

Health

Unit 4 of 4

Welcome to your last Unit on Health! We've covered injury and pain, exercise, relaxation, and alternate meanings to various words. In Unit 4, we'll be covering endurance, point therapy, and some theories on nutrition.

Endurance

Earlier in the Course, we focused a lot on strength. Strength is measured by the amount of resistance a muscle can take, or the amount of weight a muscle can hold or lift. But exercises and sports require endurance, too. Endurance is a measure of how many times the same movement can be repeated, how long the body can continue performing one activity, and a body's heart/lung capacity.

Endurance sports like running are a form of "aerobic" exercise. AERO- is a prefix meaning "air". These kinds of exercises increase the body's need for and use of oxygen (in the muscles as well as lungs), so the heart has to work harder to get enough oxygen to where it is needed. Running can be jogging along the sidewalk while chatting with a friend; running in place in your cell; it can be the 100-meter dash at the Olympics; it can be a marathon - 26 miles of running. (Do you know where the word "marathon" comes from and when the Olympics got started? -- See Appendix 1.) Running is an exercise that requires a minimum amount of equipment, but ideally, decent shoes.

1. **What do good shoes have that bare feet don't?**
2. **List five exercises requiring continuous, repetitive movements for at least twenty minutes.**

Bearing in mind the above description:

3. **Which of the following sports would best fit the definition of an aerobic activity? Which would require the most endurance? The least endurance?**

basketball	football
baseball	soccer
hockey	push-ups
archery	jumping jacks

4. **Why did you choose the sport that got the most endurance required?**
5. **What about the sport that got the least endurance?**

We are fortunate to have Dr. Hal as a guest "speaker" for this Unit -- see Appendix 2. He is a physician in a hospital's Intensive Care Unit, and those guys know all about the heart. Since the heart is a MUSCLE, it needs to be exercised just like the rest of you. The importance of a healthy heart is obvious -- heart attacks are one of the leading causes of death in this country. A heart attack occurs when one of the vessels supplying the heart with blood becomes blocked; without

oxygen, heart muscle dies, limiting the heart's ability to pump blood. (A stroke is also a blockage of a blood vessel, but it occurs in the brain.)

6. After reading Appendix 2, practice taking your pulse (wrist & neck). What is it when you are resting? After one minute of vigorous exercise?

7. How easy is it at your prison to consult with a medical staff person if you are having pain?

One of the benefits of aerobic exercise is that the body produces "endorphins." Endorphins are hormones produced by the brain and released during exercise – they make you feel good. This is what's responsible for a "runner's high." Its effects are even said to act like an anti-depressant. This is one reason a regular exercise program can make people feel better mentally and emotionally. Of course, you might not feel all that great immediately after a strenuous workout.

8. Which of the following do you think you would want to do after working out: gasp for oxygen, take a nap, or eat a chocolate crème pie?

9. What are two endurance exercises a prisoner can do in a cell?

The Other Meaning of Endurance

It seems that the major words connected with this course (exercise, strength, etc..) have more than a physical meaning. Not surprisingly, here is one for endurance:

"Heroism is endurance for one moment more." - George Kennan, 1921

10. What is Mr. Kennan saying?

11. What is the difference between enduring and endurance?

12. Write a single sentence using the word "endurance" twice, one for each definition.

Trigger Point Therapy

Trigger Point Therapy is centered around the idea that when your "energy flow" is disrupted, pain and illness are likely to follow. To restore the energy flow to its natural balance, some use "trigger point therapy" which is the stimulation of specific spots on the body. Two kinds are listed below:

Shiatzu:

This Japanese massage technique involves using your finger and thumb to apply pressure to "acupressure points" (points that are believed to be blocking the flow of energy). Acupressure points are located along your body's meridians which are twelve channels of energy that flow throughout the body, each linked to a specific body system, but also interconnected. Shiatzu is believed to help your muscles relax, eliminate tension, and increase blood flow -- (for example, if your bicep is in spasm, you could press your thumb into the point of tension).

Foot Reflexology:

The idea behind foot reflexology is that everything -- all of your various body parts -- are connected to specific areas of your foot. Sounds kind of crazy, right? Well, some scientists say that sore sports on your foot could be linked to diseased parts of

the body, and that by massaging these sore areas ("reflex buttons"), you are sending a wave of stimulation to clear the diseased area and restore good health.

13. Some people swear by trigger point therapy, whereas others think it's ridiculous. Do either of these point therapy methods sounds reasonable to you? Explain why or why not.

