

## The Borg RPE (Rating of Perceived Exertion) Scale

Overview:

The RPE (Rating of Perceived Exertion) was developed by Borg to describe a person's perception of exertion during exercise. Dr Borg is an Emeritus Professor at Stockholm University.

Exertion	RPE
no exertion at all	6
extremely light	7
	8
very light	9
	10
light	11
	12
somewhat hard	13
	14
hard (heavy)	15
	16
very hard	17
	18
extremely hard	19
maximal exertion	20

From the plot of heart rate during bicycle ergometry and RPE (Figure 7.3) the following equations were approximated:

$$\text{minimal heart rate in beats per minute} = (6.75 * (\text{RPE})) + 28.5$$

$$\text{mean heart rate in beats per minute} = (8.2976 * (\text{RPE})) + 28.88$$

$$\text{maximal heart rate in beats per minute} = (10.314 * (\text{RPE})) + 28.876$$

For all of the RPE values the following table can be derived.

<b>RPE</b>	<b>Minimal Heart Rate</b>	<b>Mean Heart Rate</b>	<b>Maximal Heart Rate</b>
6	69	77	91
7	76	85	101
8	83	93	111
9	89	101	122
10	96	110	132
11	103	118	142
12	110	126	153
13	116	135	163
14	123	143	173
15	130	151	184
16	137	159	194
17	143	168	204
18	150	176	215
19	157	184	225
20	164	193	235

References:

Borg G. Borg's Perceived Exertion and Pain Scales. Human Kinetics. 1998. (Figure 7.3 page 49)

Roberts SO. Chapter 12: Principles of prescribing exercise. pages 235-261 (pages 240-241). IN: Roberts SO Robergs RA Hanson P (editors). Clinical Exercise Testing and Prescription. Theory and Application. CRC Press. 1997.

Sallis RE Massimino F. ACSM's Essentials of Sports Medicine. Mosby 1997. page15.