**Epistemic Annotation Guidelines 11.16.18**

**Overview**

The goal of this work is to identify and classify epistemic statements in the scientific literature and the general subject of such statements. An epistemic statement is a statement of unknowns, hypotheses, speculations, uncertainties, including statements of claims, hypotheses, questions, explanations, future opportunities, surprises, issues, or concerns (more clarifications in the task description below).

We identify these statements using epistemic cues – how these unknowns, hypotheses, speculations, and uncertainties are communicated in text. Generally, statements of fact or methodology are not epistemic statements because the statements tend to be certain or explain the experimental design. This is not to say that there are never epistemic statements in the methods sections (see the second abstract example). For each epistemic statement, there is also the subject of it. Here that includes statements about: function, global organization, location/context, production, structures/entities, or timing.

The task at hand has 3 parts: Given a sentence (1) identify and classify epistemic cues that signify a specific type of epistemics (2) identify and classify the subject of the specific types of epistemics (3) link the epistemic cues with its subject. The end goal of this work is to determine goals for knowledge (next steps or questions) based on the epistemic statements to provide an overview of the questions in a field and to drive literature-based discovery (finding relevant articles to the goals for knowledge).

1. **TASK AT HAND**

You will be provided with 54 numbered sentences in one document in knowtator2. I will train you in using knowtator2. As you go along please take notes in the last sheet of the excel spreadsheet provided for the epistemic type, epistemic subject, how hard the sentence was to classify, and any additional notes.

For each sentence please complete all 3 tasks at hand:

1. Identify and classify spans of text that are epistemic cues that signify a specific type of epistemics. The different types along with the definition, a knowledge goal, and linguistic cues that signify the specific type are provided. Each linguistic cue includes at least one positive and negative example with the specific linguistic cue highlighted in yellow and the scope in parentheses <…> for positive examples and highlighted in red for negative examples. Negative examples will always be last. Linguistic cues can be disjoint, meaning separated by other words – we write disjointness as ‘…’. Explanations for the annotation are in parentheses […] in orange. All examples are from the PubMed Central Open Access Subset.

Feel free to use this to ensure it is an epistemic statement with more information needed (next steps). Further, within knowtator2 there are synonyms and you can use the search function to help navigate within knowtator2. Also, if you think I am missing a type of epistemics please add it to the last sheet in the excel document under “Epistemic Type Notes”.

**Claims/Questions/Evidence**

FULL UNKNOWN = a statement that indicates something is not known (a lack of information), or information is presented for the first time (new or novel) and a significant amount of research is needed; not a statement about the absence of something. The next actionable step is to explore the unknown further to gain any insights.

* + - * 1. **(VERY) LITTLE IS…KNOWN/ LITTLE KNOWLEDGE/ LITTLE WE KNOW/ LESS IS KNOWN**

1. “<little is known about the feeding behavior of hematophagous insects that require plant sugar to complete their life cycles>.” [almost nothing is known about feeding behavior]
2. “<little information is known about the biological activities of these metabolites>.” [almost nothing is known about the biological activities of these metabolites]
3. NO NEGATIVES [almost always a positive example indicating information is lacking]
4. “however, there is <little knowledge about basic processes, such as gene regulation, signal transduction mechanisms and proliferation of this parasite>.” [the basic processes are unknown]
5. “most of the interviewed parents and guardians had education levels of high school or less and had little knowledge of asthma before their child’s diagnosis.” [the parents are missing knowledge, nothing about research]
6. “<what little we know about cepaciacins> suggests that some may be similar to the phage-tail-like r pyocins (govan & harris, 1985).” [cepaciacins are unknown]
7. “yet, all of us know how little we know, and how little it is that we can actually do for our patients, by way of disability limitation.” [general statement that we as humans do not know a lot, not about research]
8. “unfortunately, <less is known about the seasonality of deep infections>.” [the seasonality of deep infections is unknown]
9. “some parameter values and model assumptions are based on taking vibrios as a model system for coral pathogens, because <less is known about other pathogens of current concern>.” [other pathogens are unknown]
10. NO NEGATIVES [almost always a positive example indicating information is lacking]
    * + - 1. **NO… AVAILABLE/ NOT…AVAILABLE**
11. “to date there are <no therapies available that modify disease progression in plan, pkan or other forms of nbia>.” [there is a lack of therapies to modify disease progression]
12. “the largest positive sensitivities are found for a9and a10, whose values were set equal (sees2 table) as <no data on the phosphorylation of pdk1 and mtorc2 were available>.” [there is a lack of data on phosphorylation]
13. “in lieu of antibodies capable of detecting native endogenous perforin-2, <as these reagents are not currently available>, we transfected c-terminal tagged perforin-2–rfp or–gfp into cells in which endogenous perforin-2 was knocked down.” [there is a lack of reagents]
14. “in case of doubts or new symptoms, patients are instructed to access this consultation, instead of emergency room, where misinterpretation of the symptoms is more frequent, particularly when neurologist is not available.” [there is a lack of neurologist for a patient, not a lack of information]
15. “for some patients, complete clinical data were not available.” [specific patients are missing data which is not a research question]
    * + - 1. **NOT…CLEAR/ (FULLY/WELL) UNDERSTOOD/ KNOW/ (WELL) KNOWN/ VERY CLEAR/ WELL DEFINED**
16. “<although the pathogenesis of bisphosphonate-induced esophageal mucosal damage has not been clearly demonstrated>, direct chemical esophageal damage with prolonged local mucosal exposure to a drug with gastric acid might be the most plausible biological mechanism as suggested by the literature.” [the pathogenesis is not known]
17. “<it is not clear from these experiments whether nuclear localization is a consequence or cause of apoptotic changes in the nucleus>.” [it is unknown if nuclear localization is a consequence or a cause]
18. “if the statistical methods used in a biomarker study are not clearly specified, it will be difficult or impossible for the reader to interpret the results or reproduce and validate the findings.” [the statistical methods need to be specified but they are not unknown]
19. “<the mechanisms responsible for ripple generation are not fully understood>, however a prominent theory suggests that gap junction proteins play a critical role (figures1b,c).” [the mechanism is unknown]
20. NO NEGATIVES [almost always a positive example indicating information is lacking]
21. “<its causes are not well understood>, but probably include the mother’s own experience of trauma, abuse and loss (with the danger of perpetuating an intergenerational cycle of abuse), as well as rejected pregnancy and depression.” [the causes are unknown]
22. “time-sensitive decision-making process for thrombolytic therapy could be a factor of increased in-hospital delay, since the presentation of risk and benefit is often biased by the physicians who are under threat of frequent violence from the patients or their proxies indicated in a previous study [11] and not well understood by the general population [12].” [the general population does not understand well, nothing about research]
23. “however, <we do not know the effect of exacerbations on cbf in epithelial cells of copd patients>.” [the effect is unknown]
24. “they did not know how to help their patients when they expressed their concerns about resuming work.” [a statement about what they, in the study, did not know when their patients expressed concerns, nothing about research]
25. “however, <the genes, pathways and mechanisms of swainsonine biosynthesis are not known>.” [the genes, pathways, and mechanisms are unknown]
26. “in addition to the involvement of mc1r in pain modulation,134it appears that red-haired individuals were less affected by the anaesthetic effect of subcutaneous lidocaine, as measured by the pain perception and tolerance thresholds.135the mc1r gene is not known to be expressed at the periphery, around the nerve fibres,136and it is unclear what association there is between the sodium channel blockade in the periphery and melanocortin-1 g-protein–coupled receptor gene.” [the mc1r gene is not expressed at the periphery, nothing about research]
27. “we consider vip and vpac2r to be under core clock control, since <the features of vip release and vpac2r expression are not well known> and beyond the scope of this work.” [the features are unknown]
28. “the diversity in perceptions of norm may be due to an absence of a norm or that the norm is not well known to the public.” [the public does not know the norm, nothing about research]
29. “it has been shown that tead1 plays a regulatory role in muscle fiber determination (karasseva et al., 2003;tsika et al., 2008); however, <the molecular mechanism is not very clear>.” [the molecular mechanism is unknown]
30. “however, it was not very clear from stakeholders’ responses how this data is used by the various actors and whether these data actually inform the work of the moh and nhis.” [the stakeholders’ responses need to be clarified, nothing about research]
31. “genetic, epigenetic, environmental, and infectious factors appear to be important for the induction of the underlying autoimmune pathology, but <the hierarchy of events and the close interplay of these factors are not well defined>.” [the hierarchy and interplay is unknown]
32. “the next section introduces the i nn algorithm which is less sensible to k parameter and for this works better than k nn in datasets with overlapped classes (boundary not well defined).” [boundary not well defined is the definition of overlapped classes, nothing about research]
    * + - 1. **NO…EXIST**
33. “<while such technologies for remote sensing do not yet exist>, it may be possible to use such methods in the future to detect diseases without clear visible symptoms.” [technologies are not known since they don’t exist – a new methodology is necessary]
34. “faf of rpe tears showed a hypofluorescent area in the rpe denuded zone, indicating non-existing rpe.” [results are explained that rpe is missing but not that it is unknown]
35. “no existing method other than mrna delivery could achieve the direct, vector-independent expressions of transcription factors in an exogenous manner.” [no exist signifies hyperbole that there is only one method currently to use – not that a method doesn’t exist]
    * + - 1. **NOTHING… IS KNOWN/ NO…IS KNOWN/ DON’T KNOW**
36. “<nothing further is known about distances travelled to form a new nest>.” [a lack of information about distances traveled to form a new nest]
37. “to our knowledge, <not much is known about the injury pattern of certain injury mechanisms in different groups of young road users (3–22 years) compared to a large group of adult road users>.” [a lack of information about injury patterns in specific populations]
38. “virtually <nothing is known, however, on the possible links between disturbance and epigenetic features of wild plant populations>.” [a lack of information on the links between disturbance and epigenetic features]
39. “variables with finite variance approximately follows a normal distribution), no matter whether the distribution of sound correspondences in v is known or not…” [the distribution is known with or without any information – a statement of knowledge not being necessary]
40. “<what we don't know, is what the woman thought about the outcome>.” [thoughts about the outcome are unknown]
41. “indeed, <we don't know yet if evolutionary dynamics of mitochondria are radically different between fungi and metazoan> and <we don't know if the profound difference between these organisms in life style and reproduction mode could be reflected in their evolutionary dynamics> and, if so, in which way [35].” [the differences between these organisms are unknown]
42. “i don't know how she can come into this room.” [how someone can come into a room is unknown, nothing about research]
    * + - 1. **NO…IDENTIFIED**
43. “interestingly, we have <not identified a specific relation between serum dkk-1 concentrations and patterns of bone pathology in psa, in the form of either new bone formation or bone loss>.” [the specific relation between serum dkk-1 concentrations and patternsof bone pathology is unknown]
44. “t tumour, n inguinal lymph node, 0 no such cells identified, (+) present, (−) absent” [no…identified defines 0 here so nothing is actually unknown]
45. “this amino-acid substitution was not identified in rr mice, in concordance with the absence of cho qtl in b6 × rr f2mice.” [a statement of something absent not unknown”
    * + - 1. **COULD NOT DETERMINE**
46. “we <could not determine the superiority of la peak systolic strain over la fractional shortening>.” [the superiority is unknown]
47. “reasonable care and skill could not have remedied the accident, and the lawyers could not determine what they were sueing for until after a dissection of their client.” [the lawyers don’t know but there is no general research question that is unknown]
    * + - 1. **ELUDES**
48. “many potential risk factors have been explored in relation to the aetiology of nec; however, <the definite aetiology still eludes modern medical research>.” [the aetiology is unknown]
49. “the resulting adducts are able to inhibit transcription, while the low distortion of the dna significantly eludes repair.” [the dna escapes evades repair – nothing is unknown]
    * + - 1. **LACK OF/ (HAS BEEN) LACKING/ LACKS /LACK OF INFORMATION/LACK OF KNOWLEDGE/ LACK OF…DATA**
50. “in contrast to the large numbers of papers reporting on the association between diabetes and depression, <there is a lack of research investigating postnatal depression in women with t1dm>.” [research is missing in postnatal depression in women with t1dm]
51. “lack of an effective communication between the patient and physician and inappropriate attention to the professionalism may prevent cooperation of the patient with the learners and decrease his readiness as another input of teaching in clinical environment; this is also emphasized in other studies.” [lacking communication, nothing about research]
52. “this study also identified that <appropriate and timely information throughout the transition to motherhood was lacking> and that the internet and web-based information/support plays an important role for women with t1dm during time.” [information is lacking/missing]
53. “<compelling evidences for or against various techniques in improving recovery profile and cognitive function are lacking>.” [missing compelling evidence]
54. “in addition, mutants lacking both n-terminal 370 or 467 residues and the c-terminal 99 amino acids were generated (371-ynd1-531 and 468-ynd1-531 respectively).” [mutants are missing amino acids, nothing about research]
55. “<a systematic effort in this area has been lacking to investigate if nci60, the panel of cancer cell lines most widely used in cancer research and drug screening, represent their tumors of origin>.” [a systematic effort is missing]
56. “they truly did a great job explaining their definition of what constituted an injury, which has been lacking in several studies, as well as providing great recommendations for the “safe” participation in this training modality.” [a good explanation is lacking from studies, nothing about research]
57. “in other words, <there lacks a concrete threshold, in erms of the minimum number of sound matching instances, for determining a recurrent sound correspondence>.” [a concrete threshold is unknown]
58. “this mutant lacks only five amino acids in the mdm2 protein and develops normally to adulthood.” [the mutant is missing amino acids, nothing about research]
59. “consequently, <there is a lack of information about the frequency and types of malaria infections occurring in sénégal>.” [the frequency and types of malaria is unknown in Senegal]
60. “the following judgements were used; low risk, high risk or unclear (either lack of information or uncertainty over poteintial for bias).” [describing different judgements that can be made, nothing about research]
61. “<the lack of knowledge regarding the ecological niche of paracoccidioides sp> hinders the development of prophylactic measures that are likely to prevent infection among the population most exposed to the fungus.” [ecological niche of paracoccidioides sp is unknown]
62. “hiv/aids is largely preventable, but lack of knowledge has led to its rapid spread.” [lack of knowledge about hiv/aids affecting spread, nothing about research]
63. “despite the rapid increase in the extent of research into isoflavones in recent years, there remains a <lack of data on which to base recommendations regarding intakes either for patients with breast cancer or healthy women wishing to reduce their risk of breast cancer>.” [lack of information to understand recommendations]
64. “the following conditions were exclusion criteria for recruitment: the indicators and ctc were not related; the evaluation indicators derived from ctc in blood circulation were not used for hcc diagnosis; lack of complete data to describe or calculate the sensitivity and specificity; and reviews, letters, technical reports, case reports, and comments.” [a lack of data is an exclusion criterion only]
    * + - 1. **NO PREVIOUS STUDY/ NO PRIOR STUDY/ NO DEFINITIVELY ESTABLISHED/ NO KNOWN/ NO ROLE**
65. “moreover, <no previous study has evaluated the health status of child survivorsseveral years after an earthquake>.” [it is unknown the health status of child survivors’ years after an earthquake]
66. “however, <no prior study has compared the quality of pearls resulting from the same donor>.” [a comparison of the quality of pearls from the same donor is unknown]
67. NO NEGATIVES [almost always a positive example indicating information is lacking or unknown]
68. “the anatomical diversity of neurons in layer ii of the entorhinal cortex is likely to be associated with functional diversity, although <no known molecular signatures exist for the distinct morphological subtypes>.” [signatures for distinct subtypes is unknown]
69. “he had no known food or drug allergies.” [referring to a person’s allergies, nothing about research]
70. “the doubly phosphorylated form of hpr ((his(p),ser(p))-hpr) is not abundant in bacillus subtilis (9,10), and to date <no role has been assigned to it in this organism>” [the role of ‘it’ is unknown]
71. “the sponsor of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report.” [describing the roles of the people involved in the study, nothing about research]
    * + - 1. **REMAIN(S) TO BE ELUCIDATED/ ESTABLISHED/ DEFINED/ DETERMINED**
72. “thus, neuronal expression of gpr3 may potentially regulate various neuronal functions; however, <the role of gpr3 in the central nervous system remains to be elucidated>.” [the role of gpr3 in the CNS is unknown]
73. “it <remains to be established if flanking genes of the invertebrate class 2 b1 receptors are also part of multigene families with gene copies in other nematode and arthropod chromosomes>.” [it is unknown if flanking genes are a part of the multigene family]
74. “<mhc-restricted zikv epitopes remain to be defined>.” [the definition of mhc-restriced ziky epitopes is unknown]
75. “however, <the precise mechanisms of how ros generation may mediate this anti‐inflammatory effect remain to be determined>.” [the exact mechanism is unknown]
76. NO NEGATIVES [almost always a positive example indicating information is lacking or unknown]
    * + - 1. **REMAIN(S) UNCLEAR/ ELUSIVE/ RELATIVELY UNEXPLORED/ UNKNOWN**
77. “one percent of the extracellular ectodomains of membrane-anchored proteins are released from the cell surface by endogenous proteolytic cleavage[17], but <the novel biological functions in which some of these molecules can be involved in cancer remain unclear.>.” [the biological functions are unknown]
78. “however, <the role of mitochondrial dysfunction in the pathogenesis of pd‐ gba1 remains elusive> and, to date, only three studies have investigated the impact of gba1 mutations on mitochondrial function.” [the role is unknown]
79. “whereas cold exposure causes changes in the fatty acid composition of bat, <the functional consequences of this remains relatively unexplored>.” [functional consequences are unexplored/unknown]
80. “it currently <remains unknown why the usage of conductive resins had favorable effects on images at higher resolutions>, and multiple mechanisms have been suggested.” [unknown why conductive resins had the effects it did]
81. “in some cases, a repeat hst or in-laboratory testing may be required if a diagnosis remains elusive.” [explains what to do if a diagnosis remains elusive, nothing about research]
    * + - 1. **(HAVE/HAS) NOT (YET) BEEN CONDUCTED/ DESCRIBED/ EXAMINED/ EXPLORED/ INVESTIGATED/ DETERMINED/ (RIGOROUSLY) EVALUATED/ (WELL) CHARACTERIZED/ (FIRMLY) ESTABLISHED/ REPORTED/ STUDIED/ IDENTIFIED/ ELUCIDATED**
82. “to the best of our knowledge, <validation studies have not been conducted among women living in rajasthan>.” [missing validation studies ]
83. “if these evaluations had not been conducted at our hospital, the patients were questioned directly.” [a scenario if an evaluation was not done, nothing about research]
84. “<the second mechanism could involve disturbance via a domain that has not been described>.” [a domain is unknown]
85. “he had remarked that the glands in the trachea at the base of the larynx had been called paristhmia by ‘the ancients’, but he had refused to use the word in this sense until now because they had not been described by professors of anatomy.” [the words were not used because they were not used by professors in anatomy, nothing about research]
86. “<most of the nine pesticides used in the present study have not been examined in amphibians at all>: no published studies have addressed the effects of cyfluthrin, cyhalothrin, tebupirimphos, metalaxyl, or propiconizole on amphibians.” [most of the nine are unknown]
87. “[83] to date, it appears that <the impact on cancer caregivers has not been explored>.” [the caregiver impact on cancer is unknown]
88. “first, in bandit tasks when novel options are available, or equivalently when non-stationary options have not been explored for some time, the distribution of possible reward values is broad and uncertainty is high” [describing a specific scenario in a task where something is not explored and what to do about it, nothing about research]
89. “intracranial arterial dissection has not been investigated in association with migraine.” [the relationship between intracranial arterial dissection and migraines is unknown]
90. “<the risk of infection caused by pens in hospitals has not yet been determined>, and there are no cleaning guidelines available.” [the risk is unknown]
91. “additionally, as the accucirc retail price has not yet been determined by the manufacturer, we investigated the exact price at which the accucirc unit cost would break even with the mogen clamp.” [a price is unknown, nothing about research]
92. “therefore, the presence of untreated sleep disorders has a substantial economic and social impact but <the relationship between sleep complaints and healthcare utilization has not been rigorously evaluated>.” [the relationship is unknown]
93. “rab40c is a member of the ras oncogene family, but <the gene has not been well characterized> [36].” [the gene is unknown]
94. “especially, <the links between biophysical properties and cellular functions, and links between cellular functions and pathological roles have not been firmly established> and even have been contradictory.” [the links are not known]
95. “additionally, our studies show <localization of 2b, in discrete spots, to golgi bodies, which has not been reported previously>.” [localization is unknown]
96. “however, <atrial fibrillation associated with an unroofed cs and a persistent lsvc has not been reported yet>.” [the relationship between atrial fibrillation and an unroofed cs and persistent lsvc is unknown”
97. “monocarboxylate transporter 3 has not been reported in hypothalamus.” [mt3 is not present in the hypothalamus, nothing about research into it]
98. “although several studies have confirmed the loss of intestinal il-17 producing cd4+t-cells, <the dynamics of il-22 and il-17/il-22 producing t-cells during hiv and siv infection have not been studied> extensively.” [the dynamics are unknown]
99. “the existence of a plant nuclear lamina is debatable as <lamin homologues have not been identified in their genome databases> (fiserova and goldberg, 2010).” [lamin homologues are unknown]
100. “in summary, although <a number of genes that function as anterior-determining components in flies have not been identified in mosquitoes (and other insects)>, the posterior-determining components are well conserved in mosquitoes.” [the genes are unknown]
101. “nevertheless, xloc\_006390 and rp11-567g11.1 have not been identified in any cancers.” [stating the absence of genes in cancer, nothing about research]
     * + - 1. **NEW/ NEWLY/ NOVEL**
102. “the role of light microscopy (lm) as gold standard has been questioned and, therefore, <new molecular methods have been developed for the detection of plasmodium species>.” [a new avenue or a previously unknown avenue is being explored]
103. “each of these 14 new spf herds had an average of 60 animals (range 20–150).” [a description of the situation with new herds, nothing about novelty in research]
104. “this study extends our understanding of the links of fas with oa, synovitis, and wound healing, and reports <newly identified serum and synovial fluid fas as predictive biomarkers of oa and wound repair in obesity>.” [a new avenue of research – identified new biomarkers]
105. “newly hatched nymphs of the house cricket and larvae of the black soldier fly were taken from colonies maintained at the laboratory of entomology, wageningen university.” [a description of the situation of nymphs, nothing about novelty in research]
106. “based on these findings we utilized a genetic screen in yeast, which uncovered a <novel component of the e4orf4 cell death-inducing network>, called ynd1.” [a new component was discovered – a brand new avenue of research about cell death]
107. “the engineering must be evolutionarily stable, so that natural selection does not favor loss of the novel functions.” [a description to ensure that the new engineered functions are not lost, nothing about novelty in research]
     * + - 1. **OBSCURE**
108. “nonetheless, all these important insights leave <obscure the process by which perilipin governs accessibility of tag to lipases>.” [the process is unknown how perilipin and lipases interact]
109. “as in our case, obscure radiologic findings make diagnosis difficult.” [a description of the radiological findings that are unclear, no avenue to research]
     * + - 1. **GAP(S)/ GAP(S) IN (CURRENT/OUR) KNOWLEDGE/ OMMISIONS OR GAPS/ RESEARCH GAPS/ DATA GAP**
110. “there is a need for further research addressing the <real gaps> and some of the institutional challenges of hecs and evaluating the functions of hecs.” [need research to fill in gaps, meaning something is unknown or missing]
111. “theoretically, with the use of a contrast injection, the tissue heterogeneity should be easier to detect since the discrepancies in the washout time between the fibrotic and normal tissues add to the gap of the t1 time, as gadolinium can potently shorten the t1.” [a gap in time – not a research gap]
112. “our study provides further evidence of <a substantial gap in knowledge about t2dm and its treatment in an educationally and racially/ethnically diverse national sample>.” [missing knowledge about t2dm and its treatment]
113. “filling in <gaps in current knowledge> will improve the quality of data gathered to inform the model, providing more precise evidence about the most promising targets and strategies to reduce the environmental contamination with toxocara eggs.” [the need to fill in gaps in knowledge about toxocara eggs]
114. “motive: statement indicating why the research was done (e.g., a gap in knowledge, contradictory results).” [a description of the motivation section of an article – need to describe the gap in knowledge – nothing about research]
115. “we aimed to assess the current standing of traumatic stress research in terms of its global nature and to provide insight in factors identified as affecting <research gaps between hic and lmic> (lansang & dennis,2004).” [factors affecting hic and lmic are unknown]
116. “defining the “research gaps” in sarcoma care has been an important outcome of this process.” [a description of methodology, not about the research gaps themselves]
117. “computational models allow calculation of inhalation dosimetry of particles45, but <there is an experimental data gap for critical parameters (submicron-sized particles, specific anatomical features)>.” [missing data for critical parameters]
118. “atsdr invited scientific experts in the fields of hair analysis, toxicology, and medicine to participate in a discussion of such topics as analytical methods, factors affecting the interpretation of analytical results, toxicologic considerations, and data gaps and research needs.” [a list of topics that includes data gaps, nothing about research]
     * + - 1. **OPEN QUESTION**
119. “thus, <a clear understanding of the implications of the present results for photoemission experiments is still an open question> that requires further work.” [understanding the present results is unknown]
120. “it is best to begin with general, open questions rather than specific enquiries about depression or anxieties.” [a recommendation of how to begin, nothing about research]
     * + - 1. **OUT OF REACH**
121. “since <this active space is out of reach for the traditional casscf implementation>, the orbitals were optimised with the dmrg-scf approach as implemented in the development version of molcas.” [the active space is unknown since it is out of reach]
122. “instructions should cover seating position (distance, using a car seat or similar), avoidance of distractions (sound, persons, other browser tabs, moving the keyboard, and monitor out of reach), position of the parent (out of the field of view), and interactions (no talking, no pointing).” [a description of instructions that includes monitoring out of reach, nothing about research]
     * + - 1. **POORLY CHARACTERIZED/ UNDERSTOOD**
123. “<understanding of the impact of mip on infant growth and infant risk of malaria or morbidity is poorly characterized>.” [the impact of mip is unknown]
124. “genes could be moved from <poorly characterized organisms> to more convenient hosts such as e. coli k12.” [information about the organisms is unknown]
125. “the category “poorly characterized” includes “general function prediction only (r)” and “function unknown (s)”.” [a definition of poorly characterized, nothing about research]
126. “<several aspects of desensitization are, however, poorly understood>.” [desensitization is missing information]
127. “health literacy can prove a more substantial barrier [8] as translations for medical terms are often poorly understood or simply do not exist [9].” [medical terms are not always understood leading to health illiteracy, nothing about research]
     * + - 1. **STILL BEING ELUCIDATED**
128. “<the underlying etiology, pathophysiology and complications of diabetes are still being elucidated>.” [the etiology, pathophysiology and complications of diabetes are still unknown]
129. “the original studies describing the eukaryotic queuine-insertase activity date back to 1962: a time when the mechanistic details of translation were still being elucidated.” [past tense with ‘were’ and quoted almost from the 1960s]
     * + - 1. **UNCERTAIN/ UNCERTAINTY/ UNCLEAR/ LESS CLEAR/ UNDETERMINED/ UNKNOWN/ UNRECOGNIZED**
130. “furthermore, <two high molecular weight serine proteases (145 and 198 kda) of uncertain origin> are found in the coiled gut lumen.” [the origin is unknown]
131. “for individuals from uncertain and risky childhood environments, it would make evolutionary sense that, as adults, they would respond to such threats in an experienced and functional manner.” [a description of an uncertain childhood environment, nothing about research]
132. “together, these observations indicate <uncertainty about the role and significance of circulating concentrations of dkk-1 in the development of bone disease in inflammatory arthritis>.” [the role and significance are unknown]
133. “transitions are diverse and complex, may involve uncertainty, can be sequential or simultaneous, and often occur in multiples that compound the effect of transitions [5,36].” [a description of transitions that can include uncertainty, nothing about research]
134. “however, <the underlying physiological mechanisms still remain unclear>.” [the mechanism is unknown]
135. “we will contact all corresponding authors of included studies with incomplete, unclear or missing data and request them to provide further written description of such content.” [a description of the methods to deal with unclear data, nothing about research]
136. “however, it is <less clear whether these groups also differ on weight-related behaviors>.” [it is unknown if these groups differ on weight-related behaviors]
137. “for the archaeological corpus, the separation of the two species on the factorial plane was less clear but nonetheless visible (fig 5).” [a description of the fact that the separation is not obvious, nothing about research]
138. “<the mechanism underlying this response is undetermined>.” [the mechanism is unknown]
139. “"1the asc can be further subdivided into "those of undetermined significance (asc-us)" and "those where a high-grade squamous intraepithelial lesion (hsil) cannot be excluded (asc-h)."” [a description of the subdivision into categories that includes undetermined significance but nothing about research of them]
140. “it is <unknown what triggers the bidirectional transcription of sine b2>, but boundary activity only occurred when both transcription machineries were in play.” [the trigger is unknown]
141. “to make inference, the maximum likelihood method is applied to estimate the unknown parameters in the empirical log-odds ratio models given in (3)-(6).” [a description of the methodology to determine missing parameters, nothing about research]
142. “<unrecognized osa> may be a reason for poor asthma control, particularly among older patients.” [the location of osa is unknown]
143. “despite more than 100 years of investigation, this is a challenge that is mostly unrecognized by the neuroscience community, and for which no consensus has yet been established by those in the biomedical ontology community (migliore and shepherd,2005; bota and swanson,2007; ascoli et al.,2008; hamilton et al.,2012).” [a description of a challenge that the neuroscience community ignores, nothing about research]
     * + - 1. **EXAMPLE**
144. “EXAMPLE” [EXAMPLE]
145. “EXAMPLE” [EXAMPLE]

EXPLICIT QUESTIONS = an explicit statement of inquiry (with a question mark or question word such as how, where, what, why). The next actionable step is to find answers to the questions and/or discover methodologies that will help answer the question.

