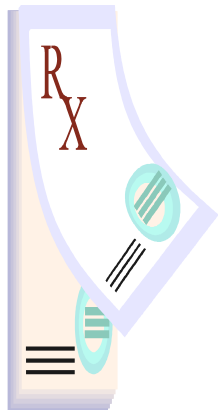


Clinical Pearls



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Probiotic Supplementation...

Probiotic's Place in Therapy

Probiotics, "pro" meaning promotion and "biotic" meaning life, are live organisms that provide therapeutic or preventative benefit to the host. Benefits can include improved digestion, decreased gas and bloating, and possibly decreased risk of certain causes of diarrhea. The most commonly used probiotics are from the bifidobacteria and lactobacilli genus. Yeasts, such as *Saccharomyces boulardii*, can also be used. Probiotic cultures can be found in many different forms for your patient's specific needs.

Probiotic Product Review

Strains	Product Examples	Promoted Benefit
<i>Bifidobacterium lactis</i> or <i>animalis</i> (Bifidus Regularis)	Activia® yogurt Rugby® dietary supplement	Regulates digestive system and speeds gut transit time
<i>Bifidobacterium infantis</i> (Bifantis)	Align® probiotic supplement Nature Made®	Possibly effective for abdominal pain, bloating, and difficult bowel movements associated with irritable bowel syndrome
<i>Lactobacillus rhamnosus</i>	Culturelle® dietary supplement Optimum®	Improves digestion, prevents gas and bloating, supports immune system, restores and maintains normal GI flora
<i>Lactobacillus bulgaricus</i>	Nature's Bounty® Lactinex® DanActive® yogurt	Strengthens the body's defenses and possibly effective for preventing or reducing severity of acute diarrhea in infants and antibiotic associated diarrhea in hospitalized adults
<i>Lactobacillus casei</i>	Yakult® fermented dairy drink	Balances digestive system and maintains health, but insufficient evidence for reducing constipation
<i>Saccharomyces boulardii</i> (yeast)	Florastor®	Protects against digestive imbalance due to antibiotics, travel, stress, diet, or other digestive issues
Multiple generic or store brands also exist for these different strains of probiotics		

Morely JE. *J Am Med Dir Assoc*. 2009 Jul;10(6):365-7.

Pharmacist's Letter. Comparison of Common Probiotic Products. July 2012

NOTE: Probiotics come in many different dosage forms such as:

**Tablets
Capsules
Yogurts
Dairy beverages
Soft chew gummies
OTC powders
Fortified foods (candy bars, ice cream) and drinks**

Positive Effects of Probiotic Ingestion:

- Yogurt has excellent caloric supplement
- Yogurt has good calcium supplementation without the negative side effects of calcium tablets
- Yogurt reduces constipation
- Can reduce symptoms of irritable bowel syndrome (IBS)
- Enhances immune system in those that
- Reduces number of days with a fever
- Reduces number of days with diarrhea
- Reduces antibiotic-induced diarrhea
- Enhances eradication of *Helicobacter pylori*

Acetaminophen Safety

As of January 14, 2014, the FDA now requires that manufacturers of prescription combination products that contain acetaminophen (APAP) limit the amount of acetaminophen to no more than 325 milligrams (mg) in each tablet or capsule. In addition, the FDA has also required that all labels for these products warn the consumer of the potential risk for liver injury. Acetaminophen, which can be found in prescription medications as well as over the counter (OTC), is one of the most commonly used drugs for treating pain and fever.

What brought on such a change in the medication dosage?

- APAP is metabolized by the liver and has the potential to cause serious liver injury resulting in liver transplant or death
- Overdoses of prescription products containing APAP account for nearly half all cases of APAP related liver failure in the US
- Most cases of acetaminophen related liver toxicity occurred in patient taking more than the recommended amount (4000 mg) in a 24hr period, taking more than one product containing APAP at the same time, or they take APAP with alcohol
- The FDA created these dosage regulations to make APAP safer for patients

Common combination products containing acetaminophen include:

- Vicodin®, Lorcet®, Lortab®, Norco®
 - Hydrocodone/acetaminophen
- Roxicet®, Endocet®, Percocet®
 - Oxycodone/acetaminophen
- Ultracet®
 - Tramadol/acetaminophen
- Fioricet®, Esgic®, Zebutal®
 - Butalbital/acetaminophen/caffeine
- Bupap®
 - Butalbital/acetaminophen

Rescheduling of Hydrocodone

The DEA has proposed to reschedule hydrocodone combination products from schedule III to schedule II.

What does this mean?

- Any medication containing hydrocodone must now be ordered using a triplicate form (just like ordering morphine or fentanyl)
- There can be delays in receiving these medications
- These medication orders cannot be written with refills and will expire within 21 days of being written

Some reasons for this change:

- Data demonstrates high potential for abuse similar to other schedule II opioid analgesic drugs
- Combination hydrocodone products are associated with abuse, dependence, overdoses of APAP causing hepatic damage, overdose causing respiratory depression and death
- The depth of abuse is evident through drug theft, doctor shopping, fraudulent prescriptions, and diversion

**NEW
Formulations**

Old Formulation	New Formulation
Vicodin® (hydrocodone & acetaminophen) 5mg/500mg	Hydrocodone & acetaminophen 5mg/300mg
Vicodin ES® (hydrocodone & acetaminophen) 7.5mg/500mg	Hydrocodone & acetaminophen 7.5mg/300mg
Vicodin HP® (hydrocodone & acetaminophen) 10mg/660mg	Hydrocodone & acetaminophen 10mg/300mg
Not all manufacturers have reformulated their products yet, so it is important to have a strength specified on all doctor's orders.	

Test your knowledge!

1. Which of the following is true regarding the maximum dose of APAP in a 24hr period? a) Not > 2000 mg b) Not > 3000 mg c) Not > 4000 mg d) Not > 5000 mg
2. True/False Acetaminophen is available ONLY as a prescription.
3. What is the major reason for decreasing the amount of APAP in tablets and capsules?
4. What is now required to be on the label of acetaminophen combination products?

Answers: B, False, {Prevention of possible severe liver injury and patient safety}, potential risk of liver injury