Prescribing Activity for Overweight Youth

Various methods are available to help measure the demands of aerobic activity and assist in exercise prescription. Pulse counting—or heart-rate monitoring—is popular in adult programs, with participants encouraged to work at a “target heart rate” based on their age and level of fitness.

An alternative—and increasingly popular—approach uses the concept of perceived exertion. Developed by the Swedish psychologist G.A. Borg, the scale shown in the accompanying chart is a useful tool that relates intensity of exercise to perceived effort. Studies have shown that this rating of perceived exertion (RPE) concept is both valid and useful.

Much of what is known about RPE with children has come from research conducted by Dr. Oded Bar-Or, director of the Children’s Exercise & Nutrition Centre at McMaster University. This particular study was done by Dr. Bar-Or for the Canadian Fitness and Lifestyle Research Institute (a national agency supported by Fitness Canada).

Nature of the Study
The study involved obese youth, a particularly important group from a public health standpoint. Statistics suggest that 10 to 20 percent of children and adolescents suffer from obesity, and that 80 to 85 percent of those who are obese as adolescents remain obese as adults.

Twenty boys and girls between the ages of 9 and 15 took part in the three phases of the study.

- **Phase I** involved assessing their health status and body composition, and measuring their peak aerobic power.
- **Phase II** evaluated their ability to rate various levels of exertion using the Borg Scale.
- **Phase III** examined whether the RPE scale could be used to guide them in choosing exercise intensities.

### Borg Scale

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>very, very light</td>
</tr>
<tr>
<td>7</td>
<td>very light</td>
</tr>
<tr>
<td>8</td>
<td>fairly light</td>
</tr>
<tr>
<td>9</td>
<td>somewhat hard</td>
</tr>
<tr>
<td>10</td>
<td>hard</td>
</tr>
<tr>
<td>11</td>
<td>very hard</td>
</tr>
<tr>
<td>12</td>
<td>very, very hard</td>
</tr>
</tbody>
</table>

### Results

The study found that:

- The children could rate their exercise intensities reliably (i.e., they gave similar ratings on each of the two tests) and accurately (i.e., the ratings matched well with the heart-rate response to the various intensities).
- When prescribed exercise by RPE numbers, the children could discriminate between intensities but tended to choose ones that were higher than expected. Generally, they did not seem to gauge correctly the range of exercise intensities.
- In all cases, results were not affected by how the RPE concept was originally taught. Some had learned it with gradually increasing intensities; for others, the order was mixed.

Future Endeavours

This study fills a gap in knowledge in that no previous information was available on the ability of children to exercise at various intensities as prescribed by the RPE scale. A major challenge for future research is to develop a technique for teaching the RPE concept so that children can more accurately gauge the full range of exercise intensities.

Using RPE for exercise prescription is promising and of particular importance for children who tend to get insufficient activity, including those with cardiorespiratory problems, the obese, and the wheelchair-bound.

More Info ...

For more on this topic, see “Use of the Borg scale in exercise prescription for overweight youth,” by D.S. Ward and O. Bar-Or in the Canadian Journal of Sport Sciences 15:2, 1990.

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Active Living Tips for Overweight Youth

- **Pursue enjoyable activities that emphasize constant movement**—walking, cycling, continuous games, etc.
- **Try to be active just about every day**, if only for a few minutes.
- **Go at a comfortable pace.** It’s not necessary to huff ‘n puff and be out of breath.

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