

Nutrition & Surgery

Optimizing your health through nutrition to improve surgical outcomes and healing





Why is nutrition important before and after surgery?

Having surgery can

- trigger inflammation in your body
- create a loss of vitamins and minerals
- cause unplanned muscle loss

Some nutrients in food can improve your immune function and improve your ability to prevent infections.

People who drink enough water before surgery reported less nausea and less pain.

Preparing your body with enough nutrition can decrease risk for complications of surgery and improve wound healing and recovery time.



Nutrients for optimal surgery outcomes

These nutrients help healing and decrease risk of infection:

VITAMIN C Found in: oranges, grapefruit, strawberries, mango, guava, papaya, tomatoes, tomato juice low sodium, bell peppers all colors, potatoes, spinach and leafy greens, broccoli, Brussels sprouts, kohlrabi, and cabbage

VITAMIN A Found in: dark green leafy vegetables, carrots, squash, cantaloupe, fortified dairy products, fortified cereals

ZINC Found in: eggs, beef sirloin, beef tenderloin, pork tenderloin, pork chops, fish, legumes, nuts, lentils, fortified cereals, milk, yogurt, seafood, tofu, wheat germ, and whole grains.

ARGININE Found in: turkey, pork tenderloin, chicken, pumpkin seeds, soybeans, peanuts, spirulina, dairy products, chickpeas, and lentils. Watermelon is a good source of citrulline, which the body can convert into arginine.

B12 Found in: meat, fish, poultry, eggs, nutritional yeast, fortified plant milks and fortified cereals.

OMEGA 3 Found in: salmon, mackerel, tuna, sardines, walnuts, chia seed, flaxseed

Focus on these food groups to optimize surgery



HIGH QUALITY PROTEIN

Protein is the building block for muscle and healing. At least 1-2 weeks before surgery, plan your meals and snacks to contain protein. The amount of protein you need depends on your height and weight but around 55-70 grams for women and 60-92 grams for men per day are a good estimate.

To protect and build muscle, it is best to divide your protein portions into 3 meals and 1-2 snacks versus eating it all at one meal or two meals. Plan about 15-25 grams protein at each meal which is 2-3 ounces of protein at a meal or the size of a deck of cards.

Protein is contained in a lot of foods but especially chicken, turkey, fish, tuna, eggs, milk, yogurt, tofu, nuts, seeds, beans, lentils, and legumes.

WHOLE GRAINS & LEGUMES

These complex carbohydrates have B vitamins to help recover from stress. These foods also have fiber to help with digestion and feed good bacteria in your gut. These include foods like quinoa, oatmeal, brown rice, wild rice, barley, black beans, garbanzo beans, almonds and pistachios.

FRUITS & VEGETABLES

Fruits and vegetables are full of antioxidants and phytonutrients which are fancy words for helping prevent infection and helping your body heal. Dark green, dark orange, dark red, and purple have the most benefit. Eat the rainbow every day.

Avoid fruit juice and instead enjoy the whole fruit to stay full. Keep a bowl of fruit on the table instead of in the fridge so you see it more often.

EAT LESS OF THESE:

Sugar, caffeine, and alcohol. These foods take away from your body instead of helping it get stronger for surgery.

Extra sources of protein

Drink milk with meals or snacks. Use milk to make a smoothie or thicken soups.

Add cheese to vegetables, salad, potatoes, brown rice, whole grain or lentil pasta, or soups.

Add hard boiled eggs to lettuce salads, tuna salad, or whole grain pasta salads.

Add peanut butter or almond butter to toast, wheat thins, or whole grain English muffins, or pitas. Have peanut butter with banana or apples.

Add nuts, seeds, or wheat germ to whole grain or lentil pasta, muffins, pancake mix, or cooked cereal like oatmeal.

Add beans (like kidney, pinto, garbanzo, black or navy) to soup, tacos, lettuce salads, or salsa.

Have tuna salad or egg salad on 5 wheat thins as a snack.

Have cottage cheese as a snack with pumpkin seeds or fruit.

Add a protein powder to a smoothie, yogurt or oatmeal.



Hydration:

People who are hydrated or have been drinking enough water before surgery report less pain and nausea. They also sleep better.

Choose water, flavored water, fruit infused water, or tea.

Avoid all soda, alcohol, and sugar drinks.

If you are female, aim for 2.3 to 2.7 liters of fluid per day. If you are male, aim for 3.3 to 3.7 liters of fluid per day. If you have trouble at night getting up to urinate, try to not drink after 7 p.m.

You may have to urinate more often the first two weeks you increase your water intake, but that should decrease as your body adjusts.

If your doctor has told you to limit your fluid intake due to heart or kidney issues, please follow those guidelines.



Plate Method

Making your meals balanced and strong

Make half your plate non-starchy vegetables (see grocery list on next pages). Consider serving two at dinner. Add spinach and tomatoes to sandwiches. Have stir-fry for lunch. Make your soup almost all vegetables! Have red or yellow peppers or cucumbers for a snack with hummus or dill dip.

Grains: make $\frac{1}{4}$ your plate whole grains. Avoid white grains like white bread, Ritz crackers, soda crackers, white rice, cookies, pies, white noodles. Try chick-pea pasta or brown rice instead. The serving per meal is about $\frac{1}{2}$ to 1 cup of grains.

