



**Solutions Suite**  
Tools for Health

# Enhancing Your Immune Health

## Facilitator's Guide

## Module 5



**UIC Center on Mental  
Health Services  
Research and Policy  
Collaborative  
Support Programs of  
New Jersey**

© 2021

**University of Illinois at Chicago Center on Mental Health Services Research and Policy and Collaborative Support Programs of New Jersey, Inc.**

**Contributing authors:** Jessica A. Jonikas, MA; Margaret (Peggy) Swarbrick, PhD, FAOTA; Kelsey Arnold, MA, MPH; George H. Brice, Jr., MSW, Judith A. Cook, PhD; and Patricia B. Nemec, PsyD, CRC, CPRP

The authors thank Charles J. Santos, MD, Department of Internal Medicine and Department of Psychiatry, Tulane University School of Medicine, New Orleans, LA, for his expert review and contributions to the contents of these modules.

This content was developed under a grant with funding from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR; grant number #90RTHF0004). NIDILRR is a Center within the Administration for Community Living (ACL), Department of Health and Human Services (HHS). The contents of this manual do not necessarily represent the policy of NIDILRR, ACL, or HHS, and you should not assume endorsement by the Federal Government.

These materials are a product of the UIC Health & Recovery Solutions Suite:  
<https://www.center4healthandsdc.org/solutions-suite.html>

**People in mental health recovery, their family members, and service providers are welcome to reproduce this manual for their personal and/or programmatic use. However, no part of this manual may be reproduced, adapted, or modified for commercial, research, or educational purposes, or for publication (including self-publication), without written permission from the UIC Center.**

# INTRODUCTION

Due to the COVID-19 pandemic, many people are seeking information and tips for enhancing their immune systems. Nobody likes being sick, whatever the cause, so it's natural to look for ways to avoid infection and illness. We want our bodies to be as strong as possible!

It's important to understand that our immune system is not a single organ in our bodies. Instead, it is a complex system that works on many different levels to fight infection. This means that our immune systems cannot technically be boosted, even though many people on TV, the internet, and social media say otherwise. However, we can improve our immune health to feel better and be healthier. Also, we can take precautions to avoid infections and illnesses.

This manual has 5 modules. You can use each one separately to educate about enhancing immune health. Or, you can use all of the modules together to teach a 5-week class on improving immunity. We've designed this material specifically to educate people with lived experience of mental illness, but it can be used by anyone who wishes to understand and enhance their immune health.

The modules are:

**Module 1: What is Immune Health?**

**Module 2: Vaccination & Health Screening for Immunity**

**Module 3: Adequate Sleep for Immune Health**

**Module 4: Managing Stress for Stronger Immunity**

**Module 5: Functional Foods, Immunity Aids, & Credible Health Information**

Each module uses an “**Explain, Evaluate, and Engage**” framework. We **explain** the key information to know in each area. Using exploration and activities, we then **evaluate** what participants already know about immune health. This is followed by further information. Each module also includes **engaging activities** to work on improving immunity and health.



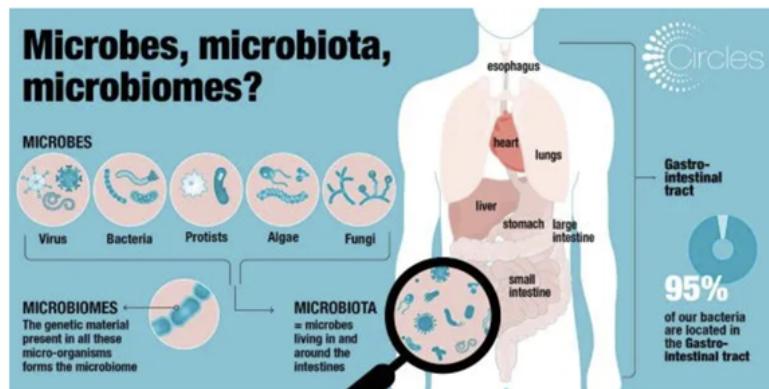
# Module 5: Functional Foods, Immunity Aids, & Credible Health Information

## Explain

Some of the foods we eat can improve our immune health. To understand how foods do this, you first need to understand how your digestive system works, and the role of a healthy gut in your immunity.

The word gut refers to your gastrointestinal tract, which is the long tube that starts at your mouth and ends at your anus. The lining of your digestive tract is covered in very tiny organisms that can only be seen with a microscope. Most of these are bacteria. Unlike the bacteria that make us ill, these bacteria help digest food and prevent infection and inflammation. In fact, most of our immune cells are housed in our intestines. Gut health also affects our mental health, weight, blood sugar, and liver.

