

HEART RATE VARIABILITY



Dr. Kelly Holt
BSc, BSc(Chiro), PGDipHSc, PhD

Dr. Heidi Haavik
BSc(Physiol), BSc(Chiro) PhD



Did you know that your nervous system controls your heart rate? It is one of the many smart things that your body does without you having to or put any thought into it. Your nervous system will increase or decrease your heart rate based on the needs of your body, and this is called heart rate variability.

Most people know that having a healthy heart rate is important - you don't want it too fast, and you don't want it too slow. It is providing your vital organs with blood and oxygen that you need to survive. However, your heart rate is not at a constant steady 70 beats per minute all day every day; it changes based on whether you are resting or exercising, whether you are happy or angry, nervous or relaxed. These changes in heart rate can be measured by something called heart rate variability or HRV.

HRV is controlled by your nervous system (made up of your brain, spinal cord and all the nerves that go to every tissue and cell in your body), specifically the part of your nervous system that is automatic, that we don't have to think about, like breathing. A good HRV (a high one) is thought to reflect a healthy heart and a body that can respond and adapt to its environment and needs.

It is important that your brain knows what is going on in and around your body so that it can know when to increase or decrease your heart rate, and it needs to do this quickly. For example, if you get a fright, or suddenly need to run really fast, your nervous system will quickly need to increase your heart rate so it can pump enough blood to your muscles so you can run. However, when you are sleeping or relaxed, you don't want your heart rate to stay beating that fast as this is not good for you,

so your brain will sense this and then decrease your heart rate.

We know now, from a lot of neuroscience research studies, that when your spine is not moving properly, this changes the way your brain can sense what is going on in and around your body and the way it controls your body.¹⁻³ If the joints of your spine are not moving properly (what chiropractors call being subluxated) this may affect how well you can sense what is going on in and around you and how well you can react to your environment. Research has shown that when a chiropractor then gently adjusts these subluxations, it helps the brain to more accurately "see" what is going on in and around the body. So, when you get adjusted by your chiropractor, it might help you to be able to respond and adapt to your environment better and keep you balanced and healthy.



Chiropractic may help



What does the research say about chiropractic care and heart rate variability (HRV)? Researchers have looked at a lot of the studies that have been done on the effects of chiropractic care on HRV and summarised them.⁴ The results show that chiropractic care does affect HRV, and in particular, it seems to increase the healing and calming side of our autonomic nervous system, the parasympathetic nervous system!

In one study,⁵ the researchers got 96 different chiropractors to measure HRV before and after adjustments on 8 different patients and after 4 weeks on 2 of their patients. Altogether, 539 adults had their HRV recorded before and after their adjustments, and 111 adults had their HRV recorded across four weeks of chiropractic care. They found that in both of these groups of adults, there were improvements in their HRV measurements and that in the group that received adjustments over four weeks, these improvements remained constant over that time.

These studies suggest that even just one adjustment can influence an important part of our nervous system that controls our heart rate, which represents how well our body can respond to our environment, and is considered to be a measure of someone's adaptability and general health. Also, very importantly, in the stressful, fast-paced life we often live these days, chiropractic care appears to increase the "healing and calming" side of our autonomic nervous system. If you are interested in good health, adaptability and want to respond better to stress, why don't you consider chiropractic care? Make sure your spine is functioning well so you can operate at your best!



Disclaimer and References

This information is provided for educational purposes only. It is not intended to be professional advice of any kind. Haavik Research Limited encourages you to make your own health care decisions based on your own research and in partnership with a qualified health care professional. 1. Uthaihpun S, Jull G, Sungkarat S, et al. The influence of neck pain on sensorimotor function in the elderly. *Arch Gerontol Geriatr* 2012;55(3):667-72. doi: 10.1016/j.archger.2012.01.013 [published Online First: 2012/02/22] 2. Haavik H, Murphy B. The role of spinal manipulation in addressing disordered sensorimotor integration and altered motor control. *J Electromyogr Kinesiol* 2012;22(5):768-76. doi: 10.1016/j.jelekin.2012.02.012 [published Online First: 2012/04/10] 3. Treleven J. Sensorimotor disturbances in neck disorders affecting postural stability, head and eye movement control. *Man Ther* 2008;13(1):2-11. 4. Amoroso Borges BL, Bortolazzo GL, Neto HP. Effects of spinal manipulation and myofascial techniques on heart rate variability: A systematic review. *Journal of Bodywork and Movement Therapies* 2018;22(1):203-08. doi: <https://doi.org/10.1016/j.jbmt.2017.09.025> 5. Zhang J, Dean D, Nosco D, et al. Effect of Chiropractic Care on Heart Rate Variability and Pain in a Multisite Clinical Study. *Journal of Manipulative and Physiological Therapeutics* 2006;29(4):267-74. doi: 10.1016/j.jmpt.2006.03.010