

T O P I C

03

NUTRITION

Human nutrition encompasses the study of food, its components, and the importance of maintaining a healthy diet for overall well-being. In this topic we will be exploring the relation between food and stress and learn about some ways we can improve our daily nutrition habits.



The contents herein are for informational and educational purposes only and are not intended as medical advice, diagnosis, or treatment. Always consult a qualified healthcare professional for any medical concerns or decisions.

LEARNING OBJECTIVES

THIS TOPIC IS DESIGNED AROUND THE FOLLOWING MAIN LEARNING OBJECTIVES:

01

Nutrition and Stress

Nutrition as a multidisciplinary science that focuses on the study of how food and nutrients impact on human health and well-being.

02

The Brain - Gut Connection

“Brain in our gut” is revolutionizing medicine’s understanding of the links between digestion, mood, health and even the way we think.

03

Dietary Regimes to Reduce Stress Level at Work

How we can reduce stress, get more work done, become insanely productive and still enjoy some great flavors.

04

A Guide to Assess and Apply Nutritional Therapies

Nutritional therapies should be tailored to meet specific health needs and contribute to overall well-being.

05

Information Overload about Nutrition and Health

A compass to navigate the complexities of an always evolving topic.

COMPETENCES

THIS TRAINING CONTENT IS DESIGNED TO HELP YOU ACQUIRE THE FOLLOWING COMPETENCES:

- 01 **Adaptability:** Maintaining effectiveness when experiencing major changes in work tasks or the work environment; adjusting effectively to work within new work structures, technologies, processes, requirements, or cultures. Tries to understand changes. Approaches change or newness positively. Quickly modifies behaviour to deal effectively with changes in the work environment.
- 02 **Building Trust:** Interacting with others in a way that gives them confidence in one's intentions and those of the organization. Operates with integrity. Remains open to ideas.
- 03 **Flexibility:** Ease of changing the criteria and orientation of one's way of thinking and judging situations, people and things when the strategic orientation changes, the environmental conditions or new information is received.
- 04 **Integrity:** Act in accordance with ethical, moral and social standards in work-related activities.
- 05 **Planning and organizing:** Establishing courses of action for self and others to ensure that work is completed efficiently.
- 06 **Problem analysis:** Identify problems, recognize significant information; search and coordinate relevant data; diagnose possible causes; diagnose possible causes *and identify opportunities*.
- 07 **Self-organization:** Effectively organize one's schedule of activities, establishing the necessary priorities and organizing your daily routine in the most efficient way possible.

COMPETENCES

THIS TRAINING CONTENT IS DESIGNED TO HELP YOU ACQUIRE THE FOLLOWING COMPETENCES:

- 08 **Self-perception:** Observe and interpret one's own behaviours, thoughts, and feelings, and using those observations and interpretations to define oneself.
- 09 **Self-regulation:** Ability to understand and manage your behaviour and your reactions to feelings and things happening around you.
- 10 **Wide range of interests:** Show a wide range of personal and professional interests. Show interest and motivation for many different aspects of personal and professional life and cultural, social, scientific, artistic, technical knowledge, etc.

INTRODUCTION TO THE FIELD OF NUTRITION AND STRESS

Your stress level might be affecting your eating habits.

The field of nutrition is a multidisciplinary science that focuses on the study of how food and nutrients impact on human health and well-being. It encompasses a broad range of topics related to the consumption, absorption, utilization, and effects of nutrients on the body.

Food is used by many as a reward or for comfort – but when we are stressed we are most likely to choose something low in nutrients and high in sugar, salt, and/ or fat. Many have a tendency to eat when anxious, even when not feeling hungry. On the other hand, others experiencing stress lose the desire to eat and frequently miss meals and snacks.

While **stress often erodes healthy eating patterns**, our need for nutrients actually increases during periods of stress. Research shows that when high demands are placed on the body, there is a more rapid turnover of protein, fat and carbohydrates needed to produce energy. These results in an increased demand for some key nutrients, including Vitamin C and many B vitamins that are used to produce energy. So when meals are skipped or a balanced diet is not maintained, nutrient needs are often not met and health may become compromised.



