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ORGANIZATION NEWS

Information/Education Page

Ten Simple Dietary Steps to Strengthen Your Immune System — A Guide for Older Individuals at Risk of COVID-19



Older adults are at risk for poor immune response to infections, including coronavirus disease 2019 (COVID-19). Although no diet can prevent COVID-19, eating healthily protects your health and strengthens your immune system. Healthy eating is very important for older individuals, especially those with chronic diseases such as diabetes, hypertension, obesity, or cancer.

Figure 1 provides 10 dietary recommendations to help you choose healthy foods and get the nutrients you need for overall good health and a strong immune system.^{1,2} These recommendations are based on advice provided by the Food and Agriculture Organization of the United Nations³ and the World Health Organization.⁴

Talk to your health care provider or a registered dietitian about your diet and lifestyle habits. They will help you develop a healthy diet plan that meets your needs, tastes, and budget. The plan should consider your lifestyle, health status, living arrangements and economic situation.

Additional resources:

- The Center for Disease Control and Prevention (CDC) Adult BMI Calculator website: https://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/english_bmi_calculator/bmi_calculator.html
- Additional United States Department of Agriculture (USDA) website resources: <https://www.usda.gov/coronavirus>
- The National Institute of Ageing's website contains sample menus for older adults that can be

found here: <https://www.nia.nih.gov/health/sample-menus-healthy-eating-older-adults>

- Dr Elena Philippou has produced a video titled “Eat to boost your immune system” with scientific information. This can be found on her YouTube channel: <https://youtu.be/FEdUw7XZt3E>

Authorship

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STEP 1 – Maintain a healthy body weight

Being either underweight or overweight weakens your immune system.



Being underweight puts you at greater risk for infections. Infections are invasions of an area of the body that causes you to become sick. For example, viral pneumonia is an infection that can be caused by the COVID-19 virus.

Being overweight or obese weakens your immune system and can increase your risk of diseases. Talk to your doctor or registered dietitian about what is your healthy weight and what you should do to reach this weight.

You can use the Center for Disease Control and Prevention (CDC) free website to calculate your BMI. You will find the website information in the “Additional Resources” at the end of this page.

For adults, the World Health Organization² defines underweight, overweight, and obesity as follows:

Body Mass Index (BMI) Category	BMI (kg/m ²)
Underweight	<18.5
Normal weight	18.5-24.9
Overweight	25.0-29.9
Obese	≥30.0

Step 2 - Eat a balanced diet

A balanced diet includes a variety of foods to promote good health and a strong immune system. Foods and nutrients work together to lead to the best health results.

The best way to get all your nutrients is by eating a range of healthy foods.

It is recommended to eat:

- 3-5 portions of different fresh or frozen fruits and 3-5 portions of different vegetables daily.
- Try to include fruits and vegetables of different colors, such as oranges, carrots, spinach, tomatoes, and bananas. There are so many choices when it comes to fruits and vegetables that you should be able to find a combination that fits your tastes and budget.
- Include whole grain foods, such as whole wheat bread, oats, pasta, and brown rice with most of your meals.
- Consume legumes, such as beans and lentils, 2-3 times per week.
- Prefer low-fat dairy products and lean meats, such as chicken and turkey.
- Choose healthy fats, such as olive oil, avocado, and unsalted nuts.

Step 3 - Avoid ultra-processed foods, fats, sugars, salt, and alcohol

A diet high in sugar, fat, and salt increases your risk of being overweight and developing heart disease, diabetes, and certain types of cancer.

Avoid ultra-processed foods which contain a lot of refined sugar, salt, and fat and are low in fiber.

Ultra-processed foods include:

- soft drinks, chips, chocolate, candy, ice-cream, sweetened breakfast cereals, packaged soups, breaded meats, hotdogs, and fries.

Avoid consuming alcohol in excess. If you drink alcohol, limit yourself to one drink at a time and try to drink it with your meal.

Step 3 – Drink plenty of fluids

Keeping your body well hydrated is important for overall good health and a good immune system response.

Drink about 8 glasses of water a day.

Keep things interesting by changing what you drink. Beverages like water, herbal non-caffeinated tea, and milk are good options.

Avoid sugary drinks, which can increase your body weight and your risk of disease.

