TIPS FOR DOING RESEARCH

Do you enjoy exploring topics on your own but feel a bit lost about where to begin with your research? The following tips are here to assist you on your journey! This guide will help you find research materials and provide you with some tools to make sense of them. It's not meant to cover everything, but it's designed to help become more confident doing your own research.

Mindset

Believe it or not, doing research starts with adopting the right mindset. I like the way Peter Attia puts it: best is to have strong convictions, but loosely held. The tendency of most people reading research is to defend the position they take in a certain matter. Although it is good not to adopt an opinion given by a research paper too fast, a certain flexibility to change your opinion is necessary.

Determining the level of confidence in research

Interestingly, the level of confidence you place in research often depends on personal preferences. When it comes to the field of nutrition, you'll need to consider questions like:

- How seriously do you take smaller studies or those with shorter durations?
- What weight do you assign to studies reliant on questionnaires?
- How much credence do you grant to observational studies? (We'll revisit this later!)
- How seriously do you regard studies with a brief timeframe?
- How much significance do you attach to animal studies?

There are numerous factors to take into account. Let's consider the last question: "How much significance should be attributed to animal studies?" In the realm of health, our aim is often to understand how variables affect humans. However, this isn't always feasible.

Certain studies that might be unethical to conduct on humans, such as investigating which foods may harm the liver by initially causing liver damage, have been carried out on rats.

I understand that this may sound distressing, but these studies provide valuable insights.
The question of whether they hold relevance for humans is complex. Nevertheless, as these types of studies are conducted across multiple species and consistently yield similar results, it becomes increasingly likely that humans respond in a similar manner.

Smaller Studies vs. Larger Studies

As a general guideline, the more variables you attempt to control in a study, the higher the associated costs. This often leads to smaller participant numbers and shorter durations, even though these studies frequently involve a more extensive examination of variables.
However, some small studies serve an exploratory purpose. Their aim is to address the question: "Can we detect any promising signals that would justify conducting large-scale studies?" These studies are not intended to draw definitive conclusions; rather, they offer valuable hints. For instance, in the initial research conducted by Bill Harris on Omega-3s, massive doses of Omega-3s (25 grams!!) were administered to individuals to determine if any measurable effects could be observed. Their rationale was: "If this doesn't produce an effect, there may be no need to pursue further research on this topic!"

TIPS FOR DOING RESEARCH

When reading percentages, always look at the actual values!

A study on Hormone Replacement Therapy once grabbed newspaper headlines, claiming a 25% elevated risk of breast cancer. However, it's crucial to understand that percentages can be misleading without knowing the actual figures. For example, if you go from 4 cases of breast cancer per thousand women to 5 cases per thousand women, that does indeed represent a 25% increase. So, always be cautious of percentages when the underlying numbers are not provided as they can be misleading.

What types of studies are there?

There are various types of studies, but they can be categorized into three main groups:

- Observational studies
- Experimental studies
- Papers that analyze or review these studies

What is the difference between an observational study and an experimental study?

In an observational study, we take on the role of observers, much like detectives, as we watch and collect information about people or things without directly intervening. It's akin to studying a group of people who consume chocolate and observing whether they experience happiness, all without actually providing them with chocolate.

In an experimental study, we adopt the role of scientists who actively manipulate variables and compare the outcomes. It's comparable to providing some individuals with chocolate while giving others a different substance, and then evaluating whether chocolate leads to increased happiness. Here, we exert control over the situation to gain a deeper understanding of the effects.

There are certain drawbacks to be aware of when forming an opinion about observational studies:

- Observational studies can only establish correlations or connections between variables, not causation.
- These studies are not well-suited for testing hypotheses; their strength lies in generating hypotheses.
- Observational studies are susceptible to uncontrolled factors that can impact the results.
- Researchers in observational studies may lack control over participant or subject selection, potentially introducing bias. This can lead to a non-representative sample that does not accurately represent the broader population.

The healthy user bias

The 'healthy user' bias is a nice example of this. Let's say a researcher wants to study the relationship between exercise and heart health in adults. They decide to conduct an observational study by recruiting participants from a local gym. They observe that gym-goers tend to have healthier hearts compared to the general population. The researcher concludes that exercise leads to better heart health based on this observation.

However, selection bias is present in this study because the participants were not randomly selected from the entire adult population. Instead, they were chosen from a specific group (gym-goers) that is inherently more likely to exercise and be health-conscious.

Randomized vs. Non-Randomized Studies

Randomized and non-randomized studies are two of the most frequently employed experimental studies in science. But how do they differ?

Randomized Controlled Study (RCT)

Imagine you're a functional medicine practitioner, and you want to discover which holistic treatment works best for your patients. You decide to make it a fair test. You close your eyes, reach into your treasure trove of herbal remedies, and select treatments at random for each patient. It's like a holistic healing lottery!

As your patients start their treatments, you ask them to rate their improvements in health. Since you assigned treatments randomly, you can be fairly confident that any positive changes are due to the treatments themselves and not influenced by your preference or their unique conditions.

Non-Randomized Controlled Study (Non-RCT)

Now, picture a different scenario. This time you let your patients choose their treatments based on their intuition and preferences. Some opt for acupuncture, others for herbal supplements, and a few for meditation and yoga.

Later, when you ask them about their progress, it gets a bit tricky. Did they improve because they chose acupuncture, or was it simply because they believed in it more than other options? It's like a holistic health adventure where personal choices can cloud your quest to find the most effective treatment.

In the realm of science, the randomized controlled study is like the first holistic treatment experiment – you assign treatments randomly to ensure fairness. The non-randomized study is more like the second experiment, where personal choices of researchers may blur the lines between what's truly effective and what's merely preferred.

TIPS FOR DOING RESEARCH

Where to Start with Your Research?

PubMed

(https://pubmed.ncbi.nlm.nih.gov)

Numerous databases contain a wealth of studies, with PubMed being a prime example, encompassing biomedical literature from various journals, books, and studies. PubMed adheres to certain standards that govern which studies are published, thereby upholding content quality. Nevertheless, it's important to note that not all research exhibits the same level of quality, which is why I've provided some tips above.

Note however that finding the articles you need can be challenging. Even though the articles are tagged with 10 keywords to help improve searchability, if you're not well-versed in the technical terminology commonly used in literature, it can be difficult finding what you need.
My suggestion is to do a quick google search on the topic you're looking for and put in "study" at the end of your search to see the terminology commonly used instead. For example, if you're searching for articles on high cholesterol, the terms hyperlipidemia or hypercholesterolemia would yield better search results.

If you're interested in improving your PubMed search skills, PubMed offers a helpful resource called "The PubMed Trainer's Toolkit." You can access it by following this link:
https://learn.nlm.nih.gov/documentation/training-packets/T0022014P/

Google

As mentioned above, finding studies using Google is easy: just ask a question and put the keyword 'study' after your question. Google will filter the search results accordingly. You can also try using 'scholar' or 'Google Scholar' after your question in the search box.

Google Scholar is the Google search engine for finding research. Google Scholar provides a simple way to broadly search for scholarly literature. From one place, you can search across many disciplines and sources. With Google Scholar you can widen your search scope.

GreenMedInfo

(https://greenmedinfo.com/)

A more targeted natural health resource is GreenMedInfo. The benefit of GreenMedInfo is that their databse is categorized by 'Therapeutic Substances',' Pharmacological Actions' and 'Therapeutic Actions' so finding research for specific symptoms or holistic substances/therapies is easy.