**The mix of bacteria in your body is called your microbiota.** Each person's microbiota is different from everyone else's. It is determined partly by your birth mother's microbiota and partly from your lifestyle. What you eat, age, stress, medications, and diseases can all increase or decrease the amount and diversity of good and bad bacteria in your gut.



### Functional foods

Not surprisingly, what you feed your microbiota may have the biggest impact on its health. And the healthier your gut is, the healthier you are. There are two ways to maintain your gut health.

1. First, you can help the good bacteria or microbes already in your body to grow, by giving them the foods they like, called **prebiotics**.
2. Second is by adding living microbes, called **probiotics**, directly into your system.

# Evaluate

Invite participants to reflect on the role of gut health in immunity.

Here are sample questions to choose from.

**What have you heard about this concept of healthy bacteria in the gut?**

**Were you surprised by the ways we can change the mix of good and bad bacteria in our guts?**

**Have you or anyone you know ever taken supplements to improve gut health?**

# Explain

Even if you're already taking prebiotics or probiotics, it is helpful to understand how they work in the body.

**Prebiotics** are high-fiber plant foods that take longer to digest, giving them time to feed the healthy bacteria and other microbes living in your gut. Another way to think about it is that prebiotics are “fertilizers” that support the growth of healthy bacteria in your gut. We need these good bacteria to fight infection and inflammation. Without enough good bacteria in our guts, we are more likely to get sick or stay sick longer.

**Prebiotics** are found in many fruits and vegetables, including whole grains, apples, bananas, onions, garlic, and artichokes. You can get more examples of prebiotics on the Internet or by talking to a registered dietitian.



# Explain

**Probiotics** contain live organisms, usually specific strains of bacteria, that directly add to the population of healthy microbes in your gut needed to fight infection and inflammation.

You can take probiotics through both food and supplements. Probably the most common probiotic food is yogurt. Yogurt is made by fermenting milk with different bacteria, and keeping those bacteria in the final product. Other bacteria-fermented foods, such as sauerkraut, kombucha (a fermented drink), and kimchi (fermented, pickled vegetables), are also good sources of probiotics. To ensure the fermented foods you choose do contain probiotics, look for the words “naturally fermented” on the label. Also, when you open the jar, look for bubbles in the liquid, which signal that it has live organisms.

Probiotic supplements also contain live organisms. A single dose may include a particular strain of microbe or blend of microbes.



There are a lot of prebiotic and probiotic supplements. You should talk with your medical provider about what is best for you, to avoid buying one that won't help or is more expensive than needed. It is thought that the most beneficial way to support your immune health using food is by eating a variety of fruits, vegetables, whole grains, nuts, yogurt, safe bacteria-fermented foods, and legumes (beans).



# *Evaluate*

Invite participants to reflect on prebiotics and probiotics for immunity, using the questions below.

**What do you know about the benefits of prebiotics or probiotics?**

**Have you tried prebiotics or probiotics?**

**Did anything I shared about prebiotics or probiotics surprise you?**

# *Explain*

Many people on TV, the Internet, and social media make claims about various vitamins, supplements, and other remedies that supposedly “boost” your immune health. While some are beneficial, many of these claims are not based on high quality research, and you should be cautious about believing them. Also, many over-the-counter supplements are not regulated by the U.S. Food and Drug Administration (FDA), so their makers do not have the same obligation to support their health claims with good science.

Because the science behind taking supplements for immune health is so new, you’ll want to avoid spending a lot of money on things that aren’t helpful, and may even be harmful. Also, some supplements may interact badly with other medications you take. It’s best to talk with your medical provider about any supplements you want to take to strengthen your immune health.



# Explain

## Immunity aids

There are several vitamins and other supplements that research shows can improve your immune health. ***You should always talk with your medical provider before taking anything new.*** Your provider may suggest that you get lab work to determine if you lack certain vitamins.

**Vitamin D** helps regulate your immune system. Not having enough Vitamin D has been linked to respiratory infections, immune disorders, allergic diseases, and various cancers. Studies show that a very large number of U.S. adults do not have enough Vitamin D, especially people younger than age 5 or older than 65, pregnant and breastfeeding women, people with darker skin, and those with limited exposure to sunshine. Vitamin D can also be too low among those who are very overweight, current smokers, physically inactive, and rarely drink milk. Research suggests that all adults should be screened for Vitamin D deficiency. If you lack it, your medical provider will probably suggest getting outside for more sunshine and taking Vitamin D pills.

