TREC 2022 Health Misinformation Track Assessing Guidelines

Version: 23 Aug 2022

Overview

This year the track will judge topics in two phases. The first phase involves judging documents for their usefulness and their contained answer to a topic's question. The second phase involves preference judging the useful documents.

Phase 1 Assessor Instructions

Before any judging takes place, assessors should be giving the following instructions.

Assume there is a search user who is looking to answer a medical question (e.g., “Does yoga improve the management of asthma?”). The user is searching the document collection for documents that support either an answer of "yes" or "no" to the question.

Your job is to assess documents on:

1) How useful is this document for answering the question?

2) For documents that are useful, what answer do they support?

Document Collection

The document collection consists of web pages that have been converted to plaintext (text free of formatting and images). Assessors are encouraged to use the plaintext to judge the page, but if in doubt, the assessor may attempt to view the actual webpage via the page's URL. If the URL is not viewable, the assessor must use just the document given its plaintext.

Search Topics

Assessors should be provided with each search topic's question and background. In general, topics concern the use of some treatment for a given health issue. For example,"Does yoga improve the management of asthma?" or "Is dexamethasone a good treatment for croup?". Assessors do not need to know the topic's answer to do assessing. Assessors do **not** judge correctness of documents.

1) Usefulness: Judging a document as not-useful, useful, or very-useful

Each document is judged based on the degree to which a user would find the document useful for helping make a decision about the search topic's question.

Please note that the usefulness grades have changed in 2022 and are different from 2021.

The usefulness grades are:

0. Not-useful. A not-useful document either fails to address the question, or fails to address all parts of a question. For example, if the question is "Does yoga improve the management of asthma?" and the document only talks about yoga without talking about asthma or vice versa talks about asthma but not yoga, then the document is not-useful.

1. Useful: The user would find the document useful because it either directly answers the question or provides enough information for the user to determine an answer. Some questions ask about the effectiveness of a specific treatment for a health issue, and merely mentioning the health issue or treatment of the question is not-useful. **To be useful, a document must address all of the parts of a question and help the user make a yes/no decision for the question.**

2. Very-useful: In addition to helping the user make a decision about the question's answer, the document is high quality either because of the detail with which the question is addressed and/or the document appears to be from a highly credible source. **This document is something that you think deserves to be in the top 10 results of a web search for this topic's question.** While both *useful* and *very-useful* documents address the entire question and help the user determine an answer to the question, very-useful documents are of "top 10 web search" quality because of their answer quality and/or apparent credibility of their source. You can find more than 10 *very-useful* documents for a given topic, i.e. you are trying to determine *candidates* for being in the top 10 results. In the preference judging phase, your preference judgments will determine the top-10 ranking.

For a useful or very-useful document, it does not matter whether the assessor believes the information provided in the document is correct or incorrect. The assessor is judging whether or not a search user would be likely to find the information useful regardless of the document's correctness. For example, two very-useful documents could have different answers to the same question, but both would be viewed by the average user to be high quality results from credible sources suitable as top 10 web search results.

Documents are automatically **Not-Useful** if they:

- Are written in a language other than English. A multilingual document (e.g., Spanish/English) should be judged on the basis of the information in English.
- Contain adult material.
- Are garbled, empty, unreadable or otherwise broken.

2) Document's Answer: Judging what a useful or very-useful document says is the answer to the question.

For all *very-useful* and *useful* documents, the assessor should then judge what the document says is the answer to the question. All questions are written as "yes/no" questions, i.e., the answer to the question should be yes or no.

Judgment choices for "document's answer" are:

- **Yes:** The document says the answer to the question is "yes" or provides strong support that would lead a user to conclude that the answer is "yes".
- **No:** The document says the answer to the question is "no" or provides strong support that would lead a user to conclude that the answer is "no".
- **Unclear:** The document addresses the question, but a reasonable user would not be able to conclude the answer was "yes" or "no" given the document.

Phase 2 Assessor Instructions (Preference Judging)

In Phase 1, you identified very-useful (top-10 web search quality) and useful documents for each topic's question. For these very-useful and useful documents, you also identified the document's answer to the question (yes, no, or unclear). In phase 2, we will tell you what the correct answer is to each topic question, and you will use a preference judging system to find the best 10 documents for a topic from the documents that contain the correct answer, or in some cases from also the documents that have an unclear answer.

