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Culinary Nutrition News:

Cold Case: Revealing Immune-Boosting Foods

Provided through a partnership between ACEF Chef & Child Foundation and Clemson University, and sponsored by French's Foodservice.

With the holiday season upon us, we also get the rippling effect of the cold and flu season. Flu shots, washing hands, downing vitamins, drinking lots of water, regular exercise and getting enough sleep are all ways to help build up your body's immune system, especially this time of year. Working in a restaurant, you may find it difficult to find time to drink eight (8-fluid-ounce) cups of water and get eight hours of sleep. Don't fret. A healthy diet may prove to be your body's biggest and best protection against unwanted pathogens. As is always the case with healthy eating, balance, moderation and variety reign supreme; however, there are some foods that have exceeded healthful expectations, being deemed immune-boosting foods. While these foods may or may not help to prevent colds and flu, they may give you a leg up on fending off pesky germs.

Yogurt and Kefir

The main job of the body's immune system is to patrol the gastrointestinal tract and prevent germs, bacteria and other pesky pathogens from entering the bloodstream, causing illness. Yogurt can be a key ingredient in helping in this effort. Yogurt is not only packed with vitamins and protein, but it is also a source of lactobacillus, a probiotic (or healthy bacteria) that has been shown to increase the body's white blood cell count, thus strengthening the immune system and fending off bad bacteria. However, not all yogurts are created equal, and some do not contain probiotics.

Probiotics are found in yogurts with live or active cultures—the lactobacillus and bifidobacterium strains—which may be specified by the National Yogurt Association's Live & Active Cultures seal. Also, choosing the low-fat or fat-free kinds helps reap the benefits without adding extra fat.

Originally from the Middle East, traditional kefir is similar to yogurt in taste but more drinkable, like a slightly thickened milk. Also, it is cultured with special kefir grains, so it contains slightly different bacteria. Unlike the bacteria in yogurt, which are short-lived and pass through the system over time, the bacteria in kefir are capable of colonizing in the intestinal tract. Kefir also contains good yeasts that help fight off pathogenic yeasts in the body.

the good stuff: **Probiotics**

other sources **Sauerkraut, fermented and unfermented milk, some juices and soy drinks**

try it: **Cold crab soup with cucumber, radishes and kefir**

Brazil Nuts

As the largest commonly eaten nut, the Brazil nut is the richest natural source of selenium. The body uses selenium to produce selenoproteins—a powerful antioxidant that protects the immune system by helping to form infection-thwarting T-cells. Studies show that this antioxidant may also help to regulate intestinal flora, prompting good bacteria

to defend against invading pathogens. Brazil nuts are so high in infection-fighting selenium that a single nut has nearly double the amount needed in a day, according to the Institute of Medicine. To put it into perspective, the average adult requires 55 micrograms per day of selenium, and a single Brazil nut has about 95 micrograms. “Too much of a good thing can be a bad thing” rings true for Brazil nuts, considering too much selenium can be bad for your health. In other words, Brazil nuts should not be a part of a daily diet but, rather, an occasional dietary source.

the good stuff: **Selenium**

other sources **Shellfish, fish, meat, eggs, whole grains and sunflower seeds**

try it: **Toasted and crushed Brazil nuts over soups and salads, as well as a garnish for entrees**

Mushrooms

Cultivated for more than 1,000 years, mushrooms have long been used for edible, as well as medicinal purposes. In fact, they have been touted for their immunity-boosting properties by practitioners of folk medicine and Eastern medicine for centuries. Their healing reputation is owed, in large part, to beta-glucans—a type of carbohydrate found on the cell walls of fungi, yeast, bacteria, algae, lichens and plants. Unlike other immunity-boosting nutrients, beta-glucans can neither create nor regulate cells within



the immune system. Instead, researchers say that beta-glucans can act as a kind of decoy, stimulating the immune system by mimicking an invading pathogen. For instance, when you eat mushrooms (or other beta-glucan-containing foods), your immune system reacts as if a harmful substance is present and switches into protection mode.

the good stuff: **Beta-glucans**

other sources **Yeast, barley and oats (particularly the bran)**

try it: **Burgers with sliced mushrooms mixed in with the beef and served atop the patties**