Nutrition

Weight Control

Lots and lots of exercise programs are begun all year long for the same reason -- to lose weight. Then there is the question of how to diet...

14. What have you done to lose weight (or gain weight or maintain your weight)? How successful have your efforts been?

15. List three different theories you've heard/seen on how to lose weight (diet and/or exercise).

Whatever the diet plan, calories are what exercise and weight loss have in common. A calorie is a unit of heat, which is why you hear the term "burn calories". The body has to have fuel to live and food is that source of fuel. The harder the body works, the more energy (in the form of the heat produced by food consumed) is burned. Even with no exercise, your body will burn around 1200 calories/day. As one diet expert says, *"In order to gain one pound, you have to eat 3500 calories more than your body uses."* However, there is no single weight loss/gain/maintenance program that works for everyone!

16. Which of your daily activities burns the most calories?

Diets are undertaken for health reasons too, and even as part of an alternative life style for mental strength and spiritual growth. There are differing theories on what constitutes a healthy diet, of course, beginning with the age old "eat your vegetables!" Practices such as "herbalism" include prescribing different herbs for health problems. Be careful - not everyone recommending "natural" substances knows what they're talking about. (For instance, someone could be told to take a common herb for her cold - but the herb could interact with her heart medication!) Just remember that "natural", now plastered on seemingly every product, doesn't necessarily mean good. Rattlesnake venom is natural, too! Other factors in heart disease include obesity, high blood pressure, smoking, and family history. CG student Jesse W. sent in some information on trans fats. See Appendix 3 for some of the information he wanted to share.

17. Why are people willing to pay more for products labeled natural or organic?

Nutrition Theories:

* **The 90/10 Theory** is a nutritional plan that involves eating "healthy" (whatever that entails now-a-days!) 90% of the time and letting yourself eat whatever you want the other 10% of the time. Supposedly, this method will help those who find themselves binging on unhealthy foods when they try to stick to a 100% healthy diet. You've probably heard people say, "moderation is key!", but there are definitely other health-fanatics who would cringe at the thought of not eating 100% healthy.

* **Vegetarians** are people who choose to not eat meat, poultry, or fish (a **pescatarian** is a person who is vegetarian except they do eat fish). Some become vegetarians because they feel killing animals is not right, whereas others choose it for health benefits. Vegetarians tend to have low-fat, high in fiber diets which can often help prevent heart diseases.

* **Vegans** go one step further than vegetarians -- they don't eat any animal by-products (this means no cheese, no milk, no eggs, and a lot of other foods). The health benefits of Veganism include increased energy and younger skin -- caused by eating the proteins, iron, calcium and other vitamins and antioxidants that are found in plants. (You get very familiar with plants when you are a vegan!) However, vegetarians and vegans have to be careful to get enough of the nutrients they need, such as iron, most commonly found in meat, but also in lentils and dark greens.

18. Some vegetarians and vegans don't eat meat because they think animal slaughter is unethical, whereas meat-eaters think it is simply a part of the "circle of life". What is your opinion on this?

19. Write a letter as a cow convincing someone to be a vegan.

* **High-Protein, Low-Carb diet** is becoming more and more popular now-a-days. When the body has no carbohydrates to burn (or at least doesn't have excessive amounts to burn, since carbs are hard to avoid; they are even in vegetables!), it starts to burn fat for fuel, often resulting in weight loss. Protein is found in meat, poultry, seafood, eggs, beans, and nuts, to name a few.

* **High-Carb diet** is the complete opposite of the diet you just read! This diet involves eating a lot of carbs in the hopes of gaining energy and healthy prebiotics (which help your gut function). Some athletes find that a high-carb diet helps increase their energy and endurance (although some do well on a low-carb diet). Other health professionals recommend upping carb-intake during pregnancy, as the carbs help ensure fetal brain development. But, on the flip side, eating too many carbs has been linked to diabetes and other diseases...So, you have many opinions to wade through!

20. Hmmm to carb or not to carb? What are your thoughts on the role of carbohydrates in our diet?

* **Gluten-free** is a new trend that has popped up after people discovered that gluten is often hard for the body to process -- and we are often unaware of the physical and mental effects of gluten because we are used to eating it. People range from having mild to extreme sensitivity to gluten. A small part of the population suffers from Celiac disease, an auto-immune disorder where the body actually damages its own digestive organs when they are exposed to gluten. Some people say they feel "lighter" after eating gluten-free, whereas others could never live without their bread! Eating gluten-free also means you have to be careful about getting nutrients (such as fiber) in other foods.

