

Chapter 10 Reading guide

1. Define physical activity, cardiorespiratory fitness, flexibility, muscular strength/endurance, body composition, exercise, and physical fitness.
2. What are some general recommendations for becoming physically fit and improving "...cardiorespiratory fitness even more?"
3. Can people with physical limitations still maintain fitness? Explain.
4. List and explain in detail the many benefits of regular physical activity and fitness covered by the text, supplemental lectures and Harvard's Exercise link.
5. Define capillaries, blood pressure, hypertension, HDL, osteoporosis, white blood cells; and explain how exercise affects them (you probably already covered these in your answer to #4, I'm just making sure)
6. Describe the Female Athlete Triad and male dysmorphia. How do you think these relate to addiction?
7. Define/describe aerobic exercise and how it relates to cardiorespiratory fitness.
8. What are "The most beneficial aerobic exercises?" Provide some examples.
9. To what does the acronym "FIT" apply?
10. Explain how to determine the appropriate frequency, intensity and duration of an exercise to improve your cardiorespiratory fitness.
11. What is muscular strength? Endurance?
12. Explain several reasons why strength training should be a part of your regular exercise routine.
13. What are the 3 components of an effective resistance exercise program (strength training)? Explain each.
14. When you strength train, muscles hypertrophy. What does that mean? What's a difference between males and females when it comes to muscle hypertrophy in response to exercise? (By the way, testosterone is largely responsible for this. One of its roles is to encourage muscle cells to increase contractile proteins, which is how muscles hypertrophy)
15. Describe isometric, concentric and eccentric muscle action.
16. What are four common ways you can strength train? Do you need equipment to strength train? Explain.
17. To what does "core strength" refer? Why is core strength training particularly important, and how often is it recommended? Why should you learn core exercises with the help of a professional?
18. Explain several benefits of including flexibility training as part of your regular routine.
19. Explain static and dynamic stretching.
20. What is ballistic stretching? FYI: this is NOT recommended: it is less effective and promotes injury!!!
21. Explain yoga, tai chi and pilates.
22. Fred would like to start an exercise program and comes to you for help. What are questions/considerations you will have as you help Fred create his fitness program?
23. Describe some "popular and practical" exercise equipment
24. What are overuse vs. traumatic fitness related injuries?

25. Why are proper shoes and protective equipment important during exercise?
26. What are the 3 most common overuse injuries? (list and describe)
27. What is the RICE treatment?
28. Discuss dangers of exercising in heat and cold. What are symptoms of heat cramps, exhaustion and stroke? Of hypothermia? Can any of these conditions kill you? How can you protect yourself from heat and cold when considering exercising under these conditions?
29. (from link) What is "SeDS?"

Supplemental Lectures

I. The wonder of muscles- I think the book actually downplayed strength training (probably for lack of time and space!). Let me just add a few more points to drive home how beneficial moderate strength training really is. And remember, you don't have to be grunting like a gorilla or popping veins to get the benefits of strength training. In fact, for many people that kind of effort may be dangerous! Follow the guidelines in the book, and follow your comfort level as guidelines. Here's why having muscle tone is beneficial:

>This is one of the best ways to build and maintain bone mass. Especially if you are past about 35 years old... in fact, then it is the **ONLY** way to build bone mass. After about 35, you will not build bone mass unless you strength train... but you will absolutely **LOSE** bone mass if you do not.

>Muscles hold joints in place, reducing the risk of general joint pain, and reducing the risk of injury to joints. It is important that you work opposing muscle groups to ensure that the joints are being held in place correctly. If, for example, you work the front shoulder muscles more than the back, you can actually pull your shoulder joints out of whack a little bit. But, if you let those muscles atrophy, you increase the risk of injury and pain! So, for healthy joints, work the muscle groups that hold them in place, and work those muscle groups evenly. And remember to stretch :)

>The book pointed this out, but let me be a little more emphatic about it: muscle cells burn calories!!! Even when you're watching the Simpsons on the couch. They burn a lot of calories, and the bigger your muscle cells, the more calories they burn. Not only that, but **RESTING MUSCLE CELLS BURN FAT** preferentially. So, while the rest of your body cells may be burning glucose, your resting muscle cells are actually burning fat! Now, as you start to use your muscles, they will switch to glucose for a while. But, if you use them continuously (about 20 minutes or so), they switch back to fat.

>Muscle tone pulls connective tissue in (including fat), so that even if you do not lose any fat tissue, you will look fitter because the underlying muscle is holding the tissue in place a little more tightly.

>Muscles encourage the growth of branched blood vessels, which can be beneficial to blood pressure. Excess fat tissue, on the other hand, encourages the growth of less branched blood vessels, which can be detrimental to blood pressure.

II. Waist-to-Hip ratio

I just wanted to point out that this is one aspect of body composition that is largely genetic. You can control your BMI, for example, by losing or gaining weight to get to what's considered a healthy range. But, where you carry fat is difficult to change. If you carry your fat in your abdomen more than in your hips, legs or arms, your best strategy is to be very careful about staying at a healthy weight and exercise regularly; ie, don't carry excess fat.

Excess cortisol is one factor that can affect this ratio, however, regardless of genetics. Excess cortisol can cause fat to be redistributed in your body, and deposited in undesirable places like the abdomen. There's another good reason to keep stress in check as much as is within your power! □