<table>
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<tr>
<th>ASPECT OF CARE</th>
<th>NUTRITION PRACTICE GUIDELINES</th>
</tr>
</thead>
</table>
| **A. Biophysical needs are assessed and addressed.** | **1. Conduct nutritional assessment:**<br>• Review medical history, dietary intake, food intolerances, gastrointestinal symptoms, functional capacity, PMH, labs, medications, supplements and complementary therapies, and physical examination as appropriate. <br><br>**Review:**<br>• History & physical (Dx, PMH, physical exam)<br>• Anthropometrics (ht, wt, IBW, UBW, BMI, wt changes, growth failure)<br>• Biochemical (albumin, pre-albumin, electrolytes, Mg, phosphorus, cholesterol, triglyceride, HDL, LDL, AST, ALT, folate ,Vitamin D25OH, Lactic acid, C reactive protein, Total CO2, CBC, transferrin, GFR, BUN, HgbA1c, fasting blood glucose, Ca+, viral load, CD4, testosterone & vitamin B12 as applicable).<br><br>**2. Wasting:**<br>• Wasting Syndrome (CDC definition)<br>“AIDS wasting is the involuntary loss of more than 10% body weight, plus more than 30 days of either diarrhea, or weakness and fever. Wasting is linked to disease progression and death. Losing just 5% body weight can have the same negative effects. Wasting is still a problem for people with AIDS, even people whose HIV is controlled by medications. Part of the weight lost during wasting is fat. More important is the loss of muscle mass.” [http://wonder.cdc.gov/wonder/prevguid/m0018871/m0018871.asp](http://wonder.cdc.gov/wonder/prevguid/m0018871/m0018871.asp)<br>• Anabolic Steroids<br> o Hypogonadism/low testosterone level is common in HIV/AIDS.<br> o Correcting testosterone level associated with increased muscle, RBC production, healthy bones, insulin action and lowering cholesterol.<br> o Anabolic steroids may be beneficial in treatment of wt loss in HIV/AIDS.<br><br>**3. Weight:**<br>• If dry wt >120% IBW consider using adjusted weight for obesity:<br>Adjusted weight (wt) = [(Actual wt - IBW) x 0.25] + IBW<br>• Aim for promotion of weight maintenance, loss, or gain (as appropriate)<br>• Monitor weight trend (>3% unintentional weight loss from UBW over last 6 months or since last visit)<br>Compare current weight to desirable wt (DBW )&/or usual wt (UBW)<br>• Achieve/maintain DBW or UBW<br><br>**4. Calories:** *Consider other factors such as fever, lifestyle and physical activity when determining caloric needs.*<br>• Asymptomatic HIV: 30-35 kcal/kg/day<br>• Symptomatic HIV: 35-40 kcal/kg/day<br>• CD4 count <200, presence of AIDS defining condition, &/or opportunistic infection: 40-50 kcal/kg (start with 30 kcal/kg and increase gradually as
tolerated if severely malnourished)

5. **Protein**: Consider other factors such as renal insufficiency, pancreatitis, or encephalopathic cirrhosis when determining protein needs.
   - 15-20% of total kcal per day
   - Asymptomatic HIV: 1.1-1.5g protein/kg/day.
   - Symptomatic HIV: 1.5-2.0g protein/kg/day
   - CD4 <200, presence of AIDS defining condition: 2.0-2.5g/kg
   - High protein may also be indicated for a patient at high risk for malnutrition.

6. **Fluid**: Set per age, PMH and medical condition.
   - 30-35 ml/kg or a minimum of 1500 ml/day
   - Increased fluid needs secondary to high outputs (i.e. diarrhea, fever, fistulas, vomiting).
   - Fluid control should be required for those experiencing ESRD.
   - Fluid control is recommended as it would be in others with renal diseases.
   - During episodes of GI distress, should give fluids that are moderate in temperature. Warm fluids may be better tolerated by some patients than iced or cold.

7. **Fat**:
   - 30% of total kcal - <10% saturated fat, <300 mg cholesterol, <2g trans fatty acids (<1% of kcal intake, which would only include natural sources, avoiding transfat from processed food)
   - Fat may need to be restricted with a low fat diet of 25-40g/day if fat malabsorption and/or steatorrhea are present.
   - Fat-soluble vitamins may need to be supplemented in patients with malabsorption.
   - MCT supplementation as a fat calorie source for patients with fat malabsorption/steatorrhea may be considered. Must be ordered from pharmacy. 1 tablespoon 3-4 times daily with each feeding to increase calories: add to food, supplemental beverage, salad dressing, or take by the tablespoon.

