Coffee good for you, but it's OK to hold back

By Elizabeth Landau, CNN
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(CNN) -- If you can't get through your day without a coffee break or two, here's good news for you: What scientists know so far suggests coffee may help you stay healthy.

As usual with medical research, the operative word is "may."

It's hard to know for sure whether coffee is really causing good effects -- lifestyles or behaviors associated with coffee consumption may also influence health. Also, different people have different tolerances for coffee -- it can have short-term side effects that make people steer clear of morning brews.

So, doctors aren't quite convinced enough to prescribe coffee -- but they probably don't need to, because so many people indulge in it anyway.

The point is: In general, regular coffee drinkers won't be discouraged from continuing the habit, although there are exceptions.

"For most people, for people who don't experience the side effects, the benefits far outweigh the risks," said Dr. Donald Hensrud of the Mayo Clinic.
Why would coffee be good?

More is known about the overall association between coffee and positive health effects than about the mechanism behind it, said Dr. Alberto Ascherio, professor of epidemiology and nutrition at the Harvard School of Public Health.

Antioxidants are one potential reason that good outcomes are seen from coffee. Our bodies produce oxygen radicals, which are damaging to DNA. Antioxidants prevent them from doing damage, Ascherio said.

Although antioxidants are found in fruits and vegetables, research has shown that coffee is the top source of antioxidants for Americans.

Caffeine itself may also contribute to coffee’s positive effects on brain health. That may be because caffeine is an antagonist to adenosine receptors. These receptors normally slow down neural activity when the chemical adenosine binds to them, producing a sleepy feeling. But if caffeine binds to the receptors, the activity of neurons speeds up.

Coffee also appears to lower levels of insulin and estrogen, which is perhaps why a study last year found a lower risk of endometrial cancer in coffee-drinking women. Insulin also plays a role in prostate cancer, another disease coffee may help stave off.

Perfect your coffee pour-over

What good it may bring

The evidence is fairly strong for coffee preventing type II diabetes and Parkinson’s, and reasonably good for antidepressant effects, too, doctors say.

Just in the last few months, several new studies have been published highlighting other possible benefits of coffee. Again, none of them prove that coffee causes any effects at all; they are just associations.

People who drink two 8-ounce cups of coffee daily appear to have an 11% lower risk of developing heart failure, compared to noncoffee drinkers. That’s according to a meta-analysis published in June in the American Heart Association’s Journal Circulation: Heart Failure, based on pooling the results of five studies. The researchers did not take into account the strength of coffee, what time of day it was drunk, or whether it was caffeinated -- factors that could be related.

Coffee drinkers may also be protecting themselves against basal cell carcinoma, the most common form of skin cancer, according to a July report in the journal Cancer Research. Other caffeinated beverages also seemed to reduce the risk of this slow-growing cancer. But scientists don’t yet know why this effect was observed.

Increased coffee consumption also is associated with longer life, according to Research in the New England Journal of Medicine. Again, no one knows what about coffee would make people live longer, but Ascherio theorizes it could be the protection against type II diabetes, Parkinson’s, depression and suicidal tendencies.

Some of the strongest evidence comes from studies on type II diabetes. According to a 2009 meta-analysis, the risk of type II diabetes goes down with each cup of coffee consumed daily. Additionally, a 2007 meta-analysis found a correlation between increased coffee consumption and lower risk of liver cancer. But it’s not enough to tell anyone who doesn’t already drink coffee to start.
There have not been any large randomized controlled trials regarding coffee's health benefits, or even to see whether caffeinated or decaf is better for you. Without this kind of research, there will be uncertainty.

While perhaps scientifically interesting, such an investigation hasn't happened because of the economics involved, Ascherio said. A trial could cost in the tens of millions of dollars. Pharmaceutical companies aren't in the business of selling coffee, and coffee makers don't need a study to market their products -- people who like coffee buy it anyway.

The optimal daily dose of coffee varies widely, depending on the person. Some can't drink it at all. Others tolerate six to eight cups a day.

As common sense might suggest, the greatest overall benefits appear to be in people who drink coffee at moderate levels: two to three cups a day. But there are exceptions: A May 2011 study found that men who drink six or more cups a day had a decreased risk of fatal prostate cancer.

The bad stuff

Coffee hasn't always been hailed as such a great thing. It's also not for everyone.

Doctors may never consider coffee a standard recommendation because of individuals' varying susceptibility to side effects, said Hensrud.

Those include headaches, insomnia, heartburn and palpitations, not to mention urinary urgency. People who get fast heartbeats may need to steer clear of caffeinated coffee, too. Others don't drink coffee because it irritates their stomachs.

Famously, coffee got a bad reputation from research in the early 1980s connecting it to pancreatic cancer. But more recent studies have not found the same link, according to the American Cancer Society.

Some studies in the past did not take into account the connection between drinking coffee and smoking cigarettes, which do contain carcinogens, Hensrud said.

Different people metabolize caffeine differently, so some people can have a cup of coffee at night and fall asleep right away, while others need to keep their distance from java for several hours before bedtime to avoid insomnia.

Coffee that's boiled -- popular in Scandinavia, for instance -- will increase bad cholesterol; espresso has the same effect, Hensrud said. But filtering regular coffee reduces those cholesterol-raising substances.

Also, of course, if you don't drink black coffee, cafes will gladly charge you for all kinds of additives to dilute the bitter flavor and strength.

Some milky, sugary coffees may contain upwards of 500 calories -- particularly if they begin with the sound "frap." So, if you think you're doing your body a favor with these treats, health detriments of the added calories and fat may cancel out coffee's magic.
The bottom line

While all the evidence taken together suggests benefits from coffee, the burden of proof still isn't quite strong enough, because these are associations, not a demonstration that coffee causes anything.

"For a public health recommendation, you've got to be pretty dam sure," Hensrud said.

If you don't particularly like coffee but you're thinking about starting to drink it, beware: A sudden change from no consumption can trigger bad consequences, just like doing a really hard workout after you've been a couch potato, Ascherio said. Both situations -- going from nothing to a lot -- can increase risk of heart attack and stroke.

So, if you do feel like trying coffee, start gradually, Ascherio said. It may be that people who experience negative side effects from coffee won't reap the same long-term benefits from it, anyway.

"If you consume coffee, enjoy it," Hensrud said. "But I wouldn't necessarily recommend taking it up if you don't like it."

CNN's Kat Kinsman, Caitlin Hagan and Val Willingham contributed to this report.