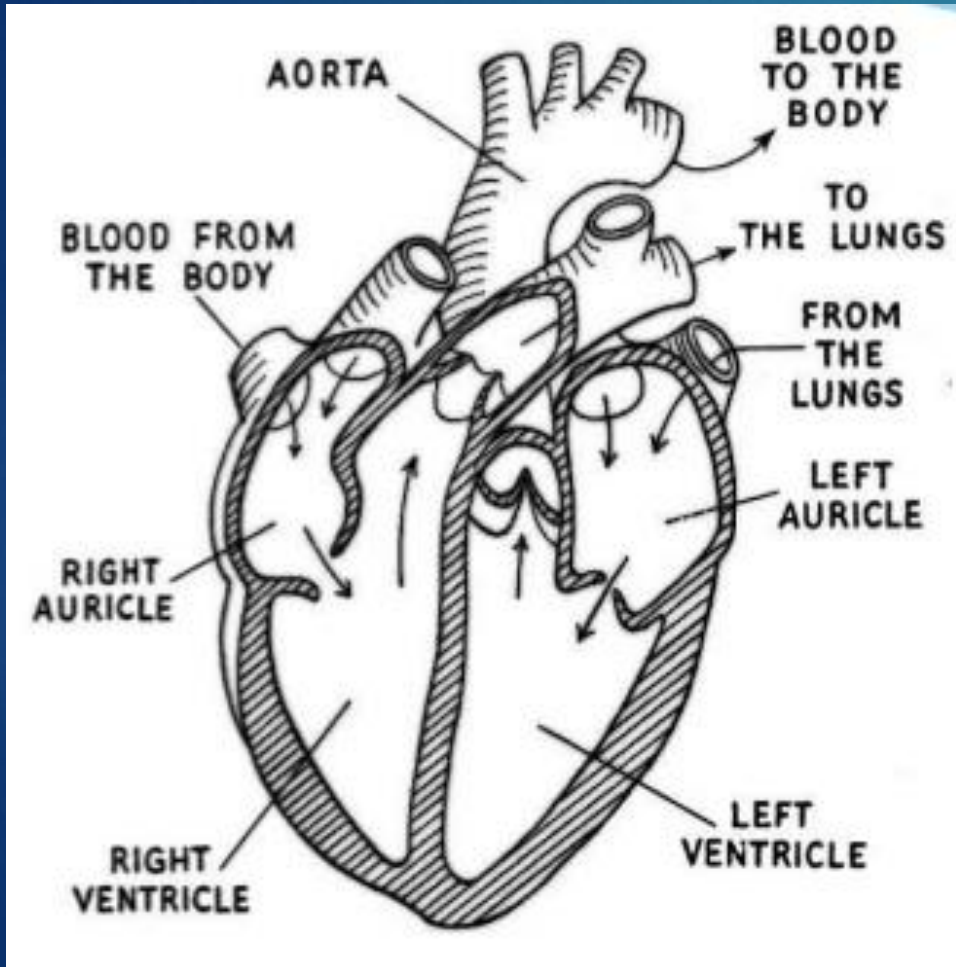# Heart Rate

WHAT DOES YOUR HEART DO?

WHAT IS A HEART RATE?

Introducing the Heart

- The most important muscle in your body.

- It is the pump that delivers oxygen rich blood throughout your body.

- The atria and ventricles work together, alternately contracting and relaxing to pump blood through your heart. The electrical system of your heart is the power source that makes this possible.

- Your heartbeat is triggered by electrical impulses that travel down a special pathway through your heart.

- The heart is made up of cardiac muscles and can become stronger with use and good health practices.

- To improve and maintain the strength of your heart, it is important to participate in regular aerobic exercise.

What is Heart Rate?

▶ The number of times your heart beats per minute (BPM).

▶ Also known as PULSE.

▶ Normal HR varies from person to person, knowing yours can be an important health gauge.

Resting Heart Rate (RHR): Heart pumping the lowest amount of blood because body is at rest.

➢ Normal RHR ranges from 60 – 100 BPM

How to Check Your Pulse

► Find your pulse in either your neck or wrist.

► Count how many times you feel it beat for 30 seconds.

► Once you have that number, double it.

► Example: I counted 35 beats in 30 seconds. When I double that number, my heart rate is 70 BPM.

What is Maximum Heart Rate?

▶ **Maximum Heart Rate (MHR):** Age related number of BPM of the heart when working at maximum.

MHR = 220 - Age

▶ Knowing this number along with RHR allows you to find the correct intensity for your body when being physically active.

▶ Low intensity, closer to RHR

▶ High intensity, closer to MHR

▶ Given this information, where do you think HR should range during physical activity?

What is Target Heart Rate Zone?

► **Target Heart Rate Zone (THRZ):** Range that defines the upper and lower limits of training intensities.

$$\text{THRZ lower} = \text{MHR} \times 0.65$$
$$\text{THRZ higher} = \text{MHR} \times 0.85$$

► This is how you know if you are doing too much or not enough.

► This zone is also a good indicator of your physical health.

► Remember to listen to your own body! Every BODY works and responds differently.

