

1: Fibers 3: Burn test - Crime Scene

Fiber Evidence: Assigning Significance Whenever a fiber found on the clothing of a victim matches the known fibers of a suspect's clothing, it can be a significant event.

But learning more about how much this underappreciated nutrient can affect your health might change your opinion. What you may not know is that getting the right amount and the right types of fiber in your diet can have benefits far beyond digestive health. In fact, the amount of dietary fiber you receive could make an impact on your immune system, your heart, how well you control your appetite, and even how well you manage your weight. Nearly everyone needs more fiber. Only about 5 percent of adults meet the recommended amount of dietary fiber in a typical day ¹. The Institute of Medicine recommends at least 25 grams for women and 38 grams for men, but the average adult consumes just 16 grams daily ^{1, 2}. This means that 95 percent of people are missing out on the potential health benefits of getting the minimum recommended amount of fiber. Even if you regularly eat healthful foods like fresh fruits and vegetables, you might still be missing the goal. These foods often have a lot less fiber per serving than you might expect. For example, a medium apple contains about 3 grams of fiber, which means a woman would need the equivalent of about nine apples to reach the recommended amount of fiber in a day. The Institute of Medicine defines dietary fiber as non-digestible carbohydrates ². Many different components of plants, like inulin from onions, pectin in apples, and beta-glucan found in oats are all different types of fiber, each with unique benefits. To get many benefits, choose from a variety of sources. The unique properties of the different types of dietary fiber are what provide beneficial effects ³. Other types of fiber, known as gel-forming fibers, thicken when mixed with water. Oatmeal is a familiar example of a food rich in this type of fiber. Insoluble fibers are known to promote digestive regularity by adding bulk to stool, making it easier to pass. Gel-forming fibers can help you to feel satisfied longer following a meal by slowing the rate of digestion, which makes this type of fiber useful in weight management ³. These are only a few examples of how different fibers support health, and choosing from a variety of foods can help you to receive the most benefit. Some types of fiber have unique prebiotic properties. Prebiotics are a type of fiber that support the growth of beneficial bacteria in the large intestine examples: Many people consume beneficial bacteria, called probiotics, either as a supplement or in foods like yogurt. One way to think of prebiotic fiber is as a source of food for probiotic bacteria. Scientists are continuing to find new and surprising ways that our intestinal bacteria can influence our wellbeing. A healthy, balanced community of intestinal bacteria has been linked to benefits for digestive health and immune health, to name a few ⁴. Because prebiotic fiber is essential to the maintenance and growth of beneficial bacterial within the large intestine, getting plenty of this type of fiber is important for promoting a healthy and balanced community of intestinal bacteria. Unfortunately, most people fall short when it comes to getting an adequate amount. Now that you know the impact fiber can have on your wellbeing, you might be more interested in making sure you are giving your body the right amount of fiber every day. Trends in dietary fiber intake in the United States, J Acad Nutr Diet. Institute of Medicine, Food Nutrition Board. The National Academies Press; The impact of diet and lifestyle on gut microbiota and human health.

2: Evidence-Based Approach to Fiber Supplements and Clinically Meaningful Health Benefits, Part 2

Evidence-Based Approach to Fiber Supplements and Clinically Meaningful Health Benefits, Part 1 What to Look for and How to Recommend an Effective Fiber Therapy Johnson W. McRorie, Jr, PhD, FACG, AGAF, FACN.

