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Our October 2018 Newsletter for Healthy Living

More Love for Broccoli

Broccoli, a close relative of Brussels sprouts, cabbage and cauliflower, is perhaps most well-known for its chemoprotective properties. It's an excellent source of phytonutrient glucosinolates, flavonoids and other health-boosting antioxidant and anticancer compounds. One of the compounds in broccoli known to have anticancer activity is sulforaphane, a naturally occurring organic sulfur. Studies have shown sulforaphane supports normal cell function and division while causing apoptosis (programmed cell death) in colon, prostate, breast and tobacco-induced lung cancer cells. Three servings of broccoli per week may reduce your risk of prostate cancer by more than 60 percent.

Its beneficial effects on obesity, Type 2 diabetes and nonalcoholic fatty liver disease (NAFLD) have also been highlighted in a number of studies. Researchers have now identified yet another major health benefit of this cruciferous vegetable: a healthy gut. In fact, researchers suggest broccoli can be very



helpful in the treatment of colitis and leaky gut. As reported by CBS: *"The Penn State study was carried out with mice, who were found to be much more capable of tolerating digestive issues than those who weren't put on a broccoli diet. The scientists added that the results could be a breakthrough for humans, as digestive problems can reportedly lead to other severe issues."* What they discovered is that when you eat broccoli, a compound

called indolocarbazole (ICZ) is produced, which catalyzes a healthy balance not only in your gut but also in your immune system, as the two are intricately connected. In this study, 15 percent of the animals' diet was swapped out for raw broccoli, equating to a human eating 3.5 cups of broccoli per day. Admittedly, that's quite a bit of broccoli, but the researchers note you can obtain

Chronic inflammation in your body can also contribute and/or lead to other health conditions such as arthritis and heart disease. While leaky gut syndrome is primarily associated with inflammatory bowel diseases like Crohn's and ulcerative colitis and celiac disease, even healthy people can have varying degrees of intestinal permeability leading to a wide variety of health symptoms, and

"...mice were found to be much more capable of tolerating digestive issues when on a broccoli diet."

an equivalent amount of ICZ from a single cup of Brussels sprouts, as they contain three times the ICZ of broccoli. Earlier studies had confirmed that one of the health benefits of broccoli is its ability to quench inflammation, so it makes sense it would be helpful for gastrointestinal (GI) inflammation as well.

Leaky gut is a condition that occurs due to the development of gaps between the cells (enterocytes) that make up the membrane lining your intestinal wall. These tiny gaps allow substances such as undigested food, bacteria and metabolic wastes that should be confined to your digestive tract to escape into your bloodstream. Once the integrity of your intestinal lining is compromised, allowing toxic substances to enter your bloodstream, your body experiences a significant increase in inflammation. Your immune system may also become confused and begin to attack your own body as if it were an enemy — a hallmark of autoimmunity disorders.

this can be significantly influenced by your diet.

A key component of a healthy gut is having good barrier function to prevent particles from escaping from your intestinal tract into your bloodstream. Receptors located on the lining of your gut wall called aryl hydrocarbon receptors (AHRs) play a vital role in maintaining a well-functioning barrier. One of their primary jobs is to trigger a reaction when toxins are detected. As mentioned, broccoli and other cruciferous vegetables contain glucosinolate compounds, which are broken down into ICZ and other byproducts during digestion in your stomach. By binding to and activating AHR, ICZ helps boost your immune function and improve the balance of the microbiome in your gut. The compound sulforaphane also inhibits inflammation by reducing damaging reactive oxygen species (ROS) by as much as 73 percent.

Broccoli has been shown to:

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- **The Power of Curcumin**
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The Power of Curcumin

Cancer has an incredible global impact and places a vast financial and emotional burden on the families it touches. Nearly 40 percent of American men and women will be diagnosed with cancer in their lifetime and over \$125 billion is spent annually on medical treatment and patient care. The American Cancer Society estimated there

Deregulation of physiological and mechanical processes that initiate and promote the growth of cancer cells makes use of hundreds of genes and signaling routes, making it apparent a multitargeted approach is needed for prevention and treatment. Research has demonstrated that curcumin has a broad range of actions as it is able to effect multiple

seeking out and destroying early cancer cells naturally. Curcumin mimics the bodily processes used to enhance your cancer treatments and chemotherapy.

While some chemotherapy has been developed to target specific cells, most therapy drugs are nonspecific and affect all cells in your body. But not all scientists are convinced by the number of studies over the past 15 years demonstrating the multiple effects curcumin has on the inflammatory response and cancers, as well as the low toxicity profile. In one meta-analysis, researchers claimed curcumin could not meet the criteria for a good drug candidate.