IMPACT OF NUTRITION ON HEALTH AND WELLBEING

Nutrition has a profound impact on health and well-being across the lifespan. The food people consume provides the essential nutrients that the body needs to function properly. Let's find out why is that.

PHYSICAL HEALTH

- **Nutrient Intake:** Adequate intake of essential nutrients, such as vitamins, minerals, proteins, carbohydrates, and fats, supports the body's various physiological functions.
- **Disease Prevention:** Proper nutrition plays a role in preventing chronic diseases, including cardiovascular diseases, diabetes, and certain cancers.
- **Energy Levels:** A balanced diet with sufficient calories from macronutrients (carbohydrates, proteins, and fats) provides the energy needed for daily activities and overall vitality.
- **Weight Management:** Nutrition is a crucial factor in weight management. Maintaining a healthy weight contributes to a reduced risk of obesity-related conditions, such as type 2 diabetes and joint problems.



Bone health

Adequate intake of calcium, vitamin D, and other essential nutrients is crucial for maintaining strong and healthy bones, preventing conditions like osteoporosis.



Digestive health

Fiber-rich foods contribute to digestive health by preventing constipation and supporting a healthy gut microbiome.

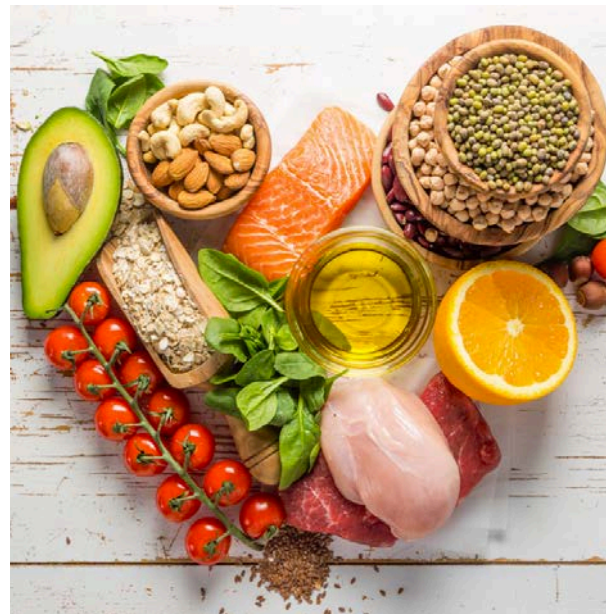


Heart health

A heart-healthy diet that includes foods low in saturated fats, cholesterol, and sodium helps reduce the risk of cardiovascular diseases.

Skin health

Nutrients like vitamins A, C, and E, as well as hydration, contribute to healthy skin. Poor nutrition can lead to skin issues such as dryness and premature aging.



Reproductive health

Nutrition is vital for reproductive health, supporting fertility, pregnancy, and lactation.

MENTAL HEALTH

- **Brain function:** Nutrition influences cognitive function and brain health. Nutrients like omega-3 fatty acids, antioxidants, and vitamins play roles in mental clarity and focus.
- **Mood and Emotional well-being:** Certain nutrients, such as serotonin precursors found in some foods, can influence mood and emotional well-being.
- **Immune system support:** Proper nutrition supports a robust immune system, helping the body defend against infections and illnesses.

Longevity

A balanced and nutritious diet is associated with a longer, healthier life. Nutrient-rich foods contribute to overall well-being and reduce the risk of premature aging.

Disease management

For individuals with existing health conditions, such as diabetes or hypertension, managing nutrition is a critical component of treatment and overall health.



A HEALTHY DIET HELPS US FEEL BETTER

Good Food, Good Mood

It's pretty obvious that if our brain and muscles run out of energy, we can't be our best - not even at our favorite activities in the day. Foods like wholegrain bread and cereals, potato, rice and some dairy are rich in carbohydrates: the fuel that our body needs to keep our brain and muscles working smoothly all day long.

There has been plenty of evidence that suggests **a close relationship between our diet and our mood**. Just like the research that showed how a diet with a high glycemic load, such as those found in soft drinks, cakes, white bread, and biscuits, may cause increased symptoms of depression and fatigue. Food, especially vegetables, whole fruits, and whole grains, have a lower glycemic load that can make us feel better in ourself.

