***Calculating Target Heart***

Intensity is the most important aspect of training, and the one you can most control. So, you should check your heart rate during and after your workout to make sure you are getting the most out of your workout.

* + (Maximum Heart Rate = 220 – Your Age) = 220 - = MHR
	+ (minimum effort) MHR x 0.6 (60%) = /bpm (beats per min)
	+ (maximum effort) MHR x 0.8 (80%) = /bpm(beats per min)
	+ Training HR range Lower (60%) bpm ÷ 6 = /10sec
	+ Training HR range Upper (80%) bpm ÷ 6 = /10sec
	+ **Training HR range / 10sec = to /beats per 10sec**

***Calculating Heart Rate Recovery***

Heart Rate Recovery (HRR) is a good indicator of heart health and should be checked on for possible improvement in your cardiovascular health. The quicker your heart recovers from the activity the better! However, it only counts if your heart rate has increased enough (met the 60-80% training range).

***HRR = (Heart Rate immediately after exercise) – (Heart Rate after 1-2min or rest)***

|  |  |
| --- | --- |
| Excellent | > 66 |
| Very Good | 50-65 |
| Good | 31-49 |
| Could Improve | < 30 |

***Exercise Technique & Principles***

***NOTE: Your body will get used to an exercise. So, you need to change the exercises you are doing every 6 weeks, or so.***

**Training Tips:**

* For all exercises
	+ FORM!
	+ Slow and steady
	+ Don’t swing/ arch your back
	+ Shoulders back/ shoulder blades together
	+ Do **NOT** fully extend/ slam your joints
	+ Bend your knees when standing
* Back exercises
	+ Pull as if trying to bring your elbows together behind your back
	+ Try to crush a walnut between your shoulder blades
	+ If extending the back do not hyperextend (don’t go beyond 120o)
* Chest Exercises
	+ Push from your elbows – trying to bring them together
	+ Squeeze/ flex muscles throughout
* Arm Exercises
	+ Do ***NOT*** rock; try to isolate the muscle. SQUEEZE the muscle throughout the movement.
* Abdominal Exercises
	+ Do not pull on your neck, or have your neck pulled in towards your chest
		- If you need to have your hands behind your head with your elbows at the sides to create a rest for your head while not pulling on your neck.

Effort and form are the two most important aspects of training. You don’t need to work out for 1-2hrs (Tabata Training). You can get a good workout in as little as 10-20min if you ***push yourself***!

**Principle of Diminishing Returns**

* The more fit you are the more work you would have to put in to see **improvement**. Conversely, the less fit you are the greater the benefits you will see from exercise.
* It can be a reason some people stop exercising they see great improvement at first, but once the benefits become more difficult people lose motivation.
	+ E.G. Someone who is not very flexible will see great improvements, at first, but it will not see as much improvement once they are more flexible.

**Use/Disuse Principle**

* If you cease training, in any given area of fitness, you can quickly lose some of your potential gains (body wants to conserve energy & muscles require energy)
	+ In some cases, ***two weeks of inactivity*** can reduce any muscular gains
		- Still, you should rest for 1 week every 4-6weeks (reduced Intensity or frequency of workout)

**Principles of Training**

**S.A.I.D. Principle**

* **S**pecific **A**daptation to **I**mposed **D**emands
	+ Your body will adapt to the specific stresses placed on it.
		- Your brain adapts first 🡪 Your neurons learn to fire together through repeated action
			* You will see great improvement in the first 6 weeks as your neurons adapt (NO increase in size!)
		- Once your neurons learn have learned to do the movement then your muscles may begin to adapt (increased size)
			* You must train in a specific way for your muscles to increase in size (see: Muscular Strength FITT principle)
	+ For your body to adapt it must be pushed beyond its normal limits (**OVERLOAD)**!
		- If the exercise you are doing is easy than your body won’t adapt 🡪 If it is too easy your body will actually become weaker! (Use it or lose it!)
		- However, don’t over train either 🡪 Every 4-6 weeks you should either reduce your workout frequency or intensity (weight) for a week 🡪 Take that time to set new goals and evaluate your progress.

***What does this mean?***

* Train so that your activities are similar to the results you want 🡪 Twisting crunches for better twisting motion!
	+ If you repeatedly do crunches your abdominals will adapt to that exercise; however, your abdominals may not be strong when it comes to doing a plank.
		- Do a full range of motion so your improvements are not limited to a small angle of motion.

