The Fitness Corner

Facilitating Your Fitness Journey

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Inside this issue:

Calculating Your Heart Rate Training Zones

In the previous issue of the Fitness Corner, I introduced the 5 Heart Rate Training Zones. In this issue, I will describe two ways to calculate your training zones: the *Age Formula* and the *Karvonen Heart Rate Reserve* method.

1. **The Age Formula**. You are probably familiar with this approach. Your first step is to purchase a heart rate monitor (HRM). There are many to choose from, however I suggest you visit your local sporting goods store and purchase a model that costs less than $100. There are many models that are more expensive but they will probably include features you won't need. Just make sure the model you are considering provides continuous heart rate information (i.e., beats per minute) as well as average heart rate for your workout.

The Age Formula is very simple. You determine your maximum heart rate (MHR) using the **MHR = 220 - your age** formula and then apply it to the 5 training zones. For example, if you are a 30 year old male, your estimated MHR is 220 - 30 = 190. From here it is simple to calculate your training zones: 190 x .5 = 95; 190 x .6 = 114; 190 x .7 = 133; 190 x .8 = 152; 190 x .9 = 171; 190 x 1.0 = 190. You then plug in these numbers to get your personal Heart Rate Training Zones:

Zone 1 = 95 to 114 BPM
Zone 2 = 114 to 133 BPM
Zone 3 = 133 to 152 BPM
Zone 4 = 152 to 171 BPM
Zone 5 = 171 to 190 BPM

This approach is fine for most exercisers. However, the 200 - your age formula (NOTE: for women, the calculation is 226 - *your age*) can be somewhat inaccurate when it comes to estimating your maximum heart rate. Therefore, for competitive athletes and those in serious training programs, I suggest using a method that more accurately determines maximum heart rate and/or lactate threshold. One such approach is the Karvonen Heart Rate Reserve method.

2. **The Karvonen Heart Rate Reserve Method**. Heart rate reserve is the difference between your MHR and your resting heart rate (RHR). It represents the working heart rate range within

Calculating Your Heart Rate Training Zones

which all activity occurs. While the Karvonen formula also has the weakness of estimated MHR, it can be more effective because it takes your current physical condition into consideration (i.e., lower RHR is correlated with increased aerobic fitness). It is also more closely aligned to your *Maximal Oxygen Uptake* (also known as VO2 Max, it is the highest amount of oxygen you can utilize in a given time period). The formula is **(MHR – RHR) x Desired Intensity + RHR = HR** in beats per minute (NOTE: determine your RHR by wearing your heart rate monitor overnight).

Using the Karvonen method and assuming a RHR of 70 BPM, the Heart Rate Training Zones for the 30 year old man would be as follows:

Zone 1 = 130 to 142 BPM
Zone 2 = 142 to 154 BPM
Zone 3 = 154 to 166 BPM
Zone 4 = 166 to 178 BPM
Zone 5 = 178 to 190 BPM

Notice how the heart rate zones are significantly higher using the Karvonen method. It is for this reason that I suggest only competitive athletes and experienced exercisers in excellent physical condition use this method. Beginners and those trying to 'get into shape' should stick with the standard age formula. It may be less accurate, but it is a safer place to start.

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