



PA 40 – Monitor Your Health with HRV

Most people know that having a healthy heart rate is important. You don't want your heart to beat too fast and you don't want it to beat too slow. It should beat at just the right pace to provide your vital organs and muscles with just the amount of blood and oxygen that you need to survive and thrive. What many people don't know though, is that the natural variation in someone's heart rate is also important. Your heart shouldn't beat at a constant steady rate all day, it should vary based on whether you are resting or exercising, whether you are happy or angry, nervous or relaxed. Your brain is constantly detecting what is happening inside and outside of you and one of the ways it responds to changes in your environment, is by increasing or decreasing your heart rate. These natural changes can be measured and are called your heart rate variability or HRV.

HRV is controlled by your nervous system, specifically the part of your nervous system that controls your automatic functions, like breathing and digesting, the things that we don't have to think about doing, the ones that just happen. A good HRV, is one that is high and is thought to indicate a healthy heart and body, one that is able to respond appropriately and adapt to its environment and needs.

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 or fight. However, when you are sleeping or relaxed, you don't want your heart to stay beating that fast, as this is not good for you, so your brain will perceive this and then decrease your heart rate.

In order for your nervous system to be able to increase or decrease your heart rate based on your needs, your brain needs to be able to properly sense what is going on in and around it. We know now, from a lot of neuroscience research studies, that when segments of your spine are not moving properly, what chiropractors call being subluxated, 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

Research has shown that when a chiropractor gently adjusts these subluxations, it helps your brain to more accurately perceive or 'see' what is going on in and around your body.^{4 5} So, when your chiropractor adjusts you, it might help you to be able to respond and adapt better to your environment and keep you balanced and healthy. This is why some chiropractors will measure your HRV when you're under chiropractic care... so they can see how well you are responding to the chiropractic care and to see how you are currently adapting to your environment.

A group of researchers wanted to know more about chiropractic and HRV so they got 96 different chiropractors to measure HRV before and after a single adjustment session on some of their patients, and for some of these patients they measured their HRV over a course of 4 weeks of chiropractic care. Altogether, 539 adults had their HRV recorded before and after their adjustments and 111 had their HRV measured across 4 weeks of care. They found that in both of these groups, there was a significant improvement in their HRV measurements and that in the group that was assessed over 4 weeks, these improvements were sustained.⁶

When we put this study together with the other research that's been published about chiropractic care and HRV it suggests that chiropractic adjustments can influence HRV⁷⁻⁹ and 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. Although we do need more research on this area

If you are interested in good health, adaptability and want to better respond to stress and your environment, why don't you consider chiropractic care and make sure your spine is functioning as well as it can so you can operate at your optimal potential!

References

1. Uthaikhup 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.
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.
3. Treleaven J. Sensorimotor disturbances in neck disorders affecting postural stability, head and eye movement control. *Man Ther* 2008;13(1):2-11.
4. Haavik H, Murphy B. Subclinical neck pain and the effects of cervical manipulation on elbow joint position sense. *J Manipulative Physiol Ther* 2011;34(2):88-97.
5. Holt KR, Haavik H, Lee AC, et al. Effectiveness of chiropractic care to improve sensorimotor function associated with falls risk in older people: A randomized controlled trial. *J Manipulative Physiol Ther* 2016;39(4):267-78.
6. 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.
7. 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.
8. Wirth B, Gassner A, de Bruin ED, Axén I, Swanenburg J, Humphreys BK, Schweinhardt P. Neurophysiological effects of high Velocity and low amplitude spinal manipulation in symptomatic and asymptomatic humans: A systematic literature review. *Spine*, 2019;44(15):E914–E926.
9. Shafiq H, McGregor C, Murphy B. The impact of cervical manipulation on heart rate variability. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference*, 2014; 3406–3409.