1. **ASKED/WONDERED**
2. “to further understand the molecular mechanism in lyn-mediated autophagosome formation, <we asked which domain(s) of lyn is required for interaction with the functionally or structurally relevant proteins>.” [a specific research question: which domain(s) of lyn…?]
3. “of five items that examined attitudes and beliefs about treatment decisions, two statements specifically asked patients about their need to have control over decisions about treatment.” [a description of methodology where patients were asked, no explicit research question]
4. “since pre- xrn-2 mrna levels increase in bpnt-1(xe22) in the apparent absence of increased rpl-43promoperon promoter activity, <we wondered if rpl-43icrmight exhibit promoter activity>.” [a specific research question: does rpl-43 exhibit promoter activity?]
5. “−in post experimental interviews many subjects stated that they “never wondered about it,” “never thought of that before,” etc.” [wondering is a part of a quote from subjects, no explicit research question]
6. **QUESTIONS/ RESEARCH QUESTION(S)**
7. “<this question has received extensive empirical investigation since the early 1900s>[4], in part because the answers may elucidate a host of important issues in cognitive and social psychology, such as the role of experience in the formation of visual processing expertise and the origin and establishment of racial prejudice and stereotypes[1]–[3],[5],[6].” [an explicit question has received a lot of attention]
8. “patients respond to the questions on a five-point likert scale from 0 (not at all) to 4 (very), with two open-ended items requesting patients to identify ‘most helpful’ and ‘least helpful’ parts of the web program.” [a description of the methodology where patients respond to questions, no explicit research question]
9. “our <research questions were: (1) what is the incidence, consequences, nature, and preventability of surgical aes among hospitalized patients, and (2) what are the causes of, and potential prevention strategies for, surgical aes?>” [an explicit statement of research questions]
10. “these were assigned as follows: yes\* (3 points) to abstracts that definitely informed the research questions and that met the search criteria outlined above, yes (2 points) to abstracts that were likely to inform the research question, possible (1 point) to abstracts that might possibly inform the research questions, or no (0 points) to abstracts that did not inform the review questions.” [a description of the methodology about how to assign abstracts as being relevant to the research questions or not, no explicit questions]
11. **CAN/DOES/IS/WHICH + ? (with a question mark ideally)**
12. “does the b. oleracea origin of the resyn lines, which were used as hybrid parents, influence hybrid yield?” [explicit research question: does the origin influence hybrid yield?]
13. “in the current study we addressed the following research questions: (a) are the intelligence factor structures (i.e., single-factor structure and two-factor structure) of the rias invariant across individuals with and without a migration background, and (b) do individuals with and without a migration background differ in latent means and variances in the rias intelligence factors (the vix, nix, and cix)?” [a statement of explicit research questions: (a) are… (b) do…]
14. “the specific research questions were: (1) can participants be classified into groups based on their scores on the individual wellness dimensions?” [a statement of explicit research questions: can…?]
15. “in our work we addressed protein sampling by hla class i molecules to answer two questions: 1) which proteins are sampled by the antigen processing pathway and why, and 2) which peptides of a given protein are picked to represent the source protein on the cell surface?” [a statement of explicit research questions: 1) which proteins… 2) which peptides… - no specifics/options about the proteins or peptides]
16. “index of belief in curabilityi believe that my cancer: 1. is curable 2. is not curable 3. don't know regardless of what your doctors have told you, how long do you expect to survive?” [a questionnaire question about curability of cancer, no explicit research question]
17. **WHO**
18. “EXAMPLE” [EXAMPLE]
19. “EXAMPLE” [EXAMPLE]
20. **WHAT**
21. “there is no report showing how bk improves skin disorders and <what constituents contribute to bk's effect>.” [explicit research question: what constituents contribute to bk’s effect?]
22. “nonetheless, it is helpful to examine how the simulated values of diversity compare to empirical observations, and <what these comparisons might tell us about the evolutionary processes that are acting on microbiomes>.” [explicit research question: what these comparisons tell us about…]
23. “it is worth pausing at this point to clarify what we mean when we say that hosts acquire their microbiomes from their “parents” or their “environments”.” [a clarification of a definition, no explicit research question]
24. **WHERE**
25. “mapping such deposits will aid our knowledge of when, how frequently and <from where such events occur>.” [an explicit research question: where such events occur?]
26. “the anova was calculated as a mixed model, where the effect of the location was considered random and the effect of the genotype was considered fixed.” [a clarification about the anova, no explicit research question]
27. **WHEN**
28. ““mapping such deposits will aid our knowledge of <when, how frequently and from where such events occur>.” [an explicit research question: when such events occur?]
29. ” [EXAMPLE]
30. “when irradiated with lower-energy uv–a light, the presence of oxygen from the ambient atmosphere played a significant role, where the use of a quartz mask limiting the supply of oxygen notably slowed down the ageing of the polymer.” [a description of what happens in the ambient atmosphere, no explicit research question]
31. **WHY**
32. “this may be a contributing factor to <why obese patients that develop pca have more aggressive disease and a higher mortality rate> (22–24).” [an explicit research question: why obese patients…]
33. “it is not clear <why the ectopic expression of histone h1 even by the strong promoters failed to restore the chromatin-bound histone h1 protein level in rasg12v-transfected cells>.” [an explicit research question: why the ectopic expression…]
34. “structure of each session in the refresh (recovery from cancer-related fatigue) programobjectives and outlinethe objectives and outline provides a rationale for learning the material from that session by reminding participants about what has been covered to date and addressing the questions, ‘what will i learn in this session?’ and ‘why is this session important?’main contenteach session typically requires 30–45 min to complete.” [a quoted question that participants were asked, no explicit research question]
35. **HOW**
36. “the purpose of this study is to examine <how likely it is that a patient will be harmed compared to benefit> assuming all patients expose themselves to an initial increased risk with transplantation.” [an explicit research question: how likely is it…]
37. “figure 2shows visually how the percentages for ‘no benefit', ‘harm’ and ‘benefit’ were derived.” [a description of methodology about how percentages were derived, no explicit research question]

ALTERNATIVE OPTIONS = an explicit statement of multiple (at least 2) choices, actions, approaches, or methods that needs to be experimentally determined, with no stated disagreements, including statements with an implied second option, such as “whether”. Presenting multiple options or seeking other options which implies the best option has not yet been chosen. The next actionable step is to determine the correct option or a better option

1. **ADDITIONAL/ ALTERNATE/ ALTERNATIVE/ OTHER…/ TWO MAJOR HYPOTHESIS (ES)**
2. “additionally, these large data sets enable exploration of <additional hypotheses that hitherto remain unanswered (e.g., which evolutionary forces drive the fixation of duplicates at the species-wide level)> and test key theoretical predictions for gene duplicate evolution that were established in the pre-genomic era [1,2,3].” [multiple options presented to test: evolutionary forces]
3. “also, we carried out preliminary post hoc investigations to test <additional hypotheses that, within young people with 22q11ds, (1) severity of schizotypy is correlated with differences in wm integrity; and (2) polymorphism of the comt gene is associated with differences in wm volume and coherence>.” [multiple hypotheses presented: (1) severity is correlated with differences in wm integrity (2) polymorphism of comt gene is correlated in wm volume and discharge]
4. “we further explored the plausibility of various hypotheses through a combination of methods described below that allowed room for additional hypotheses to emerge or existing hypotheses to strengthen as cases accrued.” [a description of the methodology of hypotheses, no statement of alternative options that needs research to determine]
5. “the <alternate hypotheses are that logarithmic (base 2) fold changes are (a) greater than 1 in absolute value or (b) less than 1 in absolute value>.” [two options presented: (a) and (b)]
6. “a recent surge in the scientific exploration of arf and rhd has resulted in <alternate hypotheses regarding the pathogenesis of arf>, new global burden of disease estimates and revised diagnostic criteria.” [new hypotheses about the pathogenesis of arf]
7. “2005), using test2 as outlined in the paml manual was used to compare null and alternate hypotheses.” [a description of methodology and how to take account alternate hypotheses in general, no statement of alternative options that needs research to determine]
8. “building further on a previous review byegner (2007), we then set out to evaluate three <alternative hypotheses for the conflict-monitoring theory: feature integration, contingency learning, and repetition expectancy>.” [three different options presented to explore with no stake to which is correct]
9. “no list of alternative hypotheses can be exhaustive; these were chosen because they were the most relevant alternatives given our experience with the system and because the proposed mechanisms have been demonstrated in the literature or through our own experimental work.” [a meta statement about alternative hypotheses and how they can never be exhaustive, no statement of alternative options that needs research to determine]
10. “due to the fall in cerebrovascular mortality in all regions of brazil,5<another important hypothesis to be tested is whether annual decline in rates is the same by sex and race/ethnicity>.” [multiple options possible as to whether annual decline in rates is the same or different by sex or race/ethnicity]
11. “however, little is known about the <exact mechanisms by which acquired resistance arises from the histological transformation to sclc, for which two major hypotheses have been proposed>.” [two major options for the exact mechanism]
12. “there are <two major hypotheses about the precise location of macular xanthophylls in the nerve fiber layer of photoreceptor axons and in photoreceptor outer segments>.” [two options about locations, no stake in either one]
13. **(ALTERNATIVE/ SEVERAL) APPROACH(ES)/ METHOD(S)/ OPTIONS**
14. “more recent studies have focused on identifying <alternative approaches and factors that can be used to increase reprogramming efficiency of fibroblasts to pluripotency>.” [alternative options are sought out to increase reprogramming efficiency, no stake in any option]
15. “(39) with the objectives of developing <an alternative approach based on artificial dynamic recurrent neural networks (drnn)> to identify the relationship between the muscle emg activity and the arm kinematics.” [a new option presented to identify relationships with no stake in either method working]
16. “currently, manipulation of living matter has entered a new era exploiting alternative approaches and devices that assist or even substitute the human hands through tele-operated devices and miniaturized tools.” [a description of methodology that uses alternative approaches, no statement of alternative options that needs research to determine]
17. “<several methods have been proposed for detecting the on and off timing of the muscle>.” [multiple methods presented with no stake in any of them]
18. “proteins and genes whose functional relations to rrna modification enzymes were shown by several methods” [several methods were used to prove their point, not about options or choosing one but for consensus]
19. “EXAMPLE” [EXAMPLE]
20. “in both cases, the pros and cons of <alternative options for urs> were balanced accurately in a team of staff members and with the patients.” [aiming to determine the best option for treatment with no stake in the answer right now]
21. “in this systemic review of the literature, we have evaluated the oncological safety and reproductive outcomes in women with bots treated with fertility-sparing surgery, as well as new controversies in bot management and alternative options to surgery to preserve fertility.” [a presentation of multiple options instead of surgery to preserve fertility]
22. “option buttons may allow the user to switch between different ways of modeling utility and cost over time, alternative parametric ways of modeling survival data or various alternative options defining stopping rules in markov decision models, depending on the needs and complexity of the economic model.” [a description of option buttons within a modeling tool to allow for alternative options, nothing about needing to choose between alternative options]
23. **(ALTERNATIVE/ SEVERAL/ VARIOUS) MODEL(S)/ THEORIES/ PERSPECTIVES/ EXPLANATIONS/ BELIEFS/ CLAIMS**
24. “EXAMPLE” [EXAMPLE]
25. “our model has several advantages over existing models.” [staking a claim that their model is more advantageous than other models]
26. “there are <various theories proposed as the cause for a branchial cyst>.” [multiple options for the cause]
27. “<several theories have been proposed to explain how ai might increase the risk for thyroid malignancy>.” [multiple theories to explain how ai might increase risk]
28. “of the two theories, the most accepted is the lymphnode theory suggested by kings.” [staking a claim to the lymphnode theory]
29. “even though from <different perspectives>, current <theories on the mechanisms of action involved in emdr> provide possible explanations of the neurobiological changes we observed over time in children.” [multiple perspectives explained with no stake in any of them]
30. “since we wished to investigate participants’ own perspectives on the ways in which their religiosity and spirituality might influence their perception of health states, we used a descriptive, qualitative study design.” [a focus on participants perspectives, not the research perspectives and the options we have]
31. “<several explanations for this outcome have been put forward>, including a major role for rare as yet unidentified variants, structural features such as copy-number variation (cnvs), power loss due to excessive multiple testing, locus and allelic heterogeneity, parent of origin effects and gene-gene as well as gene-environment interactions [4,5,10,11].” [multiple explanations presented with no stake in any of them]
32. “for example, one study reported of people with depression “their explanations changed within their narratives and they tried out several explanations, not finding one that explained all of their experience” [55], leading to uncertainty about how to resolve problems.” [a description of people with depression who tried out several explanations but could not find one, no statement of alternative options that needs research to determine]
33. “in general, <beliefs about medicine differ among different groups in the population> (mardby et al., 2007), which is a particular challenge to the doctor-patient communication.” [multiple options for beliefs and need to face up to challenge]
34. “cognitive processing therapy (cpt; resick & schnicke,1993) conceptualizes ptsd as a disorder of “non-recovery” fueled by erroneous beliefs about the causes and consequences of the traumatic event.” [erroneous beliefs are a part of the definition of CPT, no statement of alternative options or beliefs that needs research to determine]
35. “we use these as the basis for a <series of tentative claims about the way in which features of the school and context might clash or support one another in ways that promote or hinder the likelihood of hiv-competence in schools>.” [multiple claims about school]
36. “claims data can be used to accurately identify patients with ckd for study because of a high positive predictive value (97.5%)[16],[17].” [medical claims, no statement of alternative claim options that needs research to determine]
37. **CANNOT RULE OUT**
38. “however, our observations <cannot rule out β-hydride addition as the first step>.” [there are multiple options for what the first step could be including β-hydride addition and there is no stake to whether or not this occured]
39. “we <cannot rule out a possible effect of fibrin sealant when not using a tourniquet> (thus, without any resulting hyperemia).” [there are multiple things that can occur when not using a tourniquet including effecting the fibrin sealant and there is no stake to whether or not this occured]
40. “we therefore cannot rule out patients who might have tested dsa igg+ using the alternative immucor sab assay.” [a description of the methodology with respect to patients and testing, no statement of alternative options that needs research to determine]
41. **EITHER… OR**
42. “in this case enucleation was performed because of the rapid development of subretinal or choroidal masses thought to be consistent with <either choroidal invasion or hemorrhage>.” [either choroidal invasion occurred or hemorrhage but it is unknown which]
43. “a considerable future challenge will be to determine the functional impact of a deluge of rare non-coding variants – <as either causative agents or modifiers of traits>.” [it is unknown if rare non-coding variants are causative or modifiers]
44. “the cells were then either cryopreserved in liquid nitrogen or were reestablished in monolayer culture.” [a description of the methodology with two arms to it for preserving, no statement of alternative options that needs research to determine]
45. “so at any one moment, the emg signal may be either positive or negative voltage.” [a description of the system possibilities: positive or negative voltage, no statement of alternative options that needs research to determine]
46. **WHETHER OR NOT/ WHETHER… AND/ OR / COMPARED (TO)/ IF/**
47. “<whether such correlations or absence of correlation with gene number or genome length would hold for more complex organisms remains> an open question.” [multiple options to choose from: correlations, absence of correlations with gene number or genome length]
48. “[4] performed a systematic review to determine <whether or not the tying of medial row sutures would provide more fixation strength>.” [need to determine if one should tie medial row sutures or not]
49. “to test <whether filtering by the human body contributes to causing deviation from scale invariance for natural self-motion envelopes, we compared envelope signals obtained during passive self-motion measured at the subject’s head to those measured when the subject is absent> (i.e. 176” [need to determine if filtering contributes by comparing envelope signals]
50. “finally, an important question regarding the activity of our peptidomimetics was <whether their peptoidic nature is essential for their antivirulence activity or if peptide analogues could have the same activity>.” [need to determine if peptoidic nature is essential or if peptide analogues are suitable]
51. “one should consider for each strength whether it can serve only one or more virtues, and if yes whether this should enter their definition.” [speaking about oneself, no statement of alternative options that need research to determine]
52. “women were asked at the baseline questionnaire whether they had ever used oral contraceptives, their duration of use, and age they started use.” [a question from a patient questionnaire, no statement of alternative options that needs research to determine]
53. “next, the algorithm checks whether∏s∈c1-θsprpd>1-Δis true.” [a description of the methodology specifically the algorithm, no statement of alternative options that need research to determine]
54. “thus, the effect of soybean oil supplementation on sf flavor was dependent on whether or not the antioxidant was present.” [an answer to what the sf flavor depended on, no statement of alternative options that needs research to determine]
55. “for example, <zinc appears> to be essential for lipopolysaccharide induced signal transduction in monocytes and <to influence if n-γ expression in activated t-cells>, and in mast cells labile zinc plays a role in regulation of caspase activation and nf-κb translocation (reviewed by[5]).” [need to determine if zinc influences n-γ expression in activated t-cells or not]
56. “these parameters are thus not appropriate for external parameters evaluation even if they remain robust to compare ligands or competitors under the same cation condition.” [a results statement that it doesn’t matter if they remain robust or not therefore it is not a statement of alternative options that needs research to determine the correct option]
57. “EXAMPLE” [EXAMPLE]
58. **EXAMPLE**
59. “EXAMPLE” [EXAMPLE]
60. “EXAMPLE” [EXAMPLE]

INCOMPLETE EVIDENCE = a statement of one proposed explanation for a phenomenon on the basis of limited evidence as a starting point for further investigation OR a statement that information is needed to support an assertion or claim, including both positive and negative statements. Either a statement that some evidence already exists, explaining how current findings support previous work, adding confidence to a claim OR a statement that information is limited, more research is needed or is ongoing including limitations – biases or short comings related to the study design and execution. The next actionable step is togather more evidence to support the claim OR conduct more research to determine the validity of the claim; Complete the partial picture; Consider the short comings and biases for the next experiment and how it can be addressed.

Due to this being the largest category, we split up the linguistic cues into 4 categories based on the stage of the research: early, middle, late, reflection. You do not need to classify these when you are annotating. This is only to provide a little more categorization when going through examples.

