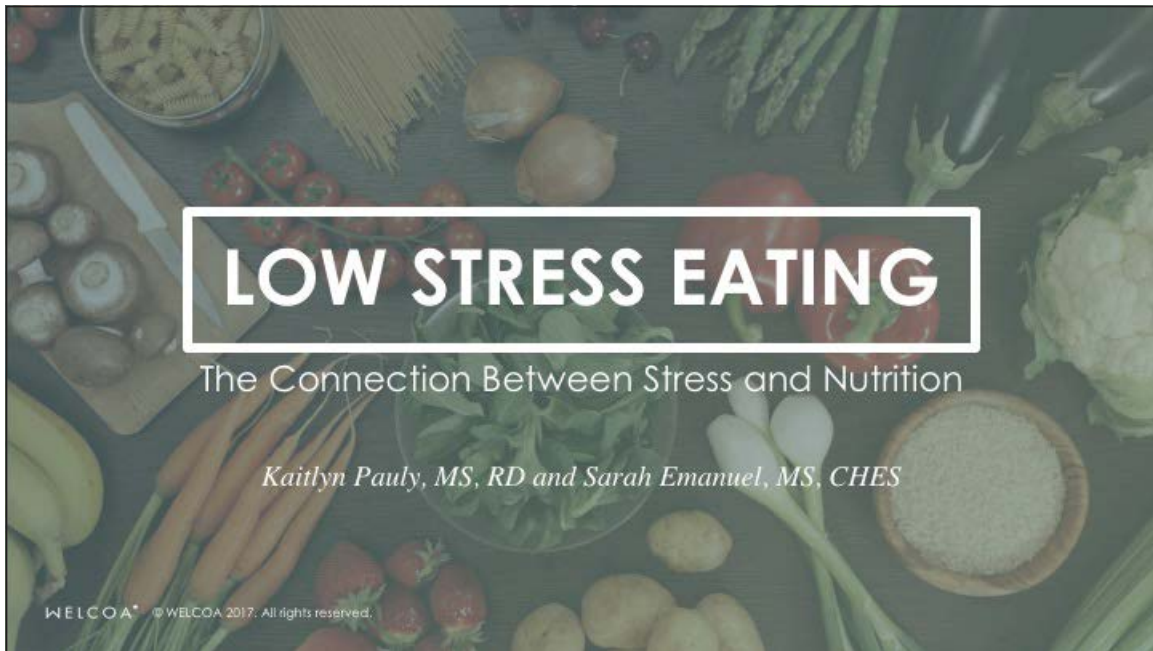


Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES



Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES



Nutrition plays an integral role in optimal health and disease prevention. Unfortunately, there is plenty of misinformation in the mainstream media regarding nutrition. It seems like everywhere you turn there is a new diet or a new nutrition “expert” trying to sell a product or solution, which tends to confuse and frustrate consumers. Often, people rely on their physician’s guidance regarding nutrition, however physicians generally receive very little formal training in nutrition. This reliance can lead to misinformation and/or misunderstanding.

With an increased emphasis on prevention in today’s healthcare system, utilizing nutrition, physical activity and stress-relief techniques instead of the conventional treatment of pills and surgical interventions is becoming more popular. Many people may not recognize the complex interconnectedness of stress on proper nutrition, physical activity and overall wellbeing. The reality is that when one of these factors is out of balance it is likely that the others will follow suit, which leads to decreased overall health (physical, mental, emotional), decreased immunity and increased risk for disease.

In today’s presentation we will take a closer look at the bidirectional relationship of stress and nutrition and learn some strategies for using nutrition and stress relief to promote optimal well being, boost immunity and fight future disease.

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES



In this section you will learn about the key nutrients in food and how the body interacts with them.

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES



Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES

Nutrient:

A substance that provides nourishment essential for growth and the maintenance of life.



CARBOHYDRATES



FATS



PROTEINS

WELCOA™

5

The key calorie-(energy) containing nutrients in food are carbohydrates, fats and proteins. Food also contains other non-caloric beneficial compounds such as water, vitamins, minerals, antioxidants and phytonutrients.

As a general rule (2010 Dietary Guidelines) a balanced intake of key nutrients is: 45%-65% Carbohydrate; 10%-35% Protein; 20%-35% Fat for adults 19 years and older.