Preference judging systems work by asking you to compare pairs of documents and select the preferred document.

When comparing two documents, you are to **prefer the document that would best help the searcher reach a correct decision.** If you believe both documents to be the same or near duplicates of each other, you may say that the documents are "equal". When making preference judgments, you are encouraged to take into consideration all factors that you think would matter to a searcher and **influence the searcher to make a correct decision**.

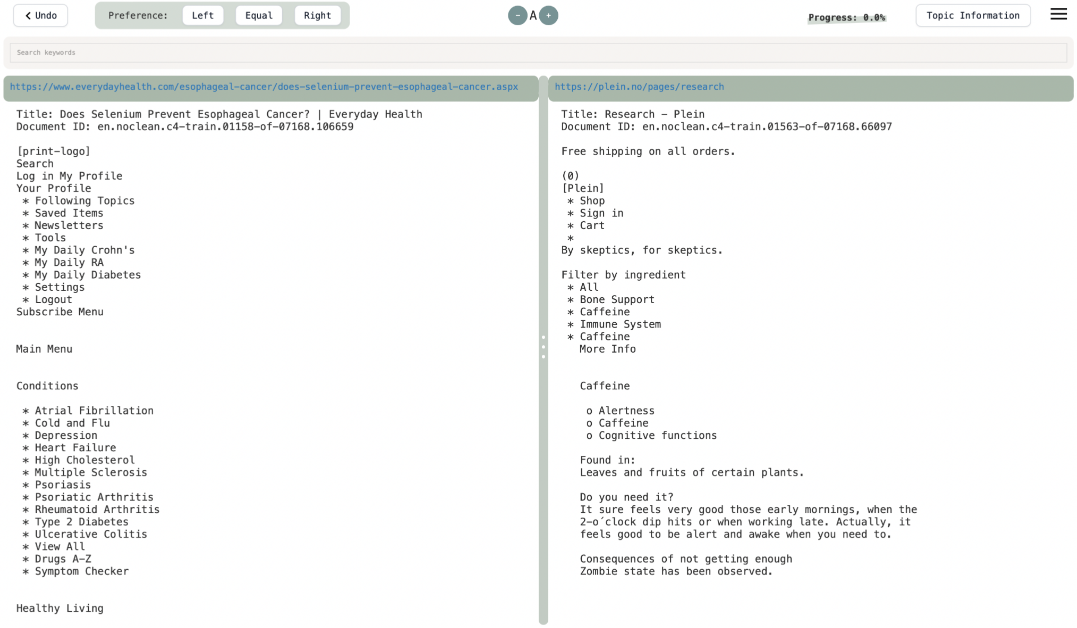
In addition to containing a correct answer, factors may include, but are not limited to the following:

- Quality of explanation for the answer, i.e. searchers may make better decisions when a document has a correct answer with an explanation and reasoning as opposed to simply having the correct answer.
- Presentation quality. Is the answer and document written in a manner that is easy to read and comprehend?
- Some documents will have more expertise, authoritativeness, and trustworthiness[1]. For example, www.cdc.gov has high amounts of expertise, authoritativeness, and trustworthiness. If two documents seem to contain the information, but one has more credibility, you would assume that the more credible document would influence the searcher more and be preferred.
- An informative document from a credible source would be preferred to a document that is for advertising or marketing purposes.
- Documents written by experts would be preferred to those by non-experts.
- The whole document context should be considered. For example, a single correct sentence embedded in a document filled with scam treatments is less likely to influence a searcher to make a correct answer than a document filled with credible information.

If you come across a document that contains an incorrect answer, this means that in Phase 1 the document was mistakenly judged with the incorrect answer, for in Phase 2 we will only show you documents judged to contain the correct answer or possibly an "unclear" answer. If you find an incorrect document, please prefer the other document with its correct answer.

