



# SCLERODERMA FOUNDATION

SUPPORT • EDUCATION • RESEARCH

## Eating Well With Scleroderma

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Linda Kaminski, MS, RD, CDE  
Nutrition & Lifestyle Consultant

Dinesh Khanna, MD, MS  
Associate Professor of Medicine  
Director, University of Michigan Scleroderma Program

The foods we eat affect our health in many ways, for better or for worse. Fruits and vegetables are beneficial foods that provide our bodies with energy and essential nutrients. Processed junk foods, such as cookies, potato chips and sugary sodas, are devoid of nutrients and, in large amounts, potentially harmful to our bodies no matter our age or current health.

However, when a person faces a potentially debilitating chronic disease such as scleroderma, in which fatigue, digestive difficulties and nutrient deficiencies are common, a high quality, nutritious diet must take center stage to enhance quality of life and successful management of symptoms.

There is no one specific “scleroderma diet” since symptoms and severity of disease varies widely. However, striving to create a balanced diet that emphasizes foods that fight inflammation and provide energy, protein, vitamins and minerals is of utmost importance.

Systemic sclerosis is a condition in which the immune system overstimulates the collagen-producing cells of the body causing inflammation and an excessive buildup of collagen. This leads to hardened skin and fibrosis of internal organs such as the lungs, digestive tract and blood vessels. While there is no scientific evidence indicating any specific foods or nutrients are capable of increasing or decreasing collagen production, the foods you eat can have a positive impact on your disease condition by fighting fatigue, inflammation and digestive dysfunction. (There is no scientific evidence showing collagen-containing foods, such as meat and bone broth, will accelerate collagen production.)

People who suffer from scleroderma are at increased risk of malnutrition even if they try their best to eat a healthy diet. Malnutrition in scleroderma is caused either by inadequate intake of nutritious foods or from poor absorption of nutrients from the gastrointestinal (GI) tract. Individuals who eat less because they have difficulty

## Symptoms of Malnutrition

The following symptoms can also describe the underlying scleroderma and may be difficult to distinguish from malnutrition. New or worsening symptoms (such as fatigue or excessive weight loss) may indicate malnutrition.

- Unexplained weight lost (10 percent or more) during a three-month period
- Weakness and muscle wasting
- Excessive or new onset fatigue
- Increased susceptibility to infection (weakened immunity)
- Delayed wound healing
- Brittle nails and excessive hair loss
- Excessively dry and flaky skin

chewing, swallowing, and/or preparing their own food may suffer from inadequate nutrient intake, or “undernutrition”. This could ultimately lead to excessive weight loss and malnutrition. However, someone who has extensive GI involvement may eat enough food, but still be unable to absorb the nutrients properly. This results in specific vitamin or mineral deficiencies, with or without obvious symptoms.

It is important for everyone with scleroderma to have his or her nutritional status monitored regularly and to eat healthy foods from all the different food groups (as tolerated) every day. Substantial weight loss during a three-to-six-month period could indicate inadequate nutrient and calorie intake. Measuring your weight at home at regular intervals is a simple step toward monitoring your malnutrition risk.

Your health care team may perform these laboratory tests to diagnose malnutrition:

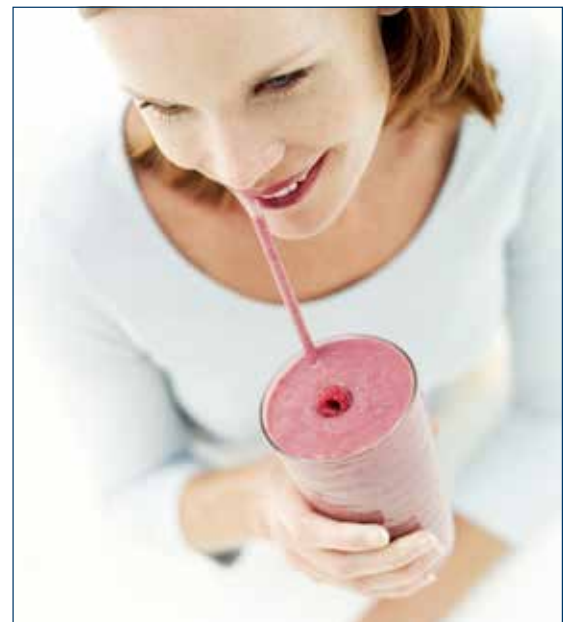
- **Protein malnutrition:** Blood tests to assess total protein, serum albumin and serum pre-albumin.
- **Specific vitamin/mineral deficiencies:** Blood tests to assess serum hemoglobin, iron, ferritin, total iron-binding capacity, zinc, vitamin D, folate, and vitamin B-12.
- **Small bowel bacterial overgrowth:** Blood tests to assess serum folate, carotene, and/or vitamin D

levels along with a hydrogen/lactulose breath test.