8. **Carbohydrate**:
   - 50-55% of total kcal/day, minimum of 130g/day
   - Avoid overfeeding dextrose to patients on parenteral nutrition. Maximum recommended dextrose load is 4-5 mg/kg/minute. For patients with diabetes the maximum dextrose load is <5mg/kg/min. Overfeeding CHO may contribute to TPN related liver dysfunction.
   - Avoid simple/concentrated carbohydrates in patients with glucose intolerance and/or diarrhea.
   - Avoid large amounts of lactose unless tolerated without GI distress. Lactose-free diets should not be implemented unless intolerance has been documented.
   - Monitor BG with goal of <120 for those patients receiving parenteral or enteral nutrition. Individualize parameters based on individual pt status.
   - Some patients may need to avoid foods high in sugar alcohols and fructose. Eating these types of foods can cause discomforts of flatulence,
9. **Fiber**
   - Both insoluble and soluble fibers promote benefits for GI disorders.
     - Types of insoluble fiber include: Fruits, whole grains, bran, vegetables, wheat and edible seeds.
     - Types of soluble fiber include oats, pear without peel, apple without peel, applesauce, sweet potatoes, mashed beans and lentils (as tolerated), and peas. This type of fiber has been more directly linked to improve IBD.
   - Fiber supplements are also an effective way of adding fiber to the diet.
   - As fiber intake is increased, water intake must also be increased to prevent constipation.
   - Patients may need to follow a low fiber diet during acute GI distress. Once tolerated it is recommend to gradually resume a diet of 25-35g of fiber per day.

10. **Vitamins:**
   - A high-potency multivitamin with minerals is recommended for most patients with HIV+/AIDS. MVI should be given with a meal to avoid nausea.
   - Supplement fat soluble vitamins in water soluble form if the patient has steatorrhea.
   - B12 is a common deficiency found in HIV+/AIDS. If a patient has B12 levels less than 250, 1000mcg sublingual B12 supplement is recommended. Follow-up serum B12 levels in 3 months and B12 injections next line of therapy if serum B12 levels continue to be low.

11. **Minerals/Trace elements & electrolytes:**
   - In general, all supplementation for minerals and trace elements should be individualized.
   - Supplemental selenium of 200 mcg/day has been found to help boost CD4 levels

12. **Fish Oil:**
   - Do not exceed 3g of DHA + EPA from fish oil per day. Doses higher than this may suppress immune and inflammatory response.
   - Care needs to be taken to make sure the product is molecularly distilled to remove contaminants such as mercury. Unpleasant side effects may occur such as flatulence, diarrhea & GERD. Some of these symptoms may be alleviated by freezing capsules and/or taking with food. Also avoid drinking a large amount of water/ beverages immediately after taking fish oil capsules, as excess water may increase reflux.
     - If triglycerides are less than 200: 1-2g DHA+EPA/day
     - If triglycerides are more than 200: 2-3g DHA+EPA/day
   - Do not recommend fish oil if a patient has a heart valve replacement or pacemaker.

13. **Probiotics:**
   - May be beneficial in patient with diarrhea to improve intestinal flora.
   - OF NOTE: if the patient is on antibiotics, the following should be used after antibiotic treatment
     - Lactobacillus GG(Culterelle)
     - Jarodophilus (Jarrow products)
• Bifidobacterium Infantis (Align)
  The following can be used during antibiotic treatment
• Lyophilized Saccharomyces Boulardii (Florastor) is effective during antibiotic therapy. Saccharomyces boulardii, a beneficial yeast, has now been placed on hospital formularies to prevent *C. difficle* in patients with a prior history of antibiotic associated diarrhea and as concurrent therapy with vancomycin for recurrent *C. difficle*. (Note: Florastor has been studied and found to be safe and effective in people with AIDS. However in very rare cases S boulardii fungemias have been reported. In documented cases all patients had an indwelling central venous catheter. Consequently, administration of S. boulardii is contraindicated in patients with an indwelling central venous catheter.)

