# Assessment

Note:

* In this print out numbers in (brackets) are coded responses, used for analysis since data output from this questionnaire returns participant’s responses as numbers instead of the full text of their choices.
* Correct answers in green. All correct answers scored 1 point unless otherwise stated.

Start of Block: Milestone 1

Q74 **You will now be asked a series of questions**   
  
  
This assessment is expected to take you about 30 minutes to complete all 7 sections.    
It is very difficult to learn so much information in one session so you are not expected to know all the answers! Don't worry if you need to guess sometimes.  
  
   
Please refer to the visualisation to help you answer these questions [(if you have closed it by accident you can access it again here)](https://www.morenostok.io/mendel/visualisation.html)

Q47 Select from the list below all the traits present in the network

* Education (1) – 0.2 score
* Heart Disease (2) – 0.2 score
* Wellbeing (3) – 0.2 score
* Eveningness (4) – 0.2 score
* Diabetes (5) – 0.2 score
* Coffee intake (6) – 0.2 score
* OCD (7)
* Public transport use (8)
* Phone use (9)
* Videogaming (10)
* Weight (11)
* Diet (12)
* Drug use (13)
* Social anxiety (14)

Q48 Does insomnia share a **direct** relationship with eveningness?

* Yes (1)
* No (2) – 1 score

Q98 Please indicate how different arrow colors in the visualisation represent how different relationships affect the prevalence of traits:

|  |  |  |
| --- | --- | --- |
|  | Increases (1) | Decreases (2) |
| Red arrows represent... (1) | 0.5 score |  |
| Blue arrows represent... (2) |  | 0.5 score |

Q49 For the next few questions please consider the **direct** relationship between **coffee intake** and **intelligence**

Q50 What is the **direction** of this relationship?

* Intelligence affects coffee intake (1)
* Coffee intake affects intelligence (2)

Q51 Compared to the effect size of other effects in the network, how **large** is this effect? (Remember the visualisation does not show relationship strengths)

* Larger than average (2)
* Smaller than average (3)

Q52 Is this relationship responsible for an increase or decrease?

* The effect is responsible for an increase (1)
* The effect is responsible for a decrease (2)

Q64 Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

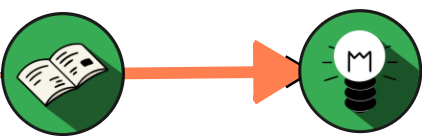
End of Block: Milestone 1

Start of Block: Milestone 2

Q79   
   
Please refer to the visualisation to help you answer these questions [(if you have closed it by accident you can access it again here)](https://www.morenostok.io/mendel/visualisation.html)

Q86 On the picture below please click on the **trait**which is responsible for a change in the other (the color of the traits is not important for this question):

Not scored



Q53   
Imagine that a fast food restaurant opened up and people started going there so much that they put on weight. This would **increase** their BMI. What effect would this have on **smoking**? (Remember the visualisation does not show relationship strengths)

* Smoking would increase by a relatively large amount (1)
* Smoking would increase by a relatively small amount (2)
* Smoking would reduce by a relatively large amount (3)
* Smoking would reduce by a relatively small amount (4)

Q54   
Would either of the following public health interventions directly increase exercise? Please consider only the immediate **direct** effects of interventions.

* Increasing intelligence would increase exercise (1)
* Increasing education would increase exercise (2)
* No, neither of the interventions above would increase exercise (4)

Q55 Which intervention would **most reduce** heart disease directly? Please consider only the immediate direct effects of interventions.

* Increasing exercise (1)
* Reducing diabetes (2)
* Increasing education (3)

Q65 Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

End of Block: Milestone 2

Start of Block: Milestone 3

Q80   
   
   
Please refer to the visualisation to help you answer these questions [(if you have closed it by accident you can access it again here)](https://www.morenostok.io/mendel/visualisation.html)

Q56 Would the effects of an intervention to **increase education** be on the general mental and physical health of the population? For the purposes of this question please treat increases in coffee intake, BMI, eveningness, smoking, neuroticism as **bad** even if this is not intuitive to you (you can see whether traits are good/bad by using the Trait key under the help menu of the visualisation)

* Its effects would be only good (1)
* Its effects would be mixed (3)
* Its effects would be only bad (4)

Q58 Which trait causes the **greatest** effects on other traits in the network? (Remember the visualisation does not show relationship strengths)

