

Measuring Your Fitness Level using a Heart Rate Monitor

By Eric Lewis, P.E., HeartFit

How is your fitness level? Is it improving? How do you know? Do you measure your fitness level with a weight scale? Or by how sore your muscles are the next day? Or do you have a baseline workout that you measure once a month?

What is fitness? Fitness is defined as the ability to be physically active¹. Fitness activities include: walking, dancing, cycling, running, swimming and any other physical activity.

How can you measure your fitness level? One popular method is to use a weight scale. If the person is losing weight they will assume that they are improving their fitness level. This is not always the case. They may be dehydrated or losing muscle tissue.

Another very popular way of measuring your fitness level is to ask yourself: Do I feel good? If the answer is yes, then the person assumes that their fitness level is good and they continue their current activity level or even raise it to a higher level. The popular slogan of “No-Pain equals No-Gain” continues to motivate uneducated, physically active people to improve their fitness level with harder and more challenging activities. A review of the current literature produces many studies showing that a person can acquire a higher fitness level without using the “No-Pain equals No-Gain” philosophy. In addition, a physically active person can sustain their physical activity over their lifetime by NOT subscribing to the “No-Pain equals No-Gain” philosophy.

One of the most economical and efficient methods to measure your fitness level is by using a heart rate monitor and a baseline workout. A baseline workout can be completed

in any activity that the physically active person wants. It consists of a workout that can be repeated consistently from one month to the next. The most important aspect of the workout is that it has to be repeatable with the same environment, route, pace, time of day, day of the week, etc. The only variable is the heart rate level. If the fitness level is improving, a physically active person should be able to reduce the heart rate level month after month during the baseline workout. If the fitness level is not improving then the heart rate level will not be reduced.

One of my favorite baseline workouts is using a treadmill. By using the same workout facility, the environment is always consistent in temperature and humidity. I use the same brand of treadmill with the incline and speed set the same. I wear the same level of clothing, drink the same level of water, use the same day of the week and the same time of day. I hope this sounds very consistent, because it has to be for the results to be comparable. The only variable is my heart rate.

The baseline workout should be completed in the optimum aerobic heart rate range. The range should be measured using a heart rate monitor. So, what is this optimum aerobic heart rate range and how can a physically active person determine their optimum aerobic heart rate range?

The optimum aerobic heart rate range is a range of approximately 10 beats per minute (BPM) where each person is getting the maximum fitness improvement without risking injury or long term physical problems. (See the reference below for more information.)

The optimum aerobic heart rate range is different for everyone. A quick literature search will find that there are many formulas for calculating the range. It seems that every author has the “most accurate” formula. If a person wants the most accurate calculations, then they should visit a local human performance lab and have the heart rate tests performed. (As always, you should check with your medical doctor prior to starting any type of physical activity.)

¹ *The Maffetone Method - The Holistic, Low-Stress, No-Pain Way to Exceptional Fitness*, by Dr. Phillip Maffetone, Published by McGraw-Hill, Copyright 2000, pg 18.

For most physically active persons, the human performance lab testing is not necessary to get started with a baseline workout.

Dr. Phillip Maffetone uses a very simple formula to find your optimum **aerobic** heart rate range². This formula uses your age and some factors to calculate the maximum **aerobic** heart rate. (Please do not confuse maximum **aerobic** heart rate with a maximum heart rate! They are not the same values.)

Maximum **aerobic** heart rate =

$$180 - \text{Your Age} + \text{Factor}$$

The factors consist of:

-10 if the person is *recovering from a major illness* or under a doctor's care.

-5 if the person *has not exercised before, have exercised irregularly, have been exercising with an injury...*

0 if the person has *been exercising regularly for up to two years without any ...problems.*

+5 if the person is a *competitive athlete and have been training for more than two years without any ... problems.*

The minimum aerobic heart rate is calculated by subtracting 10 from the maximum aerobic heart rate.

Here are some examples for calculating the optimum **aerobic** heart rate range. A 50 year young person that has been a physically active person for two years would have a maximum **aerobic** heart rate of 180 minus 50 which equals 130 BPM. Their optimum **aerobic** heart rate range would be 130 to 120 BPM (130 -10).

A 45 year young person that is recovering from a stroke would have a maximum **aerobic** heart rate of 180 – 45 - 10 which equals 125. The optimum **aerobic** heart rate range would be 125 to 115 BPM (125 – 10).

Using your baseline workout once per month, you should be able to determine if your fitness level is improving by monitoring your heart rate

with a heart rate monitor. (This article only covers measuring your fitness level. There are many other aspects that need to be considered when designing and developing a total fitness plan. Please see a physical professional for developing a total fitness plan that meets your requirements.)

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² Ibid pg. 61-63.