Food & Supplement Medication Interactions

Nutrition and Dietetic Educators and Preceptors
of the Academy of Nutrition and Dietetics

EDITORS:
Lauren Roberson, PhD, RDN, LD
Avani Patel, PharmD, RDN, MDN, LD

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Contents

Introduction

This resource provides notable and documented interactions between food, including some dietary supplements, and medications (also referred to as drugs) that nutrition practitioners are likely to encounter in a clinical setting. The information provided is not all-inclusive or exhaustive as the availability of medications is constantly changing and some have limited or no effects on nutrition status. Additionally, research on adverse effects of medications impacting nutrition status is evolving. Information presented here is reflective of the research available at the time of publication. Other sources may need to be consulted for some medications and for dietary supplements. This resource is intended to be used in conjunction with other clinical practice resources.

How to Use This Guide

Over 560 medications are included and listed alphabetically by generic name. The following information is presented as it applies to each medication.

- **DRUG NAME:** generic name of drug currently available in the US
- **DRUG CLASS:** category (or categories) in which drugs are classified according to their mechanism of action and intended effect
- **COMMON USES:** conditions for which the drug is most commonly prescribed
- **DIET CONSIDERATIONS:** information related to timing of taking medications in relation to meals and whether intake of specific substances (eg, grapefruit products, caffeine, alcohol), and/or specific macronutrient or micronutrients may need to be adjusted, limited, or avoided
- **FOOD (OR NUTRIENT) DRUG INTERACTIONS:** brief explanation of how specific foods, ingredients, or macronutrient or micronutrients can either increase or decrease drug effects (and side effects), or how drugs may impact macronutrient or micronutrient status (eg, some drugs can increase micronutrient loss)
- **DRUG-SUPPLEMENT INTERACTIONS:** information, as available, related to dietary and herbal supplements, ranging from food-based (eg, garlic and maitake) to vitamin and mineral supplements to substances used recreationally or for medical purposes (eg, cannabis, products containing cannabinoids, mushrooms, and melatonin), and their effects on increasing or decreasing a drug's effects (Note that cannabis listed in this resource refers to the oral form and it is considered a controlled substance and not a dietary supplement.)

  Guidance related to supplements is included only if there was sufficient evidence to document an interaction, such as in UpToDate. Due to limitations in published research on dietary supplements and variability in composition of dietary supplements, clinical data is often insufficient to make conclusive judgments about the incidence and severity of potential drug-supplement interactions. The registered dietitian nutritionist (RDN) should consult available resources on specific dietary supplements and discuss findings with the health

care team to make informed decisions regarding use of dietary supplements in conjunction with certain medications.

- **NUTRITION-RELATED SIDE EFFECTS:** the most common side effects that may influence nutrition status observed in adult patients (unless otherwise noted) taking each drug

  This includes side effects related to gastrointestinal function, organ function (cardiac, renal, hepatic), appetite, weight, hydration status, laboratory tests, and blood levels of specific vitamins or minerals. Percentages associated with various side effects are provided for some drugs; these reflect documented prevalence of the side effect (based on available data from UpToDate and peer-reviewed studies).
- **MONITOR:** lab tests that should be monitored as well as anthropometric data, vitals (eg, blood pressure), and related signs and symptoms that should be monitored by the RDN in the treatment of patients who have been prescribed the given drug

All information has been gathered from peer-reviewed sources, which may include professional databases, articles, book chapters, or website content. Refer to the bibliography at the back of this resource for more details.

NOTE: The term drug can refer to any chemical substance that affects the functioning of the body, typically used for therapeutic, diagnostic, or recreational purposes, whereas medication specifically refers to a drug that is used for therapeutic purposes to prevent, treat, or manage medical conditions or symptoms. Thus, all medications are considered drugs, while not all drugs are medications. Throughout this resource, both drug and medication terminology are used interchangeably to describe any substance being used for therapeutic or diagnostic purposes and under the supervision of a health care professional.

Defining Food and Supplement Medication Interactions

Foods (including ingredients and nutrients) and supplements can enhance, delay, or decrease the absorption of some drugs, and drugs can have a wide range of effects on food intake, nutrient metabolism, and nutritional status. Consequently, an interaction occurs when a food (or nutrient) affects the metabolism or absorption of a drug, or when a drug affects the absorption, metabolism, or excretion of a nutrient. These interactions can alter the effectiveness of a medication, leading to increased risk for toxicity or significantly reduced therapeutic effect.[1,2] Drug-food/nutrient interactions can also affect nutrient intake, absorption, and metabolism and the overall nutritional health of an individual.

Abacavir

Antiretroviral, nucleotide reverse transcriptase inhibitor (NRTI)

COMMON USES HIV infection

DIET CONSIDERATIONS Take with or without food.

