

# OPTIMAL HEALTH UNIVERSITY™

Presented by Katie Gravesen, DC

## Hot News About Hot Peppers

*Ancient civilizations loved the way that hot peppers, also referred to as chili peppers, spiced up their food. But they also knew that these pungent, aromatic vegetables contained amazing healing and all-natural antibacterial properties (J Ethnopharmacol 1996;52:61-70). Today, scientists are rediscovering the potent healing powers of this fiery vegetable. Here's some "hot" research Dr. Gravesen has dug up on these spicy vegetables.*



Here are two more "hot" facts about peppers and pepper-related products: Oil from hot peppers may kill salmonella on raw poultry, and Tabasco sauce on raw oysters may kill hepatitis. Clearly, these spicy additions benefit more than your taste buds!

Hot peppers may be small in size. But, according to Dr. Gravesen, they pack a powerful punch against disease.

### Cure the Cold

Hot peppers are fantastic sources of immune-boosting antioxidant vitamins like A, C and E. They are also rich in folic acid and potassium, low in calories and sodium, contain no carbohydrates or fats and help fight the common cold.

Instead of relying on drugs to keep lung and nasal secretions thin and easily expectorated, indulging in spicy food when you're under the weather loosens lung and sinus congestion naturally.

### Banish Bugs

Farmers are continually fighting the battle of the bugs. But many insecticides and herbicides are suspected carcinogens. Fortunately, environmentally conscious farmers are now using cayenne pepper as a fungicide for berries and grapes. Saponin, a compound found in cayenne peppers, is the active ingredient. "Saponin is detergent-like and foaming when water is added," say researchers. "The compound destroys fungal cells by forming holes along their cell membranes." (*Nutr Today* 2003;38:224.)

The researchers also note that several scientists believe this fungicide may have uses far beyond crop protection — including eliminating bathroom mildew without the use of dangerous chemicals.

### Pacify Pain

The modern pioneers of research into capsaicin's pain-relieving qualities were Hungarian researchers "who first published their studies in the 1940s. Working with animals, they showed that capsaicin selectively damaged [desensitized] a part of the nervous system involved with pain sensations." (*Diabetes Forecast* 1992;45:34.)

In particular, capsaicin may suppress an element called "substance P."

"Substance P is a neurotransmitter. Neurotransmitters are substances in the nerve system that mediate, or regulate, the movement of pain and pleasure signals throughout the body's nerve system — between the peripheral nerves in the hands and feet, for instance, and the central nervous system and the brain." (*Diabetes Forecast* 1992;45:34.)

### Combat Cancer

The secret ingredient in hot peppers is capsaicin, a chemical best known for its ability to produce a spicy sensation upon ingestion. But capsaicin also appears to slow the growth of cancerous tumor cells, according to researchers from the University of Pittsburgh who presented their findings at the American Association for Cancer Research earlier this year. Their work focused on ovarian and pancreatic cancers, both of which have low survival rates.

Even more impressive is the fact that while capsaicin causes cancer cells to self-destruct, it does no harm to surrounding normal cells.

But what about people who can't stomach the thought of eating hot peppers? Dr. Gravesen advises them not to worry. The chemical capsiate, found in mild sweet peppers, also "targets a variety of pathways involved in cancer development and inflammation." (*Eur J Nutr* 2003;42.)



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When the body experiences pain, substance P is released. According to the authors of the article cited on the previous page, “The pain signal is transmitted from the site of the pain to the nervous system and then to the brain. The body then releases natural pain-killers, called endorphins and enkephalins, that [also] inhibit the release of substance P.”

Evidence indicates that capsaicin may also help patients overcome the pain of osteoarthritis. And repeated nasal applications are shown to help prevent debilitating cluster-headaches (*Drugs* 1997;53:909-14).

Researchers also continue to study capsaicin as an effective treatment for a number of sensory nerve fiber disorders, including pain associated with cystitis and human immunodeficiency virus (HIV) (*Clin J Pain* 2000;16:86).

### Omit Overactive Bladder

Have you noticed a recent influx in television commercials and print ads promoting medications for overactive bladders? This is the pharmaceutical industry’s latest direct-to-consumer advertising campaign. However, these drugs may spark potentially hazardous side effects.

Fortunately, there are a number of all-natural alternatives from which to choose. Preliminary research reveals that chiropractic adjustments may help stave off bladder control problems (*J Manipulative Physiol Ther* 1998;21:363-7). Capsaicin is also shown to alleviate symptoms of an overactive bladder. “Studies with capsaicin over the past eight years have demonstrated clinical efficacy with minimal long-term complications.” (*Endourol* 2000;14:97-103.)

Researchers in Hungary note that “the introduction of capsaicin into modern urology is one of the most fascinating advances in neuro-urology. Its mechanism of action is based on the ‘desensitization’ of the sensory nerves of the bladder.” (*Orv Hetil* 1999;140:867-72.)

### Culinary Caution

Capsaicin can clearly be very helpful,

### How Hot Is Hot?

Scientists measure the heat of a pepper in Scoville Units. One part of chili “heat” in one million drops of water is 1.5 units.

- Bell peppers — 0 units
- Jalapenos — 2,500 to 8,000 units
- Serrano — 8,000 to 22,000 units
- Cayenne — 30,000 to 50,000 units
- Thai peppers — 50,000 to 100,000 units
- Habaneros — 100,000 to 300,000 units
- Pure capsaicin — 15,000,000 to 16,000,000 units

but beware that it has the power to be harmful as well.

Hot peppers routinely contribute to “burning and stinging of the hands, mouth and eyes in conjunction with food preparation and ingestion.” (*Cutis* 2003;72:21-3.) The pain can range from mild irritation to excruciating. Therefore, it’s vital to wash your hands thoroughly after coming into contact with any member of the hot-pepper family.

Did you know that a drink made with one drop of capsaicin and 100,000 drops of water can still produce a noticeable burn? Now *that’s* hot! And because capsaicin creams remain potent, “even at a concentration of 0.075 percent, people must protect their fingers by using a glove or a sheath over the finger. The cream also must be kept away from the eyes and mouth.” (*Diabetes Forecast* 1992;45:34.)

If you do burn your mouth while enjoying a spicy meal, reach for a glass of milk instead of water. According to the Chili Pepper Institute, casein — found in dairy products — disrupts the fiery reaction by stripping away the capsaicin like detergent on a greasy pan. Sour cream and yogurt work equally well. Rice and bread may also help reduce the burn.

In the event that capsaicin oil comes into contact with your skin, the Institute recommends using rubbing alcohol on the affected area first, then soaking it in milk. “If you get it in your eyes the only thing you can do is repeatedly rinse with water or saline,” recommends the Chili Pepper Institute.

### Talk With the Doctor

“The clinical importance of herb-drug interactions depends on many factors associated with the particular herb, drug and patient,” note the authors of an article published earlier this year (*Drugs* 2005;65:1239-82).

So, before spicing up your diet with hot peppers — or any other herb or supplement — talk with your doctor of chiropractic first. Just because a capsaicin-based product is available over the counter doesn’t mean you can throw caution to the wind when it comes to using the product for pain relief or other health-based interventions.

And stay tuned for more late-breaking nutrition information from this chiropractic office. We are committed to remaining up to date with the latest wellness research — and sharing that research with our patients.

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