

MRS. J's Advanced STRENGTH/CONDITIONING STUDY GUIDE

The **FINAL EXAM** covers the material that has been discussed and utilized in class. The questions consist of multiple choice, short answers, & essay worth a variety of points. **STUDY THIS WELL AND YOU WILL DO WELL ON THE EXAM!**

GOAL SETTING

- When considering establishing a goal, consider the following if the goal is attainable, measurable, and specific.
- The 5 components of S.M.A.R.T. goals are: 1.) Specific, 2.) Measurable, 3.) Attainable, 4.) Realistic, 5.) Timely
- The purpose of a goal being **specific** is that you will be able to know when you have attained it.
- List two specific goals that you set for yourself this trimester.
- List two improvements that you still have for yourself for this year.

HEART RATE

- Your resting heart rate is your heart rate in the morning when you wake up at your body's most restful state.
- Know how to find your pulse for **one minute and record your score.**
- If you exercise between your Target Zone range of 50%-85% of your maximum heart rate you will have cardiovascular benefit.
- The **average** adult resting heart rate is **72 beats per minute.**

STATIC & DYNAMIC STRETCHING

- An example of **static** stretching is bending down, touching your toes, and holding it for 30 seconds.
- An example of **dynamic/ACTIVE** stretching is the magic stretch with a partner in the beginning of the trimester.
- Dynamic stretching is the best form of stretching to use **ANYTIME** - before, during, and after a workout.

THE MUSCULAR SYSTEM

- Skeletal muscles are voluntary meaning that you control your movements.
- The Gluteus maximus is the largest muscle in the body.
- The Quadriceps muscle is on the front of the thigh.
- The hamstrings are on the back of the thigh.
- An exercise that can improve the biceps is arm curls.
- The pectorals and deltoids are mostly used in the bench press.
- In class, we worked the abdominals by doing the core strength, Crossfit, and the Insanity, Yoga, Tae Bo, Tap Out & Ab Ripper X videos. Pushups and bench press are ways that strengthen the pectoralis muscles.
- Smooth muscle and Cardiac muscles are automatic controlled by your brain. They are involuntary.
- The overhead press and military press build strength in your deltoids.

NUTRITION & HYDRATION FOR SPORTS

- Athletes get energy from eating complex carbohydrates.
- An example of a weight-bearing exercise that builds bone up tissue is running for distance.
- Drinking milk and water are the best options for staying hydrated and building strong bones. Limit yourself from sugary drinks like pop, gatorade, energy drinks, and juice as much as possible.
- Eating 6-7 small meals a day as opposed to eating 2-3 large meals a day is your best option for increasing metabolism and staying lean for life.
- Doing the pee-test from when you first wake up and throughout the day is an accurate measure of one's hydration.
- An example of a healthy snack to each **AFTER** a workout is peanut butter on whole-wheat toast because it is high in protein to rebuild muscle and complex carbs to replace expended energy.
- What is a healthy snack to have between meals to keep energy levels high throughout the day?
- The most important meal of the day is **BREAKFAST**. Don't make up excuses for yourself such as "I don't have time; I am not hungry; or I'm trying to cut weight."

ANAEROBIC VERSUS AEROBIC EXERCISE

- In order for a high performance track athlete to reach a level needed to compete, he/she needs to have a focused training, training with an objective. Not all training is the same; there are different kinds of training to achieve different results. In this essay I will discuss the differences between an aerobic and an anaerobic training.
- First of all, both kinds of training are done to achieve different goals. If what you want is to develop force, you must do an anaerobic training. Anaerobic training increases your force and muscular mass; therefore, your velocity increases because you are now stronger. But if it is more stamina what you want, you'll have to do an aerobic training. Aerobic training builds up your lung capacity, and your heart is forced to pump more blood to your body, resulting in heart strength.
- In aerobic training the warm-up is short and with a low intensity. The anaerobic training warm-up is longer because muscles receive a much more aggressive treatment than in an aerobic training. Sprints (50-200m) are part of an anaerobic training, while longer runs (300-500m) with a more comfortable rhythm belong to an aerobic training. In anaerobic training there is a gap between runs, to recover, and then to run the next repetition just as fast. On the other hand, aerobic training has very short recovery times between repetitions, and very often the recovery must be done jogging. That is not recovery at all! But that is the way it's done. Working out in a gymnasium is a useful anaerobic training too.

