

Chapter 19

Sections that will not be on Exam III (but are highly recommended for you to skim over for your own knowledge):

-pg 665 “Food Safety While Traveling”

-pp 665-666 “Advances in Food Safety”

-pp 670-671 “Natural Toxicants in Foods”

Reading Guide

1. Briefly describe/define/explain the potential threat of each of the following: foodborne illnesses, nutritional adequacy, environmental contaminants, naturally occurring toxicants, pesticides, food additives
2. Using table 19.1, list the organisms that cause these most common of foodborne illnesses. Then, rearrange them based on: a) the type of food they typically come from (ie, list all those that associated with meat, with dairy, etc), b) a separate list based on the time of onset of symptoms after exposure, c) a separate list based on the symptoms
3. How can you protect yourself from foodborne illness? In addition to generalizing, talk specifically about how to handle meat and seafood.
4. Make a copy of the “how to” box on pp 664-665 and hang it on your fridge.
5. See table 19.2. List the foods and their safe refrigerator storage times.
6. What are some steps you can take to reduce vitamin degradation in fruits and vegetables?
7. What does the term “bioaccumulation” mean?
8. List 3 specific toxins that bioaccumulate.
9. List some species of fish and shellfish with high, moderate and low levels of methyl mercury.
10. List one species of fish, common in the NW, which is both low in mercury and high in omega-3 fatty acids. [What an important fish this is for human health and the NW economy! We can’t just switch to other fish if we lose this industry due to overfishing or loss of habitat,

because very few other fish have that perfect combination of low bioaccumulation and high omega-3s. By the way, the book says that farm-raised are lower in mercury, and I've seen conflicting reports about that. What is known is that farm-raised have MUCH higher levels of other toxins, largely because of the concentrated fish pellets they are fed.]

11. How are pesticides on foods monitored in the US?
12. Explain how you can minimize your intake of pesticides.
13. What are some organic farming methods that reduce the need for pesticide use?
14. What is the Delany Clause? Some pesticides are suspected to be carcinogenic (or have been shown to be in lab animals); why are they not subject to the Delany Clause?
15. What are some antimicrobial agents and antioxidants?
16. What are some other CLASSES of additives? Provide an example of a flavor enhancer.
17. What is the purpose of lecithin? Of carageenan, guar, pectin and xanthan gum?
18. What types of containers should, and should not, be used for microwaving? Why?
19. A coffee drinker may drink 2 cups of coffee daily for 50 or more years. Why might it behoove him/her to buy unbleached filters?
20. What is the primary concern with the overuse of antibiotics in livestock?
21. What are some potentially harmful contaminants that could be in the water supply?
22. Explain why dumping solvents, using pesticides on your lawn and vegetables, etc., in your yard may affect people and animals throughout your town.

Notes: these aren't really lectures with info that will be tested, just a few notes from me.

-As far as tap water, here in the US it is usually pretty darn clean, especially when it comes to microorganisms that could cause disease. There is really no reason to buy filters for microorganisms. The biggest concerns are Chlorine (which is added to kill the microorganisms), Lead (primarily if you have old pipes), VOCs (Volatile Organic Compounds) and a few other specific toxins. If you want to filter your water, look for filters that focus on toxins (specific chemicals) more than microorganisms.

-I believe that the authors of our text have taken a slightly too cavalier approach in their discussion of pesticides, growth hormones, antibiotics and environmental contaminants. I feel they have treated these as basically non-issues with virtually no threats. While that MAY be true, it is not nailed down, and reputable researchers have aired some real concerns about these issues. In our environmental science classes, for example, we spend chapters talking about the health threats of pesticides and contaminants both to ecosystems and to humans. Several papers in the biological literature link hormones from agriculture with an increase in reproductive aberrations in animals; particularly aquatic organisms. For example, there has been a measurable increase in crocodilian and amphibian aberrations such as hermaphroditism and undeveloped reproductive organs. While I still believe the risks are fairly low, I also believe that until we know for sure, we should take some of these concerns more seriously. For example, if you have the choice and you can afford some extra expense, why not choose organic dairy products?

-Antibiotic resistance is one concern that we know is real. This is something that many researchers are really alarmed about; if pathogens develop resistance to antibiotics (and they have), they have the ability to cause widespread disease, as was common before the early 1900s. Our generations have no idea what it's like to live in a world where infectious disease kills most people, so it's hard for us to imagine it! Here are some things you can do to reduce the development of resistant bacteria:

-Eat organic meat, eggs and dairy products

-Do not use “antibacterial” products; they are unnecessary anyway. Washing your hands frequently with regular soap is still the best way.

-Do not take antibiotics unless you know for a fact that you have a bacterial infection; antibiotics do NOTHING for a viral infection. If your doctor prescribes an antibiotic for an “unknown” infection or as a prophylactic, ask him/her if it is absolutely necessary (in the past, doctors used to practically hand out antibiotics just to make the patient feel they were actually getting something out of the appointment; it doesn't happen as much now, but still does sometimes)

-When you are prescribed a necessary antibiotic, take ALL of it; this is absolutely imperative!! If you stop taking your antibiotic, all you've done is left the strongest bacteria, and they will survive to have strong progeny.