In addition to improving our overall mood, good diet and food also enhances our skin color and make our look more attractive.



THE BRAIN - GUT CONNECTION. NEW GUT UNDERSTANDING

What does our gut's brain control?

If we've ever "gone with our gut" to make a decision or felt "butterflies in our stomach" when nervous, we're likely getting signals from an unexpected source: our second brain. Hidden in the walls of the digestive system, this **"brain in our gut" is revolutionizing medicine's understanding of the links between digestion, mood, health and even the way we think.**

Scientists call this little brain the Enteric Nervous System (**ENS**). And it's not so little: the ENS is two thin layers of more than 100 million nerve cells lining our gastrointestinal tract from esophagus to rectum. The ENS main role is controlling digestion, from swallowing to the release of enzymes that break down food to the control of blood flow that helps with nutrient absorption to elimination. The enteric nervous system doesn't seem capable of thought like the big brain in our skull, but it communicates back and forth with it with profound results. For decades, researchers and doctors thought that anxiety and depression contributed to irritable bowel syndrome (IBS), and functional bowel problems such as constipation, diarrhea, bloating, pain and stomach upset, but **studies now show that it may also be the other way around.** Researchers are finding evidence that **irritation in the gastrointestinal system may send signals to the Central Nervous System (CNS) that trigger mood changes.**





40%

**more than 40% of persons
worldwide have FGIDs, which
affect quality of life and health
care use**

A **2021 large-scale multinational study**, found out that more than 40% of persons *worldwide* have functional gastrointestinal disorders (FGIDs), which affect quality of life and health care use. These new findings may explain why a higher-than-normal percentage of people with IBS and functional bowel problems develop depression and anxiety.

