

## **Research Project Summary**

### **Project Complete**

Chronic inflammation has vast consequences, possibly leading to life-threatening conditions, such as atherosclerosis and diabetes. This research investigates the relationship of the subluxation, neuropathy and IVF inflammation as well as the possibility that inflammation and its potential fatal consequences could be forestalled or even prevented by adjustments.

Lumbar intervertebral foramen inflammation plays a critical role in the pathogenesis of low back pain. This process can produce injury or disease to the structures and tissues within and / or adjacent to the IVF. These researchers will measure markers of inflammation and neuropathic pain, before and after adjusting.

This research will investigate a model that may demonstrate the possible fatal, long-term consequences of spinal subluxations as well as the effects of spinal adjustments on such conditions. Such findings have the potential to significantly advance the relevance and understanding of chiropractic care.

# Impact of Research

#### Awards

 World Federation of Chiropractic Congress 2015, Athens, NCMIC Louis Sportelli Original Research Award – 3rd place.

### **Publications**

- Xue-Jun Song, Zhi-Jiang Huang, William B. Song, Xue-Song Song, Arlan F. Fuhr, Anthony L. Rosner, Harrison Ndtan, Ronald L. Rupert. Attenuation Effect of Spinal Manipulation on Neuropathic and Postoperative Pain Through Activating Endogenous Anti-Inflammatory Cytokine Interleukin 10 in Rat Spinal Cord. Journal of Manipulative and Physiological Therapeutics Jan 2016.
- Su Liu, Yue-Peng Liu, Zhi-Jiang Huang, Yan-Kai Zhang, Angela A. Song, Ping-Chuan Ma, Xue-Jun Song. Wnt/Ryk signaling contributes to neuropathic pain by regulating sensory neuron excitability and spinal synaptic plasticity in rats. The Journal of the International Association for the Study of Pain Dec 2015.