* **Paleo**, also known as the "caveman" diet, is built around only eating the foods our ancestors did - meat, fish, nuts, non-starchy vegetables, fruit, eggs, and plant-based oils (like olive oil). Health professionals say this diet is anti-inflammatory, high in iron, and helps your systems by eliminating the need to process all that "junk food" which can make you tired. However, those following the paleo diet have to be careful about getting nutrients in other forms. (One example is Vitamin D, normally eaten through dairy products).

21. If you had to choose one of these diets listed, which one would you choose and why?

22. Write a poem where the narrator is a food (it can be an animal, plant, grain, fruit, nut, etc.)

23. There have been countless documentaries made on healthy eating, vegetarianism, obesity, and many other things. If could direct your own documentary around food - what would it be about? What would you show the audience?

Health Club

Since you've made it to your last Health Unit, your exercise program should be pretty varied by now!

24. Explain whether you enjoyed making an exercise program and if you plan to use one in the future.
25. How is the program going so far?
26. You might consider adding some cardio or point therapy to your program. Write your complete exercise program.
27. If you had access to any food, and money wasn't an issue, briefly tell us what your ideal diet would be.

Since this is your final Unit, we'd appreciate any feedback or suggestions you have for improving the Course!

Remember: First names only & please let us know if your address changes

Appendices Health: Unit 4 of 4

Appendix 1 (from the Ottawa Journal, 1975)

OLYMPIC GAMES. While the origin of the Olympic games is not known exactly, traditionally the first celebration of the ancient games was in 776 B.C. Thereafter, they were held at four-year intervals until A.D. 393, when they were abolished by the Roman emperor Theodosius I after Greece had lost its independence. Few enterprises created by man have lasted so long. At first, the program was confined to one day and consisted only of a single event, a race the length of the stadium. Afterward additional races, the discus throw, the javelin throw, the broad jump, boxing, wrestling, the pentathlon, chariot racing and other events were added, and the duration, including the religious ceremonies, was extended to seven days. Participation in the games was at first restricted to Greeks, but competitors came from all of the Greek colonies. A sacred truce was declared and enforced to permit participants to travel unmolested to the games. Women were not allowed as competitors or, except for the priestesses of Demeter, as spectators. Before the contest opened, all the competitors and their families, the trainers, and the judges swore a solemn oath to keep the competition clean and fair and to give just decisions.

The games occupied such an important position in the life of Greece that time was measured by the four-year interval between them -- an "Olympiad." The greatest honour then to be attained by any Greek was the winning of the simple branch of wild olive given to a victor in the games. Kings competed alongside commoners; even the Roman emperor Nero (A.D. 37-68) sought Olympic honours. Winners became national heroes; musicians sang their praise, and sculptors preserved their strength and beauty in marble. Their feats of skill and courage were recorded by the poets and writers of the time. The gracefulness and sportsmanship of the contestant and the method of winning were esteemed equally with the victory itself.

MARATHON RACE, a modern road race first staged at the revival of the Olympic games at Athens Greece, in 1896. It commemorates the legendary feat of a Greek soldier, who in 490 B.C. is supposed to have run from Marathon to Athens, a distance of 22 mi. 1,470 yd., to bring news of his countrymen's victory over the Persians.

Michel Bréal of the Sorbonne at Paris originated the idea that the commemorative race should be added to the Olympic games program and, appropriately, the first marathon winner was a Greek, Spyros Louis.

Not until 1924 was the Olympic marathon distance standardized at 26 mi. 385 yd. The distance of the first race at the 1896 Olympics was 24 mi. 1,500 yd. At Paris (1900) the distance was 40 km, (24.85 mi.); at St. Louis, Mo., (1904), 40 km; at the 1906 unofficial Olympic games at Athens, 26 mi.; at London (1908), 26 mi. 385 yd.; at Stockholm (1912), 24 mi. 1,725 yd.; at Antwerp (1920), 26 mi. 990 yd.; at Paris (1924), 26 mi. 385 yd. In 1908, the British Olympic committee decided to start the race from the royal residence at Windsor castle and finish in front of the royal box in the stadium at London.

Because marathon courses are not standardized, the International Amateur Athletic federation does not list a world's record for the event. Except for the Olympic games championship, perhaps the most coveted honour in marathon running is victory in the Boston (Mass.) Athletic Association race, held annually after 1897. Athletes from all parts of the world have participated.

