The influence of cervical manipulation on autonomic function

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It has long been thought that Osteopathic manipulation affects autonomic function. In particular, cervical manipulation is thought to increase parasympathetic activity, especially that mediated by the vagus nerve. This is clinically significant because the vagus nerve has shown the ability to suppress production of inflammatory cytokines which are believed to have a major role in the etiology of such diverse conditions as diabetes and heart disease. We are investigating the hypothesis that manipulation can modulate autonomic function using heart rate variability (HRV) to evaluate autonomic function. HRV technology (Heart Rate Scanner 3.0 manufactured by Biocom Technologies) allows us to assess multiple parameters including the relative level of sympathetic and parasympathetic (vagal) activity as well as overall autonomic function. Our study examines the autonomic effects of three common cervical procedures: cervical high velocity, low amplitude adjustment (HVLA), compression of the fourth ventricle (CV4) and suboccipital inhibition (SI) as well as sham (SL) laser and no treatment (NT) control protocols. A total of 40 normal subjects between the ages of 20 and 60 are being recruited from the Kirksville area. Subjects fill out a standard medical history form which is screened by a clinical investigator to insure there are no contraindications to the procedures. Subjects are situated in a supine position, sensors are placed on both wrists and following a ten minute stabilization period, a baseline HRV reading is taken. The subjects then undergo one of five procedures: HVLA, CV4, SI, SL or NT and then a post-experimental HRV reading is obtained. Pre- and post-experimental evaluation of subject mood is also obtained using the Positive and Negative Affect Schedule. Subjects participate in a total of five experimental sessions, one with each protocol. This research is being performed in the laboratories of the ATSU Research Institute. It is funded by Strategic Research Fund award # 501-298.

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