

Hypertension and exercise

What is hypertension?

Blood pressure (BP) refers to the pressure in the large arteries when the main pumping chamber of the heart, the left ventricle, is at maximal contraction (systole) and relaxation (diastole). BP is usually presented as two numbers: the higher systolic BP and the lower diastolic BP. The two pressures are usually expressed together, for example '120 over 80'. Excessively high BP is called hypertension. Hypertension is described on a graded scale from mild to severe (see table below). A BP of 180 over 110 mmHg (or higher for either pressure) is classed as severe hypertension (grade 3).

The higher the BP, the higher the risk of cardiovascular events. Therefore, doctors prescribe lifestyle changes (e.g. diet and exercise) and/or medication for people with high BP to reduce the risk.

Blood Pressure Category	Systolic BP (mmHg)	Diastolic BP (mmHg)
Normal	<120	<80
High-Normal	120–139	80–89
Grade 1 Hypertension (Mild)	140–159	90–99
Grade 2 Hypertension (Moderate)	160–179	100–109
Grade 3 Hypertension (Severe)	≥180	≥110

Why is exercise important?

Regular aerobic exercise has a variety of effects that protect against heart disease and diseases of the blood vessels, including high BP. On average, exercise reduces blood pressure by about 6–7 mmHg. Scientific studies with large numbers of volunteers have shown that, if systolic BP is reduced by 5 mmHg, deaths from strokes decrease by 14% and deaths from coronary heart disease (i.e. blocking of the blood vessels that supply the heart) decrease by 9%. Regular physical activity is the first treatment recommended to lower BP and improve cardiovascular health, both in the general population and in those people with hypertension (3,4).

What type and amount of exercise is best?

The exact amount and type of exercise that is best for BP control is not really known. However, scientific studies support that regular aerobic exercise reduces resting BP and also reduces BP during light exercise and daily activities. Additionally, aerobic exercise protects against developing hypertension in the future (5). These effects occur in both men and women, with normal or raised BP.

Type of exercise	Intensity	Duration	Frequency
Aerobic exercise (e.g. walking, running, cycling)	Moderate (40-60% of HRR**; or 12-13 RPE***) or Vigorous (60-84% of HRR**; or 14-16 RPE***)	30 minutes	5 days a week
		20 minutes	3 days a week
Resistance training (e.g. lifting weights)	Light or Moderate (resulting in substantial fatigue)	30-60 minutes	2 or more non-consecutive days per week (1 or more sets of 8-12 repetitions)

Note: ** HRR = heart rate reserve; *** RPE = Borg rating of perceived exertion

Points to remember:

- Some people have exercise hypertension, an abnormal spike in BP during exercise. This may indicate poorly controlled BP but should **not** be interpreted as 'exercise is bad for you.'
- Exercise is usually safe whether or not BP-lowering medication is used. However seek medical advice if chest discomfort, irregular heart rhythm or abnormal breathlessness while exercising is experienced.
- If resting systolic BP is 180 mmHg or more, or resting diastolic BP is 110 mmHg or more, you should postpone exercise and seek medical advice.

References and further information

Exercise is Medicine Australia www.exerciseismedicine.org.au

Find an Accredited Exercise Physiologist www.essa.org.au

Exercise Right www.exerciseright.com.au

1. dabl® Educational Trust. (2011). Blood pressure monitors — validations, papers and reviews. http://www.dableducational.org/sphygmomanometers/device_index.html
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3. National Heart Foundation of Australia's National Blood Pressure and Vascular Disease Advisory Committee. (2008). Guide to management of hypertension 2008. <http://www.heartfoundation.org.au/SiteCollectionDocuments/Guide-to-management-hypertension-2008.pdf>
4. J Sci Med Sport 2009; 12(2): 252–7.
5. Circulation 2007; 116(9):1081–93.

For more detailed information, please read the full version of this factsheet at www.exerciseismedicine.org.au

