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Evaluating New Cancer Treatments

You've just heard about a possible new cancer treatment and you may wonder if it might work for you. Your doctor hasn't mentioned it, but you want to find out more about this new treatment.

You want to have every possible chance of cure. But before you put your time, your money, and your body on the line, you need to know more about the new treatment so you can decide if it's worth it. Be sure to take the time to see what you can find out about it from sources you can trust. Here are some ideas to help you when you're searching for more information.

- [Where did the information about the new cancer treatment come from?](#)
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Where did the information about the new cancer treatment come from?

To start, you'll need to look at the source of the information:

- Was it in a newspaper or magazine?
- Was it discussed on a TV or radio program?
- Was it on the Internet on a website that also happens to be selling the treatment?
- Did a health food store employee suggest it?
- Was there a study published in a well-known, respected, peer-reviewed medical

journal such as the *New England Journal of Medicine* or the *Journal of the National Cancer Institute*?

- Did someone tell you about someone else who used it and was cured of cancer?

Was it in a respected newspaper or magazine?

Don't just read the headlines – sometimes they can be overstated or misleading. You'll need to read the whole article carefully to find out where the reporters got their information:

- Is this a press release from a drug company announcing a new breakthrough?
- Is it a report from a clinical study that was shared at a scientific conference?
- Is it a report from a clinical trial that was published in a respected medical journal?
- What do you know about the research center where the clinical trial took place?

Was it on a TV or radio program?

You'll want to know if what you saw or heard can be trusted. Was the news reviewed and reported by a real medical professional, or was it a non-medical person, like a reporter or news anchor? Some news groups use medical reporters to explain medical and health news more clearly to the public. Journalists without medical training don't usually understand all the medical background and previous related research on the subject, so they may not be able to give a clear, unbiased view.

Was it on a reliable news channel?

Getting these facts from broadcasts can be much harder than from printed reports, because it's hard to remember everything you hear on a short TV or radio report. Try to remember the details. Look for the kind of information that you would get from a newspaper, including where the new information came from.

And you can't always go back and search for the facts after the broadcast is over. Even if you can recall everything you heard, important details may be left out because they have so little time to cover the subject.

Some news outlets post extra information or replay their newscasts on their websites. If you're unable to find more on the website, you might want to try contacting the TV or

radio station to get your questions answered. It's better to do this right away rather than wait. Sometimes, a question that might be answered easily a day or two after the broadcast becomes impossible to answer after a month or two. And, if it turns out that part of their report was wrong, you might find corrections or clarifications online soon after the report was aired.

Was it anecdotal information?

If someone told you about the friend of a friend, or some other person who got better on this treatment, it's called *anecdotal* information. This often means that you get a second or third-hand report that the treatment worked for a certain person.

Can you check the story and find its source? Is there a way to be sure that what you were told really happened? Keep in mind that even if one person got better on the treatment, it's impossible to say what exactly caused the change.

For example, a person who has just finished cancer treatment may take an herbal medicine because he still feels tired a lot. Then he may notice he feels better, and his cancer doesn't come back. He may credit the herb with feeling better, even though it would have happened anyway without the herb. He may even believe that the herb cured his cancer or kept it from coming back – even though he got mainstream medical treatment first.

He may then gratefully tell everyone that he's been cured. But if the cancer comes back later, he probably won't go back to update all the people he told about the cure. Sadly, these people may wrongly believe – even years later – that he was cured by the treatment. And as a result, they may end up recommending or even taking a treatment that didn't work even for the one person they thought was cured by it.

There are many other ways that honest people with good intentions can draw the wrong conclusion from a single person's experience. This is why scientists test new cancer treatments under careful conditions. They want to test the treatment on many people who are known to have the disease, so they can be sure of the outcome.

Was it a promotion from a seller?

Many companies that sell treatments online talk about the healing powers of herbs and supplements that have never been proven to heal anything in people. Some use outright lies and fraud to make their websites look official. Some have written fake quotes from doctors. Others have reported on studies that were either never done or were misrepresented, saying that they were from well-known cancer treatment centers.

There have even been instances where ads or websites had people dressed up as doctors who appeared to use or endorse the product.

