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The Effects of Chiropractic Spinal Adjustments on Heart Rates

By Mark Studin and William Owens | July 2010

"Heart rate is the number of heartbeats per unit of time - typically expressed as beats per minute (bpm) - which can vary as the body's need for oxygen changes, such as during exercise or sleep. The measurement of heart rate is used by medical professionals to assist in the diagnosis and tracking of medical conditions. It is also used by individuals, such as athletes, who are interested in monitoring their heart rate to gain maximum efficiency from their training...Heart rate is measured by finding the pulse of the body. This pulse rate can be measured at any point on the body where an artery's pulsation is transmitted to the surface - often as it is compressed against an underlying structure like bone - by pressuring it with the index and middle finger. The thumb should not be used for measuring another person's heart rate, as its strong pulse may interfere with discriminating the site of pulsation" (Wikipedia, 2010, "Heart rate").

"The autonomic nervous system (ANS or visceral nervous system) is the part of the peripheral nervous system that acts as a control system functioning largely below the level of consciousness, and controls organ functions. The ANS affects heart rate, digestion, respiration rate, salivation, perspiration, diameter of the pupils, micturition (urination), and sexual arousal. Whereas most of its actions are involuntary, some, such as breathing, work in tandem with the conscious mind" (Wikipedia, 2010, "Autonomic nervous system").

For our conversation, it is this autonomic nervous system that largely controls the heart rate. Dr. I Kestin, Consultant Anesthesiologist, Derriford Hospital, UK, stated in 1993, "The heart will beat independently of any nervous or hormonal influences. This spontaneous rhythm of the heart (called intrinsic automaticity) can be altered by nervous impulses or by circulatory substances, like adrenaline. The muscle fibers of the heart are excitable cells like other muscle or nerve cells...This automatic rhythm of the heart can be altered by the autonomic nervous system. The sympathetic nervous system supply to the heart leaves the spinal cord at the first four thoracic vertebra, and supplies most of the muscle of the heart...There are nervous reflexes that effect heart rate. The afferents are nerves in the wall of the atria or aorta that respond to stretch. The aorta contains high pressure receptors. When the blood pressure is high these cause reflex slowing of the heart to reduce the cardiac output and the blood pressure. Similarly, when the blood pressure is low, the heart rate increases, as in shock. Similar pressure receptors are found in the atria. When the atria distend, as in heart failure...there is a reflex increase in the heart rate to pump the extra blood returning to the heart. When there is a sudden reduction in the pressure in the atria the heart slows"

(http://www.nda.ox.ac.uk/wfsa/html/u03/u03_011.htm).

Increased heart rate can lead to cardiomyopathy, damage of the heart muscle and according to Cook, Togni, Schaub, Wenaweser, and Hess in 2006, “Since 1980, it is known that resting heart rate (RHR) is a prognostic factor in coronary diseased patients. Data from the Coronary Artery Surgery Study (CASS) published last year underline the prognostic importance of RHR for morbidity (time to rehospitalization), as well as total and cardiovascular mortality. Heart rate proves to be the best predictor after myocardial infarction, in patients with congestive heart failure, as well as in patients with diabetes mellitus or hypertension. In addition, it was found that elevated RHR is also strongly associated with mortality in the general population” (p. 2387).

It has been the independent clinical observation and conclusion over the course of 30 years by Dr. Mark Studin, one of the author's of this article, that post chiropractic adjustment patients have experienced lowering heart rates and subsequent high blood pressures. Dr. Studin states, “Many patients have reported that their increased heart rates have abated for long periods of time.”

Budgell and Polus reported in **The Journal of Manipulative and Physiological Therapeutics (2006) that chiropractic adjustments of the thoracic spine were associated with significant heart rate values and influenced the autonomic output of the heart, meaning that heart rates generally lower with the chiropractic adjustments because of the shift in the neurological communication of the autonomic nervous system (to the parasympathetic nerves) causing the heart to slow or normalize.**

This study by Budgell and Polus offers potential answers to many as to why patients' heart rates spontaneously spike for no apparent reason. The spine, although a great influence the nervous system, has often been overlooked in the clinical arena as the prime cause for cardiac issues. The authors of this article want to emphasize that chiropractic care has a positive effect for many conditions, including cardiac, and should be considered in conjunction with all other health care specialists, as clinically indicated, as a conclusive diagnosis to rule out life-threatening illnesses must be rendered.