Practical “Do Anywhere” Fitness Methods For Heart Health

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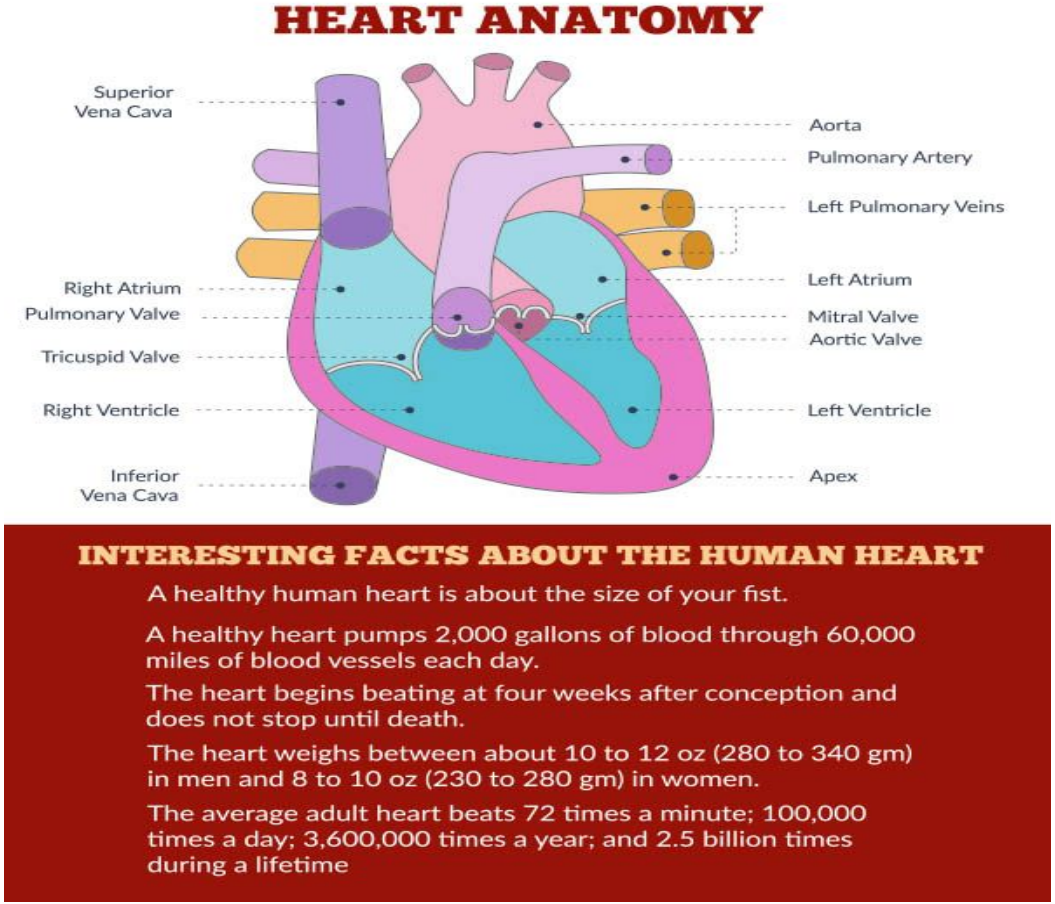
Warning, Proceed With Caution!

Exercise is not recommended for all those with pre-existing heart conditions. Be sure to consult with a physician before attempting any exercise program.

A Little Heart Primer To Get Us Started



Why Exercise For Heart Health?

- **Reduction in bodyfat, including visceral bodyfat or "belly fat".**
- **Reduction of blood pressure and heart rate**
- **Reduction of total cholesterol and LDL "bad cholesterol"**
- **Increase in HDL "good cholesterol," especially from strenuous exercise**
- **Reduction of inflammation in the arteries and aids in keeping blood vessels open and arteries elastic, even as we get older**
- **Increase in insulin sensitivity after bouts of exercise, improved utilization of glucose by muscle cells**
- **Improved use of oxygen/greater aerobic capacity which can lead to less fatigue from daily activities**
- **Reduction of stress and anxiety along with improved mood**
- **Increased bone density and improved muscle strength, flexibility and function**
- **Overall improved quality of life**

Regular exercise has been shown to decrease the death rate in heart attack patients by 20-25%, lower the likelihood of developing back pain and disability in older age populations and improve quality of life. Ideally we want to combine strength training with aerobics to realize all of these benefits.

