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Concerned About Coffee? It May Actually Be Good for You

Because it tastes so good, you may assume coffee is bad for you. Maybe you've heard rumors that your morning brew causes everything from heart disease to cancer. But researchers are finding that coffee poses little to no health risk for most people. Not only that, coffee drinking might have some health benefits.

Early research hinted that coffee might have some harmful effects. But most of those studies searched for links between people's habits and their overall health. In such studies, it's hard to know which effects come from coffee and which just show up by coincidence. Heavy coffee drinking sometimes goes hand in hand with unhealthy habits, like smoking and a less active lifestyle.

Coffee beans are seeds and, like all seeds, they're loaded with compounds to protect the plant's next generation. "Coffee is an amazingly potent collection of biologically active compounds," says Dr. Walter C. Willett of the Harvard School of Public Health.

Caffeine is probably the most well-known compound in coffee. It can make you feel more awake and alert, which is why most people drink coffee in the first place. But too much can be harmful. In fact, according to Willett, caffeine causes the most common problem reported by coffee drinkers: trouble sleeping. Caffeine can also blunt your appetite and cause headaches, dizziness, nervousness and irritability.

If you're sensitive to caffeine, Willett says, simply drink less of it. If you have trouble falling asleep at night, make sure to avoid it later in the day.

Caffeine is mildly addictive, so you might get headaches, drowsiness, irritability, nausea and other symptoms if you suddenly cut back. You can avoid these effects, though, by gradually reducing your caffeine intake.

"There's some evidence that high amounts of caffeine during pregnancy may cause problems with the pregnancy," says Dr. Jared Reis of NIH's National Heart, Lung and Blood Institute.

That's why doctors recommend that pregnant women cut back on coffee and other caffeinated beverages.

Studies also suggest that caffeine may interfere with calcium absorption. Calcium is an important nutrient for growing and maintaining strong bones. Make sure you get enough calcium in your diet to help reverse this effect.

Overall, says Dr. Rob M. van Dam of Brigham and Women's Hospital and Harvard Medical School, "Caffeine doesn't seem to have the wide array of detrimental health effects we first thought it had."

At one time, many doctors worried that coffee might cause cancer. That's largely because caffeine damages DNA in the test tube, Willett explains, and DNA damage is linked to cancer. However, that doesn't mean that coffee



causes cancer in people. Coffee also has high levels of compounds, called antioxidants, that protect DNA.

"Coffee's been looked at in detail in relation to many cancers, and there's really not been any good evidence that any type of cancer is increased by coffee consumption," Willett says. "I think we can say quite confidently that there's no increased risk of cancer with coffee consumption."

Some evidence even suggests that coffee may help reduce the risk of

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liver cancer, Willett says. NIH's National Cancer Institute is now organizing a new effort to put together data from many studies and look into this question, among many others.

Some doctors thought coffee might cause heart attacks or strokes, because caffeine can raise blood pressure. But Reis says that a cup of coffee won't lead to a dramatic increase in blood pressure for regular coffee drinkers. "In long-term studies, higher levels of caffeine have not led to a higher risk of **cardiovascular disease**," he says.

Some types of coffee can cause cardiovascular problems for another reason, however. Coffee can contain compounds that lead to a rise in LDL cholesterol. That's the "bad" kind of cholesterol that's been linked to

cardiovascular disease.

"A lot depends on the way in which coffee is brewed," Reis explains. "When coffee is brewed with a paper filter, it removes a lot of the components that lead to higher LDL." So it's a good idea to drink filtered coffee to avoid this problem.

Coffee may even have some positive effects. Some studies have linked coffee intake with a lower risk of developing **Parkinson's disease**. "When looking at Parkinson's disease patients, they may be up to 4-8 times less likely to have been heavy coffee drinkers," says Dr. Wendy R. Galpern of NIH's National Institute of Neurological Disorders and Stroke. However, she points out, the studies in this area

**Web Links**

For links to further information, see this story online:

<http://newsinhealth.nih.gov/2009/August/feature1.htm>

have been limited. "It's hard to know if this is just an association or if this is cause and effect," she says.

Some studies suggest coffee may have other positive effects on the mind. Galpern says that researchers are now looking into the potential effects of caffeine on memory and Alzheimer's disease.

Perhaps the strongest research showing a health benefit from coffee relates to **type 2 diabetes**. In a 2002 study, van Dam's team reported that people drinking 7 or more cups per day had a 50% lower risk of type 2 diabetes than those drinking 2 or less cups. About 20 studies have now looked into the effect in various populations. "The great majority of studies confirm that coffee is associated with a lower risk for type 2 diabetes," van Dam says.

Researchers aren't sure why coffee has this effect, but some compound other than caffeine is responsible. "We did a study of decaffeinated coffee and essentially found the same association as caffeinated coffee," van Dam says.