If you are eating less due to problems chewing or swallowing, try these suggestions:

- Blend fresh fruits and vegetables into juice.
- Make homemade smoothies using fruit, vegetables, yogurt, 2-percent milk, nut butter, ground flaxseeds, chia seeds, and/or unsweetened protein powder.
- Include soft, moist protein sources during meals and snacks such as cottage cheese (if tolerated), scrambled eggs, yogurt, fish, chicken with gravy, ground meats, and creamy or cheesy casseroles.

If you have lost an excessive amount of weight, consider the fol-



lowing to help restore weight and nutritional status:

- Have your doctor rule out small bowel bacterial overgrowth and gastroparesis.
- Liberally add sources of healthy fats to your diet such as olive, coconut and peanut oils; nuts, seeds and nut butters; avocado; fatty fish; and oil-based salad dressings.
- Make smoothies with fruits, vegetables, and high protein/calorie ingredients such as full fat yogurt, almond or peanut butter, protein powder, and avocado.
- Include a high-protein and high-calorie liquid nutrition supplement (such as Ensure® Plus or Boost Plus®) between meals one to three times per day. If you are unable to tolerate those options, try Boost Breeze®, a high protein juice-based alternative.
- Eat every two hours to maximize calorie and nutrient intake.

#### GENERAL DIET RECOMMENDATIONS

- Eat small meals frequently – every three to four hours. If you have lost an excessive amount of weight or only can eat small amounts at a time, consider eating every two hours to maximize nutrient intake.
- Choose fresh, whole, minimally processed foods, without preservatives, artificial ingredients or hydrogenated oils. If there are “chemical” sounding names in the ingredient list, avoid it. In general, the shorter the ingredient list, the better.
- Add antioxidant rich, anti-inflammatory herbs and spices, such as basil, rosemary, oregano, cinnamon, ginger, paprika, cayenne, turmeric and curry powder, liberally to foods.
- Cut down on added sugars. (Natural sugar found in fruit, milk and yogurt is not a concern unless it causes GI distress.) Check ingredient lists for stealthy terms indicating added sugar such as sucrose, evaporated

cane juice, fructose, brown rice syrup, honey, agave nectar, molasses, corn syrup and maple syrup.

- Consider taking an over-the-counter multi-vitamin or mineral supplement containing 15 mg zinc; 10 to 18 mg iron; vitamins A, D, E, K, folate and B-12. If specific nutrient deficiencies have been identified, extra supplementation may be required. If you have bloating or distention, taking a probiotic supplement such as Align® or Culturelle® may help restore intestinal function and alleviate symptoms.
- Drink fresh, filtered water that has never been exposed to plastic. Use a water filtration system at home and drink only from glass or stainless steel containers. Aim to drink half your body weight in ounces of water each day. For instance, a 150-pound person should drink 75 ounces of water daily.

#### Low FODMAP Food Guide

To resolve problematic gastrointestinal symptoms such as severe gas, bloating, discomfort, diarrhea,



and/or constipation, consider removing foods containing wheat (gluten) or dairy (lactose) from your diet, one food item at a time. These foods often are difficult to digest. If removing wheat and/or dairy products does not provide relief, starting a low FODMAP diet may prove beneficial.

FODMAPs are sugars and other carbohydrates found in a variety of foods that tend to be poorly digested and absorbed by the gut. These components are easily fermented by bacteria in the intestine, and can cause abdominal pain, gas, bloating, diarrhea and/or constipation. Aggravating gastrointestinal symptoms often resolve when foods rich in FODMAP's are removed from the diet. Be sure to check ingredient lists on all foods.