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- An example of aerobic training would be **running a mid- to long-distance**.
- A benefit of anaerobic exercise would be **increased muscle strength and mass**.
- An example of a combination of aerobic and anaerobic exercise would be **plyometric circuit training**.
- A benefit of aerobic exercise would be improved **circulation and lower blood pressure**.
- An example of anaerobic exercise would be a **max bench press, deadlift, or squat**.

INJURY PREVENTION & CARE

- **Acute** - This injury is from a **single blow** of force such as being hit in football or hockey.
- **Overuse** - Repetitive training usually causes this injury such as the **stress fracture of the tibia in a cross country runner**.
- **Core Strength and Cardio Conditioning** - This is the best way to prevent an injury from occurring in the first place.
- **Concussion** - This injury is becoming more and more common, and causes memory and concentration problems.
- **RICE - Rest -- Ice -- Compression -- Elevation** - This is a method of treating injuries.
- How long and at what frequency should you ice an injury? **20-30 minutes at a time, 3-4 times a day for the first 48 hours that the injury occurred.**

STAPH INFECTION/WEIGHT ROOM

- MRSA is a drug resistant staph infection.
- Staph infection usually spreads through cuts and scrapes.
- The best form of preventing staph infection from spreading through schools is by cleaning equipments and hands after working out.
- Symptoms of staph infection include hot spots that look like pimples and a fever.
- You should wipe down the machines after each training session.
- You must have a spotter in the front and the back for squat.
- There should be two spotters on each side of a bench press plus one in the back.
- Safety is the most important aspect in any training program.
- From the article you read, name a benefit of being on a team.
- Based on the article you read, how can healthy competition be good?
- The three fundamental principles of exercise that need to be applied in order to have success in any exercise program are: Specificity, Overload, and Progression. PLEASE BE ABLE TO DESCRIBE EACH OF THESE!
- **Specificity** may apply to muscle groups, energy systems or specific movements and activities. Basically this principle states that *in order to get better at any type of activity you need to you need to perform that activity*. This means that if you want to get better at running you need to run, throwing darts you need to throw darts, and so on. This principle may however be subdivided further to include only parts of a specific skill, for example if a baseball pitcher wants to work specifically on his accuracy he needs to target this skill by trying to hit a specific target. If he wants to work on his speed he needs to target the throwing phase of the pitch and somehow measure the speed of his pitch. The possibilities and variations are endless but these principles make up a framework to work around when trying to achieve a specific goal.
- **Overload** - This principle states that in order to achieve improvement a greater than normal load needs to be applied. The body will adapt increased stimulus over time whether this increase comes in the form of added weight such as in strength training or added difficulty in any other form depends on the specific activity we want to improve on as well as our goals. When the body has adapted once again we need to apply further overload in order to improve further which leads us to the third principle of progression... In other words... keep making it harder so that you improve! If you are too comfortable you will never get better.
- **Progression** - The principle of progression refers to the rate of which the overload is applied. In theory an optimal rate at which to apply overload exists for all skills or activities. However, this rate might be very different between different people. If overload is applied too rapidly it will result in poor improvement (progression) and demotivation and in sports this may lead to injury. As a general example an athlete that only exercises sporadically and adds overload too fast violates both the principle of overload as well as the principle of progression and as a result will not achieve good progression. In other words, don't try to get better too soon or else you will burn out physically and mentally!
- Give examples of how skills learned from teamwork can help you in the future outside of sports.
- What part of the class was your favorite or most beneficial?
- Describe how you would like to see this class improved for the future if you were to take it again.
- How can you continue keeping your body in shape throughout next trimester and the summer?
- Describe how this class has helped you to become a more physically educated person? How will being more knowledgeable impact your future as an athlete?
- How was your attendance this trimester in general? If you missed class, which class were you most likely to miss? Why? Did you reach your attendance goal for this trimester? How can you improve your goal for next trimester?