

Food-Drug Interactions: Corticosteroids

Corticosteroids, also known as steroids, are a group of hormones used to control problems with swelling and the body's immune system. They also are involved in balancing the body's water, salt and potassium.

When taking corticosteroids, like prednisone, for more than a month, you may retain water. You may also gain weight and have an increased appetite. Long-term use may also weaken your bones.

Do I really need to watch my salt (sodium) intake?

A high salt intake can increase water retention and increase loss of calcium in your urine.

To prevent "holding" water, decrease your salt (sodium) intake.

- Avoid salt and salty foods. If it tastes salty it has too much salt!
- Limit the amount of processed foods you eat, such as frozen dinners, packaged entrees, and canned soups.
- Restrict your intake of salted or smoked meat or fish. Avoid lunch/deli meats, bratwurst, and bacon.
- Try herbs and spices such as garlic or onion powder instead of garlic salt or onion salt. Use salt free spice mixes and marinades such as Mrs. Dash®.
- Read food labels to pick the products lowest in salt.
- Be careful using condiments that are high in salt like ketchup, pickles, relish and sauerkraut.

Will my weight change?

You may feel hungrier while taking corticosteroids. If you do not want to gain weight, you may have to control the number of calories and fat you eat. Eat only at mealtimes and limit your portion sizes. If you are still hungry, fill up on vegetables and fresh fruits. Try eating a tossed salad with a low calorie/low sodium dressing before lunch and dinner to help slow down your intake of other high calorie foods.

How can I prevent problems with my bones?

To prevent bone weakness and fractures you will need to increase your calcium and Vitamin D intake. Steroids increase bone loss, decrease your body's ability to make bone tissue, and decrease the amount of calcium your body can absorb. Exercise helps keep your bones strong. Get out and walk to help keep your bones and muscles in good shape.

What are good food sources of calcium and Vitamin D?

Milk and milk products like yogurt, aged cheeses, and milkshakes are the best food sources of calcium and Vitamin D. Your doctor or dietitian may also suggest that you take extra calcium with Vitamin D or a multivitamin. This is especially important if you do not tolerate milk or dairy products. Calcium fortified orange juice can also increase your intake of calcium. Liquid supplements (Ensure®, Boost®, Carnation Breakfast Essentials®) are good sources of calcium and Vitamin D but may contain more calories than you need.

Food Sources of Vitamin D

Food	Amount	Vitamin D International Units
Cod Liver Oil	1 teaspoon	455
Salmon	3 ounces	309
Mackerel	3 ounces	296
Shitake mushrooms, dried	4	249
Tuna, canned	3 ounces	200
Sardines, canned in oil and drained	1 ¾ ounces	250
Milk (whole, reduced fat or nonfat) Vitamin D fortified	8 ounces	98
Soy Milk, fortified with Vitamin D	8 ounces	100
Shiitake Mushrooms, fresh	3.5 ounces	100
Orange Juice, fortified with Vitamin D	4 ounces	50-65
Cereal, fortified	1 serving (¾-1 cup)	40-50
Egg yolk from hens fed Vitamin D	1	20
Liver, beef	3 ounces	13
Cheese, Swiss	1 ounce	12

How much protein do I need?

While taking corticosteroids, you need to make sure you eat enough protein. Milk, meat and poultry, fish, eggs, peanut butter, nuts, tofu, dried beans or peas are high in protein. If your kidneys are working well, you should get at least 2-3 meat servings a day.

Will eating sugar cause problems?

In some patients, long-term use of corticosteroids raises blood sugar levels. If your blood sugar level is above normal, talk with your dietitian or doctor. They may suggest diet changes or insulin therapy. You may be able to improve your blood sugar levels by avoiding sugar-containing beverages and fruit juices. Avoid eating more calories than your body needs.

What do I need to know about Potassium?

You may need more potassium in your diet while taking prednisone. These are good sources of potassium:

- Bananas
- Oranges and orange juice
- Cantaloupe
- Carnation Breakfast Essentials®
- Beans (chili, kidney, refried, etc.)
- Potatoes
- Boost®
- Prunes
- Milk
- Tomatoes, tomato juice/V-8, tomato sauce®
- Winter squash

Is it okay to use Dietary Supplements, such as, herbal products?

Some dietary supplements can damage the liver, interact with your other medicines or cause other side effects. Be sure to tell your doctor if you are taking anything in addition to your medicines. Let them know about all over-the-counter medicines and diet supplements.

Vitamin D Requirements and Supplements

- Standard vitamin supplements usually provide 400 International Units of Vitamin D. This level meets the needs of most people.
- However, during treatment with steroids, it is advised that most patients take 800 International Units of Vitamin D per day.
- Patients over 70 years old should take 1000 International Units Vitamin D per day.