## FODMAP

*stands for:*

**F**ermentable

**O**ligosaccharides (fructans and galactans)

**D**isaccharides (lactose)

**M**onosaccharides (excess fructose in a food)

**A**nd

**P**olyols (sugar alcohols like sorbitol, maltitol, mannitol, xylitol and isomalt)

FOOD GROUP	SERVING SIZE	CHOOSE	AVOID	SUGGESTIONS
Fruit 2 to 3 servings per day	1 small whole fruit 1 cup pieces (melon, grapes, berries) 1/4 dried (raisins, cherries) 1/2 cup canned	All varieties in deep colors of the rainbow: green, red, orange, yellow, purple and blue	Those that cause excessive gas, bloating or GI discomfort. <i>*See low FODMAP diet for details.</i>	Choose organic as often as possible. Choose fresh and frozen instead of canned fruits. Eat only one serving at a time to limit GI distress.
Vegetables 5 to 7 servings per day	1 cup raw, chopped 1 cup leafy 1/2 cup cooked	All varieties in deep colors of the rainbow: green, red, orange, yellow, purple and blue	Those that cause excessive gas, bloating or GI discomfort. <i>*See low FODMAP diet for details.</i>	Choose organic as often as possible. Choose fresh and frozen over canned vegetables.
Proteins (i.e. meat, fish, cheese, eggs, nuts, beans) aim for : 2 to 3 ounces per meal or 1 ounce per snack	2 to 3 ounces meat (size of deck of cards) 1 ounce protein equivalents: 1 egg; 1-inch cube of cheese; 1 medium slice of cheese; 1/4 cup tuna or cottage cheese; 2 tablespoons of nut butter; 1/4 cup nuts; 1/2 cup dried beans	Choose lean cuts of beef or pork, skinless chicken or turkey. A variety of fish such as wild salmon, wild cod, whitefish, or chunk light tuna Organic eggs Organic cheeses Nuts and seeds, as well as nut butters Dried beans (as tolerated)	Highly processed meats such as bacon, sausage, pepperoni, salami, hot dogs, bologna, corned beef and pastrami Breaded and deep-fried fish, chicken, pork and beef	Choose organic or grass-fed meat and cheese as often as possible. Remove extra fat and skin from meats before cooking. For healthy Omega-3 oils, eat 8 to 12 ounces of fatty fish, such as salmon, every week.
Milk/Dairy 2 to 3 servings per day	1 cup milk 6 to 8 ounces yogurt	Low-fat or fat-free varieties Try Greek-style yogurt for extra protein	Avoid dairy products with lactose. This may help resolve problematic GI symptoms. <i>*See low FODMAP diet for details.</i>	Choose organic as often as possible. Try goat cheese and yogurt to limit GI distress.
Whole Grains 3 to 6 servings per day	1 slice bread 1/2 cup pasta or rice 3/4 cup cereal 1/2 cup cooked cereal 4 to 6 crackers	100 percent whole grains, such as minimally-processed whole wheat bread and cereals, barley, quinoa and oats	Avoiding gluten-containing grains such as wheat, rye, and barley may improve GI symptoms. <i>*See low FODMAP diet for details.</i>	Look for labels that read "100 percent whole grain." Choose foods with three grams of fiber or more per serving. Limit white and refined grain products as much as possible (many gluten-free bread products are highly refined)
Fats/Oils 1 to 2 servings per day	1 tablespoon oil 1/4 cup nuts 2 tablespoon seeds 2 tablespoon nut butter 1/8 avocado	Extra virgin olive, peanut, avocado, and coconut oils most often. All nuts, especially almonds, walnuts, flaxseeds, pine nuts, natural peanut and almond butters.	Avoid trans fats from hydrogenated and partially hydrogenated oils. Minimize use of safflower, sunflower, grape seed, vegetable, corn and soybean oils.	Limit solid fats from butter, shortening and margarine. For healthy Omega-3 oils, eat 8 to 12 ounces of fatty fish, such as salmon or whitefish, every week.



