

WEIGHTLIFTING

INSTRUCTIONS

This Learning Packet has two parts: (1) text to read and (2) questions to answer. The text describes a particular sport or physical activity, and relates its history, rules, playing techniques, scoring, notes and news.

The Response Forms (questions and puzzles) check your understanding and appreciation of the sport or physical activity.

INTRODUCTION

Let's start with a few definitions:

Resistance training - Exercises which involve moving against a resisting object, such as a weight, a lever, a rubber cable, or a torsion bar.

Weight training - Exercises which use the weight of an object to provide resistance to movement. Weight training is a form of resistance exercise.

Free weights - Barbells, dumbbells, iron shoes, and other objects.

Exercise machines- Machines designed to provide resistance to exercise movements. This resistance can be achieved with built-in weights, bungee cords, torsion bars, hydraulic cylinders, etc.

Weightlifting- Weightlifting is a sport that involves lifting barbells or dumbbells.

Olympic weightlifting- A sport that involves two lifts:

1. The snatch (moving a barbell from the floor to an overhead position in one smooth, rapid motion).
2. The clean and jerk (moving a barbell first from the floor to the level of the shoulders (the clean), then overhead

(the jerk), in two smooth, quick motions).

Powerlifting- A sport that involves three lifts:

1. The bench press (pushing a barbell vertically by extending the arms at the elbows while lying on a bench).
2. The deadlift (lifting a barbell off the floor until the back is vertical).
3. The squat (stepping under a barbell that is held on a squat rack, lifting the barbell off the rack onto the shoulders, squatting down until the thighs are parallel to the floor, then rising up until the legs are locked).

Bodybuilding- Using weight training to develop muscular size and symmetry instead of athletic ability. Bodybuilders use weight training to shape their bodies to fit current bodybuilding standards for muscular development. In short, they train not for strength or health, but to achieve a certain appearance.

Although Ben Weider, the President of the International Federation of Bodybuilding, has been working hard for many years to gain Olympic recognition for bodybuilding, the Olympic Committee still does not recognize bodybuilding as a sport.

Athletic Weight Training- Using weight training to develop the strength and endurance needed for such sports as swimming and football. Coaches who assist such athletes are part of a professional organization called the National Strength and Conditioning Association.

Rehabilitative Weight Training - Persons who engage in this kind of training often are recovering from trauma injuries or are living with some condition or disability such as a cardiac condition, diabetes, chronic arthritis or a respiratory ailment. Weight training in such cases often focuses on certain areas of the body. The goal is usually rehabilitation and development of overall fitness rather than appearance or strength.

Like many forms of exercise, weight training helps to develop both overall fitness and a well-muscled, defined and toned physique. Much of that “hard body” look we admire in bodybuilders, both male and female, comes from disciplined and regular weight training. Also, weight training is used to increase skills, strength and power not only in Olympic weightlifting and powerlifting, but in football, wrestling, hockey, and other sports where strength and power are necessary to play the game.

HISTORY OF WEIGHTLIFTING

ORIGINS

Since earliest times, people have been fascinated by weightlifting. The Old Testament tells the story of Samson and his extraordinary feats of strength. Greek legend supplies the story of Milo, a strong man who became stronger through a unique progressive resistance exercise. Starting with a young, small calf, Milo lifted the calf (a weight) for a certain number of times (repetitions) each day. By the time the calf became a full grown cow, legend has it that Milo was lifting that cow overhead in a movement very much like our modern standing press!

England in the 1890s saw the first actual weightlifting contests to test the strength of the competitors. Competition in America began at the 1920 Olympic Games, in which the International Weightlifting Federation (IWF) supervised the competition for the first time. Bob Hoffman (the late owner of the York Barbell Company) was the coach of the U.S. Olympic team for several decades.

Today, the barbell is the standard (and only) piece of equipment used in contemporary weightlifting competitions. The winner is the man or woman who can lift the heaviest amount of weight. Competitors compete in one of nine categories, ranging from “flyweight” to “super heavyweight.”

Specific weight categories are defined precisely (132 lb. class, 181 lb. class, etc.).

MISCONCEPTIONS ABOUT WEIGHTLIFTING

Many myths about weight training and weightlifting persist to the present day. Some believe (erroneously) that lifting weights is bad for the heart (it isn’t—in fact, many physicians and exercise physiologists prescribe it for patients recovering from cardiac episodes). Others believe (also erroneously) that it develops huge, out-of-proportion muscles, especially in women. Equally wrong! If those mythmakers had any idea of just how difficult it is to build one pound of muscle, they’d forget their mythologizing and concentrate on their workouts. Another is the old myth of becoming “musclebound.” Full range-of-motion

resistance exercises tend to make weight trainers more supple practitioners of other forms of exercise and other sports.

Still another common misconception about weight training revolves around the terms “strength,” “power” and “endurance.” These terms all have very specific meanings and are not interchangeable. Here are a few definitions:

Strength- Strength is measured in terms of how much weight can be lifted, regardless of the amount of time required to lift it. People who train for strength perform weight training exercises with slow, deliberate moments.

