

Exercise Prescription for Cardiorespiratory Fitness (CRF)



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Principles & Benefits for CRF

Overload

- Tissue or organ to improve in function, it must be exposed to a load not normally accustomed to.

Specificity

- Training effects derived from exercise programs are specific to the exercise performed

Benefits?

- Enhance physical fitness (CRF)
- Promote health
- Reduce risk factors
- Ensure safety
- Not all weighted the same

Guidelines for CRF

Daily

- Warm-up (___ min)
- Endurance/resistance phase (_____ min)
- Recreational activities (optional)
- Cool-down (_____ min)

Weekly

- Endurance: _____
- Resistance: _____
 - Alternate days
- Flexibility: _____

5 Essential Components for CRF

- 1.
- 2.
- 3.
- 4.
- 5.

Mode of Exercise

Greatest improvement in CRF:



1. Large _____ group exercise
2. Prolonged _____ of time
3. Rhythmic and aerobic in nature
 - e.g. walking, hiking, jogging, running, cycling, rowing, dancing, x-country skiing, or endurance games

Exercise Intensity (ACSM Guidelines)

1. 55/65% to 90% of age predicted HR_{max}
2. 40/50% to 85% of HRR
 - a. HRR = Heart Rate Reserve
 - Difference between HR_{max} and HR_{rest}
3. RPE

Intensity: Age Predicted HRmax

- HRmax = 220-age
 - Best to measure HRmax during maximal test but.....

Exercise Prescription

- 55/65% to 90% HRmax

Example

- Male:
-
- HR exercise range =



Intensity: Heart Rate Reserve (Karvonen Method)

$$\text{Target HRR} = [(\text{HRmax} - \text{HRrest}) \times 40/50-85\%] + \text{HRrest}$$

Necessary Values

- Age Predicted HRmax (220-age)
- Resting HR

Example: (Male: 30 y.o. HRrest = 70 bpm)

- $220 - 30 \text{ y.o.} =$
- HRR =
- HRR =

When to Measure HR

1. Resting - When you wake up
2. Prior to Exercise
3. During Exercise – Every _____ minutes
4. Recovery (Keep walking – HR returns close to baseline)
 - ▶ _____ minutes (young apparently healthy)
 - ▶ _____ minutes (special or older populations)

RPE for Intensity

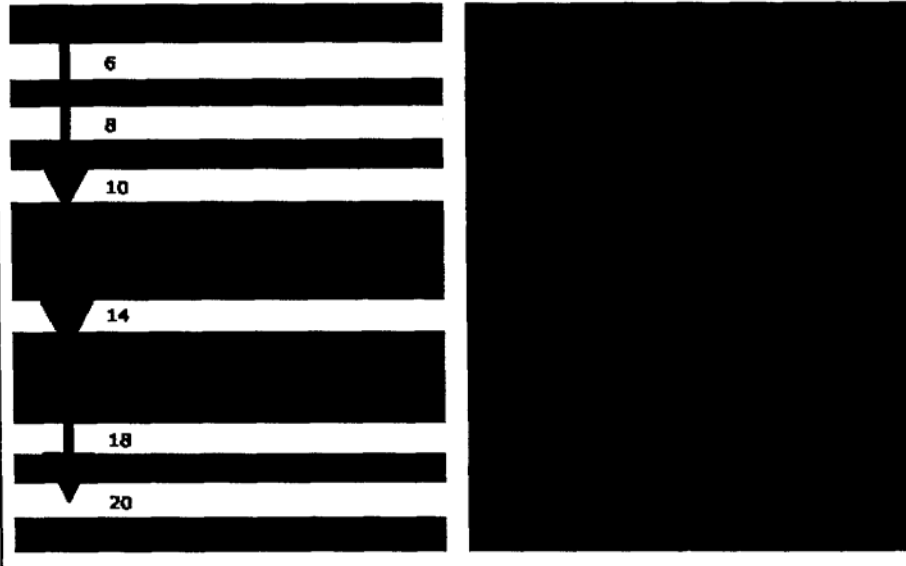
Additional tool

- Difficulty palpating HR
- HR alteration due to medication

RPE for adaptation is _____ (somewhat hard to hard)

RPE will not match HRR or %HR_{max} exactly

RPE for Intensity



Exercise Duration Guidelines

Unfit

- 4-6 ---5 minute bouts low intensity with rest periods

Increase progressively until longer duration is achieved

Goal

- _____ continuous or intermittent (minimum 10 min. bouts)
- 60-80% HRR or 70-85% HR_{max} for _____
{excluding warm-up and cool-down}

Exercise Frequency

Deconditioned

- Improve with _____ days a week
- _____ short sessions per day



Optimal

- _____ @ 60-80% HRR or 70-85% HRmax
 - Additional days - CV benefits appear to be minimal
- _____ may be necessary for weight loss

Energy Expenditure Goals

- Recommend: _____ Kcal per day physical activity and/or exercise
- Lower end (_____) represents ____ Kcal/wk
- Suggest working towards _____ Kcal/day
- We will discuss during the Calorie Lecture

Initial Conditioning Stage

Intensity

- Minimal muscle soreness, discomfort and injury
- Moderate level aerobic activity (40-60% HRR)

Duration

- Begin _____ minutes, progress to ____ minutes

Frequency

- _____

Stage: Last up to _____



Improvement Stage

Gradual increase in volume of training

- Age must be considered. Older may take longer to adapt: progress slower

Intensity

- Increase to 50-85% HRR

Duration

- Increase every _____ until _____.

Frequency

- Increase dictated by rate of adaptation

Stage: Lasts _____



Maintenance Stage

- Long term Cardiorespiratory fitness
- Further increases may not be a goal
- Adjust Intensity, Duration, Frequency
- Include recreational activities

Practice Problem

Male – 66 y.o. and rest HR = 74 bpm –
Sedentary (Start 50-60%)

Steps

1. HRmax:
2. HRR:
3. HRR =

Practice Problem: Prescription

- Mode:
– (e.g. _____)
- Intensity: Heart Rate:
- RPE:
- Duration:
– (may have to start with _____ minute sessions)
- Frequency:
- Progression:

Conclusion

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