

Nutrition important before, after surgery

Q I'm having surgery soon and I'm worried about recovery. Are there any foods I can eat that will help? LY, Winterville

A It's great that you have some time to prepare yourself for surgery. Good nutrition is important both before and after surgery. Taylor Stamey, a Brody medical student, has information to share with you. Here is what she wants you to know.

It is essential to eat a wide variety of foods in order to promote wound healing. Including adequate micronutrients and macronutrients in your diet will aid in recovery from surgery. Macronutrients are the nutrients we need in large quantities. You know them as fat, protein and carbohydrates. Micronutrients are nutrients needed in smaller quantities or vitamins and minerals. There are many types of cells involved in wound healing, and all require protein for proper functioning.

Formation of new blood vessels and collagen, the main structural protein found in skin and connective tissues, requires protein. Proteins also are involved in the immune response — your body's way of fighting off disease.

Sources of protein include chicken and turkey, lean beef, fish and shellfish, eggs, almonds, Greek yogurt, milk, lentils, peanuts, and beans. It is recommended to multiply your weight by 0.7 to find how much protein you need daily. For the average American, that's 100 grams or in a day that could be one chicken breast, an egg, a serving each of milk, almonds, Greek yogurt and beans.

The specific amino acids — arginine and glutamine — are building blocks of proteins involved in wound healing. Arginine is essential for the inflammatory process, collagen synthesis, promotion of tissue growth and activation of immune system cells.



KATHY KOLASA

It also helps in preventing wound infections. Glutamine is necessary for antioxidant production, transport of amino acids

in the body and the inflammatory process.

Some foods with arginine are lean red meat, chicken, and turkey, fish, nuts and seeds, legumes, whole grains and low-fat dairy products. Some foods with glutamine are beef, pork, chicken, dairy products, spinach, parsley and cabbage.

Carbohydrates are necessary for production of cells creating collagen, white blood cell function, and secretion of hormones, like insulin, helping tissue growth. Quinoa, beans, oats, and berries are all examples of healthy carbohydrates. Fats have a structural function in all cells of the body and also form compounds involved in the inflammatory process necessary for wound healing. Some healthy fats are nuts, seeds, fish, canola and olive oil.

Vitamins are important micronutrients involved in wound healing. Vitamin A helps immune function and inflammatory processes, as well as skin and collagen synthesis. B vitamins help produce immune system cells and tissue growth, and collagen synthesis. Vitamin C helps collagen synthesis, antioxidant activity, and formation of new blood vessels. Vitamin D keeps tissues strong, allows substances to move between cells, and lowers inflammation.

Include in your diet foods like kale, spinach, broccoli, Brussels sprouts, carrots, sweet potatoes, white potatoes, squash, tomatoes, bell peppers, peas, mushrooms, avocado, cantaloupe, mango, bananas, oranges, nuts, milk, eggs, lean meat, fish, whole-grain breads, cabbage, kale and spinach.



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Formation of new blood vessels and collagen requires protein. Proteins also are involved in the immune response — your body's way of fighting off disease. Protein-rich and portable, nuts have always been the utility players of the snack world.

Foods rich in vitamin D include fish such as salmon, swordfish and tuna, as well as egg yolks and fortified foods. The usual serving size of fish is 4 ounces, with the recommended amount of fish in a week being 8-12 ounces. It is not recommended to eat more than that to promote wound healing.

Zinc and iron are important minerals involved in wound healing. Proliferation of cells involved in inflammation and tissue growth requires zinc. Zinc is also involved in fighting infection. Iron carries oxygen throughout your body, which is important for feeding tissues and producing collagen.

Foods containing zinc include cooked oysters, beef, crab, oats, dairy products, peanuts, eggs, salmon and rice. Iron-containing foods include meat, poultry, seafood, nuts, seeds, dried fruit, whole grains, legumes, tofu and dark leafy greens such as spinach and broccoli. It is not recommended to eat raw oysters if you have a compromised immune system, such as after surgery, as raw oysters may harbor bacteria.

New research has demonstrated possible but not proven benefit of curcumin for wound

healing, but supplementation is not currently recommended. Curcumin is a curcuminoid found in turmeric and may prevent unnecessary inflammation and promote proliferation of tissues and collagen. Curcumin can be found in mango ginger and curry powder. Side effects and needed dose are not known.