Some marketers have implied that their product was endorsed by the American Cancer Society. Some have even falsely said that their treatment or device was approved by the US Food and Drug Administration (FDA). Others note that their device is registered with the FDA. But even if that's true, registration is not the same as approval. Registration does not require proof that the device works or is safe. Another take on this is that a device is said to be FDA approved, and it is – but when you investigate, it's not approved for the purpose they claim. You can find out more about these claims by calling the FDA at 1-888-463-6332 or visiting www.fda.gov.

Sometimes the staff at nutrition centers and herbal shops will make suggestions or even prescribe treatments for cancer and other conditions. Studies looking at these shopkeeper recommendations found that none of the suggested treatments had been proven to help people with cancer. In fact, some of these types of treatments can cause harm. (For more information on these treatments, see [Complementary and Alternative Methods and Cancer¹](#) and [Dietary Supplements: What Is Safe?²](#))

There are also commercials and infomercials that present new cancer treatments on TV. These are often set up to look like news interviews, and can be very misleading, since they're scripted by the sellers of the product. In fact, you may later learn that some of the people who sell cancer cures or "secret cancer information" in these ways have been jailed for fraud. But when the reports first come out, they can sound very promising, and plenty of people want to think there's a miracle that can help them. It can be hard to know what to believe without more information.

Was it in a press release?

Sometimes a company will put out a press release about a promising treatment. This may be done after a lab or animal study, or a small clinical trial (study on humans). But even if a press release comes out after a study was done on a lot of people, the company is only telling the press what they want the public to hear. This is not the same as having fellow scientists carefully look at the study methods and outcome.

Was it from a conference presentation?

Researchers often share early results of their studies at professional conferences. This can sometimes make a study sound very dramatic, and it can make news headlines. Reporters go to these conferences looking for just this kind of story.

As you read conference reports, it's important to know who's doing the study and where they are in the study process. Sometimes, the study is being done using all the careful methods of a well-run clinical trial, and the researcher is sharing his or her early data with the audience. But the final outcomes of these studies are not complete when the presentation is given. And, in most cases, the peer review that's needed before publication also has not yet been done. By the time the study is published – if it even gets published – the results may be quite a bit different from the initial conference presentation.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/complementary-and-alternative-medicine/complementary-and-alternative-methods-and-cancer.html
2. www.cancer.org/treatment/treatments-and-side-effects/complementary-and-alternative-medicine/dietary-supplements.html

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Last Medical Review: May 10, 2016 Last Revised: May 10, 2016

Questions to ask about new cancer treatments

What's the research behind the treatment?

If you want to use a cancer treatment with a proven track record, look at how the treatment was tested. The way tests are set up can affect the outcome, and sometimes can make a treatment look like it works when it really doesn't.

Pre-clinical tests

Studies in cells (laboratory studies or in vitro studies)

Scientists usually start by testing a new treatment on cancer cells in a dish in the lab, to find out if it has any effect there. If it doesn't, they may change the formula or use different types of cells to try it again. **If they find the effect they want in the dish, they may move on to animals.**

Because some of these cell study reports are published, you may hear about them on the news. But often the headlines do not clearly say what kind of study is being reported. Very few of the substances that are tested in these early stages look promising enough to even be tested in humans.

Studies in animals (in vivo studies)

If the researchers find the effect they want in cells in a dish, they may move on to animal tests or tests in living creatures. Some of these reports are published and may be reported on the news.

If the study was done in living animals, good outcomes may sound promising. Keep in mind, though, that drugs that work in animals don't always work when they are tested in people. Sometimes, the drug works in almost the exact same way in people as it does in animals. But as any veterinarian can tell you, people use many drugs that don't work on animals, and vice versa. So while animal tests can give researchers certain types of

valuable information, they still may not show how the drug will affect people. **There are many hurdles between lab studies and those done in humans that must be overcome for the study to progress to the next phase.**

News stories on lab and animal studies can mislead

In both lab studies and animal studies, the research report may be published. Usually, the researcher's own report makes it clear that more studies need to be done to see if the substance makes a difference in people. But if a news group picks up the story and publishes it, the story may not clearly say what kind of study was done. Sometimes the news reports on this very early research make it sound like the method will work in people, which can lead to confusion. This is why it helps to look at the whole printed story, and then see if you can find out more about the details of the research. Always keep in mind that there's a huge difference between positive results in lab or animal studies and good results in human studies.