1. **EARLY: (ATTRACTED/RESEARCH) ATTENTION/ ATTRACTED INCREASING INTEREST/ EMERGING (FIELD/KNOWLEDGE/RESEARCH)/ EXPLOSION OF KNOWLEDGE/ FAR FROM UNDERSTANDING/ FIRST(DATA/STUDY/TIME)/ (MARGINAL/MODEST) (EVIDENCE/SAMPLE SIZE)/ PRELIMINARY (EVIDENCE/STAGE)/ PREMISE/ PROPOSE(AL)(ED)(ES)/ RECENT(LY) (EMERGENCE/ OBSERVATIONAL RESEARCH/ STUDIES)/ STARTING POINT/ STILL BEING (DISCOVERED/DISCUSSED/ EVOLVING)/**
2. “among such products, <mushrooms, especially basidiomycetous fungi, have attracted attention due to their low toxicity and high degree of specificity in the activation of the human immune system> [4]” [mushrooms are the new hot topic in research]
3. “as a result, <prochlorococcus has attracted attention from research groups spanning many disciplines>, which motivated us to create a comprehensive database to facilitate research on this organism.” [Prochlorococcus is the new hot topic in research]
4. “this may be due to the relatively undeveloped evidence base, as <sb has attracted substantial research attention in the last 5–6 years only>.” [sb is a new hot research topic]
5. “much like the emulation monitoring and repair processes proposed herein, these authors hypothesized that unexpected events attracted attention and caused updating of the internal schema that drove the violated expectations.” [a part of the hypothesis of the authors: events attracted attention…, nothing about a new hot topic to research]
6. “the contribution of mscs to tumor progression and resistance is well established, while <the msc-mediated tregs expansion and immunosuppression has recently attracted increasing interest>.” [the msc-mediated tregs… is a new hot research topic]
7. “stakeholder input is a key component of the <emerging field of patient-centred outcomes research>.” [patient-centred outcomes research is a hot research topic]
8. “new professional interdisciplinary identities, institutionalized through dedicated training programmes, can help to stabilize emerging fields of research and the networks that enact them.” [a meta statement about how to stabilize emerging fields, nothing about a new hot research topic]
9. “exploiting the <emerging knowledge of mirnas> for the development of new human therapeutic applications will be important.” [mirnas is a new hot research topic]
10. “additionally, he sought to synthesize emerging knowledge across objectives.” [a description of methodology around emerging knowledge, nothing about a new hot research topic]
11. “<emerging research suggests that higher levels of physical fitness at any age are associated with better cognitive functioning> and this may be mediated, at least in part, by improvements in cerebrovascular reserve.” [new research provides insights into better cognitive function]
12. “2) what are the newly emerging research topics?” [a question about the new hot topics, but nothing about a new hot research topic]
13. “the last decade has seen an <explosion of knowledge about how host cells detect invading bacteria and viruses in the cytosol>, and in some cases, pathogen strategies for avoiding detection [15,16].” [how host cells detect invading bacteria and viruses in a new hot topic]
14. “this is an argument in line with a large number of other commentators, but what is particularly welcome in rajasekaran’s contribution is that he presents hard facts that are well suited to illustrate that there is good reason to ask the question of whether we are experiencing an ‘explosion of knowledge or just junk science’:” [asking whether there is an explosion of knowledge, not saying there is a particular new hot research topic]
15. “however, although we are able to cultivate dokdonia species in the laboratory, we are <far from understanding their real metabolic requirements>.” [a new research topic is dokdonia species real metabolic requirements]
16. “however, knowing the building blocks and their properties is far from understanding the architecture of the “memory palace”.” [someone that only understanding the building blocks and their properties does not understand the ‘memory place’, nothing about a new research topic that we barely know anything about]
17. “this research provides the <first data on the kinetics of ceria enm interaction with the bbb and choroid plexus>.” [preliminary data presented, more data and exploration are needed]
18. “month and year of initial symptoms and diagnosis, gender, hospital, year of birth and date of first data entry were obtained for 13 721 patients with ra, psa or as who had been registered in the danbio registry.” [a description of methodology surrounding data collection including first data entry, nothing about preliminary data on a new research topic]
19. “this is the <first study to apply a technology acceptance model to surgeons' adoption of surgical robots>.” [a pilot study applying a technology acceptance model, more data and exploration are needed]
20. “through checking their email addresses, it was ensured that none of the participants in the first study took part.” [a description of exclusion criteria: participants from the first study could not take part again, nothing that needs more data and exploration]
21. “we found <marginal evidence of an effect on mean calcium and iron intake>.” [preliminary evidence about the relationship between calcium and iron, more data and exploration needed]
22. “these search strategies first find disease-associated snps with noticeable marginal evidence.” [a description of methodology: search strategies first look for snps with marginal evidence to proceed, nothing that needs more data and exploration]
23. “nevertheless, there is <modest evidence for a link between peripheral bdnf levels and depressive symptoms>.” [preliminary evidence about the relationship between bdnf and depressive symptoms, more data and exploration needed]
24. “definitions of levels of confidencedefinition of various confidence levels for causal relation between aes and errors:  virtually no evidence for management causation slight to modest evidence for management causation management causation not likely; less than 50-50 but close call management causation more likely than not, more than 50-50 but close call moderate or strong evidence for management causation virtually certain evidence for management causation definition of various confidence levels for preventability:  virtually no evidence for preventability slight to moderate evidence for preventability preventability not quite likely; less than 50-50 but close call preventability more likely than not; more than 50-50 but close call strong evidence for preventability virtually certain evidence for preventability” [modest evidence is a part of the definition of levels of confidence, nothing that needs more data or exploration]
25. “the <modest sample size reduced the power to detect statistical significance>.” [a preliminary study with not enough samples, needs more data and exploration]
26. “the three latent variable models for spelling, phoneme awareness and reading development were considered separately because of the modest sample size.” [a description of methodology: how to consider each variable due to a modest sample size, nothing that needs more data or exploration]
27. “this <preliminary evidence suggests that species of zygophiala may differ with regard to host range>.” [preliminary results suggest conclusions, more data and exploration is needed to validate such conclusions]
28. “the second is by presenting some preliminary evidence that student quantitative skill and concept learning is not sacrificed (as we have witnessed among our previously underperforming life science students) as a way to engage mathematics faculty or other stakeholders who worry about preserving rigor.” [an idea of how to engage faculty and stakeholders: present some preliminary evidence, nothing that needs more data or exploration]
29. “it is very important to evaluate the performance of some linear algorithms in feature extraction or classification, when <lie detection research is in the preliminary stage>.” [lie detection research is a hot new research topic, needs more data and exploration]
30. “carious lesions representing preliminary stage of subsurface enamel demineralization were produced by suspending four sections of each tooth into glass tubes containing 20 ml of demineralization solution, for 72 hours, in an incubator at a temperature of 35 degree.” [a description of the preliminary medical stage of subsurface enamel demineralization, nothing to further explore or collect more data]
31. “several findings support the <premise that hypomethylation of the dna surrounding the promoter region is a prerequisite for gene activation>, whereas heavy methylation leads to gene silencing [10].” [evidence is accumulating for this premise, need more data and exploration]
32. “additional samples were also available from the same premises where clinical cases had occurred and from nearby stables collected as part of the serologic survey described in the following section.” [premises as a piece of land, nothing that needs more data or exploration]
33. “we <propose that s1p produces activation of multiple s1p receptor subtypes> (including s1p1and s1p3) resulting in conflicting physiological effects.” [an initial claim about s1p activities, need for more data and exploration]
34. “this was one factor that led damasio (1996) to propose a theory of decision making influenced by emotional factors, referred to as the somatic marker hypothesis (smh).” [a description of the factors that led to the proposed theory, nothing that needs more data or exploration]
35. “the presence of m haplogroup in ethiopia, named m1, led to the <proposal that haplogroup m originated in eastern africa>, approximately 60,000 years ago, and was carried towards asia[34].” [a research proposal, need more data and exploration]
36. “part of the technical leadership involves resource mobilisation through application for grants through proposal development from international agencies and overall technical management of the centre.” [grant proposals, not incomplete research areas]
37. “this geographical cline has attracted the attention of several studies, and the <ccr5 variants have been proposed for involvement in several infections>, including bubonic plague (stephens et al .” [a research proposal that ccr5 variants are involved in several infections, needs more data and exploration]
38. “a positive score would suggest that the group was possibly up-regulated, while a negative score proposed that the group was likely down-regulated.figure 8, showed 34 out of 44 such groups.” [a description of methodology where a negative score means that the group was down-regulated, nothing needs more data or exploration]
39. “this <study proposes a single time-point ann approach> that can predict the survival probability of a patient at any predetermined point of time.” [an approach proposal, needs more data and exploration to see if the approach is successful]
40. “in this game, the proposer receives some amount of money and proposes how to divide the money between the proposer and another player (the responder).” [a description of a game with a character called the proposer that proposes how to divide the money, nothing needs more data or exploration]
41. “while <hiv has emerged on the global scale only recently>, population genetic data strongly suggest that Δ 32 has been under selection pressure for a long time (stephens et al .” [a new research topic that just emerged: hiv, needs more data and exploration]
42. “these studies reported a reduction in incidence and prevalence of pdr and me in the more recently diagnosed cohorts which was considered to be due to better glycemic control and bp control in the later cohorts.” [a description of the methodology about a recently diagnosed cohort, nothing about a recent emerging research topic]
43. “the <recent emergence of stem cell-based medicine> has the potential to revolutionize the study of neurodegenerative diseases.” [stem cell-based medicine is a new hot research topic that needs more data and exploration]
44. “for decades antimonials were the drugs of choice for the treatment of visceral leishmaniasis (vl), but the recent emergence of resistance has made them redundant as first-line therapy in the endemic vl region in the indian subcontinent.” [drug resistance has recently occurred causing problems with drugs, nothing about a new research topic though]
45. “<recent research addressing ussed impact mitigation> has focused on each of these actions, including stoms et al.” [used impact mitigation is a new hot research topic that needs more data and exploration]
46. “this article reviews these recent research efforts including the development of high throughput screening assays, the discovery of peptide and small molecule direct inhibitors, and the biophysical characterization of the binding of these inhibitors to the target keap1 kelch domain protein.” [a description of the methods of the paper: a review of recent research efforts, nothing about a new topic that needs more data or exploration]
47. “<recent studies show that inflammatory processes may contribute to neuropathic pain>.” [a few studies have provided some evidence that the inflammatory processes contribute to neuropathic pain, more data and evidence is needed]
48. “our results provide a <starting point for future prognostic and therapeutic research> with the potential to improve patient outcomes.” [preliminary results to begin to explore a new research topic: future prognostics and therapeutic research, needs more data or exploration]
49. “the starting point of all these methods is a multiple sequence alignment (msa).” [a description of the first step in the methodology, nothing that needs more data and exploration]
50. “it is remarkable that after nearly three decades of dermatoscopy, <new details are still being discovered>.” [research is still needed to discover new details about dermatoscopy]
51. “<new components are still being discovered> contributing to the activity/function of integrins in cancer.” [research is still needed to discover new components that contribute to integrins in cancer]
52. “<the definition of a biofilm is still being discussed>.” [research is still needed to determine the definition of biofilm]
53. “current osteoporosis practice guidelines incorporate the use of frax [10], but <optimal use of this tool is still evolving> [20].” [more research is needed to determine the optimal use of the tool]
54. “for both sets of initial conditions we note that the chiralities evolve over a significantly longer timescale than the concentrations, the latter having reached steady-state before t  = 10 and the former still evolving when...” [the chiralities are still evolving in time, nothing about research that is incomplete]
55. **MIDDLE: ACCUMULATING EVIDENCE HAS SHOWN/ BECOMING BETTER KNOWN/ BELIEF/ BELIEVE(D)/ BETTER UNDERSTAND(ING)/ CLAIM(ED)/ CLUES/ CONJECTURE/ DEFINING/ EARLIER STUDIES/ EVIDENCE(S) (BASE/IS ACCUMULATING/IS MOUNTING/TO SUPPORT/ARE GROWING)/ (RELATIVELY) FEW (STUDIES/DIAGNOSES/OPTIONS)/ (FOUND/FURTHER) EVIDENCE/ GROWING (AGREEMENT/BODY OF LITERATURE/ EVIDENCE/ INTEREST)/ HYPOTHESIS(SIZED)/ IDEA/ INCREAS(ING)(INGLY)(ED) (ATTENTION/EVIDENCE/ACCEPTED/ RECOGNISED)/ INSIGHT/ INTERPRETATION/ MODEL/ NOTION/ ONGOING RESEARCH/ PARTIALLY (PROVEN)/ PARTLY/ PHILOSOPHY/ POINT(S)/ PRESUMED/ PREVIOUS(LY) (STUDY(IES)/ SHOWN)/ ROUGH INDICATOR/ SET A PRECEDENT/ SOME (EVIDENCE/ HOWEVER)/ SPECULAT(E)(ION)(IVE)/ (STRENGTHENS/ STRONG(ER) EVIDENCE (BASE)/ STUDY(IES) (ARE/IS) (UNDERWAY/ ONGOING)/ THEORY(ETICALLY/IZED/IES)/ TREND/ VIEW/ WATCHWORDS/**
56. “<accumulating evidence has shown that expression of l-ltp and long-term memory requires creb activation> [249-252].” [some evidence shows that expression of 1-ltp…, more evidence is needed to confirm]
57. “however, this tendency seems to have entered qualitative research and this may conflict with <ontological and epistemological beliefs>.” [beliefs held by ontologists and epistemologists need more evidence if they are still beliefs]
58. “however, while weber was interested in religious ethos (in particular the protestant ethos), jaspers put more emphasis on religious beliefs.” [religious beliefs are not about research beliefs]
59. “however, we <believe that bmi at age 13 to 14 is an intermediate factor (ie, intervening variable) between rwg in early life and unfavorable lipid levels and high bp in later life>, rather than a confounding factor.” [the belief in bmi as an intermediate factor needs more evidence to be certain]
60. “ions prefer the routes of the least electrical resistance; in the sc this is <believed to be via the pores>.” [the pores are believed to the route of least electrical resistance in the sc which means more evidence is needed to be sure]
61. “very few believe at the outset of a treatment episode that they will require the more intense steps of care, and most react with some anxiety and anger when the change occurs.” [patients beliefs are not research beliefs]
62. “but they lived in religious societies, surrounded by people who believed in supernatural entities.” [religious beliefs are not about research beliefs]
63. “to <better understand the lysis mechanism>, we have determined the crystal structure of an autoproteolytic fragment of the cd27l endolysin.” [more evidence is needed to better understand the lysis mechanism]
64. “in order to enable more wide spread use, a <better understanding of cell-virus interactions> is required.” [more evidence is needed to better understand cell-virus interactions]
65. “these concepts are often combined as herlyn-wernerwunderlich syndrome, although the <claim has been made that such a syndrome does not exist> [90].” [need more evidence to determine if the syndrome exists or not]
66. “indeed, it has been <claimed previously that trichoplax likely resembles an ancestral eukaryotic genome>.” [more evidence is needed to fully claim that trichoplax resembles…]
67. “publisher's note: springer nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.” [jurisdictional claims are not research claims]
68. “as an internist, if i make a contribution to the diagnosis, it is because i am a dialectician: i examine the argument for particular diagnostic claims that are leveraged on both sides and come to the prudential decision for this patient.” [diagnostic claims are not research claims]
69. “respondents claimed various sources as information and as per finding from china study, they also claimed of “having limited communications with hospital staff”” [respondents or patient claims are not research claims]
70. “insight into survival mechanisms of the parasite could provide important <clues for novel anti-schistosome drugs or reveal vaccine targets>.” [clues/ more evidence about anti-schistosome drugs or vaccine targets are needed]
71. “our results therefore provide <clues to the biological factors that may be disrupted following a concussion>.” [clues/more evidence is needed about the biological factors that may be disrupted after a concussion]
72. “in the absence of guidelines, most experts opine that only those cases that have some clues in history, examinations, or routine laboratory tests can be explored further.” [a description of how experts determine if a case is relevant is based on the location of clues, nothing about research clues]
73. “other helpful clinical clues that might suggest consideration of the diagnosis of legionnarie’s disease include diarrhea, hyponatremia, larger numbers of neutrophils but few bacteria in sputum, lack of response to beta-lactam antimicrobial agents and aminoglycoside antibiotics5,6,7,8).” [clinical clues are not research clues]
74. “<the causes of varicocele recurrence remain a matter of conjecture>.” [more evidence is needed to determine the causes of varicocele recurrence]
75. “changes to household behaviour (<strength of evidence = conjecture>)” [the strength of the evidence is a conjecture, meaning more evidence is needed]
76. “the lf also represents tense, modality, and aspect information—information that is crucial for determining whether a statement expresses a stated fact, a conjecture, or a possibility.” [a description of how to determine what a statement expresses, including conjecture, nothing about research that needs more evidence]
77. “in addition to <defining the set of bacteria significantly associated with crc>, several groups have used measurements of microbiome diversity to compare cancer patients with normal subjects.” [more evidence is needed to define the set of bacteria significantly associated with crc]
78. “some editors are even more provocative in defining their role.” [defining editors’ roles is not about research that needs more evidence]
79. “several <earlier studies suggested that exogenous application of meja inhibits lycopene accumulation> (saniewski and czapski, 1983).” [more studies are needed to corroborate that inhibition of lycopene accumulation]
80. “these findings contrast with <earlier studies in ova/alum‐based allergic asthma models> (korsgren et al ,1999; ple et al ,2010; ghadially et al ,2013).” [more evidence is needed in ova/alum-based allergic asthma models to determine correct findings]
81. “as a result, <evidence based dosing guidelines> are lacking.” [more evidence is needed for dosing guidelines]
82. “grey indications are those for which the evidence base is weak.” [a description of what grey indications mean, nothing about an evidence base that needs more evidence]
83. “thus, <evidence is accumulating in favor of the concept that tumor-infiltrating t cells play an active role in promoting favorable clinical outcomes in eoc>.” [some evidence already exists in favor of tumor-infiltrating t cells play an active role in…, but more evidence is needed to make a stronger conclusion]
84. “host manipulation, of course, is much more diverse, and <evidence is accumulating that it is not limited to parasites>.” [more evidence is needed to determine if host manipulation also occurs in parasites]
85. “<evidence is mounting that tissue repair is underway in ep> within the neonatal period, that is, within the period of the inciting insult(s).” [some evidence exists that tissue repair is underway, but more is needed]
86. “<evidence is mounting regarding the clinically significant effect of temperature on blood pressure>.” [some evidence exists about the relationship between temperature and blood pressure, but more is needed]
87. “although it has been inferred that ams are responsible for cd4+t cell-mediated clearance of pc, <there is little in vivo evidence to support this>.” [more evidence is needed to support the relationship between ams and cd4+t cell-mediated clearance of pc]
88. “this article describes the intervention, <the empirical evidence to support it>, and test-retest reliability data.” [some evidence exists for it, but more is needed]
89. “(2006)systematically surveyed the gene structures, phylogeny, and conserved motifs of the erf gene family in arabidopsis and rice, but <relatively few soybean erf genes were studied previously>.” [more evidence is needed about soybean erf genes]
90. “thus, although bac arrays have relatively few printed elements on the arrays, their spatial resolution is relatively high.” [a judgement of bac arrays with a complaint about its technology having not enough printed elements, nothing about research that needs more evidence]
91. “<a few studies have been reported in regard to hearing function in pregnancy>.” [more studies are needed about hearing function in pregnancy]
92. “we <found evidence that two of these genes (np\_001124104 and np\_957150) are transcribed>.” [some evidence exists about the two genes, but more is needed]
93. “thus, we <have not found evidence that human coregulators are differential in their actions with non-mammalian nuclear receptors>, possibly due to the highly conserved nature of these proteins [31–33,49].” [more evidence is needed to determine if human coregulators are differential…]
94. “the university of basel investigated this matter using its established procedures for matters of scientific integrity and found evidence of data manipulation.” [evidence found of data manipulation based on guidelines, nothing about research evidence]
95. “a follow-up fmri study using the same task revealed <further evidence for an active form of suppression> (anderson et al.,2004).” [some evidence exists revealing an active form of suppression, but more is needed to say more definitively]
96. “comparative genomic analysis with arachis <further evidenced that the aeschynomene genome constituted of macrosyntenic blocks>.” [some evidence exists that the aeschynomene contains macrosyntenic blocks, but more is needed to be definitive]
97. “however, there is <no further evidence to support or disprove this idea>.” [more evidence is needed to support or disprove the idea]
98. “despite the variety of conceptual approaches, there is <growing agreement in defining vulnerability as the combination of three components: (i) sensitivity , or the susceptibility of a system to threats, (ii) exposure , or the level of those threats on a system, and (iii) adaptive capacity , or the capacity of the system to prepare for and respond to those threats> [41,52,53].” [more evidence/consensus is needed to define vulnerability]
99. “apart from its metabolic consequences, <a growing body of literature suggests that free fructose can also affect neuronal systems>.” [some literature exists to suggest that free fructose can also affect neuronal systems, but more is needed, it is still growing]
100. “our study contributes to <the growing body of literature on the association between elevated rdw levels and mortality>.” [this study adds more evidence to the growing literature, but it is still growing so more evidence is needed]
101. “<growing evidence suggests that there are many common cell biological features shared by neurons and podocytes>; however, the mechanism of podocyte foot process formation remains unclear.” [some evidence suggests… but more evidence is needed]
102. “overall, our results add to <growing evidence (e.g., bishop and kelaher2008; olabarria et al.2010) that the identity of detrital material is a far more important determinant of its effect on macroinvertebrates than species richness>.” [their results add to growing evidence, but the evidence is still growing meaning there is more evidence needed]
103. “the recent discovery of residing tendon stem/progenitor cells has triggered <a growing interest in stem cells as a useful tool in tendon repair>.” [growing interest in studying stem cells for tendon repair, more evidence is needed to ensure it is a useful tool]
104. “in particular, there is a <growing interest to study the relationship between gene expression and chromosomal proximity> (7,9).” [new interest in studying the relationship between gene expression and chromosomal proximity that requires more evidence]
105. “the <hypothesis of relaxed pressure on mcm6 outside Africa> is supported by the evidence based on mk and hka tests (harding et al .” [a hypothesis presented that needs more evidence to become a fact]
106. “typically, they contrast likelihood ratio of data under the null hypothesis, assuming neutrality to various alternative hypotheses.” [a description of statistics with the null hypothesis, nothing that needs more evidence]
107. “we <hypothesize that the exclusive breastfeeding rate in the intervention group will double compared with the control group>.” [need to explore the evidence to determine if the intervention group is doubled compared to controls]
108. “therefore, we <hypothesized and explored ways to improve endothelial integrity> that will subsequently reduce renal and hepatic dysfunction after liver ir.” [ideas on ways to improve endothelial integrity that need more evidence to determine the best way]
109. “we <hypothesised that therapeutic sirt1 activation would have beneficial effects on cardiometabolic health> in people with diabetes.” [need to explore the evidence about therapeutic sirt1 activation on cardiometabolic health]
110. “<the idea is to approximate the model by a linear one and to refine the parameters by successive iterations> [31].” [an idea that needs more evidence to determine if it is correct]
111. “all women and their husbands, welcomed the idea of receiving health promotional sms into their phones and had positive attitudes on program successes in receiving health education messages to their mobile phones did not appear to be a potential downside for respondents women, their husbands, mother and mother-in-law.” [participants welcomed the idea of…, nothing about a research idea]
112. “<social capital theory has gained increased attention> across a number of disciplines including health, economics, governance, and public policy over the past several decades (shortt,2004).” [social capital theory is being used in multiple disciplines with more evidence needed for its use]
113. “although research has focused on the role of protein-coding genes in the pathogenesis of human tumors in the past few decades, non-coding rnas (ncrnas), including <micrornas and long non-coding rnas (lncrnas) have received increased attention> with development of whole genome and transcriptome sequencing technologies [5].” [more research is ongoing with micrornas and lncrnas with more evidence needed]
114. “these findings call for increased attention of clinicians to emotional distress in this patient population.” [clinicians need to pay more attention to their patients’ emotional distress, nothing about research that needs more evidence]
115. “<increasing evidence suggested that il-22 is associated with respiratory damages>.” [some evidence exists about the relationship between il-22 and respiratory damages but more is needed]
116. “as inflammation and its relationship to remodeling in ar and asthma are becoming better understood, <the importance of anti-inflammatory treatment is increasingly accepted>.” [anti-inflammatory treatment is increasingly used and would be more widely used with more evidence]
117. “biological treatments are increasingly accepted by patients.” [patient acceptance is important but not relevant to research that needs more evidence]
118. “<the importance of the gaba-benzodiazepine receptor complex and its subtypes are increasingly recognised in addiction>.” [increased recognition for the importance of … in addiction would be more recognized with more evidence]
119. “in vitro experiments have also provided <insight into how the capsule virulence factor promotes the ability of cryptococcus to cause infection at the lung barrier>.” [some evidence about how the capsule virulence factor promotes… but more is needed]
120. “further studies in this arena will give more in depth <insight to the mechanisms of association between specific bacterial infections and cancers>, but in the next section we will discuss the well-known and characterized bacterial-infection associated cancers especially through the lens of ros induced dna damage and alteration of dna repair pathways.” [more studies will provide more evidence or insight into the mechanisms of association between specific bacterial infections and cancer]
121. “conventional content analysis method is an appropriate method to obtain valid and reliable results out of textual data; the results can be used to reach and develop knowledge, new insights, facts, and a practical guide to performance (10).” [a claim about what the methodology can do, nothing about a research topic that has a new insight]
122. “all three strains were isolated as diploids and the mutations severely reduced the in vitro affinity of recombinant tropomyosin for filamentous actin in two of the three, <limiting interpretation of the results>” [more evidence is needed to be able to interpret the results better]
123. “an <interpretation more consistent with our findings is that cdc8pd16ak30acompetes less effectively for actin with fim1p-gfp than fim1p> and more filaments are incorporated into actin patches as enabled by the fim1p-gfp, at the expense of actin cables.” [an interpretation leaves room for other interpretations, more evidence is needed to pick a definitive meaning of the results]
124. “statistical tests should be appropriate, interpretation of results and conclusions should be correlated with the initial hypothesis, and possible bias and applicability of findings should be reported.” [a recommendation about what an interpretation of results is, nothing about a research interpretation that needs more evidence to determine the correct meaning]
125. “the rabbit has been advocated as a <model for cryptococcal meningitis> mainly due to its size in comparison to other mammalian study systems.” [a model system for cryptococcal meningitis, which means we do not fully understand it and need a model to study it – more evidence is needed]
126. “<modelling the blood-brain barrier (bbb) with the appropriate neurovascular properties> has been a prominent challenge in cryptococcosis research.” [a model for the bbb is needed]
127. “we place a relatively large focus on these novel, emerging models over the more established and well-used vertebrate systems in order to highlight potential avenues for exploiting new model systems for cryptococcal research.” [a meta-statement about a focus on newer models, no avenues of research though that need more evidence]
128. “subsequent functional studies supported the <notion that the pvhl–elongin b–elongin c–cul-2–rbx1 complex functions as an e3 ligase> [20-22].” [notion is like an idea that needs more evidence to become concretely backed up]
129. “indeed, the <notion of conservative postprocessing of finite elements> [ hughes et al .,2000] does not align with the discontinuous material coefficients prevailing in porous media, and arithmetic means are recovered where harmonic means are desired [ babuska and osborn ,1983].” [the idea of conservative postprocessing of finite elements is called into question, meaning more evidence is needed to develop the idea]
130. “i did not have any notion that i was going to be finding out what human beings are all about.” [a human notion about figuring out what human beings are about, nothing about a research endeavor that needs more evidence]
131. “finally, we summarize the advances in <ongoing research aimed at exploiting the dependency of cancer cells on lipids to abolish tumor progression>.” [research in exploiting the dependency of cancer cells on lipids is ongoing, meaning it needs more evidence]
132. “<ongoing research in our group is examining the effects of dexamphetamine for treating obesity> (poulton et al.,2015).” [research in the effects of dexamphetamine for treating obesity is ongoing, meaning more evidence is needed]
133. “finally, the years of data collection in our study ended in 2014, and ongoing research is needed to evaluate use of and trends in recently approved agents, such as everolimus.27” [future work is to evaluate the use of and trends in these agents, but this is a future work statement, not incomplete evidence because it has not been done yet]
134. “also, with the implementation of the rusvm one health master of science degree, an online degree opportunity, the ability to reach world-wide impact has been realized, and students have the opportunity to work on problems in their own communities or they are encouraged to come to the caribbean to study and solve many ongoing research problems.” [a statement about student opportunities to help solve ongoing research problems but no mention of the research problems in general that need more evidence]
135. “however this finding is controversial as <sexual distinction in vertebral cross-sectional area is partially explained by the larger stature and overall body size in men>.” [need more evidence to complete the partial explanation of sexual distinction]
136. “intriguingly, inhibition of barbed-end exchange via cytod treatment slightly but significantly reduced the mobile fraction of rbc actin filaments (figure 3d), although the half-time of fluorescence recovery was unaffected (figure 3e), suggesting that <barbed-end assembly partially accounts for actin filament mobility in rbcs>.” [need more evidence to complete the partial account for actin filament mobility in rbcs]
137. “12; increased demarcation of the retinal nerve fibers, partially embedded retinal vessels; and a distinct tortuosity of the retinal vessels near the optic disc are seen” [a statement describing what is seen, including parts of embedded retinal vessels, not a research question that needs more evidence]
138. “this also could be <partially proven by the color of the functionalized paema-co-ag fabric>, which is almost unchanged when compared with pristine cotton fabric, indicating that the silver nps were wrapped by paema graft chains.” [a idea of how to provide some evidence about this using color of the functionalized…, more evidence is needed to fully prove this]
139. “under article 21 of the appd, a “therapeutic experiment consists of the introduction by the physician of new or only partially proven diagnostic, therapeutic or preventive methods in order to achieve direct benefit to the health of the patients, and it can be carried out when hitherto applied methods were ineffective or their effectiveness was insufficient” [2].” [the definition of a therapeutic experiment that can include only partially proven methods, nothing about a research endeavor that needs more evidence]
140. “in this context, pulmonary fat embolism is well known as a major complication after long bone fractures and at least <partly responsible for the increased rate of ards following bilateral femoral fractures> [20,21].” [more evidence is needed to determine what else is responsible for the increased rate of ards following…]
141. “some treatment experts have expressed concern that the msc model relies partly upon the patient’s desire to minimize exposure to counseling to motivate clinical progress.” [an explanation of a model where patient’s desire are a piece of it, nothing that is partially understood that in turn needs more evidence]
142. “this <philosophy of compensating for lack of function of tongue by adding bulk to the flap> is based on the knowledge that wider and thicker flaps significantly improve swallowing and function when reconstructing large tongue defects which is relatively immobile.” [a stance on compensating for lack of function of tongue by… seems to be need more evidence to not just be a philosophy but a standard of care practice]
143. “the common data format used for brainliner was created in accordance with the <philosophy that brain activity and behavioral data should be given equal salience and should also be aligned on a common time axis>.” [a philosophy on brain activity and behavioral data that needs more evidence to become the standard practice and move out of philosophy]
144. “for instance, jaspers originally proposed to include homer (around 800 bce), whose work provided the cultural background of greek philosophy.” [information about including Greek philosophy, nothing about a philosophy that needs further evidence or exploration]
145. “correspondingly, different scans that use similar methods should <point to similar coordinates of selection regions>.” [multiple pieces of evidence from multiple methods should all provide similar coordinates of selection regions]
146. “these findings also <point to the potential for bidirectional relation between transcription factor binding and transcriptional activity and that of dna methylation>.104,122” [the findings lead to a potential for bidirectional relation between…, more evidence is needed to concretely interpret the findings]
147. “if the third value was also above the cut-off point, the lowest of the 3 values was recorded and analyzed.” [a cut-off point, not a research point that needs more evidence]
148. “<snmp2 was presumed to have a full-length orf> (table 7).” [snmp2 is proposed as having a full-length orf, but more evidence is needed to be certain]
149. “recent evidence shows that fstvalues are the greatest for the polymorphic sites nearest to <the presumed selected variant>, but diminish in the flanking regions (hamblin et al .” [the supposed selected variant is presented, but more evidence is needed to be certain]
150. “she was initially admitted for further management of presumed prerenal acute kidney injury as a consequence of hyperemesis gravidarum.” [a description of a medical patient that they assumed had prerenal cute kidney injury, nothing about research assumptions that need futher evidence]
151. “our <previous studies revealed that many proteins in addition to the known allergens of d. farinae have not been fully characterized>.” [if previous studies’s research topics are brought up, it is because more evidence is needed or to disagree with the findings]
152. “on the other hand, logistic regression didn't show impact of these variables in the results, <corroborating previous studies>[18].” [adding more evidence to previous studies that could probably use more evidence still]
153. “a <previous study demonstrated that secondary bas including dca and tdca>, which are produced by intestinal bacteria, <were increased in the serum of oatp1a1-null mice>[19].” [one study demonstrated that secondary bas… were increased in the serum of…, but more evidence is needed to show definitively]
154. “several previous studies have utilized this strategy to assess changes in the cancer-associated microbiome in a variety of populations [7,9,10,12,19,23,24].” [a description of the methodology grounding the strategy in other studies, nothing about a new research topic that needs more evidence]
155. “our data further emphasize the importance of the liver in the synthesis of critical peroxisome-dependent cns plasmalogens, as <previously shown for dha> [16].” [extending the results about dha to peroxisome-dependent cns plasmalogens and providing some evidence]
156. “these <previously were often designated as transcriptional activation domains> (liu et al.” [prior to this study, these were designated as transcriptional…, but now more evidence is needed to determine if that is still true]
157. “immunoblotting analyses of human renal endothelial cell and proximal tubule (hk-2) cell lysates were performed as described previously (8,22) after treating the cells with either sphinganine-1-phosphate or with vehicle (0.4% bsa) for 5 min.” [a description of a previous methodology, nothing about a research topic needing more evidence]
158. “another <rough indicator of satisfaction>—the proportion of enrollees who left the risk program within the first year of enrollment—suggests that a sizable proportion of new enrollees are not satisfied.” [more evidence that indicates satisfaction is needed]
159. “data from fsc and ssc scatters are generally used to characterize the morphological state of the cells, as <rough indicators of the cell size and granularity>, respectively.” [more evidence or better estimates that indicate the cell size and granularity are needed]
160. “<the use in nondeficient children set a precedent for gh therapy used as gh augmentation therapy>, in contrast to gh replacement therapy.” [a standard was set for gh therapy and more evidence is needed to determine the effects of the precedent and how it effects research in general]
161. “moreover, few ugandan lawyers are willing to launch a constitutional challenge against the anti-abortion laws and perhaps even fewer women willing to be involved in a test case, i.e., a judiciary case which outcome is likely to set a precedent or test the constitutionality of a statute [27].” [the definition of a test case that includes setting a precedent in law, nothing about research]
162. “there was <some evidence for a quadratic relationship between age and cd4:cd8 ratio> ( p = .05).” [some evidence exists for a quadratic relationship between…, but more evidence is needed]
163. “indeed, both animal and human studies have shown <some evidence of changes in epigenetic marks associated with cr(vi) exposure>.” [some evidence exists of the changes in epigenetic marks, but more evidence is needed]
164. “in addition to the possible anti-neoplastic effects of pde5i treatment, <there is some evidence to suggest that increased ejaculatory frequency could be protective with regard to prostate cancer>.” [some evidence exists that supports that increased ejaculatory frequency…, but more is needed to know for certain]
165. “<some authors, however, suggest that the localisation of metastases in specific regions in bone is predictive of survival> [9,10].” [some apparently support that localization of metastases…, but more information is needed]
166. “the tg of individual infected mice varied widely in β-galactosidase-positive cell numbers, but all (8/8) showed some evidence of infection, whereas dissociated ob showed none (0/8).” [determining if there is an infection or not with all showing evidence of infection, no research topic that needs more evidence]
167. “it seems reasonable to <speculate that bec binding>, which was unchanged in rhaa-vs2 mutant, <may not have been necessary for survival of a> .” [a speculation that needs more evidence to be more certain]
168. “(2005)have <speculated that the pathogen may have emerged from macaca to humans 53 000–265 000 years ago>, and entered africa afterwards.” [a speculation about the pathogen emergence that needs more evidence]
169. “- i hesitate to speculate on what should have been.” [a declaration of not speculating, nothing about a research speculation that needs more evidence]
170. “<whether the new south italian family of varieties originated from spontaneous crossing or there were intentionality created, remain a matter of speculation>.” [more evidence is needed to be certain about the speculation of whether the new south Italian family of varieties originated from…]
171. “on the other hand, we are aware of <this speculation requires further research>.” [further research or more evidence is required for the speculation to be more certain]
172. “for instance, voegelin coined the term ‘mythospeculation’;13momigliano used the term ‘criticism’;11schwartz proposed the term “age of transcendence,’ referring to the new ability of “standing back and looking beyond” and of ‘self-distanciation;”12and assman suggested “the mosaic distinction” and “cognitive disembedding from the symbiotic embeddedness of early man in the cycles of nature, political institutions, and social constellations.” [a definition of the word mythospeculation, nothing to do with research topics that need more evidence]
173. “in many cases, users would dismiss speculation regarding the quality and safety of the drugs because they trusted the person who had sold them:” [users did not care if the seller’s speculated, they would trust them anyways, nothing about a research topic needing more evidence]
174. “these are rather <speculative results>, however, because eds was not sampled following mws.” [the results are uncertain and so more evidence or data is needed to better determine the results]
175. “we emphasize that this application of <our results to the debate about subspecies is speculative>.” [results are speculative about the application of them, more evidence is needed to be certain]
176. “thus, studies tacking into account specific lower levels of organization should maintain their interpretation restricted to those particular levels, avoiding excessive speculative inferences on the higher levels.” [a description of what to avoid – speculative inferences at higher levels, nothing about research that needs more evidence]
177. “this consistency between areas <strengthens the evidence for a decline>.” [the evidence for a decline is stronger but still needs more to be definitive]
178. “the fact that two separate measures of parasite burden both show qtl in the same region of the genome <strengthens the evidence for a qtl in this region>.” [the evidence that there is a qtl in this region is stronger but still needs more to be definitive]
179. “for example, when phylogenetic analysis is used to infer the evolution, there is <strong evidence of phylogenetic constraints on seed size>11.” [the evidence that there are phylogenetic constraints on seed size is strong but needs more to be definitive]
180. “5,6strong evidence can be obtained by tracking bp from childhood to adulthood7: the cardiovascular risk in young finns study followed participants for 27 years and showed that childhood bp correlated with values measured in middle age.” [a method to gather strong evidence, but nothing about the research topic that needs more evidence]
181. “this highlights the need for a <stronger evidence base that takes due cognisance of benefits and risks to help inform future music therapy provision> [9].” [more evidence is needed for future music therapy provision]
182. “theme 3. public health practice will require better measures, a stronger evidence base, and strategic communications about its demonstrated ability to have an impact on population health” [a theme and recommendations, not a research topic that needs more evidence]
183. “<studies are underway to measure gpvi dimer levels after acute stroke in comparison to healthy controls>, which may be a useful diagnostic tool in the future.” [current studies that will gather more evidence about measuring gpyi dimer levels as a future diagnostic tool]
184. “<studies are underway in our laboratory to test these hypotheses>.” [more evidence is being gathered with the studies in the laboratory to test the hypotheses]
185. “our data highlighted the changeable trend of mdros rates; a more accurate< study is ongoing to assess what kind of variables can influence the spread of mdros> (staff?” [a current study is gathering more evidence, since more evidence is needed]
186. “further <study is ongoing to validate the anti-apoptotic role of rpl34 in other gc cell lines>.” [current study focusing on validating the anti-apoptotic role of rpl34…, more evidence is needed]
187. “inclusion criteria : (1) study participants are not yet being recruited; (2) participants are currently being recruited; (3) participants are being (or will be) selected from a predetermined population; (4) study is ongoing, but participants are not currently being recruited or enrolled; (5) the study has concluded normally and participants are no longer being examined or treated; (6) recruiting or enrolling of participants has halted prematurely but may resume; (7) recruiting or enrolling of participants has halted prematurely and will not resume and participants are no longer being examined or treated; (8) study halted prematurely, prior to enrollment of first participant.” [a description of the inclusion criteria which includes the study is ongoing, nothing about research that needs more evidence]
188. “<l5, in theory, is even more prone for loading>.” [a theory about l5 needs more evidence to be certain]
189. “in recent years, robert bellah3has proposed to <use merlin donald's theory of cognitive change14,15to explain the axial change>.” [a theory used to explain the axial change needs more evidence to determine if the theory fits and is correct]
190. “we believe that conducting this elicitation study with surgeons will lead to <more refined, contextualized theories of robotic-assisted surgery acceptance and use>.” [more evidence is needed to support/create theories on robotic-assisted surgery acceptance and use]
191. “liestbl et al10integrated the survival analysis theory with the ann methodology in a discrete multiple classification framework.” [a description of methods specifying the implementation of a specific theory]
192. “<they theorized that interruption of small superficial venous channels draining into cephalic vein during flap harvest would force venous drainage more into the deep system>.” [a theory about the interruption of small superficial… that needs more evidence to support]
193. “this difference has been highlighted by piaget 4 decades ago when he <theorized about the impact of the behaviour of organism on evolution>:” [piaget’s theory on the relationship between behavior and evolution has remained a theory and thus needs more evidence]
194. “these challenges were again derived using the theorized determinants of self-efficacy outlined by bandura [21].” [an explanation of methodology of how the challenges came about, nothing about a research theory that needs more evidence]
195. “though <theoretically appealing>, a puzzlement arises when we inspect how modest is the replication for discovery of different genomic regions between algorithmic approaches or between different studies (tables 2and3)” [the theory needs to be tested to get rid of the puzzlement, more evidence is needed]
196. “for oacgh, <cot-1 dna would theoretically not be necessary>, since the oligonucleotides are designed to be repeat-free.” [test the theory by gathering more evidence about it]
197. “müller's proposal accounts in a theoretically elegant way for the problem that some argument linearizations are marked: violations on the subhierarchy only induce markedness, not ungrammaticality (see müller,1999: 795f.).” [a comment on the proposal accounts that they are in a theoretically elegant way – nothing about a research theory that needs more evidence]
198. “a <trend that has also been concerning is the appearance of type 2 diabetes emerging in obese children>.” [a trend that needs more evidence to explore further and intervene in this case]
199. “conversely, if functional mutations are constantly removed from a population by purifying selection, the opposite trend can be expected: d n< d s (or ka<ks ).” [a model trend, not a research trend about a topic that needs more evidence to determine if the trend is valuable]
200. “<in this view, the functions of cdc8pd16a.k30aand fim1p-gfp are synergistic and may make the actin filaments more susceptible to depolymerization or severing by one or more actin binding proteins>, such as cofilin-adf1p.” [with this theory or idea, the functions are synergistic…, more research is needed to be certain]
201. “it is thus important to <investigate the characteristics of these dogs in view of the species utility in disr assessment>.” [with the idea of the species utility in disr assessment, more evidence is needed to understand the characteristics of these dogs]
202. “blinded specimen were analyzed by transmitted-light microscopy (carl zeiss, jena, germany) under 20-fold magnification and the number of inflammatory cells per field of view was counted by two independent examiners.” [the field of view of a microscope, not a research viewpoint that needs more evidence]
203. “EXAMPLE” [EXAMPLE]
204. “EXAMPLE” [EXAMPLE]
205. **LATE: A GOOD UNDERSTANDING/ ARGUE(S)(D)/ CENTER OF ATTENTION/ (COMPELLING/RESEARCH) EVIDENCE/ CONFIRM (PREVIOUS) FINDINGS/ CONSIDERABLE SCIENTIFIC EVIDENCE/ CURRENT RESEARCH PROVIDES EVIDENCE/ EMPIRICAL SUPPORT/ EXTENSIVE NUMBER OF EPIDEMIOLOGICAL STUDIES/ FAIR AMOUNT IS KNOWN/ (GENERALLY/IS) THOUGHT (TO)/ (HAS/HAVE) (RECENTLY/REPEATEDLY) BEEN (DEMONSTRATED/FOUND/MOUNTING EVIDENCE/ SUGGESTED/ DESCRIBED/SEEN/FOUND/SHOWN)/ INDICATE(D)(S)(ING)/ IT IS KNOWN/ MANY (LITERATURE DATA/STUDIES)/ REVEAL(S)(ED)/ SEVERAL (EPIDEMIOLOGICAL DATA/ STUDIES)/ SHED LIGHT/ SUGGEST(S)(ED)(ING)(IVE)(IVELY)/ SUPPORT(S)(ED)(ING)(IVE)/ THERE IS EVIDENCE/ USUALLY/ VALIDATION/ WELL DOCUMENTED**
206. “therefore, <a good understanding on how vestibular sensory pathways encode and transmit information to the upstream neurons and brain under various conditions is a major goal in neuroscience>.” [a major goal of neuroscience is to understand how vestibular sensory pathways…, more evidence is needed to achieve this]
207. “<a good understanding of retrieval techniques is necessary>, particularly for cases of difficult retrieval.” [more evidence is needed to understand retrieval techniques]
208. “even those who have a good understanding of the spanish language are unlikely to understand the complex medical terminology needed for a visit to the doctor or when receiving hospital treatment.” [an understanding of the Spanish language, no research topic that needs more evidence]
209. “<the reduced actin affinity of cdc8pr121a argues for a model in which the binding sites of tropomyosin for the highly-conserved protein actin are conserved> in animal and fungal proteins.” [more evidence is needed to be more certain about the proposed model]
210. “based on recent fieldwork, <this article argues that this ‘neat’ depiction of chinese science communication as a top-down ‘deficit’ approach with unenthusiastic scientists may be misleading>.” [the article suggests an idea about the ‘neat’ depiction of Chinese science…, more evidence is needed to back up the claim]
211. “maternal psychological control included the following items: (a) suggestive questioning (e.g., statement questions); (b) superiority (e.g., pedantic behavior, impose opinion); (c) constraining (e.g., interruption, continuous questioning); (d) invalidation (e.g., denies or argues with statements); (e) criticism (e.g., rejection, attack); (f) intrusiveness (e.g., pervasive talking); (g) shame inducing (e.g., feeling ashamed); (h) guilt inducing (e.g., feeling guilty); (i) provocation (e.g., continuous disagreement, compete); and (j) physics (e.g., physical signs of invalidation).” [a list of what maternal psychological control includes: arguing, nothing about research that needs more evidence]
212. “the other two properties, even though <it can be argued to carry some desired coevolution effects>, are also prone to raise the mi score of false positives.” [an idea about coevolution effects that need more evidence to support]
213. “most reported studies have <argued either for an early or a late initiation of dialysis>.” [timing of dialysis is not yet resolved to be early or late, more evidence is needed to determine]
214. “i have argued and written at length on what i think medicine actually is - philosophically and in practice.” [a personal statement about what ‘I’ have argued about, no idea put forth that needs more evidence]
215. “for those reasons, <tregs-associated glioma have been the center of attention> for decades and represent nowadays innovative target in glioma therapy.” [tregs-associated glioma has received a lot of attention and more evidence is needed to ensure its efficacy for decades to come]
