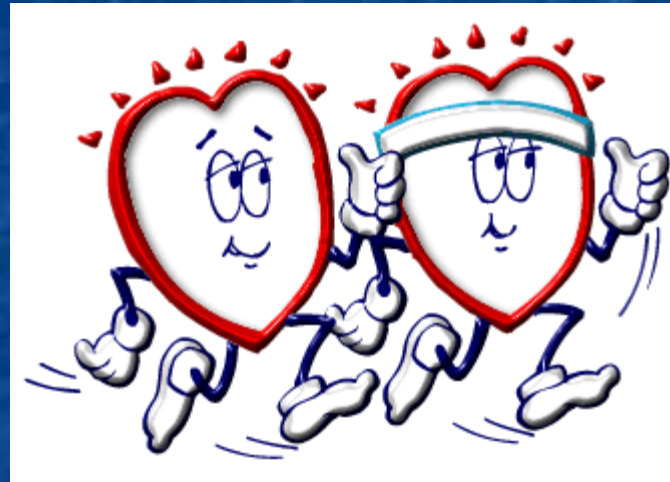


Exercise and Your Heart

How to be Active Safely



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Exercise and ACHD

- In the past you may have been told to avoid exercise, we now realize that gentle exercise is beneficial for most people with Congenital Heart Conditions

Why Should You Exercise?

- Benefits of Regular Physical Activity
 - Manage Weight
 - Increase Mood
 - Decrease Blood Pressure
 - Boost Energy
 - Better Sleep
 - Stronger Muscles/Bones

Prevent Risk Factors

- Exercise helps reduce risk factors for heart disease
- Your heart is already at a disadvantage compared to those without congenital heart defects
- Don't make yourself further at risk because of those risk factors you can prevent!

Risk Factors

Positive Risk Factors:

Family History

Cigarette Smoking

High Blood Pressure

High Cholesterol

Diabetes

Obesity

Sedentary Lifestyle

Negative Risk Factor:

HDL Cholesterol



BMI - Obesity Risk

WEIGHT lbs	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215
kgs	45.5	47.7	50.0	52.3	54.5	56.8	59.1	61.4	63.6	65.9	68.2	70.5	72.7	75.0	77.3	79.5	81.8	84.1	86.4	88.6	90.9	93.2	95.5	97.7
HEIGHT in/cm	Underweight				Healthy				Overweight				Obese				Extremely obese							
5'0" - 152.4	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
5'1" - 154.9	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	36	37	38	39	40
5'2" - 157.4	18	19	20	21	22	22	23	24	25	26	27	28	29	30	31	32	33	33	34	35	36	37	38	39
5'3" - 160.0	17	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	32	32	33	34	35	36	37	38
5'4" - 162.5	17	18	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	31	32	33	34	35	36	37
5'5" - 165.1	16	17	18	19	20	20	21	22	23	24	25	25	26	27	28	29	30	30	31	32	33	34	35	35
5'6" - 167.6	16	17	17	18	19	20	21	21	22	23	24	25	25	26	27	28	29	29	30	31	32	33	34	34
5'7" - 170.1	15	16	17	18	18	19	20	21	22	22	23	24	25	25	26	27	28	29	29	30	31	32	33	33
5'8" - 172.7	15	16	16	17	18	19	19	20	21	22	22	23	24	25	25	26	27	28	28	29	30	31	32	32
5'9" - 175.2	14	15	16	17	17	18	19	20	20	21	22	22	23	24	25	25	26	27	28	28	29	30	31	31
5'10" - 177.8	14	15	15	16	17	18	18	19	20	20	21	22	23	23	24	25	25	26	27	28	28	29	30	30
5'11" - 180.3	14	14	15	16	16	17	18	18	19	20	21	21	22	23	23	24	25	25	26	27	28	28	29	30
6'0" - 182.8	13	14	14	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28	29
6'1" - 185.4	13	13	14	15	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28
6'2" - 187.9	12	13	14	14	15	16	16	17	18	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27
6'3" - 190.5	12	13	13	14	15	15	16	16	17	18	18	19	20	20	21	21	22	23	23	24	25	25	26	26
6'4" - 193.0	12	12	13	14	14	15	15	16	17	17	18	18	19	20	20	21	22	22	23	23	24	25	25	26