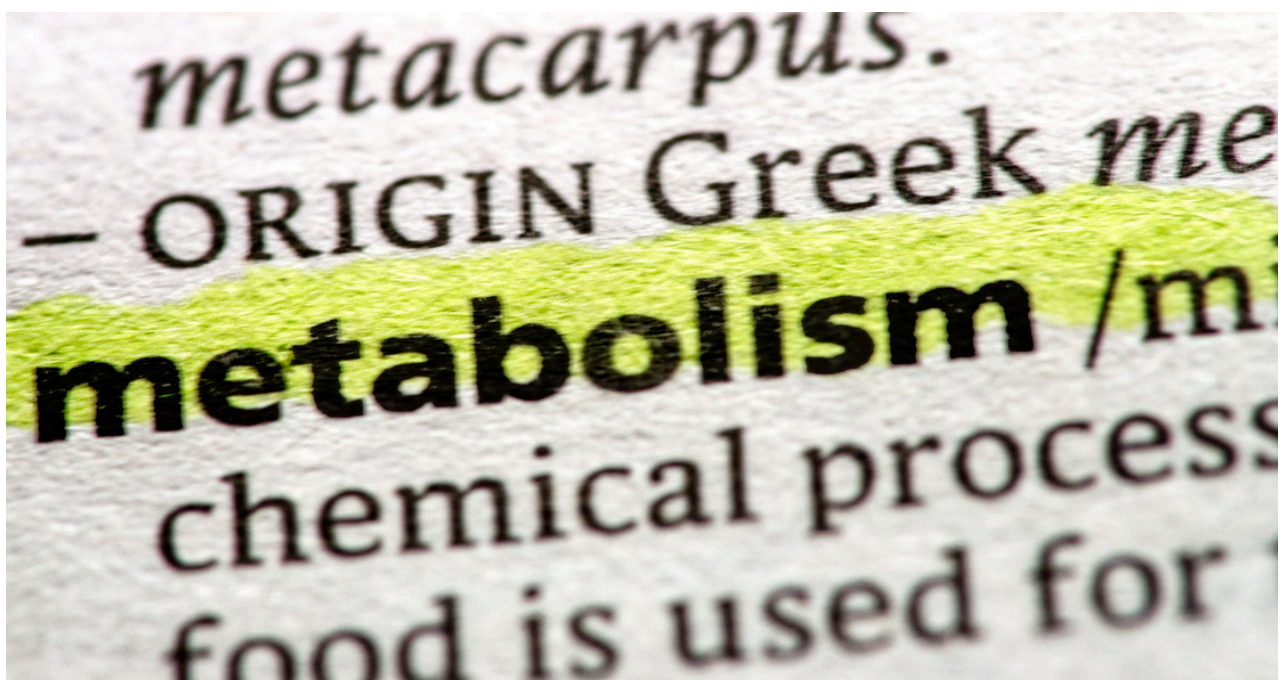
Still More to Learn About Mind-Gut Link

Researchers say **our two brains "talk" to each other, so therapies that help one may help the other.** In a way, gastroenterologists (doctors who specialize in digestive conditions) are like counselors looking for ways to soothe the second brain.

Gastroenterologists may prescribe certain antidepressants for IBS, for example - not because they think the problem is all in a patient's head, but because these medications calm symptoms in some cases by acting on nerve cells in the gut. Psychological interventions like Cognitive Behavioral Therapy (**CBT**) may also help to "improve communications" between the big brain and the brain in our gut.

Research suggests that **digestive-system activity may affect cognition** (thinking skills and memory), too. Researchers at [John Hopkins](#) and elsewhere are exploring the impact of these findings.

Another area of interest is how signals from the **digestive system affect metabolism**, raising or reducing risk for health conditions like type 2 diabetes. This involves interactions between nerve signals, gut hormones and microbiota - the bacteria that live in the digestive system.



HOW DIET AND FOODS HELP REDUCE STRESS AT WORK

What to eat to reduce stress and get more done at work?

We can improve the diversity of our gut microbiota through eating specific foods, taking probiotics, exercising, getting more sleep and finding ways to manage stress. A human body has its own limits: our mind can't focus on multiple things at once (yes, multitasking is not ok). Similarly, our body can't work 7 to 8 hours in the daylight if it doesn't get proper nutrition and a good 7 to 8 hours of sleep at night. There are a variety of factors that can disrupt our daily productivity at work - including our sleep patterns. That means in order to be more productive at work, we need to ensure restful sleep. And a healthy routine and good foods can surely help us with that!

Try to **lower the consumption of alcohol and caffeine**, and replace it all with a healthy diet like **fruits, cereals, plant-based milk, leafy green vegetables, seeds, whole grains and starches, good fats, low-fat dairy products, and lean proteins (eggs, tofu, fish, and nuts)**. Our stress management diet can include a variety of colors and tastes in it. That means we can reduce stress, get more work done, become more productive at work and still enjoy some great flavors.



Foods that increase and foods that lower stress

Remember the holy trinity of hormones we talked about in the beginning (see Unit 1 - Topic 2) of this training course? Let's see what type foods help lower or increase the levels of stress in the body by influencing each of the three main hormones dealing with stress: cortisol, adrenaline (epinephrine), and noradrenaline (norepinephrine).

HORMONE	FOODS TO INCREASE	FOODS TO LOWER
Cortisol	<ul style="list-style-type: none">• High-Sugar Foods: Candy, soda, and pastries can cause spikes in cortisol due to the rapid increase in blood sugar levels.• High-Fat Foods: Fast food, fried foods, and processed snacks can elevate cortisol levels.• Caffeine: Coffee, energy drinks, and some teas can increase cortisol production.	<ul style="list-style-type: none">• Leafy Greens: Spinach, kale, and Swiss chard are rich in magnesium, which helps regulate cortisol levels.• Fatty Fish: Salmon, mackerel, and sardines contain omega-3 fatty acids that reduce cortisol production.• Berries: Blueberries, strawberries, and raspberries are high in antioxidants that help lower cortisol.• Nuts and Seeds: Almonds, walnuts, and flaxseeds are good sources of healthy fats and magnesium.• Whole Grains: Oats, brown rice, and quinoa help stabilize blood sugar levels, reducing cortisol spikes.