216. “recently, <the effect of gnrh agonist administration in luteal phase of icsi cycles in different studies has been the center of attention>.” [lots of studies and more evidence is needed on the effect of gnrh agonist…]
217. “second, the probability of choosing features from a given display item falls off with distance from the center of attention, according to another two-dimensional normal distribution whose variance is a second free parameter of the model.” [a description of the model, no research topic that has gained a lot of attention that still needs more evidence]
218. “<compelling evidence gained from untargeted/targeted lipidomics studies, cancer preclinical models and clinical trials, has revealed the crucial role of lipid classes and molecular species in supporting tumor growth and metastatic dissemination>.” [there is a lot of evidence to support the crucial role of lipid classes and …, but more evidence is still needed to be certain]
219. “these observations therefore provide <compelling evidence that copper(ii) is the correct metal>.” [a lot of evidence that copper(ii) is the correct metal but more evidence is needed to be certain]
220. “this could contribute to excessive costs for patients treated with drains, <despite the lack of compelling evidence of the advantages of this treatment in the literature and in the current study>.” [a lack of evidence, so more is needed]
221. “moreover there is an extensive list of bone markers being offered <making it very difficult to compare research evidence>.” [difficult to compare research evidence, meaning more evidence is needed that crosses the comparison barrier]
222. “despite <research evidence that shows that implementing yfhs contributes to better health among young people and does not require huge financial investment>, health systems worldwide have failed to implement this approach [4,14,17,18].” [some evidence exists to support the benefits of yfhs, but more evidence is needed]
223. “research uptake is key in facilitating the use of research evidence by stakeholders which include communities, policy makers, practitioners and other relevant partners.” [research evidence in relation to research uptake by stakeholders, nothing about a research topic that needs more evidence]
224. “the series is intended to help such people ensure that their decisions are well-informed by the best available research evidence.” [a series about research evidence for people but not about a research topic that needs more evidence]
225. “[10] further research is required to <confirm if the effectiveness of financial incentives varies by socio-economic position and how such a finding could be acceptability operationalized>.” [confirmation/more evidence is needed for the effectiveness of financial incentives by socio-economic position…]
226. “a recent genome-wide association scan <confirmed the role of mc1r snps in hair, eye and skin pigmentation> (sulem et al .” [the role of mc1r snps in hair, eye, and skin pigmentation is confirmed, more evidence is needed to determine what the role is]
227. “for each experiment, we also performed semiquantitative rt-pcr under conditions that yielded linear results for glyceraldehyde-3-phosphate dehydrogenase (table 1) to confirm equal rna input.” [confirming the methodology by ensuring equal rna input, no research topic that needs confirming/more evidence]
228. “<to confirm findings from animal models>, we wanted to evaluate the concentration of uchl1 in the blood plasma of boys with cryptorchidism and if there is any correlation with patient age.” [more evidence is needed to confirm the findings from animal models]
229. “if appropriate, repeat examinations and/or additional examinations should be recommended to clarify or confirm findings.” [a meta statement about confirming findings if appropriate, no specific research topic that needs findings confirmed or more evidence]
230. “<these results confirm previous findings in schizophrenia[4]and bipolar disorder>[6].” [previous findings need more evidence and thus these results help provide evidence for schizophrenia and bipolar disorder]
231. “<the failure to confirm previous findings from another study for rs4072111 is largely attributed to population differences or, probably, to interactions with genetic and/or non-genetic factors> (74).” [a failure to confirm findings, meaning more evidence is needed to determine what the correct conclusion is]
232. “there is <considerable scientific evidence supporting the use of antiretroviral therapy (art) in prevention of human immunodeficiency virus (hiv) and tuberculosis (tb) infections>.” [there is a large amount of evidence supporting the use of art in prevention of hiv and tb, but more is needed to be certain]
233. “<considerable scientific evidence has shown that the use of certain antibiotics increases enteric colonization of antibiotic-resistant strains of enteric pathogens in domestic animals> (28–32).” [a large amount of evidence has shown the relationship between antibiotics and enteric colonization of…, more is still needed to be certain]
234. “<current research provides evidence that besides ips, working memory might influence the performance of an individual in both these tests> [51,52].” [some evidence for working memory influencing the performance on these tests comes from previous work, but more is needed to be certain]
235. “there is <empirical support for the hypothesis that disability benefit is used for early retirement in such cases> [27].” [some empirical evidence for the hypothesis, but more is needed to be certain]
236. “these arguments raised a heated discussion, particularly among economists, with criticism of titmuss for his narrow view of market forces and lack of empirical support (arrow, 1972;solow, 1971).” [an explanation of why arguments caused a heated discussion: titmuss did not have empirical support, no specific research topic that needs more evidence presented]
237. “<this gene was thought to consist of a single exon> until a possibility of alternative splicing was suggested (tan et al .” [this gene previously was determined to consist of a single exon, but more evidence is needed to show that it may not be at all]
238. “this will hopefully provide an evaluation of how different models can aid cryptococcal research and give <food for thought on how current and new models could be utilised in novel ways>.” [new information that could be valuable for new uses of models, more evidence is needed to determine]
239. “[43,44] the first author worked through a paper version of the questionnaire with adult volunteers asking them to comment on design, wording and layout and answer all questions, explaining their thought processes as they did so.” [a description of the methodology around the questionnaire that includes thought processes, no specific research topic that needs more evidence]
240. “thus, <oatp1a1 is thought to transport bas in vivo from blood into liver>.” [the current thinking is that oatp1a1 transports bas in vivo from blood into liver, but more evidence is needed to be certain]
241. “in o. mykiss , treatment with a dopamine agonist inhibited the (gnrh-induced) release of fsh from the pituitary during late vitellogenesis (vacher et al., 2000), and in s. alpinus , <it is thought that dopamine is involved in the thermal inhibition of ovulation> (gillet & breton, 2009).” [current research says that dopamine is involved in the thermal inhibition of ovulation, but more evidence is needed to be certain]
242. “if a patient has an adverse event that is thought to be drug related and that does not resolve, then the patient will be withdrawn from the study.” [an explanation of the protocol of the study around a patient that is thought to have an adverse event, no research topic that needs more evidence]
243. “<intracellular nitrate is generally thought to be located in vacuoles>.” [intracellular nitrate seems to be located in vacuoles, but more evidence is needed to be certain]
244. “certain teaching techniques were noted by the fellows as being less helpful (table 2); for example, they generally thought that two persons performing endoscopy—during which the attending gastroenterologist partially controls the endoscope—was less helpful than the fellow completely controlling the endoscope with the experienced endoscopist intently focused on guidance and technical assistance.” [an example of the general thoughts of fellows on teaching techniques, no specific research topic that needs more evidence]
245. “<a positive association has been demonstrated between hp infection and gastric adenocarcinoma with increased oxidative stress> [42].” [a relationship between hp infection and gastric adenocarcinoma has some evidence, but more is needed to be certain]
246. “we then describe good examples of genes where selection has been demonstrated.” [an explanation of the next following examples where selection has occurred, no research topic that needs more evidence]
247. “<increases of 1 m/s of pwv has been found to increase cardiovascular risk by 15 % in a recent metaanalysis> [35], and kidher et al.” [some evidence that increases of 1 m/s of pwy increases cardiovascular risk by…exists, but more is needed to be certain]
248. “it also has been found on sweet persimmon fruit in korea[37].” [the phenomenon was also found on persimmons in korea, no research topic that needs more evidence]
249. “since this discovery, there <has been mounting evidence showing the efficacy of propranolol on infantile hemangioma> [34,35].” [a large amount of evidence exists showing the efficacy of propranolol on infantile hemangioma, but more evidence is needed]
250. “over the past decade, <there has been mounting evidence that medical students are not receiving adequate education in radiology> [1].” [a large amount of evidence exists showing medical students are not receiving adequate education in radiology, but more evidence is needed to be certain]
251. “however, <it has been suggested that a different variant (c), located at −14010 (g/c), is responsible for lactase persistence in africans> (tishkoff et al .” [a suggestion of a different variant that is responsible for lactase persistence in africans, more evidence is needed to be certain]
252. “furthermore, the present study indicates that tsg-6 is not a major participant in the structural stabilization of the cumulus matrix through its direct cross-linking of ha chains, <as has been suggested previously> (12,13,15,31,34,53,54).” [the results match previous results, adding more evidence with more needed to be certain]
253. “[14] reviewing pertinent literature[2–5] use of following antibiotics has been suggested:” [suggestions for treatments based on literature, not a research topic that needs more evidence right now]
254. “<current research has seen a rapid rise in lncrna research> due to an increased appreciation for their functional importance.” [research has focused on lcrna research and more is needed]
255. “the ultimate reason is that for about a century and a half the medical profession has seen itself as applied science and hence will enthusiastically embrace and use insights from basic research for clinical applications.” [a description of the medical field’s depiction, no research topic that needs more evidence]
256. “for instance, <g6pd and tnsf5 genes have been shown to be under a strong selection in africans> (sabeti et al .” [some evidence shows that g6pd and tnsf5 genes are under a strong selection in africans and conclusions from that are needed]
257. “more importantly, <evidences of natural transmission of α -syn aggregates have been shown> [31–35].” [some evidence shows natural transmission of… and conclusions from that are needed
258. “the phylogeny trees of haplogroups m53 to m62 have been shown infig.” [information shown in a figure, no research topic that needs more evidence or conclusions]
259. “although <the axial age has recently been the focus of increasing interest>,1-5its existence is still very much in dispute.” [the recent focus of interest in axial age needs more evidence to be certain]
260. “<mace has recently been introduced as a digital gene expression method>, in which each cdna molecule is represented by one cdna fragment (tag) of 94 bps, originating from a region 100–500 bps from the 3′ (poly-a) end of the transcript.” [a new method is introduced that needs more uses and evidence to ensure the method is sufficient]
261. “he has recently been recommended for transfer to a medium security unit.” [a person recommended for a transfer recently, no research topic that needs more evidence]
262. “<delayed antiviral treatment has repeatedly been identified as a risk factor for maternal icu admission and death> [5,8,10,11].” [strong evidence that delayed antiviral treatment is a risk factor for maternal icu admission and death, more evidence is needed to be defnitive]
263. “<the prevalence of gilbert's syndrome has repeatedly been reported to be in the range of 6–8%>[12],[13], and our estimate of the ta7/ta7–genotype being found in 9.3% of the nordic population as a whole is in agreement with this statement.” [strong evidence reports a prevalence between 6-8%, but more evidence is needed to be definitive]
264. “although plastics are a large source of waste found in environmental cleanups worldwide, tpw has repeatedly been the most collected item [3].” [the most collected items has been tpw worldwide, no research topic that needs more evidence]
265. “<these conserved amino acid residues probably indicate crucial roles for erf family genes involved in different forms of physical contact with dna>.” [the conserved amino acids provide evidence for erf family genes involved in…, with more evidence needed to be certain]
266. “black and grey shading indicate identical and conserved amino acid residues present in >50% of the aligned sequences, respectively.” [an explanation of the colors in the figure, no research topic that needs more evidence]
267. “<these findings indicated that pplase is not an one of the allergens of d. farina> (table 1).” [the findings suggest that pplase is not one of the allergens but more evidence is needed]
268. “total rnas were isolated from soybean seedlings exposed to nacl, drought, cold, smv, et, sa, me-ja, and aba for the indicated times.” [rnas were isolated at specific indicated time points, no research topic that needs more evidence]
269. “<reduced polymorphism around the slc24a5 gene involved in skin pigmentation indicates an episode of selection in the european population> (signature iv).” [reduced polymorphism around the specific gene suggests an episode of selection, but more evidence is needed to be certain]
270. “‘x’ in the sequences indicates no conservation at that position.” [an explanation of what ‘x’ means, no research topic that needs more evidence]
271. “of general significance, lifeact-gfp negatively affects the actin cytoskeleton, <indicating caution in its use as a biomarker for actin filaments>.” [its use as a biomarker must be cautionary, more research is needed to determine the affects]
272. “those indicating fewer than three places were coded as “0, lower mobility” and those indicating three or more places were coded as “1, high mobility”.” [an explanation of the coding and what its definition, no research topic that needs more evidence]
273. “nowadays, <it is known that the disorder is not only limited to this region but occurs worldwide>.” [some known information about the disorder in the region, but need more information about the disorder worldwide]
274. “for example, according to the study, it is known that the patient was alive for 1 year, but there is no information what happened after that.” [known information about a patient, but missing some, not a research topic that needs more evidence]
275. “<many studies have shown that microsatellites can serve as transcription factor binding sites (tfbss) to regulate gene expression> [for a review, see [19]].” [a large amount of evidence shows that microsatellites can serve as…, more evidence needed to be certain]
276. “while <many studies correlated cognitive function with changes in brain morphology in multiple sclerosis> (ms), few of them used a multi-parametric approach in a single dataset so far.” [a large amount of research categorizing the relationship between cognitive function and brain morphology in ms, but more evidence is needed to be certain and to understand the relationship itself]
277. “a voxel-wise survey of the network centrality indices revealed decreased dcs in two regions, i.e., the left ains and the anterior part of the mcc (also called the dorsal anterior cingulate cortex in many studies), in male volunteers after 45 days of −6° hdt bed rest.” [a reference to a different name in other studies, no research topic that needs further evidence that multiple studies are working on]
278. “<molecular and morphological analysis reveals five new species of zygophiala> associated with flyspeck signs on plant hosts from china” [five new species were discovered by molecular and morphological analysis with more evidence needed]
279. “in these cases, otitis complication, such as acute mastoiditis, usually reveals the real ear problem.” [patient case information about the real ear problem, not research evidence that reveal an insight that needs more evidence]
280. “consistent with a previous study[20], urinary metabonomic analysis in the present study also <revealed a distinct separation between wt and oatp1a1-null mice> (fig.” [a urinary metabonomic analysis provided insight on a separation between…, with more evidence needed to explore the separation]
281. “gene regions with past actions of selection show an altered sequence organization that can be revealed by comparing changes between homologous sequences by three different approaches.” [an explanation of how to reveal gene regions, not research evidence that reveal an insight that needs more evidence]
282. “although <several epidemiological data have shown that the consumption of added sugars as ingredients in processed or prepared foods and caloric beverages has dramatically increased over the last decades>, most of the experimental studies investigating the development of insulin resistance in the skeletal muscle have been based on genetic manipulation or use of high fat diets [2–4].” [multiple studies have shown… with more evidence needed to be certain]
283. “<several studies have been performed to evaluate the tear film>, especially that of dry eye, by non-invasive interferometry.” [multiple studies evaluated the tear film, yet still not definitively stated, more evidence is needed]
284. “<several studies have explored associations of air pollution with asd>, using the u.s.” [multiple studies have explored the relationship between air pollution and asd with more evidence needed to draw any conclusions]
285. “additionally, the description of these coilin activities will <shed light on what coilin may be doing in primary cells>, some of which lack cbs.” [the description will help provide more evidence into what coilin may be doing in primary cells]
286. “while these studies certainly show evidence for capsinoids being adrenergic system stimulants and activating lipid oxidation, <they do little to shed light on a potential mechanism>.” [more evidence is needed to shed light on a possible mechanism]
287. “<the present results suggest that there was significant cross-talk in the expression of the nine unigenes under abiotic and biotic stress conditions>.” [the results provide some evidence for cross-talk, but more is needed to be definitive]
288. “among other things, we suggest measures that are variants of mutual information, and measures that use a multidimensional representation of each residue in order to capture the physico-chemical similarities between amino acids.” [a recommendation for measurements that falls under future work]
289. “<this suggests that presence of capsule inhibits protective cytokine production>.” [this provides some evidence on the inhibition, but more is needed to be definitive]
290. “<the evidence suggests that irf4 from dcs can drive th0 cells toward differentiation into th2 cells>.” [some evidence exists about what drives th0 cells toward differentiation, with more evidence needed to be more definitive]
291. “<malaria resistance was suggested> as an explanation for the elevated frequencies of the duffy fy\*0 allele in african populations.” [malaria resistance was put forth as an idea that needs more evidence to be certain]
292. “<this finding suggested a deviation from neutrality not accounted for by population structure>, which was confirmed by tests for natural selection (bamshad et al .” [the findings provide some evidence for a deviation, with more needed to be certain]
293. “institutional staff suggested messages to be simple, easily understandable and culturally appropriate.” [a recommendation that falls under a non-urgent recommendation]
294. “the rat has also been reported to develop chronic pulmonary cryptococcosis in the wild [90], <suggesting this organism as a potentially valuable disease model>.” [more evidence is needed to determine if the rat is a valuable disease model]
295. “these findings bear considerable similarity to the maternal effect in the rat and are <suggestive of early-environment regulation of the neural epigenome in humans>.” [the rat findings provide evidence for regulation in humans, with more evidence needed to be certain]
296. “inclusion criteria were: 1/to present symptoms and signs suggestive of an acute or sub-acute stroke between 0 and 72 hours after onset; 2/to be hospitalized for this problem or, if stroke occurred during an ongoing hospitalization, for another unrelated problem; 3/to accept and sign the information and consent forms of the study (patient or family relatives).” [a description of inclusion criteria that suggest a stroke, no research topic that needs more evidence]
297. “furthermore, a thicker adhesive between the surfaces of the cfrp and steel was observed to <suggestively slow the rate of corrosion of the steel>.” [some evidence exists that a thicker adhesive slows the rate of corrosion of steel, but more evidence is needed to be certain]
298. “the major advantage of the level-set method is that it is possible to segment objects with complicated shapes and deal with topological variations, such as image segmentation and merging, suggestively.” [two use cases are presented as examples, no research topic that needs more evidence]
299. “<these parallels support the case for c. elegans constituting a sound model for investigating basic mechanisms underlying cryptococcus infection, disease, and treatment>.” [some evidence for the case of c. elegans as a sound model, with more evidence needed to be certain]
300. “this investigation demonstrates how survival data from an insect model that is relatively easy to infect and monitor in a high-throughput manner can support in vitro mechanistic discovery.” [a statement about what could support something, but not a research topic that already has some support]
301. “<the altered vesicle fusion in cdc8e104a cells further supports our conclusion>.” [some evidence exists for the conclusion already, but more is needed to be certain]
302. “this intervention requires patients to enlist the help of drug-free family or friends to attend group counseling and help them develop or expand drug-free social supports.” [patient supports, not a research topic that has some support, but needs more]
303. “<recent selection about the lct locus is supported by several tests>.” [several tests provide evidence on the selection, with more evidence needed to be certain]
304. “proper cuff size was selected based on arm circumference.15measurements were taken in the seated position, with the right arm supported at the level of the heart.” [measuring supports for an arm injury, no research topic that has some support but needs more to be certain]
305. “thus, renal cystic disease is highly prevalent in pa and treatment halts its progression, <supporting the contention that persistent hypokalemia is the causative factor>.” [some evidence for the contention, but more is needed to be definitive]
306. “together, these findings highlight the crucial role of lipids and their modes of transport in supporting the tumor-tme dialog, which is essential for tumor cell proliferation and dissemination.” [the lipids and their modes of transport support the tumor-tme dialog, no research topic with some supporting evidence that needs more to be certain]
307. “although more evidence is needed in order to draw firm conclusions, <this trend might be supportive for the use of sdt and mi in web-based ct> in order to achieve maintained pa increase.” [the trend provides some evidence for the use of sdt and mi in web-based ct, but more evidence is needed to be certain]
308. “caregivers are often considered as supportive individuals, but sometimes patients introduce them as a source of stress and discomfort (7).” [caregivers are usually supportive to patients, no research topic that has some supportive evidence that needs more to be certain]
309. “finally, <there is evidence of positive selection in the excess of the high-frequency-derived variants> measured by fay and wu's tests (fay & wu 2000;hamblin et al .” [some evidence exists for positive selection with more needed to be certain]
310. “we focused on four healthy behaviours for which there is evidence that financial incentives can be effective:[10] smoking cessation, regular physical activity, attending a primary care provider for disease screening, and attending a primary care provider for adult vaccination.” [a description of the methodology and why it was chosen, no research topic that needs more evidence]
311. “disease is typically caused in the immunocompromised, such as hiv/aids or organ transplant patients, and <is usually attributable to c. neoformans> .” [more evidence is needed to determine in what cases it is not attributable to c neoformans]
312. “in this system a culture of c. neoformans in ypd liquid media is spread onto agar plates, usually with the addition of antibiotics, and incubated overnight.” [a description of the methodology with the usual protocol, no research topic that needs more evidence to determine unusual case]
313. “<after validation in a larger multicentric study>, this biomarker could become a robust predictor of mortality in septic patients.” [validation is needed in a larger study to be certain of the biomarker]
314. “applying a 5-fold cross-validation technique helped using all patients in the data set for both model training and testing.” [a technique for validation, not a research topic that needs validation]
315. “<toxicity of heavy metals to the human body is well documented> [6].” [lots of evidence that heavy metals are toxic to humans, more evidence is needed to be more definitive]
316. “they recommend starting antibiotics 1-2 days before surgery and continuing for a total of atleast 8 days, however, <the value of this regimen has not been well documented>.” [more documentation is needed about the regimen to be certain of the recommendations]
317. “all these lines of evidence are consistent with <the well documented role of the putamen and cerebellum in motor control[61],[62]and speech production>[63].” [more evidence is consistent with the largely supported role of putamen and cerebellum in…]
318. “we focus on the 2009 pandemic period in 21 cities and counties in new york state, for which spatial heterogeneity has been well documented[3],[11].” [a description of the methodology focus due to the data being well documented, not a research topic with lots of evidence that needs more to be certain]
319. “EXAMPLE” [EXAMPLE]
320. “EXAMPLE” [EXAMPLE]
321. **REFLECTION: ABSENCE OF EVIDENCE/ BE EXAMINED/BIAS/CAUTION/ CLOSER SCRUTINY/ (FAIRLY) CONSISTENT(LY)/ CREDITED/ (DATA /RESEARCH) (IS/ARE) (LIMITED/ TOO PRELIMINARY/ SPARSE)/ DO NOT FULLY/ DOES NOT STRAIGHTFORWARDLY EXPLAIN/ EVIDENCE (IS/ARE) (WEAKER/SCARCE/LIMITED)/ EXISTING (DATA/EVIDENCE/LITERATURE) IS SMALL/ EXPERIMENTAL EVIDENCE/ FAILED TO REVEAL/ FAILURE/ INADEQUATELY (STUDIED/UNDERSTOOD)/ INCOMPLETE (UNDERSTANDING/RESULTS)/ INFORMATION IS SCARCE/ INSUFFICIENT (EVIDENCE/INFORMATION)/ LACK (OF) (ANSWERS/EVIDENCE/INFORMATION/RIGOROUS STUDIES/ DATA/ EFFICACY)/ LESS/ LIMIT(ATIONS)(ED)(S) (DATA/EVIDENCE/NUMBER)/ (VERY) LITTLE (ATTENTION/CONCLUSIVE EVIDENCE/ DATA/ FOCUS/ INFORMATION/INSIGHT/SCIENTIFIC SUPPORT/TO NO)/ MORE DATA ARE NEEDED/ (MUCH/OFTEN) OVERLOOKED/ NEED (FOR VALIDATION/MORE INFORMATION/TO IDENTIFY/EVIDENCE)/ NEGELCTED TOPIC/ NO (CLEAR EVIDENCE/CONCLUSIVE EVIDENCE/ EXISTING GUIDELINES/REPORTS/ STUDIES)/ NONE (WITH ENOUGH EVIDENCE/ACHIEVED CLEAR EVIDENCE)/ NOT (ADEQUATE(LY)/AVAILABLE/BASED ON SCIENTIFIC EVIDENCE/FULLY EXPLORED/IMMEDIATELY APPARENT/RECEIVED SUFFICIENT ATTENTION/SPECIFICALLY DESIGNED TO/ WELL ESTABLISHED/ PROVEN)/ NOT PREVIOUSLY BEEN (FULLY APPRECIATED/REPORTED)/ NUMBER OF STUDIES/ ONLY (BEEN PREVIOUSLY DESCRIBED ONCE/EXPLAIN PART/FEW CASES/ OTHER PUBLISHED REPORT)/ PAUCITY/ RARE(R)(LY)/ RECEIVED LITTLE STUDY/ REMAIN(S) (LIMITED/SCARCE/A COMMON OCCURRENCE/UNDER INVESTIGATION/ UNDER-STUDIED)/ SCANT(Y) (EVIDENCE/ REPORTS)/ SCARCE INFORMATION/ STILL (REMAIN/ VERY SCARCE)/ SUBSEQUENT STUDIES/ THE NEED/ TO UNDERSTAND BETTER/ TOO CRUDE/ UNCOMMON(LY)/ UNDER-STUDIED/ UNEXPLAINED/ UNPROVEN EFFICACY/ UNUSUAL/**
322. “the diagnosis was acute infection from other arboviruses when samples were positive for specific arboviral igm in the absence of evidence of wnv infection.” [incomplete evidence for diagnosing, not for a scientific research question]
323. “broadly these results suggest that <unanticipated gene-gene interactions can be disclosed and should be examined in complex in vivo environments>.” [examination in complex in vivo environments is needed to provide more evidence]
324. “<this will be examined in a larger group of participants>.” [more evidence will be provided from examination in a larger group]
325. “however, as we have shown, domain-based phylogenies can help flag proteins with gene model errors so that these can be examined and potentially revised.” [explaining what domain-based phylogenies can help with, not a research question that needs more to be examined]
326. “four-weekly photographic reviews are carried out in a nurse-led clinic with dedicated ophthalmic imaging room and a team of ophthalmic photographers, allowing for multiple patients to be examined simultaneously.” [patient examinations, not research]
327. “<bias is hardly ever a desirable feature in a method>, but we think that as truly coevolving sites are rarely the quickest evolving sites in an alignment, <bias towards slowly evolving sites might prove much less harmful than the one showed by mutual information>.” [need to ensure biases are understood – gather more information and ways to mitigate it]
328. “not all patients underwent the same reference tests, <introducing selection bias in the final results>.” [need to be aware of biases being introduced and gather more information to mitigate them]
329. “each unit in the hidden layer estimates a weighted sum of the input variables and the bias.” [explaining the methodology of a network algorithm where the hidden layers estimate bias, no research to gather more information or evidence for]
330. “given our current knowledge, <the increased incidence scenario should be taken with caution>.” [need more evidence to determine if the increased incidence scenario is safe]
331. “although others [26,28] and we [29,30] have shown that intra-renal administration of vegf improved the function of the stenotic kidney, <caution should be exercised in translating this into clinical practice> [29,30].>.” [more information and evidence is needed to translate the findings into clinical practice]
332. “the patient was further cautioned against using the whistle between his anterior teeth.” [the patient was given a warning of caution from a medical professional, not a research question that needs more evidence to determine its effects]
333. “<this hypothesis deserves closer scrutiny>.” [the hypothesis needs more evidence]
334. “the implications of this study are that <guidelines and practice parameters for ap use drugs need closer scrutiny>.” [more evidence is needed to understand the guidelines and practice parameters for ap use drugs]
335. “this, however, turns out not to be true at closer scrutiny of the fossil record of hominin evolution.” [the evidence was already gathered/looked at because of closer scrutiny, nothing is incomplete]
336. “yet, upon closer scrutiny, this is a vastly documented, complex human need and is hence not necessarily in direct opposition to western medicine’s paradigm.” [the evidence was already gathered/looked at because of closer scrutiny, nothing is incomplete]
337. “while there was some variation in scope across the three surveys, <our main variables of interest were collected fairly consistently>.” [there is error by saying fairly and thus room for improvement to gather more evidence to say more definitively consistent]
338. “overall, respondents in this study maintained dependence on a fairly consistent level of prescription pills for a majority of their use periods.” [an issue of consistency with the respondents not with the study design or evidence]
339. “the molecular and cellular functions of this gene family have not been described; however, <a number of genome-wide association studies have consistently identified the human orthologue clec16a as a strong candidate susceptibility locus for autoimmune disorders> (hakonarson et al., 2007;international multiple sclerosis genetics consortium, 2007;todd et al., 2007;wellcome trust case control consortium, 2007).” [a good amount of evidence to suggest clec16a but still need more]
340. “older participants were consistently more likely than younger participants to prefer no reward compared to all types of incentives.” [a discussion of study findings where participants were consistent, nothing is incomplete]
341. “<this is both consistent with the time frame of selection approaches involved (table 1, iii–vi) and overlaps with the date for the switch of the malaria parasite from a primate to a human host> (mu et al .” [some evidence is consistent with the working hypothesis but more is needed to be certain]
342. “there were few consistent differences in preference according to level of education.” [a statement of findings where most differences in preference were not consistent with level of education, nothing is incomplete]
343. “<it> has covered a quarter of the brazilian population and <is credited with reducing the estimated poverty rate in brazil by 8 percentage points>.” [the current theory is that it reduced the estimated poverty rate, but more evidence is needed to be certain]
344. “this is an open-access article distributed under the terms of the creative commons attribution license, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.” [a statement of author and source credit, not about evidence]
345. “<the epidemiology of pnet in japan> is of increasing interest, but <data are limited>.” [need more data about the epidemiology of pnet in japan]
346. “<these data are limited to a large set of collection points>, which are not distributed across all coral reef areas and thus do not necessarily reflect oa conditions at all coral reefs [43], especially for coastal areas.” [more data from other coastal areas is especially needed to generalize the results]
347. “since the rate of pmd is generally low far away from the read ends, position-specific estimates may become noisy for these positions, particularly if data are limited.” [a statement of a particular issue/problem when data is limited, not about the data that is limited and needs more evidence]
348. “moreover, <the analytical data for the mandible are limited with respect to their relationship with skeletal malocclusion, the size of the mandible, and the measurement planes and reference points for locating the position of the mnf>.” [need more analytical data for to understand the things specified]
349. “our data showed limited genetic diversity of pvs25 and pvs28 in the yunnan isolates.” [a statement of the result that the data did not show what the researchers were hoping for, no statement of needing more evidence]
350. “<such comparative data is sparse in the preclinical arena> and sorely lacking in the clinical arena, and at present the optimal timing of treatment is yet to be determined.” [data is missing/incomplete in the preclinical arena]
351. “specifically, when data is sparse, trained models tend to lose generalization capability on test data; when the entities have many surface forms, such as concept mentions recorded disjointedly, briefly, or intuitively, traditional features in learning algorithms become insufficient to capture such variations.” [problems/issues for trained models when data is sparse]
352. “the microbial communities present in the intestinal tract have known associations with colon health, though until recently <researchers were limited to the study of microbes that were amenable to in vitro culturing>.” [more evidence is needed around other microbial communities]
353. “<while docking has matured into a powerful tool for pharmaceutical research after decades of development,1−7the accuracy of docking calculations continues to be limited by these relatively simple scoring functions which lack a complete treatment of desolvation and receptor reorganization>.” [research is limited and more is needed around accuracy of docking calculations]
354. “after confirming that no contraindications (such as glaucoma, prostate hypertrophy or severe heart disease) were presented, 20 mg of scopolamine butyl bromide (1 ml: 20 mg; chengdu no.1 drug research institute company limited, chengdu, china) was injected intramuscularly to prevent gastrointestinal motility 10 minutes before mr examination.” [the name of the drug research company, nothing is incomplete]
355. “yet <the traditional classifications do not fully reflect the heterogeneity of breast cancer>.” [new classifications are needed to reflect the heterogeneity of breast cancer]
356. “[7] acknowledge that this cost analysis represents “a single payer, base-case scenario,” <they do not fully acknowledge the complexity of this disorder and its treatment>.” [more information is needed about the complexity of the disorder and its treatments]
357. “trials or impact evaluations (and systematic reviews of these) do not fully report resource use” [incomplete information reported but the research is not incomplete]
358. “supplying controlled drugs from prescriptions that do not fully meet legal requirements.” [the drugs don’t meet the full legal requirements, nothing about research that is not fully completed]
359. “although animal studies demonstrated that inappropriately elevated aldosterone levels for the salt status cause renal tissue damage [66], <the clinical evidence of a role of aldosterone as a potential contributor to renal dysfunction is weaker than that emerged for the cardiovascular system> [67].” [more clinical evidence is needed to determine the role of aldosterone to renal dysfunction]
360. “<a large part of the evidence advocating icp monitoring originates from the late nineteen seventies and early eighties [122–124], but these studies are of weaker methodological design>.” [the evidence comes from a weaker study design, so more evidence is needed to make conclusions]
361. “the strongest evidence for correlation was seen for c-kit and vegfr2 while pdgfrα showed a somewhat weaker association.” [a statement of the statistical evidence, no research is incomplete]
362. “<there is scarce evidence of immune function of the abo locus>, and in particular, include only a few reported examples of pathogen induced directional selection favoring a alleles [29] or b alleles [30] in isolated populations.” [need more evidence of immune function of the abo locus]
363. “however, research on the relationship between weight self-stigma and health is minimal, and <evidence of how weight bias internalization impacts physical health is scarce>.” [need more evidence on the relationship between weight bias and physical health]
364. “the role of yogurt consumption in the development of metabolic syndrome (mets) is not fully understood and <the available epidemiologic evidence is scarce>.” [epidemiologic evidence is needed]
365. “research on the treatment of catatonia is scarce, but there is overwhelming clinical evidence of the efficacy of benzodiazepines, such as lorazepam, and electroconvulsive therapy.” [here evidence is not scarce but the research is, so with the cue ‘evidence...scarce’ this would not be an ignorance statement]
366. “however, for most common cancers, <up-to-date uk evidence about whether socio-demographic inequalities in stage at diagnosis exist and their magnitude and direction is limited>.” [more up-to-date uk evidence is needed]
367. “consequently, <the existing, even though very limited, observational and trial evidence do not support vitamin d supplementation among the general population of infants in lmics to reduce common morbidities>.” [more evidence is needed to determine if vitamin supplementation works]
368. “this is usually referred to as rct (randomized controlled trial).19open studies and those with associated interventions in just one group of subjects can report positive conclusions, but they have limited value for evidence-based medicine.20,21” [a statement that open studies are not very valuable for evidence-based medicine, no statement of research that is limited in evidence]
369. “<existing evidences have established ceramide as an important player in apoptosis induction> [12,13,14].” [need more evidence to state the conclusion more concretely]
370. “we searched scopus, cochrane database of systematic reviews and psycinfo to identify existing evidence and theoretical mechanisms likely to explain the effectiveness of an intervention promoting resilience to improve psychosocial outcomes after stroke.” [a statement of methods to find existing evidence, not a statement of incomplete evidence]
371. “hitherto <existing data indicate that diabetes mellitus is a relative contraindication for fingolimod treatment>.” [the current data shows diabetes as a contraindication for fingolimod treatment, but more data is needed to be definitive]
372. “approval for using the existing data was obtained from the research ethics board of sunnybrook health sciences centre.” [discussions of how the data was obtained, not about what the current data shows and we need more evidence for]
373. “the ‘attract and reward’ approach is theoretically supported (kaplan and lewis 2015), but to date <there is little experimental evidence in support of this strategy>.” [need more experimental evidence to support the aproach]
374. “<experimental evidence has established that oxidative stress is involved in the pathogenesis of diabetes and the development of diabetic complications, including diabetic cardiomyopathy and nephropathy>.” [need more evidence to concretely show that oxidative stress is involved in pathogenesis]
375. “to link this cds sample with experimental evidence, we compared the protein sequence homology of the cdss of this sample with protein sequences in pdb (e ≤ 0.0001)” [a statement of methodology to the cds sample with other evidence]
376. “<a search of the literature failed to reveal any reports of natural compounds that can inhibit the biological activity of ricin>, except for the recent report by rasooly et al .” [more evidence is needed of natural compounds that inhibit the biological activity of ricin]
377. “<inspection of the genome sequences of isolates jg-3, aw25m09, 29mftsu3.1, and 114mtsu3.1, failed to reveal any of the virulence genes known to be necessary for rhodococcus to cause leafy gall disease>.” [the genome sequence seems to only be a partial picture of what is going on – more evidence is needed to determine virulence genes]
378. “the patient’s temperature was normal and the rectal examination failed to reveal any pathology.” [a statement of a patients examination, not a research question that needs more evidence]
379. “<due to a failure to detect a clear band of the active form of jnk protein in our cell lysates>, we turned to determine jnk activity by assaying the phosphorylation degree of c-jun, a known substrate of jnk [22,23].” [need more evidence to detect the active form of jnk protein]
380. “liver failure due to ischemia and reperfusion (ir) and subsequent acute kidney injury are significant clinical problems.” [an organ failure but not ]
381. “so far, <the physiological significance of this potential coexistence of c4subtypes is inadequately studied>.” [more information is needed to determine the physiological significance]
382. “in brief, <the nature of the robustness of cell cycle control is still inadequately understood>.” [we need more evidence about the nature of the robustness of cell cycle control]
383. “young people with persistent musculoskeletal pain fear a life lived in pain and described the challenges imposed by a health system that is fragmented, health professionals who inadequately understood persistent pain and services that failed to meet their age-appropriate needs.” [health professionals did not understand young people with persistent pain, there is no research that is not understood]
384. “<there is an incomplete understanding of the genes and signals involved in hsc induction, migration, maintenance, and niche engraftment>.” [more information is needed to understand the genes and signals]
385. “we noted an interaction between complacency and an incomplete understanding of how vaccines work among a small proportion of mostly african americans respondents.” [the African American respondents had an incomplete understanding, no research question that was incompletely understood]
386. “<a review of the literature up to the time of this report shows only a few encouraging but incomplete results in humans>.” [need more results/evidence in humans specifically]
387. “two children with incomplete results were excluded.” [exclusion criteria based on results for each child participant, the study did not have incomplete results in general that need more evidence]
388. “however, <such information is scarce for the human eye>.” [more evidence/information is needed for the human eye]
389. “<information about anticancer and antioxidant activities of enriched ginger by elevated co2concentration is scarce>.” [more evidence/information is needed about anticancer…]
390. “to date, <there is scarce information on the thermostability of laccases>, and no single biochemical factor governing it can be concluded[34].” [need more evidence/information on the thermostability of laccases]
391. “the study has fielded useful information regarding caries experience and risk factors in cp children on whom literature is scarce.” [the literature is scarce not information, in fact the study has helped find the information]
392. “<phylogenies estimated from such short msas are rarely accurate, simply due to insufficient information>.” [better information is needed to more accurately estimate phylogenies]
393. “these perspectives may be due to the fact that dietary supplements were recklessly used owing to the internet, exaggerative advertisements, and insufficient medical information, causing people to only recognize positive aspects of the dietary supplements.” [explanation of perspectives due to insufficient information placed on the internet, no research question]
394. “since <there is insufficient evidence to support the clinical importance of verum acupuncture for bph>, active control with conventional medication should not be strongly recommended, and a non-inferiority design should be adopted.” [need more evidence to support the importance of verum acupuncture for bph]
395. “although p> 0.05 means insufficient evidence to demonstrate difference, it is not the same as no difference between groups.26” [a statement of the meaning of a p-value greater than 0.5, nothing about research]
396. “patients with liposarcoma were excluded from this phase iii study, because the phase ii study showed insufficient evidence for the efficacy of pazopanib in the treatment of liposarcoma [20].” [a statement of exclusion criteria due to previous insufficient evidence, no research question]
397. “when parents of young children with special health care needs (cshcn) receive their child’s diagnosis, they encounter information they may not understand, emotions they may not know how to cope with, and <questions about their child’s immediate and long-term future that frequently lack answers>.” [many questions are still left unanswered and need more information to answer]
398. “[8] pointed out that there is a <lack of evidence for the axillary artery to be recommended as a standard cannulation site>.” [need more evidence for the axillary artery to be recommended]
399. “here, it was suggested, training and implementation needed to focus on raising awareness of the lack of evidence to support giving magnesium sulphate to women with relatively mild disease.” [the goal is to raise awareness about the lack of evidence, not a call to find more evidence to support giving magnesium sulphate]
400. “this finding is supported by a lack of evidence for genotoxic effects (mice were exposed since in utero), generally healthy appearance and activity levels at the end of the experiment, no teratogenic effects and/or apparent abnormalities of the internal organs following dissection and substantial improvement in the melena and intestinal hemorrhage normally observed in apcminmice.” [the finding is based on the fact that there is a lack of evidence, not a call for more evidence for genotoxic effects]
401. “<this lack of information has further limited our knowledge regarding its carcinogenic role in these regions>.” [need more information in order to determine carcinogenic role of the regions]
402. “while we have a lot of information regarding the impact of crb among icu patients, <there is still lack of information concerning non-icu patients>.” [information is needed about non-icu patients]
403. “the patients’ and health care providers’ lack of information about the disease is one of the barriers to the delivery of care for patients with chronic renal failure (1).” [the patients’ and health care providers are lacking information, but there is not a research question that needs more information]
404. “<evidence for this added value is inconclusive due to a lack of rigorous studies>.” [need more evidence using more rigorous studies]
405. “<there is a lack of rigorous evidence to support the opinion regarding the discontinuation of tba training> (16,17) and randomized controlled trials with enough power to look at the impact of tba training on neonatal and maternal mortality would help address this issue.” [need more rigorous evidence]
406. “one limitation of the present study is <the lack of rigorous in-study diagnosis of asc and of an overt behavioral measure of motor dysfunction>.” [need more rigorous evidence to address the limitation of in-study diagnosis]
407. “a study should not be called as a pilot just because of the small sample size or lack of rigorous methodological evaluation.” [a statement about semantics of ‘pilot study’ based on the criteria of a lack of methodological evaluation, no statement of research that has a lack of rigorous evaluation]
408. “on the contrary, they should be examined in all their complexity to advance with safe passage and to avoid falling into old illusions as a result of haste, lack of rigorousness and enthusiastic but naïve conclusions by venturing into fields distant from one’s own specialty.” [a statement about methodology and examination to avoid lack of rigorousness, not a research statement about what is incomplete]
409. “a further limitation is <the lack of availability of national data with similarly high complete information on stage for the studied cancers and period: this prevented expanding the analysis to a wider population>.” [a limitation about the lack of data to provide more evidence]
410. “because of <the lack of relevant data>, we investigated the association between rapid weight gain (rwg) during early childhood and cardiovascular risk factors in japanese adolescents.” [the relevant data is missing and needed to answer the original questions]
411. “despite <the lack of long-term follow-up data>, current studies have shown that laparoscopic cryoablation of renal tumors is one of the most advantageous techniques.” [long-term follow-up data is missing and needed in order to determine the best approach for renal tumors]
412. “the following conditions were exclusion criteria for recruitment: the indicators and ctc were not related; the evaluation indicators derived from ctc in blood circulation were not used for hcc diagnosis; lack of complete data to describe or calculate the sensitivity and specificity; and reviews, letters, technical reports, case reports, and comments.” [exclusion criteria for the method includes ‘lack of complete data…’, but not a research statement about what is incomplete]
413. “in addition, lack of oatp1a1 had no effects on bile flow (data not shown) or the concentrations of bas in bile of mice (fig.” [the data is not shown, not a lack of data needed for research]
414. “however, the fact that ono‐4053 is not a histamine antagonist and that <laropiprant lacks efficacy for sneezing, rhinorrhea, and nasal itching> indicates that the effectiveness of ono‐4053 in relieving these symptoms, which are primarily histamine‐induced, cannot be due to its dp1 antagonistic action.” [potentially need more evidence to determine if laropiprant effects sneezing, rhinorrhea, and nasal itching]
415. “<although less well studied than macrophages, several aspects of dc function have been documented in vitro> .” [dc function has not been studied enough and needs more information to better understand it]
416. “the deciphering of signaling pathways that regulate the cytoskeleton has been a focus whereas <regulation at the terminal machinery has received less attention>.” [more attention and information is needed about the regulation at the terminal machinery]
417. “the region is less well conserved in period 3 of animal tropomyosins in which the analogous residue is thr108 in vertebrates, but variable in other animal species (barua et al., 2011).” [a statement about the region being less conserved than other regions, not research missing or incomplete that is needed]
418. “participants were less likely to be at the extremes of age; were more educated; less likely to currently, or have ever, smoked; and less likely to be regularly physically active than the population as a whole.” [a statement about the description of the data using statistics and proportions, no research is missing or incomplete]
419. “<despite this limitation>, investigations have shown that neutrophils are able to kill cryptococci in vitro [29,30].” [need more evidence to overcome the limitation about neutrophils]
420. “<a limitation of our study is that data on the prevalence of comorbidities were based on patients' self-reported medical history>.” [need to collect data that is not self-reported to confirm findings]
421. “to overcome these limitations, plants respond and adapt to stresses at the physiological and biochemical levels.” [plants have a limitation that they need to overcome, not a research limitation that needs more evidence or information]
422. “the paper mentions limitations of different time points, methodologies, and population characteristics.” [a description of the paper’s limitations, not research limitations]
423. “however, <this comparison alone provides limited functional information>, whereas queries with arabidopsis or rice erf genes of known function could identify candidate soybean orthologs with functional similarities.” [need more functional information]
424. “<the literature on antioxidant activity and phenolic content (pc) of plant foods is limited from india as well as other parts of the world>.” [need more evidence/literature from india about plant foods]
425. “colorimetric method was adopted in the present study, since <sensitive chromatographic method in quantification of phenols is often limited to single class of phenolics and is often limited to low-molecular weight compounds that are available as standards>.” [limitations of a methodology, need more evidence in this study due to these limitations of the methodologies using a different technique]
426. “[30,31] however, <the range of financial incentive characteristics and health behaviours that have been explored using dce methods are both limited>.” [need to broaden the scope and gather more evidence to capture the range of financial incentive characteristics]
427. “this external environment is not only limited to air, water, and soil (physical environment) but also the social and economic conditions to which the human race is exposed to.” [a statement of what is included in the external environment, not research that is limited]
428. “vitamin d deficiency is common during early infancy due to a combination of poor transplacental transfer of maternal vitamin d stores, low vitamin d content in human breastmilk, and limited sun exposure of young infants (22,23).” [the quantity of sun exposure of young infants, not research that is limited]
429. “nevertheless, the greatest number of studies in the medical literature with high methodological quality refers to basic and experimental science and not to clinical studies, which <limits generalization of results in clinical practice>.” [need more evidence to generalize the results to clinical practice]
430. “<the small size of the majority of currently described excisionases (typically more than 100 amino acids) limits the ability to predict and identify novel excisionase proteins based on homology searches> (28).” [the small size is a research limit that needs more evidence/information to overcome]
431. “values are mean + sem (or 95% confidence limits for % data).” [confidence limits, not research limits]
432. “the shape, dimensions, and limits of the frontal recess are determined by its surrounding structures2, and a frontal sinus cannot exist without a recess5.” [the limits of the frontal recess are determined by the surrounding structures, not a research limit]