***F.I.T.T. Principle***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Cardiovascular** | **Flexibility** | **Muscular Strength** | **Muscular Endurance** |
| **F**requency | 3-5 days/week | Part of every cool down (part of warm up optional) | 3-4 times per week\*give 24hr rest to muscle groups. | 3-4 times per week\*give 24hr rest to muscle groups. |
| **I**ntensity | Increase as you become more fit | Hold stretches for 5-30seconds\*less time if planning activity afterwards | 8-10 reps/ 1-2 sets\*Final few reps should be difficult to complete | 15-20 reps/ 2-3 sets\*Final few reps should be difficult to complete |
| **T**ime | 10-60min of continuous activity depending on intensity. | As long as it takes to get through each major muscle group. | 10-60min depending on number of exercises | 10-60min depending on number of exercises |
| **T**ype of Activity | Any activity that raises the HR to the target levels. | Static or controlled dynamic stretches | Any activity that provides resistance (body weight, resistance bands, etc.) | Any activity that provides resistance (body weight, resistance bands, etc.) |

* We use the FITT principle to design a training program, and to inform how we should progress.
	+ ONLY increase **one of the aspects** at a time to help prevent injury (Start out slow too!).
		- E.G. Michael has a goal of increasing his muscular strength. He currently works out 2x a week, and can now do 1 set of 10 reps of bicep curl using a 10lb weight with little difficulty. To continue to progress he should do **one** of the following:
			* Increase to 2 sets
			* Increase to 15lbs so that the 8-10th repetition is very difficult/impossible
			* Increase to working out 3 days/week

Example progression:

|  |  |  |  |
| --- | --- | --- | --- |
| **First 6 weeks** | **Second 6 weeks** | **Third Six Weeks** | **Fourth Six Weeks** |
| 2x week1 set of 10 reps for 10lbs | 3x week1 set of 10 reps for 10lbs | 3x week2 sets of 10 reps for 10lbs | 3x week2 sets of 10 reps for 15lbs |

|  |  |  |
| --- | --- | --- |
|  | ***Fitness FITT Principle*** |  |
| Name  | Class | Date |

**Part A: Match the following activities to the appropriate fitness component.**

|  |  |  |
| --- | --- | --- |
| Fitness Components1. Muscular strength
2. Cardiovascular endurance
3. Muscular endurance
4. Flexibility
 | \_\_\_\_\_\_ 1. swimming\_\_\_\_\_\_ 2. triceps dips\_\_\_\_\_\_ 3. soccer\_\_\_\_\_\_ 4. Crunches\_\_\_\_\_\_ 5. lifting heavy objects | \_\_\_\_\_\_ 6. stretching\_\_\_\_\_\_ 7. gymnastics\_\_\_\_\_\_ 8. aerobics\_\_\_\_\_\_ 9. wrestling\_\_\_\_\_\_ 10. Lifting light objects  repeatedly |
| **Part B: Indicate whether each statement is True or False.** |  |

\_\_\_\_\_\_ 1. There are four components in the FITT principle.

\_\_\_\_\_\_ 2. To maintain your cardiovascular fitness, you need to stretch at least 20 minutes three times a week.

\_\_\_\_\_\_ 3. Sit-ups help to develop cardiovascular endurance.

\_\_\_\_\_\_ 4. To improve your muscular strength, you need to exercise every day.

\_\_\_\_\_\_ 5. Talking to someone as you exercise is a great way to tell whether you are working too hard.

\_\_\_\_\_\_ 6. Playing soccer three times a week for 25 minutes at a high intensity level is an action plan for cardiovascular endurance.

|  |  |
| --- | --- |
| **Part C: Identify what each letter of the FITT principle stands for and briefly describe it.** |  |
| F | I | T | T |

**FITT Principle Practice**

Name: Div.: Date:

Use the SAID & FITT principles to design a workout plan for the following people:

1. Susan likes to play soccer and has set a goal to score more goals this year. She realizes that the best way to do this is to become stronger so she can be quicker at sprinting to the ball, as well as be able to put more power into her shot. (Note: Types of activities should be exercises that will help her with her specific goal)

|  |  |  |
| --- | --- | --- |
|  | **Beginning** | **Possible Progression** |
| **Frequency** |  |  |
| **Intensity** |  |  |
| **Time (Duration)** |  |  |
| **Type(s) of Activity** |  |  |

1. Jorge is tired a lot and wants to have more energy. When pressed for a specific example, he says he doesn’t want to get tired when running up the stairs of his house.

|  |  |  |
| --- | --- | --- |
|  | **Beginning** | **Possible Progression** |
| **Frequency** |  |  |
| **Intensity** |  |  |
| **Time (Duration)** |  |  |
| **Type(s) of Activity** |  |  |