The preference judging system that will be used for TREC Health Misinformation will look similar to (see next page):

[1] The idea of understanding the purpose of a website before judging its quality, determining the amount of expertise, authoritativeness, and trustworthiness (E-A-T), and the cdc.gov example of high E-A-T are ideas based on Google's General Guidelines for search evaluators: http://static.googleusercontent.com/media/www.google.com/en//insidesearch/howsearchworks/assets/searchqualityevaluatorguidelines.pdf . Last Accessed: 17/12/2018)



https://www.everydayhealth.com/esophageal-cancer/does-selenium-prevent-esophageal-cancer.aspx

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Title: Does Selenium Prevent Esophageal Cancer? | Everyday Health
Document ID: en.noclean.c4-train.01158-of-07168.106659

[print-logo]
Search
Log in My Profile
Your Profile
 * Following Topics
 * Saved Items
 * Newsletters
 * Tools
 * My Daily Crohn's
 * My Daily RA
 * My Daily Diabetes
 * Settings
 * Logout
Subscribe Menu


Main Menu


Conditions

 * Atrial Fibrillation
 * Cold and Flu
 * Depression
 * Heart Failure
 * High Cholesterol
 * Multiple Sclerosis
 * Psoriasis
 * Psoriatic Arthritis
 * Rheumatoid Arthritis
 * Type 2 Diabetes
 * Ulcerative Colitis
 * View All
 * Drugs A-Z
 * Symptom Checker


Healthy Living
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https://plein.no/pages/research

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Title: Research – Plein
Document ID: en.noclean.c4-train.01563-of-07168.66097

Free shipping on all orders.

(0)
[Plein]
 * Shop
 * Sign in
 * Cart
 *
By skeptics, for skeptics.

Filter by ingredient
 * All
 * Bone Support
 * Caffeine
 * Immune System
 * Caffeine
   More Info


   Caffeine

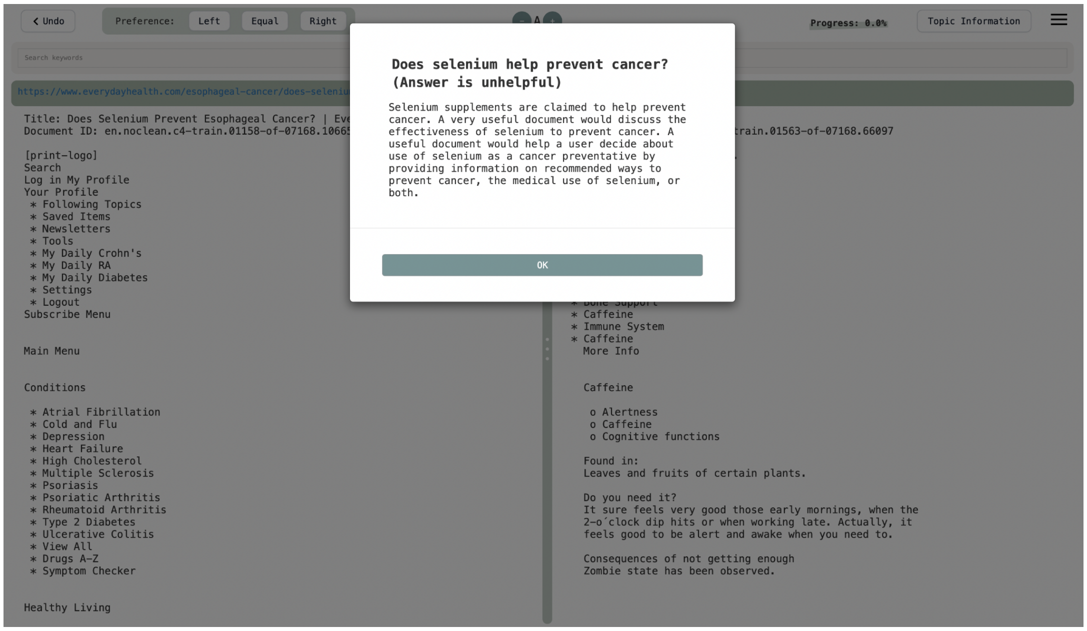
    o Alertness
    o Caffeine
    o Cognitive functions

   Found in:
   Leaves and fruits of certain plants.

   Do you need it?
   It sure feels very good those early mornings, when the
   2-o´clock dip hits or when working late. Actually, it
   feels good to be alert and awake when you need to.