Power- Power is measured in terms of how much weight can be lifted within a specified time period. To measure power, divide the amount of work done by the amount of time it takes to do it. Persons training for power perform weight training exercises with explosively fast movements.

Endurance- Endurance is measured in terms of how much weight can be lifted repetitiously over an extended period of time.

Stamina - Stamina is measured in terms of how much weight can be lifted in rapid repetitions over an extended period of time.

These four aspects of athletic ability—strength, power, endurance and stamina—are needed in different proportions, depending on the particular sport. The primary rule in any training routine is that training is specific. Power lifters can’t be expected to run marathons without having trained for them, any more than a marathoner could be expected to bench press 400 pounds without having training for that kind of lift.

Athletes whose sports require great amounts of strength benefit from slow-movement resistance training. If power is required, training should be more rapid, and movements explosive. If endurance is needed, resistance should be less and repetitions greater in number. If stamina is needed, training should include rapid movements over an increasing period of time.

Many people go into weightlifting as a means to improving their shape and physical condition. It’s an excellent way to do both. Increasing the muscular endurance of all major muscle groups in the body leads to a firmer, more defined

shape in both women and men. Weight training will NOT build big, out-of-proportion muscles unless you work for that kind of physique.

SAFETY PRECAUTIONS IN WEIGHTLIFTING

As with any type of physical activity, weightlifting is a relatively safe sport when practiced correctly. But a few precautions are always in order. To be safe, observe the following rules:

Always warm up thoroughly before you attempt any physical activity. A Warm up increases the body temperature to prepare it for more activity; it also helps muscles to contract/relax and protects the joints and tendons from damage when the weight training begins. A good warmup will last anywhere from 10 to 20 minutes, depending on age, general physical condition and the level of intensity of your workout.

Keep your knees bent and your back straight when you lift weights off the floor or put them back down.

Remember to breathe regularly and naturally. Holding your breath during a heavy lift can cause dizziness and even blackouts.

Check all equipment before using it. Make sure that bench stands are stable and weights stacked on the floor. Be careful to balance weights when adding to, or subtracting weight from a bar. Keep weight stacks (on exercise machines) with the pin firmly positioned at the right place on the stack. Make sure that barbell or dumbbell collars are securely fastened.

Use a “spotter”—a friend or exercise partner to help you with overhead or supine exercises such as the bench press.

NEVER do heavy bench presses alone!

Remember to keep control of the weight at all times. Make smooth, controlled movements without jerking or wobbling. Use correct form at all times. If the weight is too heavy to lift without a spotter, use less weight and do more reps or sets until you can handle the heavier weight comfortably and safely. If you are doing bench presses, don't bounce the bar off your chest.

Perform all exercises with a full range of motion unless you are specifically trying to develop strength or power in a particular portion of a range of motion.

WEIGHT TRAINING EXERCISES

FOR THE LEGS AND HIPS

The following exercises are part of any comprehensive lower body routine. The weights and equipment can be either free weights (hand-held weights, bars and dumbbells) or machines (such as Nautilus or Universal machines). Remember to warm up before doing any of these exercises. Also remember to breathe regularly. Never hold your breath during a workout!

Squats

This exercise works the muscles of the legs, hips and back.

Place your feet about hip width apart, with the whole foot resting on the floor. Step under a squat rack and lift the barbell off onto your shoulders. Bend your knees and slowly allow your body to move downward. Keep the back muscles tensed at all times—don't bow the back to the front! Continue in the squatting motion until the thighs are parallel to the floor. Then, without bouncing, slowly come back to a standing position. In the beginning, use a weight with which you can comfortably do 10 repetitions. Do only one set of 10 repetitions as a beginner. Over-training can result in injuries.

Thigh curl

This exercise works the muscles in the backs of the thighs and calves.

This exercise is best done on a thigh curl machine. Lie face down on the bench with the heels under the roller pads. Press your knees against the bench and bend the knees, bringing the heels as close as possible to the buttocks. Straighten and repeat the movement. Do this exercise slowly after a good warmup. Hamstrings (the collection of tendons and muscles in the back of the leg at the knee) are easy to injure).

Hip Adduction

This exercise works the inner thigh muscles. This exercise is also most easily done on a machine. Place the legs into the moveable arms of a hip adduction machine so that the thighs and ankles rest against the pads. In one fluid motion, bring your legs together by pressing against the pads. Keep the lower back pressed firmly against the back rest as you work. Return to starting position and repeat the motion.

EXERCISES FOR THE UPPER BODY

These are only three of the major exercises in any good upper-body routine. As with the lower-body workout above, be sure to warm up adequately and breathe regularly.

Bench Press (or Chest Press)

This exercise works the muscles of the chest (called the pectorals), the back of the upper arms (triceps) and front of the shoulders (anterior deltoids). Stabilizing muscles in the shoulders and torso (body) are also used during the lift.