433. “total proteins were within normal limits in all groups, however, albumin decreased with aging.” [a set range of values that all proteins were within, not research limits]
434. “however, <there are limited data regarding the altered intestinal bacteria in the genetically modified animals>.” [need more data regarding the altered intestinal bacteria]
435. “<limited data exist about the effect of vitamin d supplementation on weight gain and body composition>.” [need more data about the effects of vitamin supplementation]
436. “under these circumstances, hydrologic modeling is an effective solution that can use limited data to simulate runoff volume [18,19,20].” [a methodology that can use limited data, more evidence is not needed for this description of the methodology]
437. “the limited data from these sites were not included in the analysis (table 1).” [a statement about the limited data not being used in the analysis, not a call for more data]
438. “although preservation of high activity level has been reported in active young patients after periacetabular osteotomy (pao) for the treatment of symptomatic hip dysplasia, there is <limited evidence whether a dancer may be able to resume dancing after pao>.” [more evidence is needed to determine if a dancer can resume dancing after pao]
439. “<limited evidence on the effects of pr> does not necessarily imply lack of effect, rather, need for future research [12].” [need more evidence on the effects of pr]
440. “of the nonvolatile organochlorine compounds, iarc has classified the 2,3,7,8-substituted tetrachlorodibenzo- para -dioxins (tcdds) as carcinogenic to humans (group 1) on the basis of both mechanistic evidence and limited evidence in humans of excess risk of all cancers combined rather than for any specific site cancer; pcbs as probably carcinogenic to humans (group 2a) because of limited evidence of excess cancers of the liver and biliary tract and of lymphatic and hematopoietic tissues; and pcps and their sodium salts as possibly carcinogenic to humans (group 2b) based on findings of excess risk of soft tissue sarcoma and nhl (siemiatycki et al.” [a statement of definitions of groupings for compounds based on limited evidence, not a call for more evidenced]
441. “the main limitation of this study relates to <the limited number of early stroke patients studied in the original cohort>, yet this problem was somehow circumvented by the confirmation of the gst-π performances on a larger (n = 100) and independent cohort.” [need more early stroke patients to study in the original cohort]
442. “however, <due to the limited number of studies pertaining to zfx>, no direct intractable targets were identified in the reactome database (data not shown).” [need more studies on zfx]
443. “these results clearly indicate that abrb regulates the expression of many operons, acting mainly as a repressor but also as an activator in a limited number of instances.” [abrb acts as a repressor in a few instances, not a research limitation]
444. “only a limited number of studies have used actual or reported behaviors as the dependent variables.” [a statement about the types of studies done where only a few studies used a specific dependent variable, no research limitation]
445. “<as such there is very little data of this kind reported in the literature>.” [more data is needed of this kind]
446. “<there is very little cost-effectiveness evidence on financial incentives for healthy behaviours>.” [need more cost-effectiveness evidence]
447. “it is also widely believed that younger children are more flexible than adolescents (26), but <there is very little literature to support this>.” [need more evidence/literature to support the belief]
448. “we note that higher mobility has very little association with alcohol use among the fsws; but among the male migrant workers in both groups, the effects of higher mobility on alcohol use are significant.” [a statement about the strength of the association, not that more evidence is needed]
449. “table 1shows very little change in stented daughter vessel flow rate after flow-diverter deployment (<5% in 5/6 cases and <1% in 3/6 cases).” [a description of the table comparing change in flow rates, no need for more evidence]
450. “until now, <little attention has been paid to the relationship between hesperetin and nav1.5 channels>.” [more evidence is needed for the relationship between hesperetin and nav1.5 channels]
451. “in many african countries, first referral hospitals received little attention from development agencies until recently.” [the hospitals did not get attention from the development agencies, not research that needs more attention/evidence]
452. “however, <there is little conclusive evidence that a targeted treatment with antioxidants in patients with sepsis could be beneficial> [3,4].” [need more evidence to determine if targeted treatment helps with sepsis]
453. “however, with some notable exceptions for conditions such as headache pain, [5] <there is little conclusive evidence about which component parts of psychological intervention are most effective for which population of children with pain>.” [need more evidence about the component parts of psychological intervention]
454. “irreversible electroporation is a novel ablative method that is used for locally advanced pancreatic adenocarcinoma, but <little data exists for its use for pancreatic nets>.” [need more data/evidence to determine its use for pancreatic nets]
455. “nevertheless, <there are little data about how older adults exercise in the hospital> and definitive studies are not yet available to determine what type of physical activity will prevent hospital related decline.” [need more data/evidence about how older adults exercise in the hospital]
456. “very little data were missing in the present study: two children did not complete the shifting trial, one child had no ratings for emotion regulation, and four children lacked ratings for adhd symptoms.” [a statement about the fact that not much data was missing from the study, not a statement of needing more data due to little data]
457. “surprisingly, apart from these physiological explanations, <there has been very little focus on the biophysical aspects of biofilm persistence in natural and engineered environments>.” [need to focus/gather more evidence on the biophysical aspects of biofilm persistence]
458. “parallel to the current study’s finding that clinical assessment and management skills were most often taught, with little focus on disability and health care systems, the majority of content taught in the uk medical schools was medical aspects of disability, with minimal teaching on support services.” [a statement about the focus of teaching in medical school, not research that has little focus currently and needs more focus/evidence]
459. “however, <little information is available in the literature on the aoa and pc correlations in glvs> [12].” [need more information about aoa and pc correlations in glys]
460. “although the exact number of times the o allele was fixed throughout the americas is of interest, <our model provides little information toward answering this question>.” [need more information/evidence to answer the question]
461. “[21,20] provide relatively little information about the exact algorithm used, and their segmentation method is not fully automatic.” [the papers do not provide enough information about the algorithm, not a research question that needs more information]
462. “<monitoring disease outcomes provides little insight into the underlying mechanisms that determine herd immunity and serotype replacement>.” [need to look elsewhere to find insight/evidence about the underlying mechanism]
463. “unfortunately, <animal studies have provided little insight other than to suggest there is little to learn from animal models>.” [need to study other animals to find more insight/evidence]
464. “however, the drafters of dsm-iii , in 1980, despised psychoanalysis, were unilingual and unicultural to the core, and had little insight into distant european influences, except for those of kraepelin, whom they understood only dimly at best.” [the drafters of the dsm-iii were close-minded and did not look to distant European influences, not a statement about research that provided little insight, but instead people had little insight]
465. “<there is little scientific support in the literature for the use of intra-articular corticosteroid injections to treat glenohumeral arthritis>.” [need more evidence/scientific support to use intra-articular corticosteroid injections]
466. “<there is little support for this guideline in the literature>.” [need more evidence/support the guideline from the literature]
467. “there is little support for an important effect of any individual-level variable (seetable s2).” [a statement about the effect of the variables having no support, not a research statement with little support that needs more]
468. “they feel enriched by their experience despite challenging situations with little support from the rehabilitation services.” [a statement about the support of the rehabilitation services (about people and an organization), not a research statement with little support that needs more]
469. “such evidence also comes in support of the recent efforts to define the enactive concept of presence and emotion in the context of virtual reality, <an aspect which has thus far received little to no attention> (willans et al.,2015).” [the definition needs more attention or evidence for it]
470. “interestingly, <there is little to no evidence of this in lb>.” [need more evidence to confirm this finding in lb]
471. “reduces the ability to bind to hard tissue but has little to no effect on the strains ability to bind to soft tissue.” [a statement about the null effect on the strains, not about research that needs more evidence]
472. “regardless of the level of training, all learners in both settings reported that they had little to no experience with decision analysis.” [people had not enough experience with decision analysis, not research that needs more evidence]
473. “few previous studies have directly examined the transmission of rsv within households [12–16], and <more data are needed to guide optimal use of future rsv vaccines>.” [need more data/evidence to determine optimal use of vaccines]
474. “on the basis of the available literature, <more data are needed to determine the best technique of laparoscopic cornuostomy and its subsequent reproductive outcome>.” [need more data to determine the best technique]
475. “a systematic review published in 2011 suggested that <more data are needed demonstrating an effect in the most rigorous study designs and with outcomes that are not potentially affected by respondent bias>.” [need more data on the effect in most rigorous study designs]
476. “note the difference between “no more data are needed” and “no, more data are needed”).” [a semantic statement about the difference between phrases, not a research topic that needs more data/evidence]
477. “<one often overlooked challenge is determining the best way to report those disparities associated with multiple attributes such as income, education, sex, and race/ethnicity>.” [need to find more evidence/answers to how to determine the best way to report these disparities]
478. “<an often overlooked aspect of the fhl system is the need for formate transport across the inner membrane>.” [need more evidence/attention to the aspect mentioned here]
479. “environmental narratives exploring these connections play a fundamental role in people’s everyday wellbeing, however, <they are still often overlooked in scientific arenas> [85,86].” [environmental narratives are overlooked and need more attention/evidence to understand people’s everyday wellbeing]
480. “it is often overlooked because it is common among patients; however, anemia is one of the leading indicators of cancer.” [anemia is often overlooked in patients, not a research topic that needs more evidence because it is overlooked]
481. “symptoms of depression, apathy, or agitation can be subtle and are often overlooked as reactions to receiving a new diagnosis of parkinsonism.” [symptoms overlooked that indicates parkinsonism, not a research questions that needs more attention or evidence]
482. “to establish rules governing the contributions of nanomaterials to allergic responses, <we need more information, including an understanding of the molecular mechanisms of action of nanomaterials>.” [more information/evidence is needed to create the rules]
483. “the participants would need more information from a variety of sources in order to solve the design problems and evaluate proposed design alternatives based on multiple criteria.” [the participants need more information, not more information needed for a research question]
484. “<an urgent need to identify appropriate collection time of the plant parts used in traditional health care system> and threat assessment of potential native plants in the entire gulf region.” [need more information about the appropriate collection time of plant parts used in health care]
485. “finally, <there may be a need to devise a new, more specific assessment tool to evaluate joint laxity in the developing musculoskeletal system—one that can be used to identify children at risk of symptoms such as pain and pathology such as connective tissue disease and, as importantly, to reassure those who do not need further medical intervention>.” [a need to create a new tool to find more information and help identify children at risk]
486. “<The guidelines-developing process revealed fundamental questions about hGH treatment that still need evidence-based answers>.” [questions about hGH treatment needs evidence-based answers and in general needs evidence/answers]
487. “general practitioners need evidence from and about the patients they see” [doctors need evidence/information from their patients, not a research question that needs evidence]
488. “with demographic ageing proceeding rapidly in all regions world-wide, interest began to focus on <the previously neglected topic of dementia in low-income and middle-income countries (lmic)>.” [need more evidence on dementia of lmic]
489. “esophageal squamous cell carcinoma is one of the most common esophageal diseases in the developing world, but <the relationship between esophageal squamous cell carcinoma and helicobacter pylori infection remains a neglected topic>.” [the relationship needs more evidence since it is still a topic not studied well]
490. “<palliative care for chf patients is a neglected topic in both practice and research> and should receive more attention.” [need more evidence on palliative care for chf patients since it is a topic that is not well-studied]
491. “remarkably, <no clear evidence has emerged regarding snail resistance after extensive and prolonged niclosamide application for over 20 years> [86] despite wpn being both toxic to fish and costly [84].” [need more evidence, since there is no definitive evidence regarding snail resistance]
492. “yet <there is no clear evidence of its long-term impacts>.” [need more evidence about its long-term impacts, since there is no definitive evidence]
493. “taken together, <there is no clear evidence in the literature for a role for shox in the development of the female reproductive duct>.” [need more evidence about the role of shox, since there is no definitive evidence in the literature]
494. “these datasets included expression profiles from multiple cancers such as breast, ovarian, and blood (leukemia), as well as diseases of the brain/nervous system, skin, and intestinal tract (note: the leukemia datasets g and h were excluded from this particular comparison, as <we found no clear evidence for which subtype—aml or all—is more malignant>).” [an explanation why g and h datasets were excluded due to not enough evidence to determine the subtype, need more evidence to determine it]
495. “if this or a subsequent regimen was shown to have a good toxicity profile, and no clear evidence of inferior relapse rates was identified, a randomised trial against the standard bep could be considered.” [a hypothetical situation, not a research question about evidence that is not clear]
496. “although there may be controversy regarding its safety and advantages in comparison to other local anesthetics, <there is no conclusive evidence demonstrating neurotoxicity or significantly superior anesthetic properties of articaine for dental procedures>.” [need more evidence of neurotoxicity since there is no definitive evidence yet]
497. “melatonin significantly improves sleep onset insomnia in adhd patients, but <there have been no conclusive evidences to support association between problematic behaviors and cognition>.” [need more evidence about the association since there is no definitive evidence yet]
498. “the conclusions [84]: “for children under 8 years, <no conclusive evidence exists for the assumption that the sar levels in children’s head is higher than for adults>”.” [more evidence is needed for the sar levels since there is no definitive evidence]
499. “the commission's press statement also noted there was “no conclusive evidence” of dalli's direct participation, and “no transaction was concluded between the company and the entrepreneur [zammit] and no payment was made”” [a press statement, not a research question that needs more evidence]
500. “while drugs that specifically target hif-1 degradation exist, <there have been no reports to date of compounds that generally increase protein turnover by the ups>.” [need more evidence to find these compounds]
501. “<there have been no reports about the tolerance dose of cauda equina thus far>.” [need more evidence on the tolerance dose since there are no reports so far]
502. “no reports were repetitive.” [reports were not repetitive, not a research question with no reports that needs more evidence]
503. “the most common symptom reported in the interview sample was persistent cough/hoarseness (34%), and there were no reports of breast changes (table1).” [participants did not report any breast changes, not a research question that has no reports yet that need more evidence to get there]
504. “however, there has been little consideration of the satiating effects of eaas-based nutritional supplements enriched with leucine and <no studies have examined the impact on appetite and concurrent mealtime energy intake nor the practical aspects of palatability>.” [need more evidence about the impact of appetite and concurrent mealtime energy intake, since there are no studies on it]
505. “our study may be the first to investigate the influence of the time of administration of spinal local anesthetics on the duration of anesthesia, because <no studies have been published concerning about that>.” [need more evidence since no published studies exist]
506. “although <there have been no studies related to cholangiocarcinoma and these lipid-associated proteins>, there is a great deal of evidence that the proteins promote reduction of tumor growth.” [need more evidence related to cholangiocarcinoma and lipid-associated proteins since no studies have been done]
507. “no studies were excluded on the basis of language.” [exclusion/inclusion criteria for studies, not a research question with no studies done yet]
508. “all studies showed positive results, and no studies with contrasting results were reported.” [a report on the results that none of the studies with contrasting results were reported, not a research question with no studies done yet]
509. “we note that if mtorc2 were activated by pi3k instead of pip3, <the model could not adequately fit pakt(ser473) data at zero and low insulin in pten-silenced cells>, nor the prediction of pip3 concentration data would improve (s1 fig, panels c, d).” [need more data to fit the model correctly]
510. “analysis of the free energy decomposition results revealed that the main reason for the high false positive rate in docking could be due to the presence of partially buried, unfulfilled polar groups for which <the high desolvation penalty is not adequately captured by the scoring function>.” [need a better scoring function to correctly capture the high desolvation penalty]
511. “moreover, <the underlying mechanism of tlr4 in tg has not been adequately studied>.” [need more evidence to support the underlying mechanism of tlr4, since it has not been studied enough]
512. “human cells contain nuclear and mitochondrial dna (mtdna), but <the impact of mitochondrial epigenetics on the development of environmentally-linked diseases, such as allergies and asthma, has not been adequately explored>.” [the impact has not been explored enough and needs more evidence to link to diseases]
513. “even when sequence data is available, <existing databases are often not adequate for definitive identification even at the genus level>.” [need more evidence and information at the genus level to help existing databases]
514. “because the molecular weights of abrb and abh (10.4 kda and 10.1 kda, respectively) are similar, the proteins are not adequately separated on sds-page.” [a result about the separation technique of sds-page that does not separate the proteins, not a research question that needs more evidence]
515. “many patients, especially among the elderly, may not be aware of their immunization status nor have it recorded adequately in their health records and are may therefore be incorrectly assumed to be fully vaccinated.” [a statement of results that patients do not have adequate information in their health records, not a research question that needs more evidence]
516. “a majority of 75.4 % of medical officers stated that the internship training is not adequate to handle resuscitation confidently, with majority sharing that thought being females, and those with a longer work experience, implying that teaching and training should be commenced during the undergraduate years and continued at repeated intervals after internship.” [a statement of research results that the medical officers think the training is inadequate, not research that is inadequate and needs more attention/evidence]
517. “<a limitation of the study is that s1p4and s1p5receptor selective antagonists currently are not available>, therefore, we cannot rule of the roles for these receptor subtypes in sphinganine 1-phosphate mediated liver and kidney protection.” [need the antagonists to complete the research, but it is currently not available]
518. “since <standards are not available for the lipidomic analysis of diverse plasmalogens>, these were normalized to the housekeeping metabolite ptdetn 16:0/18:0. data were analyzed by 1-way anova, followed by the tukey-kramer test to determine differences between groups.” [need standards in order to move forward]
519. “if husband was not available, mothers or mother-in-law were interviewed.” [a statement of the method of who was interviewed for the study based on if the husbands were not available, not a research question that needs more evidence or information]
520. “auc area under receiver-operating characteristic curve, fn false negative, fp false positive, tn true negative, tp true positive, ppv positive predictive value, na not available, npv negative predictive value, lge late gadolinium enhancement, rt relaxation time, sid signal intensity decay” [a statement of acronyms and what they stand for, no information that is not available that needs to be]
521. “<the policy was not based on scientific evidence>, as the literature shows that the strategy of compulsory service is not efficient in the long term [4,6,7].” [more evidence is needed to update the policy]
522. “however, <this guideline> consists mostly of information about the procedural aspects of the assessment, does not include an extensive list of factors which are relevant to the assessment, and <is not based on scientific evidence>.” [the guidelines are not based on scientific evidence and need more to be based on science, scientific evidence is missing]
523. “it is estimated that about 30%–40% of patients receive treatment that is not based on scientific evidence, and 20%–25% receive treatments that are either not needed or potentially harmful [6,10,11].” [a statement of results where a percentage of patients receive treatment not based in science, not a statement of research that needs more scientific evidence because it doesn’t have any yet]
524. “although <the molecular mechanisms underlying mh in ibd is not fully explored>, local fibrosis would contribute to interfere mucosal repair.” [need to explore the underlying mechanisms more by finding more evidence]
525. “a few interesting but <not fully explored observations> indicate the involvement of various genes/proteins in regulation of cpt activity.” [need to explore the observations more to find more evidence]
526. “<the relationship between free energy and translation initiation is not immediately apparent>.” [need more evidence to understand the relationship that is not obvious]
527. “<it is not immediately apparent why right-pointing triangles should be judged consistently higher than those that point left>.” [need more evidence to understand the different in triangles]
528. “the "third dimension" (elevation) of the landscape represented by the quasi-potential, although directly derived from the dynamic rate equations without any additional information, thus yields an interpretation of cellular stability not immediately apparent from two-dimensional phase portrait analysis.” [the third dimension provides much more detail than the second dimension where things are not as obvious, not a statement about research that is not obvious]
529. “in addition, these questions were not immediately apparent as they were placed at the end of a long questionnaire.” [the questions were not obvious because it was a long questionnaire, not research that was not apparent and needs more evidencein addition, these questions were not immediately apparent as they were placed at the end of a long questionnaire.]
530. “while hypothermia has long been recognized as a potential threat to newborn survival in resource-limited settings, <it has not received sufficient attention>[14].” [hypothermia needs more attention/evidence to understand its threat to newborn survival]
531. “the application of established techniques from network science allows us to present a novel method that extends common evaluation measures towards a path-based evaluation and expands the arsenal of existing recommendation evaluation techniques with <two dimensions that have not received sufficient attention so far>.” [these two dimensions need more attention/evidence]
532. “it concludes that although this is <a subject that has not received sufficient attention in the medical literature> and requires rigorous confirmation, relationships do have an impact on the ibs illness experience and may even have an effect on response to treatment.” [the subject (ibs illness experience) needs more attention/evidence]
533. “<probe was not specifically designed to investigate pro in children>.” [need more evidence/a different technique to investigate pro in children]
534. “although <our sampling scheme was not specifically designed to detect genetically identical ramets>, we compared the extent of clonal growth (genets-to-ramets ratio) between regions and between l- and s-morphs of all sampled populations.” [need more evidence/a different technique to detect genetically identical ramets]
535. “some social scientists may see limitations in these data, as these social programs are not specifically designed to affect outcomes for children therefore the exact mechanisms of any observed change are unclear[23].” [the interventions are not specifically designed to affect outcomes for children, this is not a research question that wasn’t designed for a specific task]
536. “flexible acryl iols are commonly implanted in dogs but the iol optic is not specifically designed to prevent pco [7].” [a dog intervention not designed to prevent pco, not a research question that needs more evidence though]
537. “<the relation between the sinunasal mucosa abnormalities of patients with and without gvhd and rhinosinusitis is not well established yet>.” [need more evidence to establish the relationship]
538. “<the exact mechanism of rd after laser capsulotomy is not well established>.” [need more evidence to understand the exact mechanism]
539. “we recommend that trialists and trials units give due consideration to actively involving trial participants in their trials, in particular where interventions under investigation are novel and where an obvious patient group is not well established.” [a recommendation when a patient group is not well established for a trial, not a research question that is not well established and needs more evidence]
540. “(readers will recognize phelps was writing before the flexner report resulted in more uniform medical schooling and at a time when orthopaedics was not well established as a specialty and all training was via an apprenticeship system.)” [history of medicine where a specialty was not well established, not a research question that is not well established and needs more evidence]
541. “it remains the case that in some cases <it is not proven whether the sequences are of flaviviral origin or result from integrations> as some sections of apparently “insect-specific” flaviviral sequence may have been amplified from cultures in which carry-over of mosquito dna integrations from original pool inoculum and/or from the c6/36 cell cultures themselves may have occurred.” [need more evidence to prove the origins of the sequences]
542. “but this was not proven in the patients with msa considered in the present study (table 2).” [a statement of results that the patients with msa did not show something, not a statement that more evidence is needed to prove something]
543. “<the signaling pathways responsible for the tcr stop signal have not previously been investigated in detail>.” [need more evidence/detail about the signaling pathways responsible for the tcr stop signal]
544. “unfortunately, <highly efficient plasmonic scfs have not previously been proposed or realized>.” [need more evidence/detail about highly efficient plasmonic scfs]
545. “more specifically, <the importance of bubbles as an integral part in the behaviors and physical adaptations associated with rafting has not previously been observed in s>. [the importance of bubbles was observed for the first time and needs more evidence to confirm the observation]
546. “however, participants who have not previously been diagnosed of diabetes were excluded from the study as were those who could not understand the contents of the questionnaire after it has been explained to them (illiterate or visually impaired).” [exclusion criteria for those who have had diabetes in the past, not a research question that needs more evidence since it had not been previously done]
547. “in order to align all included patients at the same stage of disease (first hospitalisation for treatment of metastatic disease), the analysis was restricted to patients who had not previously been treated for metastatic melanoma.” [inclusion criteria are patients who have not had treatment for metastatic melanoma in the past, not a research question that needs more evidence since it had not been previously done]
548. “this is <a unique case of dlbcl involving the ureter that, to our knowledge, has not previously been reported in the pediatric or adolescent literature>.” [need more evidence about dlbcl in pediatric and adolescent populations since not much literature on it]
549. “<expression of dominant-negative proteins as a strategy to inhibit autophagy has not previously been reported in zebrafish>; therefore, we took several steps to validate this approach.” [need more evidence specifically in zebrafish]
550. “in addition, we have shown that cenpjtm/tm mice display some of the less frequently reported characteristics of the syndrome, including retarded bone ossification[1],[32],[64], as well as vertebral abnormalities and several other interesting histopathological and hematological abnormalities that have not previously been reported in patients.” [a statement of results where patients did not report before, not a research question that needs more evidence]
551. “<a number of studies have reported that bmi in later life was an intermediate factor in unfavorable lipid concentrations and high bp in later life>.” [need more evidence about the effects of bmi later in life since there are only a few studies (a number of studies) reporting the effect]
552. “in recent times, focus on plant research has improved all over the world and <increasing number of studies have demonstrated potential health benefits of medicinal plants used in numerous traditional systems>.” [need more evidence/studies to demonstrate the health benefits of medicinal plants]
553. “nevertheless, the greatest number of studies in the medical literature with high methodological quality refers to basic and experimental science and not to clinical studies, which limits generalization of results in clinical practice.” [there are many studies in the basic and experimental science that don’t need more evidence]
554. “), however, <only a few erf genes have been studied so far>.” [need more evidence about the erf genes since not many have been studied]
555. “remarkably, <only two of these gene regions were verified by two or more studies ( lct and cyp3a5 )>, and four more were positioned within a selected region in one study, but less than 200 kb away from at least one region in other gwsss ( ccr5 , adh1b and slc24a5 ;table 2).” [need more studies/evidence to verify the genes]
556. “those regions showing both signatures are more likely to harbour multiple selection signatures than those showing only the increased levels of fst(oleksyk et al .” [a comparison criteria based on signatures, not a research question that needs more evidence because it is the only one so far]
557. “however, <the increase of fmby a factor 2 can only explain part of the ∼100 enhancement of the q -factor>.” [need more evidence to determine the other part that explains the ~100 enhancement]
558. “together, <these results further confirmed that highly expressed or essential genes could only explain part of sgd in prokaryotes>.” [need more evidence to determine the other part that explains sgd in prokaryotes]
559. “<only few cases of paraurethral leiomyomas (pl) have been described in the literature>.” [need more evidence/information about pl for future cases]
560. “<only few cases have been reported a link of pulmonary sarcoidosis with this class of medications>.” [need more evidence/cases to determine if the link is real or not]
561. “because the contaminated group in the follow-up survey represented only 3.4% of the whole population in the contaminated area, probably only few cases of giardiasis were included in the follow-up study.” [a statement of the methodology that only included a small number of cases in the follow-up study, not a research topic that only has a few cases but needs more evidence to understand it more]
562. “based on the answers given to questions 1-4, three groups of responder gps were identified: those who found the note 66 recommendations in most hospital discharge letters (the “most” group), those who found them in only few cases (the “few” group) and those who found no note 66 recommendations in the hospital discharge letters (the “no” group).” [an explanation of the different groupings based on answers with one category being “only few cases”, not a research question with only few cases that needs more evidence]
563. “<the changes in respiration noted herein are in stark contrast with the only other published reports measuring respiration during ecd exposure>.” [need more evidence/published reports about changes in respiration since there are not many of them and a conflict between them]
564. “<the paucity of genomic information for h. zea is limiting with respect to quantitative expression analysis using microarrays>, since authentic genome sequences are required, which cannot be reliably substituted, even by those of closely-related species[19].” [need more evidence about the genomic information for h. zea since there is only a few studies]
565. “although considered to be with a potential to recur after excision, <the actual recurrence rate is not known due to paucity of literature>.” [need more evidence/literature about the recurrence rate since there are only a small number in the literature so far]
566. “however, as available snp datasets were obtained by genotyping previously discovered variants, an ascertainment bias for enrichment of high-frequency polymorphisms and paucity of low-frequency variants arises, biasing the performance of these tests (nielsen et al .” [a statement that a small number of low-frequency variants arise due to bias, not a research question about the small number that needs more evidence]
567. “our findings with regard to the resource-constrained work environment and difficult teamwork relationships are in line with the barriers (paucity of resources, discrimination of midwives by physicians, and lack of teamwork in the health facilities), challenging the success of an innovative midwifery education program in afghanistan in terms of strengthening the midwives competencies, providing quality health care and averting maternal deaths.” [a statement of findings that aligns with known barriers, including a small amount of resources, not a research question that needs more evidence due to its small amount of information]
568. “<eczematous dermatitis associated with becker's nevus is quite rare> and described in only one case report.” [need more evidence about the association since it is a rare occurence]
569. “for example, the duffy region shows a skew towards rare variants in african populations, indicating a possibility of positive selection, but the tajima's d values have not been significant (hamblin et al .” [a statement about results for rare variants, not a rare occurrence that needs more evidence]
570. “being a rare lesion itself, <the literature mostly consists of case reports[310–13] of rarer forms or presentations of the same lesion> which consist of diffuse, multifocal type[11] and diffuse associated with ocular, skin lesions.” [the literature has many rare forms of the lesions, but more evidence is needed to combine information to understand the lesion in general]
571. “for example, in 1869 the physician to charing cross hospital describes lung cancer as ‘… one of the rarer forms of a rare disease.” [a quote from physicians in 1869 saying that lung cancer was quite rare, not a research topic that needs more evidence because it is rare]
572. “<serum levels of mufa are rarely measured in large studies>, but a recent meta-analysis of 3 prospective studies demonstrated adverse cardiovascular risk association for greater mufa, and the mufa to be as strong biomarker as ldl-c.” [need more evidence about serum levels since measuring them is quite rare]
573. “the size of the labeled endosomes increases as they advance toward the center of the cell, but rarely exceeds 2 µm in diameter.” [a description of endosomes that generally do not exceed a specific diameter, not a research question that needs more evidence due to it being quite rare]
574. “<this species is widespread around southeast asia, but has received little study>[11].” [the species needs more attention/evidence since it is so widespread]
575. “although <variation among asian strain chikv infection of a. aegypti has received little study>, no evidence has been produced to support adaptive evolution in asia since the 1950s.” [need more evidence about variation among Asian strain chiky infection]
576. “<the differential molecular mechanisms for these signaling differences between endothelial cells and proximal tubules cells remain to be elucidated>.” [need more evidence about the differential molecular mechanisms to understand the differences]
577. “this change eliminates the receptor in erythrocytes only, while other cells carrying it remain unaffected (hadley & peiper 1997).” [a statement of cells that are unaffected while others are affected, not a research question that remains and needs more evidence]
578. “2008), <it remains to be seen whether such recent selection signatures can be found in other admixed populations>.” [more evidence is needed to determine if the selection signatures can be found in other admixed populations]
579. “publisher's note: springer nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.” [a disclosure statement by the publisher that they are neutral to the jurisdictional claims, not a research question that remains]
580. “however, <understanding of the interactions between baculoviruses and host cells in culture remains limited>, mainly due to a lack of insect genomic sequences.” [need more evidence to understand the interactions]
581. “<reports regarding the incidence of iht-related patient safety events and human failures remain limited>.” [need more reports/evidence to understand the incidence]
582. “<treatment options remain limited>[74], despite the emergence of therapeutic gene replacement[65,66,75–80].” [need more evidence for more treatment options]
583. “the advantage of a flexible intervention is that it can be tailored to the actual needs of the participants and, in case there are no problems or questions, the number of consultations remains limited, which will positively affect the cost-effectiveness.” [the method explained has the advantage that the number of consultations can be few/limited, not a research question that is limited by not enough evidence]
584. “for this main reason and also for cost issues, the adamts13-related assays are not accessible to any laboratory and remain limited to specialized expert laboratories.” [there are not enough assays for labs, not a research question that remains limited due to evidence]
585. “however, <transcriptomic and genomic data for jerusalem artichoke remain scarce>.” [need more data on the Jerusalem artichoke since there is not much of it]
586. “remarkably, blast analysis shows that the chromosomal arm xr is overpopulated with the same dna satellite as the chromosomal arm xl, whereas the autosomal homologs in the other species remain scarce of satellites (table 1).” [a table description that points out that in other species the satellites are few in number, not a research question that scarce evidence exists and more is needed]
587. “<neurologic injury remains a common occurrence after lumbar fusion surgery whether by tlif,9plif,10or llif.11>” [need to determine how to reduce neurologic injury with more information]
588. “similarly, <acute shortage of feeds during the dry season remains a common occurrence>, compelling these animals to graze around water bodies that often contain large number of potential intermediate hosts of trematodes [8].” [need to figure out how to stop acute shortages of feed during the dry seasons]
589. “statins are of proven benefit in patients with coronary heart disease [146]; however, <their usefulness in the setting of left ventricular dysfunction that remains under investigation>.” [need more evidence/investigation to determine the usefulness for left ventricular dysfunction]
590. “<the mechanism of mn-induced α-syn toxicity remains under investigation>.” [need more evidence/investigations to understand the mechanism]
591. “a case–control study revealed food-linked exposures and the outbreak remains under investigation at the time of writing, demonstrating the difficulties in food chain investigations.” [a statement of methodologies where at the time of writing the outbreak was under investigation, not a research question though that needs more investigation or evidence]
592. “while it is known that nucleic acids can form numerous non-canonical conformations [7], <the influence of these conformations in living cells remains under-studied>.” [need more investigations/evidence into the influence of the conformations in living cells]
593. “sunken wood is particularly important in the tropical pacific[15], but <it is also difficult to locate, variable in composition and remains under-studied>[16].” [need more studies/evidence about sunken wood since there are not many studies on it currently]
594. “[7,8]however, <only scant evidence has shown the effect of buerger exercise on peripheral circulation improvement or the healing of dfu>.” [need more evidence to supplement the small amount of evidence that shows an effect of the exercise on circulation improvement or healing improvement of dfu]
595. “while it was proposed that tyrosine hydroxylase (th+) axons form synapse-like structures with chat+t-cells, <there is scant evidence to support or refute this phenomenon>.” [need more evidence to either support or refute the phenomenon]
596. “<due to scant evidence in the current literature>, further research on implementation and effectiveness of ccdss is required.” [need more evidence in the current literature to determine implementation and effectiveness of ccdss]
597. “the incidence of lingual metastasis from rcc is almost unknown, as only 21 cases have been reported in the literature (table1), excluding our own.3,6,12–24<from these scanty reports spread over nearly a century>, we can still extract some information; mean patient age is 60 years and 85% of cases also present metastasis to other districts, the most common site being the lung, which was involved in 16 of 22 cases, including our own.” [need more reports/evidence to augment the current few reports]
598. “though there are a few case reports of maintenance of anaesthesia with isoflurane and sevoflurane, <there are scanty reports of use of desflurane in these patients>.” [need more evidence/reports to use desflurane in patients to augment the current few reports]
599. “<given scarce information existing on the biodynamic of leptin during smoking cessation and the plausibility of leptin as a good candidate to explain weight gain following smoking cessation>, we attempted to describe the biodynamics of serum leptin levels during smoking cessation.” [need more information/evidence about leptin with regard to smoking cessation]
600. “as slowly evolving characters, <intron positions provide useful and otherwise scarce information>.” [stating how much information intron positions provide and that more evidence is needed from elsewhere also]
601. “in contrast to acidic habitats, <there is scarce information on the ecology of microbes oxidizing ferrous iron at circumneutral ph>.” [need more information/evidence on the ecology of microbes]
602. “most mathematical models in systems biology face three troubles: highly nonlinear models, a large number of parameters for approximation, and the scarce information content of the available experimental data.” [an account of the three major troubles with mathematical models in systems biology, including scarce information content of the experimental data, not a research question that has scarce information so far and needs more]
603. “proper and appropriate cf among children can be hampered due to various reasons such as poverty, urban-rural differential, gender discrimination, lack of parental education and health literacy, lack of women participation in household decision making processes, high vulnerability due to environmental condition and scarce information in academic syllabus [26,41–48].” [there is not enough information in academic syllabi, but this is not a research question that needs more evidence due to a lack of information]
604. “in addition, <many challenges still remain for engineering photosynthetic microorganisms> [1,6].” [need more evidence to help with the challenges of engineering photsynthetic microorganisms]
605. “while the brief review indicates some understanding of epidemiological and immunological risk factors of bl (figure 2), <our understanding of the genetic basis of bl still remains rudimentary>.” [need more evidence to understand the genetic basis of bl, since it is at a basic level of understanding right now]
606. “we previously show that16the displacement energy is much higher (more than 60 ev) for the carbon atoms to be knocked towards the sio2substrate, while it still remains around 25 ev for being knocked out into the vacuum.” [the displacement energy remained around 25ev, not a research question that still remains and needs more evidence]
607. “therefore, many studies have been recently designed to examine the efficacy of probiotics, but <the literature on the allergic skin disorders is still very scarce>.” [need more evidence/literature on allergic skin disorders]
608. “however, a few interventions have been reported that target children or adolescents [24,25], but the number of web-based interventions aimed at children of substance abusing parents are still very scarce [15,26].” [need more interventions to help children of substance abusing parents, but not a research questions that has scarce evidence and needs more]
609. “however, <subsequent studies reveal effects of early experience on multiple components of the hpa axis>, and in each case there is evidence for stable epigenetic programming.” [new information from the subsequent studies that need more evidence to confirm]
610. “these data are now available for use in subsequent studies of population-level relationships and provide a baseline for monitoring changes in breed diversity.” [subsequent studies can use the data, but not a research question that needs subsequent studies/more evidence]
611. “this study points to <the need for developing a greater in-depth understanding of the role of alcohol in accentuating the hiv risk among migrant populations with greater mobility>.” [need more evidence to develop an in-depth understanding]
612. “the variability of these results suggests the presence of unknown sources of variation in attraction of platy gastrid wasps by hipvs, but is nevertheless promising, and underscores <the need for further research>.” [need more evidence/further research]
613. “compared with the conventional group, there was a 25% risk reduction (7-40, p = 0.0099) in the intensive group in microvascular endpoints, including the need for retinal photocoagulation.” [a group comparison where one group had the need for retinal photocoagulation, not a research questions that has the need for more evidence]
614. “the participants put emphasis on the need for the presence of nephrologist in hemodialysis ward so that they provide patients with the necessary visits and advices.” [the participants emphasized their need for nephrologists, not a research question that has the need for more evidence]
615. “more well-designed and large-scale investigations are warranted <to understand better the value of the nlr in the prognosis of dtc>.” [need more evidence/investigations to understand the value of the nlr better]
616. “this would allow us <to understand better how qtls from diverse backgrounds interact> [63].” [need more evidence to better understand how gtls from diverse backgrounds interact]
617. “a key issue for further research is <to understand better how the ndvi and the derived indexes irg and cirg relate to both plant quality and quantity when compared across habitats>.” [need more evidence to better understand the relationship]
618. “i was not expecting to learn a lot of things in depth, which is normal.’ adding ‘but my two objectives were an a-z learning/understanding and to understand better my day to day work, my day to day practice at the organisation of clinical trials where i work .’” [a quote where someone wanted to understand better their day at work, not a research question that needs a better understanding]
619. “each week, home visitors relayed messages and feedback from the population, helping msf to understand better their needs and concerns.” [msf needed to better understand the population needs and concerns, not a research question that needs more evidence to better understand]
620. “also, the data points in our data represent months and quarter years, not days, <making the data too crude to investigate this properly>.” [need more data/evidence, since the data is currently too elementary for the analysis]
621. “our recent study indicates that while our initial one-cluster model per pathway provides an informative approximation, <it is too crude>.” [need more evidence/studies to determine the model, since now it is too elementary]
622. “third, in the absence of validated cut-offs, <the cut-offs used in the logistic regression analyses might have been too crude> and too arbitrary [16].” [the cutoffs are elementary, need more evidence to determine less-arbitrary cut-offs]
623. “finally, we note that the choice of total count, k , can matter: if the selected k is too small, then the expectation may be farther from log r since the large sample approximation is too crude; if the selected k is too large then the number of background bins may be too few.” [an explanation about the choice of k – based on how crude the large sample approximation is, not a research question that needs more evidence because it is elementary]
624. “<agenesis of the paranasal sinuses is an uncommon clinical condition> that appears mainly in the frontal (12%) and maxillary (5-6%) sinuses; in some populations, it appears at a higher proportion.” [agenesis is a rare clinical condition and thus needs more evidence to understand it]
625. “while the victorians did not possess sophisticated diagnostic or screening technology, they were as able to diagnose late stage cancer as we are today; but <this was an uncommon finding>.” [need more evidence to understand why cancer was an uncommon finding for the victorians]
626. “it is not uncommon to acquire at least 40 averages to improve snr.” [double negation turns this to it is common to acquire…, not a research question that needs more evidence since it is common]
627. “<the condition is uncommonly reported in dogs> and, to date, no genetic studies have been performed.” [need more evidence about the condition specifically in dogs since it is uncommon]
628. “pigmented villonodular synovitis (pvns) is a benign proliferative joint disease with an uncertain etiology that <uncommonly involves the spine>.” [need more evidence about how the spine is involved since it is uncommon]
629. “laboratory diagnostics for respiratory viruses other than influenza and rsv were uncommonly available.” [the tests were generally not available, not a research question that needs more evidence because it is uncommon]
630. “studies from this area and among displaced populations are scarce; therefore, <these data offer rare insights into an under-studied population>.” [need more evidence/studies on these under-studied populations]
631. “an important yet often poorly appreciated and <under-studied aspect of validation> concerns the practical issues surrounding development, implementation, and interpretation of scores.” [need more evidence/studies on validation]
632. “<how to best disseminate public health interventions within communities is an important but under-studied question>.” [need more evidence/studies to answer the question of how to best disseminate public health inerventions]
633. “running the risk of leaving important knowledge hidden in the data, especially when the topic being researched is under-studied, incorporation of both types of analysis will minimise the limitations and maximise the advantages of each approach.” [a statement about the methodology of analyzing data to make sure that all is incorporated, especially if an under-studied research topic, not a specific research topic that is under-studied though]
634. “in another report, endometrial and sub-endometrial perfusion was impaired in <women with unexplained subfertility> (raine-fenning et al.2004b).” [need more evidence/data on women with unexplained subfertility to better explain the phenomenon]
635. “however, <the molecular mechanisms that regulate glucagon secretion in unaffected and diabetic states remain relatively unexplained>.” [need more evidence to fully explain the molecular mechanisms]
636. “patients with these symptoms are disabled and generate major costs to health and social services, with uk estimates for annual costs associated with working-age patients with ‘medically unexplained symptoms’ of around £18 billion (bermingham et al ., 2010), slightly more than the cost associated with dementia for patients of all ages in the uk (knapp et al ., 2007).” [a statement about the cost of patients with ‘medically unexplained symptoms’, not a research questions that needs more evidence to find an explanation]
637. “who stagingwho clinical stage 1 1. asymptomatic 2. persistent generalized lymphadenopathywho clinical stage 2 1. moderate unexplained weight loss (<10% of presumed or measured body weight).” [the who groupings that include ‘moderate unexplained weight loss’, not a research questions that needs more evidence to find an explanation]
638. “together with <the unproven efficacy of anti-lingo-1 antibody and clemastine>, this highlights the need for development of novel strategies to promote remyelination in ms.” [need more evidence/prove the efficacy of the antibody and clemastine for ms]
639. “clinicians involved in management of these high-risk pregnancies regrettably have had to rely on <protocols based on expert opinion with unproven efficacy>.” [need more evidence/prove the efficacy of the protocols]
640. “[789] here, we report an <unusual case of abrasion of the anterior teeth> due to the constant use of a whistle that was placed between the teeth.” [a curious case that needs more evidence to better understand]
641. “the assumption that rhvi1 has two transmembrane regions, one of which is cleaved and is a signal peptide, indicates <the unusual association of this invertase with the vacuolar membrane>, and also the fact that the whole protein, through the c-terminal side, would be exposed to the cytosolic face (fig.” [a curious association that needs more evidence to better understand]
642. “movies were analyzed offline, frame by frame, and any rbcs that were unusually shaped, overlapped, or clustered were excluded from measurement.” [exclusion criteria based on the unusual shape of the rbcs, not a research topic that is curious and needs more evidence to better understand]
643. “EXAMPLE” [EXAMPLE]
644. “EXAMPLE” [EXAMPLE]
645. **EXAMPLE**