   Consequences of not getting enough
   Zombie state has been observed.
```

Clicking on the "Topic Information" button will bring up the topic's question and background information.



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Does selenium help prevent cancer?
(Answer is unhelpful)

Selenium supplements are claimed to help prevent
cancer. A very useful document would discuss the
effectiveness of selenium to prevent cancer. A
useful document would help a user decide about
use of selenium as a cancer preventative by
providing information on recommended ways to
prevent cancer, the medical use of selenium, or
both.
```

https://www.everydayhealth.com/esophageal-cancer/does-seleniu

Title: Does Selenium Prevent Esophageal Cancer? | Eve
Document ID: en.noclean.c4-train.01158-of-07168.10665
[print-logo]
Search
Log in My Profile
Your Profile
 * Following Topics
 * Saved Items
 * Newsletters
 * Tools
 * My Daily Crohn's
 * My Daily RA
 * My Daily Diabetes
 * Settings
 * Logout
Subscribe Menu
Main Menu
Conditions
 * Atrial Fibrillation
 * Cold and Flu
 * Depression
 * Heart Failure
 * High Cholesterol
 * Multiple Sclerosis
 * Psoriasis
 * Psoriatic Arthritis
 * Rheumatoid Arthritis
 * Type 2 Diabetes
 * Ulcerative Colitis
 * View All
 * Drugs A-Z
 * Symptom Checker
Healthy Living

train.01563-of-07168.66097
 * Caffeine
 * Immune System
 * Caffeine
   More Info
   Caffeine
    o Alertness
    o Caffeine
    o Cognitive functions
   Found in:
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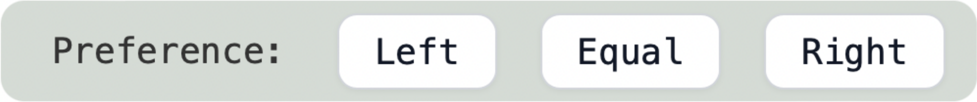
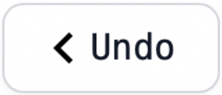
   It sure feels very good those early mornings, when the
   2-o´clock dip hits or when working late. Actually, it
   feels good to be alert and awake when you need to.
   Consequences of not getting enough
   Zombie state has been observed.

You record your preference judgment using the preference widget:

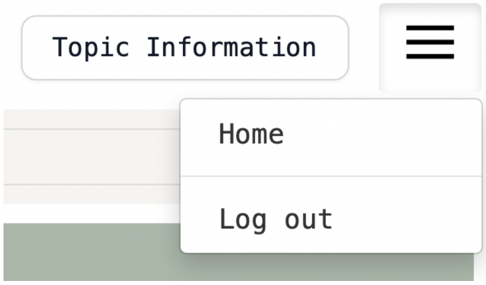


Thus, if the left document is more likely to influence a searcher to make a correct decision, you would click on "Left" and similarly if the right document is better. If the documents are the same or near-duplicates with the same source, etc. then you should judge them "Equal".

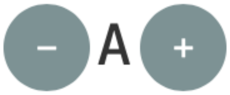
If after making a judgment, you decide it was a mistake, you can go back to the previous judgment pair using the "Undo" button:



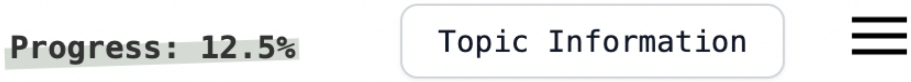
To go back to the topic selection page, you can click on the three horizontal lines in the upper right corner and select "Home". You can also log out whenever you want.