Eating an adequate diet of a wide variety of foods can prevent macro- and micro-nutrient deficiencies which will aid in wound healing. After any surgery, ask your doctor if you need to be on a special diet and ask a registered dietitian nutritionist (RDN) to review your usual intake to ensure you are getting the right amount of nutrients to aid wound healing. Talk to your doctor or RDN before taking any dietary supplement including arginine, glutamine, zinc, iron, curcumin, turmeric or a vitamin-mineral supplement. Dr. Kolasa can send you a handout on wound healing and diet. Write her at kolasaka@ecu.edu

Professor emeritus Kathy Kolasa, a registered dietitian nutritionist and Ph.D., is an affiliate professor in the Brody School of Medicine at ECU. Contact her at kolasaka@ecu.edu.

Study: Moderate salt reduction can lower your blood pressure

EBONY WILLIAMS
Atlanta Journal-Constitution

Cutting back on sodium intake can be challenging, especially during the holiday season, when so many activities are centered on food. But according to a new study, cutting back moderately on sodium can lead to much lower blood pressure.

According to a study released in JAMA, almost everyone — including those already on blood-pressure-reducing drugs — can lower blood pressure by cutting out a teaspoon of salt daily.

“We found that 70-75 percent of all people, regardless of whether they are already on blood pressure medications or not, are likely to see a reduction in their blood pressure if they lower the sodium in their diet,” said co-principal investigator Norrina Allen, PhD, the Quentin D. Young Professor of Health Policy in the Department of Preventive Medicine in a press release.

Participants in the study consisted of 213 men and women in their 50s, 60s and 70s, who reduced their current salt intake by one teaspoon daily. A week later, 72% of participants saw a decrease in their systolic blood pressure.

“The fact that blood pressure dropped so significantly in just one week and was well tolerated is important and emphasizes the potential public health impact of dietary sodium reduction in the population, given that high blood pressure is such a huge health issue worldwide,” said co-investigator Cora Lewis, MD, professor and chair of the Department of Epidemiology and professor of Medicine at the University of Alabama at Birmingham.

According to the Centers for Disease Control and Prevention, high blood pressure accounts for nearly 500,000 deaths in the United States each year. While limiting salt intake can help lower blood pressure, there are other lifestyle changes that can help too, according to the Mayo Clinic:

- Exercise regularly
- Eat a healthy diet
- Limit alcohol
- Quit smoking
- Get at least six hours of sleep per night

“Maintaining an awareness of your numbers can alert you to any changes and help you detect patterns. Tracking your results over time will also reveal if the changes you've made are working,” advised the American Heart Association.

ASK THE DOCTORS

Resistant starches the new topic in gut microbiome talk

Q I've been learning about the gut microbiome, and the terminology keeps changing. I understand probiotics. Then came prebiotics and postbiotics, which I think I finally get. But now people are talking about resistant starch. What is it, and why is it important?

A It's fascinating how quickly academic research into the gut microbiome moves into the public domain. In the last decade, we have gone from rarely hearing the word “probiotics” to seeing it every day, and seemingly everywhere. Probiotics are in countless dietary supplements, as well as personal products such as shampoo and conditioner, makeup, lotions, soaps and deodorants. They are even infused into clothing. And, as you point out, our gut-related vocabulary is constantly expanding as well.

The theory that the body contains beneficial microbes reaches back centuries. The idea of “probiotics,” introduced by a German scientist in 1953, is far more recent. Today, the word refers to the live bacteria and other microbes that support health and bodily functions. It is also commonly used to indicate products and supplements that contain those microbes.

In the last decade, the terms prebiotics and postbiotics have come into the conversation, too. Prebiotics refers to compounds that serve as a food source for the microbes in our guts, and which foster their growth and well-being. Postbiotics are certain substances produced by the microbes, which also benefit human health.

And this brings us to resistant starch. We have discussed it here before, but it's so interesting, we're happy to address it again. Resistant starch is a carbohydrate that resists digestion. Instead of being broken down and absorbed by the small intestine, resistant starch moves on, largely unchanged, to the large intestine. There, it is fermented and consumed by the trillions of microbes in the



EVE GLAZIER



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gut. Skipping the small intestine means resistant starch doesn't contribute to blood glucose levels. Research has linked it to improved intestinal and colonic health.

Studies have found diets that include resistant starch help with blood sugar control, yield more healthful blood lipid levels and improve feelings of satiety after eating. They have also been linked to lower risk for colon cancer.

As bacteria in the gut ferment resistant starch, they create compounds known as short-chain fatty acids. These include butyrate and propionate. The former is associated with lower rates of colorectal cancers. Propionate has been shown to lower inflammation in the body and also improve immune support.