Testing in humans

After it's tested in the lab, the treatment may be ready to be tested in humans. Before this decision is made, the results from cell and animal tests are carefully reviewed. Other evidence may be weighed, such as the effects of related drugs, what's already known about the class of chemicals, and other such information. If the drug is a new substance, the company must tell the US Food and Drug Administration (FDA) why they think the drug will work in humans, and share research from the lab and animal studies. **They must also have some evidence that it will be safe for people to take.** If the FDA approves human testing, researchers must decide how to design clinical trials and find volunteers who are willing to take the drug.

Clinical trials are research studies in which people volunteer to help doctors find ways to treat a disease or improve care. Today's cancer treatments are mostly based on what was learned in past clinical trials. Cancer treatments have improved because of clinical trials. It's important to continue this kind of research, so that cancer treatments can keep getting better. You can find a lot more information about this in [Clinical Trials: What You Need to Know¹](#).

Is the study published and peer reviewed?

Publishing the findings in a respected, peer-reviewed journal means that the methods and information from the study were looked at by other doctors or scientists. When they look at the information, **they want to be sure that the scientific procedures were properly followed.**

Sometimes you will find news about studies that comes from other sources, such as magazines or journals that are not peer reviewed, or books and letters that are supposed to have been written by experts. Be extra careful of this information.

Good science is cautious

It takes more than one study to prove something works. One study with a good outcome, even a human study, doesn't mean a treatment works. Future studies that try the same thing sometimes get different results, even if the study is done the same way. This can happen because the second study tests the method on a different group of people that doesn't respond the same way as the first group. Or the treatment may be used in a slightly different way, or with some other small difference that may not have been noticed. Or the treatment looks good in the first study based on random factors that couldn't be controlled. **Sometimes a treatment looks great in the first study, but then no other study gets the same outcome – meaning that real-life patients couldn't expect those great results either.**

It's rare to find a respected cancer researcher who wants to use a new treatment based on just one study. But even if it looks that way, behind that study is almost always a lot of other information that's been built up over a long time. When one large clinical trial makes the news, keep in mind that if a treatment actually works, it usually has a good track record from earlier studies.

What do I need to know about treatments that are not in line to be approved by the FDA?

Many herbs and food extracts are advertised as having an effect on cancer. As long as these food-related products are generally regarded as safe, there are few restrictions on their sales. Those who make or sell the products are not required to submit proof that the herb or supplement is safe or effective, and they don't address the supplements' effects on the body.

But some supplements have been found to not contain what's listed on the label, and others have been found to contain substances that were not on the label. You can get more information in [Dietary Supplements: What Is Safe?](#)²

Because there's growing interest in dietary supplements, researchers have started studying some of them using the same methods used for cancer treatments. Large sums of money are not usually available for clinical studies to look at herbs, so these studies tend to be smaller. But because the safety of the substance isn't called into question, there's less need for safety testing.

When looking at studies of herbs or supplements in people, consider the same questions you would use for [clinical trials](#)³. Keep in mind that until recently, many of these studies were poorly designed and many didn't get published. Or, if they did, some were published someplace other than peer-reviewed scientific journals.

On the Internet, at conferences, and in health food stores, those who sell herbs sometimes try to use lab studies or animal studies as evidence that the herbs work. Some sellers will refer to studies that are not published in peer-reviewed journals. The studies may be written up in a "natural cures" book or posted on a website. Sometimes sellers will show letters on a doctor's or hospital's letterhead, often from another country where it's impossible to check the facts. You have no way of knowing that the studies were done as they're presented.

It also happens that researchers will isolate a chemical from an herb and test it in the lab to find out if it affects cells. Because the effects of the isolated chemical might be different (especially in large doses), this kind of treatment is tested from the ground up, like a new drug. This type of study is usually written up in scientific literature and can be found there. But if sellers of an herb learn about scientific studies done with herbal extracts, some of them will talk about the study's findings as if the success in the study is linked to the whole herb, not a concentrated extract of one of its parts. Purified extracts don't work the same way as the whole herb, and these 2 types of studies cannot stand in for one another.

What if different studies of the same treatment show different outcomes?