Garlic

Considered holy and thought to guard against vampires and witches in the Balkans, garlic is considered a food prodigy in some parts of the world because of its versatile culinary and curative properties. Its medicinal reputation has a long-standing history, being used as an antibiotic during both World Wars. Thanks to its sulfur-containing compounds, garlic is

regarded as one of the most naturally potent cold and flu fighters. The presence of these compounds, specifically allicin, not only gives garlic its notable aroma but also blocks enzymes, preventing the spread of infections from viruses, bacteria, fungi and parasites. Allicin is also said to boost the immune system and have antioxidant properties; however, it is only released when garlic cells are damaged (cut, chewed, crushed), and is heat-sensitive. Garlic is also rich in vitamins A and C, which can further boost your immune system and provide antioxidant benefits.

the good stuff: **Allicin**

other sources **Leeks, onions, scallions and chives**

try it: **Salad dressings, pasta salads and salsa with minced, raw garlic**

Oysters

As one of nature's most potent aphrodisiacs, oysters may also aid in protecting the body against colds and flu. Their high zinc content is responsible for both. Zinc helps in regulating testosterone, the hormone behind the human sex drive, as well as keeping the immune system healthy. In particular, zinc aids in the development of T-cells, a group of white blood cells that help fight off infection, as well as in the maintenance of the body's first barriers to infection—skin and mucus membranes. While a wide variety of foods contain zinc, oysters contain more zinc per serving than any other food. Red meat and poultry provide the majority of zinc in the American diet. Other good food sources include beans, nuts, certain types of seafood (such as crab and lobster), whole grains, fortified breakfast cereals and dairy products. However, the bioavailability of zinc from plant sources is lower than that from animal source because of the presence of phytates, which bind zinc and inhibit its absorption by the body. It is also important to note that while even the mildest zinc deficiency can have adverse effects on the immune system,

particularly in children and the elderly, too much can be toxic and will inhibit immune function. The FDA recommends about 11 milligrams of zinc per day.

the good stuff: **The Good Stuff: Zinc**

other sources **Lean meats such as beef and chicken, seafood, pumpkin seeds, beans and mineral-fortified cereals**

try it: **Oyster stew with leeks and potatoes for a hearty appetizer**

Kale

With peak season during the cooler winter and spring months, kale is a great source of vitamin C, also known as ascorbic acid. Vitamin C delivers a powerful antioxidant punch that helps fight off infection and regenerate other antioxidants in the body, including vitamin E. While vitamin C is regularly used as an immune-boosting supplement, there is little in the way of actual clinical research to explain how vitamin C helps boost immunity. Vitamin C may not prevent a cold, but it can shorten its duration. It is sensitive to heat, which breaks down the nutrient, making it less effective. Each 100-gram serving of raw kale includes about 120 mg of vitamin C, well over the recommended dietary amounts for men (90 mg) and women (75 mg). Still, one cup cooked kale does offer a good dose of vitamin C (89% of the daily value) as well as more than double a day's worth of vitamin A, which promotes eye and skin health and may help strengthen the immune system.

the good stuff: **The Good Stuff: Vitamin C**

other sources **Spinach, Swiss chard, as well as a host of other fruits and vegetables**

try it: **Baked kale chips served as a delicious and healthy side**



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About the American Culinary Federation and the Chef & Child Foundation



The American Culinary Federation, Inc., established in 1929, is the premier professional organization for culinarians in North America. With over 20,000 members in more than 200 chapters nationwide, ACF is the culinary leader in offering educational resources, training, apprenticeship and accreditation.

In addition, ACF operates the most comprehensive certification program for chefs in the United States. ACF is home to ACF Culinary Team USA, the official representative for the United States in major international culinary competitions, and to the Chef & Child Foundation, founded in 1989 to promote proper nutrition in children and to combat childhood obesity. For more information, visit www.acfchefs.org.

About Clemson University



“Culinary nutrition” is the application of nutrition principles combined with food science knowledge displayed through a mastery of culinary skills. CU CHEFS® (Clemson University’s Cooking and Healthy Eating Food Specialists Outreach Services), led by Dr. Margaret Condrasky, promotes healthy foods research and applications for culinary professionals and the food industry. Ranked No. 25 among the nation’s top public institutions, Clemson University is a science-and-



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