HORMONE	FOODS TO INCREASE	FOODS TO LOWER
Cortisol		<ul style="list-style-type: none"> • Dark Chocolate: Contains flavonoids that can lower cortisol levels. • Green Tea: Rich in L-theanine, which promotes relaxation and reduces cortisol.
Adrenaline	<ul style="list-style-type: none"> • High-Sugar Foods: Can cause spikes in adrenaline due to rapid increases in blood sugar levels. • Caffeine: Coffee, energy drinks, and some teas can increase adrenaline production. • High-Fat Foods: Fast food, fried foods, and processed snacks can elevate adrenaline levels. 	<ul style="list-style-type: none"> • Leafy Greens: Similar to cortisol, leafy greens help reduce adrenaline levels due to their magnesium content. • Fatty Fish: Omega-3 fatty acids in fish help reduce adrenaline production. • Whole Grains: Help stabilize blood sugar levels, reducing adrenaline spikes. • Green Tea: Contains L-theanine, which promotes relaxation and lowers adrenaline levels. • Dark Chocolate: Flavonoids in dark chocolate help reduce adrenaline levels

HORMONE	FOODS TO INCREASE	FOODS TO LOWER
Noradrenaline	<ul style="list-style-type: none"> • High-Sugar Foods: Can cause spikes in noradrenaline due to rapid increases in blood sugar levels. • Caffeine: Coffee, energy drinks, and some teas can increase noradrenaline production. • High-Fat Foods: Fast food, fried foods, and processed snacks can elevate noradrenaline levels. 	<ul style="list-style-type: none"> • Leafy Greens: Magnesium in leafy greens helps reduce noradrenaline levels. • Fatty Fish: Omega-3 fatty acids help lower noradrenaline production. • Whole Grains: Help stabilize blood sugar levels, reducing noradrenaline spikes. • Green Tea: L-theanine in green tea promotes relaxation and lowers noradrenaline levels. • Dark Chocolate: Flavonoids in dark chocolate help reduce noradrenaline levels.

Should I keep their levels high or low?

While these hormones are crucial in short-term stressful situations, keeping the levels of **all three of them low** *in the long run* is essential for maintaining overall health. High levels of **cortisol** over time can lead to weight gain, high blood pressure, weakened immune system, and mental health issues. On the other hand, chronic high **adrenaline** levels can cause high blood pressure, anxiety, heart palpitations, and heart disease. Finally, prolonged high **noradrenaline** levels can lead to chronic stress, high blood pressure, anxiety, insomnia, and cardiovascular issues.

Managing stress through good nutrition

The 4 NO's of foods at the workplace

Making healthier food choices helps keep your body and mind balanced, allowing you to handle workplace challenges more effectively. Unfortunately there's a ton of those, but here are the four types of food which you need to pay attention to starting today!



1 High-Sugar Foods

There's literally a sugar pandemic out there. And we know it is hard to resist, but here's what you need to consider. Eating sugary snacks causes a quick spike in blood sugar levels, followed by a rapid drop. This rollercoaster effect can lead to mood swings, irritability, and increased stress levels.

2 Processed Foods

Foods like chips and fast food are often high in unhealthy fats and refined carbs, which can cause inflammation in the body. Inflammation can disrupt your mood and make you feel more stressed.

3 Caffeine

Found in coffee and energy drinks, caffeine can increase your heart rate and stimulate your nervous system. This can lead to jitteriness and anxiety, making you feel more stressed.