14. **Prebiotics:**
• Fructan Fiber: Inulin/ FOS (Fructooligosaccharides are short-chain simple sugars that stimulate and nourish the growth of beneficial gut flora.)
• Inulin / FOS are extracted from: Jerusalem artichoke, banana, onion, chicory root, garlic, asparagus, barley, wheat, jicama, tomatoes and leeks.
• FOS may be an added ingredient in certain fiber supplements


15. **Pancreatic Enzyme Replacement:**
• Examples of pancreatic enzyme replacement are: Lipase, Pancrease, Ultrase, and Viokase.
• Replacement therapy is common among patients with steatorrhea or chronic pancreatitis. Enzyme supplementation is administered with meals and snacks to assist with absorption of nutrients. The amount and type of enzyme supplementation depends on the degree of malabsorption and the fat content of the diet.
• It is beneficial to work directly with physician and pharmacy to help adjust the type, combination and/or concentration of enzymes needed for each patient. It can also help to reduce the number of pills taken each day. Taking a large number of pills can impact a patient’s appetite.

16. **Other Conditionally Essential Nutrients**
• Glutamine - supplemental glutamine of 10g TID has been found to be beneficial in the treatment of intestinal malabsorption, diarrhea and wasting.
• N-Acetyl Cysteine (NAC) - supplemental NAC of 1000-2000 mg/day has been found to be beneficial in the augmentation of CD4 levels and suppression of HIV & HBV replication. (Whey protein is rich in cysteine.)
• Acetyl L-Carnitine - supplemental Acetyl L-Carnitine of 1000-3000 mg/day has been found to be beneficial in conditions associated with impaired fat breakdown and energy production such as hypertriglyceridemia, mitochondria toxicity and wasting.
• Alpha Lipoic Acid - 300-400 mg BID has been found to be beneficial in the treatment of mitochondrial toxicity and neuropathy caused by nucleoside reverse transcriptase inhibitors (NRTIs), a class of antiretroviral drugs.

17. **Nutrition Supplemental Formulas designed for HIV/AIDS**
• Nutrivir – Serving: 5 T. added to 8 oz beverage: 315 kcal, 21g Pro, 2g
### NAC, 1g Carnitine, 100mg alpha lipoic acid, 200mcg selenium and other conditionally essential nutrients. [http://www.bionxs.com/nutrivir.htm](http://www.bionxs.com/nutrivir.htm)

- Juven (Abbott) –Serving: 23 g packet: 75 kcal, Hydroxy-beta-methylbutyrate (HMB), arginine & glutamine, conditionally essential nutrients that help support the immune function – increasing lean tissue, CD4 and suppression of HIV viral load. Juven is a therapeutic nutrition drink mix that has been clinically shown to help build lean body mass in people with cancer and support wound healing. [http://myjuven.com/index.html](http://myjuven.com/index.html)

### 18. Diarrhea: > 3 loose stool/day for 2 consecutive days or >500 ml every 8 hrs

- Include history and etiology of diarrhea and address underlying cause. Possible causes include HIV enteritis, drug induced diarrhea, antibiotics and food borne illness. Due to weakened immune system, the HIV infected person is at greater risk for serious food/waterborne illnesses.
- Calcium carbonate supplements for some patients with unresolved diarrhea depending on the cause. 1500-2500 mg/day. Spread out dosage throughout the day and not with other medications.
- In all patients with severe diarrhea Na, K, Cl, and Mg should be monitored for repletion needs daily.
- Zinc Sulfate supplement: 220 mg(50 mg elemental Zn) daily until diarrhea has resolved. Lab test not recommended since result takes two weeks.
- IV Zn: 6-10 mg elemental Zn for Parenteral solution.

### 19. Lipodystrophy

- Growth Hormone
  - Improves lipodystrophy, but has detrimental effect on blood glucose.
  - Not currently used due to expense and temporary effectiveness. It is only used in extreme cases of lypodystrophy, i.e. buffalo hump.
  - High doses (2-6 mg/day) for HALS (HIV-Associated Lipodystrophy Syndrome) have been shown to increase IGF-1 (insulin-like growth-factor-1) with adverse effects such as edema, arthralgia (joint pain), carpal tunnel syndrome, glucose intolerance, elevated pancreatic enzymes, gynecomastia, body hair growth and high blood pressure.