**Vitamin C** can help protect against various deficiencies in your immune system. Some research suggests that higher levels of Vitamin C may indicate a person's overall good health. Vitamin C is in foods like citrus fruit (oranges, lemons), bell peppers, strawberries, broccoli, and brussels sprouts. If you decide to take a Vitamin C pill, it may irritate your stomach, so it's best to take a non-acidic, buffered form.

**Vitamin B9 or Folic Acid** supports immune health because it aids in the reproduction of cells. Because of its critical importance, folic acid is added to many foods, like cereals and breads, in a process called "fortification." Folic acid deficiency is quite rare, but can occur in people who drink too much alcohol, have disorders that prevent the processing of folic acid, or during pregnancy. If you are worried about your folic acid levels due to alcohol consumption or other reasons, they can be easily checked by a medical provider.

# *Explain*

## **Immunity aids (continued)**

**Zinc** is an essential mineral to support immune health that the body needs only in extremely small amounts. Some research suggests that zinc itself might be directly harmful to viruses. Many people take zinc in lozenges when they have a head cold. Zinc is most helpful if you have a deficiency, caused by not eating a well-balanced diet or having a chronic disease that limits your body's ability to absorb key vitamins or nutrients.

As a sleep aid, **Melatonin** may strengthen your immune health. Remember, good sleep is a great way to support your immunity. You probably produce enough Melatonin through your diet and lifestyle, but it can be taken as a supplement. Talk with your provider first because it can interact with other medications. It also can be harmful in large quantities. It can be sedating, so don't take it before driving or operating heavy machinery.

**Iron** plays a critical role in immune function, particularly when you are sick. You can get enough iron from eating a balanced diet. However, iron deficiency, called anemia, is commonly seen in women who are menstruating due to blood loss. It can also occur in vegans or vegetarians, people with poor diets, or those with chronic diseases. Some food sources of iron are red meat, pork, poultry, seafood, beans, dark green leafy vegetables (like spinach), dried fruit (like raisins and apricots), iron-fortified cereal, and peas. Taking too much iron can be harmful, so it should be taken only after discussion with a medical provider.

# *Explain*

In general, the best action you can take to boost your immunity is a healthy lifestyle involving a number of things:

- eat a well-balanced diet with plenty of fruits and vegetables
- manage your stress or daily hassles
- try to get regular, good quality sleep
- get outdoors in the sunshine
- get plenty of physical activity; talk to your provider if you have any medical conditions that might limit your physical activity
- if you smoke, consider talking with your providers or supporters about making a quit plan



# *Evaluate*

Invite participants to reflect on immunity aids using the following questions.

**Are you surprised by how few supplements have been proven to help with immune health?**

**If you have any of the risk factors I mentioned, like age or chronic medical conditions, would you like to talk with your medical provider about getting lab tests to uncover vitamin deficiencies?**

**Do you take any vitamins or supplements?**

# Explain

## Finding Trustworthy Online Health Information

Many of us worry about trusting health information from the Internet or social media. There are thousands of medical and health web sites, not to mention blog and social media posts. Some provide reliable health information. Many do not. Some of the medical news is current. Some of it is not. Choosing which sources to trust is important when searching for reliable information about immune health.

Let's look at the Module 5 Handout, [Finding Trustworthy Health Information](#). It is adapted from the National Institute on Aging and contains helpful questions to ask yourself.

### 1. Who sponsors the information?

If someone is making money from the sources or sites you visit, that's a good reason to question the validity of the health information. If the health information is on *non-medical* sites, blogs, or posts, that's another reason to question its reliability and look elsewhere.

### 2. Who wrote the information?

Ask yourself if the information you're reading is clearly from a doctor, nurse, or other medical expert. If not, then dependable sources will tell you where their health information comes from, such as whether it's from medical experts, virologists, politicians, advocates, commentators, and so forth. Dependable sources also share the unbiased scientific evidence that backs up their claims. Unbiased means that the researchers were not personally invested in the results of the studies one way or the other. You can typically trust scientific evidence from medical experts that is gathered from studies conducted by unbiased researchers.

Be careful! Personal stories, or testimonials, may be comforting or revealing, but they aren't always reliable. Also, not everyone experiences health problems the same way. Finding personal stories isn't really "doing your research," even if you find a lot of similar ones. Also, no information should replace seeing a medical provider about your specific situation.

# *Explain*

## Finding Trustworthy Online Health Information (continued)

### 3. When was the information written?

Look for current sources of health information. Older information isn't always a problem and can be the foundation for new research. But, using information based on the most current scientific evidence is often best.