Risk Factors

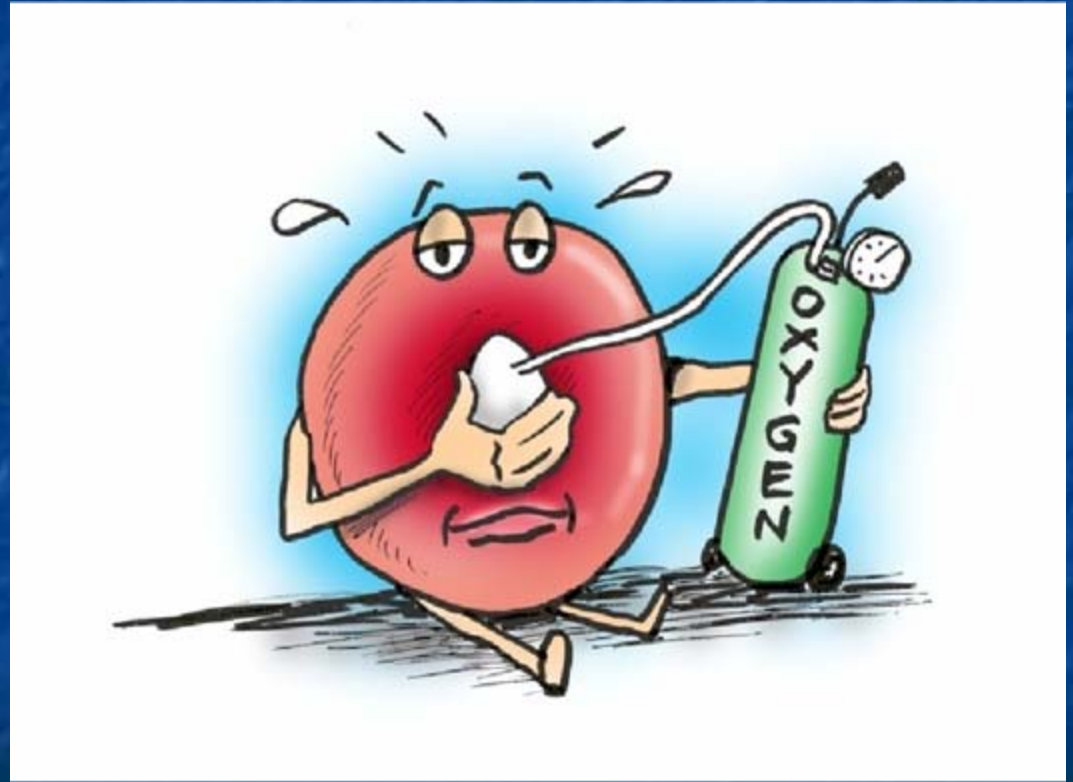
- Exercise can help prevent risk factors:
- High Blood Pressure
- Obesity
- Diabetes
- Sedentary Lifestyle
- Cholesterol

What happens to your heart when you exercise?

- When you exercise muscles demand more oxygenated blood
- Muscles send signals to the heart telling it to pump more blood to them

What happens to your heart when you exercise?

- Heart pumps blood through lungs
- Red blood cells load up with oxygen



What happens to your heart when you exercise?

- Heart pumps oxygenated blood to muscles where its used
- If heart is working efficiently then muscles will receive adequate amounts of oxygen-rich blood

How does exercise help your heart?