“EXAMPLE” [EXAMPLE]

“EXAMPLE” [EXAMPLE]

**Links/Understanding**

POSSIBLE UNDERSTANDING = a statement of a feasible explanation, relationship, or phenomenon; no claim to the correct explanation, relationship or phenomenon. The next actionable step is to determine the most feasible or correct explanation, relationship, or phenomenon either mentioned or not.

* 1. **CANDIDATE**

“<laca is a promising candidate> for applications in mg removal as well as bioremediation of food and aquaculture wastewater.” [laca is a possible/viable option, the question is whether it will work or not]

“they have initially identified <761 candidate genes> from 1,851 patients' tumor samples in nsabp c-01/c-02/c-04/c-06 and cleveland clinic study.” [many candidate genes that need to be tested and understood better to determine the most likely informative gene]

“finally, <epoxide hydrolase 2 ( ephx2 ) emerged as a candidate> for anr associated with increased depression and anxiety in a high-throughput sequencing study (scott-van zeeland et al., 2014).” [ephx2 is a candidate and needs to be further explored to determine if it is truly associated with depression and anxiety]

“in addition, no association signals of earlier linkage and candidate gene association studies coincide with any of the loci identified in the gwas and the meta-study.” [candidate is a part of the methodology name for ‘candidate gene association studies’]

* 1. **COULD/ COULD BE/ COULD… AND/OR**

“<these changes could provide a selective advantage for maintaining duplicate genes through the origin of novel protein-protein interactions> (effectively reducing degeneracy between paralogs) leading to new gene functions.” [it is possible that the changes provide a selective advantage or not, need to determine if they do or not]

“nearly all 'cluster-specific' residues map onto the molecular surface of the homeodomain, similar to the paralog group specific sites [33], suggesting <changes in amino acid properties could influence interaction of the homeodomain with other proteins>.” [it is possible that these changes influence the interactions, need to determine if they do or not]

“so that we could re-start his heparin safely it was decided that he needed definitive treatment of his epistaxis.” [an explanation of how to re-start a patient on heparin safely, no need to determine the most feasible explanation for a research question]

“<these derived interactions could be those responsible for novel hox gene functions in vertebrates>.” [it is possible that these derived interactions are responsible; need to determine if they are responsible or not]

“however, given diffraction data of sufficient resolution, <the single-heavy-atom sites could be determined for lysozyme–tab and for stya1–tab in consecutive residual/llg-map completion steps>.” [a possible method to determine the single-heavy-atom sites; need to determine if the method works or not]

“at that time, only area 45 could be identified in this species, inside the inferior arcuate sulcus, between subareas 6v and 8ar (preuss and goldman-rakic,1991a).” [only area 45 was identified due to some constraints, no need to determine the most feasible possibility to answer a research question]

“the author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.” [the author declares no conflict of interest, no need to determine the most feasible possibility to answer a research question]

“this analysis first aimed to increase the power of qtl mapping, as there was a possibility that <we could identify additional and/or novel qtl> and that the 95% ci for qtl could be narrowed by increasing the sample size.” [this analysis may find additional and/or novel gtl, need to determine if in fact these are identified or not]

“in rainfed areas or areas of inadequate irrigation, <transplanting rice could completely fail or delay in years with less and/or delayed rainfall>.” [transplanting rice may possibly fail or delay in years where this depends on the delayed rainfall, need to determine if it is in fact delayed]

“however, there remains a fairly substantial proportion (35.6%) of participants in our study who could not read and/or did not have access to a mobile phone in this setting, suggesting that additional means of supporting adherence among such individuals is needed.” [participants were not able to read and/or have access to phones, no need to determine the most feasible option for a research question/answer]

“EXAMPLE” [EXAMPLE]

* 1. **IT IS POSSIBLE/ POSSIBILITIES/ POSSIBLITY/ POSSIBLE UNDERSTANDING/ POSSIBLE/ POSSIBLY/ THIS POSSIBILITIY**
  2. “since the diagnosis is established with the help of sophisticated image exams, and the fact that some abscess heal with just antibiotic therapy, <it is possible that the real frequency of the pa is greater than the estimated>.” [the real frequency of pa may be higher than estimated, the goal is to determine if this is true or not and possibly change the estimation technique]
  3. “it is possible to distinguish between these models by comparing nonsynonymous ( dn) to synonymous ( ds) substitution rate ( dn/ ds= ω) with ω = 1, <1, and >1 indicating neutral evolution, purifying selection and directional selection.” [a statement that an action is possible with an associated methodology, no goal to determine if the methodology works or not]
  4. “<these two approaches have largely been considered alternative possibilities>, and there has been little cross-talk between authors supporting each view; in addition some misunderstanding of each other’s work has increased the difficulty of reaching some agreement or common view.” [multiple possible approaches, where the most feasible one needs to be determined]
  5. “even though the immune system may be playing a capital role in shaping the diversity of arthropod microbiomes, <there are additional possibilities> that we will discuss here.” [multiple possibilities that need to be explored to determine the most feasible explanation of the diversity of arthropod microbiomes]
  6. “harnessing it by study of its passage through organic matter may offer new possibilities for medical diagnosis technique.” [a methodology to discover new possible medical diagnosis techniques, not about the possible medical diagnosis techniques themselves that will need to determine the most feasible technique]
  7. “along this line, a vocalization mirror neuron system has been proposed to exist in songbirds, but <this possibility and the relation of this putative circuit with a grasping mirror system have yet to be proved> (bonini and ferrari,2011).” [the possibility is not yet proven yet and the most feasible explanation/phenomenon needs to be determined]
  8. “in both studies, we also applied non-painful heat intensities to investigate whether smiles indeed occur more often during painful stimulation and to exclude <the possibility that smiles during pain are only an experimental artifact>.” [the goal is to determine the most feasible explanation by aiming to exclude the explanation that smiles during pain are only an experimental artifact]
  9. “he was transferred to our nephrology department because he was anuric, and the possibility of hus was under consideration.” [the goal is to diagnose a patient who possibly has hus, not a research goal though where the most feasible explanation needs to be determined to further science]
  10. “if the parents in either of the two situations place themselves extremely positively along the x-axis or extremely negatively along the y-axis, the researcher should review the trial information sheet with them in order to give them <the best possible understanding of the trial>.” [the goal is to find the best/ most feasible explanation of the trial]
  11. “this feature represents a possible association with a new base to understand the allostery, a phenomenon related in the first case to describe the dynamic modularity of proteins, and subsequently in <the possible understanding of cellular dynamics>” [the goal is to determine the most feasible understanding of cellular dynamics]
  12. “while sec can provide information on <possible interactions between molecules>, poor analyte resolution causes the technique to be unsuitable for small molecule speciation.” [need to determine the most feasible interactions between molecules]
  13. “these findings support <a possible formation of as2se3in the soil environment> after simultaneous supplementation of selenium and arsenic.” [need to determine the most feasible formation of as2se3 in the soil environment]
  14. “his hemoglobin dropped from 13.5 to 8 g/dl and in view of further possible life threatening epistaxis the decision was made to discontinue his heparin.” [a patient with possible life threatening epistaxis, not a research question that needs the most feasible explanation determined]
  15. “<as is possibly the case in songbirds>, it is likely that mirror neurons were included in the nascent phonological loop of early humans, an auditory–vocal sensorimotor pathway with sufficient plasticity and memory capacity to learn complex vocal utterances by imitation.” [need to determine the most feasible case in songbirds]
  16. “inferior parietal areas send projections to the ventral premotor areas and <possibly to area 44 of the monkey>.” [need to determine if the inferior parietal areas send projections to area 44 of the monkey or not]
  17. “eventually, 14 months after the omentoplasty, a stage iiib non-small cell lung carcinoma was detected in this patient, which could possibly also have affected the complicated post-operative course for this patient.” [a specific patient possibility as a case study, not a research question that needs the most feasible explanation determined]
  18. “<this possibility, as well as the rational design of mirna-based rnai therapies, will depend on the further elucidation of non-seed factors contributing to mirna knockdown efficacy>.” [need to determine the most feasible understanding and design of mirna-based rnai therapies based on the further elucidation of non-seed factors…]
  19. “<this possibility cannot be excluded and is an important issue when interpreting the evidence>.” [need to take the possibility into consideration to determine the most feasible understanding of the evidence]
  20. “<further studies>, focusing on fgfr3 g697c in epithelial cells rather than on comparative analysis shown here, <would be needed to confirm this possibility>.” [need more studies to determine the most feasible understanding/confirm the possibility mentioned]
  21. “researchers should be aware of this possibility when screening et patients using spirals.” [researchers need to be careful to look for a specific phenomenon when screening patients, but not a specific research question that needs the most feasible explanation determined]
  22. “EXAMPLE” [EXAMPLE]
  23. **MAY/ MAY BE/ MAYBE/ MIGHT**
  24. “thus, <short sequences with a high degree of amino acid conservation but substantial synonymous site divergence may not contain enough signal to reliably obtain estimates of dnand ds>.” [need a more feasible option to reliably obtain estimates of dnand ds since the current short sequences possibly don’t have enough signal]
  25. “overall, <selenium and arsenic antagonism may occur by several pathways>.” [need to determine the most feasible pathways for selenium and arsenic antagonism]
  26. “our case adds to the literature the fact that psoitis can mimic appendicitis symptoms, and may cause confusion during the diagnosis and treatment.” [a statement that a specific fact about confusing symptoms can lead to confusion during diagnosis and treatment, not a specific research question that needs the most feasible explanation determined]
  27. “n. varied from 2.5 ±2.5 individuals per m2, in may 2005, to a maximum of 587.5 ±110.8 individuals per m2recorded in july 2008 (fig.3).” [may like the month, not a research question that needs the most feasible explanation determined]
  28. “however, <this modulation may be what is needed to have a better learning capacity>, as children with a stronger verbal working memory end up with a larger vocabulary some years later (baddeley,2003).” [need to determine the most feasible phenomenon that provides a better learning capacity]
  29. “finally, some words on studies of vocal learning in songbirds may be worth mentioning here.” [a judgement by the authors that mentioning studies of songbirds is worthwhile to the readers, not a specific research question that needs the most feasible explanation determined]
  30. “p38 would not be seen as driving apoptosis in this context; <maybe it acts to support nuclear functions of er> [152].” [need to determine the most feasible actions of p38 including if p38 acts to support nuclear functions of er or not]
  31. “EXAMPLE” [EXAMPLE]
  32. “for various reasons, the project did not go very well, so, although these years were very formative for me, maybe they were less good in terms of having scientific success.” [first person narrative about their project – perhaps an issue with scientific success, not a specific research question that needs the most feasible explanation determined]
  33. “thus, the arcuate fasciculus is possibly an element involved in auditory–vocal coordination and articulatory control, and <might be involved in working memory processes> by maintaining the functional connectivity between sensory and motor regions while holding items online.” [need to determine the most feasible role of the arcuate fasciculus, including if its involved in working memory processes]
  34. “although <rankl upregulation in osteocytes in the unloaded condition might increase bone resorption> by reducing opg release from osteocytes to the bone surface, the upregulation of rankl in osteocytes by unloading is inconsistently observed (xiong et al.2011; moriishi et al.2012).” [need to determine the role of rankl upregulation in osteocytes in the unloaded condition, including if it increases bone resorption or not]
  35. “to investigate this, basolateral supernatants from a2en cells exposed to 1000 tcid50cell-free hivbalwere incubated with uninfected ccr5+ mt4-r5 cells to amplify any viable virus that might have been in the basolateral supernatants.” [a statement of methodology to detect any viable virus that could be in the basolateral supernatants, not a specific research question that needs the most feasible explanation determined]
  36. “EXAMPLE” [EXAMPLE]
  37. **PERHAPS**
  38. “an important component of working memory capacity depends on the close integration between sensory and motor systems, in which audio–vocal mirror neurons may participate, as is <perhaps the case in song-learning birds> (bolhuis et al.,2010; bonini and ferrari,2011).” [need to determine the most feasible phenomenon in song-learning birds and if it is the same as the current case or not]
  39. “this hints at the role of <perhaps other members of the sp family of transcription factors or other transcription factors at the hpv lcr region>.” [need to determine the most feasible role of other members of the sp family]
  40. “perhaps the most important observation of this study is the discovery of collagen with reduced thickness and packaging in proximity of ectopic blood vessels.” [the authors staking a claim about the most important observation in the study, not a specific research question that needs the most feasible explanation determined]
  41. “this is perhaps not surprising, as lge hyperenhancement occurs at the infarction site when the gadolinium contrast agent passively diffuses into and becomes trapped in the intracellular space after the loss of myocyte membrane integrity following necrosis [46].” [the authors staking a claim that a result does not seem surprising, not a specific research question that needs the most feasible explanation determined]
  42. “EXAMPLE” [EXAMPLE]
  43. “EXAMPLE” [EXAMPLE]
  44. **PLAUSIBILITY/ PLAUSIBLE/ PLAUSIBLY/**
  45. “in this framework, we provide strong evidence for <the plausibility of decoding through spike coincidences (up to a few hundred ms)>, compared to a neural integrator decoder.” [need to determine the most feasible method that decodes through spike coincidences]
  46. “these observations lend further <biological plausibility to the association between mdm2 snp309 and the development of endometrial cancer>, a highly estrogen-dependent neoplasm.” [need to determine the most feasible explanation for the association between mdm2 and snp309…]
  47. “we used multivariate logistic regression to determine the independent association between predictors and sub-optimal b-12 deemed appropriate based on prior published work and biologic plausibility.” [a justification of a model choice based on prior biological possibility, not a specific research question around the biologic plausibility that needs the most feasible explanation determined]
  48. “briefly, anonymized patient data are centralized at the amis plus data center where they are checked for plausibility and consistency and cross-checked when queries arise.” [data checks to make sure the patient data is anonymized, not a specific research question that needs the most feasible explanation determined]
  49. “sp1 is known to be involved in the regulation of tert in collaboration with c-myc by binding to the gc boxes on the tert promoter [27] ( fig 2a,s5a fig ), thus making <both sp1 and c-myc plausible candidates for tip60 mediated repression>.” [need to determine the most feasible candidate for tip60 mediated repression, including both sp1 and c-myc]
  50. “<it is plausible that the absence of the inhibitory pilin domain from the runs with the low affinity state unlocked the swing segment from its lifted position> [fig.7(b)], which in turn facilitated an increased mobility of the large β sheet [fig.8(a)].” [need to determine the most feasible phenomenon that unlocked the swing segment from its lifted position, including the absence of the inhibitory pilin domain]
  51. “specifically, we speculate that alt [36] may explain the elongated telomeres observed in more aggressive tumors in our study, especially for subjects whose rtl ratio >1, as it is not biologically plausible for telomerase to result in such substantial elongation of telomeres [37], whereas alt cells demonstrate highly heterogeneous telomere length, some of which are extremely long [38].” [a statement of something that is biologically not possible to occur, not a specific research question that needs the most feasible explanation determined]
  52. “the rationale is that ‘the more tests agree on an outcome, e.g., selection, the more plausible this outcome is’.” [a quote that explains general rationale/methodology, not a specific research question that needs the most feasible explanation determined]
  53. “comparative genetics analysis for a sample of putative candidate genes revealed <ortholoci of three rice genes that may plausibly be causally related to qtls for correlated functions>.” [need to determine the most feasible causal relationship to gtls for correlated functions, including the ortholoci of three rice genes]
  54. “thus, if an observer were to focus attention preferentially on one location, we might expect σ s to decrease there while <plausibly increasing at unattended locations>.” [need to determine the most feasible phenomenon at other unattended locations and if they increase]
  55. “participants were instructed to imagine themselves in a pleasant scenario of their own choosing with the constraint that it had to be based in reality (i.e., something that had already happened or might plausibly happen in the future).” [instructions to participants to think about things that have already happened or possibly could happen in the future, not a specific research question that needs the most feasible explanation determined]
  56. “figure1summarises the main ways in which water or sanitation or hygiene can plausibly lead to ill health, distress, harmful behaviours or other adverse outcomes, grouped in two main dimensions: (i) ‘in water’ – microorganisms or chemicals in water and (ii) ‘behaviour’ – actions or cultural aspects related to wash, including aspects relating to the location of the water point or sanitation facility.” [a list of possible ways water/sanitation/hygiene can lead to ill health/distress/harmful behaviours/other adverse outcomes, not a specific research question that needs the most feasible way determined]
  57. “EXAMPLE” [EXAMPLE]
  58. **POTENTIAL/ POTENTIALLY**
  59. “this study probes <the potential effects of single and simultaneous addition of selenium and arsenic within c. comosum plants>.” [need to determine the most feasible effects of single and simultaneous addition of selenium and arsenic within c. comosum plants]
  60. “bone-specific gja1 conditional knockout mice, in which intercellular communication through gap junctions is disrupted, represent <a potential mouse model> for evaluating whether the osteocyte network acts as the mechanosensing apparatus.” [need to determine the most feasible mouse model to evaluate whether the osteocyte network acts as the…]
  61. “<potential mechanisms by which ct-infected epithelial cells and their secreted immune mediators could facilitate early hiv transmission events> include, but are not limited to: i) disruption of the single columnar endocervical epithelial barrier, facilitating paracellular hiv migration and access to underlying susceptible target cells; ii) enhancement of transcellular hiv migration, also facilitating viral access to underlying susceptible leukocytes; iii) initiation or maintenance of the characteristic influx of activated, ccr5+cd4+ t lymphocytes, the major hiv target cells, observed in the endocervix of ct-infected patients [30,31], and iv) enhancement of hiv replication in target cells at the site.” [need to determine the most feasible mechanism by which ct-infected epithelial cells and their secreted immune mediators could facilitate early hiv transmission events occurs]
  62. “in order to acquire the necessary anions for biological processes, mmols of oh–can be released from the plant roots creating a potential difference between the root–soil interface, which allows for the absorption of anions such asno3−, cl–,so42−andh2po4−, to maintain the charge balance.” [an electric potential difference, not a specific research question that needs the most feasible explanation determined]
  63. “the author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.” [the author declaring no conflicts of interests, not a specific research question that needs the most feasible explanation determined]
  64. “embolization was a treatment option for the spa although not for the anterior ethmoidal artery as this is part of the internal carotid artery system and therefore poses a significant risk of causing a cva or embolus in the ophthalmic artery with potential visual loss.” [a description of a treatment and its potential side effects that include visual loss, not a research question that needs the most feasible explanation determined]
  65. “our studies provide a mechanism by which <this common sti could potentially promote the establishment of founder virus populations and the maintenance of local hiv reservoirs in the endocervix>.” [need to determine the most feasible explanation for the establishment of founder virus populations and the maintenance of local hiv reservoirs in the endocervix, including this common sti]
  66. “the early gradual change of the gaba response from <potentially excitatory to inhibitory> may influence central nervous system development41.” [need to determine the most feasible explanation of the early gradual change of the gaba response, including from excitatory to inhibitory]
  67. “however, it might be that simply knowing that somebody else is in the room, and therefore knowing that visual communication is potentially possible, have a very similar effect to being directly observed.” [the participants potentially know that visual communication is possible, not a research question that needs the most feasible explanation determined]
  68. “additionally, 14 potentially relevant titles and abstracts were identified in the cbrg trial register for injection-related interventions and screened for potential inclusion.” [possible relevant titles and abstracts were identified and screened for inclusion, not a research question that needs the most feasible explanation determined]
  69. “EXAMPLE” [EXAMPLE]
  70. **PROSPECT**
  71. “part of this development was spurred by <the prospect of soft-landing a diffractometer on the moon>.” [need to determine the most feasible way to have a soft-landing of a diffractometer on the moon]
  72. “in a 1-day observational study in 14 belgian hospitals, it was found that 9.4 % of all patients admitted to the hospital are in the palliative phase, which was defined as the phase where a patient is suffering from an incurable, progressive, life-threatening disease, without a prospect of remission, stabilization or improvement [23].” [the definition of the ‘palliative phase’ in the study which includes no hope for remission]
  73. “EXAMPLE” [EXAMPLE]
  74. **VIABLE**
  75. “given its rich vascularisation and angiogenic and immunogenic features, the greater omentum seems an ideal and outmost <viable solution for the repair of infected sternotomy wounds> [12].” [need to determine the most feasible solution for the repair of infected sternotomy wounds]
  76. “in summary, we successfully showed the continuous and scalable nanodroplet-based microfluidic route as <a viable platform for the synthesis of mofs and their functionalized analogs>.” [need to determine the most feasible platform for the synthesis of mofs and their functionalized analogs]
  77. “viable virus was detected at both time points, confirming that migrated virus was infectious.” [the virus was sustained in the specimen, not a research question that needs the most feasible explanation determined]
  78. “then the supernatant was removed, and the mtt-formazan crystals formed by metabolically viable cells were dissolved in 200 μl of dimethyl sulfoxide (dmso).” [a statement of methodology about metabolically stable cells, not a research question that needs the most feasible explanation determined]
  79. **EXAMPLE**
  80. “EXAMPLE” [EXAMPLE]
  81. “EXAMPLE” [EXAMPLE]
  82. “EXAMPLE” [EXAMPLE]
  83. “EXAMPLE” [EXAMPLE]

PROBABLE UNDERSTANDING = a statement staking a claim to the most likely explanation, relationship, or phenomenon; there is a good chance this understanding is correct. The next actionable step is to determine if the most likely option is correct of if it’s another option.

