



Functional Foods: Managing Diabetes with Diet

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KENDALL REAGAN NUTRITION CENTER

FUNCTIONAL FOODS: MANAGING DIABETES WITH DIET

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LEARNING OBJECTIVES

- Define **what** functional foods are
- Describe **how** functional foods work to promote whole body health and blood sugar management
- List what functional foods have been studied for helping to regulate blood sugar
- Identify strategies for making functional foods part of your daily diet



WHAT ARE FUNCTIONAL FOODS?



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MEDIA COVERAGE + ADVERTISEMENTS OF “FUNCTIONAL FOODS”

The 10 Best Emerging Superfoods to Try in 2024

Explore 2024's Top 10 Emerging Superfoods! Uncover their health benefits, culinary uses, and get answers to key questions in our exclusive guide.



FOOD & DRINK

What tops the list of trendy ‘miracle’ foods Americans are willing to try?



POST 50 FIFTY POST50 VOICES

5 'Miracle' Foods You'll Actually Want To Eat

Super foods that are easy to find, amazing for your health, and super tasty.

5 foods that help cure everything



BUT WHAT ARE FUNCTIONAL FOODS REALLY?

There is no standard definition of functional foods that exists in the United States, but many food and health organizations offer similar descriptions.

Academy of Nutrition and Dietetics Definition:

Whole foods along with fortified, enriched, or enhanced foods that have a potentially beneficial effect on health when consumed as part of a **varied** diet on a **regular** basis at **effective** levels.



WHAT MAKES A FOOD FUNCTIONAL?

Contains an active ingredient that works within our body to :



- Increase our health and wellbeing
- Improve our health even after a disease diagnosis



- Decrease our risk of chronic disease such as heart disease, cancer, **diabetes**, and brain disease
- Decrease inflammation and damage to our bodies

Functional foods work together to protect our bodies! More functional foods eaten = more and varied health benefits!



WHERE ARE FUNCTIONAL FOODS IN OUR DAILY DIET?

Conventional Foods



- Fruits
- Vegetables
- Beans + Legumes
- Nuts + Seeds
- Whole Grains
- Dairy
- Fish

Modified Foods



- Fermented foods
- Fortified foods: orange juice, butter, eggs
- Agriculture modifications: purple potatoes!

Food Ingredients



- Fish oil capsules
- Prebiotic fiber supplements
- Probiotic capsules
- Plant sterols and stanols
- Wheat germ, oat bran fiber

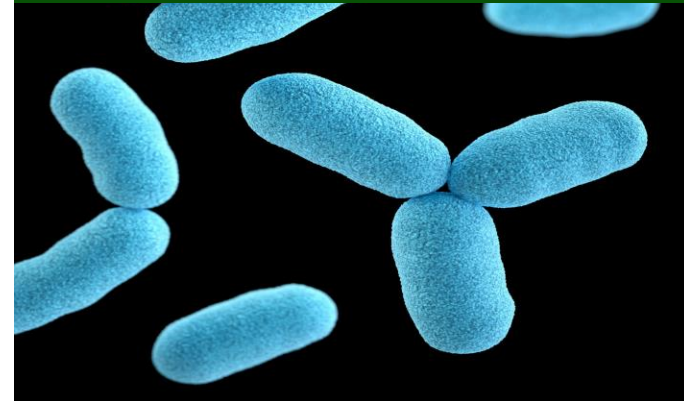


WHAT MAKES FOODS FUNCTIONAL?