Different outcomes can be very confusing, especially at first. Even when the studies are set up well, clinical trials often end up showing very little difference, if any, between the people who took the study treatment and those who didn't.

When the treatment really doesn't have any effect, random chance will often tip the scales in one direction or another – sometimes enough that the results seem to be significant. This means that sometimes the placebo group will do a bit better than the test group, while at other times, the group that gets the new treatment does a little better.

In most cases, when results conflict with one another like this, it means that the treatment really has very little effect. But sometimes conflicting results can be caused by study design problems, or other factors that affected the outcomes.

This leads to another problem that can creep in as studies are published. Sometimes,

the studies that show no difference between the treatment and placebo, or the ones that show the placebo group doing better, are never published. After all, it isn't exactly exciting news when something doesn't work. But these kinds of studies could really help people who are trying to decide whether it's worthwhile to get the treatment.

Worse, if the only clinical trials published are the ones that show the treatment helps, a person reviewing the published information won't be able to find those studies that showed no difference. He or she might conclude that the treatment was helpful, because those are the only studies that were published. This is an example of what's called *publication bias*.

Does this new cancer treatment really make a difference to people?

Even if a study finds that the difference between an old treatment and a new one is significantly different, it may not make that much difference in people's lives. For instance, a very large clinical trial can show that a treatment improves survival by an average of 10 days and that this was not by chance. Even though it's significant statistically, for most patients, a treatment that extends life a bit more than a week may mean that the treatment may not be worth the side effects.

Sometimes, it's hard for even doctors to know how helpful a treatment may be when balancing its benefits with its side effects and other costs. Still, if you ask your doctor about a certain treatment that was found helpful in a good study, he or she may be able to talk to you about whether it might be worthwhile for you.

What if I want to get an unapproved treatment?

Even if the evidence isn't there, you may decide to use a new treatment. If you choose to do this, talk about it with your doctor to get his or her opinion of the treatment. See what you can find out about side effects, allergies, drug interactions, and other possible effects.

The most common way to get a treatment that has not yet been approved is to take part in a [clinical trial](#)⁴. But there are other situations where a drug may be used before the FDA approves it for general use, even if you can't be in a clinical trial.

Sometimes a new drug has already been approved by the FDA for one purpose and is being used for another. This means it might be available for you if your doctor agrees it might help you. (See [Off-Label Drug Use](#)⁵ for more on this.)

Sometimes the drug can be used for certain people even before the FDA has approved

the drug if “expanded access” or “compassionate use” are allowed. If this is the case, doctors can use the drug for certain problems, usually when other treatments are not working. (See [Compassionate Drug Use](#)⁶ to learn more about this option.)

Unfortunately, insurance companies sometimes refuse to pay for treatments that are used to treat conditions for which they were not approved. [Off-Label Drug Use](#)⁷ and [Compassionate Drug Use](#)⁸ tell you how to deal with this.

Questions you should ask about new cancer treatments

After going over what all of these things mean, here’s a recap of questions about new treatments you will want answered:

- Was the new treatment tested in the lab (on cells in a dish, called *in vitro*), in animals, or in humans (*in vivo*)?
- Who did the study? Was it done at a reputable cancer treatment center?
- Are there other studies that were done before that support this outcome?
- If the study was done in humans, how many were involved? How long were they followed (observed)?
- Was there a difference in outcome between the group taking standard treatment and the group taking the new treatment?
- Was the difference in outcome measured in survival, recurrence, symptoms, or some other marker?
- Was the study published in a respected, peer-reviewed journal, or was it presented at a conference or sent out in a press release?
- Is the treatment only being used in clinical trials in humans or has it been approved by the FDA?
- If the treatment hasn’t been approved, is it available through expanded access or compassionate use? (Compassionate drug use is when seriously ill patients use a new, unapproved drug when no other treatments are available. Call us to learn more about this.)
- Is the treatment likely to be harmful? What’s known about side effects?
- Is the treatment safe to use along with other treatments I’m getting?

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials/what-you-need-to-know.html

2. www.cancer.org/treatment/treatments-and-side-effects/complementary-and-alternative-medicine/dietary-supplements.html
3. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials/what-you-need-to-know.html
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Last Medical Review: May 10, 2016 Last Revised: May 10, 2016

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