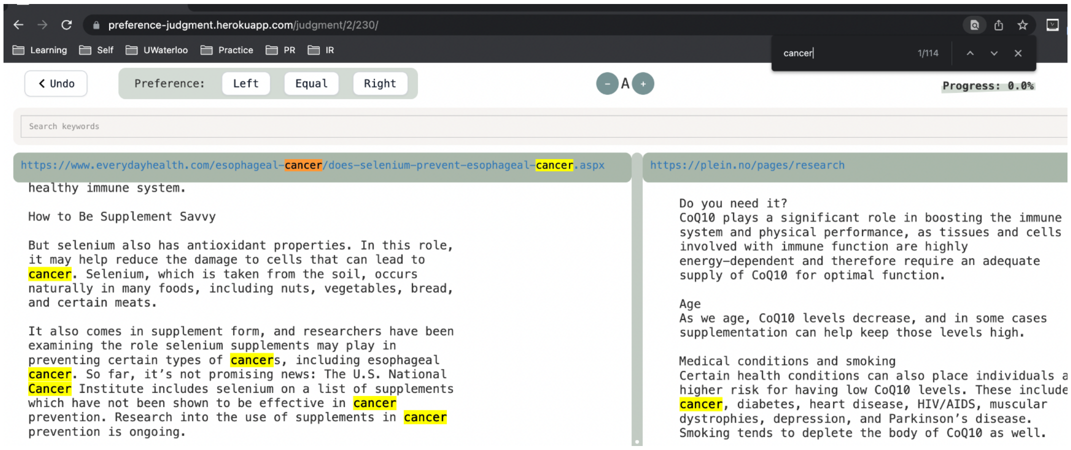
You can increase the size of documents by the following feature in the middle of the header. It will be kept during the judgment process.



The progress number is beside the topic information button in the right corner, indicating approximately how percent of judgments are done until all documents are entirely judged. It’s not very accurate. More like a wild guess.



A fast way to find occurrences of a single keyword in the documents is to use the web browser's "find in page" search feature, which is brought up by typing CTRL-F. For example in Google Chrome's browser it will pop up a widget that allows you to enter a keyword and then use up and down arrow buttons to find the next or previous occurrence. The search will first go through the left document, and then move on to the right document. For example:



https://www.everydayhealth.com/esophageal-cancer/does-selenium-prevent-esophageal-cancer.aspx

```
healthy immune system.

How to Be Supplement Savvy

But selenium also has antioxidant properties. In this role,
it may help reduce the damage to cells that can lead to
cancer. Selenium, which is taken from the soil, occurs
naturally in many foods, including nuts, vegetables, bread,
and certain meats.

It also comes in supplement form, and researchers have been
examining the role selenium supplements may play in
preventing certain types of cancers, including esophageal
cancer. So far, it’s not promising news: The U.S. National
Cancer Institute includes selenium on a list of supplements
which have not been shown to be effective in cancer
prevention. Research into the use of supplements in cancer
prevention is ongoing.
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https://plein.no/pages/research

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Do you need it?
CoQ10 plays a significant role in boosting the immune
system and physical performance, as tissues and cells
involved with immune function are highly
energy–dependent and therefore require an adequate
supply of CoQ10 for optimal function.

Age
As we age, CoQ10 levels decrease, and in some cases
supplementation can help keep those levels high.

Medical conditions and smoking
Certain health conditions can also place individuals a
higher risk for having low CoQ10 levels. These include
cancer, diabetes, heart disease, HIV/AIDS, muscular
dystrophies, depression, and Parkinson’s disease.
Smoking tends to deplete the body of CoQ10 as well.
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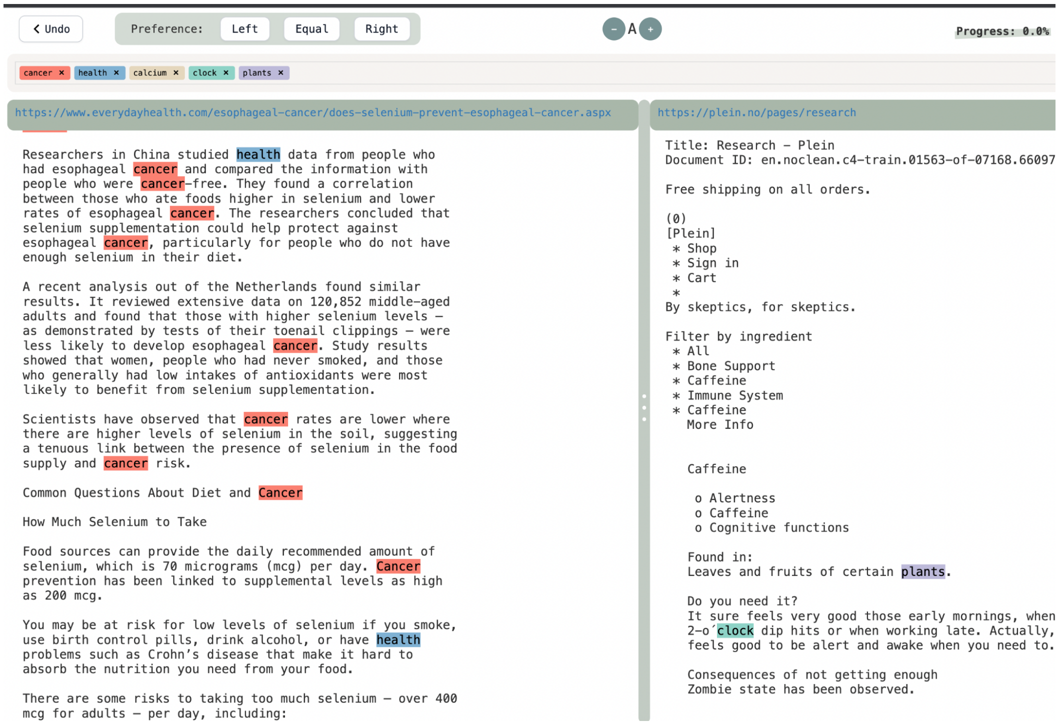
The judging system also offers the means to enter search keywords and phrases to highlight all occurrences automatically in documents. Keywords can only contain numbers and letters, and thy are not case sensitive. In the location that says "Search keywords", you can type a keyword or phrase and then press the "Enter" key to add that as a word to highlight:



https://www.everydayhealth.com/esophageal-cancer/does-selenium-prevent-esophageal-cancer.aspx