4 Alcohol

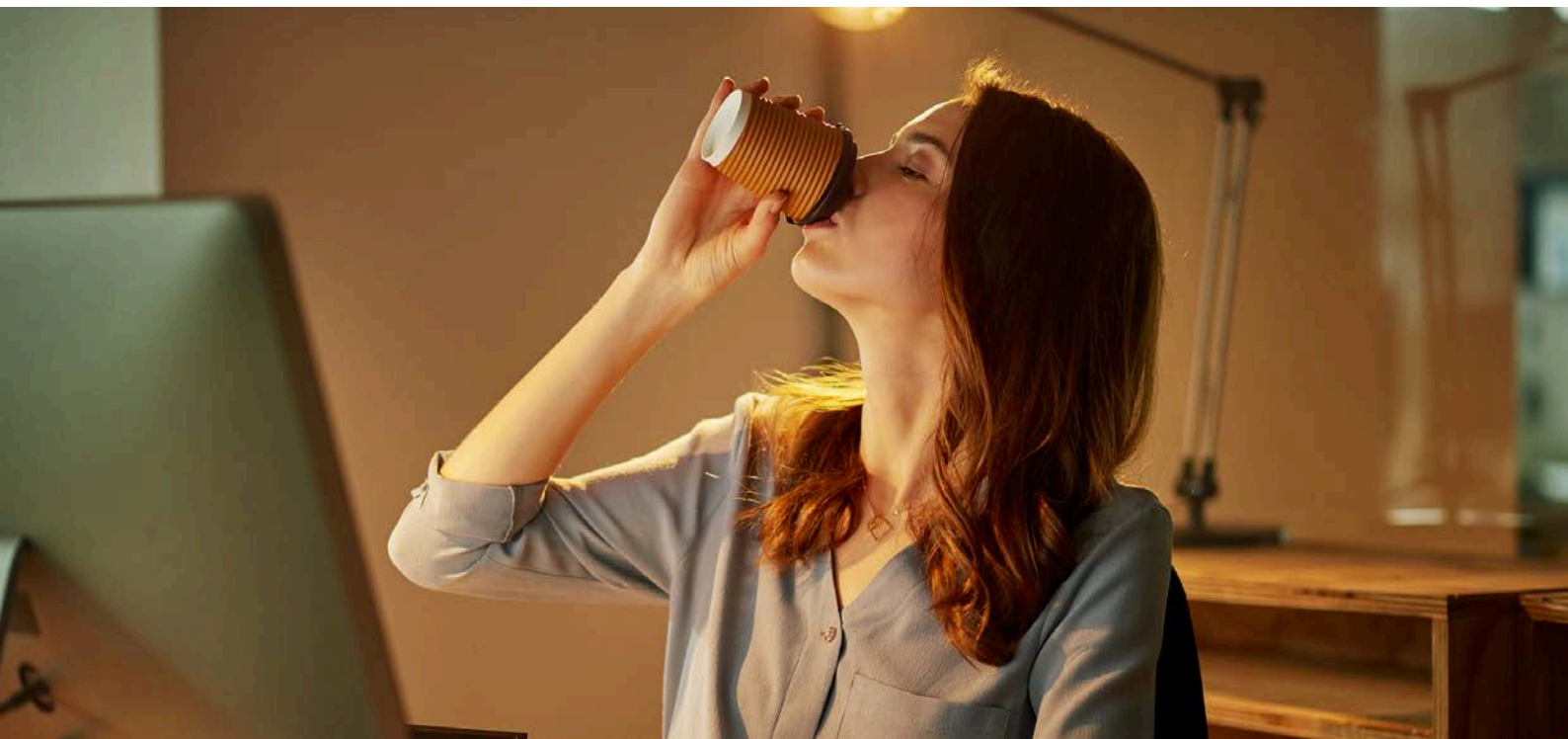
Drinking alcohol may seem relaxing at first, but it can disrupt your sleep and affect your mood. Over time, it can increase your stress levels and make it harder to cope with challenges.

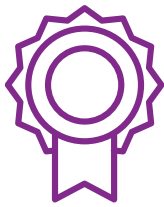
MORE ABOUT CAFFEINE

High amounts of caffeine can lead to a negative health effects associated with prolonged elevated levels of cortisol. During stressful times, one way people often cope is to skip meals. Then, when energy slumps, the reaction is often to grab a quick, accessible treat, typically something high in sugar like candies or cookies. While this quick burst of energy provides some immediate relief, it is short-lived and almost always followed by an even worse slump in energy. A repetitive cycle can follow: **the need to get a quick energy boost followed by a crash. This cycle leaves people feeling more tired and irritable** than before. **Caffeine** also contributes to this unhealthy pattern. When energy drops or a stressful task looms, another common response is to grab a coffee, energy drink or other caffeinated beverage. Ironically, this will **increase stress levels** because high levels of caffeine adds to feelings of anxiety and the stress response, including increasing heart rate.