What is Cardiovascular Exercise?

"According to the American College of Sports Medicine, cardio, or cardiovascular exercise, is any activity that increases heart rate and respiration while using large muscle groups repetitively and rhythmically."

How Much Is Enough?

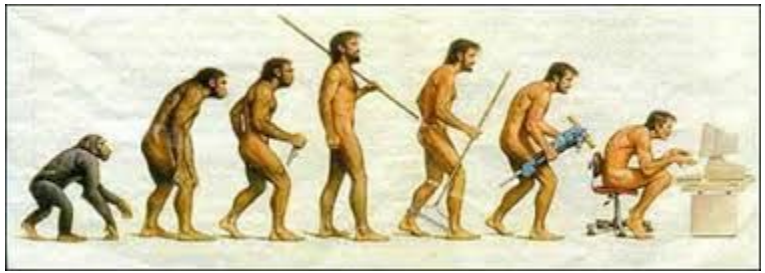
From the Mayo Clinic:

“To improve overall cardiovascular health, we suggest at least 150 minutes per week of moderate exercise or 75 minutes per week of vigorous exercise (or a combination of moderate and vigorous activity). Thirty minutes a day, five times a week is an easy goal to remember. You will also experience benefits even if you divide your time into two or three segments of 10 to 15 minutes per day.”

As we will discuss, there are an infinite number of painless ways to reach these numbers, no matter how busy you are or how little experience you have.

Running: Is It Right For Everyone?

One common exercise choice that many people turn to is running. While this is certainly an effective method, it is not the only way and can have harmful side effects if your body is not ready to run. Long hours of sitting is one of the greatest saboteurs of running posture.



The Importance of Posture

Long hours spent sitting creates postures like this:

Over time, these changes become the “new” normal posture.

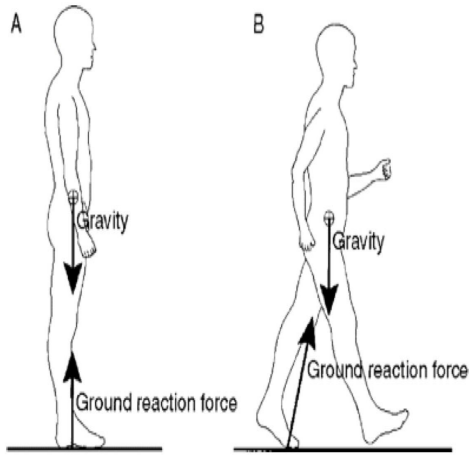
Combine this posture with thousands of steps on a hard surface

and you have a recipe for overuse injuries!

Overuse Injuries From Running

GROUND REACTION FORCES

- The effect of action-reaction forces on the body.
- Every step you take is subject to gravity (body weight) and velocity (speed of movement).
- Ground reaction forces move up the body and cause all our injury problems.



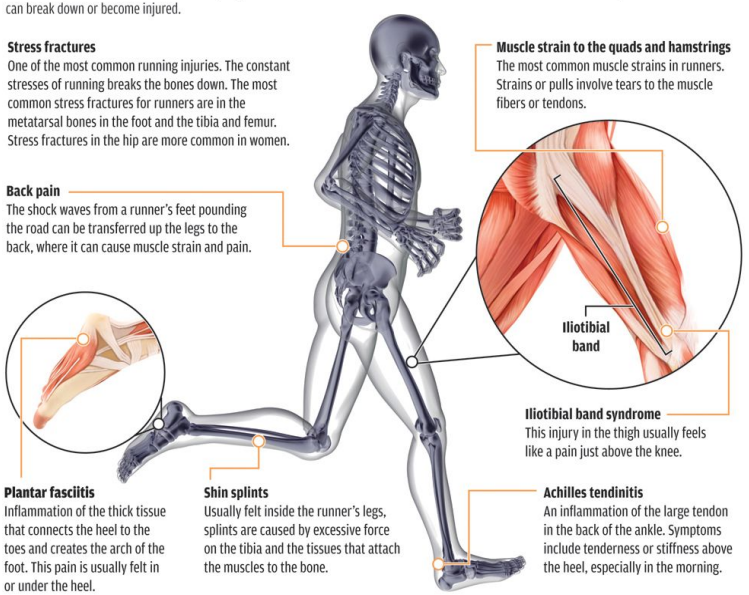
Overuse injuries slow runners down

As runners put more miles on their bodies, they need to allow time to let their muscles and bones restore themselves. If not, the bones and tissues can break down or become injured.