```
Researchers in China studied health data from people who
had esophageal cancer and compared the information with
people who were cancer–free. They found a correlation
between those who ate foods higher in selenium and lower
rates of esophageal cancer. The researchers concluded that
selenium supplementation could help protect against
esophageal cancer, particularly for people who do not have
enough selenium in their diet.

A recent analysis out of the Netherlands found similar
results. It reviewed extensive data on 120,852 middle–aged
adults and found that those with higher selenium levels –
as demonstrated by tests of their toenail clippings – were
less likely to develop esophageal cancer. Study results
showed that women, people who had never smoked, and those
who generally had low intakes of antioxidants were most
likely to benefit from selenium supplementation.

Scientists have observed that cancer rates are lower where
there are higher levels of selenium in the soil, suggesting
a tenuous link between the presence of selenium in the food
supply and cancer risk.

Common Questions About Diet and Cancer

How Much Selenium to Take

Food sources can provide the daily recommended amount of
selenium, which is 70 micrograms (mcg) per day. Cancer
prevention has been linked to supplemental levels as high
as 200 mcg.

You may be at risk for low levels of selenium if you smoke,
use birth control pills, drink alcohol, or have health
problems such as Crohn’s disease that make it hard to
absorb the nutrition you need from your food.

There are some risks to taking too much selenium – over 400
mcg for adults – per day, including:
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https://plein.no/pages/research

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Title: Research – Plein
Document ID: en.noclean.c4-train.01563-of-07168.66097

Free shipping on all orders.

(0)
[Plein]
 * Shop
 * Sign in
 * Cart
 *
By skeptics, for skeptics.

Filter by ingredient
 * All
 * Bone Support
 * Caffeine
 * Immune System
 * Caffeine
   More Info


   Caffeine

    o Alertness
    o Caffeine
    o Cognitive functions

   Found in:
   Leaves and fruits of certain plants.