Similar to a vehicle, if we have no fuel (food) eventually our bodies will not function. In addition, when we consume poor fuel we don't function at our optimal level, increasing our risk for illnesses and disease. Therefore, it is important for our overall health and wellbeing to consume proper, nutrient-dense fuel most of the time so we can do all of the things we want to do in this life. Remember, without your health, you have nothing.

<https://health.gov/dietaryguidelines/2010/>

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES

Carbohydrates



Carbohydrates are classified into two general categories: simple and complex. Simple carbohydrates such as glucose, lactose, sucrose and maltose are just as their name suggests, simple. They are the quickest source of energy for the body because they are rapidly digested and absorbed into the bloodstream for use. Examples include table sugar, fruit drinks, honey and candy. These types of foods tend to give you instant energy that is quickly used up, leaving you to burn and crash later.

Complex carbohydrates are made up of many simple molecules linked together and are often rich in fiber and water, making them more satisfying and health promoting than simple carbohydrates. They are commonly found in whole plant foods that come from the earth (potatoes, beans, fruits, vegetables, legumes, whole grains), making them a rich source of vitamins, minerals and phytonutrients as well. These types of foods tend to leave you with lasting energy that “sticks with you” for longer periods of time.

Many people do not recognize the association of how nutrient-rich fuel from complex carbohydrates keeps them fuller longer, curbing their hunger and thus energy intake throughout the day. They also may not recognize that the less nutritious, simple carbohydrates leave them hungrier shortly after eating them. This is why some people always “feel” hungry despite eating high-energy foods frequently throughout the day.

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES

Fats



When it comes to fat, choosing more of the healthy type is very important for optimal health. Anti-inflammatory fats are those that lower disease risk, and include mono- and polyunsaturated fat. Foods that are high in these fats are vegetable oils such as olive, canola, sunflower, soy and corn oil, as well as nuts, avocados seeds and fish.

Pro-inflammatory fats increase disease risk and are found in primarily in processed foods made with trans- fat from partially hydrogenated oils and are also found in fatty meats/ animal products. Fortunately trans fats are/or will be eliminated from many foods in the food system. When it comes to saturated fats, know that they are best consumed in limited amounts and include foods such as red meat, butter, cheese and ice cream.

Fats also contain the most calories (aka energy) than any other type of nutrient. Just one tablespoon of olive oil has 120 calories! Because of this, they need to be eaten in moderation as to not go over your calorie needs for the day.