Foods that are high in resistant starch include nuts, seeds, beans, legumes, whole grains, unripe bananas and plantains.

It has also been found that cooking and then cooling certain high-carb foods transforms those carbs into resistant starch. These include rice, potatoes, yams, whole grains such as oats and barley and pasta.

Someone looking to increase their consumption of resistant starch should consider allowing those foods to cool completely before consuming them. Research shows that for the first four days after cooking, each chill day increases the percentage of resistant starch.

A caveat: If foods high in resistant starch are new to your diet, add them gradually in order to avoid gas and bloating.

Eve Glazier, M.D., MBA, is an internist and associate professor of medicine at UCLA Health. **Elizabeth Ko**, M.D., is an internist and assistant professor of medicine at UCLA Health.

Recycle this newspaper.

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-100, SUB 194

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of
Biennial Determination of Avoided Cost Rates for Electric Utility Purchases from Qualifying Facilities – 2023)
NOTICE OF PUBLIC HEARING)

NOTICE IS HEREBY GIVEN that the North Carolina Utilities Commission (Commission) has scheduled a public hearing in this docket which will commence on Tuesday, February 6, 2024, at 7:00 p.m., in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina, for the purpose of taking nonexpert public witness testimony as a part of its 2023 biennial determination of avoided cost rates for purchases of electricity by the electric utilities who are parties to this docket from qualifying cogeneration and small power production facilities. The electric utilities who are parties to this docket are Duke Energy Carolinas, LLC (DEC), Duke Energy Progress, LLC (DEP), Virginia Electric and Power Company d/b/a Dominion Energy North Carolina (Dominion), Western Carolina University (WCU), and Appalachian State University, d/b/a, New River Light and Power Company (New River).

The Public Utility Regulatory Policies Act of 1978 (PURPA) requires electric utilities to offer to purchase electric energy from cogeneration and small power production facilities which obtain qualifying facility status under PURPA. The rates for such purchases shall be set by the state regulatory authority, shall be just and reasonable to the ratepayers of the electric utility and in the public interest, shall not discriminate against qualifying cogenerators or qualifying small power producers, and shall not exceed the incremental cost to the electric utility of acquiring alternative electric energy. As a part of its responsibility in these matters, the Commission determines on a biennial basis the avoided cost rates and conditions for the purchase of electricity by electric utilities from qualifying cogeneration and small power production facilities in North Carolina.

In addition to the requirements of PURPA, N.C. Gen. Stat. § 62-156 requires the Commission to determine the rates and contract terms to be observed by electric utilities in purchasing power from small power producers as defined in N.C.G.S. § 62-3(27a). The rates established pursuant to N.C.G.S. § 62-156 shall not exceed, over the term of the purchase power contract, the incremental cost to the electric utility of the electric energy which, but for the purchase from a small power producer, the utility would generate or purchase from another source.

The purpose of the hearing cited in this Notice is to consider revision of the avoided cost rates and contract terms previously set by the Commission for the purchase of electricity by the electric utilities who are parties to this proceeding from qualifying cogeneration and small power production facilities in North Carolina.

The Public Staff is required by statute to represent the using and consuming public in proceedings before the Commission. Written statements to the Public Staff should include any information which the writer wishes to be considered by the Public Staff in its investigation of the matter, and such statements should be addressed to Mr. Christopher J. Ayers, Executive Director, Public Staff — North Carolina Utilities Commission, 4326 Mail Service Center, Raleigh, North Carolina 27699-4300.

The Attorney General is also authorized by statute to represent consumers in proceedings before the Commission. Statements to the Attorney General should be addressed to The Honorable Josh Stein, Attorney General of North Carolina, c/o Utilities Section, 9001 Mail Service Center, Raleigh, North Carolina 27699-9001.

Written statements are not evidence unless those persons submitting such statements appear at a public hearing and testify concerning the information contained in their written statements.

Any person desiring to intervene in the matter as a formal party of record should file a motion under Commission Rules R1-5 and R1-19 no later than Wednesday, February 7, 2024. All such motions should be filed with the Chief Clerk of the North Carolina Utilities Commission, 4325 Mail Service Center, Raleigh, North Carolina 27699-4325. The comments and exhibits to be presented in this proceeding by formal parties other than DEC, DEP, Dominion, WCU, and New River must be filed with the Commission no later than Wednesday, February 7, 2024.

ISSUED BY ORDER OF THE COMMISSION.

This the 7th day of August, 2023.

NORTH CAROLINA UTILITIES COMMISSION

Tamika D. Conyers, Deputy Clerk