Protein: Make $\frac{1}{4}$ your plate lean protein. Use black beans in salad, refried beans in tacos, or use lentils instead of hamburger in sloppy joes. Have nuts as a snack every day $\frac{1}{4}$ cup. Add pumpkin or sunflower seeds to salad or yogurt. Limit processed meats like bacon, sausage, brats, hot dogs, summer sausage, or chicken patties.

Check out the MyPlate app as another great resource!



Start simple with MyPlate Plan

The benefits of healthy eating add up over time, bite by bite. Small changes matter. Start Simple with MyPlate.

A healthy eating routine is important at every stage of life and can have positive effects that add up over time. It's important to eat a variety of fruits, vegetables, grains, protein foods, and dairy or fortified soy alternatives. When deciding what to eat or drink, choose options that are full of nutrients. Make every bite count.

Food Group Amounts for 1,600 Calories a Day for Ages 14+ Years

Fruits	Vegetables	Grains	Protein	Dairy
1½ cups	2 cups	5 ounces	5 ounces	3 cups
<p>Focus on whole fruits</p> <p>Focus on whole fruits that are fresh, frozen, canned, or dried.</p>	<p>Vary your veggies</p> <p>Choose a variety of colorful fresh, frozen, and canned vegetables—make sure to include dark green, red, and orange choices.</p>	<p>Make half your grains whole grains</p> <p>Find whole-grain foods by reading the Nutrition Facts label and ingredients list.</p>	<p>Vary your protein routine</p> <p>Mix up your protein foods to include seafood; beans, peas, and lentils; unsalted nuts and seeds; soy products; eggs; and lean meats and poultry.</p>	<p>Move to low-fat or fat-free dairy milk or yogurt (or lactose-free dairy or fortified soy versions)</p> <p>Look for ways to include dairy or fortified soy alternatives at meals and snacks throughout the day.</p>
<p>Limit</p> <p>Choose foods and beverages with less added sugars, saturated fat, and sodium.</p> <p>Limit:</p> <ul style="list-style-type: none"> • Added sugars to <40 grams a day. • Saturated fat to <18 grams a day. • Sodium to <2,300 milligrams a day. 	<p>Activity</p> <p>Be active your way: Children 6 to 17 years old should move 60 minutes every day. Adults should be physically active at least 2½ hours per week.</p>			

MyPlate Plan

Write down the foods you ate today and track your small changes, bite by bite.

Food group targets for a 1,600-calorie* pattern are:	Write down your food choices for each food group,	Did you reach your target?	
 <p>Fruits 1½ cups 1 cup of fruits counts as • 1 cup raw or cooked fruit; or • ½ cup dried fruit; or • 1 cup 100% fruit juice.</p>	_____ _____ _____	<input type="checkbox"/> Y <input type="checkbox"/> N	 <p>Limit: • Added sugars to <40 grams a day. • Saturated fat to <18 grams a day. • Sodium to <2,300 milligrams a day.</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>
 <p>Vegetables 2 cups 1 cup of vegetables counts as • 1 cup raw or cooked vegetables; or • 2 cups leafy salad greens; or • 1 cup 100% vegetable juice.</p>	_____ _____ _____	<input type="checkbox"/> Y <input type="checkbox"/> N	
 <p>Grains 5-ounce equivalents 1 ounce of grains counts as • 1 slice bread; or • 1 ounce ready-to-eat cereal; or • ½ cup cooked rice, pasta, or cereal.</p>	_____ _____ _____	<input type="checkbox"/> Y <input type="checkbox"/> N	 <p>Be active your way: Children 6 to 17 years old should move 60 minutes every day. Adults should be physically active at least 2½ hours per week.</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>
 <p>Protein 5-ounce equivalents 1 ounce of protein foods counts as • 1 ounce seafood, lean meats, or poultry; or • 1 egg; or • 1 Tbsp peanut butter; or • ¼ cup cooked beans, peas, or lentils; or • ½ ounce unsalted nuts or seeds.</p>	_____ _____ _____	<input type="checkbox"/> Y <input type="checkbox"/> N	
 <p>Dairy 3 cups 1 cup of dairy counts as • 1 cup dairy milk or yogurt; or • 1 cup lactose-free dairy milk or yogurt; or • 1 cup fortified soy milk or yogurt; or • 1½ ounces hard cheese.</p>	_____ _____ _____	<input type="checkbox"/> Y <input type="checkbox"/> N	<p>* This 1,600-calorie pattern is only an estimate of your needs. Monitor your body weight and adjust your calories if needed.</p>



Resources:

Recipes www.100daysofrealfood.com

Recipes Recipes | ThedaCare Lifestyle Medicine (thedacarelifestyle180.com)

Recipes: www.allrecipes.com select Mediterranean , low calorie, or Whole30

RECIPES: MyPlate Kitchen <https://www.myplate.gov/myplate-kitchen/recipes>

American Diabetes Association Diabetes Food Hub www.diabetesfoodhub.org

Tracking food and calories www.myfitnesspal.com

App for calculating and tracking calories/ meal planning: Eat This Much

MyPlate meal plans <https://www.myplate.gov/myplate-plan>

Weight Watchers program <https://www.weightwatchers.com/us/>

References

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