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES

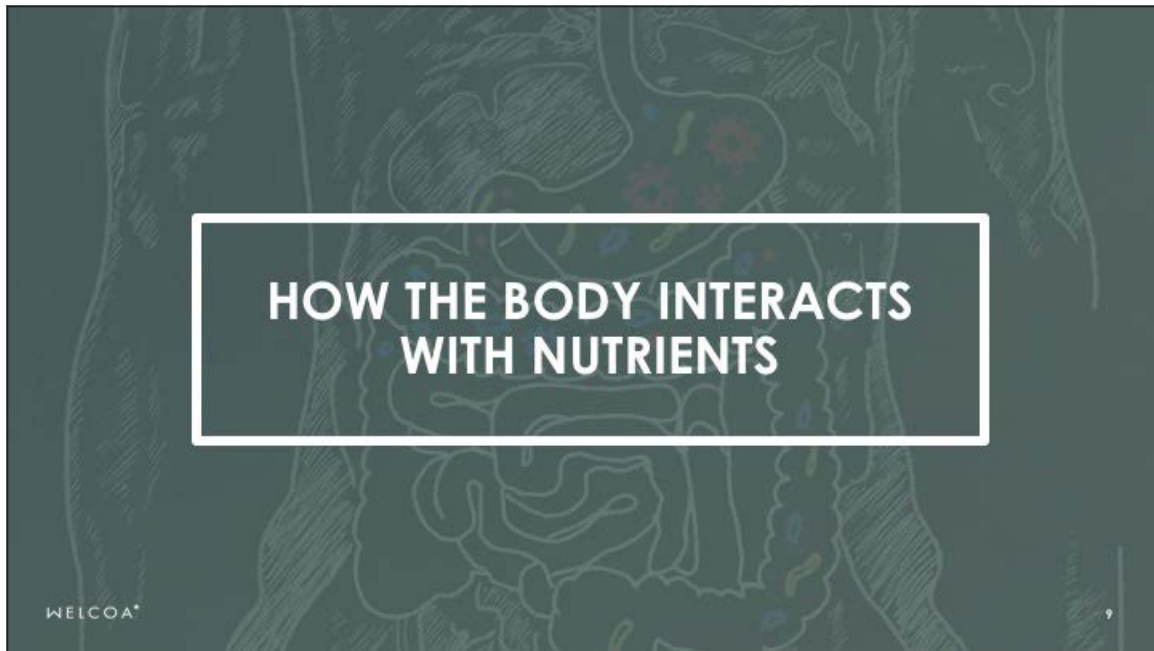
Proteins



Protein can be found in both animal and plant sources of food. Protein is often referred to as the most satisfying nutrient as it tends to keep you feeling fuller for longer periods of time. You've likely heard protein referred to as meat or meat substitutes. Healthful protein choices include both plant-based proteins such as beans (black, kidney, pinto), lentils, quinoa, soy (tofu/tempeh), peas as well as animal sources of protein such as fish and seafood (especially those high in omega-3 fatty acids) chicken and other poultry, as well as low fat dairy products and eggs. Lean options of game such as buffalo, pheasant and venison can also be healthy protein sources. If you choose beef, pork, veal or lamb, be sure to select the leanest options. When it comes to grass fed vs grain fed versions, know that the grass fed versions have been shown to have less inflammatory fatty acid profiles and are therefore considered to be healthier.

Low Stress Eating: The Connection Between Stress and Nutrition

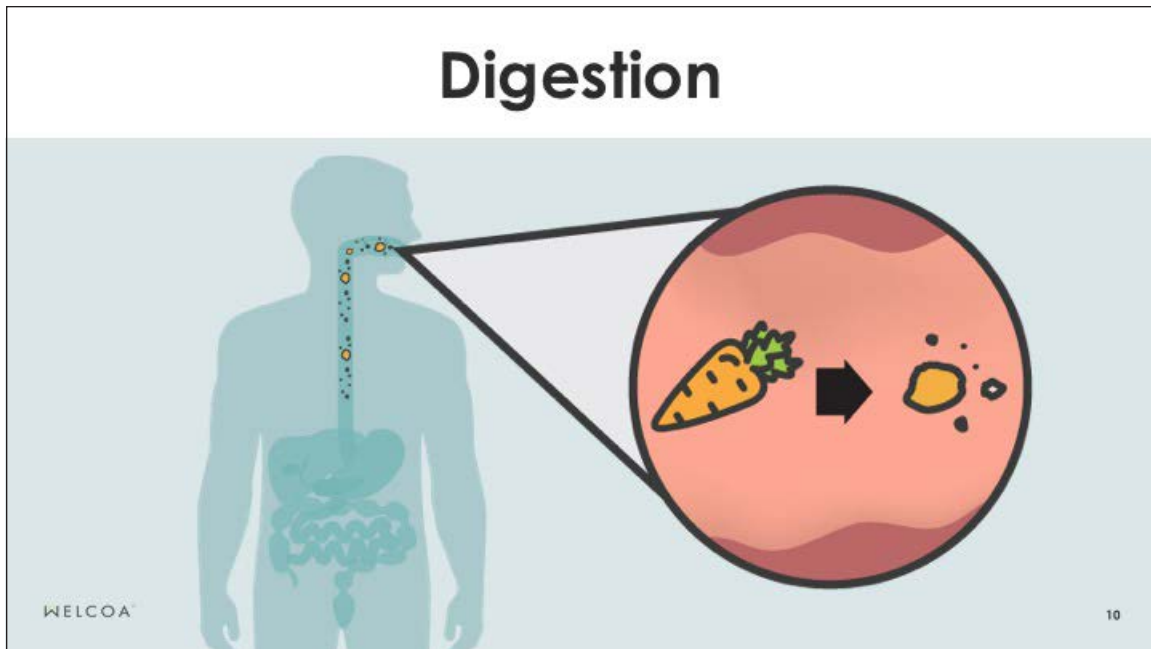
Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES



Once we eat food, our body has the big job of breaking down our food into particles that can be utilized for energy.