Stress fractures
One of the most common running injuries. The constant stresses of running breaks the bones down. The most common stress fractures for runners are in the metatarsal bones in the foot and the tibia and femur. Stress fractures in the hip are more common in women.

Back pain
The shock waves from a runner's feet pounding the road can be transferred up the legs to the back, where it can cause muscle strain and pain.

Muscle strain to the quads and hamstrings
The most common muscle strains in runners. Strains or pulls involve tears to the muscle fibers or tendons.



Iliotibial band syndrome
This injury in the thigh usually feels like a pain just above the knee.

Plantar fasciitis
Inflammation of the thick tissue that connects the heel to the toes and creates the arch of the foot. This pain is usually felt in or under the heel.

Shin splints
Usually felt inside the runner's legs, splints are caused by excessive force on the tibia and the tissues that attach the muscles to the bone.

Achilles tendinitis
An inflammation of the large tendon in the back of the ankle. Symptoms include tenderness or stiffness above the heel, especially in the morning.

Sources: Nigel Sparks, assistant professor at the University of Florida's Bone and Joint Center on Emerson; Daniel Montero, Mayo Clinic sports medicine physician; Gate River Run race officials; U.S. National Library of Medicine; MayoClinic.com
Illustrations source: Photos.com

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Is This The Answer?

Where do you think a cyclist experience discomfort?

Why do my neck and shoulders hurt??

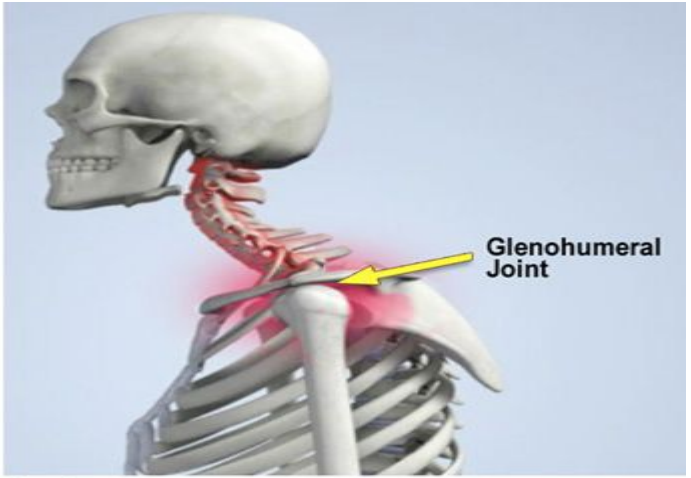
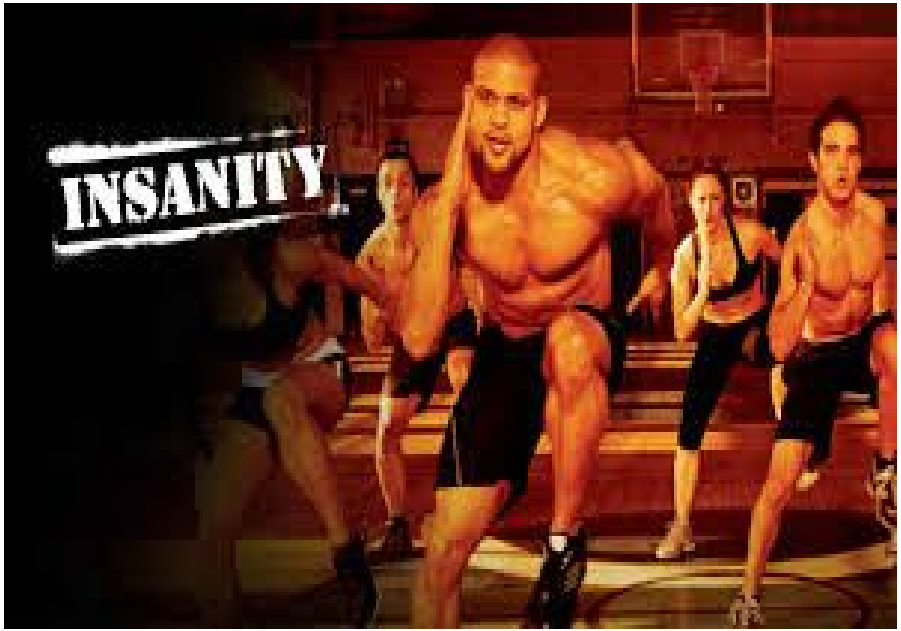


