Guidelines for Improving Cardiorespiratory Fitness

EXS 150
Chap 4b

Remember there are three Elements of a Good Cardiorespiratory Training Session

- Warm-up
  - examples
- Conditioning period
- Cool-down
  - example

Exercise Prescription to Improve Cardiorespiratory Fitness is summed up by the F.I.T.T. principle

- Frequency – days per week
  - i.e.
- Intensity – percent of maximum (how hard?)
  - i.e.
- Time – duration in minutes
  - i.e.
- Type – mode of exercise
Table 4.2: The Relationship of THR to Percent VO_{2\text{max}} and Percent HR_{\text{max}} for a 20-Year-Old Individual.

<table>
<thead>
<tr>
<th>THR (beats/minute)</th>
<th>% VO_{2\text{max}}</th>
<th>% HR_{\text{max}}</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>105</td>
<td>60</td>
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</tr>
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<td>85</td>
</tr>
<tr>
<td>135</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

*Heart rate based on a HR_{\text{max}} of 200 beats/min.

Target heart rate zones for individuals of ages 20 through 70.

Realize there is a lot of error here.

Suggested intensity, duration, and frequency of exercise necessary for improving cardiovascular fitness.

Exercise Intensity
70-90% of HR_{\text{max}}

Exercise Duration
20-60 minutes per session

Exercise Frequency
3-5 times per week
Rate of Progression of Program

<table>
<thead>
<tr>
<th>Fitness level</th>
<th>Time (weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slow progression Stage</td>
<td>6 weeks to 6 months</td>
</tr>
<tr>
<td>Maintenance Stage</td>
<td>After 6 months</td>
</tr>
<tr>
<td>Starter Stage</td>
<td>4 to 6 weeks</td>
</tr>
<tr>
<td>Maintenance Stage</td>
<td>After 6 months</td>
</tr>
</tbody>
</table>

The effects of increasing intensity, frequency, and duration on the improvements on VO2max vs. the increased risk of injury.

Training Techniques Suited to Increasing Cardiorespiratory Fitness

- Cross-training
  - Example, goal
- Long, slow distance
  - Example, goal
- Interval training
  - Example, goal
- Fartlek training
  - Example, goal
How the Body Adapts to Exercise Determines Level of Fitness

- Cardiovascular function improves to deliver more O₂ to muscles
- Respiratory muscle endurance increases
- Skeletal muscles increase capacity for aerobic energy production
- Body fat is likely reduced

The relationship between initial fitness levels and improvements in VO₂max after a 12-week training period.

The relationship between training intensity and improvements in VO₂max after a 12-week training period.
Summary

• Exercise must be fun.
• Exercise must be as convenient as possible.
• Keep a record of training progress.
• Don’t get discouraged!