Colorful Compounds



Probiotics



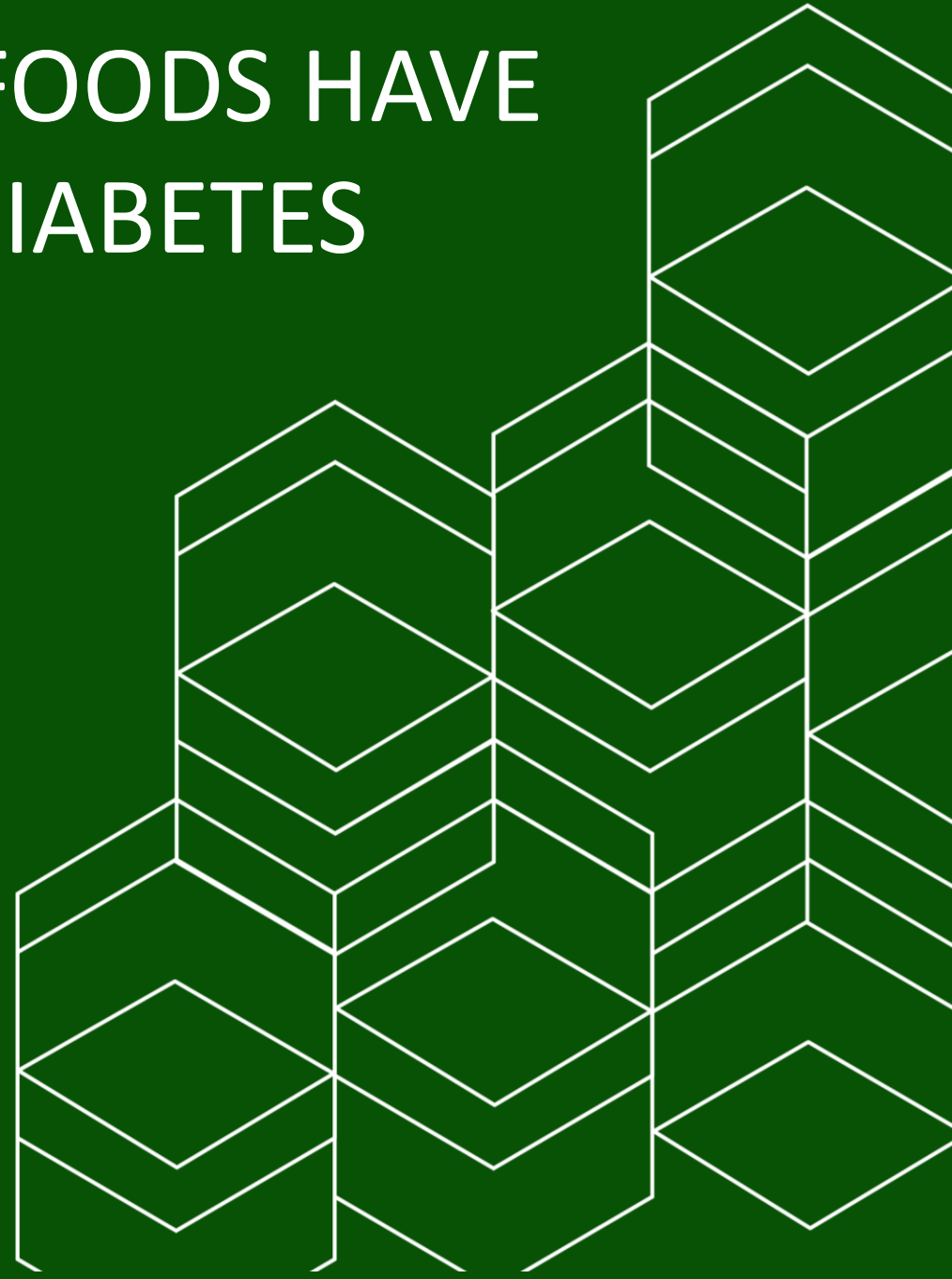
Prebiotics



Nutritious Fats



WHAT FUNCTIONAL FOODS HAVE BEEN STUDIED FOR DIABETES PREVENTION AND MANAGEMENT?




FIRST, WHAT DOES THE RESEARCH SAY?

Although a growing body of evidence supports the **potential** beneficial effects of functional foods on treating chronic diseases, the clinical practice guidelines for diabetes have not recommended the consumption of functional foods in managing type 2 diabetes (T2D) (Hou et al., 2023). Currently, functional foods have health benefits in preventing and managing chronic diseases as a **complementary** approach in medicine; however, some ingredients of functional foods have the potential to become an effective and safe “drug” in the future.

Hamasaki, H. (2024). Functional foods for treating patients with diabetes: An overview of previous systematic reviews and meta-analyses and future prospects. In Alani, M. & Eskin, M. (Eds.), *Chronic Disease: Role of Sensory, Chemistry and Nutrition*. (pp. 43-75). Academic Press. <https://doi.org/10.1016/B978-0-323-91747-6.00009-3>




HOW DO FUNCTIONAL FOODS HELP WITH DIABETES?



Help decrease blood sugar:

- Stimulate the pancreas to release more insulin
- Cause cells to better respond to insulin and take up blood sugar
- Help delay the release of sugar into the bloodstream



Increase protection and proper function:

- Antioxidant activity reduces and prevents damage
- Anti-inflammatory activity that prevents damage
- Reduce inflammation caused by insulin resistance and high blood sugar



FUNCTIONAL FOODS FOR MANAGING BLOOD SUGAR: PRODUCE

- **Red + Orange:** bell peppers, tomatoes, sweet potatoes, cantaloupe, mango
- **Purple + Blue+ Red:** grapes, berries, cherries, pomegranate
- **Leafy Greens + Cruciferous Veggies:** broccoli, cauliflower, spinach, kale, chard, turnips
- **Citrus + tropical fruit:** oranges, pineapple, kiwi
- **Apples, Pears, Peaches**
- **Garlic + Onions**
- **Olives**