THRZ & Example Activities

TARGET ZONE HEART RATE	EXAMPLE DURATION		
VERY HARD 90-100%	LESS THAN 5 MIN	171-190 BPM	**BENEFITS:** develops maximum performance and speed **FEELS LIKE:** very exhausting for breathing and muscles **RECOMMENDED FOR:** fit persons and for athletic training
HARD 80-90%	2-10 MIN	152-171 BPM	**BENEFITS:** increases maximum performance capacity **FEELS LIKE:** muscular fatique and heavy breathing **RECOMMENDED FOR:** everybody for shorter exercises
MODERATE 70-80%	10-40 MIN	133-152 BPM	**BENEFITS:** improves aerobic fitness **FEELS LIKE:** light muscular strain, easy breathing, moderate sweating **RECOMMENDED FOR:** everybody for moderately long exercises
LIGHT 60-70%	40-80 MIN	114-133 BPM	**BENEFITS:** improves basic endurance and fat burning **FEELS LIKE:** comfortable, easy breathing, low muscle load, light sweating **RECOMMENDED FOR:** everybody for longer and frequently repeated shorter exercises
VERY LIGHT 50-60%	20-40 MIN	104-114 BPM	**BENEFITS:** improves overall health and helps recovery **FEELS LIKE:** very easy for breathing and muscles **RECOMMENDED FOR:** weight management and active recovery

Maximize Performance

Improve Fitness

Lose Weight

HEART RATE ZONES FOR CHILDREN AND ADOLESCENTS

HEART RATE ZONE	FEELS LIKE	EXAMPLE ACTIVITIES	BENEFITS
PERFORMANCE **100-90%**	**VIGOROUS TO VIGOROUS+** » VERY EXHAUSTING » FAST BREATHING » MUSCLES MAY FEEL TIRED	» SHORT SPRINTS » SOCCER » BASKETBALL	DEVELOPS MAXIMUM PERFORMANCE AND SPEED
HEALTHY HEART **90-70%**	**MODERATE TO VIGOROUS** » EASY TO HEAVY BREATHING » LIGHT MUSCULAR STRAIN » AVERAGE SWEATING	» GAMES » JOGGING » CYCLING » DANCING	IMPROVES AEROBIC FITNESS AND PERFORMANCE CAPACITY
ACTIVE **70-60%**	**EASY TO MODERATE** » EASY, COMFORTABLE BREATHING » LOW MUSCLE LOAD » LIGHT SWEATING	» WARM-UP AND COOL-DOWN » BRISK WALKING » PLAYING CATCH » VOLLEYBALL	IMPROVES BASIC ENDURANCE AND MUSCLE TONE

EXERCISE INCREASES BRAIN POWER AND MUSCULAR STRENGTH!

5 Components of Fitness
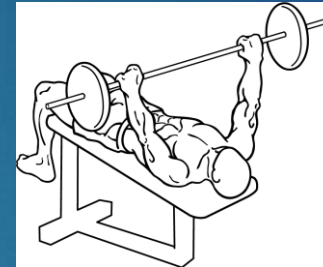
- Muscular Strength
- Muscular Endurance
- Cardiovascular Fitness
- Flexibility
- Body Composition

Muscular Strength

- Is characterized by the maximal force muscle(s) can generate without a time limit of a specified movement.

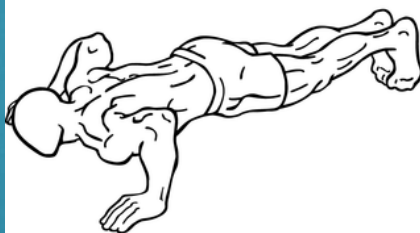- What are some exercises/activities that demonstrate Muscular Strength?

- My Examples:
  - Curl-Ups in 60 seconds
  - Bicep curl
  - Bench press
  - Leg Press

Muscular Endurance

▶ Is the ability of the muscles to perform continuously without fatiguing.

▶ What are some exercises/activities that demonstrate Muscular Endurance?

▶ My examples:

   ▶ Cadence Push-up test

   ▶ Cycling

   ▶ Step machines

   ▶ Elliptical machines

Cardiovascular Fitness

- Is the ability of the heart and lungs to work together to provide the needed oxygen and fuel to the body during sustained workloads.

- What are some exercises/activities that demonstrate Cardiovascular Fitness?

- My examples:
  - Mile Run
  - Pacer Test
  - Swimming

Flexibility

- Is the ability of each joint to move through the available range of motion for a specific joint.

- What are some exercises/activities that demonstrate Flexibility?

- My examples:
  - Sit & Reach Test
  - Yoga
  - Stretching
  - Shoulder flexibility test
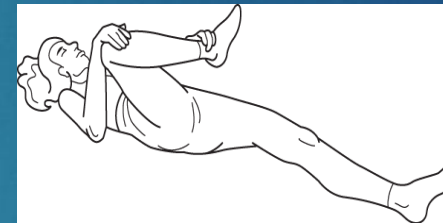
Body Composition

▶ Is the amount of fat mass compared to lean muscle mass, bone and organs. This can be measured using underwater weighing, Skinfold readings, and bioelectrical impedance. Underwater weighing is considered the "gold standard" for body fat measurement, however because of the size and expense of the equipment needed very few places are set up to do this kind of measurement.

▶ What are ways to help maintain a healthy body composition?

▶ My examples:

  ▶ Well balanced diet

  ▶ Daily exercise/activity (60 minutes)