* BMI (1)
* Education (2)
* Intelligence (3)
* Depression (4)

Q66 Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

End of Block: Milestone 3

Start of Block: Milestone 4

Q81   
   
Please refer to the visualisation to help you answer these questions [(if you have closed it by accident you can access it again here)](https://www.morenostok.io/mendel/visualisation.html)

Q88 Reflecting on your experience with the interactive visualisation or game software please drag the bar below to indicate how much you found it easy to use

Item not scored

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Very difficult to use | Somewhat difficult to use | Somewhat easy to use | Very easy to use |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |

|  |  |
| --- | --- |
| Usability (1) |  |

Q60   
Imagine a scenario where students go to University. One might expect that education **and** alcohol consumption would **both increase**. What would be the combined **direct** effects of this on eveningness? Please consider only the immediate direct effects of interventions.

* Increasing education and alcohol consumption would both increase eveningness (1)
* Increasing education and alcohol consumption would both decrease eveningness (2)
* The effects of increasing education and alcohol consumption would cancel out and there would be little/no effect (3)

Q61 Select the combination of interventions whose direct effects would most **increase**wellbeing.  Please consider only the immediate **direct** effects of interventions.

* Reduce neuroticism, depression, and insomnia (1)
* Reduce worry, depression, and insomnia (3)
* Increase exercise and reduce eveningness (4)

Q67 Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

End of Block: Milestone 4

Start of Block: Milestone 5

Q82   
   
Please refer to the visualisation to help you answer these questions [(if you have closed it by accident you can access it again here)](https://www.morenostok.io/mendel/visualisation.html)

Q95 Click on the trait(s) below which would be **increased** by an intervention on education (please ignore the colours of the traits for this question)

Not scored



Q62 Imagine that Universities were closed and the students just went home. This would **reduce** education. Given the example of the relationship between education and intelligence (shown above), what would happen if education was **reduced**?

* Insomnia would increase (1)
* Insomnia would not be affected (2)
* Insomnia would decrease (3)

Q63 What effect would **reducing**depression have on worry?

* It would have no effect (1)
* It would reduce worry (2)
* It would increase worry (3)

Q68 Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

End of Block: Milestone 5

Start of Block: Milestone 6

Q83   
Please refer to the visualisation to help you answer these questions [(if you have closed it by accident you can access it again here)](https://www.morenostok.io/mendel/visualisation.html)

Q64 When considering the whole network of effects, **including all indirect effects**, does depression have an effect on coffee intake?

* Yes (1)
* No (2)

Q97 For the next two editions please consider the scenario: Imagine that a new brewery opened up and people started drinking **more** alcohol.

Q65 For this question we would like you to focus on only two of the effects of increasingalcohol consumption: it **increases** BMI and **reduces** education. Education then has a knock-on effect on BMI. We would like you to identify what this effect is and use this to estimate the combined overall effects on BMI:

* Increasing alcohol and reducing education would both increase BMI (1)
* Increasing alcohol and reducing education would have opposing effects on BMI which would cancel out so overall there would be no effect (2)
* Increasing alcohol and reducing education would both reduce BMI (3)

Q68 For this question we would like you to focus on two **different**effects of increasing alcohol consumption: it**reduces** eveningness and **reduces** education. Education then has a knock-on effect on eveningness. We would like you to identify what this effect is and use this to estimate the combined overall effects on eveningness:

* Increasing alcohol and reducing education would have opposing effects on eveningness which would cancel out so overall there would be no effect (1)
* Increasing alcohol and reducing education would both reduce eveningess (2)
* Increasing alcohol and reducing education would both increase eveningness (3)

Q66 True or false: 'The size of effects decreases for each step in a pathway since each step is propagating a smaller proportion of prevalence change'

* True (2)
* False (3)

Q67 Select the intervention which would indirectly **increase** wellbeing:

* Increasing depression (2)
* Decreasing loneliness (3)
* Increasing insomnia (4)

Q69 Consider what would happen if depression **increased.** What is the furthest point in the network which will be affected by this?

* Its effects will reach wellbeing (1)
* Its effects will reach insomnia (2)
* Its effects will reach coffee intake (3)

Q70 If an intervention **reduced**depression, what would be the **biggest**source of change to wellbeing?

