

IAFF / IAFC Peer Fitness Trainer

Target Heart Rate Calculation

To increase your aerobic capacity (endurance or stamina), you must perform aerobic activities that stimulate your cardiorespiratory system. Examples of aerobic exercise include running, cycling, cross country skiing, fast paced walking, rowing, or any activity that raises the heart rate for extending periods of time. Ideally, you should perform these activities at least 30 to 40 minutes, three to five days a week.

To get the greatest benefit from these activities, you must perform the activity in your *training heart rate zone*. This zone is established using a percentage of your maximum heart rate. Below are two formulas that can be used to calculate your *target training heart rate zone*.

Instructions: Count your resting heart rate each morning as soon as you get up. Use the space below to document each heart rate.

Resting Heart Rate

Day 1: _____ Day 2: _____ Day 3: _____ Day 4: _____ Day 5: _____

Simple Method

Calculation for a 30-year-old person

Calculate Maximum Heart Rate: $220 - \text{age}$ Example $220 - 30 = 190$ beats per minute

55% Training Heart Rate Range: 190×0.55 (55%) Example $190 \times 0.55 = 105$ beats per minute

90% Training Heart rate Range: 190×0.9 (90%) Example $190 \times 0.9 = 171$ beats per minute

The simple method results in a *target heart rate zone* of 105 – 171 beats per minute.

Karvonen Method

Calculation for a 30-year-old person

Step 1 Determine your heart rate reserve (HRR). Take your resting heart rate 5 mornings in a row after waking up. Average these numbers.

Step 2 Calculate Maximum Heart Rate (MHR):
Example $220 - 30 = 190$ beats per minute

Step 3 Subtract Heart Rate Reserve (HRR) from MHR:
Example $190 - 50 = 140$ beats per minute

Step 4 Calculate 60% Training Heart Rate (THR) Range:
Example $140 \times 0.6 = 84$ beats per minute

Step 5 Add HRR + 60% THR:
Example $50 + 84 = 134$ beats per minute

Step 6 80% Training Heart Rate (THR) Range:
Example $140 \times 0.8 = 112$ beats per minute

Step 7 Add HRR + 80% THR:
Example $50 + 112 = 162$ beats per minute

The Karvonen method results in a *target heart rate zone* of 134 - 162 beats per minute.