Another potential benefit from coffee is that it can keep you from drinking less healthy things. "We think that coffee is actually quite a good beverage compared to other beverages," van Dam says. "It can be a reasonable beverage choice if you don't add a lot of cream and sugar."

Coffee can also help your social life, if you meet good friends to talk over coffee. Studies have clearly shown that people who have more social relationships have less stress and live longer. Research also suggests they're less likely to show mental declines as they age.

So go enjoy that cup of coffee. It's not the guilty pleasure you may have thought. ■

**Definitions****Cardiovascular**

The system of heart and vessels that circulates blood through the body.

Parkinson's disease

A brain disorder that leads to shaking, stiffness and difficulty with walking, balance and coordination.

Type 2 diabetes

The most common form of diabetes, a disease in which blood glucose (a type of sugar used by the body for energy) levels are too high. In time, it can lead to serious problems including heart disease, blindness and kidney failure.

**Wise Choices For Healthier Coffee Drinking**

- Drink coffee that's been filtered through paper.
- Avoid specialty coffee drinks loaded with sugar and fat, which can contribute to weight gain.
- Consider adding a little non-fat milk if you're concerned about bone health.
- Don't drink caffeinated coffee late in the day if you have trouble sleeping.
- Avoid caffeinated coffee if you're pregnant.

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You've Got Rhythm

Your Internal Clock Affects Your Health

Do you live by the clock, checking your watch so you're not late for work, school or appointments? While you struggle to stay on time for your daily activities, your body has its own internal clock. This biological clock helps you feel alert at work, hungry at mealtime and drowsy at night. When your internal clock is out of whack, your health can suffer.

Scientists have long known that the human body has daily rhythms, called circadian rhythms (circadian is Latin for "around a day"). These natural rhythms are coordinated by a tiny region in your brain. This "master clock" generally operates on a 24-hour cycle, and it adjusts to several cues in your surroundings. The most important cue is light and darkness.

During the day, when it's light outside, the brain's master clock sends out signals to other brain regions to make **hormones** that will help keep you awake, boost your heart rate and give you energy. In the evening, when less light enters your eyes, the master clock triggers production of a hormone called melatonin. Melatonin makes you feel drowsy and helps you stay asleep.

The brain's clock affects various body functions, including body temperature, hormone levels, urine production and blood pressure.



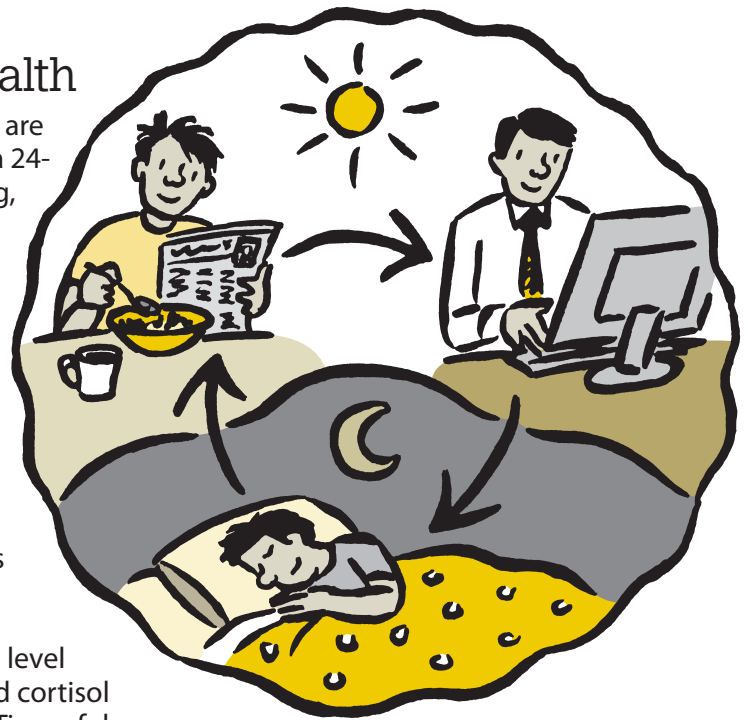
Wise Choices Keep Your Inner Clock On Track

- Stick to a regular sleeping schedule.
- Avoid caffeine and cigarettes late in the day, and don't drink alcohol to help you sleep.
- Get rid of light and sound distractions in your bedroom.
- Don't exercise within 2 hours of bedtime. It may delay the release of melatonin.

"Many processes are patterned around a 24-hour cycle: sleeping, eating, waking, drinking and even health-related events," says Dr. Martha Gillette, a scientist at the University of Illinois at Urbana-Champaign. For instance, she notes, heart attacks are more likely to occur early in the morning, when the level of a hormone called cortisol starts its daily rise. Time of day has also been shown to influence the effectiveness and side-effects of certain drugs.