Next time you feel an urge for caffeine, try consuming nuts and seeds like almonds and pumpkin seeds instead, which are excellent for steady energy release. Fresh fruits like apples and bananas offer natural sugars and essential vitamins. Greek yogurt is another good option, providing protein and probiotics to stabilize your energy. For a quick pick-me-up, you might also try dark chocolate—just a small piece can lift your mood and provide antioxidants.

Opt for these healthier choices and feel the difference in your stress levels and energy throughout the day.





GOOD PRACTICES & TIPS



Navigating the abundance of information on nutrition and health requires a thoughtful approach. Be cautious of quick-fix claims and prioritize a sustainable, evidence-based approach.



Consider consensus among experts and scientific studies and recognize the individualized nature of nutrition, understanding that what works for one may not work for another. Make sure to fact-check claims and the credibility of your information sources, favoring reputable journals, health organizations, and registered dietitians.



Embrace balance in your approach, **avoiding extreme diets**, and stay informed while being selective to prevent information overload. Educate yourself on basic nutrition principles, make reading food labels a habit.



Ultimately, **prioritize a holistic view of health** that encompasses not only nutrition but also lifestyle factors like physical activity, stress management, and sleep.



Creating a healthy diet is a flexible and individualized journey, and making sustainable choices that align with your lifestyle and goals is key! However, if you are finding it difficult to follow these suggestions for personalized guidance, especially if you have specific health concerns, please consult with a registered dietitian or healthcare professional.



PRACTICAL ACTIVITY



How do you do with nutrition?

Let's check your own nutrition habits. If your answer is "Yes:" to one or more of these questions, your stress levels might be affecting your eating habits.

- *Do you feel like you have to skip breakfast or other meals because you don't have time to eat?*
- *Do you depend on caffeine to keep you awake in the morning or at other times of the day when you are feeling low in energy?*
- *Are you starving when you get home from a busy day of classes and other activities because you have skipped meals?*
- *When you eat under stress, do you choose foods that are high in salt, sugar and/or fat?*
- *Have you lost or gained weight recently due to a change in appetite or stress eating?*




PRACTICAL ACTIVITY

Objective:

Bring a positive change into your everyday life. Below are some easy nutrition tips which can help you manage stress and provide your body with much needed physical and mental energy.

NUTRITION TIPS



- **Eat a balanced diet:** Focus on meals that contain vegetables and fruit, whole grains and protein such as lean meat, poultry, fish, beans, eggs and nuts.
 - **What, why and how much you are eating:** If you notice you are grabbing food when you're not hungry, keep a food and feelings diary to identify what triggers your eating.
 - **Keep handy healthy foods for meals and snacks:** If you feel hungry for a treat, try consuming a single serving at a time.
 - **Keep a water bottle with you at all times:** Drink water regularly.
 - **Using a timer or cell phone alarm:** Wait 15 minutes if you have a stress-related craving, then re-evaluate if you are truly hungry; you may find the craving has gone.
 - **Start the day with breakfast:** Eat a moderate sized meal or snack every 3 to 4 hours after this. You may need to plan snacks in the afternoon or evening as well in order to maintain your energy.
 - **Avoid excessive caffeine and alcohol:** Relax with decaffeinated hot or cold beverages or water with a slice of lemon or lime.
 - **Getting 7 to 8 hours of sleep at night:** Nothing can replace this! So get a good 7 to 8 hours of sleep to get enough energy and decrease food cravings.
- 

EXPERIENTIAL ACTIVITIES

Make a New Recipe

Do you like to cook? If so, making new recipes can be the perfect stress reliever! The idea for this to be fun is to do it with intention. Play some music and take your time **making a recipe preparing your healthy meal or snack** – no matter how simple or complex, depending on how much time you have.

Preparing and cooking food is ideal for stress relief because it allows you to connect with your five senses, which is scientifically proven to calm your nervous system.

How about a quick and nutritious stir-fry with vegetables and quinoa? It's simple to make, stress-busting, and great for maintaining energy levels at work. Ready? Head on the next page where you'll find some basic directions.