Fig. 1 © 2013 erikdalton.com

High Intensity versus Low Intensity?

We Live In a World of Extremes



There is Another (Better?) Way

For our purposes, we are going to use circuit training as a way to start the rebuilding process and get our groove back. We are going to learn to use heart rate to define intensity. This allows us to create truly individualized routines that enables progress for everyone and avoids exclusion.

Circuit training is defined as:

A form of body conditioning or resistance training using high-intensity aerobics. It targets strength building or muscular endurance. An exercise "circuit" is one completion of all prescribed exercises in the program."

Setting S.M.A.R.T. Goals, Is My Program Working?

Before we get to the workouts, tracking progress is vital to reaching any long term goal. I love the acronym S.M.A.R.T. when it comes to goal setting of any kind and improvements in cardiovascular fitness is no different. The letters stand for:

Specific: Aim to improve 1-2 elements of cardiovascular fitness each 6-12 week training block. Examples include blood work such as cholesterol and insulin levels, resting heart rate, blood pressure or shortening the time it takes for your heart rate to return to normal after bouts of exercise (a favorite of mine).

S.M.A.R.T. Goals Continued

Measurable: Again, when setting goals, its important that you can measure your progress to see if what you are doing is getting the results you desire. Any of the above goals I listed can be measured to ensure progress is being made.

Attainable: Lowering your cholesterol from 300 to 200 probably isn't realistic in a 6-12 week time frame but a 5-10 point reduction is certainly possible. Make sure you are not setting yourself up to fail.

Relevant: Make sure your goal is relevant to your cardiovascular health and is realistic. See attainable above.

Timely: Have a deadline. If a goal is left open ended without a specific deadline, failure is much more likely

Lets Get Geeky!

Time to get out those calculators as we have to do a little math to ensure we start in that right place and have information we can use to create our S.M.A.R.T. Goals. That which gets measured gets managed!

Step one: Track your resting heart rate each morning, immediately upon waking, for 3-5 mornings in a row. You can use neck, wrist, or a monitor such as a fitbit. Record these numbers in a journal by your bed.

Step two: Find your maximum heart rate by subtracting your age from 220. This is only an estimate. Also, certain medications keep heart rates low and can interfere with these numbers. If you have any questions, you will want to consult with your healthcare professional.

How To Measure Your Heart Rate

Heart rate can be measured using nothing more than your fingers and a timer. Start by finding your pulse either on your neck or wrist:

Use your index and middle fingers and count the beats you feel for 20 seconds. Take this number and multiply by 3 to find your heart rate for 1 minute

Target Training Heart Rate, The Karvonen Formula

Now that you have an average resting heart rate and your maximum heart rate, we can use these numbers to find your optimal training heart rate using the Karvonen formula.

(MaxHR) - (resting heart rate) = HRR

(HRR) x (60% to 80%) = training range %

(training range %) + (resting heart rate) = (your target training zone)

Example of the Karvonen Formula

220 - 35 = 185 (MaxHR)

185 - 60 = 125 (HRR)

125 x .6 = 75 (60% training percentage)

125 x .8 = 100 (80% training percentage)

75 + 60 = 135 (target training zone, in beats per minute)

100 + 60 = 160 (target training zone, in beats per minute)

So, your target training zone, in beats per minute is 135 to 160. Of course, to get a 15 second target simply divide each number by 4. That would be 34 to 40 beats over 15 seconds. When counting beats, start with the first beat as zero: ie. 0-1-2-3-4...38-39-40.