How do scientists analyze fibers using a burn test and dye test? Fibers taken from a crime scene can help an investigator determine who has been on the scene and where the victims of the crime have been. Students will be able to: Two fiber samples were found at a crime scene: Which of these two fibers can be individualized? Which fiber sample would be better evidence in a court of law? Content of the Lesson: Matching dyed synthetic fibers or dyed natural fibers can be very meaningful, whereas the matching of common fibers such as white cotton or blue denim cotton would be less significant. In some situations, however, the presence of white cotton or blue denim cotton may still have some meaning in resolving the truth of an issue. Since neither of these situations is likely to occur or be known, fiber examiners will conclude that the fibers could have originated from the clothing or that the fibers are consistent with originating from the clothing. The only way to say that a fiber did not originate from a particular item of clothing is to know the actual history of the garment or to have actually observed the fiber transfer from another garment. Deedrick, To identify fabric, a simple burn test can be done to determine if the fabric is a natural fiber, man made fiber, or a blend of natural and man made fibers. The burn test is used by many fabric stores and designers and takes practice to determine the exact fiber content. A second test that can be done to identify fabrics is a dyeing test: Dyeing tests involve the use of T. Identification stains available from Testfabrics, Inc. These are special mixtures of dyes that color different fibers different colors used to identify an unknown fabric or fibers. Current Fiber Identification Protocols: Primarily, fibers must match in three ways to be considered from the same source: Generic class whether a fiber is natural or synthetic, polyester, nylon, cotton, or wool can be established by a variety of methods. For natural fibers polarized light microscopy is the most efficient method of discrimination It is relatively simple for an investigator to tell a synthetic fiber from a natural fiber by visual examination. Physical characteristics can be determined by microscopic investigations. These examinations include determination of cross-sectional shape, diameter, and the presence of delustering agents Other methods investigators use to determine the generic class of a fiber include solubility, melting point, and refractive index determination Color is related to the dye applied to a fiber, thus an alternative to examining the [fiber structure] itself is to examine the dye applied to it Burn test 1 Light a candle or a Bunsen burner. Holding a fiber, bring it close, but not in direct contact, to the flame. Does the fiber melt, ignite, or curl? Does the fiber ignite quickly or slowly? Does it sputter, melt, or drip? Does it continue to burn? Does it glow and smolder? If you note the odor of burning hair: If you note the odor of burning paper: If the fiber does not burn: Heat the solution to boiling. Maintain a hot, but not actively boiling solution. Squeeze out the excess liquid and place the samples in the hot dye bath for 3 to 5 minutes. Compare the color of the fiber or cloth samples with the multi-fiber fabric. Squeeze out the excess liquid and place the samples in the hot dye bath for 5 minutes. Hairs, fibers, crime, and evidence. Retrieved on November 25, from <http://>

3: Four Facts You Didn't Know About Fiber - Isagenix Health

Because the term fiber supplement implies that regular (daily) consumption will provide essentially the same health benefits of a high-fiber diet, it is reasonable to require evidence of a clinically meaningful health benefit before selecting/recommending a fiber supplement.

Published online Mar He went on to complete a bachelor of science degree at the University of Maryland, followed by a dual PhD in neuroscience and physiology at Michigan State University, where he was also a physiology instructor for the medical school. His research interests include neurogastroenterology and motility, gastroesophageal reflux disease, and the physical effects of fiber supplements on metabolic syndrome, cholesterol lowering, improved glycemic control, constipation, diarrhea, and irritable bowel syndrome. The work cannot be changed in any way or used commercially. This article has been cited by other articles in PMC. Fiber supplements cannot be presumed to provide the health benefits that are associated with dietary fiber from whole foods. Of the fiber supplements on the market today, only a minority possess the physical characteristics that underlie the mechanisms driving clinically meaningful health benefits. The second part will also discuss how processing for marketed products can attenuate efficacy, why fiber supplements can cause gastrointestinal symptoms, and how to avoid symptoms for better long-term compliance. Both mechanisms require a fiber supplement that is relatively nonfermented, so that most of the fiber remains intact and present in stool throughout the large intestine. This mechanism is proportional to particle size and shape—large coarse particles have a significant laxative effect, whereas small smooth particles do not. Nonviscous soluble fibers, like wheat dextrin and inulin, are fermented not present in stool throughout the large bowel and have no water-holding capacity and thus do not provide a laxative benefit at physiologic doses. Once fermented, the fiber is no longer intact and present in stool, lacking the water-holding capacity required for soluble fibers to improve stool form and symptoms in constipation, diarrhea, or IBS. In contrast to the fiber supplements discussed above, psyllium is not fermented in the gut 3, 26 and retains its water-holding gelled structure throughout the large bowel. Although psyllium has often been reported as fermentable, there exists a significant discrepancy between in vitro data and human clinical experience. Under in vitro test conditions, psyllium is mixed with stool and homogenized in high-speed mechanical blender. In contrast, 5 well-controlled clinical studies show that psyllium is not fermented in the human gut. All 5 studies showed that the psyllium gel was not fermented. A recent comprehensive review of available clinical data concluded that resistant starch soluble, nonviscous, fermentable; eg, wheat dextrin had no significant effect on satiety or weight loss at physiologic doses. A review of the effects of fiber supplements on weight loss 60 identified 17 placebo-controlled clinical studies, most of which maintained subjects on energy-restricted diets and fiber supplements mostly insoluble fiber, provided 3 times daily before meals. Fiber supplement intake ranged from 4. A 6-month study compared the effects of viscosity on weight loss by assessing a viscous, gel-forming, nonfermented fiber psyllium versus a less viscous, readily fermented fiber partially hydrolyzed guar gum. Patients were maintained on a restricted diet alone American Heart Association Step 2 diet, negative control or the restricted diet supplemented with psyllium or partially hydrolyzed guar gum both dosed 3. The control group showed gradual loss in weight over the first 4 months, followed by weight regain Figure. In contrast, the psyllium treatment group showed gradual and sustained weight loss across the entire 6-month test period Figure.

