

Medication Interactions

Nutrients such as vitamins and minerals in food affect how drugs work in the body. Interactions between foods and drugs can affect nutritional status. Interactions can also change the effect of a drug or cause serious side effects. Liver enzymes in the body affect how the body uses medications too. Sometimes changing your meal plan can lessen medication side effects or harmful drug effects.



Things Affecting Prescribed Medications

- ❶ Age
- ❷ Alcohol intake
- ❸ Cytochrome P450 liver (CYP) enzymes
- ❹ Nutrients and chemicals
- ❺ Food
- ❻ Gender
- ❼ Genetic factors (Inherited genes)
- ❽ Other drugs

Certain compounds from common foods react with your liver's CYP enzymes. They can compete with protease inhibitors for clearance. Other medications, recreational substances, herbs and alcohol also compete with drugs for clearance. Avoid alcohol and herbal supplements, especially St. John's Wort and garlic. This will help to limit side effects or harmful drug effects when taking prescribed medication. See your doctor, pharmacist or a knowledgeable nutritionist to learn about the CYP enzymes that affect the medications you take. These health care providers can develop a time schedule noting medications and food considerations.

Generally, all medications for HIV can cause Diarrhea; Fatigue; Fat redistribution/Lipodystrophy (↑ lipids, ↑ glucose/DM (increased risk of glucose abnormalities such as diabetes, etc.); Gastrointestinal effects (heartburn, stomach upset/pain, etc.); Headache; Liver changes (abnormal labs, hepatitis, liver disease progression, etc.); nausea, and vomiting.

Following these tips can lessen medication side effects or harmful drug interactions.

1. Tell your doctor about every drug and dietary supplement that you take.
2. Follow your doctor's orders on when and how to take your medications.
3. When getting medications, ask for the package insert and read it carefully.

Resources: • HIV ReSources newsletters and updates. URL: www.hivresources.com • AIDS MEDS.com. URL: <http://aidsmeds.com>
• Cytochrome P450 Drug Interaction Table. URL: www.drug-interactions.com • Pronsky ZM, Meyer SA, Fields-Gardner C. HIV Medications Food Interactions (And So Much More), 2nd Ed;2001. Food-Medication Interactions: Birchrunville, PA 19421-0204. URL: www.foodmedinteractions.com

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Meal Plan And Medication Considerations

MEDICATION	SIDE EFFECTS	CONSIDERATIONS
Combination Drugs: <i>Combivir (3TC+ AZT); Epzicom (3TC+ABC); Kaletra (Lopinavir+Ritonavir) See Ritonavir; Trizivir (TRZ/AZT+3TC+ABC)</i>		
Fusion Inhibitor: <i>Enfuvirtide, T20 (Fuzeon):</i> Other side effects– asthenia, fever, insomnia, lactic acidosis, peripheral neuropathy, and irritation at injection site.		
Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTI): Other side effects- gas and loss of appetite.		
<i>Rescriptor (Delavirdine)</i>	constipation, M	Take without food or with a light snack . Do not take antacids with magnesium or aluminum within two hours.
<i>Sustiva (Efavirenz)</i>	fever, pancreatitis, T	Take on an empty stomach or with a low fat snack. Take at bedtime to lessen side effects.
<i>Viramune (Nevirapine)</i>		Snack limits GI upset.
Nucleoside/Nucleoside Reverse Transcriptase Inhibitors (NRTI): Other side effects– anemia, appetite loss, lactic acidosis, pancreatitis, ↓ B12, copper, zinc and carnitine.		
<i>Emtriva (FTC, emtricitabine)</i>		Snack limits GI upset.
<i>Epivir (3TC/Lamivudine)</i>	fever	Snack limits GI upset.
<i>Hivid (ddC/Zalcitabine)</i>	constipation, M	Take on an empty stomach. Do not take antacids with magnesium or aluminum within two hours.
<i>Retrovir (Zidovudine/AZT/ZDV)</i>	constipation, fever, ill feeling, T	Take on an empty stomach or with low fat food to limit GI upset.
<i>Videx/Videx EC (Didanosine/ddI)</i>	constipation, fever, gas, M, T	Take with water on an empty stomach. Do not take antacids with magnesium or aluminum within two hours. Do not mix with acidic liquid.
<i>Viread (TDF/Tenofovir)</i>	gas	Take with fatty meal . Besides St. John's Wort and garlic, avoid milk thistle.
<i>Zerit/Zerit XR (d4T/ Stavudine)</i>	fever, ill feeling, M	Snack limits GI upset.
<i>Ziagen (Abacavir/ABC)</i>	fever	Snack limits GI upset.
Protease Inhibitors: Other side effects- T		
<i>Agenerase (Amprenavir)</i>	anemia, gas, oral or peripheral paresthesia/numbing	Take on an empty stomach . Low fat food limits GI upset. Avoid grapefruit juice. Increase fluid intake. Avoid vitamin E supplements. Avoid taking antacids within two hours.
<i>Lexiva (prodrug of Amprenavir)</i>		Take with light meal and avoid vitamin E supplements.
<i>Crixivan (Indinavir)</i>	kidney pain/stone, ill feeling, loss of appetite	Take on an empty stomach or with a light snack . Avoid grapefruit juice. Drink at least 1.5 liters (48 ounces) of liquid per day.
<i>Norvir (Ritonavir)</i>	loss of appetite, oral or peripheral paresthesia/numbing	Take with a full meal to limit GI upset.
<i>Reyataz (atazanavir sulfate)</i>	asthenia, depression, lactic acidosis	Take with a light meal .
<i>Saquinavir (Fortovase-soft gel-FTV & Invirase-INV)</i>	gas, M	INV: Take within 2 hours after a full meal . Grapefruit juice increases absorption. FTV: Take with full meals to lessen side effects or if used alone. Absorbed better than INV.
<i>Viracept (Nelfinavir)</i>	gas	Take with meals. Increase fluid intake. Avoid acidic food or liquid.

KEY: **M**= Mouth/Esophageal Ulcers/stomatitis **T**= Taste alterations **GI**= Gastrointestinal **Empty Stomach:** one hour before meals, or two hours after meals. **Low Fat Food Examples:** fresh or dried fruit, cereal, skim milk, non-fat yogurt, toast with jam. **Light Snack:** less than 300 calories, less than 2 grams fat, less than 6 grams protein and less than 65 grams carbohydrate. See *Additional Food List for Crixivan (indinavir sulfate)* at URL: www.apla.org/apla/nutrition/factsheets/indlist.html. **Light Meal:** 357 calories, 8.2 grams fat, 10.6 grams protein. **Full/Fatty Meal:** meal high in fat (40-50% fat), protein (more than 40 grams protein) and calories (900-1,200 calories). **Acidic Food Examples:** apple juice, applesauce, grapefruit juice