Low Stress Eating: The Connection Between Stress and Nutrition

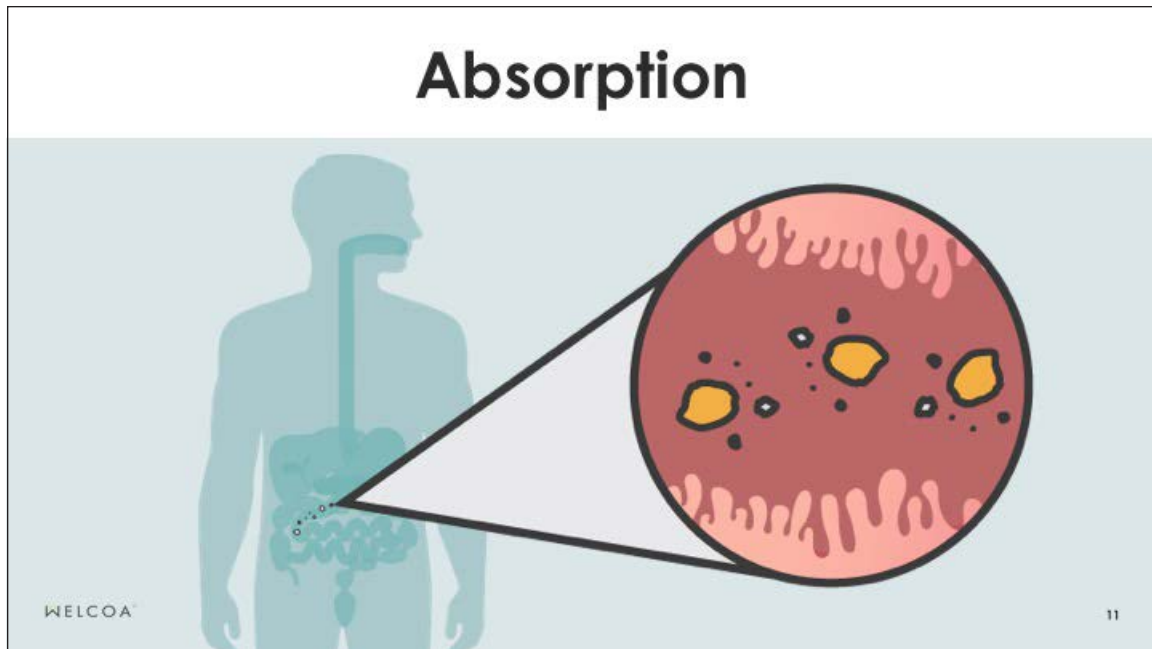
Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES



Digestion is important for breaking down food that we eat into nutrients, which the body uses for energy, growth, and cell repair. Food and drink must be changed into smaller molecules of nutrients before the blood can absorb them and carry them to cells throughout the body. Digestion works by moving food through the GI tract. Digestion begins in the mouth with saliva and chewing and ends in the small intestine (note that a few nutrients do get absorbed in the large intestine as well but most occurs in the small intestine). As food passes through the GI tract, it mixes with digestive juices, causing large molecules of food to break down into smaller molecules.

Low Stress Eating: The Connection Between Stress and Nutrition

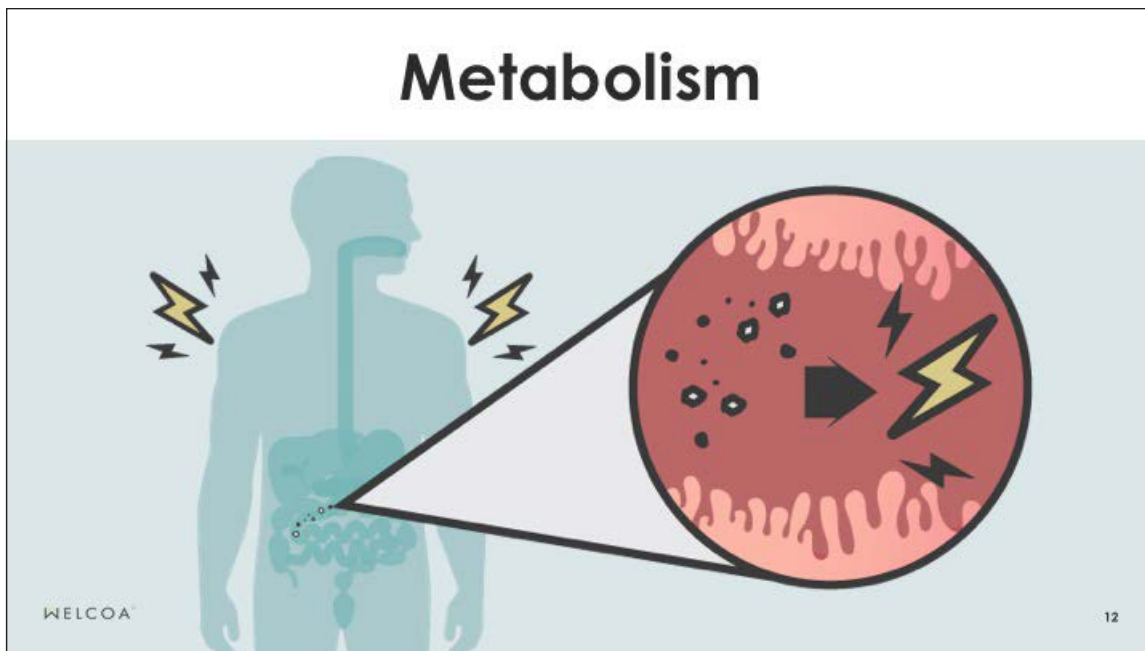
Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES



The smaller digested particles are perfectly suited for absorption into the bloodstream or liver, where they can be transported to the cells of the body to be utilized as fuel/energy.

Low Stress Eating: The Connection Between Stress and Nutrition

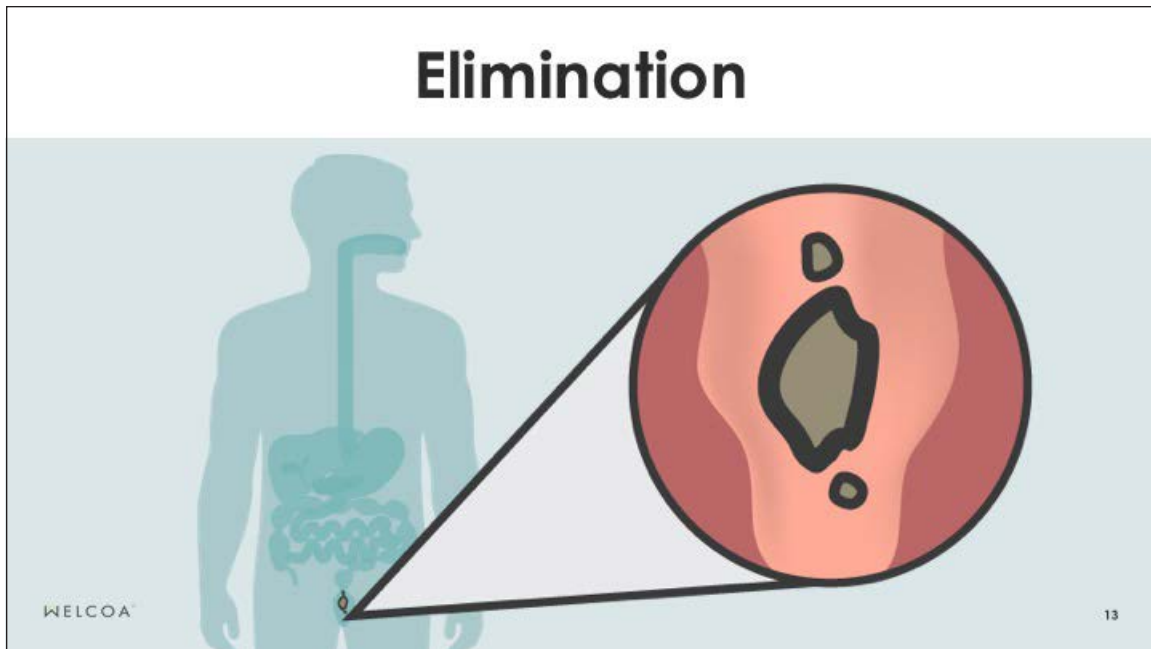
Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES



Metabolism has taken on many different definitions over the years. For the purposes of this presentation, metabolism assists in the conversion of food (fuel) to energy that helps run cellular processes, build new molecules as well as eliminate wastes. All of these metabolic reactions allow humans and animals to grow and reproduce, maintain structure and respond to the environment. When people refer to the speed of their metabolism, they are often talking to how fast or slow their body processes (breaks down and builds new components) energy from fuel.

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES



Once the body has absorbed nutrients and water from the food that we eat, the leftover “waste” travels through the GI tract to be excreted from the body.