FODMAP CATEGORY	FOODS TO AVOID* (high)	FOODS TO CHOOSE** (low)
<p><b>Oligosaccharides:</b> Fructans &amp; Galactans Fructo-oligosaccharides (FOS) Galacto-oligosaccharides (GOS)</p>	<p><b>GRAINS</b></p> <ul style="list-style-type: none"> <li>• Products containing wheat and wheat flour, such as bread, cereal, baked goods, crackers, pasta, etc.</li> <li>• Products containing rye, such as bread and crackers</li> <li>• Barley</li> </ul> <p><b>FRUITS/VEGETABLES</b></p> <ul style="list-style-type: none"> <li>• Banana (very ripe), grapefruit, persimmon, plum, dried figs, dates, nectarine, peach, watermelon</li> <li>• Asparagus, artichokes, peas, leeks, shallots, onion, scallions, garlic</li> </ul> <p><b>BEANS (LEGUMES)</b></p> <ul style="list-style-type: none"> <li>• Baked beans, black beans, kidney, pinto, navy, fava, split peas</li> <li>• Soy beans, soy milk, soy flour</li> </ul> <p><b>NUTS</b></p> <ul style="list-style-type: none"> <li>• Cashew and pistachios</li> </ul> <p><b>OTHER</b></p> <ul style="list-style-type: none"> <li>• Additives such as inulin, chicory root, and FOS, often found in snack bars, yogurt, and ice cream (check ingredient list)</li> <li>• Carob</li> </ul>	<p><b>GRAINS</b></p> <ul style="list-style-type: none"> <li>• Corn tortillas, grits, oatmeal, unsweetened corn and rice cereals, rice, millet, quinoa, buckwheat, soba noodles, polenta, sourdough bread, and other products derived from these grains (quinoa or rice noodles etc.)</li> <li>• Foods labeled "gluten-free" (GF) are usually well-tolerated, such as GF bread and pasta (look for "whole grain")</li> </ul> <p><b>FRUITS/VEGETABLES</b></p> <ul style="list-style-type: none"> <li>• Celery, spinach, potatoes, carrots, corn, leafy greens (spinach, lettuce, kale, arugula, collard), radish, tomato, green beans, zucchini, olives, pickled beets, summer squash, spaghetti squash</li> </ul> <p><b>BEANS (LEGUMES)</b> (limit portion)</p> <ul style="list-style-type: none"> <li>• ¼ cup drained/rinsed garbanzo beans</li> <li>• 1/2 cup drained/rinsed lentils</li> </ul> <p><b>NUTS/SEEDS</b></p> <ul style="list-style-type: none"> <li>• Almonds, peanuts, pecans, macadamia, pine nuts, walnuts, sunflower seeds, chia seeds, sesame seeds, pumpkin seeds</li> </ul>
<p><b>Disaccharides:</b> Lactose</p>	<ul style="list-style-type: none"> <li>• Cow, sheep, and goat milk</li> <li>• Standard milk products such as yogurt, pudding, ice cream, custard</li> <li>• Cottage cheese and ricotta cheese</li> <li>• Milk chocolate</li> </ul>	<ul style="list-style-type: none"> <li>• Lactose-free milk and milk products</li> <li>• Almond, rice, and coconut milks and yogurts</li> <li>• Hard cheeses such as cheddar, Colby, Swiss, provolone, mozzarella, parmesan</li> <li>• Soft cheeses such as brie, goat, feta</li> <li>• Dark chocolate</li> </ul>
<p><b>Monosaccharides:</b> Contain excess fructose</p>	<p><b>FRUITS/VEGETABLES</b></p> <ul style="list-style-type: none"> <li>• Apple, pear, watermelon, mango, cherries, boysenberry, dates, fresh figs</li> <li>• Fruit juices containing apple or pear juice</li> <li>• Asparagus, sugar snap peas, Jerusalem artichoke, sun-dried tomatoes</li> </ul> <p><b>SWEETENERS</b></p> <ul style="list-style-type: none"> <li>• High fructose corn syrup, corn syrup solids, honey and agave</li> </ul>	<p><b>FRUITS</b> (Limit portion to 1 cup)</p> <ul style="list-style-type: none"> <li>• Berries such as blueberry, cranberry, raspberry, strawberry</li> <li>• Citrus fruits such as kumquat, lemon, lime, mandarin, clementine, orange and tangelo</li> <li>• Other: small, firm banana, cantaloupe, honeydew, kiwi, passion fruit, star fruit, grapes, papaya, plantain, pineapple and rhubarb, 1 Tbsp. dried raisins/cranberries</li> </ul> <p><b>SWEETENERS</b></p> <ul style="list-style-type: none"> <li>• White sugar, brown sugar, vanilla, pure maple syrup, rice malt syrup, cocoa powder</li> </ul>
<p><b>Polyols</b> Sugar alcohols, such as sorbitol, mannitol, xylitol, isomalt</p>	<p><b>FRUITS/VEGETABLES</b></p> <ul style="list-style-type: none"> <li>• Apricot, apple, blackberry, nectarine, plum, peach, pear, apple, watermelon, cherries, and prunes</li> <li>• Cauliflower, mushrooms, snow peas, and large amounts of avocado, butternut squash, and sweet potato</li> <li>• Foods labeled "diet" or "sugar free", such as snack bars, gum, and baked goods, often contain sugar alcohols (check ingredient list)</li> </ul>	<p><b>FRUITS</b> (limit portion)</p> <ul style="list-style-type: none"> <li>• Ripe guava, small firm banana, berries, and other fruits listed above</li> </ul> <p><b>VEGETABLES</b> (limit portion)</p> <ul style="list-style-type: none"> <li>• 1/8 avocado; ¼ cup butternut squash, ½ cup sweet potato</li> <li>• Small amounts of foods containing polyols may be tolerated</li> </ul>