Lie flat on a bench press bench with the small of the back pressed into the bench. Reach up and grasp the barbell (with or without weights) with a grip a little more than shoulder-width. Push up and lift the bar off the rack, then lower it smoothly in one motion until it touches the chest. Then, without pausing or bouncing, lift it upward again. Repeat this movement 6 to 8 times, exhaling as the bar is raised and inhaling as it is lowered.

Remember: always use a spotter for this exercise! Don't try to do it alone! Also, make sure that you warm up your shoulder muscles before doing this lift. While your arms and chest muscles may be able to handle the weight, the shoulder muscles act mostly to stabilize your arms in this lift. If you get off balance or if one of your spotters drops his or her end of the bar, you could injure at least the arm, chest and shoulder muscles.

Use a wide grip to concentrate the load on the chest muscles (pectorals) and the front of the shoulders (anterior deltoids). Use a narrow grip to concentrate on the pushing muscles of the arms (triceps).

Alternating Dumbbell Curl

This exercise works the biceps, the muscles at the front of the upper arm.

Stand with your legs slightly apart, holding a dumbbell in each hand, with the arms close to the sides and the back straight. The dumbbell bars should be pointing straight ahead.

Start with your right arm: bend (flex) it at the elbow and bring the dumbbell up in an arc to shoulder height in front of your chest.

As you bring the dumbbell up, rotate your wrist so that at the end of the lift, the dumbbell bar is pointing to the side. Slowly bring the arm down. Maintain tension on the biceps throughout the lift. Then do the other arm. Do 6 to 8 repetitions in strict form, with a full range of motion.

Shrugs

This exercise works the muscles of the neck, the upper back (primarily the trapezius) and the middle head of the shoulder muscles (lateral deltoids).

Here's how to do this exercise, step by step:

1. Bend your knees, reach down and grasp a bar or barbell with both hands, palms facing you. Keep your back slightly arched (hyperextended), straighten your legs and stand erect with the bar resting across the groin area.
2. Slowly lift your shoulders as high as you can. Imagine that you are going to touch your ears with your shoulder muscles.
3. Slowly lower the weight until it is back across the groin area. Maintain tension on the upper back muscles (trapezius) throughout the movement. Repeat this movement for a total of 8 to 10 repetitions.

COOLING DOWN

If warm-ups are important, cool-downs are almost equally so. After the weight training exercises are completed, you need gradually to bring the body back to its normal condition.

Stretching, riding a stationary bicycle or doing some additional light exercises are excellent ways to cool down.

Remember: never sit or lie down immediately after a strenuous workout. All the blood that's been directed to the muscles will find it difficult to get back to the heart if you sit or lie down. Instead, remain standing or walk at a relaxed pace around the room for a few laps. Otherwise, you may find yourself growing light-headed or faint.

EQUIPMENT AND CLOTHING

EQUIPMENT

Before the introduction of the modern health club, championship bodybuilders and weightlifters did all their workouts with ordinary barbells and dumbbells.

With the proper benches and racks, you can do all the exercises needed to do a rough cut of the kind of strong, powerful body you want.

The exercise machines found in modern health clubs have evolved for several reasons. The Nautilus machines started with designs done for rehabilitation work. The Smith Machine, a movable squat rack, was designed to enable lifters to do squats without a spotter. All of the machines can be used for working both muscle

groups and individual muscles. Some work on the principle of eccentric cams (Nautilus, Dynacam, etc.), others by use of bungee cords (Soloflex) or flat pieces of flexible material (Bowflex). Old-fashioned weight machines have pegs that hold regular barbell plates. One of the most innovative machines uses adjustable hydraulic cylinders to provide resistance (HydraGym).

The advantage of resistance exercise machines is that you rarely need a spotter. The disadvantage is that since the machines move in a predetermined path, that path may not match your own individual ranges of motion. In short, if a machine is designed with the average person in mind and you are either larger or smaller than the average person, you may risk injury in the machine. Some machines are adjustable.

Experiment with light resistance until you find the adjustment that matches your own personal “groove.”

The advantage of free weights is that you work not only the main muscles involved in performing a particular lift, you also work the collateral stabilizing muscles involved in balancing the weight and allowing you to make smooth transitions of body or limb positions throughout the lift’s range of motion.

STUDENT RESPONSE PACKET

WEIGHTLIFTING

NAME _____

DATE _____

WHAT TO DO

The following questions will help you to have a greater appreciation and understanding of weightlifting and weight training. Write your answers in the spaces below the questions. If there is not enough room, write on the backs of these sheets. Be neat, spell correctly, and write in complete sentences.

1. What are some of the physical benefits to be gained from weightlifting?
2. Name at least two erroneous ideas about weightlifting that persist to the present day, and explain why they are in error.
3. Distinguish between the terms “strength,” “power,” and “endurance” as they are used in weightlifting.
4. What is the difference between weightlifting and bodybuilding?

5. Why is it important to warm up before doing weight training?
6. Why should you never do an exercise such as the bench press without a spotter?
7. Describe how the exercise known as the “thigh curl” is done. What muscle group does it work?
8. How is the bench press done? What muscle groups does this exercise work?
9. How should you “cool down” after a weight training session?
10. What kind of clothing is best for weight training?