Appendix 2

DOCTOR HAL

Healthy adults can improve their physical fitness through a regular exercise program appropriate for their age and level of fitness. The health benefits include weight loss, lower risk of heart disease and diabetes, and better blood pressure.

To improve the heart, lungs, and muscle endurance, exercise should be continuous and rhythmic, building up to at least 30 minutes, 3 to 4 times/week. It is important to start with short period of exercise and slow down or walk as muscles fatigue, then resume exercise when recovered. An hour after exercise, you should feel completely recovered.

To gain the most heart benefit, exercise much be close to the training heart rate. For young adults, this is a heart rate of 140-160 beats/minute for the 30-minute period, not including warm up and cool down (stretching, walking slow). Count your pulse for 10 seconds (wrist and neck) and multiply by 6. (Or just count for the whole minute.) This gives you your pulse in beats/minute. If you have been inactive for months, it will probably be 65-80 beats/minutes when relaxed. After you have exercised regularly for one month, it will probably be slower (*My friend who was a distance runner had a resting pulse of 40, but that is unusually low!*)

Being part of a group makes exercise easier, even if you don't feel like a workout. Unless you are sick or injured, try to show up for every session. Above all, listen to your body – if your program makes you feel bad, you are doing too much or working at too high a level and you need to slack off. Although this may be impossible for prisoners, speaking with a health professional before starting vigorous exercise is recommended for people with health problems and those over age 40.

Good luck!

Appendix 3

"Heart Healthy Diets" - Jesse W.

Diet is an essential element to overall health. In fact, in the United States of America, many of the leading causes of death are related to diet. The number one cause of death is heart disease, in which trans fats can play a role. Trans fats are formed when hydrogen is used to turn liquid oils into solid fats, like shortening and hard margarine, a process called hydrogenation, which improves the shelf life and flavor of foods. Like saturated fats, trans fats can increase your risk of cardiovascular disease. Saturated fats are generally found in animal products, but there are also vegetable sources including coconut oils. Saturated fats can increase the amount of LDL ("bad") cholesterol. Other vegetable oils, including olive, canola and peanut, are high in mono-unsaturated fats, which reduce LDL cholesterol and are considered heart-healthy.

Feedback for Health Unit 3 assignments

3-6. Examples (in order) are loading trucks, painting ceilings, babysitting someone's parakeet, typing. (I bet you didn't come up with that third one!)

8-9. Include both the physical and mental in defining relaxation. Neither the body nor mind are designed for constant movement or concentration. A balance makes both work better.

10. Relaxation is an exercise if a muscle is tight and painful, and the sufferer learns to focus on the muscle in order to be able to consciously decrease its tension. Yoga is both exercise and relaxation. Relaxation is hard work for a child with spasticity (cerebral palsy) who has to control the flailing, excess movement enough to move more naturally. Another example is trying to wind down after a confrontation.
12. The gentle method of massage could be effective in decreasing tension in muscle groups, or the body in general. The rigorous method can work to increase the muscle tone of the trunk for improved posture and energy level, or to focus on a specific muscle to reduce spasm or tightness.
15. The abdominal (stomach) muscles contract when breathing out forcibly.
16. When exercising the muscles of your hands, the muscles of the upper body are tensing to stabilize the upper arm; that way, the hand has something to push against. Using the hands to vigorously squeeze a towel/ball could get pent up hostility out of your system and also make the muscles work hard so they relax to a greater extent when you stop.
24. You can be "ruled by others" if you act in response to their actions instead of being able to stop caring what others think or expect of you.

PLEASE TRY TO ANSWER ALL QUESTIONS BEFORE LOOKING AT THE ANSWER KEY FOR THIS UNIT

Feedback for Health Unit 4 assignments

1. Good shoes are shock absorbers, support the contours of the feet, prevent pain and aggravation when you step on something sharp or messy, and look really cool when they match your outfit :-)
- 2-5. Running, swimming, and jumping jacks are good examples. Although soccer and hockey involve continuous movement, they aren't the same repetitive movements, and they are interrupted for time outs, foul shots, etc. Of the six sports listed, archery seems to take the least energy, followed by baseball - both entail a lot of standing around. Soccer and hockey players seem to do the most running (or skating), while in football and basketball, lots of players get time on the side lines.
11. A definition for enduring is "putting up with", and one for endurance is "stamina".