Oral solution contains sorbitol; consider other dietary sources of sugar alcohols to prevent GI side effects.

NUTRITION-RELATED SIDE EFFECTS

- Nausea, 7%–19%
- Diarrhea, 7%
- Gastritis, <6%
- Elevated serum amylase, 2%–4%
- Vomiting, 2%
- Hepatomegaly with steatosis
- Lactic acidosis
- Mild hyperglycemia (more common in pediatric pts)

Abdominal discomfort or diarrhea may occur in pts who are sensitive to fructose.

MONITOR ***Lab tests:*** CBC, fasting lipid panel, liver function (AST, ALT)

Abatacept

Selective T-cell costimulation blocker, antirheumatic (disease modifying)

COMMON USES aGVHD prophylaxis, psoriatic arthritis, rheumatoid arthritis

DRUG–FOOD (OR NUTRIENT) INTERACTIONS Powder for injection may contain maltose; may result in falsely ↑ BG on day of infusion.

NUTRITION-RELATED SIDE EFFECTS

- Hypermagnesemia, 18% when prescribed for aGVHD
- Nausea, ≥10% when prescribed for rheumatoid arthritis; severe nausea in 5% when prescribed for aGVHD
- Diarrhea, severe, 6% when prescribed for aGVHD
- Dyspepsia, 6%
- Severe diverticulitis

MONITOR ***Lab tests:*** Mg, kidney function (Cr, GFR), anemia (Hgb, Hct)
Other: GI symptoms, BP, temperature in pts with aGVHD

Acamprosate

GABA agonist/glutamate antagonist

COMMON USES Moderate to severe alcohol use disorder

DIET CONSIDERATIONS Take with or without food. Avoid alcohol.

DRUG–FOOD (OR NUTRIENT) INTERACTIONS Alcohol ↓ drug efficacy.

NUTRITION-RELATED SIDE EFFECTS

- Diarrhea, 17%
- Anorexia, 5%
- Flatulence, 4%
- Nausea, 4%
- Abdominal pain, ≥1%
- ↑ Appetite, ≥1%
- Constipation, ≥1%
- Dysgeusia, ≥1%
- Dyspepsiaa, ≥1%
- HTN, ≥1%
- Peripheral edema, ≥1%
- Vomiting, ≥1%
- Wt gain, ≥1%
- AKI
- Angioedema

MONITOR ***Lab tests:*** monitor for nutrient deficiencies (eg, folate, thiamin, and vitamins A, B6, B12, D, E, and K)
Other: wt (baseline), kidney function (baseline), fluid and electrolyte status

DRUG–FOOD (OR NUTRIENT) INTERACTIONS Alters absorption of water and electrolytes.

NUTRITION-RELATED SIDE EFFECTS

- Bitter taste
- Cramps
- Diarrhea
- Nausea
- Throat upset

MONITOR BG, electrolytes (K)

Dofetilide

Antiarrhythmic agent, class III

COMMON USES Atrial fibrillation, atrial flutter

DIET CONSIDERATIONS Can be taken with or without food.

Avoid grapefruit and related citrus fruits and juices.

DRUG–FOOD (OR NUTRIENT) INTERACTIONS Grapefruit products and related citrus fruits and juices can ↑ drug serum concentration and risk for serious side effects.

NUTRITION-RELATED SIDE EFFECTS

- Nausea, 5%
- Abdominal pain, 3%
- Diarrhea, 3%
- Edema, ≤2%
- Hepatotoxicity, ≤2%

MONITOR *Lab tests:* kidney function (Cr), K, Mg

Dolutegravir

Antiretroviral, integrase inhibitor

COMMON USES HIV-1

DIET CONSIDERATIONS Take with or without food.

Take 2 h before or 6 h after oral Fe, Ca, Zn, Se, or Mg salt supplements (including MVI/mineral products with these ingredients).

DRUG–SUPPLEMENT INTERACTIONS MVI with mineral products with vitamins A, D, E, or K, folate, Fe, Se, Ca, Mg, or Zn may ↓ serum drug concentration.

St John's wort may ↓ drug serum concentration.

NUTRITION-RELATED SIDE EFFECTS

- ↑ Lipase, 2%–11%
- Hyperglycemia, <9%
- ↑ AST, 1%–5%
- ↑ ALT, 1%–4%
- Abdominal distress, <2%
- Abdominal pain, <2%
- Diarrhea, <2%
- Flatulence, <2%
- Vomiting, <2%

MONITOR *Lab tests:* lipids, aminotransferase levels, BG, liver function (ALT, AST)

Donepezil

Acetylcholinesterase inhibitors

COMMON USES Alzheimer dementia

DIET CONSIDERATIONS Take with or without food and full glass of water.

Limit caffeine.

DRUG–FOOD (OR NUTRIENT) INTERACTIONS Caffeine can ↑ risk for side effects.