Probiotics

Healthy Eating Tip of the Month

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The gut is where the body encounters the majority of pathogens. Seventy percent of immune function takes place in the gut. In 2001, the Food and Agricultural Organization of the United Nations and the World Health Organization defined probiotics as live microorganisms which, when consumed in adequate amounts, confer health benefits to the host.

What are Probiotics?

Probiotics are live microorganisms (mostly bacteria) that colonize the gut and provide beneficial effects. Probiotics are different from other types of bacteria in that they are considered “good” bacteria or non-pathogenic in healthy people.

Within our gut there are over 500 different types of beneficial bacteria. Bacteria are a normal part of our microflora. The bacteria in the gut have several beneficial functions such as inhibiting the growth of pathogenic bacteria, aiding in digestion, and B vitamin synthesis.
How did we acquire beneficial bacteria?

It all started at birth. During the birthing process, babies are exposed to their mothers’ bacteria. After birth, breastfeeding provides additional exposure to the mothers’ beneficial bacteria. Physical affection and day to day contact provide continued exposure for babies.

This early bacterial exposure is instrumental in the development of the immune system. It provides a protective barrier to the gut and a defense mechanism to protect against infectious diseases.

As children grow they are exposed to more bacteria and by their second birthdays they acquire an identifiable population of microorganisms.

Throughout life, the numbers and types of bacteria an individual hosts will change. Good bacteria can be wiped out by the use of antibiotics, stress, poor diet, or by the ingestion of pathogens.
How do we know which Bacteria are Probiotics?

In order for a bacterium to be considered a probiotic, it must meet the following criteria:

- It is a microbial organism which is not harmful
- It remains alive during processing and the shelf life of the food
- It must survive digestion and remain alive in the gut
- It is able to bring about a response in the gut
- It is associated with health benefits

Common Probiotic Bacteria

When shopping, look for the following probiotic bacteria listed in the ingredients:

- Lactobacillus acidophilus
- Lactobacillus casei
- Lactobacillus reuteri
- Lactobacillus plantarum
- Lactobacillus rhamnosus
- Bifidobacterium animalis
- Bifidobacterium infantis
- Bifidobacterium lactis
- Bifidobacterium longum

Or, look for the Live Active Culture Seal:
Live Active Culture Seal and the National Yogurt Association

The National Yogurt Association (NYA) has made it easy for consumers to recognize products with live and active cultures and have developed their own seal shown above. The NYA is the national non-profit trade organization representing the manufacturers and marketers of live and active cultures in yogurt products. Its purpose is to sponsor health and medical research for yogurt containing probiotics and serves as an information source for consumers.
What Foods Contain Probiotics?

Dairy Products

• **Yogurt** – is milk which has been fermented by bacteria into a tart thick semisolid. Comes in plain, low-fat, non-fat, flavored, Greek, and Organic.

Note: Most yogurts contain live active cultures, but there are exceptions. Check the label!

• **Specialty yogurts** - Dannon Activia and Yoplait Yo-Plus.

• **Smoothies** – Flavored dairy yogurts both regular and light versions.

• **Kefir** – A tart and effervescent fermented milk drink. Can be plain, flavored, and organic.

• Other cultured dairy – Yakult, a cultured dairy drink that contains a proprietary bacterial strain Lactobacillus casei Shirota.
Soy Products

- Soy yogurt – soybean milk which has been fermented by bacteria. Available in plain and flavored.

- Probiotic soy milk – plain or flavored drinkable soy milk.

- Kefir - Made with soy milk and the same cultures that are found in dairy kefir.

- Tempeh - Tempeh is made by controlled fermentation of cooked soybeans with a Rhizopus molds (tempeh starter). This fermentation binds the soybeans into a compact white cake.
Long before probiotics became the focus of the microbial world, cultures throughout history and across the globe were creating and using fermented foods. Born as a preservation method used since Neolithic times, fermentation has sparked a resurgence in today’s modern world.

Most of this focus is on fermented dairy products, however, vegetables such as cabbage, garlic, onions, olives, cucumbers, carrots, turnips, cauliflower, and peppers can offer health benefits. Lactic acid fermentation is the most common method and one of the easiest to experiment with. It is a process where lactic acid bacteria, mainly the Lactobacillus species, convert sugar into lactic acid, which acts as a preservative. Prior to refrigeration and pasteurization, fermentation allowed food to be stored and preserved for later use, preventing spoilage by the natural defenses of lactic acid producing bacteria.

Source: FoodandNutritionMag.org
• Kombucha – slightly effervescent drink that is brewed with tea and sugar and fermented into a liquid. This beverage originated in China nearly 2,000 years ago. Kombucha contains amino acids, B vitamins, and a bountiful population of beneficial bacteria.

• Kimchi – a traditional Korean lacto-fermented condiment made from cabbage. The proliferation of the lactobacilli in the fermented vegetable enhances their digestibility and increases vitamin levels.

• Miso – is made by adding an enzymatic culture to a soybean base and often a grain (usually wheat, barley, or rice). Salt and water are the only other ingredients in natural miso. Miso contains beneficial microorganisms.

• Sauerkraut – is cabbage that has been salted and lacto-fermented over a period of weeks. The beneficial bacteria in this product promote the healthy growth of microflora throughout the intestine.
Probiotic Wellness Bars

- Attune™ snack bars contain probiotics.

A Note about Frozen Yogurt

Recently there has been a boom in frozen yogurt shops popping up all over the country which now offer yogurt with live active cultures and well as products appearing in the freezer section of the supermarket. Dairy research shows that it is possible for the cultures to survive in frozen products. However, it appears to be dependent upon the manufacturing technique, the ingredients, and the strains used. You can check with the manufacturer or the store manager of your favorite yogurt shop for more information.
What’s the Difference between Prebiotics and Probiotics?