When you fight against your circadian clock and your activities take you out of sync with day and night, your health may suffer. The schedules of shift workers who must be on the job after the sun goes down are at odds with their biological clocks. These people often find themselves sleepy at work. They may also have trouble falling or staying asleep during daylight hours after work. Studies show that shift workers have increased risk for heart disease, digestive disturbances, cancer and other health problems.

Another less severe disruption of the circadian clock is jet lag. It's caused by traveling across time zones. Jet lag is usually more severe for eastbound travelers, because their days are shortened and the brain has



more trouble adjusting to a shorter day than a longer one. Some studies suggest that taking melatonin pills just before bedtime may help jet-lagged travelers adjust to new time zones. But the scientific evidence for using melatonin to treat sleep disorders is still unclear.

In recent years, researchers have discovered that circadian activities are far more complicated than they'd ever expected. Inside our cells, clock genes and proteins keep each cell running on a near-24-hour schedule. "Every single cell that we've looked at in the body has a clock inside of it," says Gillette. "Cellular timekeeping is a molecular dance, and it's very complicated."

Researchers continue to explore exactly what makes our biological clocks tick. The answers they find may eventually lead to new treatments for sleep disorders, jet lag and other health problems. ■



Definitions

Hormones

Molecules sent through the bloodstream to signal another part of the body to grow or react a certain way.



Web Links

For links to more information about circadian rhythms, see this story online:
<http://newsinhealth.nih.gov/2009/August/feature2.htm>

Health Capsules

For links to more information about these topics, visit this page online:
<http://newsinhealth.nih.gov/2009/August/capsules.htm>

Questions Raised About “Depression Gene”

A “depression risk” **gene** identified more than 5 years ago may not be linked to the mental illness after all, a new study reports.

Scientists believe that most mental disorders are caused by a complex interaction between genes and the environment. But it’s difficult to detect their precise roles.

In 2003, researchers thought they’d found a gene, the serotonin transporter gene, that affects the risk of major depression in people who’d experienced several stressful events. But follow-up research by other scientists raised questions about the 2003 study’s findings.

To take a closer look, scientists from NIH and 6 universities reviewed research studies that had looked into

the connection. The team re-analyzed data on over 14,000 participants in 14 studies of depression and the serotonin transporter gene.

The researchers found a strong link between the number of stressful life events and the risk of depression. But the serotonin transporter gene seemed to have no effect on the risk for major depression, alone or in



Definitions

Gene

A stretch of DNA, a substance you inherit from your parents, that defines characteristics like height and eye color, along with how likely you are to get certain diseases.

interaction with stressful life events.

Scientists note that it can be hard to distinguish between the modest effects of certain genes and the impact of environmental factors, like stressful life events. That’s why it’s important to conduct follow-up research to see if the results hold up with further study.

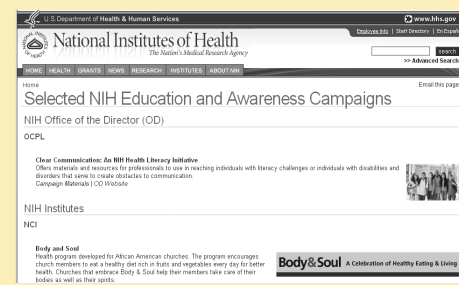
“We are still in the early days of understanding how genes and environment interact to increase the risk for depression,” says Dr. Thomas Insel, director of NIH’s National Institute of Mental Health. ■



Featured Web Site NIH Education and Awareness Campaigns

www.nih.gov/icd/od/ocpl/resources/campaigns

This web site links you to some of NIH’s best ongoing campaigns to raise awareness of important health information. Many include easy-to-read fact sheets, posters, radio and TV spots and education kits. All these materials are free and available for use in your community.



Tasty Recipes for People with Diabetes

A newly revised booklet—called *Tasty Recipes for People with Diabetes and Their Families*—is now available in both Spanish and English.

Tasty Recipes includes healthy food ideas with a Latin American flair. Learn how to make Spanish omelet, Caribbean red snapper, avocado tacos and other healthy dishes.

Each recipe comes with a Nutrition Facts table that lists calories, fat content and other dietary information. The book also includes tips for eating well and managing your **diabetes**. It’s a terrific addition to any kitchen.

To order a free copy of *Tasty*

Recipes, call NIH’s National Diabetes Education Program toll-free at 1-888-693-6337, or visit <http://ndep.nih.gov/publications/PublicationDetail.aspx?PubId=131>. A limited number of additional booklets can be purchased for \$1 each. You can also download a PDF version to print yourself at no cost. ■



Definitions

Diabetes

A disease in which the body has trouble controlling the level of glucose—a type of sugar—in the blood.

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