Stress-Free Chicken & Quinoa Stir-Fry

Ingredients

- 1 cup quinoa
- 2 cups water
- 1 tablespoon olive oil
- 1 bell pepper, sliced
- 1 cup broccoli florets
- 1 cup snap peas
- 2 cloves garlic, minced
- 2 chicken breasts, cut into bite-sized pieces
- Soy sauce or tamari to taste
- Sesame seeds (optional)
- A handful of fresh spinach (optional)



Directions

1. Rinse the quinoa under cold water. In a pot, bring 2 cups of water to a boil, add the quinoa, reduce heat to low, cover, and simmer for about 15 minutes or until all water is absorbed.
2. While the quinoa is cooking, heat the olive oil in a large pan over medium heat. Add the garlic and sauté for a minute until fragrant.

3. Add the chicken pieces to the pan and cook until fully cooked through and golden brown, about 5-7 minutes.

4. Add the bell pepper, broccoli, and snap peas to the pan. Stir-fry for about 5-7 minutes until the vegetables are tender-crisp.

5. Once the quinoa is done, fluff it with a fork and add it to the pan with the vegetables and chicken. Stir well to combine.

6. Drizzle with soy sauce or tamari to taste. Optionally, toss in some fresh spinach and sesame seeds.

7. Cook for an additional 2-3 minutes until everything is well mixed and heated through.

Enjoy!



KEY TAKEAWAYS

01

There is a close relationship between our diet and our mood: a healthy diet helps us feel better. Remember: Good Food = Good Mood

02

Your need for nutrients increases during periods of stress. This may erode your healthy eating patterns compromising physical and mental conditions.

03

Digestive-system activity may affect anxiety and depression also in the other way around, according to new brain - gut connection studies

04

To improve the diversity of our gut microbiota, we need to follow a healthy routine, eat good foods and try to drink less or at all alcohol and caffeine

ASSESSMENT

01.

When we are stressed, we are most likely to eat

☐ A- High in nutrients food.

☐ B- Only when we are feeling hungry.

☐ C- High in sugar, salt, and/or fat food.

02.

At which level nutrition impact on our health and wellbeing?

☐ A- Only physical.

☐ B- Mental and physical.

☐ C- Only mental.

03.

What the acronym IBS stands for?

☐ A- Instable Brain Symptoms

☐ B- Irritable Bowel Syndrome

☐ C- Irregular Bowel System

04.

Is there a one-size-fits-all diet?

☐ A- Yes

☐ B- Yes, except if you have specific health concerns.

☐ C- No, a healthy diet is a flexible and individualized journey.

ASSESSMENT

05.

Which food may cause increased symptoms of depression and fatigue?

- ☐ A- Fruits, cereals, plant-based milk, leafy green vegetables.
- ☐ B- Soft drinks, cakes, white bread, biscuits.
- ☐ C- Eggs, tofu, fish, nuts.

06.

Coffee, energy drink or other caffeinated beverage

- ☐ A- Are not associated with prolonged elevated levels of cortisol.
- ☐ B- Decrease heart rate.
- ☐ C- May increase stress levels.

ASSESSMENT ANSWERS

1 - C

2 - B

3 - B

4 - C

5 - B

6 - C

RESOURCE LIBRARY

Explore our resources that highlight the connection between diet and stress, including expert articles and videos on the impact of nutrition on stress levels and overall health. Learn how proper nutrition supports mental well-being and how deficiencies can contribute to stress and related conditions.



Diet and Stress

In this article by University of Puerto Rico professors Michael J Gonzalez & Jorge R Miranda-Massari, you can learn why unhealthy eating patterns will only result in an increased level of stress, followed by further health problems if in the future.

[READ THE ARTICLE](#)

World Health Organization on Nutrition

WHO recognises that nutrition is a critical part of health and development. Better nutrition is related to stronger immune systems, lower risk of non-communicable diseases (such as diabetes and cardiovascular disease), and longevity.

[ACCESS THE RESOURCES](#)

World Health Organization on Nutrition

Nutritional deficiencies can keep you in stress mode. In this valuable video, Dr. Eric Berg explains more about some of these nutrient deficiencies which can also cause stress in the form of depression and anxiety.

[WATCH ON YOUTUBE](#)

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