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES



Stress is described as a general response of the body to any harmful stimulus. As we know, stress has a biologic effect on our bodies that we have come to know as “fight or flight.” When a person’s stress triggers the fight-or-flight response, digestion slows or even stops so that the body can turn all energy to the perceived threat. With less severe or acute stress, the digestive process may slow or be temporarily disrupted, causing abdominal pain and other symptoms of functional gastrointestinal disorders. This relationship can also be reversed; as one can imagine persistent gastrointestinal problems can heighten anxiety and stress.

Maladaptive stress responses negatively impact all nutrient interactions and have been associated with an array of functional gastrointestinal disorders as well as affective disorders, autoimmune diseases, and hypertension. The relationship between environmental or psychological stress and GI distress is complex; not only can stress can trigger and worsen gastrointestinal pain and other symptoms, but vice versa is also true.

Because of this complex relationship, many healthcare providers are beginning to treat GI issues using psychologic treatments/stress-relief techniques and treating stress/anxiety/depression by improving gut health. Research has found that people with increased anxiety/stress/depression have different gut bacteria profiles (gut microbiome). Fortunately, research supports that the gut microbiome can be improved through the consumption of pre and probiotics, and that nourishing our good gut bacteria will also reduce anxiety and decrease stress.

Suarez K, et al. “Psychological Stress and Self-Reported Functional Gastrointestinal Disorders,” *The Journal of Nervous and Mental Disease* (March 2010): Vol. 198, No. 3, pp. 226–29.

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES



Have you ever noticed that when you are stressed out you might reach for food to calm you down? This reaction is often a learned behavior and has probably affected everyone at some point in their lives. You may have grown up turning to food for reasons other than hunger such as sadness, loneliness, anxiety and/or stress. Food can be comforting, especially those loaded with dopamine-releasing qualities often found in “junk” foods. That’s right, foods high in fat, sugar and salt (or the combination) trigger the reward system of the brain to release “happy hormones” temporarily making you feel better. That’s why you don’t reach for a stalk of celery or a crown of broccoli when you are stressed, you have learned that these foods just won’t cut it. Instead you reach for the candy bar or those grease-covered salty chips. Sound familiar? Perhaps these foods are even attached to pleasant memories, which increase the urge to eat them. You instantly feel better...until 20 minutes later when you experience the whirlwind of “food guilt” and then the increased potential to stress eat again or throw in the towel on your attempts to eat healthy.

The poor food choices you make when you are stressed can also cause “stress” responses inside your body (oxidative cell damage/inflammation). Stress and the consumption of these foods also have an effect on your gut bacteria profile (gut microbiome), which has a profound impact on your stress levels, health, disease prevention and immunity. Unfortunately, we have only scratched the surface when it comes to gut microbiota and its impact on our overall well-being, but the research is very promising to support our ability to manipulate our stress levels through the nourishment of our gut bacteria.

Suarez K, et al. “Psychological Stress and Self-Reported Functional Gastrointestinal Disorders,” *The Journal of Nervous and Mental Disease* (March 2010): Vol. 198, No. 3, pp. 226–29.

Guinane, C, Cotter, P. Role of the gut microbiota in health and chronic gastrointestinal disease: understanding a hidden metabolic organ. *Ther Adv Gastroenterol* (2013) 6(4) 295–308 DOI: 10.1177/1756283X13482996 © 2013. Reprints and permissions: <http://www.sagepub.co.uk/journalsPermissions.nav>

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES

Health Implications Related to Stress



Health problems and diseases associated with chronic and acute stress include heart disease, asthma, obesity, diabetes, headaches, depression and anxiety, gastrointestinal problems, Alzheimer's disease, accelerated aging and premature death.

Both physical and psychological stress alters gut bacteria, which then impacts our food (nutrient) choices, which negatively impacts our immunity, increases our risk for certain diseases and decreases our overall health. This relationship is also implicated in the opposite direction.

Griffin, M. (2010) 10 Health Problems Related to Stress that you can Fix. WebMD.
<http://www.webmd.com/balance/stress-management/features/10-fixable-stress-related-health-problems#1>

Cho I., Blaser M. (2012) The human microbiome: at the interface of health and disease. Nat Rev Genet 13: 260–270. Google Scholar Medline

Guinane, C, Cotter, P. Role of the gut microbiota in health and chronic gastrointestinal disease: understanding a hidden metabolic organ. Ther Adv Gastroenterol (2013) 6(4) 295–308 DOI: 10.1177/1756283X13482996 © 2013. Reprints and permissions: <http://www.sagepub.co.uk/journalsPermissions.nav>

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES

Tips for Reducing Stress:

R.E.L.A.X.