### B. Medications are reviewed for Food Drug interactions.

#### 1. Antibiotics:

- Pneumocystis carinii pneumonia (PCP) prophylaxis and treatment: Bactrim, Cotrim, and Septra - take with food and more than 8oz water, avoid alcohol, avoid Saint John’s Wort, interferes with folate metabolism - may need folate supplement, possible side effects: N/V, diarrhea, stomatitis, glossitis. [http://www.aidsinfonyc.org/tag/comp/ois98/16.html](http://www.aidsinfonyc.org/tag/comp/ois98/16.html)

#### 2. Antiretrovirals: (see attachment)

“FOOD/DRUG INTERACTIONS FOR HIV/AIDS MEDICATIONS”

#### 3. Antidiarrheals:

- Loperamide (Imodium AD), do not use more than 4 doses per day.
- Diphenoxylate HCL (Lomotil), do not use concurrently with MAO inhibitors, barbiturates, tranquilizers, and alcohol.

### C. Nutrition Support

1. As with other patient populations, if the gut works, use it.
2. TF is the optimal choice for nutrition support due to the increased chance for infection with TPN, especially with immunocompromised patients.
3. Individualize nutrition support plans.
4. For enteral support choose a fiber containing formula, unless contraindicated.
5. Review pt’s medications and review for food/nutrient interactions. Some antiretroviral medications need to be taken separately from food, and thus TF would need to be held.
6. Protein additives may need to be added to a TF formula to meet protein needs.
7. If chronic diarrhea is present, choose a formula low in osmolality. Consider probiotics, glutamine or pancreatic enzymes.
8. If steatorrhea is present, consider a formula with MCT oil for optimal absorption.

D. Discharge Planning and Continuity of Care issues are addressed and recorded.

1. Assess patient knowledge of diet as appropriate:
   - Healthy eating including sources of protein, carbohydrate, P, K, Ca, Na.
   - Consequences of excess weight loss or weight gain
   - Importance of exercise.
   - General guidelines for heart healthy diet if lipodystrophy (associated with metabolic abnormalities include dyslipidemia and insulin resistance), diabetes or metabolic syndrome is present.
   - Food/water safety practices, with emphasis on well cooked animal proteins, safe food storage, and avoiding cross contamination. With CD4 <200 the following is also recommended: Avoid soft cheese/ hot dogs/cold cuts from deli (listerosis), avoid drinking/swimming in water from lakes/rivers (cryptosporidiosis/ giardiasis). Use safe sources of water.
2. Identify issues regarding patient’s ability to follow and comply with diet.
3. Provide nutrition literature/counseling as appropriate to patient, family, and caregivers. Per patient request, handouts contain no reference to HIV/AIDS.
4. Refer patient to outpatient RD for on-going assessment, including Bioelectrical Impedance Analysis (BIA) and counseling.

   www.apla.org/programs/nutrition/FactSheets/BIA%20Glossary.pdf

5. If patient is discharged home on tube feeding, ensure that DME (durable medical equipment) order has been placed for tube feeding formula and equipment. (Do not order through pharmacy). Follow up with Home Health or outpatient RD referral as indicated by service area.

Patient Education for HIV/AIDS

<table>
<thead>
<tr>
<th>BIA</th>
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<tbody>
<tr>
<td>Exercise</td>
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<td>Food Safety</td>
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<tr>
<td>Water Safety</td>
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<td>Supplements</td>
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<tr>
<td>Meal Plan</td>
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<tr>
<td>Hyperlipidemia</td>
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<tr>
<td>High Cal, heart healthy meal and snack ideas</td>
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<tr>
<td>Antioxidants</td>
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<tr>
<td>Diarrhea- acute and chronic</td>
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<tr>
<td>Fatigue</td>
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<tr>
<td>Lipodystrophy</td>
</tr>
<tr>
<td>Nutrition Questionnaire</td>
</tr>
<tr>
<td>Phosphorus</td>
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</tbody>
</table>

   • All above education materials is located on below site.

http://cl.kp.org/portal/site/NCAL/template.FRAME/?search=hiv%20nutrition
References for HIV NPG

Section A1 - Nutrition Assessment

Section A2 - Wasting
http://wonder.cdc.gov/wonder/prevguid/m0018871/m0018871.asp

Section A3 – Weight

Section A4 – Calories

Section A5 – Protein

Section A6 – Fluid

Section A7 – Fat

Micromedex: Medium Chain Triglycerides - Adult Dosage. Available:
Section A8-9 & 11 - Carbohydrates, Fiber and Electrolytes


Chapter 30.