1. **AT LEAST**
2. “uptake in nontarget organs such as lung, spleen and intestine was also reduced in the presence of an excess of unlabelled rgd peptide, indicating that <the uptake in these tissues was at least partly αvβ3mediated>.” [staking a claim that at the bare minimum the uptake in these tissues was partly αvβ3mediated, need to determine if this is correct]
3. “since only 45% of mice challenged with the aerosol dose of 1.00e+03 cfu had a bacterial tissue burden, it was concluded that <a much higher dose should be used in the subsequent pathophysiology study to infect at least 95% of the challenged animals>.” [staking a claim that at the bare minimum future studies need to infect 95% of the challenged animals based on using a much higher dose, need to determine if this is correct]
4. “taken together, our results indicate that <rec or np9 mrna originated from at least 18 different hml-2 loci in various normal human tissue types>.” [staking a claim that at the bare minimum there are 18 different hml-2 loci, need to determine if this is correct or if there are more]
5. “eligibility for at-risk patients was similar to the criteria for entry into prap, i.e., any man between ages 35-69 years with at least one first degree relative or at least two second degree relatives on the same side of the family with the diagnosis of prostate cancer; african americans with or without a first degree relative with prostate cancer; men who have tested positive for brca1.” [eligibility criteria to ensure the bare minimum requirement to be included in the study, not a research question that stakes a claim at the bare minimum to answer the question with a need to determine if the claim is correct]
6. “the temperature, relative humidity, and aerosol particle size were monitored for at least one time point during each 10-minute test at approximately 5 minutes into each test.” [a statement about methodology where at the bare minimum one time point was measured for each 10-minute test, not a research question that stakes a claim at the bare minimum to answer the question with a need to determine if the claim is correct]
7. “because short-term buffering of information in an active “online” state is a keystone of working memory, sustained delay activity has become virtually synonymous with “working memory,” at least to neuroscientists.” [at the bare minimum, neuroscientists equate sustained delay activity with working memory, not a research question that stakes a claim at the bare minimum to answer the question with a need to determine if the claim is correct]
8. “EXAMPLE” [EXAMPLE]
9. **LIKELIHOOD/ LIKELY/ LIKELY BE/ MOST LIKELY/ UNLIKELY**

“for the short-term outcome, <positive hiv increased likelihood of mortality by 42% at 30-days and 35% at 90-days>.” [staking a claim about the relationship between positive hiv and an increase of mortality, need to determine if this claim is correct]

“<deferring a decision to implant an lvad>, may allow the severity of eshf to progress thereby <increasing the likelihood of an adverse event>.” [staking a claim about the relationship between deferring a decision to implant and lvad and an increase of adverse events, need to determine the correct course of action]

“the situation is similar for cancer patients, as <standardized tumor-agnostic genomic analyses have a high likelihood of uncovering plausible drug targets during the lifetimes of patients>, even those with late-stage disease.” [staking a claim about the relationship between standardized tumor-agnostic genomic analyses and uncovering plausible drug targets during the lifetimes of patients, need to determine if this standard analysis uncovers drug targets]

“odel fit was determined using standard-likelihood ratio tests, while the impact of individual model factors was determined by evaluating log-likelihood ratio tests and calculating odds ratios (or) and 95% confidence intervals (ci).” [a statistical test ‘log-likelihood ratio test’, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is correct]

“we applied the markov blanket to simplify the network and reduce the likelihood of over-fitting the model to the dataset (i.e.” [specific methodology to decrease the issue of over-fitting, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is correct]

“interestingly, the last five were reported to be differentially expressed in fish following bacterial challenge [48], indicating <the likely evolutionary conservation of function of these apps between different species>.” [staking a claim of evolutionary conservation of function of these apps between different species, need to determine if this claim is correct]

“more generally, <the microarray data are likely to be helpful in uncovering potential crosstalks regarding mammalian immune response mechanisms>.” [staking a claim that the microarray data will be helpful in uncovering potential crosstalks regarding mammalian immune response mechanisms, need to determine if this claim is correct]

“<the no-traders were likely to make no trade-offs in any direction favouring the status quo>.” [staking a claim about the relationship between being a no-trader and making no trade-offs, need to determine if this claim is correct]

“<this is likely an important finding as, like bcl-2, mcl1 does not induce proliferation> but rather promotes cancer cell viability by blocking apoptosis[35].” [staking a claim that the finding is important, need to determine if this claim is correct]

“<it is not likely that sunitinib or its metabolites inhibit the renal elimination of pemetrexed>.” [staking a claim that sunitinib or its metabolites does not inhibit the real elimination of pemetrexed, need to determine if this claim is correct]

“<achieving this will likely be a great help in sci treatment>, and, possibly in conjunction with one of the many cell transplantation strategies currently under investigation, can hopefully lead to a better functional outcome for patients.” [staking a claim that achieving the goal will be a great help in sci treatment, need to determine if this claim is correct]

“t was determined that for the myidea app to enhance medication adherence, <it would likely be more advantageous to have this education a few days after the procedure>.” [staking a claim that it would be more advantageous to have this education a few days after the procedure, need to determine if this claim is correct]

“if pulse oximetry is incorporated into future pneumonia guidelines, <hypoxemia will likely be a diagnostic indicator of severe disease requiring referral to a health facility with oxygen>.” [staking a claim that hypoxemia will be a diagnostic indicator of severe disease requiring referral to a health facility with oxygen, need to determine if this claim is correct]

“the distance between the rgd units of the multimers used in this study is relatively short and therefore <statistical rebinding might be the most likely explanation for the increased affinity in the series tetramer > dimer > monomer>.” [staking a claim that statistical rebinding might be the explanation for the increased affinity in the series tetramer > dimer > monomer, need to determine if this explanation claim is correct]

“<the plant model of galactosylglycerols synthesis is most likely true for diatoms as well>, which is supported the study of dodson et al.” [staking a claim that the plant model of galactosylglycerols synthesis is true for diatoms, need to determine if this is correct]

“given that our three cluster solution indicated limited cluster membership uncertainty, we believe there is limited bias derived from our present methodological approach of studying the most likely cluster membership for each patient case.” [a methodological statement where they are studying the most likely cluster membership for each patient cluster, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is correct]

“if their vision does not improve, then they most likely do not have dry eye.” [a statement about patient care and diagnosis, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is correct]

“additionally, <high polymerization activity is very unlikely in the adult hair bundles of the adult mammalian cochlea>.” [staking a claim that high polymerization activity does not occur in the adult hair bundles of the adult mammalian cochlea, need to determine if the claim is correct]

“however, access to radiotherapy is equal for all patients and <it is unlikely that a high incidence of medical contraindications would explain our relatively high mastectomy rate>.” [staking a claim that a high incidence of medical contraindications would not explain our relatively high mastectomy rate, need to determine if this claim is correct]

“at $300 per variant (which is sanger-based and unlikely to change anytime soon), the research model may rapidly become prohibitively expensive when used to manage care.” [the sanger-based price is not likely to change anytime soon, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is correct]

“it further adds that there were many people in the informal sector who have ‘simply not enrolled either because they do not understand the value of insurance or because they are healthy and unlikely to use services’ [51].” [a quote about people in the informal sector not likely to use services, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is correct]

“EXAMPLE” [EXAMPLE]

1. **MAINLY**
2. “because of the limitations in feasibility for randomized trials to address the long-term effects of lifestyle on clinical outcomes, <clinicians must rely mainly on a combination of epidemiological investigations and short-term clinical trials with intermediate end points>.” [staking a claim that clinicians must rely on a combination of epidemiological investigations and short-term clinical trials with intermediate end points, need to determine if this claim is correct]
3. “<data and theory point to mainly additive genetic variance for complex traits>” [staking a claim that data and theory point to additive genetic variance for complex traits, need to determine if this claim is cor]
4. “<c-raf-1 is thought to mainly have oncogenic potential> and has been found to be highly expressed in certain human and animal malignancies, including hcc [26].” [staking a claim that c-raf-1 has lots of oncogenic potential, need to determine if this claim is correct]
5. “subjects in the lifestyle group also received guidance on increasing their level of physical activity, mainly walking for a minimum of 30 minutes per day, but also swimming or aerobic ball games.” [the majority of subjects in the lifestyle group walked for a minimum of 30 minutes per day, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is correct]
6. “thus, we are suggesting the above mainly for new patients and research participants.” [a suggestion of treatment specifically for new patients and research participants, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is correct]
7. “EXAMPLE” [EXAMPLE]
8. **MOSTLY**
9. “<echinocandin drug resistance in candida species is mostly due to the point mutations in β-1,3-glucan synthase subunits> (9,31).” [staking a claim that echinocandin drug resistance in candida species is due to the point mutations in β-1,3-glucan synthase subunits, need to determine if the claim is correct]
10. “despite much being known of the inflammatory factors that contribute to increased subconjunctival scar formation, the physical principles linking bleb properties to stable intra-ocular pressure and surgical success have not be clearly elucidated, and <implant design has mostly lacked a rational design foundation>.” [staking a claim that the implant design has lacked a rational design foundation, need to determine if the claim is correct]
11. “local information mostly refers to distinct circumscribed characteristics of the face, such as the mouth or the nose.” [a definition of local information and what it refers to, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is correct]
12. “the latter included mostly corals [10-13], but also species for which red fluorescence has never been described before, such as a polychaete species, several sponges (not shown) and feather stars (details in fig.2).” [a description of what the later included in general, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is correct]
13. **PRESUMABLY**
14. “it has been identified recently as a novel gene in present in bronchial epithelium, and <is presumably linked to respiratory function> [64].” [staking a claim/assumption that it is linked to respiratory function, need to determine if this claim/assumption is correct]
15. “alternatively, an increase in fluid absorption lowered iop, <presumably by removing fluid more efficiently>.” [staking a claim/assumption that the increase occurred by removing fluid more efficiently, need to determine if the claim/assumption is correct]
16. “as horizontal transmission event can result in the acquisition of multidrug resistance by wild-type strains, thus <this could presumably contribute to the rapid increase in the prevalence of multidrug resistance among clinical bacteria>.” [staking a claim/assumption that this could contribute to the rapid increase in the prevalence of multidrug resistance among clinical bacteria, need to determine if the claim/assumption is correct]
17. “most cancer patients who died in a different state than the one in which they were presumably diagnosed were also registered as incident cases in the death state’s cancer registry.” [an assumption about where the patients were diagnosed, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is correct]
18. “finding a set of proteins which are not annotated at all was difficult, so many of the evaluation targets already had "iea" annotations (presumably often based on blast or a similar approach).” [an assumption about what the annotations are based on, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is true]
19. “EXAMPLE” [EXAMPLE]
20. **PROBABILITY/ PROBABLE/ PROBABLY**
21. “<the fungistatic nature and long-term duration of these regimens increase the probability of the development of drug resistance by c. neoformans> (7).” [staking a claim that the fungistatic nature and long-term duration of these regimens increases the development of drug resistance by c. neoformans, need to determine if the claim is correct]
22. “as in combination drug therapy, <the probability of resistance can be reduced by requiring multiple resistance mutations to occur simultaneously>.” [staking a claim that resistance can be reduced by requiring multiple resistance mutations to occur simultaneously, need to determine if the claim is correct]
23. “based on our data, the median probability of being classified in class i (high-traders) for patients in class i was 1.000 with an inter-quartile range of .996 to 1.000.” [the actual statistical probability, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is true]
24. “an ‘excitatory’ bundle deflection increases the tension in the tip links, thereby increasing the open probability of the channel.” [the open statistical probability, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is true]
25. “therefore, a higher exposure dose of b. melitensis appears to increase the probability of detecting these bacteria in a blood sample.” [how to increase the statistical probability of detecting the bacteria, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is true]
26. “thus <hormesis may be considered as one of the probable mechanisms of geroprotective effects of fucoxanthin>.” [staking a claim that hormesis may be considered as one of the mechanisms of geroprotective effects of fucoxanthin, need to determine if the claim is correct]
27. “the analysis revealed hundreds of brucella missed gene calls and <dozens of new, probable bona fide split genes>.” [staking a claim that the analysis revealed dozens of new bona fide split genes, need to determine if the claim is correct]
28. “missing demographics and lab values, for example, were considered to be either mar, in which case we assumed the most probable values (i.e.” [trying to determine what the missing values should be and used the most statistically probable values, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is true]
29. “in the group reporting probable ptsd, 44.9 % (95 % ci 0.4–0.5) had comorbid alcohol misuse, and within the group defined as reporting alcohol misuse, 13.6 % (95 % ci 0.1–0.2) also reported probable ptsd.” [the group is defined as ‘probable ptsd’, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is true]
30. “it can be induced in pbmcs by lps, il-1, il-6, and tnfα, <probably through activation of nf-κb cells>.” [staking a claim that it can be induced through activation of nf-kb cells, need to determine if this claim is correct]
31. “<this is probably attributable to the dose-response relationship of each treatment>.” [staking a claim that this is attributable to the dose-response relationship of each treatment, need to determine if this claim is correct]
32. “for example, if a patient has no record of a chest x-ray then the doctor probably did not feel the need to order one.” [an example about a patient where the doctor did not need to order one, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is true]
33. “i think the fact that we are here in an academic setting gives the sceptics a little bit of comfort and sends the message that probably it is a safe program.... it gives us credibility.” [sending a message that the program is safe, not a research question that stakes a claim at the relationship between entities in order to answer the question with a need to determine if the claim is true]
34. “EXAMPLE” [EXAMPLE]
35. **PROMISE/ PROMISING**
36. “although there are limited studies with this new technology, <it shows promise> and is less expensive than oct” [staking a claim that the new technology shows hope it will work, need to determine if the claim is correct]
37. “among commonly used methods, <continuous intravenous infusion of analgesics, including opioids and nonsteroidal anti-inflammatory drugs, has shown promise> but is not always satisfactory and can have some adverse effects.” [staking a claim that continuous intravenous infusion of analgesics shows hope it will work, need to determine if this claim is correct]
38. “this will ultimately be the case with the genomics revolution, but to realize this promise we need to plan carefully as a community while remaining cognizant of ethical and regulatory considerations.” [a statement of how to realize the promise, not a research question that stakes a claim at what is promising in order to answer the question with a need to determine if the claim is true]
39. “this promise has led to only limited electronic device applications due to the lack of an energy gap which prevents the formation of conventional device geometries.” [a statement of what a promise has led to, not a research question that stakes a claim at what is promising in order to answer the question with a need to determine if the claim is true]
40. “nevertheless, <the finding that mammalian ohcs at a very early developmental stage recovered from the effects of bapta treatment is promising>.” [staking a claim that mammalian ohcs at a very early developmental stage recovered from the effects of bapta treatment is a hopeful finding, need to determine if the claim is correct]
41. “<human umbilical cord (uc) tissue has been suggested to represent another promising source of mscs> [9,10].” [staking a claim that human umbilical cord tissue represents a probable source of mscs, need to determine if the claim is correct]
42. “whereas cpps have gained extensive interest because of their ability to carry macromolecular cargo across cellular membranes, <amps have emerged as promising candidates for treatment of antibiotic-resistant bacteria>.” [staking a claim that amps are probable candidates for treatment of antibiotic-resistant bacteria, need to determine if the claim is true]
43. “[1] however, the review quoted only one citation after 2002 and as such few promising articles were inadvertently missed.” [presenting articles that were promising, not a research question that stakes a claim at what is promising in order to answer the question with a need to determine if the claim is true]
44. “a summary of promising candidates identified through such studies is provided in table2.” [a description of table 2 that includes a summary of promising candidates, nothing about the promising candidates themselves and thus not a research question that stakes a claim at what is promising in order to answer the question with a need to determine if the claim is true]
45. “EXAMPLE” [EXAMPLE]
46. **FEASIBLE**
47. “with the availability of a number of genome-wide profiling technologies, <it is now feasible to initiate integrative analyses to decipher the gene-regulatory phenomena and describe the dynamic regulation of gene networks>.” [staking a claim that we can now initiate integrative analyses to decipher the gene-regulatory phenomena and describe the dynamic regulation of gene networks]
48. “<these methods are demonstrated feasible in wsns> [19].” [staking a claim that the methods work fine in wsns and can potentially generalize]
49. “these findings demonstrate that <p53ma astrocytes represent a feasible model system for the generation of brain tumors>.” [staking a claim that p53ma astrocytes represent a model system for the generation of brain tumors]
50. “<bmr is not currently a feasible target for intervention>, but it may be a determinant of individual differences in bmi42.” [staking a claim that bmr is not a likely target for intervention]
51. “split preparations for morning procedures were performed only for those procedures after 10 am, as earlier procedures were not feasible to have patients take an early morning dose of their preparation.” [a methodological explanation statement as to why split preparations for morning procedures were performed only for those procedures after 10am, not a research question that stakes a claim at what is not likely in order to answer the question with a need to determine if the claim is true]
52. “then, it would be worth considering the attempt of heading a minimal isoform set that is able to explain the read data by multiple features, while using dimensionality reduction algorithms to make it a feasible goal.” [reducing the problem to the goal doable, not a statement that stakes a claim at what is likely in order to answer the question with a need to determine if the claim is true]
53. “EXAMPLE” [EXAMPLE]
54. “EXAMPLE” [EXAMPLE]
55. **EXAMPLE**
56. “EXAMPLE” [EXAMPLE]
57. “EXAMPLE” [EXAMPLE]

SUPERFICIAL RELATIONSHIP = a statement about a connection, link, or association between at least 2 variables; connectedness between entities and/or interactions representing their relatedness or influence. The next actionable step is to confirm the connection, link, or association between variables; determine the full underlying relationship between variables**.**

1. **ACCOMPANIED**
2. “<the changes in β-cell metabolism induced by diabetes were accompanied by striking changes in expression of metabolic genes>.” [need to determine the relationship between the changes in β-cell metabolism induced by diabetes and striking changes in expression of metabolic genes]
3. “each odu is specific and accompanied by a history, a myth of which its symbolic base interpreted by the priest will advice in a way to help the consultant in his/her life.” [the odu’s have a history behind them, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
4. **AFFECT/ AFFECTED**
5. “we hypothesized that <il23r may affect the development of breast cancer>.” [need to determine the relationship between il23r and the development of breast cancer]
6. “our results show that <the mutations>, regardless of the distance from the active site, <affect the catalytic properties and structural parameters>, and also change the three-dimensional structure which correlates with a more severe clinically phenotype.” [need to determine the full underlying relationship between the mutations and the catalytic properties and structural parameters]
7. “manipulating the age-distribution of patients or the frequency of monitoring did not affect the model predictions.” [a statement of the known full relationship: that the age-distribution of patients or the frequency of monitoring had no effect on the model predictions, no need to determine any more information about the relationship between the 2 entities]
8. “finally, insulin was elevated for 5 h to provide sufficient time for changes in insulin signaling to affect gene transcription and for the latter to translate into substantial effects on gng enzyme levels and activities.” [a methodological statement about how the methodology will provide sufficient time to see an effect, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
9. “<hiri is a complicated pathophysiological process affected by multiple factors>.” [need to determine the full underlying relationship between hiri and the multiple factors]
10. “overall, unregulated timp expression showed that <l. tetragonum> did not intervene with the timp-linked cellular inhibition of mmp-2 and -9 but <only affected the enzymatic activity and gene expressions of mmps>.” [need to determine the full underlying relationship between l. tetragronum and the enzymatic activity and gene expressions of mmps]
11. “despite major advances in the treatment of dr, affected subjects must be identified as early as possible by aggressively targeting the risk factors and by regular screening the affected individuals since timely intervention reduces dr progression and vision loss[5].” [a statement about ‘affected subjects’ with an illness or disease, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
12. “yet she fails to consider how this affected domestic life, does not acknowledge the new ways in which housewives were encouraged to think about food preparation and ignores the shifting hygienic practices which become encoded in early-twentieth-century cookery.” [a critique of someone else’s work who failed to consider how this affected domestic life, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
13. “these results indicated that this patient, diagnosed with pcd, was also affected by ils.” [a patient affected by another illness (ils), not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
14. “EXAMPLE” [EXAMPLE]
15. **ASSOCIATE/ ASSOCIATED/ ASSOCIATED… OR/ ASSOCIATES/ ASSOCIATION/ ASSOCIATIONS**
16. “<tor can associate with distinct proteins> and form two different complexes, torc1 and torc2.” [need to determine the full underlying relationship between tor and distinct proteins]
17. “agg3 expands the plasma membrane with the γ domain in the cytosol, able to associate with agb1 and thus transmit signaling through gβγ3 dimers while its extracellular cysteine-rich domain is free to interact with extracellular domains from receptors or perhaps bind agonists by themselves, without the intervention of receptors.” [a description of how agg3 and agb1 can combine together to transmit signaling through gβγ3 dimers, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
18. “in the united kingdom in the 1970s, <a large proportion of imported malaria cases were> attributable to p. vivax and <associated with a large number of immigrants from india and Pakistan>.” [need to determine the full underlying relationship between a large proportion of imported malaria cases and a large number of immigrants from india and Pakistan]
19. “a key finding was that <mmse scores were associated with sapp β> , but less so with sapp α , in ad and lbd groups.” [need to determine the full underlying relationship between mmse scores and sapp β]
20. “as reported by klausen k, <very low levels of ma (uae level, 4.8 µg/min) are associated with an increased risk of coronary heart disease and death> independent of renal function, hypertension, and diabetes.” [need to determine the full underlying relationship between very low levels of ma and an increased risk of coronary heart disease and death]
21. “swelling was not associated with pain.” [swelling and pain are not related, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
22. “investigations are in evolution to establish the genetic linkage and heterogeneity associated with it [4,5].” [a methodological statement about the point of investigations in evolution, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
23. “other studies also demonstrated that <grp78 and grp94 were associated with certain tumors, when expressed either together or alone> (13–16).” [need to determine the full underlying relationship between grp78 and grp94 with certain tumors both together and alone]
24. “in the simple linear regression analyses of nonlead covariates, <children’s age, height, and bmi were significantly associated with sbp or dbp> in both girls and boys (table 2).” [need to determine the full underlying relationship between children’s age, height, and bmi and sbp and dbp]
25. “this indicates that perforin-2 was not present as a soluble protein nor associated with cellular debris or microvesicles.” [perforin-2 is not related to cellular debris or microvesicles, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
26. “however, recognition of bisphosphonate-associated erosive or ulcerative esophagitis, and communication of this possibility to the clinician, may be important.” [a statement of the name of what needs to be recognized and communicated to a clinician: ‘bisphosphonate-associated erosive or ulcerative esophagitis’, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
27. “these results indicate that <the upregulated expression of hsa\_circ\_0014130 significantly associates with some clinicopathological factors of nsclc patients>, and may serve as a novel potential tumor marker and therapeutic target for nsclc.” [need to determine the full underlying relationship between the upregulated expression of has\_circ\_0014130 and some clinicopathological factors of nsclc patients]
28. “it further needs to be established if s. tigurinus can be part of pathogenic oral biofilms, <how it associates with other members of the oral microbiota>, and whether it is a potent inducer of pathogenic host responses.” [need to determine the full underlying relationship between it and other members of the oral microbiota]
29. “il23r constitutively associates with janus kinase (jk) 2 and also allows binding of signal transducer and activator of transcription (stat) 3 in a ligand-dependent manner, whose phosphorylation and consequent dimerization trigger downstream expression of genes, such as il-17 and il-22[16].” [il23r and janus kinase (jk) 2 are present together and allows binding of signal transducer and activator…, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
30. “limulus amebocyte lysate assay was performed on unfractionated bal from 5 day-old wt and scnn1b -tg+mice using the pyrochrome kinetic method, according to manufacturer instructions (associates of cape cod, inc.” [the name of the manufacturer: ‘associates of cape cod inc., not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
31. “in the ad group <a significant association was observed only between sapp β and a β 40 and between sapp α and p-tau>.” [need to determine full underlying relationship between sapp β and a β 40 and between sapp α and p-tau]
32. “this report is the collective product of word-leading experts working in the branches of integrative medicine by predictive, preventive and personalised medicine (pppm) under the coordination of the european association for predictive, preventive and personalised medicine.” [report and findings under the ‘european association of predictive, preventative, and personalized medicine’, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
33. “unconditional multivariate regressions result in <independent hla class i and ii associations>” [need to determine the full underlying relationship between independent hla class i and ii]
34. “eight factors were removed during stepwise backwards elimination, leaving <six significant associations>.” [need to determine the full underlying relationship between the six significant associations and the question from the beginning]
35. “these results add to the body of knowledge in this area providing new information regarding these associations.” [an explanation of the results and relationship to the associations, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
36. “in contrast, values < 0.5 and 0.3 represent weak and very weak associations, respectively.” [definition of weak and very weak representations, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
37. “EXAMPLE” [EXAMPLE]
38. **COINCIDE**
39. “interestingly, we show that trim5 was under strong positive selection only in the common dermopteran ancestor and that <this period could coincide with elvgv activity>.” [need to determine the full underlying relationship between this period and elygy activity]
40. “for instance, we were interested to know whether <the borders of expression of all these genes coincide> or if they are expressed in a nested fashion.” [need to determine the full underlying relationships between the borders of expression off all these genes]
41. “the overall rates of surface versus buried residue decomposition in our study (table 4) coincide with the findings from numerous others who also report that surface mass loss occurred at slower rates (holland and coleman1987; thomas and asakawa1993; ibewiro et al.2000; thippayarugs et al.2008; abera et al.2014).” [a statement that the findings corroborate with findings from numerous others, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
42. “the axes of this ellipsoid coincide with the eigenvectors ui of h .” [an explanation of the axes of the ellipsoid and how they are the eigenvectors ui of h, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
43. “the ongoing decrease of wave v latency in congenitally deaf cats after birth does not coincide with human data.” [no relationship between the ongoing decrease of wave v latency in deaf cats after birth and human data, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
44. “EXAMPLE” [EXAMPLE]
45. **CONNECTED**
46. “suggested that <single-membraned vesicles, seen early in infected cells, may be connected to the double-membraned vesicles seen later in infected cells>[64].” [need to determine the full underlying relationship between single-membraned vesicles and double-membraned vesicles]
47. “two or four simulated pedicle screws (diameter, 6 mm) were inserted through the pedicles of l4 and l5 vertebrae unilaterally or bilaterally, and connected by one or two rods (diameter: 6 mm) modeled with solid elements.” [a description of a medical procedure that involves screws that connect by one or two rods, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
48. “EXAMPLE” [EXAMPLE]
49. **CONTRIBUTES**
50. “<a novel sun-nels contributes to the targeting of unc-84 to the ne>” [need to determine the full underlying relationship between a novel sun-nels and the targeting of unc-84 to the ne]
51. “our findings shed light on the controversial role of pml during retroviral infection and show that <pml contributes to the intrinsic restriction of retroviral infections in a cell type-dependent manner>.” [need to determine the full underlying relationship between pml and the intrinsic restriction of retroviral infections in a cell type-dependent manner]
52. “what contributes to her wellbeing and what causes her suffering?” [a question about the contributors to her wellbeing and causes of suffering, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
53. “our result contributes to a better understanding of p. vivax genetic variation, and provides a fundamental basis for the geographic differentiation of vivax malaria from china-myanmar border area using a direct sequencing approach without leukocyte depletion.” [a statement that the results provide a better understanding, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
54. **CORRELATE/ CORRELATED/ CORRELATES/ CORRELATION/ CORRELATIONS**
55. “the reason why <the csf levels of these app isoforms correlate tightly> is unknown, but may suggest that the expression of app isoforms are regulated by similar stimuli and pathways, and thus that they have similar functions.” [need to determine the full underlying relationship between the csf levels of these app isoforms]
56. “in g6pd zacatecas mutant (r257l), a salt bridge of r257 with e473 amino acid is lost, which could be critical for <both catalytic activity and overall protein stability that correlate with a more severe phenotype>.” [need to determine the full underlying relationship between both catalytic activity and overall protein stability and a more severe phenotype]
57. “however, <loss of function of p53 resulting from loh may not correlate with protein overexpression>.” [need to determine the full underlying relationship between loss of function of p53 resulting from loh and protein overexpression because not a definitive negation of correlation]
58. “[they] were able to <correlate enhanced microglial activation with intracerebral complement c3 expression at seven days post injury> [9], which reflects the same time-window analyzed in our current study.” [need to determine the full underlying relationship between enhanced microglial activation and intracerebral complement c3 expression at seven days post injury]
59. “the aims of this study were 1 ) to determine the maximal physiologic effect of insulin, 2 ) to determine the relative importance of its effects on gluconeogenic regulatory sites, and 3 ) to correlate those changes with alterations at the cellular level.” [a statement of the aims of the study, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
60. “the first results obtained with the facs-based virion fusion assay correlate with the data from the infectivity assay, showing a lower activity of serinc3 in restricting hiv infectivity when compared with serinc5.” [a statement that the data corroborate the first results, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
61. “<sapp α and sapp β levels correlated with a β 38, a β 40, a β 42, and tau> in the lbd group.” [need to determine the full underlying relationship between sapp α and sapp β levels and β 38, a β 40, a β 42, and tau]
62. “genotyping of the two snps in our study showed that <rs10889677, located at the 3′-utr of the il23r gene, was correlated with the risk of breast cancer>.” [need to determine the full underlying relationship between rs10889677 and the risk of breast cancer]
63. “in addition, liver biopsies were taken at the end of each study to allow <the effects of insulin on molecular signaling and gene transcription to be correlated with alterations in whole-body metabolic flux rates>.” [need to determine the full underlying relationship between the effects of insulin on molecular signaling and gene transcription and alterations in whole-body metabolic flux rates]
64. “however, bdi total score was not significantly correlated with any of the neuropsychological test performance variables.” [negated correlation stating that there is no relationship, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
65. “when developing full models, only variables that were highly significant ( p  < 0.1 or 0.05 depending on the model) in unconditional analyses, uncorrelated (pearson’s correlation coefficients, r < 0.5), and biologically plausible predictors of the outcome of interest were considered (additional files1,2,3).” [a statement of the methodology and which variables were considered, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
66. “furthermore, there are reports that <apoptosis-related protein survivin is frequently overexpressed in endometrial carcinomas [7,9] and correlates inversely with pten expression> [9].” [need to determine the full underlying relationship between apoptosis-related protein survivin and pten expression]
67. “a second objective was to explore clinical and neurochemical correlates of csf sapp α and sapp β levels, to assess their relationship with disease severity as a measure of underlying brain pathology.” [a statement of the aim of the study to explore correlates (noun) of csf sapp α and β levels, but no correlates are mentioned and so it is not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
68. “<correlation of clinical outcome with molecular markers, molecular determinants of local control, metastases development, as well as toxicity is required>.” [need to determine the full underlying relationship between clinical outcome and molecular markers, molecular determinants of local control, metastases development, and toxicity]
69. “it has been shown that <the number of gnih neurons have a positive correlation with plasma progesterone concentration> (47) and that gnih neurons are regulated by progesterone (48).” [need to determine the full underlying relationship between the number of gnih neurons and plasma progesterone concentration]
70. “however, the correlation factors of sapp α in the patient groups were rather similar to the control group, suggesting that the lack of significance is related to the smaller sample size in the individual groups.” [a statement about the correlation factors being similar between groups, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
71. “correlations between levels of csf analytes and demographic and clinical features were performed using spearman correlation for nonparametric analyses.” [the correlation test used to determine the correlations between levels of csf analytes and demographic and clinical features was a spearman test, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
72. “another finding was the <highly significant correlations between sapp α and sapp β> in all groups.” [need to determine the full underlying relationship between sapp α and sapp β]
73. “a survey of the literature reveals widely ranging <correlations between microarray and qpcr data> of -0.48 to 0.94 (14-16and others).” [need to determine the full underlying relationship between microarray and qpcr data]
74. “correlations were considered significant if they reached the 0.05 level (2-tailed) and highly significant at the 0.01 level (2-tailed).” [a definition of correlations that are significant or not, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
75. “no significant correlations were found between brachial-ankle pwv and 24-h sodium and potassium excretions.” [negated correlation stating that there is no relationship between brachial-ankle pwv and 24-h sodium and potassium excretions, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
76. “EXAMPLE” [EXAMPLE]
77. **CORRESPONDED**
78. “<changes in mdg, assessed based on oc analysis, corresponded well with changes in hba1c(15)>.” [need to determine the full underlying relationship between changes in mdf and changes in hba1c]
79. “(a) <increasing left amygdala volume, corrected for intracranial volume, corresponded with enhanced overall memory for impressions in older, but not younger adults>.” [need to determine the full underlying relationship between increasing left amygdala volume and enhanced overall memory for impressions in older adults]
80. “genome-wide nominal linkage evidence (lod ≥ 0.8; p< 0.05) was identified on eleven other chromosomal regions (figure4), some of these corresponded to previously reported regions with similar level of linkage signal for ra [1,20,30].” [a statement that the results corroborate previous reported work, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
81. “the smaller one (646 bp) corresponded to the female dsxf mrna.” [an identification of the smaller one as the female dsxf mrna, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
82. “EXAMPLE” [EXAMPLE]
83. **IMPACT/ IMPACTS**
84. “a study performed in c. elegans demonstrated that <rapamycin treatment as well as genetic knockdown of torc1 signaling increased stress resistance and autophagy and had positive impact in health and lifespan> [103].” [need to determine the full underlying relationship between rapamycin treatment and health and lifespan]
85. “similarly, <cvd is associated with development of white matter disease [14], pathological changes to blood vessels [15], and inflammatory processes [16], each of which are known to adversely impact cognitive function>.” [need to determine the full underlying relationship between cvd, pathological changes to blood vessels, and inflammatory process and cognitive function]
86. “serious researchers in psychiatry have investigated semi-serious subjects and have published their results in high impact journals.” [a statement to publish in high impact journals, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
87. “to determine the relative impact of significant outcomes, stepwise conditional logistic regressions were performed.” [a methodology statement on how to determine the relative impact, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
88. “accordingly, <regional hydrodynamic conditions during the settlement season produced significant impacts on the juvenile densities> depending on their size and with contrasted effects in respectto cove orientation.” [need to determine the full underlying relationship between regional hydrodynamic conditions and juvenile densities]
89. “<diabetes duration impacts β-cell function>” [need to determine the full underlying relationship of diabetes duration and β-cell function]
90. “our results suggest that <partial neutralisation of apobec3 impacts viral fitness and response to lamivudine>.” [need to determine the full underlying relationship between partial neutralization of apobec3 and viral fitness and response to lamivudine]
91. “though unavoidable in this pragmatic trial, any such contamination would underestimate intervention impacts, creating bias towards the null.” [a statement about the possible consequences of contamination and its impact on the trial, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
92. “such information would bring new knowledge to complement current aetiological investigations and would contribute to enhancing resource allocation strategies for stakeholders in developing relevant interventions to prevent obesity and its negative impacts.” [a significance argument for the research that includes prevent negative impacts of obesity on humans, no impacts are mentioned though so not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
93. “EXAMPLE” [EXAMPLE]
94. **IMPLICATED**
95. “recently, <a subset of t-helper 17 (th17) cells characterised by interleukin-17a (il-17a) production was implicated as a critical mediator of inflammation and cancer>[3].” [need to determine the full underlying relationship between a subset of t-helper 17 cells and inflammation and cancer]
96. “these results further validate our computational approach (‘pathome’), in which we <implicated an hnf4α-wnt5a signal coupling in gc>,34an approach we believe improves on the mere examination of gene ontology or gene set enrichment analysis.” [need to determine the full underlying relationship between hnf4α-wnt5a signal coupling and gc]
97. “because <pias1 is a sumo e3 ligase and hdac1 is implicated in neurodegenerative diseases>, here we examined whether hdac1 could be sumoylated by pias1 in the rat brain and whether hdac1 sumoylation is modulated by a β treatment.” [need to determine the full underlying relationship between pias1 and hdac1 and neurodegenerative diseases]
98. “<the mir-21 is one of the most commonly implicated mirnas in cancer>.” [need to determine the full relationship between mir-21 and cancer]
99. “in support of the causality of changes in the haploblock 2 area of the c3 gene, two of the three associating snps within the haploblock described in our study have been implicated in prior studies in other phenotypes.” [a statement that these results corroborate the results of prior studies, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
100. “EXAMPLE” [EXAMPLE]
101. **IMPOSE**
102. “in interfollicular regions and the medulla, <lecs can impose antigen-specific deletional tolerance> through direct presentation of ptas to naïve cd8+t cells [81].” [need to determine the full underlying relationship between lecs and antigen-specific deletional tolerance]
103. “furthermore, we also know that <binding sites at different conformations of the channel are fundamentally different, and most probably impose different orientations and positions on bound drugs>[10],[11],[12].” [need to determine the full underlying relationship between binding sites at different conformations of the channel and different orientations and positions on bound drugs]
104. “to determine whether mutants in trs130 and -120 block invertase secretion, we shifted wild-type and mutant cells to the restrictive temperature (37°c) for 20 min to impose a block in secretion.” [a statement of methodology to cause a block in secretion, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
105. “this may be because fold change cutoff alone assumes a normal distribution, while sam does not impose this restriction.” [a negated relationship and a statement of methodology about the sam method, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
106. **INFLUENCE/ INFLUENCES**
107. “in the model, it was found that <changes in the frequency of monitoring had little influence of the predicted mortality rates>.” [need to determine the full underlying relationship between changes in the frequency of monitoring and the predicted mortality rates]
108. “therefore, we investigated <the influence of the il23r gene polymorphisms in the pathogenesis of breast cancer>.” [need to determine the full underlying relationship between il23r gene polymorphisms and the pathogenesis of breast cancer]
109. “the model was adjusted for variation in the following factors that have been shown to influence survival outcomes: gender; age; hiv risk group (categorised as: men who have sex with men (msm), heterosexual, injecting drug use or other/unknown (including blood contact and vertical transmission)); region of origin (categorised as: netherlands, western europe and north america excluding the netherlands, sub saharan africa, latin america/ caribbean and other); calendar year of hiv diagnosis (categorised as: <2000, 2000–2002, 2003–2007); cd4 cell count at first presenting and, symptoms at first presentation at the centre (categorised as: symptoms present or not present).” [a statement of methodology to adjust the model and control for specific influences, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
110. “methodological limitations which might influence the findings include the relatively small number of patients with low statistical power.” [a statement of methodological limitations to consider about the findings, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
111. “considering that the synthesis of endogenous creatine is responsible for increasing hepatic demand on methylation reactions influencing homocysteine synthesis, it has been suggested that <crs is capable of reducing homocysteine blood levels, exerting positive influences on vascular endothelial function> [12,13].” [need to determine the full underlying relationship between crs and vascular endothelial function]
112. “the medicolegal systems and societal influences also differ between countries and this framework extends the debate beyond the intensive care unit [17] potentially providing a framework that may be acceptable across systems.” [a statement about different systems in different countries, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
113. “EXAMPLE” [EXAMPLE]
114. **INTER-RELATIONSHIPS/ INTERRELATIONSHIP/ INTERRELATIONSHIPS**
115. “furthermore, <the complex inter-relationships identified amongst the levels> reveal lessons for programming, policy and research in terms of the factors that contribute most to a higher quality of life.” [need to determine the full underlying relationship amongst the different levels]
116. “there are <complex inter-relationships among various cognitive and non-cognitive factors> that impact learning this subject.” [need to determine the full underlying relationship between the various cognitive and non-cognitive factors]
117. “the somewhat complex inter-relationships between these four papers are illustrated conceptually in figure1, with paper i being an overview of the whole.” [a statement about the relationships between four papers and the corresponding figure that shows it, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
118. “the textural approach makes use of spatial inter-relationships for the pixels to extract features and quantifies properties such as the smoothness, regularity, and coarseness of the image.” [a statement of the approach that uses spatial relationships of pixels, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
119. “studies like these [32,44,112,113] add information to start defining <the interrelationship between the cellular and molecular networks regulating flagellar changes>.” [need to determine the full underlying relationship between the cellular and molecular networks regulating flagellar changes]
120. “thus, there might be <a yin-yang interrelationship between er stress and autophagy>.” [need to determine the full underlying relationship between er stress and autophagy]
121. “we must conclude that due to this interrelationship among exposure groups, it was not possible to disentangle the specific role of phthalates and alkylphenolic compounds in the observed lower fetal growth rates.” [a statement about the limitation of the study due to the relationships among exposure groups, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
122. “it is a framework for seeing interrelationship rather than things in pieces.” [a statement about a framework to see interrelationships, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
123. “factor analysis with a varimax rotation was performed to reveal <interrelationships between soil variables> and obtain a small number of uncorrelated factors representing the main sources of variation in the soil dataset.” [need to determine the full underlying relationship between soil variables]
124. “it is used to examine the interrelationships among a set of variables, thus, can be used to assess construct validity.” [a statement of a methodology that can be used to examine relationships among a set of variables, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
125. “EXAMPLE” [EXAMPLE]
126. **INTERACT/ INTERACTION/ INTERACTIONS/ INTERACTS**
127. “in fact <xlg2 was reported to physically interact with the nuclear protein related to vernalization 1 (rtv1)>, enhancing the dna binding activity of rtv1 to floral integrator gene promoters and resulting in flowering initiation (heo et al.,2012).” [need to determine the full underlying relationship between xlg2 and the nuclear protein related to vernalizatoin (rtv1)]
128. “because we found that <regions of eba175 outside of the tandem dbl domains influenced its ability to interact with gypa>, we asked whether pfeba175 fl would be able to elicit a more potent invasion-blocking antibody response than the rii fragment alone.” [need to determine the full underlying relationship between regions of eba175 and gypa]
129. “agg3 expands the plasma membrane with the γ domain in the cytosol, able to associate with agb1 and thus transmit signaling through gβγ3 dimers while its extracellular cysteine-rich domain is free to interact with extracellular domains from receptors or perhaps bind agonists by themselves, without the intervention of receptors.” [a description of how the extracellular cysteine-rich domain is free to move about the space, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
130. “disability associated with jaw and neck pain interferes greatly with daily activities and can affect the patient's lifestyle which declines the individual's ability to work and interact in a social environment [6,8].” [a statement about consequences of disabilities that makes it difficult for people to be in social environments, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
131. “to examine <the interaction between ampkα2 and hnf4α>, we used metformin (an ampk activator) to treat four gc cell lines (nci-n87, ags, hs746t and mkn45).” [need to determine the full underlying relationship between ampkα2 and hnf4α]
132. “aside from the genetic interaction, we have now evidence of <physical interaction between g-protein subunits and several rlks> suggesting that g-protein signaling occurs immediately after recognition of the signals by the receptors (aranda-sicilia et al.,2015).” [need to determine the full underlying relationship between g-protein subunits and several rlks]
133. “gdp-bound g protein conformation does not allow interaction with downstream effectors and it is therefore inactive, independently of its phosphorylation state (b) .” [a statement of negated relationship and the effects of it, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
134. “the symbolize portions of this white, that is, units that resume or synthesize the interaction of two creating powers, the masculine and the feminine, in the right and the left side.” [a description of the symbolized portions, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
135. “<the survival is believed to be strongly determined by biological interactions and sea conditions>, however it has been poorly investigated.” [need to determine the full underlying relationship between survival and biological and sea conditions]
136. “swaminath1has cogently illustrated the use and value of humour in clinical interactions.” [an example for people interacting in the clinic, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
137. “in order for a receptor to be a gpcr it needs to transmit the signal through g-proteins and in the case of <gcr1 it was reported that it physically interacts with gpa1> (pandey and assmann,2004), a claim that other authors could not reproduce (urano and jones,2013).” [need to determine the full underlying relationship between gcr1 and gpa1]
138. “this suggests that <rme-1 in the inactive adp-bound state interacts with amph-1> and prevents amph-1 mediated tubulation.” [need to determine the full underlying relationship between rme-1 in the inactive adp-bound state and amph-1]
139. “on the basis of drug-target networks, it was estimated early on that a drug interacts on average with approximately two targets4.” [a general statement about drug-target networks with no specific interactions mentioned, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
140. “EXAMPLE” [EXAMPLE]
141. **INTERSECT**
142. “given that small ubiquitin-like modifier (sumo) is a reversible covalent post-translational modification (ptm) targeting chromatin-associated factors and regulating epigenetic silencing, we investigated the mechanisms by which <hiv-1 tat could intersect with the sumo pathway> to promote hiv-1 gene reactivation.” [need to determine the full underlying relationship between hiv-1 tat and the sumo pathway]
143. “although <these pathways intersect in cell death>, they culminate in disparate outcomes, immunity, or disease as detailed in the text.” [need to determine the full underlying relationship between these pathways]
144. “these two lines are calculated in a way to accurately approximate the point swarms in x and y. the lines intersect with the average points, and by projecting the observations onto them, the scores of t1 and u1 are obtained for x and y, respectively.” [a statement about lines that intersect on a graph, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
145. “in particular in regions with bone deficiency, the rays first penetrate the reconstructed (intact) mesh and, only further on intersect the deficient mesh.” [a statement of methodology where the mesh connects to the deficient mesh, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
146. “EXAMPLE” [EXAMPLE]
147. **INVOLVED**
148. “thus, it is possible that <these proteins may somehow be involved in the pathogenesis of these diseases as well as in ad>. [need to determine the full underlying relationship between these proteins and the pathogenesis of these diseases and ad]
149. “although autophagy is considered to be an adaptive process, current studies suggest that <a basal level of autophagy is always active and is involved in protein quality control> [81–83].” [need to determine the full underlying relationship between levels of autophagy and protein quality control]
150. “all authors were involved with interpreting the data statistically and clinically.” [a statement about the authors working together, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
151. “thus, an innovative platform for european research with the possibility for european research funding could be established, bringing together all the necessary disciplines involved.” [a new platform to bring all the necessary disciplines involved together, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
152. “EXAMPLE” [EXAMPLE]
153. **LINK/ LINKAGES/ LINKED/ LINKING/ LINKS**
154. “all neurodegenerative diseases and most pmds are strictly associated with aging, suggesting <a link between protein misfolding and aging>.” [need to determine the full underlying relationship between protein misfolding and aging]
155. “this further provided <a molecular link between the β2-m intracellular signaling axis mediated by erk and sterol regulatory element-binding protein-1 (srebp-1)>, involving lipogenic signaling, which collectively regulates ar expression and function.” [need to determine the full underlying relationship between the β2-m intracellular signaling axis mediated by erk and sterol regulatory element-binding protein-1 (srebp-1)]
156. “data were collected for 10 min, and the aggregation percentage was calculated with aggrolink software.” [a software called aggrlink, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
157. “in the blood plasma antibiotics link themselves to proteins and thus can pass from blood into milk.” [a physical connection between antibiotics and proteins, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
158. “<many of these structures have already shown their linkages with diseases like cancer and genetic disorders>, hence making them an extremely striking target for structure-specific drug designing and therapeutic applications.” [need to determine the full underlying relationship between many of these structures and diseases like cancer and genetic disorders]
159. “such enzymes of glycoside hydrolase class may serve as potential agents to target cyst walls due to their specificity towards degrading gal-glu and gal-gal linkages.” [a physical connection between amino acids: gal-glu and gal-gal, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
160. “it has also been shown that <cart outcomes are linked to age>, with older patients tending to have higher mortality rates in the first years of treatment.” [need to determine the full underlying relationship between cart outcomes and age]
161. “fifty chagas disease patients with positive results in both immunofluorescence assays (ifi) and enzyme-linked immunosorbent assays (elisa) were evaluated.” [a statement of methodology using enzyme-linked immunosorbent assays (elisa), not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
162. “finally, we briefly review strategies for evaluating promising hypotheses <linking diet to cancers of the large bowel, lung, breast, and prostate>.” [need to understand the full underlying relationship between diet and cancers of the large bowel, lung, breast, and prostate]
163. “these were merged to other data using a linking file and computer program that immediately deleted all personal identifiers to maintain complete confidentiality during analysis.” [a statement of methodology that used a ‘linking file’ and computer program to merge the data, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
164. “another example that <links proteasomal activity with aging> came from studies performed on the longest-lived rodent, heterocephalus glaber , better known as naked mole rat.” [need to determine the full underlying relationship between proteasomal activity and aging]
165. “journals could also provide links to sites providing national and international guidelines concerning the conduct and reporting of research.” [a statement that journals should provide the website sources/links that provide guidelines concerning conduct and reporting of research, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
166. “EXAMPLE” [EXAMPLE]
167. **RELATE/ RELATED/ RELATION/ RELATIONS/ RELATIONSHIP/ RELATIONSHIPS**
168. “A person’s LR tends to increase with age, but <within older individuals lower LRs still relate to higher AUD risks>.” [need to determine the full underlying relationship between older individuals lower LRs and higher AUD risks]
169. “it should be noted that our estimates of gluconeogenesis and glycogenolysis relate solely to the liver.” [a methodological statement about the measurements taken that only pertain to the liver and nothing else, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
170. “<this might be related to the more severe amyloid and tau pathologies in ad> compared to dlb and pd, or it is possible that α -synuclein pathology in some way affects the association between sapp α and sapp β with the development of ad pathology.” [need to determine the full underlying relationship between this and the more severe amyloid and tau pathologies in ad]
171. “immigrants returning to visit families in their home countries are at high risk for travel-related illness ( 8 – 12 ).” [a statement about travel-related illness, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
172. “in order to understand <the effect of the mutations in g6pd gene function and its relation with g6pd deficiency severity>, we report the construction, cloning and expression as well as the detailed kinetic and stability characterization of three purified clinical variants of g6pd that present in the mexican population: g6pd zacatecas (class i), vanua-lava (class ii) and viangchan (class ii).” [need to determine the full underlying relationship between the effect of the mutations in g6pd gene function and g6pd deficiency severity]
173. “as embryonic aneuploidy increases with an advanced maternal age and is suspected to contribute largely to implantation failure, the authors analyzed <the clinical outcomes of the r and nr groups in relation to patients who were aged under 40 years old> (table 3).” [need to determine the full underlying relationship between the clinical outcomes of the r and nr groups and the patients who were aged under 40 years old]
174. “the transition rule ϕrto the cell ciconcentrates on three items of xi, xi +1and xi + r −1by comparing their distances, which is the relation measurement between two items.” [a definition of the relation measurement between two items in general, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
175. “despite a bmi within a seemingly normal range, a young patient may have a low weight or even be underweight in relation to his or her own weight curve.” [a general statement about a patients weight and their own weight curve, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
176. “<interactions between humans and animals go well beyond simple ecological and functional relations> and, since antiquity, cultures have attributed magical and religious meaning to wild and domesticated animals [7,8,16-19].” [need to determine the full underlying relationship between humans and animals and the ecological and functional]
177. “the first criterion asks that the starting point of a new cluster should have a smaller distance than the average; the second one requests the distance between two consecutive items of a cluster boundary, that is, one is the end and the other is the start of two distinct clusters, respectively, to be bigger enough; <the final criterion emphasizes the relations among consecutive items near the boundary>, which is helpful to filter the noise.” [a statement of criteria that emphasizes the connections among consecutive items near the boundary, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
178. “<the complex, multi-faceted and non-linear nature of the relationship between patients, treatment centres and cart outcomes> mean that statistical modelling may fail to completely adjust for all potentially confounding factors.” [need to determine the full underlying relationship between patients, treatment centres, and cart outcomes]
179. “to further clarify <the relationship between the development of dr and ma>, development of dr was selected as a dependent variable, in contrast, ma as well as other clinical parameters was regarded as the independent variables to build a multiple logistic regression model.” [need to determine the full underlying relationship between the development of dr and ma]
180. “such a dose-response relationship can thus be modelled using the following logistic regression equation:” [a methodological statement about dose-response curves, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
181. “there is no relationship to estrogen stimulation.” [a statement of a negative relationship to estrogen stimulation, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
182. “nevertheless, further studies are necessary to assess <the temporal and spatial relationships between juvenile and adult white seabream>.” [need to determine the full underlying relationship between juvenile and adult white seabream temporally and spatially]
183. “all authors do not have the financial and personal relationships with the organization that could inappropriately influence (bias) the current research.” [a statement of conflicts of interest that authors have none, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
184. “on facebook, they can quickly initiate many superficial relationships with new facebook-friends and get a large audience for their well-planned self-presentation.” [a statement about facebook relationships that are superficial, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
185. “EXAMPLE” [EXAMPLE]
186. **TREND**
187. “<current trends credit treatments derived from natural sources to have notable effect on antitumor agent discovery> (1).” [need to determine the full underlying relationship between natural sources and antitumor agent discovery]
188. “punjab state has been reporting <a rising trend in cancer cases and high pesticide use has been reported as one of the risk factor for the same>.” [need to determine the full underlying relationship between cancer cases and high pesticide use]
189. “other nontechnical words describing the evolutionary process included “develop,” “acquire,” “appear,” “trend,” “become common,” “improve,” and “arise.” inclusion of technical words relating to evolution (e.g., “selection,” “differential fitness,” “genetic change,” or “adaptation”) did not substantially alter the picture: in evolutionary journals, evolution-related words were used 79.1% of the time that there was an opportunity to use them (range 26%–98%, mode 50%–60%), whereas in biomedical journals they were used only 17.8% of the time (range 0%–92%, mode 0%–10%).” [a statement about the word ‘trend’ as a nontechnical word, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
190. “our main study objectives were to evaluate the epidemiology of imported malaria in children in industrialized countries, identify trends and risk groups, and rank destinations according to malaria risk for children.” [a statement about the study objective to identify trends with no specific relationship mentioned yet, not a research question that discusses a superficial relationship between 2 or more variables with a need to determine the full underlying relationship between them]
191. “EXAMPLE” [EXAMPLE]
192. **EXAMPLE**
193. “EXAMPLE” [EXAMPLE]
194. “EXAMPLE” [EXAMPLE]
195. “EXAMPLE” [EXAMPLE]

