Grade 8: Healthy Body

Lesson 4: Healthy Exercise for Teens

Objectives:

1. Students will define three challenges to healthy physical activity: compulsive exercise, exercising while injured, and performance-enhancing drugs.
2. Students will explain the personal, social, competitive, and financial factors that motivate people to make these choices.
3. Students will explore four different performance- enhancing drugs and the hazards involved in using them.
4. Students will debate the pros and cons of performance- enhancing drugs.
5. Students will create strategies to use physical exercise in a healthy manner.

Materials:

- Healthy Exercise Word Jumble **(See Figure 1)**

Activity Summary:

In this lesson students will explore three challenges they face as teens that lead them to use exercise in an *unhealthy* manner. They will understand compulsive exercise, exercising when injured and performance-enhancing drugs by defining them, exploring the motivations behind their use, and the consequences of using them. Students will research and debate the pros and cons of performance-enhancing drugs.

Background Information for the Teacher:

Staying healthy through exercise is consistently promoted as the key to lifelong health. Almost all information about health and self-care for a variety of ailments, conditions and diseases extols the benefits of exercise. This is particularly true for teenagers. While teenagers may have been taught about exercise, proper exercise habits and skills from a very early age, in the teen years new challenges develop regarding the proper role of exercise.

The physical and life-changing developments of puberty bring new emphasis to the teen regarding the body and its attractiveness, shape and weight. Additionally, physical skills at sports and athletics are being developed, offering young people the opportunity for success, popularity, accomplishment and even money in the form of financial aid for college. So the pressure to view the body as a means to achieve social, personal and educational goals increases.

With this increased pressure to perform, exercise and physical activity may shift from fun and healthy activities to an opportunity (or even a requirement) for personal achievement and advancement. Exercise may become a pressure-filled activity rather than a pleasurable one. New considerations and choices about

what constitutes healthy physical activity begin to come into play for teenagers. Healthy and safe exercise for teens now consists of more than just using proper safety equipment, drinking enough water, having proper nutrition, and incorporating warm-ups and cool-downs. Healthy exercise for teens also means making good choices for themselves and avoiding these pitfalls:

- Compulsive exercise
- Exercising when injured
- Using performance-enhancing drugs.

Compulsive Exercise:

Girls are perhaps more susceptible to compulsive exercise than boys. Certainly both sexes can be affected by the drive to exercise more than is considered healthy. While exercise and proper eating are two key tools for maintaining a sense of wellness and a healthy weight, for the person whose body image is distorted, exercise can be over-used in an attempt to live up to an unrealistic ideal of body weight and shape. Pressures to achieve increased athletic performance can also lead to an excessive exercise regimen in the mistaken idea that more workouts are better. What begins as a beneficial activity can become a harmful one.

Fitness experts recommend that teens engage in at least 60 minutes of moderate to vigorous exercise daily. But while the difficulty for many teens is accomplishing that recommendation, the difficulty for many other teens is sticking to that limit. Young people on sports teams, in athletic competitions, and other physically demanding activities such as cheerleading can push their workout schedules beyond what is healthy or even effective for their sport.

Signs that a teen many be engaging in compulsive exercise are:

- Going to great lengths to fit physical activity into their life
- Exercising when not feeling well
- Becoming disproportionately upset if a workout is missed
- Exercising to the exclusion of time with friends
- Becoming overly concerned about exercising “enough” to burn off the calories they’ve consumed
- Worrying about weight gains if daily workouts are not maintained

Because there is a clear connection between compulsive exercise and eating disorders, addressing one issue may be instrumental in finding solutions to the other.

Exercising While Injured:

Unfortunately, sports and injuries often go together, even when rules are observed and safety equipment is used. Accurate information can lead to better and more effective athletic training, and provide guidelines for getting the proper amounts of rest and restoration for the athlete’s body.

There are **two major injury categories**: **acute traumatic** and **chronic**. Acute traumatic injury includes fractures, concussions, contusions, strains, sprains, cuts, and scrapes. Chronic injuries, on the other hand, occur over time and often result from overuse and/or repetitive motion. These include stress fractures, tendonitis, and bursitis. Stress fractures are tiny cracks in the bone surface that result from repetitive impact or overuse. Tendonitis is inflammation of the muscle tendons attaching to the bone, and bursitis is inflammation of the joint bursa.

Acute injuries usually result from a quick, sudden and powerful impact. They can be quite painful and traumatic. Medical treatment is usually sought immediately.