“I.B.S. Relief” A Doctor, a Dietitian and a Psychologist Provide a Team Approach to Managing Irritable Bowel Syndrome. Dawn Burstall, RD, T. Michael Vallis, PhD, and Geoffrey K Turnbull MD.


Section A10-11 - Vitamins, Minerals, & Micronutrients


Tang AM, et al. Dietary micronutrient intake and risk of progression to acquired immunodeficiency syndrome (AIDS) in human immunodeficiency virus type 1 (HIV-1)-


**Section A12 - Fish Oil**


Kelley DS, Rudolph IL. Effect of individual fatty acids of omega-6 and omega-3 type on human immune status and role of eicosanoids.

Meydani SN, Dinarello CA. Influence of dietary fatty acids on cytokine production and its clinical implications.

**Section A13 – Probiotics.**

http://www.florastor.com


Buts JP, Bernasconi P. Saccharomyces boulardii: basic science and clinical applications in gastroenterology, Gastroenterol Clin North Am. 2005 Sep; 34(3): 515-32

Alak JI, Wolf B et al. Effect of Lactobacillus reuterion intestinal resistance to Cyrptosporidium parvum infection in a murine model of acquired immune deficiency syndrome. *Journal of Infectious Diseases* 175; 218-21.


Macfarlane GT, Cummings JH. Probiotics and prebiotics: Can regulating the activities of intestinal bacteria benefit health. *British Medical Journal* 1999 April;318:999-1003