4: Evidence-Based Approach to Fiber Supplements and Clinically Meaningful Health Benefits, Part 1

Evidence-Based Approach to Fiber Supplements and Clinically Meaningful Health Benefits, Part 2 What to Look for and How to Recommend an Effective Fiber Therapy.

Put simply, dietary fiber is a non-digestible carbohydrate found in foods. Dissolves in water and can be metabolized by the "good" bacteria in the gut. Does not dissolve in water. Perhaps a more helpful way to categorize fiber is fermentable versus non-fermentable, which refers to whether friendly gut bacteria can use it or not. Some of them have important health benefits, while others are mostly useless. There is also a lot of overlap between soluble and insoluble fibers. Some insoluble fibers can be digested by the good bacteria in the intestine, and most foods contain both soluble and insoluble fibers. Health authorities recommend that men and women eat 38 and 25 grams of fiber per day, respectively. Summary Non-digestible carbohydrates are collectively known as fiber. They are most often categorized as soluble or insoluble. Bacteria live on the skin, in the mouth and in the nose, but the great majority live in the gut, primarily the large intestine 1. About different species of bacteria live in the intestine, totaling about trillion cells. These gut bacteria are also known as the gut flora. This is not a bad thing. In fact, there is a mutually beneficial relationship between you and some of the bacteria that live in your digestive system. You provide food, shelter and a safe habitat for the bacteria. In return, they take care of some things that the human body cannot do on its own. Of the many different kinds of bacteria, some are crucial for various aspects of your health , including weight, blood sugar control, immune function and even brain function 2 , 3 , 4 , 5 , 6. You may wonder what this has to do with fiber. Just like any other organism, bacteria need to eat to get energy to survive and function. The problem is that most carbs, proteins and fats are absorbed into the bloodstream before they make it to the large intestine, leaving little for the gut flora. This is where fiber comes in. However, intestinal bacteria do have the enzymes to digest many of these fibers. This is the most important reason that some dietary fibers are important for health. They feed the "good" bacteria in the intestine, functioning as prebiotics 7. In this way, they promote the growth of "good" gut bacteria , which can have various positive effects on health 8. The friendly bacteria produce nutrients for the body, including short-chain fatty acids like acetate, propionate and butyrate, of which butyrate appears to be the most important 9. When the bacteria ferment the fiber, they also produce gases. This is the reason high-fiber diets can cause flatulence and stomach discomfort in some people. These side effects usually go away with time as your body adjusts. Summary Consuming adequate amounts of soluble, fermentable fiber is very important for optimal health because it optimizes the function of the friendly bacteria in the gut. In fact, some studies show that increasing dietary fiber can cause weight loss by automatically reducing calorie intake 13 , Fiber can soak up water in the intestine, slowing the absorption of nutrients and increasing feelings of fullness However, this depends on the type of fiber. Some types have no effect on weight, while certain soluble fibers can have a significant effect 16 , 17 , 18 , A good example of an effective fiber supplement for weight loss is glucomannan. Summary Some types of fiber can cause weight loss by increasing feelings of fullness, leading to a reduced calorie intake. High-fiber foods tend to have a lower glycemic index than refined carb sources, which have been stripped of most of their fiber. However, scientists believe only high-viscosity, soluble fibers have this property Including these viscous, soluble fibers in your carb-containing meals may cause smaller spikes in blood sugar In this case, the fiber can reduce the likelihood of the carbs raising your blood sugar to harmful levels. That said, if you have blood sugar issues, you should consider reducing your carb intake , especially low-fiber, refined carbs, such as white flour and added sugar. Summary Foods that contain viscous fiber have a lower glycemic index and cause smaller spikes in blood sugar than foods that are low in fiber. Viscous, soluble fiber can also reduce your cholesterol levels. A review of 67 controlled studies found that consuming 2â€”10 grams of soluble fiber per day reduced total cholesterol by only 1. But this also depends on the viscosity of the fiber. Some studies have found impressive reductions in cholesterol with increased fiber intake 23 , Whether this has any meaningful effects in the long term is unknown, although many observational studies show that people who eat more fiber have a lower risk of heart disease Summary Some types of fiber can reduce cholesterol levels. What About Fiber and Constipation? One