Essential Micronutrients, such as vitamins, are extremely important for our health. Below we describe the role of key micronutrients and how to include them in your daily diet:

Fig 1 Ten dietary recommendations for a strong immune system. Images from the Noun Project¹






<p>Step 5 - Eat foods rich in vitamin A</p> <p>Vitamin A is a fat-soluble vitamin that protects against infections by making your immune system cells stronger to fight microorganisms (such as bacteria).</p>  <p>Good food sources of Vitamin A, include:</p> <ul style="list-style-type: none"> • dairy products, such as cheese and full fat yogurt • eggs • fish <p>Beta-carotene is also a type of vitamin A and it is available in orange and red fruit and vegetables such as oranges, watermelon, carrots, tomatoes, red and orange peppers.</p> <p>Foods cooked in tomato sauce and olive oil, such as beans or pasta, are good sources of Vitamin A.</p>	
<p>Step 6 - Eat foods rich in vitamin C</p> <p>Vitamin C is a water-soluble vitamin important for the immune system.</p>  <p>It helps you recover from the common cold and it can make the cold symptoms such as stuffy nose, cough, and sore throat easier to tolerate.</p> <p>Good food sources of vitamin C include:</p> <ul style="list-style-type: none"> • citrus fruit, such as oranges, tangerines, lemons, lime, grapefruits • other fruits like kiwis, berries, strawberries, and mango • many vegetables such as broccoli, tomatoes, spinach, and red peppers. 	
<p>Step 7 - Eat foods rich in vitamin E</p> <p>Vitamin E is a fat-soluble vitamin that produces immune system cells when they are needed.</p>  <p>Good food sources of vitamin E, include:</p> <ul style="list-style-type: none"> • oils, such as olive oil, sesame oil, sunflower oil, or other vegetable oils • olives • unsalted nuts, such as walnuts and almonds, peanut butter (without added sugar and oils) • avocado 	
<p>Step 8 - Eat foods rich in iron</p> <p>Iron is a mineral that helps transfer of oxygen in the body.</p>  <p>Low iron in your blood leads to anemia, which can make you feel mentally and physically tired. Anemia can also make you feel out of breath and have cold hands and feet. Talk to your doctor about whether you need to check your blood iron levels.</p> <p>Eating iron-rich foods helps boost your immune system.</p> <p>Heme iron is easier for your body to absorb and is found in animal products such as:</p> <ul style="list-style-type: none"> • meat, fish, shellfish, and eggs. <p>Non-heme iron is found in plant-based and animal-based foods, such as:</p> <ul style="list-style-type: none"> • green leafy vegetables, like broccoli, spinach and parsley • lentils • dried fruit, such as raisins. <p>To boost iron absorption eat foods high in vitamin C, such as oranges, tomatoes, and strawberries.</p> <p>Avoid taking iron supplements if you are not iron deficient, because they can have negative side effects.</p>	
<p>Step 9 - Eat foods rich in zinc and selenium</p>  <p>Zinc and selenium are minerals that strengthen the immune system and help to fight disease.</p> <p>Good food sources of zinc and selenium include:</p> <ul style="list-style-type: none"> • legumes, such as beans, peas, lentils, chickpeas, and black-eyed peas • wholegrains, such as coarse oats, wholegrain or rye bread, brown rice, and whole grain pasta <p>Many cultures include legumes and whole grains in their cooking traditions. Experiment to find some varieties that you like.</p>	

Fig 1 Continued



Step 10 - Eat food foods rich in omega-3 fatty acids	
	<p>Omega-3 fatty acids reduce inflammation in the whole body and in the lungs. Humans cannot produce omega-3 fatty acids and must get them through their food.</p> <p>Good food sources of omega-3 fatty acids include:</p> <ul style="list-style-type: none"> • 'Oily' fish, such as salmon, sardines, seabass, mackerel, and trout • Nuts, especially walnuts and linseeds • Green vegetables, such as broccoli
Bonus step - Probiotics and prebiotics	
	<p>Probiotics and prebiotics enrich your diet to support the immune system.</p> <p>Probiotics are foods that contain live 'good' bacteria such as kefir, yogurt with live active cultures, miso and tempeh (from fermented soybeans), and sauerkraut (fermented cabbage).</p> <p>Prebiotics are foods that our 'good' bacteria or microbiota feed on, such as asparagus, artichokes, bananas, onions, garlic, leeks, and seaweed.</p> <p>Try to eat both probiotic and prebiotic foods every day.</p>

Fig 1 Continued

References

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