Raitt M et.al.,*JAMA*.2005;293:2884-2891


**Section A14 – Prebiotics**


**Section A16 - Other Conditionally Essential Nutrients - N-Acetyl Cysteine**


**Section A16 - Other Conditionally Essential Nutrients – Glutamine**


**Section A18 – Diarrhea**


**Section A19 - Lipodystrophy**


**Section B - Antibiotics and Antiretrovirals**

Pronsky ZM. Food Medication Interactions, 14th edition. 2006

**Section C – Nutrition Support**

Section D1 – Assess Patient Knowledge of Diet as Appropriate


### ATTACHMENT:
**FOOD/DRUG INTERACTIONS FOR HIV/AIDS MEDICATIONS**

<table>
<thead>
<tr>
<th>Abv.</th>
<th>Name</th>
<th>Class</th>
<th>Interactions and possible nutrition related side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC</td>
<td>Abacavir (Ziagen)</td>
<td>NRTI</td>
<td>● Take w/o regard to food</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>● Caution w/ alcohol</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>● Possible side effects: anorexia, N/V, abd pain, diarrhea, ↑ TG, anemia</td>
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<tr>
<td>APV</td>
<td>Amprenavir (Agenerase)</td>
<td>PI</td>
<td>● Do not take with high fat meal</td>
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<td></td>
<td></td>
<td></td>
<td>● Take separately from Ca, Mg suppl or antacids by at least 1 hr</td>
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<td></td>
<td></td>
<td></td>
<td>● Avoid SJW(St. Johns Wort)</td>
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<td></td>
<td></td>
<td></td>
<td>● Caution w/ garlic (may ↓ drug level)</td>
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<td></td>
<td></td>
<td></td>
<td>● Avoid Vit E suppl</td>
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<td></td>
<td>● Avoid alcohol w/ soln form</td>
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<td></td>
<td></td>
<td></td>
<td>● Possible side effects: taste changes, N/V, GI upset, diarrhea, ↑ glucose, ↑ HbA1c, ↑ TG, ↑ chol</td>
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<td></td>
<td></td>
<td></td>
<td>● May ↑ risk of lipodystrophy</td>
</tr>
<tr>
<td>ATV</td>
<td>Atazanavir (Reyataz)</td>
<td>PI</td>
<td>● Must take w/ food to ↑ bioavailability</td>
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<td></td>
<td></td>
<td></td>
<td>● Take 2 hr before or 1 hr after Ca, Mg suppl or antacids</td>
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<td></td>
<td></td>
<td>● Avoid SJW</td>
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<td></td>
<td></td>
<td></td>
<td>● Possible side effects: nausea, ↑ glucose, ↓ TG, ↑ HDL, slightly ↑ or ↓ LDL, ↑ or ↓ chol, lipodystrophy</td>
</tr>
<tr>
<td>DRV</td>
<td>Darunavir(rezista)</td>
<td>PI</td>
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<tr>
<td>DLV</td>
<td>Delavirdine (Rescriptor)</td>
<td>NNRTI</td>
<td>● Take w/o regard to food</td>
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<td></td>
<td></td>
<td></td>
<td>● Take separately from Ca, Mg suppl or antacids by at least 1 hr</td>
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<td></td>
<td></td>
<td></td>
<td>● Avoid SJW</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>● Theoretical interaction w/ grapefruit/related citrus</td>
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<td></td>
<td></td>
<td></td>
<td>● Avoid alcohol</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>● Possible side effects: anorexia, weight ↑ or ↓, ↑ thirst, dyspepsia, N/V, diarrhea</td>
</tr>
<tr>
<td>ddi</td>
<td>Didanosine (Videx)</td>
<td>NRTI</td>
<td>● Take on an empty stomach (30 min before or 2 hr after food)</td>
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<td></td>
<td></td>
<td></td>
<td>● Do not take w/ Mg suppl</td>
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<td></td>
<td></td>
<td></td>
<td>● Take Fe 1 hr before or 4 hr after</td>
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<td></td>
<td></td>
<td>● Avoid alcohol</td>
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<td></td>
<td></td>
<td></td>
<td>● Possible side effects: anorexia, ↓ wt, dry mouth, stomatitis, ↓ taste acuity, dyspepsia, N/V, abd pain, bloating, diarrhea, constipation, flatulence, ↓ K, ↑ TG, ↑ or ↓ glucose, fat redistribution</td>
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<tr>
<td>Drug</td>
<td>Name</td>
<td>Class</td>
<td>Interaction/Precautions</td>
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<td>---------------------------------------------------------------------------------------</td>
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</tbody>
</table>
| EFV  | Efavirenz (Sustiva)   | NNRTI     | ● Take HS on empty stomach  
● Do not take w/ a high fat meal  
● Avoid SJW  
● Avoid alcohol  
● Possible side effects: anorexia, N/V, dyspepsia, abd pain, diarrhea, flatulence, ↑ chol, ↑ TG |
| FTC  | Emtricitabine (Emtriva)| NRTI      | ● Take w/o regard to food  
● Avoid alcohol  
● Possible side effects: N/V, diarrhea, ↑ TG |
| ENF  | Enfuvirtide (Fuzeon)  | Fusion Inhibitor | (Parenteral only)  
● Possible side effects: ↓ appetite, ↓ wt, taste change, constipation, ↑ TG, anemia |
| FPV  | Fosamprenavir (Lexiva)| PI        | Pro-drug of amprenavir - see listing for amprenavir  
Specific to this drug:  
● Take w/o regard to food  
● High fat meal does not affect drug  
● ↓ incidence of nausea and diarrhea |
| IDV  | Indinavir (Crixivan)  | PI        | ● Take 1 hr before or 2 hr after meal if administered w/o ritonavir  
