Practice Heart Rate Calculations

1. Jane is 47 years old.
    a. What is Jane's max HR?

    b. What is Jane's target HR for LISS?

    c. What is Jane's target HR for HITT?

    d. What is Jane's target HR when running a half marathon (21.1km or 13.1 miles?)

2. Jessica is 35 years old and has a resting HR of 43bpm.
    a. What is Jessica's max HR?

    b. What is Jessica's HRR?

    c. What is Jessica's target HR for HIIT? (use HRR to calculate)

    d. Calculate Jessica's target HR for HITT without using HRR.

Answers:

1. Jane is 47 years old.
   a. Max HR = 220 – age
      = 220 – 47
      = 173 bpm

   b. Target HR for LISS will be 50 – 75% of max HR. (Low intensity is 50-70%, moderate is 70-80%)

      Max HR x lower target %
      = 173 x 50%
      = 173 x 0.50
      = 86.5 bpm

      Max HR x upper target %
      = 173 x 75%
      = 173 x 0.75
      = 129.75 bpm

      Therefore Jane's target HR for LISS is 87 to 130 bpm (beats per minute)

   c. Target HR for HITT will be 75 -95% (Upper end of moderate (70-80%) to high intensity 80-95%)

      Max HR x Lower target %
      = 173 x 75%
      = 173 x 0.75
      = 129.75 bpm

      Max HR x upper target %
      = 173 x 95%
      = 173 x .95
      = 164.4bpm

      Therefore, Janes target HR for HIIT is 130 to 164 bpm

   d. Janes target HR when running a half marathon would be 70-80%. You would want her working in the moderate intensity zone. This zone is sustainable for long durations.

      Max HR x lower target %
      = 173 x 70%
      = 173 x 0.70
      = 121 bpm

      Max HR x upper target %
      = 173 x 80%
      = 173 x 0.80
      = 138 bpm

      Therefore, Janes target HR for running a half marathon is 121 to 138 bpm

2. Jessica is 35 years old and has a resting HR of 43bpm
   a. Max HR = 220 – age
      = 220 – 35
      = 185bpm

   b. What is Jessica's HRR (Heart Rate Reserve)
      Heart Rate Reserve = Max HR – Resting Heart Rate
      HRR = Max HR – RHR
      = 185 – 43
      = 143
      Jessica's Heart Rate Reserve (HRR) is 143

c. Since we know RHR (resting heart rate) and calculated HRR we can use this to calculate our target HR for HIIT with better accuracy (75-95%.)

Target HR = (HRR x % of target intensity) + RHR
= (143 x 75%) + 43
= (143 x .75) + 43
= 107.25 + 43
= 150

Target HR = (HRR x % of target intensity) + RHR
= (143 x 95%) + 43
= (143 X .95) + 43
= 135.85 + 43
= 178.85

Therefore, Jessica's target HR for HITT is 150 – 179 bpm

d. Target HR for HITT will be 75 -95% (Upper end of moderate (70-80%) to high intensity 80-95%)

Max HR x Lower target %
= 185 x 75%
= 185 x 0.75
= 138.75 bpm

Max HR x upper target %
= 185 x 95%
= 185 x .95
= 175.75 bpm

Therefore, Jessica's target HR for HIIT without using HRR is 139 - 176 bpm. Without using RHR and in turn HRR Jessica will be working at a lower capacity then what she is physically capable.