It is becoming widely accepted that cancer is not a preprogrammed inevitability, but the result of the impact of environment on genetic regulation that may trigger cancer cell growth. There are multiple influences that may damage or mutate DNA, and consequently alter genetic expression, including: nutritional deficiencies, stress, free radical damage, toxins and pollution, chronic infections, hormonal imbalances, and chronic inflammation. Researchers have demonstrated curcumin may affect more than 100 different pathways in your cells, helping to prevent hyperproliferation of cell growth characteristic of cancer, and aiding in the treatment of the disease. Through the reduction of inflammation, prevention of the development of additional blood supply to support cancer cell growth and influence on metastasis, curcumin has great potential.

Reference: National Cancer Institute, Cancer Statistics. *Cancer Prevention Research* 2013; 6(5):387-400. *Toxins* 2010; 2(1):128-62. *International Journal of Chemistry and Cell Biology* 2009; 41(1):40-58. *Journal of Medicinal Chemistry* 2017; The Essential Medicinal Chemistry of Curcumin.

“Curcumin triggers a variety of actions that affect the growth of cancer cells.”

would be over 1.6 million new cases diagnosed in 2018, equating to 4,630 new cases and 1,650 deaths every day.

Despite advances in cancer treatment protocols, scientists realize prevention plays an essential role in reducing the number of people who die from the disease. After 30 years of testing more than 1,000 different possible anticancer substances, the National Cancer Institute announced that curcumin has joined an elite group that will now be used in clinical trials for chemoprevention. Turmeric, a yellow curry spice used in Indian cuisine, has a long history of medicinal use in traditional Chinese medicine and Ayurvedic medicine. Curcumin is one of the most well-studied bioactive ingredients in turmeric, having over 150 potentially therapeutic activities, including anti-inflammatory, antimicrobial and powerful anticancer actions.

If you have ever been diagnosed with cancer, it may feel as if it grew overnight when, in fact, cancer cells take years to develop. The progression of a cell from normal growth to cancer happens through several stages.

cellular targets. Studies have found, based on the activities of curcumin in the body, the spice could be an effective method of cancer prevention, or in treatment when used in conjunction with conventional treatment protocols.

Curcumin triggers a variety of actions that affect the growth, replication and death of cancer cells. Cancer cells lose the ability to die naturally, which plays a significant role in the hyperproliferation of cells common to cancer. Curcumin is able to turn on the apoptosis (cell death) signaling pathway, enabling the cells to die within a natural time span. Cancer cells thrive in an inflammatory environment. Although short-term inflammation is beneficial for healing, long-term inflammation increases your risk of disease. Curcumin is able to block the pro-inflammatory response at several points and reduce the levels of inflammatory cytokines in the body. Curcumin may also stop the ability of cancer stem cells from replicating and reduce the potential for recurrence after treatment. Curcumin also helps support your immune system, capable of

aid with weight loss; boost overall immune function; lower your risk for atherosclerosis and neurodegenerative diseases, thanks to phenolic compounds



that reduce free radicals; improve digestion and gut health, courtesy of significant amounts of fiber; benefit your skin, as sulforaphane helps repair skin damage; support eye health, thanks to high levels of the carotenoids lutein and zeaxanthin; fight allergies, thanks to the flavonoid kaempferol; provide important vitamins and minerals, including magnesium, potassium, calcium, protein and vitamin

C; help reduce blood sugar levels, as it contains soluble fiber and chromium; support heart health and help prevent thickening of your arteries; reduce inflammation, which is at the root of many chronic diseases, including asthma, Type 2 diabetes and heart disease.

Contrary to what you might think, the medicinal qualities of mature broccoli are actually optimized through cooking. Precision is key, however, as there's a fine line between optimizing its nutrient content and destroying it through overcooking. Research shows steaming mature broccoli spears for three to four minutes will increase the

(continued from page 1)

available sulforaphane content by eliminating epithiospecifier protein — a heat-sensitive sulfur-grabbing protein that inactivates sulforaphane — while still retaining the enzyme myrosinase, which converts glucoraphanin to sulforaphane. The latter is important, because without myrosinase, you cannot get absorb the sulforaphane. If you opt for boiling, blanch it in boiling water for no more than 20 to 30 seconds, then immerse it in cold water to stop the cooking process.

Reference: *Cancer Research* March 2000; 60(5):1426-33. *Clinical Cancer Research* May 1, 2010; 16(9):2580-90. *Clinical Cancer Research* Sept 15, 2005; 65(18):8548-57. *Journal of Functional Foods* October 2017; 37: 685-98. *Medical News Today* Oct. 17, 2017. *Diabetes Journal* May 17, 2017; 65(5):1225-36. *Nutrition and Cancer* 2004; 50(2):121-9. *Medical Daily* June 24, 2016. *Science Daily* April 5, 2005.