### 4. What is the purpose of the source?

Is the purpose of the source to inform you or is it to sell you something? Either way, choose information based on unbiased scientific evidence rather than someone's opinion or intention to sell something.

### 5. Does the source offer quick and easy solutions to your health problems?

Be careful of sources or companies that claim any one remedy will cure you. Question cures that seem too good to be true. Make sure you can find other unbiased scientific sources with the same information. A key exception to this is vaccinations, which are proven to prevent disease, disability, and death.

# *Engage*

Help participants complete the [Module 5 Review](#) worksheet to reinforce important terms and concepts.

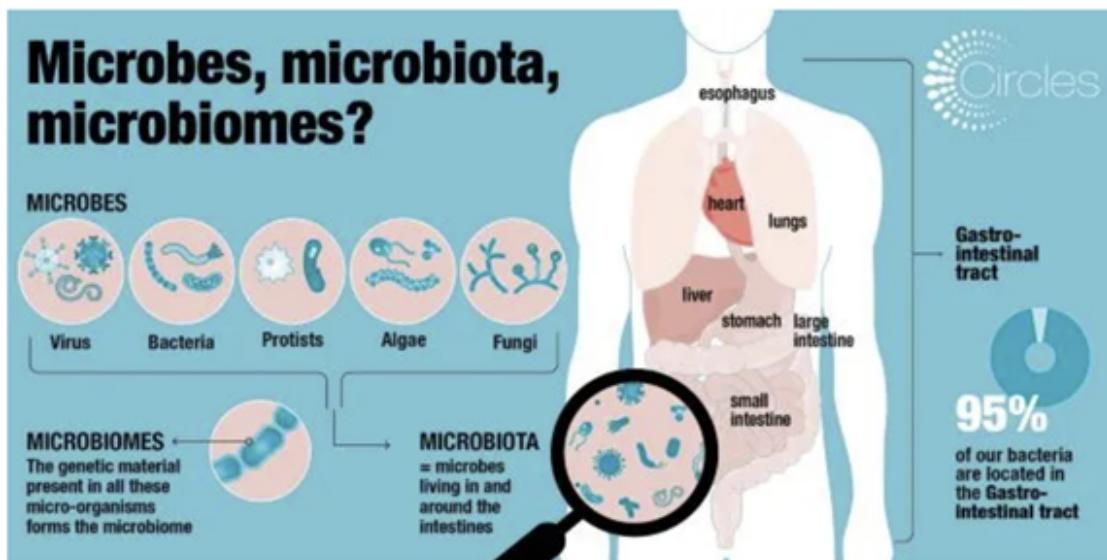
Share the handout, [Vitamins that Support Immune Health](#) (preferably while reviewing the above information).

If you have access to the Internet while meeting, visit 2 or 3 health web sites or social media posts to model asking the [Finding Trustworthy Health Information](#) questions for each one.

# **MODULE 5 HANDOUTS & WORKSHEETS**



## Understanding our gastrointestinal tract & gut health.



These foods feed the good bacteria in your gut.



These foods add good bacteria into your gut.



Tips for strong immune health.



# Module 5 Review

How the microbiome supports immune health:

---

---

---

This is how prebiotics & probiotics work:

---

---

---

2 ways to tell if health information is based on good science:

---

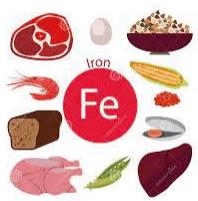
---

---

---

**My questions or notes**

# Vitamins that Support Immune Health



## Vitamin D

Common sources: sunlight, salmon, egg yolks, shrimp

Helps to regulate your immune system for proper functioning

## Vitamin C

Common sources: citrus fruit, red bell peppers, broccoli, strawberries

Helps protect against deficiencies in your immune system

## Vitamin B9

Common sources: added to foods like breads & cereals

Also called folic acid, supports immune health by aiding cell reproduction

## Zinc

Common sources: shellfish, meat, poultry, nuts, seeds, eggs

Supports immune function, growth, & development

## Melatonin

Common sources: bananas, tart cherries, tomatoes, grains like oats, barley, rice

Supports regular sleep to strengthen your immune health

## Iron

Common sources: red meat, pork, poultry, seafood, beans, dark green leafy vegetables

Supports proper immune function, especially when you are sick

You should always talk with your medical provider before taking anything new, including vitamins.