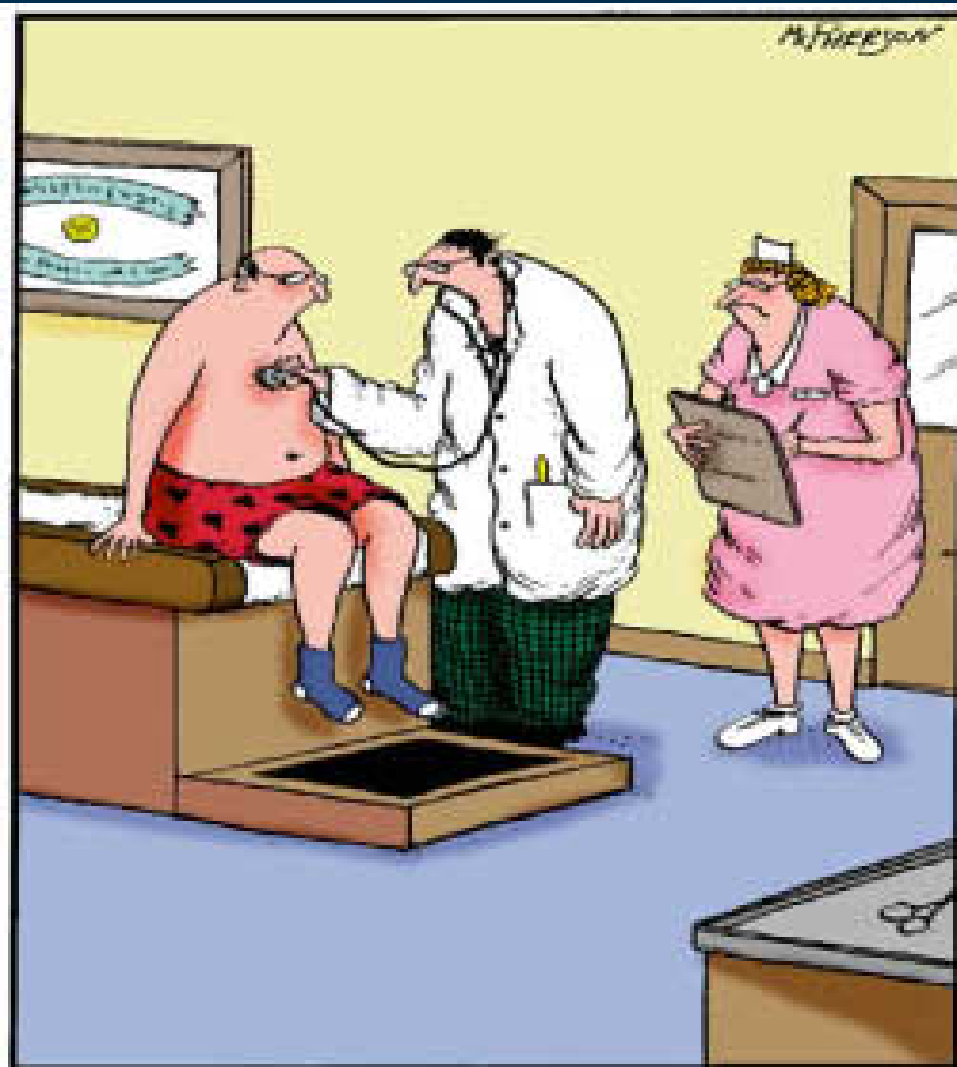
- Heart is a muscle- working out strengthens the heart muscle just like any other muscle

In turn,

- heart is stronger and works more efficiently
- makes it easier on the heart to do its job- therefore less stress on the heart

Am I healthy enough to begin an exercise program?

- Always consult Cardiologist
- Cardiologist may want further testing to see if you are healthy enough for exercise



“Joyce, write this down in Mr. Cutler’s file: ‘thump ... thump-thump ... thumpety-thump ... boink.’”

Stress Testing

- What does a stress test tell you?
 - Measures the hearts response for an increased demand for oxygen
 - Places stress on the heart to see how it responds
 - Assess for any heart rate or rhythm abnormalities

Stress Testing

- Why do I sometimes wear a mouthpiece?
- Metabolic Stress Test
 - The mouthpiece allows measurement of Oxygen Uptake (VO_2) as well as other metabolic measurements



Stress Testing

- What can a metabolic stress test tell the physician?
 - How well your heart and lungs perform together
 - Your hearts ability to do work
 - Determine if certain surgical treatments are right for you
 - Effectiveness of current treatment
 - Help develop a safe and effective exercise program

Cardiac Rehabilitation

What is Cardiac Rehab?

Cardiac rehabilitation is a medically supervised program consisting of exercise and education to help heart patients improve their overall physical and mental function

Cardiac Rehabilitation

- Who is referred for Cardiac Rehabilitation
 - Anyone who has recently undergone open heart surgery
 - Anyone who is currently inactive, feeling fatigued, or symptomatic that the Cardiologist feels would benefit from an exercise therapy program

Getting Started

- After your physician has cleared you for exercise and given you some basic guidelines its time to get moving!