of the main benefits of increasing fiber intake is reduced constipation. Fiber is claimed to help absorb water, increase the bulk of your stool and speed up the movement of your stool through the intestine. However, the evidence is fairly conflicting 26 , Some studies show that increasing fiber can improve symptoms of constipation, but other studies show that removing fiber improves constipation. The effects depend on the type of fiber. In one study in 63 individuals with chronic constipation, going on a low-fiber diet fixed their problem. The individuals who remained on a high-fiber diet saw no improvement In general, fiber that increases the water content of your stool has a laxative effect, while fiber that adds to the dry mass of stool without increasing its water content may have a constipating effect. Soluble fibers that form a gel in the digestive tract and are not fermented by gut bacteria are often effective. A good example of a gel-forming fiber is psyllium Other types of fiber, such as sorbitol, have a laxative effect by drawing water into the colon. Prunes are a good source of sorbitol 30 , Choosing the right type of fiber may help your constipation, but taking the wrong supplements can do the opposite. For this reason, you should consult with a health professional before taking fiber supplements for constipation. Summary The laxative effects of fiber differ. Some reduce constipation, but others increase constipation. This appears to depend on the individual and type of fiber. Fiber Might Reduce the Risk of Colorectal Cancer Colorectal cancer is the third leading cause of cancer deaths in the world Many studies have linked a high intake of fiber-rich foods with a reduced risk of colon cancer However, whole, high-fiber foods like fruits, vegetables and whole grains contain various other healthy nutrients and antioxidants that may affect cancer risk. To date, no strong evidence proves that fiber has cancer-preventive effects Yet, since fiber may help keep the colon wall healthy, many scientists believe that fiber plays an important role Summary Studies have associated a high fiber intake with a reduced risk of colon cancer. To date, no studies have proven the direct benefits of fiber in cancer prevention. The Bottom Line Dietary fiber has various health benefits. Not only does it feed your gut bacteria, fermentable fiber also forms short-chain fatty acids, which nourish the colon wall. Additionally, viscous, soluble fiber may reduce your appetite, lower cholesterol levels and decrease the rise in blood sugar after high-carb meals. If you are aiming for a healthy lifestyle, you should make sure to get a variety of fiber from whole fruits, vegetables and grains.

5: Rekoop - CVC, Traceable & Sustainable Bedding Sets Manufacturers & Suppliers

Dietary fiber that is intrinsic and intact in fiber-rich foods (eg, fruits, vegetables, legumes, whole grains) is widely recognized to have beneficial effects on health when consumed at recommended levels (25 g/d for adult women, 38 g/d for adult men).

WHEN IS FIBER EVIDENCE MEANINGFUL? pdf

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