# Finding Trustworthy Health Information

## Who sponsors it?

Is someone going to make money from the source, site, or post?  
Is the information on a **non-medical** source, site, or post?

If yes, these are good reasons to question the validity of the health information and look elsewhere.

## Who wrote it?

Is the information from a doctor, nurse, or other medical expert? If not, that's a strong reason to question its reliability.

Dependable sources state the **rigorous, scientific evidence** for their health information or claims.

Beware! Personal stories alone are not always a reliable source.

## When was it written?

Look for current sources of health information, based on rigorous research.

Older information isn't always a problem. However, using the most current, science-based information is often best.

## What is the purpose?

Is the purpose of the source to inform you or is it to sell you something?

Either way, choose information based on **unbiased scientific evidence** rather than someone's opinion or intention to sell something.

## Is it too good to be true?

Be careful of claims that any one remedy will cure you. Make sure you can find other unbiased scientific sources with the same information.

A key exception is vaccinations, which are proven to prevent disease, disability, & death.

# REFERENCES

## Content

Mayo Clinic Health System. Good bacteria for your gut. Accessed from:  
<https://www.mayoclinichealthsystem.org/hometown-health/speaking-of-health/good-bacteria-for-your-gut>

Mayo Clinic Health System. Prebiotics, probiotics and your health. Accessed from:  
<https://www.mayoclinic.org/prebiotics-probiotics-and-your-health/art-20390058>

Harvard Health Publishing, Harvard Medical School. Fermented foods can add depth to your diet.

<https://www.health.harvard.edu/staying-healthy/fermented-foods-can-add-depth-to-your-diet>

Antunes, A.E.C., et al., (2020). Potential contribution of beneficial microbes to face the COVID-19 pandemic. Food Research International.  
<https://doi.org/10.1016/j.foodres.2020.109577>

Vieira, A.T., et al. (2013). The role of probiotics and prebiotics in inducing gut immunity. Frontiers in Immunology. <https://doi.org/10.3389/fimmu.2013.00445>.

Liu, X. et al. (2018). Vitamin D deficiency and insufficiency among US adults: prevalence, predictors and clinical implications. British Journal of Nutrition.  
<https://pubmed.ncbi.nlm.nih.gov/29644951/>.

Zelman, K.M. Nourish by WebMD. The benefits of Vitamin C. Accessed from:  
<https://www.webmd.com/diet/features/the-benefits-of-vitamin-c#1>

Harvard T.H. Chan School of Public Health, The Nutrition Source: Vitamin C.  
<https://www.hsph.harvard.edu/nutritionsource/vitamin-c/>

Carr, A.C. et al. (2017). Vitamin C and immune function. Nutrients.  
<https://doi.org/10.3390/nu9111211>

Harvard School of Public Health. The Nutrition Source: Zinc. Accessed from:  
<https://www.hsph.harvard.edu/nutritionsource/zinc/>



# REFERENCES

## Content (continued)

Harvard School of Public Health. The Nutrition Source: Vitamin B6. Accessed from: <https://www.hsph.harvard.edu/nutritionsource/vitamin-b6/>.

National Institutes of Health, Office of Dietary Supplements. Vitamin B6 Fact Sheet for Health Professionals. Accessed from: <https://ods.od.nih.gov/factsheets/VitaminB6-HealthProfessional/>.

Carrillo-Vico, A. et al. (2013). Melatonin: Buffering the immune system. International Journal of Molecular Sciences. [https://doi.org/10.3390/ijms14048638/](https://doi.org/10.3390/ijms14048638).

National Institute on Aging. Online Health Information: Is It Reliable? Accessed from: <https://www.nia.nih.gov/health/online-health-information-it-reliable>.

## Images

Microbes, microbiota, microbiomes:

<https://boomers-daily.com/2020/12/28/infographic-microbes-microbiota-microbiomes/>

Diet and gut microbiota:

[https://www.nutriciaresearch.com/wp-content/uploads/2017/09/Infographic-Gut-Microbiota-4-Diet\\_and\\_Gut\\_Microbiota.pdf](https://www.nutriciaresearch.com/wp-content/uploads/2017/09/Infographic-Gut-Microbiota-4-Diet_and_Gut_Microbiota.pdf)

10 Prebiotic Foods For A Healthy Gut:

<https://www.amymyersmd.com/article/prebiotic-foods/>

Probiotic Foods:

<https://www.ketoindia.fit/health/blog/keto-friendly-probiotic-foods/>

How to Maintain a Strong Immune System:

<https://www.verywellhealth.com/compromised-immune-system-suppressed-immunity-2615155>

