

# MEDICAL STUDIES

## What you need to know

**A**mericans are bombarded with news of medical breakthroughs every day. How can you judge which deserve your attention? The most meaningful studies are well-designed, include hundreds of patients similar to you (in age, sex, race, and stage of disease), and have clear, dramatic results.

Consider these results with your doctor, along with your own values and concerns. Tell your physician why you want a specific test or treatment, and share what you consider important in your healthcare, whether it's quality of life, costs, or risks vs benefits.

### Questions to ask

**Who were the subjects, researchers, and sponsors?** Are the subjects similar to you? Do the researchers have appropriate credentials? Who funded the study? Could the researchers' financial involvement with a company or the sponsor's marketing motives have biased the research or reporting?

**How was the study done?** Was it a randomized trial, survey, or single-case report?

**How many people were in the study?** There's strength in numbers, and more is better.

**Where were they studied?** Primary care offices, or university clinics? Patients at large teaching hospitals often have more severe cases that aren't typical of smaller community settings.

**What was studied?** *POEMs* (Patient-Oriented Evidence that Matters) looks at medical events (outcomes) such as rates of heart attack or stroke. Other studies focus on test results like cholesterol levels or bone density. Test results can be important, but changes in serious health outcomes present stronger evidence.

**When and for how long was the study done?** Cholesterol measures can change in three months, but you may need three years to detect a change in heart attack rates.

### What the technical terms really mean

These are arranged in order from most- to least-desirable to describe types of healthcare studies.

**Meta-analysis or systematic review** of many similar studies pools results so researchers can analyze information from hundreds or thousands of patients.

**Single randomized controlled trial (RCT).** Researchers randomly divide patients into two groups. The experimental group receives a new treatment while the control (comparison) group receives either traditional care or an inactive treatment. The larger the eventual difference in results between the groups, the stronger the evidence.

**Cohort study.** A large group of people are followed, usually for years, to see how often a disease develops, and to learn which factors affect the disease.

**Case-control study.** This study compares past cases (people with disease) to *controls* (people without disease), searching for clues to why the disease occurs.

**Cross-sectional studies** look at a population at one point in time.

**Small case studies** describe only several patients with a particular disease.

**Expert opinion** is only as good as the evidence it's based on. Often, it's from a BOGSAT—a Bunch Of Guys/Gals Sitting Around Talking.

**Single cases or testimonials.** Don't trust the claim: "It worked for me, it'll work for you, too!"

### How to interpret the math

**Statistical significance,  $P < 0.05$ .** This means there's less than a 5 percent chance that the study's results are purely coincidence, and more than a 95 percent chance that they're truly related to the treatment being studied. Practical significance—whether the results are worth acting on—is entirely different. A six-month study of a weight loss pill might show statistically significant weight loss of only one pound, which isn't practically significant for someone who needs to lose 30 pounds.