\*Some foods may be tolerated in small amounts

\*\*Foods absent from the list may or may not cause distress

A one-on-one consultation with a dietitian is recommended to ensure that this restrictive low FODMAP diet will adequately meet your nutritional needs. To find a dietitian in your area, visit [www.eatright.org](http://www.eatright.org).

## Managing Specific Scleroderma-Related Issues

- **Reflux or heartburn:** Eat small, frequent meals to avoid overfilling your stomach. Avoid eating two to three hours before bedtime. Avoid foods that may aggravate symptoms such as citrus fruits, tomato products, greasy fried foods, coffee, garlic, onions, peppermint, gas-producing foods (such as raw peppers, beans, broccoli or raw onions), spicy foods, carbonated beverages and alcohol. If you carry extra weight around your midsection, weight loss also may improve your symptoms. Use a sleep wedge or elevate the head of your bed to raise your head and torso to prevent regurgitation of stomach contents into airways.
- **Decreased GI motility and constipation:** Exercise, such as walking, helps move food through the digestive tract. Eat a high fiber diet including 100 percent

whole grains, fruits and vegetables. Take a daily probiotic supplement (such as Align® or Culturelle®) and/or eat yogurt with active cultures regularly. Drink plenty of plain, filtered water throughout the day to stay hydrated.

- **Inflammation:** Choose deeply colored fruits and vegetables to increase antioxidant intake, especially dark green, deep yellow, orange, red, purple and blue. Eat fatty fish, ground flaxseeds and walnuts for Omega-3 fatty acids. Eat vitamin E-rich foods such as nuts, seeds and extra virgin olive oil. Consider taking a 1000 IU vitamin D3 (cholecalciferol) tablet with your fattiest meal (to allow for better absorption).
- **Fatigue:** Eat small, frequent meals to provide continuous energy and keep blood sugar from dipping too low. Increase fluid intake. Participate in 30 to 60 minutes of moderate daily exer-

cise such as walking, bike riding, pool exercise, Pilates, yoga, Qi Gong or Tai Chi. Sleep for seven to eight hours each night. If iron levels are low, which is typical of someone with chronic disease, discuss additional iron supplementation with your doctor. If you currently take an iron pill, take it with juice containing vitamin C to allow for better absorption.

- **Poor circulation/Raynaud Phenomenon:** Exercise will increase circulation to areas suffering from limited blood flow. If you have finger ulcers, eat animal sources of protein with zinc and iron (such as beef and pork) to improve wound healing.
- **Tight, thickened skin:** Eat foods rich in vitamin E such as nuts, seeds, wheat germ, and avocado, olive, and peanut oils; consider taking 5 mg (5000 mcg) biotin supplement, which may help skin and nails.

*Please consult a Registered Dietitian (RD) before dramatically changing your diet. Visit [www.eatright.org](http://www.eatright.org) to find an RD in your area.*

## The Scleroderma Foundation's mission is three-fold:

- ☞ To help patients and their families cope with scleroderma through mutual support programs, peer counseling, physician referrals, and educational information.
- ☞ To promote public awareness and education through patient and health professional seminars, literature, and publicity campaigns.
- ☞ To stimulate and support research to improve treatment and ultimately find the cause and cure of scleroderma and related diseases.



300 Rosewood Drive, Suite 105  
Danvers, MA 01923  
Phone: 978-463-5843  
Fax: 978-463-5809

Info Line: 800-722-HOPE (4673)

Email: [sfinfo@scleroderma.org](mailto:sfinfo@scleroderma.org)

Website: [www.scleroderma.org](http://www.scleroderma.org)

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