



QUESTIONS ABOUT RESEARCH STUDIES

A RESOURCE FOR VETERANS, SERVICE MEMBERS, AND THEIR FAMILIES

Each day you most likely hear about recent medical research findings from various sources. Newly learned information can be interesting and exciting, confusing, or even frightening. How do you judge which findings are important or relevant to you or whether the findings can be relied upon? Here are some questions that you can consider:

SHOULD I PAY ATTENTION TO A NEW RESEARCH FINDING?

It can be hard to decide if a new research finding has personal meaning for you. A study may be more meaningful to you:

- if it was done with people similar to you,
- if the (good or bad) result is important to you in a way that it makes you think twice about a lifestyle change or treatment,
- if it is a change or treatment that you would be able to do (for example, some treatments may be part of a trial and available to only trial participants), and/or
- if it is valid, meaning “proven” through research to be true for other people similar to you.

Even if this type of information is not available, you may still feel that the study (or information) is personally meaningful or it may be that the news report left you concerned. If you find you’re left with a lot of questions, it is important to ask your doctor or a knowledgeable person for more information about the study and whether or how it might apply to you.

WHY DO RESULTS OF MULTIPLE STUDIES ABOUT THE SAME ISSUE HAVE DIFFERENT FINDINGS?

The scientific process is a road of discovery. A single study can not usually answer a question completely. This is usually why multiple studies on a given topic will be done. In this way, scientists can tease out what the findings and implications are and under what conditions or situations it might be true or not true. For example, it could be that a finding was true in only one situation and another study shows that by slightly changing the situation you get a different result. Published “research studies” should be viewed as discussions among scientists. In these discussions, almost no one

gets to have the final word, as it is rare that a single study provides a final complete answer. In fact, with the benefit of new information or technology, a scientist sometimes sees old results in a new light. Sometimes findings from different studies looking at the same thing might even be different based on the characteristics of the population studied. Ask your doctor or some knowledgeable person if you are unsure of how a research finding fits in with other existing research and current knowledge.

HOW BELIEVABLE IS THE STUDY?

Research studies can be different in terms of the quality of the study. Some are “stronger” than others and their results can be more trusted. While it is not necessary that you know all the details of the study, it is important to get some estimate of how “good” the study is or how much other experts trust the results. The quality of a study is based on a variety of factors. Here are a few that you may want to keep in mind:

- **DESIGN OF THE STUDY:** Usually one can find more relevant information in a study that uses comparison groups (subjects that are treated exactly alike but do not receive the intervention or question under study). If subjects are assigned to the groups randomly (with equal chance of getting into either group, like based on the flip of a coin) the study findings may stronger because everyone in the study had an equal chance of being in either group. Alternatively, if there is only one group under study, it is important to look at what types of people are in that group.
- **SIZE OF SAMPLE:** If a large group of people were in the study the same outcomes may be found if the study was repeated. A larger study where a greater percentage of the people who started the study completed the entire





study, in other words, few people dropped out, increases a study's strength and credibility.

- **POPULATION:** It is important to ask how similar the people in the study are to you. A study can look at people with a range of symptoms and backgrounds or only include a narrowly defined group of people. Studies may use only a very select type of person – so a study might include only people with high blood pressure and chronic pain. It is important to ask how likely it is that the results would occur for different people.
- **LENGTH OF FOLLOW-UP:** If it was a treatment being studied, it is important to know how long that outcomes of the treatment lasted. In general the longer people are followed, the more one can trust the conclusion.
- **BLINDNESS/MINIMIZE BIAS:** Sometimes researchers can unintentionally be more careful with the group they want positive outcomes from or unintentionally treat groups differently. Stronger studies try to limit the information given to study participants and those responsible for measuring outcomes or administering treatments so that the participants and experimenters can not unintentionally influence the outcome of the study just because they know what the scientists expect to happen.

HOW SHOULD I INTERPRET THE NUMBERS?

Deciding what the numbers presented in a study mean is difficult and may in part depend on the choice of numbers used to present the results. Sometimes numbers are presented without a comparison. So a news article may say that there was a 300% or triple-fold increase in strokes. While at first this might seem like a high number, it might make you feel differently if you knew more information. Maybe it was an increase from 2 to 6 people out of 10,000 having strokes. Risk information can also mean more to you depending on whether you are given a full number or a percentage

(absolute difference or relative difference). If you were told that Sydney has 30% more than Pat, would that mean something different than if you were told that Sydney has \$30,000 more than Pat. If you were given the account balances of Sydney having \$130,000 and Pat having \$100,000 would that give more information? So to interpret information about a study it may help to ask your doctor or someone who has reviewed the full study to help explain the numbers or to present the numbers in a different format.

WHAT ELSE DOES THE STUDY SHOW?

Sometimes a very interesting finding is highlighted but side-effects or secondary outcomes are not mentioned. To make an informed decision it is important to know as many of the related facts as you can find. This is similar to the need to understand both the benefits and risks when making a medical decision.

WHAT DOES THIS ALL MEAN?

In conclusion, it is important to think critically about research findings. One should consider not only the strength of a study result but also whether it is relevant to you. Personal decisions about the implications of the study may focus on two primary questions:

1. How big or meaningful is the potential benefit compared to the potential risk?
2. How do the implications of the study fit into your preferences and values?

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