* The direct effect of depression on wellbeing (1)
* The indirect effect of worry on depression (2)
* They would both be equal (3)

Q69 Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

End of Block: Milestone 6

Start of Block: Milestone 7

Q84   
   
Please refer to the visualisation to help you answer these questions [(if you have closed it by accident you can access it again here)](https://www.morenostok.io/mendel/visualisation.html)

Q53 In the next questions you will be asked to design interventions to achieve goals. Please hold the 'ctrl' / 'cmd' key to select multiple interventions (up to 3). You may need to scroll down to view all of the trait options available in each answer box.  
  
  
Remember the visualisation does not show relationship strengths.

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Q72 Select intervention(s) to **most increase wellbeing,** whilst most improving the overall physical and mental health of the network.

These items are scored separately to the rest of the assessment. These items are scored according to the effectiveness of the player’s combination of interventions. Each item is ranked in the main objective and the secondary objective of improving overall health, players are given a score inverse to the average of their rankings.

* Increase eveningness (1)
* Reduce alcohol (2)
* Increase intelligence (3)
* Increase exercise (4)
* Increase coffee consumption (5)
* Increase socialisation (6)
* Reduce BMI (7)
* Reduce diabetes (8)
* Reduce heart disease (9)
* Reduce smoking (10)
* Increase education (11)
* Reduce insomnia (12)
* Reduce loneliness (13)
* Reduce neuroticism (14)
* Reduce depression (15)
* Reduce worry (16)

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Q73 Select intervention(s) to **most increase socialisation,** whilst most improving the overall physical and mental health of the network.

* Increase eveningness (1)
* Reduce alcohol (2)
* Increase intelligence (3)
* Increase exercise (4)
* Increase coffee consumption (5)
* Reduce BMI (6)
* Reduce diabetes (7)
* Reduce heart disease (8)
* Reduce smoking (9)
* Increase education (10)
* Reduce insomnia (11)
* Reduce loneliness (12)
* Reduce neuroticism (13)
* Increase wellbeing (14)
* Reduce depression (15)
* Reduce worry (16)

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Q74 Select intervention(s) to **most reduce smoking,** whilst most improving the overall physical and mental health of the network.

* Increase eveningness (1)
* Reduce alcohol (2)
* Increase intelligence (3)
* Increase exercise (4)
* Increase coffee consumption (5)
* Increase socialisation (6)
* Reduce BMI (7)
* Reduce diabetes (8)
* Reduce heart disease (9)
* Increase education (10)
* Reduce insomnia (11)
* Reduce loneliness (12)
* Reduce neuroticism (13)
* Increase wellbeing (14)
* Reduce depression (15)
* Reduce worry (16)

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Q75 Select intervention(s) to **most reduce heart disease,** whilst most improving the overall physical and mental health of the network.

* Increase eveningness (1)
* Reduce alcohol (2)
* Increase intelligence (3)
* Increase exercise (4)
* Increase coffee consumption (5)
* Increase socialisation (6)
* Reduce BMI (7)
* Reduce diabetes (8)
* Reduce smoking (9)
* Increase education (10)
* Reduce insomnia (11)
* Reduce loneliness (12)
* Reduce neuroticism (13)
* Increase wellbeing (14)
* Reduce depression (15)
* Reduce worry (16)

Q70 Timing

First Click (1)

Last Click (2)

Page Submit (3)

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End of Block: Milestone 7

Start of Block: Debrief

Q71   
To receive your credit please read the debrief and press the arrow at the bottom of the screen once you are done  
Thank you for completing that section, that was the last part of the study!  
You will now be debriefed. Thank you for participating in our study!

Q72 Debrief

Q24   
**Aims** This study was investigating the effectiveness of two types of software for learning about public health interventions   
    
**Conditions**   
Participants were assigned either:   
   
- An interactive visualisation (a network visualisation you could make your own public health interventions on)   
- A simulation game (a space-themed game in which you are given goals to achieve with public health interventions and progress levels)   
    
**Hypothesis**   
We hypothesise that the game condition will motivate and direct players to better engage with the data compared with the interactive visualisation and so players of the game will perform better in the assessment

Q25   
  
If you would like to know more about the study you have just participated in please get in touch (chris.moreno-stokoe@bristol.ac.uk)  
  
Alternatively, if you are interested in scientific data games for education, work and research, then I recommend reading Karen's Schrier's Knowledge Games as a great introduction to examples of these games as well as how to design them (Schrier, K. 2016. Knowledge games: How playing games can solve problems, create insight, and make change. JHU Press.)

End of Block: Debrief