The compliment to a probiotic is a prebiotic. Prebiotics provide the non-digestible carbohydrates for probiotics. The Prebiotics are non-digestible foods that make their way through our digestive system and help good bacteria grow and flourish. Prebiotics help feed and keep beneficial bacteria healthy.

Where do Prebiotics Come From?

Prebiotics mostly come from carbohydrate fibers called oligosaccharides. You don't digest them, so the oligosaccharides remain in the digestive tract where they stimulate the growth of beneficial bacteria. Sources of oligosaccharides include fruits, legumes, and whole grains.

Not all plant foods have been tested to determine if they are a source of prebiotics. Below is a list of foods that research has confirmed to be prebiotic:

- Bananas
- Onions
- Garlic
- Barely
- Leeks
- Asparagus
- Whole wheat
- Rye
Prebiotic + Probiotic = Synbiotic

A food is considered synbiotic when it contains a prebiotic and a probiotic ingredient. Below are a few examples of how to incorporate and create synbiotic foods.

- Eat yogurt with live active cultures with a sliced banana.
- Consume YO-PLUS yogurt manufactured by Yoplait. It contains both a prebiotic and a probiotic.
- Consume a meal with any probiotic and prebiotic to create a synbiotic dish.

What is Inulin?

Inulin is a natural prebiotic fiber that is found in over 36,000 plants worldwide. Although inulin is a natural fiber in plants, the food manufacturing industry has extracted inulin and has added it as an ingredient to foods. Inulin is highly functional and readily available. Inulin adds functional properties to foods like increased intestinal function. Inulin may also help keep you feeling full and give you that “full fat” mouth feel. Plus, dairy producers use inulin as a major food source for probiotic cultures. Other food manufacturers are adding inulin to products, too. For example, Dreamfields Pasta contains inulin, which increases its fiber content.
Can probiotics ease anxiety and curb depression? A group of scientists found that *Lactobacillus rhamnosus* can create GABA within the gut. GABA is a neurotransmitter that acts on the central nervous system to calm the body. Naturally produced GABA is a safe alternative to psychosis drugs. The bacteria is unique in that not only can it create GABA but it can also make more GABA receptors. All this has an impact on our mood and nervous system. It must be pointed out that much of the research has been conducted with mice, but more research will likely involve human subjects in the future.

Source: NaturalNews.com

Can probiotics reduce cholesterol? In a recent study, adults with high cholesterol consumed *Lactobacillus reuteri* supplements twice daily for 9 weeks and reduced their total cholesterol by 9 percent. The mechanism is thought to be due to the beneficial bacteria reducing the amount of cholesterol that is absorbed into the body.

Source: menshealth.com
Probiotic Recipes

Yogurt Parfait

- 3 cups vanilla yogurt
- 2 cups nectarines, peaches, or other favorite fruit
- 1 cup berries
- 2 cups granola of choice
- 6 parfait glasses

Spoon ¼ cup yogurt into the bottom of each glass and then layer with fruit. Add granola. Continue layering until all the ingredients are gone. Serve immediately or refrigerate for up to 6 hours.

Fruit Smoothie

- 1 cup frozen berries
- 1 banana
- 1 cup fresh fruit
- 1 cup yogurt
- ¼ - ½ cup milk, juice, or soymilk (enough to keep blender going)

Add ingredients to blender and enjoy.

Ranch Dressing

- 1 cup mayonnaise of choice
- 1 cup plain yogurt
- 1-2 small cloves of garlic or 1 teaspoon garlic powder
- 1 teaspoon dried onion powder
- ½ teaspoon salt
- 2 teaspoons dried parsley

Combine all ingredients and store in a glass jar in the refrigerator. Serve with your favorite salad.
Prebiotic Recipes

Refrigerator Pickled Onions

- 4 large sweet red onions, peeled and sliced into rings
- ½ cup or more of red wine vinegar to cover
- Salt and pepper to taste

Toss all ingredients in a bowl. Add ingredients to a non-reactive glass or ceramic container and store in the refrigerator. Can be used for sandwiches or salads.

Oven Roasted Leeks

- 2-3 medium leeks
- 2 tablespoons olive oil
- Salt and pepper to taste

Preheat oven to 350 degrees. Trim, rinse, and slice leeks. Toss all ingredients in a bowl to coat. Transfer ingredients to an oven-safe casserole dish, cover, and bake for 30 minutes.
Healthy Eating Tip of the Month Promotion!

Enter to win this prize - Just Desserts Mini Bowl 25-Piece Set

Prize includes 12 serving dishes and 12 spoons along with a serving card. Great for serving yogurt parfaits and other desserts!

How do I Enter?

Visit the Healthy Eating Tip of the Month display in the University Hospital Cafeteria during the month of February. Enter your name and email into the prize drawing. The winner’s name will be drawn in February.
Helpful Websites

  The website for the American Gastroenterological Association.

  A website supported by Harvard.

  The National Center for Complementary and Alternative Medicine (NCCAM)

PATIENT FOOD AND NUTRITION SERVICES
Nutrition Counseling Center
UH Room #2A-237 (second floor)
1500 E. Medical Center Drive
Ann Arbor, MI 48109

P: 734-936-7527

Created by: Lacy Amor – Dietetic Intern

For more information visit [http://www.med.umich.edu/pfans/services/tip.htm](http://www.med.umich.edu/pfans/services/tip.htm)