Profile – Dr. Walter Herzog PhD

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In 2010 alone, Dr. Herzog published 15 scholarly papers with 9 more accepted or in press and 13 submitted. His research involves understanding molecular transport and tissue adaptation in a wide range of musculoskeletal injuries and diseases. His research is relevant to furthering nanotechnology research and development while providing the basis for medical breakthroughs in treating diseases such as osteoarthritis, which is expected to affect 20 to 25 per cent of Canadians by 2025. Dr. Herzog hopes to discover new ways to detect, prevent and treat diseases like osteoarthritis, osteoporosis, and fibromyalgia.

Three very timely papers include:

- Austin N, DiFrancesco L, Herzog W (2010). Microstructural damage in arterial tissue exposed to repeated tensile strains. Journal of Manipulative and Physiological Therapeutics 33:14–19.
- Herzog W (2010). The biomechanics of spinal manipulation. Journal of Bodywork and Movement Therapies 14:280–286.
- Wuest S, Symons B, Leonard TR, Herzog W (2010). Preliminary report: biomechanics of vertebral artery segments c1-c6 during cervical spinal manipulation. Journal of Manipulative and Physiological Therapeutics 33:273–278.

As the PI in 10 research projects, Dr. Herzog currently carries over $1.8 million in operating grants from agencies such as CIHR, CCRF, Canada Council for the Arts, CCPA, Natural Sciences and Engineering Research Council, and the Alberta Heritage Foundation for Medical Research.

In 2010, he organized the 6th World Congress on Biomechanics in Singapore and in 2011 he is organizing the 5th International Conference on Biomedical Engineering in Kuala Lumpur.

This past year has been very successful in terms of chiropractic research. He has established a core group of interested local chiropractors who meet regularly and help with ongoing research problems. These include Drs. Bruce Symons, Sarah Wuest, Ron Carter and Phil Conway. In addition, Dr. Herzog is supervising a MSc level graduate student and chiropractor, Dr. Conrad Tang.

This past year his focus was on three primary projects:

(i) the first project was aimed at investigating the potential for vertebral arteries to adapt positively or negatively to multiple stretching cycles as they occur during spinal manipulation; (ii) the second project was aimed at quantifying the stresses and strains of human vertebral artery segments C1-C6 during diagnostic, range of motion and spinal manipulative treatment testing; (iii) the third project was aimed at studying the efficacy of ART techniques to release pain and improve function of patients with anterior knee pain.