Building Your Circuit

We are going to build our circuits using 1 exercise from each of the following five categories. As you will see, there are five exercises listed under each category. These are listed in order from simplest to most complex or easiest to hardest. Choose the exercise from each category that feels the best

Squat	Push	Pull	Single Leg	Core
Counter squat	Wall Push-up	Foreward Wall Slide	Step-up	Wall Press Abs
Arms in front	Stair Push-up	Back to Wall Slide	Higher Step	Dead Bug
Hands behind head	Full Push-up	Floor YTI Series	Split Squat	Plank
Jump Squat	Spiderman	Towel Rows	Lunge	Side Plank
Add Pause	Plyo Push-up	Pause	Jumping Lunge	Plank to Side Plank

Sets, Reps, Rest Equal Intensity

There are two types of we are going to use to develop our cardiovascular system(s). These will be alternated throughout the week, trying to get at least 2 of each per week.

Workout 1:

- **Select 1 exercise from each category**
- **Perform repetitions for 40-180 seconds, depending on your abilities**
- **Check heart rate after each round, trying to increase to target range**
- **Wait until heart rate drops back down to near resting before next round**
- **Do as many rounds as feels comfortable, trying to increase as tolerable**
- **Track the time it takes for heart rate to return to resting following each round. As this number drops, your cardiovascular system is improving**

Workout 1 Sample

- **Arms in front squat, Wall Push-ups, Wall Slides, Split Squat, Plank**
- **Perform each exercise for 40 seconds, rest for time it takes to move to next**
- **Check heart rate after each round to ensure it reaches target range and not below or beyond.**
- **Rest and re-check heart rate each minute until back down to near resting level**
- **Perform round 2, repeating above steps for 3-5 rounds total.**

Tabata, You Wanna?

Tabata is a high intensity 4 minute workout designed to increase aerobic and aneorbic capacity. Named after a researcher who performed the 1996 Japanese exercise study, Tabata is a very intense workout but like anything, can be scaled back to the individual. This scaling can be done using time as well as exercise selection.

Performance:

- **Select 1 exercise from each category in the list that follows**
- **Start week 1 doing each exercise for 2 sets of 10 seconds, resting 20 seconds between exercises and sets**
- **Each week add either 1 set to each exercise or add 5 seconds to each set and reduce rest by 5 seconds**

Tabata Exercise List

Category 1:

- **Squat to Tip Toes**
- **Squat Jump**
- **Jumping Jacks**
- **Hands Elevated Burpees**
- **Burpee Without Jump**
- **Burpee With Jump**
- **Burpee With Jump and Push-up**

Category 2:

Hands Elevated Mountain Climber
Mountain Climber
Crossbody Mountain Climber
Inchworm
Inchworm to Push-up
T rotations
T Push-ups

Sample Tabata Workout And Progression

Week	Exercise 1	Exercise 2	Work	Rest	Sets
1	Burpee	Mountain Climber	10s	20s	2ea
2			10s	20s	3ea
3			15s	15s	3ea
4			15s	15s	4ea
5			20s	10s	4ea
6	Add additional rounds, use different exercises, build up to 3-4 of these 4 minute routines, 2-3 times per week				

Get Outdoors!

One of the additional benefits of exercise programming like this is that you can do it anywhere, including the great outdoors. We live in an area that's natural beauty is second to none!

Outdoor Hobbies

Compliment your new exercise circuits with some outdoor hobbies to not only build your heart and stamina, but improve mood and concentration. One study has shown a 90 minute walk in nature "decreases both self-reported rumination and neural activity in the subgenual prefrontal cortex (sgPFC), whereas a 90-min walk in an urban setting has no such effects on self-reported rumination or neural activity."

Possible Activities Include:

Nature walks and hikes, include the family and pets for a more enriched experience, Kayaking, Swimming, Cross-country skiing, Snowshoeing, Rock Climbing, Cycling and Running (If right for you), Gardening, Fishing and Hunting, Camping and any activity that gets you outdoors and puts a smile on your face!

Let's Get Moving!

Back To The Start Again

Poor posture doesn't have to be a life sentence, we just need to get back to beginnings and rebuild from the ground up!