Assessing Intensity of PHYSICAL ACTIVITY

Calculating Intensity Can Be **Subjective** and **Physiological**

	24-Hour Movement Guideline	Intensity Level	%HRR Measured Heart Rate (ACSM/CSEP)	HR Max (ACSM)	Rating of Perceived Exertion (RPE) (1–10 Scale)	Rating of Perceived Exertion (RPE) (6–20 Scale)	What Does it Feel Like? (Talk Test)
		Very light	< 30%	< 57%	1	6–9	Minimal exertion
	Several hours per day	Light	30–39%	57–63%	2–3	10–11	Breathing is hardly noticeable; can freely talk while moving
	1 hour per day	Moderate	40–59%	64–75%	4–6	12–16	Breathing is elevated but able to say a few words if needed
	3 times per week including muscle and bone strengthening activities	Vigorous	60–89%	76–96%	7–9	17–19	Breathing heavily; very difficult to say more than a few words
		Maximum	90–100%	> 96%	10	20	Maximum activity; cannot speak in words or sentences

Calculating Your **Target Heart Rate Zone**

Methodology for Children and Adolescents:

			Example	You Try
		Age	16	I'm _____ years old.
1	Subtract your age multiplied by 0.7 from 208 to get the maximum heart rate (MHR) **[208 – (0.7 x Age)]**.	**Max Heart Rate (MHR)**	208 - (0.7 × age) = 208 - (0.7 x 16) = 197	220 – (0.7 x my age) = _____. This is my MHR.
2	Calculate your resting heart rate (RHR) using the palpation method or a heart rate monitor.	**Resting Heart Rate (RHR)**	60 bpm	My RHR is _____.
3	Calculate your heart rate reserve (HRR) by subtracting your RHR from your MHR.	**Heart Rate Reserve (HRR)**	197 - 60 bpm = 137 bpm	MHR – RHR = My HRR
4	Multiply your HRR by the **higher** percentage found on the top half of this poster.		**Target Heart Rate (59%)** The 59% level is 137 x 0.59. This is 81 beats bpm.	**Target Heart Rate (59%)** My HRR of _____ x 0.59 = _____ bpm.
6	Add the calculated RHR to the calculated values in steps 4 and 5 to determine both the **higher** and lower beats per minute (BPM) training heart rate zone.	**Moderate Activity (40–59%)**	Add RHR (81+60 = 141 bpm)	Add RHR = _____
5	Multiply your HRR by the **lower** percentage found on the top half of this poster.		**Minimum Target Heart Rate (40%)** The 40% level is 137 x 0.40. This is 55 bpm.	**Minimum Target Heart Rate (40%)** My HRR of _____ x 0.40 = _____ bpm.
6	Add the calculated RHR to the calculated values in steps 4 and 5 to determine both the higher and **lower** beats per minute (BPM) training heart rate zone.		Add RHR (55 +60 = 115 bpm)	Add RHR = _____
7	These two numbers are a person's **training heart rate zone**. An individual's heart rate should fall between these two numbers to meet a specific training intensity.		The target heart rate is 115 to 141 bpm.	My **moderate** level target heart rate is _____ to _____ bpm.
4	Multiply your HRR by the **higher** percentage found on the top half of this poster.		**Target Heart Rate (89%)** The 89% level is 137 x 0.89. This is 122 bpm.	**Target Heart Rate (89%)** My HRR of _____ x 0.89 = _____ bpm.
6	Add the calculated RHR to the calculated values in steps 4 and 5 to determine both the **higher** and lower beats per minute (BPM) training heart rate zone.	**Vigorous Activity (60–89%)**	Add RHR (122 + 60 = 182 bpm)	Add RHR = _____
5	Multiply your HRR by the **lower** percentage found on the top half of this poster.		**Minimum Target Heart Rate (60%)** The 60% level is 137 x 0.60. This is 82 bpm.	**Minimum Target Heart Rate (60%)** My HRR of _____ x 0.60 = _____ bpm.
6	Add the calculated RHR to the calculated values in steps 4 and 5 to determine both the higher and **lower** beats per minute (BPM) training heart rate zone.		Add RHR (82 + 60 = 142 bpm)	Add RHR = _____
7	These two numbers are a person's **training heart rate zone**. An individual's heart rate should fall between these two numbers to meet a specific training intensity.		The target heart rate is 142 to 182 bpm.	My **vigorous** level target heart rate is _____ to _____ bpm.

Exercising at the Correct Intensity Level Will Help You Get the Most Out of Your Physical Activity

All Forms of Physical Activity (Light, Moderate, Vigorous) Have Been Shown to

- Increase cardiovascular fitness, muscular development, and weight management
- Lower the risk of chronic cardiovascular, pulmonary, and musculoskeletal diseases
- Enhance mental health by reducing anxiety and stress, while improving self-esteem and mood
- Improve academic performance, cognitive function, school attendance, and positive classroom behaviour
- Improve motor development, and increase fitness, skill enhancement, and positive social interactions

Calculating Your Target Heart Rate Zone Using the **Karvonen Method** for Children and Adolescents

The easiest way to determine an intensity range for exercise is to first calculate your maximum heart rate (MHR). The equation **220 – Age** is commonly used, when prescribing exercise/physical activity programs, as a means of determining MHR. Despite its importance and widespread use, the equation does not take into account differences associated with gender, heart sizes, and heart rates. It has been regularly shown to underestimate the heart rate zones.

The Tanaka et al equation **[208 – (0.7 x Age)]** is more closely linked to children and youth MHR values.

Using this equation within the Karvonen Method is a simple and effective way to determine in what heart rate zone (light, moderate, or vigorous) you are exercising.

To calculate your target heart rate zone, use the following equation:

Target Heart Rate = [(MHR – resting HR) × %Intensity] + resting HR

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