● Take w/o regard to meal if administered w/ ritonivir  
● Adequate hydration - 1500mL/day (to prevent kidney stones)  
● Caution w/ grapefruit/related citrus  
● Avoid SJW  
● Possible side effects: taste changes, N/V, regurgitation, abd pain, diarrhea, ↑ glucose  
● ↑ risk of lipodystrophy |
| 3TC  | Lamivudine (Epivir)   | NRTI      | ● Take w/o regard to food  
● Possible side effects: anorexia, N/V, abd cramps, diarrhea, anemia, ↑ glucose |
| LPV  | Lopinavir/ritonavir (Kaletra)| PI      | ● Take cap or soln w/ food to ↑ bioavailability  
● Tab may be taken w/o regard to food  
● Avoid SJW  
● Moderate to high fat meal may sig ↑ drug level  
● Possible side effects: N/V, dyspepsia, abd pain, diarrhea, ↑ chol, ↑ TG, ↑ glucose, ↑ P, ↓ Na  
● May ↑ risk of lipodystrophy or DM |
| MVC  | Maraviroc (Selzentry) | Chemokine Coreceptor Antagonists | |
| NFV  | Nelfinavir (Viracept) | PI        | ● Take with food to ↑ blood level and AUC 2-3x  
● Avoid SJW  
● Possible side effects: anorexia, nausea, |
<table>
<thead>
<tr>
<th>Drug</th>
<th>Description</th>
<th>Class</th>
<th>Instructions</th>
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<tbody>
<tr>
<td>NVP</td>
<td>Nevirapine (Viramune)</td>
<td>NNRTI</td>
<td>• Take w/o regard to food</td>
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<td></td>
<td></td>
<td></td>
<td>• Caution with SJW</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Possible side effects: stomatitis, N/V, abd pain</td>
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<tr>
<td>RAL</td>
<td>Raltegravir (Isentress)</td>
<td>Integrase Inhibitor</td>
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<tr>
<td>RTV</td>
<td>Ritonavir (Norvir)</td>
<td>PI</td>
<td>• Take with food. May mix soln with choc. milk or nutr suppl</td>
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<td></td>
<td></td>
<td></td>
<td>• Avoid SJW</td>
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<td></td>
<td></td>
<td></td>
<td>• Avoid alcohol</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Possible side effects: anorexia, ↓ wt, taste changes, throat irritation, dyspepsia, N/V, abd pain, diarrhea, ↑ TG, ↑ VLDL, ↑ Chol, ↑ BUN, ↑ gluc, diabetes</td>
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<td></td>
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<td></td>
<td>• May ↑ risk of lipodystrophy</td>
</tr>
<tr>
<td>SQV</td>
<td>Saquinavir (Invirase, Fortovase)</td>
<td>PI</td>
<td>• Take w/ a light meal</td>
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<td></td>
<td>• Caution w/ grapefruit/related citrus - ↑ drug level</td>
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<td>• Avoid SJW</td>
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<td>• Garlic suppl ↓ drug level</td>
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<td></td>
<td>Possible side effects: mouth ulceration, taste changes, dysphagia, dyspepsia, N/V, abd pain, diarrhea, constipation, flatulence, ↓ gluc, ↑ TG, anemia, ↑ K</td>
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<td></td>
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<td>• May ↑ risk of lipodystrophy</td>
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<tr>
<td>d4T</td>
<td>Stavudine (Zerit)</td>
<td>NRTI</td>
<td>• Take w/o regard to meals</td>
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<td>• Limit alcohol</td>
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<td></td>
<td>• Possible side effects: anorexia, ↓ wt, stomatitis, N/V, abd pain, diarrhea, anemia, ↑ TG, ↑ chol</td>
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<td></td>
<td>• Highest incidence of lipodystrophy, hyperlipidemia &amp; lactic acidosis of all NRTI</td>
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<tr>
<td>TDF</td>
<td>Tenofovir (Viread)</td>
<td>NRTI</td>
<td>• Take w/o regard to food, but high fat meal to ↑ AUC &amp; bioavailability</td>
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<td>• Ca &amp; Vit D suppl may help reduce bone loss</td>
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<td>• Possible side effects: anorexia, ↓ wt, N/V, dyspepsia, abd pain, diarrhea, flatulence, ↓ bone mineral density, lipodystrophy, ↓ P</td>
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<tr>
<td>TPV</td>
<td>Tipranavir (Aptivus)</td>
<td>PI</td>
<td>• Swallow cap whole, w/ high fat meal to ↑ bioavailability</td>
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<td>• Avoid SJW</td>
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<td></td>
<td></td>
<td>• Possible side effects: anorexia, ↓ wt, dyspepsia, GERD, N/V, abd pain, diarrhea, flatulence, ↑ chol, ↑ TG, ↑ gluc, anemia</td>
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<td>• May ↑ risk of lipodystrophy or diabetes</td>
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<tr>
<td>ddC</td>
<td>Zalcitabine (Hivid)</td>
<td>NRTI</td>
<td>(discontinued)</td>
</tr>
</tbody>
</table>
| AZT, ZDV | Zidovudine (Retrovir) | NRTI | ●Take w/o regard to food  
●High fat meal (~40g) ↓ abs of drug  
●Avoid alcohol  
●Possible side effects: anorexia, taste changes, mouth ulcer, N/V, dyspepsia, dysphagia, pain, constipation, flatulence, severe anemia |
|---|---|---|---|
| | | | Combivir  
Zidovudine/ Lamivudine  
Trizivir  
Zidovudine/ Lamivudine/ Abacavir  
Epzicom, Kivexa  
Abacavir/ Lamivudine  
Truvada  
Emtricitabine / Tenofovir  
Atripla  
Efavirenz/ Emtricitabine /Tenofovir |