However, because chronic injuries tend to develop slowly over a longer period of time, the first signs can be subtle and all too easily ignored. These are the kinds of aches, pains, and discomforts that we tend to brush aside, saying, "It will be better tomorrow." And so it may seem for a while. But left untreated, chronic injuries are more likely to get worse over time, especially if the same activity that caused them in the first place is continued. Another difficulty with these injuries is that because they often take a while to worsen to the point where they become serious enough to require treatment, they can take an *equally* long time to heal. The painful effects of chronic injuries may be particularly slow to diminish.

Athletes ignore chronic injuries to their peril. Continuing to "play through the pain," while lauded by popular culture, perpetually aggravates the injury. And it is the chronic injuries that young athletes in particular try to ignore so they can keep playing, stay competitive, and not lose their place on the team or the competition that might give them a scholarship.

It is crucial to pay attention to chronic injuries and to treat them immediately. Attention by a properly trained fitness expert, athletic trainer, or medical doctor is vital. Knowing when and even *how* to rest the injured part, receiving appropriate therapy, and recognizing when and how to begin using the injured body part again is the key to a complete and lasting recovery.

Paying attention to your body and to the pain and discomfort messages it is sending you is important in learning to develop a philosophy of working *cooperatively with* and **not** *competitively against* your own body. This is true whether it is daily exercise or an athletic performance.

Attending to your body's messages and proper care of your body will ultimately lead to a longer and healthier life as a student athlete.

Performance-Enhancing Drugs:

There has been much in the news over the last few years about professional athletes and the use of anabolic steroids to enhance performance, and using drug enhancement for Olympic Game competition has been an issue for many years. Most recently there has been a lot of discussion about professional

baseball players' use of steroids. Congressional investigations, Major League Baseball self-regulation, and whether certain baseball stars did or did not use steroids in their pursuit of record-breaking performances has been the subject of much debate.

What does this mean for teenage athletes? Unfortunately the competitive pressure to perform has pushed the issue of taking performance-enhancing drugs into younger and younger age groups. College students, high school students and even junior school students are exposed to the opportunity to boost their athletic performance by taking anabolic steroids.

What are Anabolic Steroids?

Steroids are artificially manufactured hormones. They mimic androgens, the male sex hormones, primarily testosterone. Steroids increase muscle mass and energy, thereby boosting performance and minimizing fatigue.

The following are the major performance-enhancing substances currently in use:

- **Creatine** - An over-the-counter supplement used for sports that feature short-burst, high intensity effort such as wrestling and sprinting.

- **Androstenedione (Andro)** - A steroidal supplement sold at health food stores or gyms, the claims of Andro don't match the reality since Andro decreases testosterone production rather than raising it.

- **Ephedra** - A plant containing ephedrine, which is a stimulant like amphetamines. Also available as an over-the-counter supplement, ephedra is used to reduce physical fatigue, lose weight, and increase mental alertness.

- **Anabolic steroids** - Available only by prescription, anabolic steroids can be taken orally or by injection. Steroids are used both by males and females. They enhance the levels of testosterone for the both sexes and accentuate the physical changes normally provided by testosterone.

*(**Note**: Excellent information about these substances is available in the Mayo Clinic website article about teen athletes and performance-enhancing drugs: www.mayoclinic.com/health/performance-enhancing-drugs.)*

Hazards of Performance-Enhancing Substances:

- Emotional disturbances, including an increase in angry outbursts and aggressiveness, mood swings, hallucinations, and feelings of mistrust or fear
- Premature balding
- Nausea and vomiting

- High blood pressure
- Increased vulnerability to muscle and tendon injury
- Negative growth impact
- Higher risk of developing heart disease and some types of cancer

Males:
- Testicular shrinkage
- Pain during urination
- Development of breasts
- Impotence
- Sterility

Females:
- Increased facial hair
- Deepening of the voice
- Shrinkage of the breasts
- Changes in the menstrual cycle

Taking steroid injections can increase the risk of contracting HIV/AIDS, hepatitis, or infections of the heart lining.

Steroids use can reportedly become addictive, so using them for a short time, (such as a sport season or school term) is risky and unrealistic. So is "cycling" (rotating periods of steroid use with periods of non-use) or "stacking" (combining multiple drugs that magnify or boost the effectiveness of the others), two practices that lead to an increased potential for addiction and place greater stress on the liver, the body's main detoxifying organ. There really is NO safe way to use these substances.