Recognize



Extra Sleep



Laughter



Attitude



eXercise

WELCOA*

17

So now you know just how bad stress can be for your physical, mental, and emotional well-being, but what can you do to control your stress and in turn prevent the negative health consequences?

Stress Management Approach – Effective Coping Skills: Think of the acronym R.E.L.A.X

RECOGNIZE: Signs and Symptoms of Increasing Stress: Relaxation techniques can reduce stress symptoms by: slowing heart rate; lowering blood pressure, slowing breathing rate, reducing activity of stress hormones, reducing muscle tension and pain, lowering fatigue, improving concentration and mood, reducing anger and frustration and boosting confidence to handle situations. Accessed 2/9/2017: <http://www.mayoclinic.org/healthy-lifestyle/stress-management/basics/relaxation-techniques/hlv-20049495>

- Stress-Reduction Downloadable MP3 Files: <http://www.unmc.edu/cfh/wellness/mp3-files.html>

EXTRA SLEEP: Sleep renews and rejuvenates the body and the mind and is a necessary human function. It allows our brains to recharge and our bodies to rest.

- Adults who sleep less than eight hours a night are more likely to report symptoms of stress. Accessed 2/7/2017: <http://www.apa.org/news/press/releases/stress/2013/sleep.aspx>

LAUGHTER: Laughing is natural medicine. When you start to laugh it stimulates many organs to take in oxygen rich air and increases the endorphins that are released by your brain. It soothes tension to stimulate circulation and help with muscle relaxation which can both reduce some of the physical symptoms of stress. Accessed 2/7/2017: <http://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/stress-relief/art-20044456>

- Increase your sense of humor: <http://www.youtube.com/watch?v=RP4abiHdQpc>

ATTITUDE: A positive outlook helps with stress management and can improve health by increasing optimism. Optimistic people tend to live healthier lives, getting more physical activity, following a healthier diet, don't smoke or drink in excess. Accessed on 2/7/2017: <http://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/positive-thinking/art-20043950?pg=1>

- Health Benefits of Optimism include: lower rates of depression, lower levels of distress; better psychological and physical well-being, better coping skills during hardships and times of stress.

eXercise: Virtually any form of exercise acts as a stress reliever. A little exercise can go a long way toward stress management. Accessed 2/7/2017: <http://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/exercise-and-stress/art-20044469?pg=2>

- The direct stress busting benefits are: pumps up endorphins which are the feel-good neurotransmitters, it's mediation in motion, it improves your mood and gives you a sense of command over your body and life. Just proceed under appropriate medical guidance and develop a strategy to stick with it.

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES



Fortunately, changing the way we eat also has the ability to increase our immunity and decrease our risk for stress-related diseases. Proper nutrition can also keep us fuller longer, cut our cravings and make us feel better overall. Who wouldn't want that?

Food contains powerful nutrients, phytochemicals and antioxidants that can help to keep your body stress free from the inside out.

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES

Eating Stress Free

Food Choices for Less Mental and Physiological Stress



Eating foods rich in nutrients, antioxidants, phytonutrients, water and fiber not only has the ability to decrease physiological stress, it also helps to improve overall health through various mechanisms.

Foods that have shown to reduce cellular damage in the body include those rich in nutrients and antioxidants. These foods include but are not limited to richly colored fruits and vegetables such as dark green vegetables, berries, citrus fruits, root vegetables (beets/sweet potatoes/carrots) as well as whole grains, nuts, seeds and green tea.

Phytonutrients also found in fruits, vegetables, whole grains, nuts, seeds and tea are plant compounds that can also help fight disease and keep your body functioning properly. Phytonutrients from various foods help to decrease oxidative stress inside the body, boost immunity, lower risk and growth of cancer, decrease inflammation, protect eyesight, prevent chronic disease and lower risk for asthma among other things.

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES



As mentioned, new research on gut health has also demonstrated the power of a healthy gut microbiome for optimal well-being. Altering the gut microbiome through the use of pre and probiotics has proven to decrease stress and anxiety, improve mood and improve GI functioning.