Liquid Vitamin D³ (Cholecalciferol) Supplements

Supplement	Vitamin D (International Units=IU)	Comments
Ddrops [®]	400, 1000 & 2000/drop	www.carlsonlabs.com Gluten-free
Enfamil D-Vi-Sol [®]	400 IU/drop	Gluten-free
Life Time Liquid Vitamin D3	1000 IU & 4000 IU (High Potency) per Tablespoon	www.iherb.com No gluten, milk, soy, or egg. Contains agave nectar
Wellesse Liquid Vitamin D3	500 IU/teaspoon	Berry Flavored No artificial flavors/colors
Carlson for Kids Cod Liver Oil -Lemon & Green Apple Flavors	200 IU Vitamin D 127 mcg RAE Vitamin A 3.3 IU Vitamin E 550 mg Omega-3 (DHA/ARA/ALA) Per ½ teaspoon	www.carlsonlabs.com Free of detectable levels of mercury, cadmium, lead, PCB's and 28 other contaminants Note: The Fish Oil version has Vitamin A & D removed

Vitamin D³ (Cholecalciferol) Supplements

Supplement	Vitamin D3 (International Units=IU)	Comments
Nature Made D3	2000 IU per soft gel	No gluten, artificial flavors, or colors
Freeda Kosher Vitamin D3 Strawberry Flavor	1000 IU per gummy	www.freedavitamins.com Kosher. No eggs, wheat (gluten), milk, peanuts, tree nuts, soy, fish or shellfish.
Kirkman Labs	400 and 1000 IU per capsule	www.kirkmangroup.com No gluten, sugar, starch, wheat, casein, milk, corn, preservative, yeast, gelatin, flavoring or color. Hypoallergenic
Nordic Naturals Wild Berry Flavor	1000 IU per gummy	Vegetarian. No gluten, milk, artificial flavors or colors.
Nordic Naturals Kids Vitamin D3 Gummies Wild Watermelon Splash Flavor	400 IU per gummy	Vegetarian. No gluten, milk, artificial flavors or colors.
Solar D Gems Lemon Flavor	2000 & 4000 IU per soft gel 115 mg Omega 3's 90 IU Vitamin A	www.carlsonlabs.com Contains cod liver oil

What do I need to know about Calcium Supplements?

- Ask your pharmacist to assist you in finding a suitable supplement.
- Calcium carbonate requires stomach acids for absorption. It should be consumed with food at the end of the meal. Calcium carbonate should not be used if you are taking antacid medicines. Some people have increased gas, bloating or constipation with larger amounts.
- Calcium citrate can be taken between meals. Calcium citrate contains half the amount of elemental calcium as calcium carbonate. The pills will be larger to provide the same amount of calcium.
- Your body can only absorb 500-600 mg of Calcium at a time. If your doctor wants you to take 1000 mg of calcium per day, divide the dose and take 500 mg twice daily for maximum absorption.
- Do **not** use bonemeal or dolomite as a source of calcium. They may contain lead.
- Look for “USP” on the label or “United States Pharmacopoeia” which have standards that require the supplement contain less than 3 parts per million of lead. It also means the supplement has been tested and will dissolve properly in normal stomach acid.

Calcium Requirements

Children Age	Adequate Intake	While Taking Prednisone*
0-6 months	200 mg	400 mg
6-12 months	260 mg	600 mg
1-3 years	700 mg	800 mg
4-8 years	1000 mg	1200 mg
9-18 years	1300 mg	1500 mg

Adults Age (years)	Adequate Intake	While Taking Prednisone
19-50	1000 mg	1500 mg
51-70	1200 mg	1500 mg
>70	1200 mg	1500 mg

*Per pharmacy 11/10/23: “there aren’t universal calcium dosing recommendations for patients receiving chronic steroids. There is a very wide range that is acceptable, so it’s probably best to leave out the dosing recommendations in the HFFY.”

Calcium Supplements [Note: some also contain Vitamin D]

Name	Elemental Calcium (mg)	Vitamin D3 (International Units = IU)	Form of Calcium	Comments
Caltrate 600+D3	600/ Tablet	800	Calcium Carbonate	No gluten ingredients; but not tested
Caltrate 600+D Plus Minerals (Chewable or Tablets)	600/ Chewable	800	Calcium Carbonate	No gluten ingredients; not tested; chewable contains soy
Citracal Maximum Plus	650/Caplet	1000	Calcium Citrate	No gluten ingredients, but not tested
Citracal Petites + D3	400/ Tablet	500	Calcium Citrate	No gluten ingredients, but not tested

Kirkman Calcium Magnesium Liquid	312 mg Calcium/ 2 teaspoons	40	Calcium Carbonate	www.kirkmangroup.com 195 mg Magnesium Gluten/Allergen-Free
Kirkman Chewable Calcium	250/ Chewable	80	Calcium Carbonate	www.kirkmangroup.com
Kirkman Calcium + D3 Powder Unflavored	1000/ 1/2 teaspoon	175	Calcium Carbonate & Citrate	www.kirkmangroup.com Gluten/Allergen-Free
Tums Regular	500/ Chewable	0	Calcium Carbonate	Gluten-Free
Tums Extra Strength	750/ Chewable	0	Calcium Carbonate	Gluten-Free
Tums Smoothies	750/	0	Calcium	Contains Gluten, Milk, and

	Chewable		Carbonate	Soy
Tums Ultra 1000	1000/ Chewable	0	Calcium Carbonate	Gluten-Free
Viactiv Calcium Soft Chews Milk Chocolate	650/ Soft Chewable	500	Calcium Carbonate	40 mcg Vitamin K Flavors: Milk Chocolate, Caramel Gluten-Free

If you are a UW Health patient and have more questions, please contact UW Health at one of the phone numbers listed below. You can also visit our website at www.uwhealth.org/nutrition

Nutrition clinics for UW Hospital and Clinics (UWHC) and American Family Children’s Hospital (AFCH) can be reached at: **(608) 890-5500**

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person’s health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 11/2023 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#5332.