Vocabulary:

Compulsive exercise
Acute traumatic injury
Chronic injury
Stress fracture
Tendonitis
Bursitis
Performance-enhancing drugs
Anabolic steroids
Ephedra
Creatine
Androstenedione
Androgens

Engage:

Ask: ***"Can exercise ever be unhealthy?"*** Have students explain their answers. Students can either brainstorm this question as a group, or answer individually.

Have students/groups report their responses and reasons and let the entire class discuss the information presented.

Explore:

Have students work in groups to organize the **Healthy Exercise Word Jumble**. *(**See Figure 1** at the end of the lesson. The words are written on the page so that they are completely mixed up, with three main topics listed on the page. The remaining words are each about one of the topics.)*

Have each group determine which three words or phrases indicate the main topics. Write the three main topic headings on separate pieces of paper and circle them. Looking at the rest of the words, connect each of the remaining words and phrases to one of the three topics. (All of the words should be used.)

*(**NOTE**: It might be helpful to check in with the groups to be sure they have correctly identified the three main topics before proceeding with the activity.)*

Explain:
Using three large pieces of easel paper for each of the main topic ideas, create a Mind Map, a table, or some other graphic organizer to record the words correctly as the groups report back to the class.

Explore one of the topics (**Compulsive Exercise**, **Exercising When Injured**, and **Performance-Enhancing Drugs**) at a time, using a question-and-answer format to review the correct information as each group shares its results. Develop accurate word definitions and explanations of terms throughout the discussion.

Extend:

1. Have students prepare for a debate about students their age using performance-enhancing drugs.

2. Organize students into four groups: 1) Those in support of the use of performance-enhancing drugs; 2) Those against the use of performance-enhancing drugs; 3) Debate moderators; and 4) Audience. Have students follow these guidelines:

    - **Debate moderators:** Frame the question to be debated, research debate rules, establish rules and format for this debate, etc.

    - **Debaters** (For and Against): Research medical and health information, local and state laws, school and sports association policies, social and athletic motivations, etc.

    - **Audience**: Establish criteria for evaluating the debate and giving a result.

Evaluate:

Have students individually create their own graphic organizers the key ideas, topics, and information for these topics: **Compulsive Exercise**, **Exercising When Injured**, and **Performance-Enhancing Drugs**. This should be done without reference to the class charts or group Word Jumble pages.

Have students draw conclusions about the health and exercise concerns regarding their own activities, body image, athletic interests and goals and create a self-assessment for the at-risk behaviors and attitudes associated with these three issues. Based on this self assessment, students should create a personal strategy plan for avoiding endangering themselves with these three exercise risks.

Optional Enrichment Activity:

Assignment: Have students find news articles relating to one of the three main topics. Have the students summarize their article and share their findings in small groups.

Additional Web Resources:

- United States Anti-Doping Agency - http://www.usantidoping.org/
- World Anti-Doping Agency - http://www.wada-ama.org/en/

Figure 1:

Healthy Exercise Word Jumble

- Changes in the menstrual cycle
- Distorted body image
- Injury from overuse and/or repetitive motion
- Excessive workout demands and times
- Develops slowly over time
- Increased muscle/tendon injury and vulnerability
- Impacts adult height
- Shrinkage of the breasts
- Exercising when ill
- Artificially manufactured hormones
- Testicular shrinkage
- Excessive concern about exercising “enough” to burn calories consumed
- Worry about weight gains if daily workouts are missed
- Connection with eating disorders.
- Lengthy timeline for healing
- Compulsive Exercise
- Chronic injury
- Fractures
- Contusions
- Performance-Enhancing Drugs
- Strains
- Stress fractures
- Acute traumatic injury
- Tendonitis
- Exercising While Injured
- Bursitis.
- Injury from quick, sudden and powerful impact
- Slowly registers as serious enough to require treatment
- Athletic performance pressure
- Concussions
- Pain during urination
- Anabolic steroids.
- Increased muscle mass
- Ephedra
- Increased energy
- Extreme exercising (to the exclusion of friends)
- Impotence
- Occurs slowly over time
- Creatine.
- Deepening of the voice
- Androstenedione (Andro)
- Used by both males and females
- Enhanced testosterone levels
- Increase in anger and aggressiveness
- Mood swings
- Hallucinations
- Feelings of mistrust or fear
- Nausea and vomiting
- Sprains
- Boosts performance
- Development of breasts
- Sterility
- Minimizes fatigue.
- Increased facial hair
- Risk of contracting HIV/AIDS and hepatitis
- Addictive
- “Cycling”
- “Stacking”
- Disproportionately upset if a workout is missed