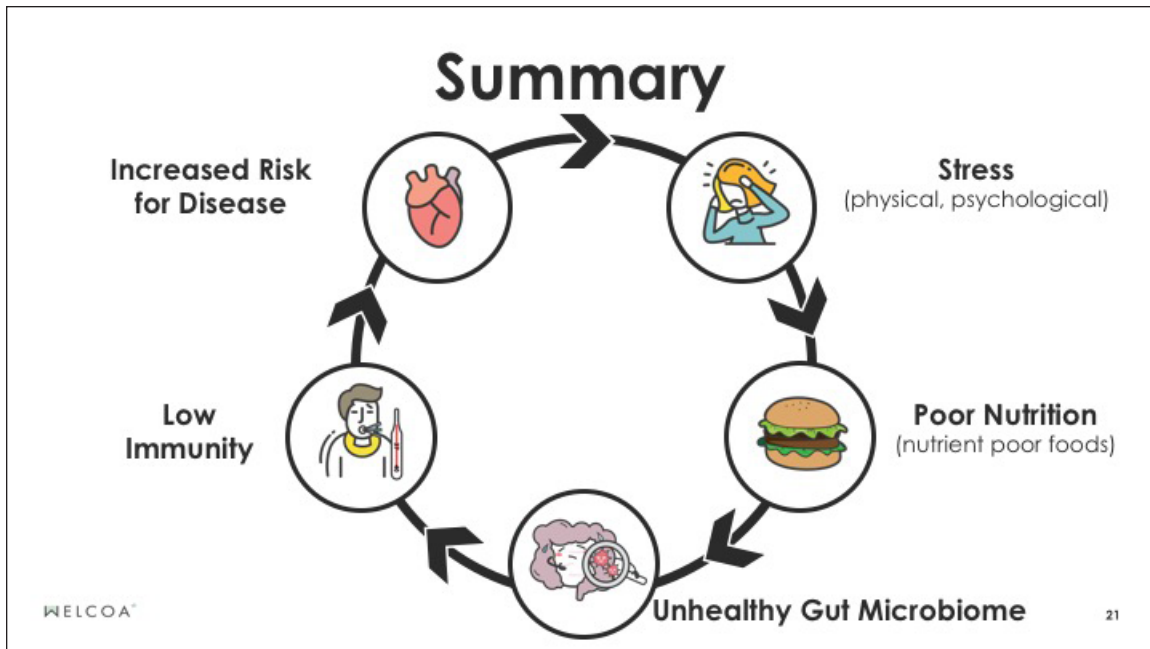
Pre-biotics are compounds that are found in plants that cannot be digested by humans, but can be digested by bacteria in your gut. In addition, these pre-biotics feed the probiotics (good bacteria). Pre-biotics are found in foods such as asparagus, Jerusalem artichokes, bananas, whole grain oatmeal, and legumes (beans).

Pro-biotics are found in fermented foods and beverages such as yogurts with “live or active cultures,” sauerkraut, miso soup, soft cheeses (like Gouda), kimchi, Kombucha and even sourdough bread.

In addition to stress, there are also items that we consume that negatively impact the health of our gut bacteria including prescription antibiotics, sugar and certain medications. Avoiding the overconsumption of these items can help foster the growth of the good bacteria and reduce some of the more harmful bacteria, yeast, viruses, fungi and parasites.

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES



As you can see, stress and nutrition have a powerful bi-directional relationship. Not only does stress impact our internal health, it also impacts our food choices, increases our risk for sickness and disease, and decreases our overall wellbeing. Poor nutrition also increases stress inside our bodies, alters our gut microbiome, increases our risk for developing certain diseases, decreases our immunity and negatively impacts our mental health. Through the use of both stress relief techniques and proper nutrition, we can help to prevent and combat many of the major health issues that are impacting our nation and world.

Use the tips outlined in this PowerPoint to improve your overall health and wellbeing today and for the future.

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES

Helpful Resources



WELCOA™

App recommendations:

foodandnutrition.org/Nutrition-Apps/

Websites:

eatright.org

nutritionfacts.org

ods.od.nih.gov/

food.unl.edu/fnh

22

Low Stress Eating: The Connection Between Stress and Nutrition

Kaitlyn Pauly, MS, RD and Sarah Emanuel, MS, CHES

THANK YOU

WELCOA® © WELCOA 2017. All rights reserved.

23