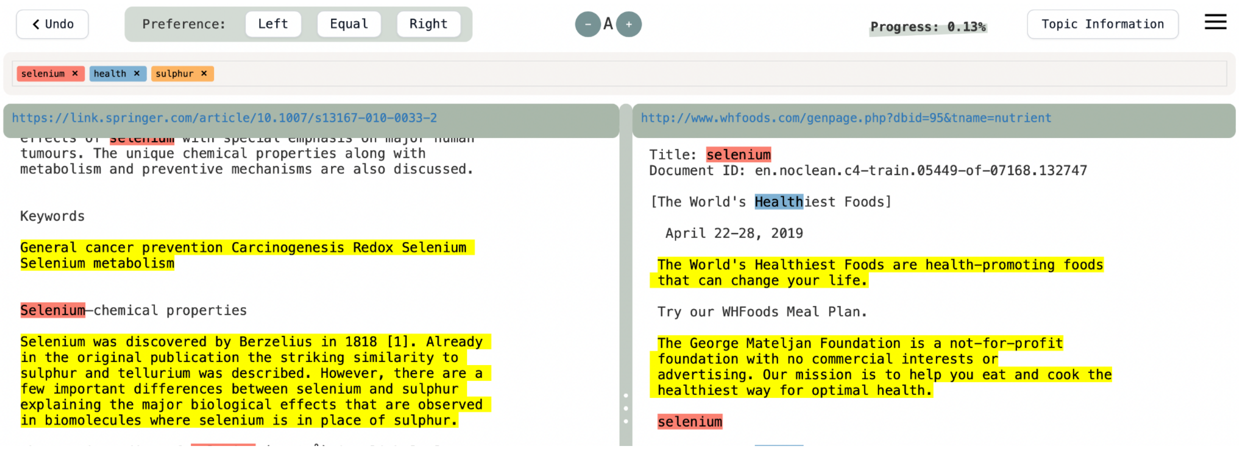
   Do you need it?
   It sure feels very good those early mornings, when
   2–o´clock dip hits or when working late. Actually,
   feels good to be alert and awake when you need to.

   Consequences of not getting enough
   Zombie state has been observed.
```

Besides highlighting keywords through the search box, in the judging system, you can highlight sentences and paragraphs in the documents by mouse down, drag, and mouse up. The system keeps highlighted part of the documents until the end of the judgment session. You also can remove the highlighted part with the mouse by clicking and dragging over a highlighted section.

The highlighting by the mouse has more priority than the search keywords. For example, in the following picture, “selenium” was entered in the search box, but when the user highlighted the first sentence in the left document, it turned yellow. If the user deletes highlighting, it will reveal any search keywords.

The judging system may present a document to you multiple times, asking you to compare it to different documents each time. Any highlighting you add to a document will be retained by the system for the next time you see it. You can use this highlighting to indicate the parts of a document that were particularly useful for making your decision, potentially speeding things up if you are shown the document again.



https://link.springer.com/article/10.1007/s13167-010-0033-2

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effects of selenium with special emphasis on major human
tumours. The unique chemical properties along with
metabolism and preventive mechanisms are also discussed.

Keywords

General cancer prevention Carcinogenesis Redox Selenium
Selenium metabolism

Selenium—chemical properties

Selenium was discovered by Berzelius in 1818 [1]. Already
in the original publication the striking similarity to
sulphur and tellurium was described. However, there are a
few important differences between selenium and sulphur
explaining the major biological effects that are observed
in biomolecules where selenium is in place of sulphur.
```
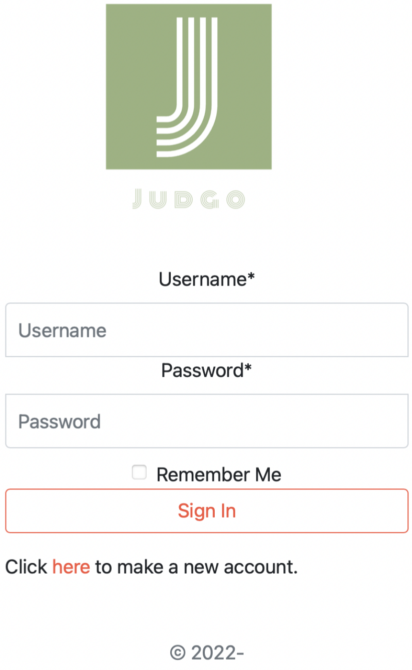

http://www.whfoods.com/genpage.php?dbid=95&tname=nutrient

```
Title: selenium
Document ID: en.noclean.c4-train.05449-of-07168.132747

[The World's Healthiest Foods]

 April 22-28, 2019

The World's Healthiest Foods are health-promoting foods
that can change your life.

Try our WHFoods Meal Plan.

The George Mateljan Foundation is a not-for-profit
foundation with no commercial interests or
advertising. Our mission is to help you eat and cook the
healthiest way for optimal health.

selenium
```

To log into the system, you will be given a username and password by NIST. (You can’t create a new account.)