FUNCTIONAL FOODS FOR MANAGING BLOOD SUGAR: GRAINS

- Whole wheat
- Brown rice
- Oats
- Corn
- Quinoa
- 'Ancient'' grains
- Whole grain products: cereals, oatmeal, pasta, breads, crackers



FUNCTIONAL FOODS FOR MANAGING BLOOD SUGAR: BEANS AND LEGUMES

- Soy products: edamame, tofu, tempeh, soy milk
- Beans and peas
- Lentils



FUNCTIONAL FOODS FOR MANAGING BLOOD SUGAR: NUTRITIOUS FATS

- Salmon and fatty fish
- Tree nuts: walnuts, almonds, pistachios, pecans, cashews
- Peanuts
- Olives, olive oil
- Seeds: pumpkin, hemp, chia, flax
- Oils from nuts and seeds



FUNCTIONAL FOODS FOR MANAGING BLOOD SUGAR: FERMENTED FOODS

- Fermented dairy: yogurt and kefir
- Kimchi and sauerkraut
- Soy: tempeh



FUNCTIONAL FOODS FOR MANAGING BLOOD SUGAR: DRINKS + OTHER

- Green + black tea
- Herbal tea: hibiscus
- Black coffee
- Herbs and spices
- Cocoa



FOODS HAVE *SYNERGY*



THE ONLY FUNCTIONAL FOODS ARE
THE ONES YOU EAT!



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WHAT CAN YOU SWAP TO MAKE YOUR DIET MORE FUNCTIONAL?



FUNCTIONAL FOODS EXIST IN MANY FORMS!

Pantry Staples

- Canned fruits, vegetables, and beans
 - Canned tomatoes and marinara sauce are especially high in antioxidants!
 - Shop for low-sodium options, and fruits packed in their own juice instead of syrup
- Low-sodium canned lentil soups and bean chilis
- Microwave packs of brown rice and whole-grain blends
- Whole wheat and bean-based pastas
- Canned fish/ pouches

Frozen Staples

- Frozen fruits and veggies
- Frozen bean + veggie blends
- Whole grain steamer bags
- Whole wheat toaster waffles
- Frozen fish fillets
- Low-sodium Indian-style lentil- based meals
- Lower sodium bean + cheese burritos and bean burrito bowls
- Meals containing bright colored veggies and fiber



FUNCTIONAL FOODS: A DAY IN THE LIFE

Breakfast:

- Scrambled eggs + cooked from frozen fiesta blend veggies+ whole wheat toast

Lunch

- Low-sodium turkey sandwich on whole wheat bread + tomato slice + red onion + spinach + hummus as a spread in place of mayo + cup of mixed berries

Snacks

- Low-sugar vanilla Greek yogurt mixed with flax meal + peanut butter as a dip for apple slices
- Black bean dip + baked tortilla chips + carrot and celery sticks

Dinner

- Chickpea or whole wheat pasta topped with tomato sauce, basil, and grilled chicken

Drinks:

- Water, hibiscus iced tea, green tea, black coffee



FUNCTIONAL FOODS SUMMARY



FUNCTIONAL FOOD FACT VERSUS FICTION

FACT



- Functional food contain active ingredients that can help protect our bodies from damage
- Functional foods are found in common whole foods and pantry staples
- Functional foods have studied effects in helping to prevent or manage diabetes

FICTION



- Functional Foods are super foods or miracle foods
- Functional foods are expensive, exclusive, or specialty foods
- Functional foods can cure, treat, or prevent a diabetes on their own



RECIPE RESOURCES

Kendall Reagan Nutrition Center:

- Recipes: <https://www.chhs.colostate.edu/krnc/recipes/>
- Recipe Videos: <https://www.chhs.colostate.edu/krnc/video-library/>

American Diabetes Association

- Recipes: <https://www.diabetesfoodhub.org/>

Mayo Clinic

- Recipes: <https://www.mayoclinic.org/healthy-lifestyle/recipes/diabetes-meal-plan-recipes/rcs-20077150>



IN CONCLUSION....

- Functional foods are found in whole foods such as produce, whole grains, beans and legumes, nutritious fats, fermented foods, beverages, herbs, and spices
- Functional foods have protective effects and benefits for the body beyond just maintaining basic survival
- Functional foods are part of a strategy to help prevent and manage diabetes
- Functional foods can be found in fresh, frozen, and canned options at the grocery store



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Creating an Age-Friendly Health System & Dementia-Friendly Community in Nevada



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