**Future opportunities**

FUTURE WORK = a statement of extensions, including next steps, directions, opportunities, approaches, or considerations of the described work that may be implemented at some future time point. The next actionable step is to determine the next course of action based on this future work proposal.

1. **EXAMPLE**
2. “EXAMPLE” [EXAMPLE]
3. “EXAMPLE” [EXAMPLE]

NON-URGENT RECOMMENDATION = a statement of suggestion or proposal as to the best course of action, especially one put forward by an authoritative body OR advice telling someone what the best thing to do is. The next actionable step is to determine the validity of the suggestion or proposal; publicize the suggestion or proposal to the correct group of people.

1. **EXAMPLE**
2. “EXAMPLE” [EXAMPLE]
3. “EXAMPLE” [EXAMPLE]

FUTURE PREDICTION = a statement of extrapolation of given data into the future and/or from past observations; no reference to next steps. The next actionable step is to run the simulation or experiment to determine if the prediction is correct; publicize the outcomes of the study to the correct people

1. **EXAMPLE**
2. “EXAMPLE” [EXAMPLE]
3. “EXAMPLE” [EXAMPLE]

URGENT CALL TO ACTION = a statement calling for immediate attention including an action needed to be taken immediately or information that needs to be disseminated immediately OR critical: being in or verging on a state of crisis or emergency OR urgently needed OR absolutely necessary. The next actionable step is to take the urgent action ASAP or distribute the knowledge ASAP.

1. **EXAMPLE**
2. “EXAMPLE” [EXAMPLE]
3. “EXAMPLE” [EXAMPLE]

**Surprises/Interesting**

CURIOUS FINDING = a statement of a surprising result, conclusion, or situation; the researchers were not expecting the result, conclusion or situation but are intrigued by it. The next actionable step is to explore the surprising result, conclusion, or situation more.

1. **EXAMPLE**
2. “EXAMPLE” [EXAMPLE]
3. “EXAMPLE” [EXAMPLE]

UNEXPECTED OBSERVATION = a statement of a judgement or inference from an observable phenomenon that the researchers did not expect; an element of surprise. The next actionable step is to repeat the experiment or simulation to make sure the observations are repeatable; think about next steps with this result.

1. **EXAMPLE**
2. “EXAMPLE” [EXAMPLE]
3. “EXAMPLE” [EXAMPLE]

**Issues/concerns**

DIFFICULT TASK = a statement of something not easily done, accomplished, comprehended, solved, or complicated with a multitude of underlying pieces or parts; heterogeneity; not medical complications. The next actionable step is to create methods to study the complicated system and to better understand any piece of the complicated system; potentially overall field development needed

1. **EXAMPLE**
2. “EXAMPLE” [EXAMPLE]
3. “EXAMPLE” [EXAMPLE]

PROBLEMS OR COMPLICATIONS = a statement of issues, problems, mistakes, or medical complications that are cause for anxiety and/or worry. The next actionable step is to determine the gravity of the concern and determine if it needs to be dealt with before the next experiment or study.

1. **EXAMPLE**
2. “EXAMPLE” [EXAMPLE]
3. “EXAMPLE” [EXAMPLE]

CONTROVERSY = a statement of disagreement amongst researchers OR a lack of consensus OR at least two possible answers are presented as results from different researchers - usually in reference to previous results and stated when results disagree with each other OR contradictions. The next actionable step is to determine the truth to break any disagreements.

1. **EXAMPLE**
2. “EXAMPLE” [EXAMPLE]
3. “EXAMPLE” [EXAMPLE]

**Questions answered by this work** = a statement of a goal or objective of a study that is attempted or completed during the study. The next actionable step is to find the answer(s) in the article; determine if the question(s) is (are) fully answered in the article.

1. **EXAMPLE**
2. “EXAMPLE” [EXAMPLE]
3. “EXAMPLE” [EXAMPLE]
4. Identify and classify the span of text that is the subject of the type of epistemics: what is the epistemic statement about in general (full definitions of subjects can be found in attached excel spreadsheet - Ignorance\_Taxonomy\_Information\_10.8.18 – Epistemic\_Subjects Sheet). Along with the definition, a knowledge goal is provided. Feel free to use this to ensure the annotating captures that more information is needed (next steps). Each epistemic type identified in task 1 should have a corresponding subject. If you do not see one that fits, please think about a new one that would capture the subject and write a note in the last excel spreadsheet under “Epistemic Subject Notes”.
   1. **Function**
      1. Abilities = the skills and potential to act
         1. **Knowledge goal:** What can things do/not do in the relevant circumstances?
      2. Activities = the realization of abilities
         1. **Knowledge goal:** What actions occur at different time points?
      3. Roles = the reason for the activity or entity with respect to the system
         1. **Knowledge goal:** What is the functional role of the entity or activity in the context of the system? What does it contribute to the behavior of the system as a whole?
   2. **Global Organization**
      1. Communication = contact between at least two things
         1. **Knowledge goal:** Do these things communicate with each other? How do they communicate?
      2. Comparison = determine the similarities and differences between at least two things
         1. **Knowledge goal:** How are these things similar and different?
      3. Disruption = disturbances, problems, or alterations that interrupt an event, activity, or process
         1. **Knowledge goal:** What is disrupted? How is it disrupted?
      4. Independent = at least two things are disjoint
         1. **Knowledge goal:** Are these things independent? Why are they independent?
      5. Pathway = a path between at least two things
         1. **Knowledge goal:** What is the path between at least two things?
      6. Regulation = constraints on entities or processes from outside the process or entity itself, including preventative measures
         1. **Knowledge goal:**  How is the process regulated?
      7. Reproducibility = multiple sources/studies have come to the same conclusion or results
         1. **Knowledge goal:** Are the same results or conclusions reached when the study or a similar one is done?
      8. Risk = either a chance with a possibility of being wrong or right with no guarantee either way or hazardous/potentially harmful/no guarantee of benefits
         1. **Knowledge goal:** Is something a real risk? How big of risk is it?
      9. Safety = efficacy concerns or focus
         1. **Knowledge goal:** Is the experiment safe?
      10. Model = the overall large picture organization of a system
          1. **Knowledge goal:** Does the model work with all situations mentioned? Are there any exceptions or edge cases?
      11. Methodology = instrumentation or methodologic information
          1. Is the instrumentation appropriate? Does it fulfill all its needs?
   3. **Location/Context**
      1. Body location = located in a specific part of the organism (like a body part or organ) instead of referring to the whole organism
         1. **Knowledge goal:** Where in the organism?
      2. Environment = the outside surroundings of the system
         1. **Knowledge goal:** What are the surroundings? What role do the surroundings play?
      3. Model/animal system = the whole organism
         1. **Knowledge goal:** What organism?
      4. Sex = societal sex assignment (male or female typically)
         1. **Knowledge goal:** What is the gender/sex? Does the gender/sex make a difference in the system?
   4. **Production**
      1. Establishes = information about establishment including formation and signaling
         1. **Knowledge goal:** What establishes it? How is it established? What forms it? What signals it?
      2. Mobilization = movement and/or usage of stored material waiting for use
         1. **Knowledge goal:** Why are the stores mobilized now?
      3. Sustains = information about its maintenance including reduction, loss, and retention
         1. **Knowledge goal:** What sustains it? Is it sustained?
   5. **Structures/Entities**
      1. Characteristics = an other category for structures/entities
         1. **Knowledge goal:** What are structural and entity characteristics?
      2. Magnitude/amount/size = the size, extent, or amount
         1. **Knowledge goal:** How big? How much?
      3. Molecular nature = genetic and chemical underpinnings of the structure or entity
         1. **Knowledge goal:** What is the molecular nature?
      4. Morphology = the form of the entity or structure
         1. **Knowledge goal:** What is the morphology?
      5. Structure, consistency, uniformity = the overall stability of the structure or entity over time and location
         1. **Knowledge goal:** Is the structure consistent or uniform?
   6. **Timing**
      1. Age = length of time a thing has existed
         1. **Knowledge goal:** What is the age?
      2. Duration = the length of time for a process
         1. **Knowledge goal:** How long is the process?
      3. End time = the termination time of a process
         1. **Knowledge goal:** When does the process end?
      4. Start time = the beginning time of a process
         1. **Knowledge goal:** When does the process start?
      5. Time points = specific time points during the process
         1. **Knowledge goal:** When does a specific event occur?
5. Link the type of epistemics (task 1) to its subject (task 2). Using the graph space functionality in knowtator2, connect the epistemic types to their subjects using the relation “is about”. I will provide detailed training of how to use knowtator2 for this task on the day of annotation. Please put all annotations from one sentence in the same graph space even if parts are disconnected. Name the graph space GS# where # is the sentence number.

**NOTES:**

* 1. There can be no, one, or more than one type of epistemics per sentence. There can also be no, one, or more than one subject per sentence. Types of epistemics and subjects can form a chain with the relation is\_about. Please also put all annotations from one sentence in the same graph space even if parts are disconnected.
  2. Each type of epistemics should either map to or be mapped to either a subject or another type of epistemics. Graphing the “is\_about” relationship helps clarify this criterion.
  3. Feel free to use the search function built in to knowtator2: make sure to read the options and be careful because terms can appear in multiple categories.

1. **2 ABSTRACT IDENTIFICATION EXAMPLES**

**Key: Yellow is epistemic type (TYPE), green is subject (SUBJECT)**

* 1. **PMC48141 abstract**

**Background**

Little is known (FULL UNKNOWN) about genetic factors (MOLECULAR NATURE) affecting intraocular pressure (IOP) in mice and other mammals (MODEL/ANIMAL SYSTEM). The purpose of this study (QUESTIONS ANSWERED BY THIS WORK) was to determine the IOPs of genetically distinct mouse strains (MODEL/ANIMAL SYSTEM), assess the effects of factors such as age (AGE), sex (SEX) and time of day (TIME POINT) on IOP in specific strain backgrounds, and to assess the effects of specific candidate gene mutations (MOLECULAR NATURE/DISRUPTION) on IOP.

**Results**

Based on over 30 studied mouse strains, average IOP ranges from approximately 10 to 20 mmHg. Gender (SEX) does not typically (CONTROVERSY) affect IOP and aging (AGE) results in an IOP decrease in some strains (MODEL/ANIMAL SYSTEM). Most (PROBABLE EXPLANATION) tested strains (MODEL/ANIMAL SYSTEM) exhibit a diurnal rhythm with IOP being the highest during the dark period of the day (TIME POINT). Homozygosity for a null allele of the carbonic anhydrase II gene (*Car2**n*) does not alter IOP while homozygosity for a mutation in the leptin receptor gene (*Lepr**db*) that causes obesity and diabetes results in increased IOP. Albino C57BL/6J mice homozygous for a tyrosinase mutation (*Tyrc*-2*J*) have higher IOPs than their pigmented counterparts.

**Conclusions**

Genetically distinct mouse strains housed in the same environment have a broad range of IOPs. These IOP differences are likely (PROBABLE EXPLANATION) due to interstrain (MODEL/ANIMAL SYSTEM) genetic differences (MOLECULAR NATURE) that create a powerful resource for studying the regulation (REGULATION) of IOP. Age, time of day, obesity and diabetes have effects on mouse IOP similar to those in humans and other species. Mutations in two of the assessed candidate genes (*Lepr* and *Tyr*) result in increased IOP. These studies demonstrate that mice are a practical and powerful experimental system to study the genetics of IOP regulation and disease processes that raise IOP to harmful levels.

* 1. **PMC5975408**

## **Background**

Prevention of mother-to-child HIV transmission (PMTCT) programs usually (INCOMPLETE EVIDENCE) test pregnant women (ANIMAL/MODEL SYSTEM) for HIV without involving (INDEPENDENT) their partners. Non-disclosure of maternal HIV status to male partners (COMMUNICATION) may (POSSIBLE UNDERSTANDING) deter (DISRUPTION) utilization of PMTCT interventions since partners play a pivotal role (ROLE) in decision-making within the home including access to and utilization of health services.

## **Methods**

Mothers attending routine 6-week and 9-month infant immunizations were enrolled at 141 maternal and child health (MCH) clinics across Kenya from June–December 2013. The current analysis was restricted to mothers with known HIV status who had a current partner. Multivariate logistic regression models adjusted for marital status, relationship length and partner attendance at antenatal care (ANC) were used to determine correlates of HIV non-disclosure among HIV-uninfected and HIV-infected mothers, separately, and to evaluate the relationship (SUPERFICIAL RELATIONSHIP) of non-disclosure with uptake of PMTCT interventions (COMMUNICATION). All analyses accounted for facility-level clustering,

## **Results**

Overall, 2522 mothers (86% of total study population) met inclusion criteria, 420 (17%) were HIV-infected. Non-disclosure of HIV results to partners was higher among HIV-infected than HIV-uninfected women (13% versus 3% respectively, p < 0.001). HIV-uninfected mothers (MODEL/ANIMAL SYSTEM) were more likely (PROBABLE UNDERSTANDING) to not disclose (COMMUNICATION) their HIV status to male partners if they were unmarried (adjusted odds ratio [aOR] = 3.79, 95% CI: 1.56–9.19, p = 0.004), had low (≤KSH 5000) income (aOR = 1.85, 95% CI: 1.00–3.14, p = 0.050), experienced intimate partner violence (aOR = 3.65, 95% CI: 1.84–7.21, p < 0.001) and if their partner did not attend ANC (aOR = 4.12, 95% CI: 1.89–8.95, p < 0.001). Among HIV-infected women (MODEL/ANIMAL SYSTEM), non-disclosure (COMMUNICATION) to male partners was less likely (PROBABLE UNDERSTANDING) if women had salaried employment (aOR = 0.42, 95%CI: 0.18–0.96, p = 0.039) and each increasing year of relationship length (DURATION) was associated (SUPERFICIAL RELATIONSHIP) with decreased likelihood (PROBABLE UNDERSTANDING) of non-disclosure (COMMUNICATION) (aOR = 0.90, 95% CI: 0.82–0.98, p = 0.015 for each year increase). HIV-infected women who did not disclose (COMMUNICATION) their HIV status to partners were less likely (PROBABLE UNDERSTANDING) to uptake CD4 testing (aOR = 0.32, 95% CI: 0.15–0.69, p = 0.004), to use antiretrovirals (ARVs) during labor (OR = 0.38, 95% CI 0.15–0.97, p = 0.042), or give their infants ARVs (OR = 0.08, 95% CI 0.02–0.31, p < 0.001) (DISRUPTION).

## **Conclusion**

HIV-infected women (MODEL/ANIMAL SYSTEM) were less likely (PROBABLE UNDERSTANDING) to disclose (COMMUNICATION) their status to partners than HIV-uninfected women (MODEL/ANIMAL SYSTEM). Non-disclosure (COMMUNICATION) was associated (SUPERFICIAL RELATIONSHIP) with lower use of PMTCT services (DISRUPTION). Facilitating maternal disclosure to male partners (COMMUNICATION) may (POSSIBLE UNDERSTANDING) enhance (SUSTAINS) PMTCT uptake.

1. **CLARIFYING CONFUSING DISTINCTIONS – put this in the first one that appears and in the other one say see note above**
2. **Possible understanding vs. Probable understanding**

Possible understanding is a statement of a feasible explanation, relationship, or phenomenon with no claim to the correct explanation, relationship, or phenomenon. The statement is more proposing options and not staking a claim as to which is correct. This includes epistemic cues such as could, can be, have potential, it is possible, and might. In the sentence, “Small changes in the resistance to aqueous humor drainage may also contribute to diurnal differences in IOP” the researchers offer another possible contributor to diurnal differences in IOP.

Probable understanding is a statement staking a claim to the most likely explanation, relationship, or phenomenon where it has a good chance of being the case or of coming about. This includes epistemic cues such as it is becoming increasingly clear. Likely, unlikely, promising, plausible, mainly. In the sentence “It is becoming increasingly clear that many forms of glaucoma have a genetic component” the researchers stake a claim that probably many forms of glaucoma have a genetic component.

1. **Controversy vs. alternative options**

Controversy is a statement of disagreement amongst researchers; a lack of consensus; at least two possible answers are presented as results from different researchers; usually in reference to previous results and stated when results disagree with each other; contradictions. There are at least two possible answers already presented as results from different researchers. This is usually in reference to previous works findings and stated when findings disagree with each other. This includes epistemic cues such as do not agree, have been variably, some but not all, some but not other studies, have been implicated, and but. In the sentence “Some but not all human studies have reported a positive association between IOP and blood pressure” there is disagreement on the association between IOP and blood pressure.

Alternative options is a statement of multiple (at least 2) choices or actions with no stated disagreements, including statements with an implied second option such as "whether". These options have not yet been studied and so there cannot be disagreements yet about which one is correct. The statement only introduces the options. This includes epistemic cues such as alternatively, cannot be ruled out, though, either, and whether. In the sentence “An effect of anesthesia in these very old mice cannot be ruled out” the researcher indicates an anesthesia affect is an alternative option for explaining some phenomenon in very old mice.

1. **Curious finding vs. unexpected observation**

Curious finding is a statement of a surprising result, conclusion, or situation; the researchers were not expecting the result, conclusion, or situation but are intrigued by it. This includes epistemic cues such as curious, however, interestingly, surprisingly, and suspected. The researchers were not expecting the result or conclusion.

Unexpected observation is a statement of a judgement or inference from an observable phenomenon that the researchers did not expect; an element of surprise. This includes epistemic cues such as apparently, appear, appears to be, seems to be, and does not appear to be. The statement describes an observable phenomenon that they did not expect.

In the sentence “Interestingly, the IOP of strain CBA/CaJ does not appear to increase in the dark.” *Interestingly* is classified as curious finding because it indicates a result that the researchers did not expect. *Does not appear to* is classified as unexpected observation because they observed that the IOP not increasing in the dark but they are not certain if this observable phenomenon is repeatable.

1. **Non-urgent recommendation vs. urgent call to action**

Non-urgent recommendation is a statement of suggestion or a proposal as to the next best course of action, especially one put forward by an authoritative body; advice telling someone what the best thing to do is. This includes epistemic cues such as advocate, encourage, guideline, should be, require, must be, and it is important that. It is a non-urgent recommendation that does not necessarily need to be dealt with right away, there is no clear sense of urgency. For example, in the sentence, “Thus, to avoid effects of anesthesia on IOP, all measurements should be made within a window of up to 12 minutes after anesthetic administration.” The sentence recommends taking measurements up to 12 minutes after anesthetic administration, without urgency, but useful for further experimentation.

Urgent call to action is a statement calling for immediate attention including an action needed to be taken immediately or information that needs to be disseminated immediately; critical: being in or verging on a state of crisis or emergency; urgently needed; absolutely necessary. This includes epistemic cues such as call to act, critical, cause for concern, crucial, essential, high priority, imperative, needed, influential, and vital. The statement has a clear sense of urgency. For example, in the sentence, “As PMTCT Option B+ scales up with regimens that require life-long antiretroviral treatment (ART) adherence, the need for HIV-infected pregnant and breastfeeding women to disclose their status to their male partners becomes more critical in order to maintain adherence to ART.” Here *the need* and *more critical* indicate a sense of urgency that needs to be dealt with sooner rather than later.

1. **Future work vs. future prediction**

Future work is an explicit statement of extensions, including next steps, directions, opportunities, approaches, or considerations, of the described work that may be implemented at some future time point. This includes epistemic cues such as additional studies, more information… is needed, needs to be assessed, future investigation/strategies/opportunities/considerations, and candidate. For example, in the sentence “Mutations in two of the assessed candidate genes (*Lepr* and *Tyr*) result in increased IOP.” *Candidate* indicates that more work needs to be done to determine if these 2 genes actually increase IOP.

Future prediction is a statement of extrapolation of given data into the future and/or from past observations; no reference to next steps or future work. This includes epistemic cues such as if real, if confirmed, expect, supposed to, will, ultimately, would, and implication. For example, the sentence “If real, this sporadic sex difference was not dependent on age, sometimes occurring in a group of B6 mice at a particular age and sometimes not occurring in a separate group of the same age.” This sentence indicates that if the phenomenon was real, then multiple things follow (a prediction). Notice no next steps are stated.