The Many Benefits of Honey

Honey has been valued as a natural sweetener long before sugar became widely available in the 16th century. Honey production flourished in ancient Greece and Sicily, for instance, while animals other than humans –

Manuka honey is made with pollen gathered from the flowers of the Manuka bush (a medicinal plant), and clinical trials have found this type of honey can effectively eradicate more than 250 clinical strains of bacteria, in-

cluded birch pollen.) However, the birch pollen honey group used less histamines than those who used regular honey. The authors concluded: *"Patients who pre-seasonally used birch pollen honey had significantly better control of their symptoms than did those on conventional medication only, and they had marginally better control compared to those on regular honey. The results should be regarded as preliminary, but*

"Patients who.....used birch pollen honey had significantly better control of their allergy symptoms."

bears, badgers, and more – have long raided honey bee hives, risking stings for the sweet reward.

Honey is a truly remarkable substance, made even more extraordinary by the process with which it is made. It takes about 60,000 bees, collectively traveling up to 55,000 miles and visiting more than 2 million flowers, to gather enough nectar to make one pound of honey. This tasty blend of sugar, trace enzymes, minerals, vitamins, and amino acids is quite unlike any other sweetener on the planet. And while honey is high in fructose, it has many health benefits when used in moderation. There are more than 300 kinds of honey in the US, each with a unique color and flavor that is dependent upon the nectar source. Lighter colored honeys, such as those made from orange blossoms, tend to be milder in flavor while darker-colored

honeys, like those made from wildflowers, tend to have a more robust flavor.



Some of the unique benefits of honey (especially raw honey) are: **Honey Makes Excellent Cough "Medicine:"** The World Health Organization lists honey as a demulcent, which is a substance that relieves irritation in your mouth or throat by forming a protective film. In fact, the United Kingdom Department of Health has proposed new guidelines recommending the use of honey as a first line of treatment for coughs, rather than antibiotics.

Honey Can Treat Wounds. Honey was a conventional therapy in fighting infection up until the early 20th century, at which time its use slowly vanished with the advent of penicillin. Now the use of honey in wound care is regaining popularity, as researchers are determining exactly how honey can help fight serious skin infections. Honey, and Manuka honey especially, has antibacterial, antifungal, and antioxidant activities that make it ideal for treating wounds.

cluding resistant varieties such as: MRSA (methicillin-resistant Staphylococcus aureus) MSSA (methicillin-sensitive Staphylococcus aureus) VRE (vancomycin-resistant enterococci) Compared to other types of honey,

Manuka has an extra ingredient with antimicrobial qualities, called the Unique Manuka Factor (UMF). It is so called because no one has yet been able to discover the unique substance involved that gives it its extraordinary antibacterial activity. Honey releases hydrogen peroxide through an enzymatic process, which explains its general antiseptic qualities, but active Manuka honey contains "something else" that makes it far superior to other types of honey when it comes to killing off bacteria. Also, research shows that any type of unprocessed honey helped wounds and ulcers heal. In one study, 58 of 59 wounds showed "remarkable improvement following topical application."

Honey Can Reduce Allergy Symptoms: Locally produced honey, which will contain pollen spores picked up by the bees from local plants, introduces a small amount of allergen into your system. Theoretically, this can activate your immune system and can build up your natural immunity against it over time. This approach only works because locally-produced honey has pollen of local plants you may be allergic to. Honey from other parts of the country simply won't work.

While research on this has yielded conflicting results, one study found that, during birch pollen season, compared to the control group, the patients using birch pollen honey experienced: 60 percent reduction in symptoms; twice as many asymptomatic days; 70 percent fewer days with severe symptoms; 50 percent decrease in usage of antihistamines. Interestingly enough, there were few differences between the two honey groups (those who took local honey, versus those who took honey that

Holiday Wine Tasting:

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Friday evening, November 9th



Paul Keller on Piano, Food & Fun by Arbor Farms

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they indicate that birch pollen honey could serve as a complementary therapy for birch pollen allergy."

Honey has anti-inflammatory and immunomodulatory properties due to its phenolic and flavonoid compounds. It may help inhibit chronic inflammation, which is considered the root cause of chronic diseases like rheumatoid arthritis, heart disease, diabetes and even Alzheimer's. Honey may also help lower the risk for cancer, neurologic diseases and cardiovascular diseases. The main thing to remember when it comes to honey is that not all of it is created equal. The antibacterial activity in some honey is 100 times more potent than in others, while processed refined honey will lack many of these beneficial properties altogether. When choosing honey, be sure it is raw, unfiltered, and 100% pure, from a trusted source. Honey has many healthy attributes, but it is also high in fructose. Each teaspoon of honey has nearly four grams of fructose, which means it should be consumed in moderation.

Reference: BBC News August 23, 2018. National Honey Board. Learn About Honey. Microbiology January 31, 2012. British Journal of Surgery July 1988; 75(7):679-81. Pharmacognosy Research 2017 April-June; 9(2):121-27. Evidence Based Complementary and Alternative Medicine 2013; 2013: 829070.



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