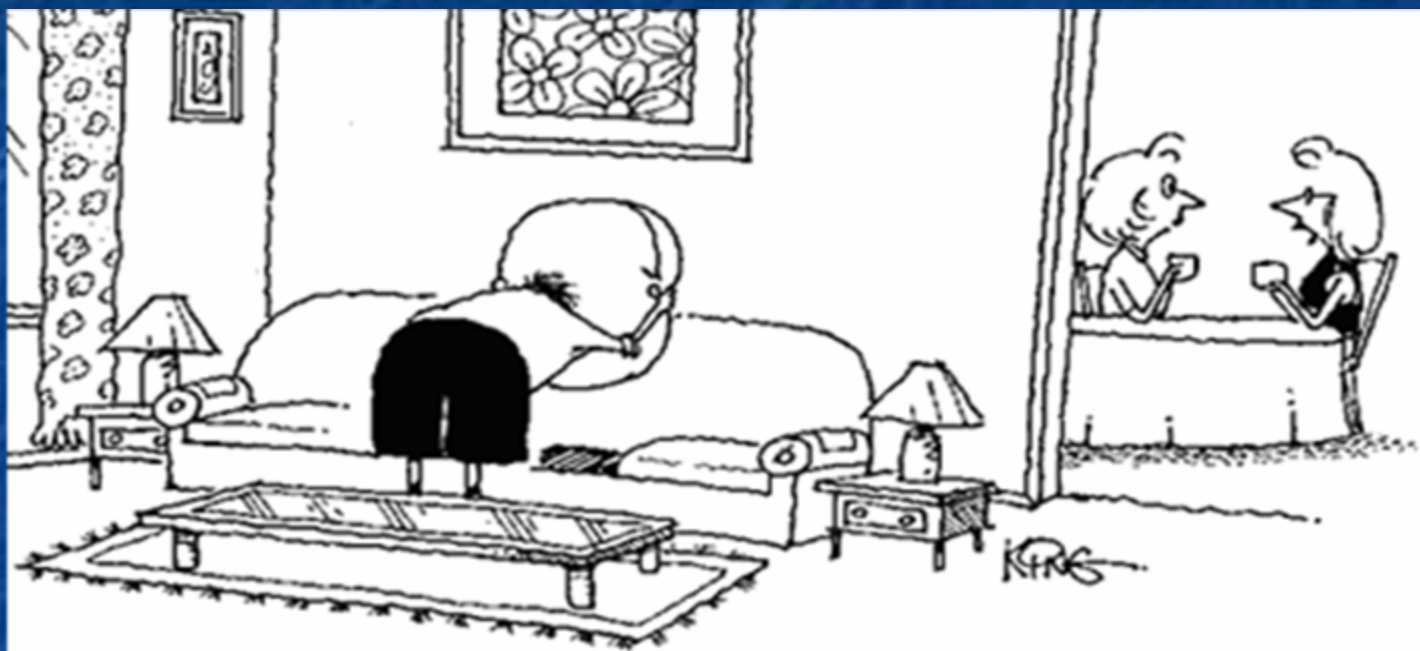


Getting Started

- Plan
 - Sit down and plan out a workout schedule
- Goals
 - Set yourself goals to achieve- both long and short term
- Rewards
 - Make rewards for achieving these goals
- Barriers
 - Think about barriers you may face and come up with solutions to prevent them from happening

Getting Started

- Increase Activities of Daily Living (ADL's)
 - Take the Stairs
 - Walk the Dog
 - Park Car Further Away
 - Yardwork
 - Exercise while watching TV
- See bookmark for more examples



The doctor said he needed more activity. So I hide his T.V. remote three times a week.