Username*

Username

Password*

Password

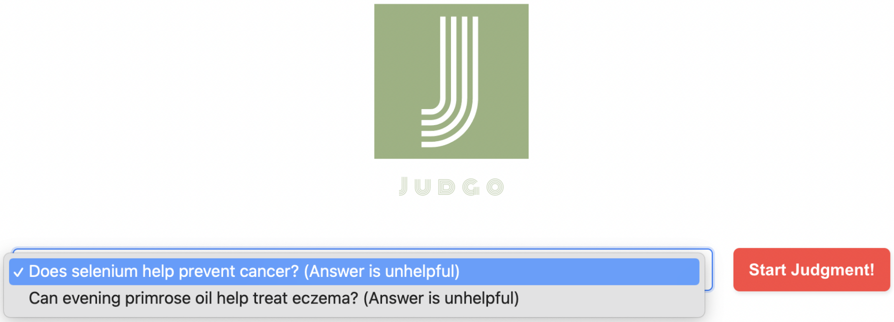
□ Remember Me

Sign In

Click here to make a new account.

© 2022-

You will be assigned to one or more topics, which will appear in a dropdown when you log in. You can start with any topic. If you log out or switch topics, and work that you've done will be retained.


JUDGO
✓ Does selenium help prevent cancer? (Answer is unhelpful)
Can evening primrose oil help treat eczema? (Answer is unhelpful)
Start Judgment!

Appendix - Letter to Assessors

On September 16, 2022, as the NIST assessors worked on the task, we sent the following update to clarify the instructions:

Now that we're about halfway through the task I just wanted to send a reminder about assessing and some clarification about the task.

By now, you've all used the preference judging system. For some of you, the preference judging has involved a large number of judgments, and we're going to work to remedy this for the remaining topics such that for further topics **you will only do preference judging on documents that you have judged to be VERY-USEFUL and which contain a correct answer to the topic's question.**   As a reminder , I'll review the difference between USEFUL vs. VERY-USEFUL.

The definition of USEFUL: The user would find the document useful because it either **directly answers the question** or **provides enough information for the user to determine an answer**. Some questions ask about the effectiveness of a specific treatment for a health issue, and merely mentioning the health issue or treatment of the question is not-useful. **To be useful, a document must address all of the parts of a question and help the user make a yes/no decision for the question.**

The definition of VERY-USEFUL: In addition to helping the user make a decision about the question's answer**, the document is high quality either because of the detail with which the question is addressed and/or the document appears to be from a highly credible source.** This document is something that you think **deserves to be in the top 10 results** of a web search for this topic's question.

While both useful and very-useful documents address the entire question and help the user determine an answer to the question, very-useful documents are of "top 10 web search" quality because of their answer quality and/or apparent credibility of their source. You can find more than 10 very-useful documents for a given topic, i.e. you are trying to determine candidates for being in the top 10 results.

When I say “credible”, I mean does the document give you confidence in the answer it gives? It might come from an authoritative source, or cite authoritative references, or be written extremely well, or clearly not be selling something, or be written by someone who seems to be an expert. Remember, THIS IS NOT CORRECTNESS – you can have a credible document telling you that injecting bleach is good for you, and that document would cite a bunch of studies and be written so clearly and strongly that it inspires confidence in the answer.

After you have judged a document's usefulness, you must judge what the document says the answer to the topic's question is. All questions are posed as yes/no questions. You are recording whether the document says the answer is "yes" or says the answer is "no". For example, if the question is "Does yoga help arthritis?", a "yes" document tells the reader to do yoga because it will help their arthritis, and a "no" document would tell the reader to not bother with yoga because it doesn't help arthritis. Labeling the documents with "yes" or "no" is very important, for you will only be shown the VERY-USEFUL documents that contain a correct answer to the question when you do preference judging.

At the end of the WebAssess stage of judging, you will have a set of VERY-USEFUL documents that are actually worth seeing, a set of USEFUL documents which aren’t as good but at least answer the question, and a set of NOT-USEFUL documents which don’t even answer the question.

Then, in the preference judging, you’ll be making a pass over the VERY-USEFUL documents that contain a correct answer (we know what the answer actually is). The preference process helps identify the best-of-the-best, to put an ordering among the most useful documents.