

## Reducing High Blood Pressure With Exercise

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Chiropractic care that includes exercise recommendations can help many patients take better control of their blood pressure. A 1999 study by Fagard determined that physical activity contributes to the control of blood pressure in overweight as well as in lean subjects.<sup>1</sup> Yeo, et al., observed a "strong trend" that 10 weeks of moderate exercise lowered diastolic blood pressure among pregnant women at risk of hypertensive disorders.<sup>2</sup> Research suggests that even patients who must take medication for severe hypertension can benefit from mild- to moderate-intensity exercise.<sup>3-5</sup>

This article offers some advice on how to lessen your risk of malpractice while providing this valuable service to your patients.

### Hypertension and Health Risks

The optimal pressure in the arteries necessary to circulate blood to all areas of the body is 120 mmHg (systolic) and 80 mmHg (diastolic). When a patient's resting measurements are consistently above 140 mmHg (systolic) and/or 90 mmHg (diastolic), the patient has hypertension. The prevalence of hypertension increases with age and is more common in males and in sedentary individuals.

In 90 percent of cases, there is no specific cause identified, which leads to the diagnosis, "essential hypertension." This is usually a complex condition, with hormonal, dietary, vascular and stress components. The reason for concern is the greatly increased chance of stroke and heart attack, as well as eventual kidney damage, when the blood pressure stays high.

### How Exercise Can Help

All types of exercise cause a temporary increase in both heart rate and blood pressure, in order to get additional oxygen to the working muscles. When sufficient oxygen is being supplied for the muscles' needs, this is termed "aerobic" exercise. With more strenuous exercising, an oxygen debt develops, and the exercise becomes "anaerobic." One response to anaerobic exercising is an even greater increase in heart rate and blood pressure.

When exercising is done regularly, resting blood pressure tends to decrease.<sup>6</sup> As the body gets better at supplying oxygenated blood during exercising, the amount of pressure needed to provide blood at rest decreases. This has a beneficial effect on many parts of the body, and may even affect age-related hearing impairment.<sup>7</sup> The challenge is to get sufficient exercise to stimulate this response without causing a stroke or heart attack during exercising, when the blood pressure is elevated.

### Exercising Safely

The simplest approach to avoiding catastrophic increases in blood pressure while exercising is to

recommend that the patient perform aerobic exercises, such as walking, swimming, or bike riding. For those having moderate hypertension (160-179 mmHg /100-109 mmHg), this is the safest way to start. However, to maintain (or regain) strength and lean muscle mass, and to establish better spinal support, some form of resistance training is necessary. With guidance in the following four areas, patients with high normal blood pressure and mild hypertension can safely be started on strength-building exercises:

**Isometric.** As a muscle contracts, the adjacent vessels are constricted and blood flow is blocked. Once the muscle relaxes, blood flow returns to normal. If the contraction is maintained, blood pressure is increased in an attempt to push blood through the blockage. Avoiding sustained contractions and encouraging full relaxation of the muscles being exercised will help prevent excessive pressure increases. This means no isometric exercises, and no "hold" at the point of maximum contraction. This also means consciously relaxing all muscles while exercising, and not carrying any constant muscular tension.

**Valsalva maneuver.** A rapid rise in blood pressure is created whenever we hold our breath and exert. This is called a Valsalva maneuver when it is performed in a clinical setting. To avoid this, patients must be instructed to breathe during exercising. Specific "breathe in/breathe out" timing is not really necessary; what is important is relaxed breathing to a regular cadence.

**Final reps.** Studies investigating blood pressure during weightlifting have found that during the last repetitions of a set, the pressure becomes greatest, as the muscles tire and have to work harder. The way to avoid this is to use moderate resistance and avoid exercising to the point of muscle failure (which is sometimes called "maximal effort"). This will keep the blood pressure from getting too high, yet can still provide a good fitness workout.

**Rest.** A final way to keep the blood pressure moderate during exercising is to enforce frequent rest periods. By planning bouts of exercise interspersed with time to relax and breathe, even hypertensive patients can participate in a strength-building exercise program. The end result will be a healthier body, and often more normal blood pressure.

### The Medication Factor

Some patients will need medication to control their high blood pressure, especially in the higher age ranges. While the drugs do decrease the likelihood of strokes and heart attacks, many patients are hesitant to exercise, and they become even more sedentary. There is good evidence that exercise is not contraindicated, and is actually beneficial for patients taking blood pressure medications.<sup>3-4</sup> Even exercise that goes beyond the aerobic threshold, if performed correctly and with the precautions listed above, can be safely recommended. However, it is still a good idea to have the patient discuss exercise with the prescribing doctor, and to make sure there are no other contraindications.

### Procedures and Recommendations

When patients are ready to begin an exercise program as part of their chiropractic care, check their blood pressure first to see into which category they fall. If they are normal, high normal, or have mild hypertension, they should be able to tolerate an exercise plan that includes strengthening. Even when a patient has to use medication to stay in this range, there is usually no need to limit or modify exercise plans. Avoid isometric or "hold" exercises, always discuss breathing and relaxation, and discourage exercising to muscle failure. With these caveats, there should be little concern about exercise recommendations raising a patient's blood pressure and causing cardiovascular problems.

When a patient has a blood pressure reading over 160/100 (if either number is exceeded), make sure the patient understands the condition and is under the care of a physician trained for this. Start the patient on a walking program first for several weeks to monitor their response to aerobic exercise. Once regular aerobic exercise is being successfully accomplished at least three (but preferably more) times a week, a hypertensive patient is ready to add resistance exercises. Go over the instructions carefully to make sure that factors which potentially increase blood pressure (listed previously) are minimized. In general, patients respond to chiropractic care more rapidly when they are exercising regularly and are performing resistance exercises that improve the support, posture and coordination of the spine.

### *References*

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SEPTEMBER 2004