Three Main Types of Exercise

- Cardiorespiratory



- Flexibility



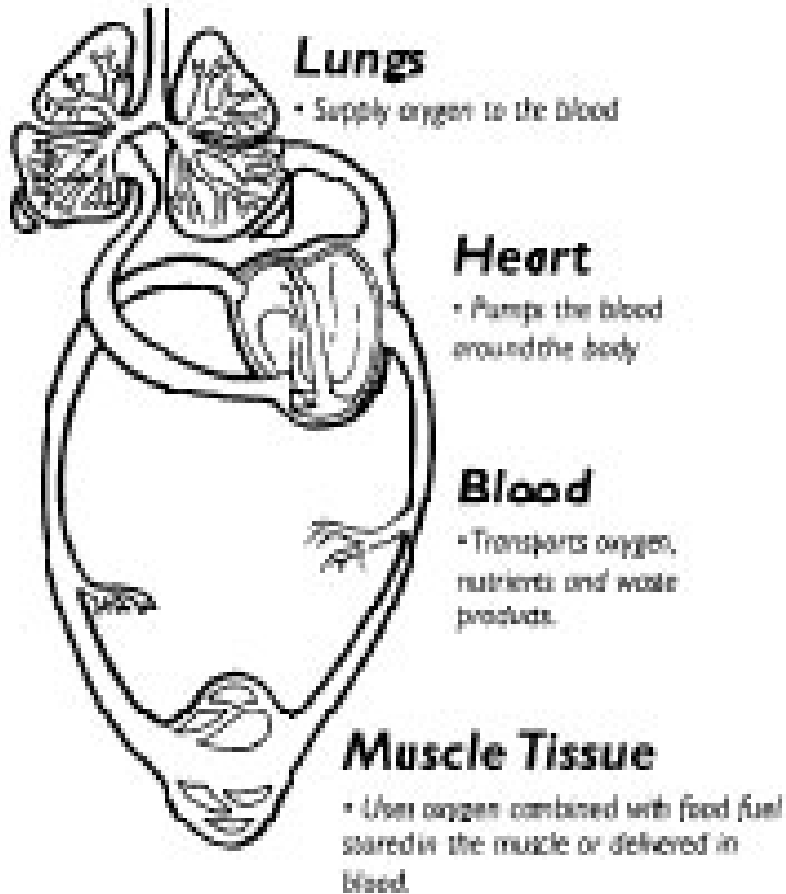
- Resistance



Cardiorespiratory

- What is it- Cardio + Respiratory
 - Affecting both the heart and lungs
- Examples
 - Walking, Running, Biking, Hiking, Swimming, etc.

The Cardiorespiratory System



Lungs- supply oxygen to blood

Heart- pumps blood around the body

Blood- transports oxygen and nutrients

Muscle- uses oxygen + food fuel

Flexibility

- Flexibility-The range of motion about a joint. Helps you increase how efficient you move
- What does it do?
 - Helps prevent pain and injuries that can be acquired from physical activity
 - Helps the muscles relax after stressful activity

Resistance

- Resistance-(strength) Training the muscles of the body to increase strength, power or muscular endurance through moving a load or weight
- Examples
 - Free Weights
 - Machine Weights
 - Body Weight Resistant
 - Thera-Band

FIT Principle

- **F.I.T**
- **Frequency**- how many days per week
- **Intensity**- how hard the activity is
- **Time**- duration of the activity

- Set a goal for each principle and for each type of exercise

FIT Principle

- Cardiorespiratory
 - 30 minutes or more most or all days of the week within target heart rate range
- Resistance
 - 1-3 sets of 10-20 repetitions, 2-3 days per week
 - Use light weight, high reps
- Flexibility
 - 2-3 stretches per muscle group
 - Hold for 15-30 sec, to a point where you feel the stretch but not pain!

Target Heart Rate

Age	Target HR Zone 50–85 %	Average Maximum Heart Rate 100 %
20 years	100–170 beats per minute	200 beats per minute
25 years	98–166 beats per minute	195 beats per minute
30 years	95–162 beats per minute	190 beats per minute
35 years	93–157 beats per minute	185 beats per minute
40 years	90–153 beats per minute	180 beats per minute
45 years	88–149 beats per minute	175 beats per minute
50 years	85–145 beats per minute	170 beats per minute
55 years	83–140 beats per minute	165 beats per minute
60 years	80–136 beats per minute	160 beats per minute
65 years	78–132 beats per minute	155 beats per minute
70 years	75–128 beats per minute	150 beats per minute

Exercising Safely

- Low Intensity/Low Impact
- Walking, Stationary Cycling, Swimming, Elliptical, Nu-Step
- Therabands, Machine Weights, Free Weights



Exercising Safely

- Exercise with a partner or in a place where others are around you
- Exercise in a setting with controlled temperature and if possible emergency equipment nearby
- Be aware of symptoms and take breaks when needed

Exercise Safely

- Eat a sufficient meal or snack at least 2 hours prior to exercising
 - Mix of Carbohydrates, Protein and *some* Fat
- Stay Hydrated!!
 - Minimum of 1 Glass of Water- Before, During and After Exercise

Exercise Safely

■ Heat Precautions

- Exercise during the cooler parts of the day
- Exercise at a lower intensity than normal
- Increase your normal fluid intake before during and after exercise
- Wear a minimum of light, loose-fitting clothing

Exercise Safely

- Cold Precautions
 - Wear lots of layers
 - Drinks lots of fluid
 - Wear gloves
 - Wear a hat



Exercise Safely

■ Warning Signs

- Pain or pressure in chest, left side of shoulder or arm
- Feeling Dizzy, Lightheaded, Nauseous
- Break out in a cold sweat
- Muscle Cramps
- Sharp pains in joints, feet, ankles, bones
- Heart racing or beating irregularly

Conclusion

- Choosing to begin a healthier life through diet and exercise takes commitment. This is a lifestyle change!
- Get your family involved, it will help you stay on track and they will also receive the benefits of living a healthier lifestyle

Questions?

Exercise!



***The Poor Man's
Plastic Surgery!***