

The Results of Radial Shockwave Therapy

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"Six pages of equations however all improvable, incomprehensible, ignore quantum mechanics and are incorrect" -Science 1929.

This was in response to Einstein's Theory of Relativity published in Science in 1929.

Einstein's theories were controversial and questioned by the scientific community.

The same cynicism has been directed towards radial shockwave therapy. Fifty years ago, healing by non-surgical techniques was only realized in science fiction.

This type of non-surgical healing is now a reality with numerous double-blind, randomized, controlled studies showing the effectiveness and efficacy of radial shockwave therapy. Radial shockwave therapy, today, shares in the treatment and rehabilitation of numerous tendinopathies, trigger point therapies and wound regenerations. This treatment has become so popular and evidence-based that the clinical applications of radial shockwave therapy have been incorporated into the curriculum of the Canadian Memorial Chiropractic College in Toronto.

A Brief History

Shockwaves, and their effects, were discovered years ago. They were found to affect people swimming on a South Pacific beach. Researchers realized that when mines were detonated off-shore, shockwaves were propagated through the water and caused internal damage to the organs of the swimmers on the beach. Years later, shockwaves were developed to treat kidney stones, by blasting them in a controlled manner with a lithotripsy, or high-power shockwave device. As serendipity would have it a German physician applied this principle to injured tendons in rabbits and showed the healing effects of shockwaves on tendinopathies.

Shockwave machines were first introduced in Canada in the mid-1980's, but at incredibly high prices. The machines were approximately two hundred pounds, in weight, and cost anywhere from \$200,000 - \$440,000.

Physicians were using them in certain clinics where patients were partially anaesthetized, and the cost per treatment varied from \$1,000 to \$1,500.

As with most medical innovations, especially with respect to orthopedics, chiropractic and osteopathic treatments, Canada is usually 10 years behind the rest of the world.

As president of the International Society for Medical and Skeletal Treatment, last year I insisted that the radial shockwave device be affordable for all practising health care professionals in Canada.

Examples of this are lithotripsy for kidney stones, instruments used to treat fractures such as intramedullary nails, arthroscopy, trigger point therapy protocols and, of course, shockwave

therapy, which took approximately 10 years to cross the Atlantic and reach Canada and the United States. The International Society for Medical and Skeletal Treatment (ISMST) was formed 10 years ago in Germany to help elucidate, teach and research the uses of shockwave therapy. In 1997, the radial shockwave therapy was introduced into Canada through Sunnybrook Hospital and my own sports clinic practice. I wondered, myself, whether the patients of my sports clinic would benefit from the healing power of shockwave therapy. European world leaders, in the use of this therapy, came and met with me, at that time, to help me try it on my first patients.

My first 10 shockwave patients were all friends, so that I could experiment on them and get an honest opinion as to the effectiveness of shockwave therapy.

One of the patients was the world champion in the "100 metres" at the time. Another friend took one look at this 200-lb., behemoth-sized machine and was so intimidated that he actually ran out of my office screaming, much to the dismay of the people waiting in the reception area. My, how things have changed!

As president of the ISMST, last year I insisted that the radial shockwave device be affordable for all practising health-care professionals in Canada. Chiropractors, physiotherapists, athletic therapists, podiatrists and physicians can now all afford, and benefit from, the use of shockwave therapy.

The Science

As an evidence-based practitioner, I am continually impressed by the efficacy of RSW as evinced in the literature.

In the last 10 years, over 300 articles and abstracts have been published and written regarding the efficacy of shockwave therapy. Drs. Odgen, Petroni and Theodore have shown in a double-blind, randomized, controlled fashion the superiority of shockwave therapy over sham, or controlled groups, in treating plantar fasciitis and tennis elbow.

In 2007, the American Journal of Sports Medicine published two articles on the effectiveness of shockwave therapy on the treatment of Jumpers Knee (patellar tendonitis) and achilles tendinopathy with a 75 percent success rate. Moreover, Dr. Gerdesmeyer's latest publication, and abstract, shows an 84.8 percent success rate for plantar fasciitis. The same cannot be said for ultrasound or laser therapy.

The Canadian Memorial Chiropractic College (CMCC) in Toronto quickly understood the benefits of shockwave therapy, and the scientific backing of this technology, and has embraced its teachings by including them as part of the curriculum for the fourth-year students. CMCC is also using the treatments in its sports clinics.

Uses and Indications of Radial Shockwave Therapy

Radial shockwave therapy (RSW) has been shown to be effective for Achilles tendinopathy, plantar fasciitis, jumpers knee, bursitis, calcific rotator cuff tendinopathy, and tennis elbow. There has also

been exponential growth in RSW use for trigger point therapy.

Typically, treatments take five minutes for tendinopathy, and five to 10 minutes for trigger point therapy. The procedure involves biofeedback from the patient. RSW creates neurovascularization of the degenerate tissue as shown by Dr. Wang in Clinic Orthopedics and Related Research. It also promotes the production of ENOS, endothelial growth factor and bone morphogenic protein. The tissue regeneration in healing takes approximately three months, yet many patients feel relief much sooner. Treatments are recommended at one-week intervals for a total of three treatments.

Success Rates

The most striking aspect of RSW is its success rate. As an evidence-based practitioner, I am continually impressed by the efficacy of RSW as evinced in the literature. This year alone, two excellent papers were published on the success of RSW in the American Journal of Sports Medicine. When combined with exercise, RSW showed a 75 percent success rate with patellar tendinopathy and a 76 per cent success rate for the treatment of Achilles tendinopathy. There have been more than 300 articles published on RSW in 10 double-blind, randomized, controlled trials. As Dr. Boyer wrote in the Journal of Shoulder & Elbow Surgery, when discussing ultrasound, ice laser and acupuncture, "where is the science?" There is a dearth of evidence supporting their uses, which is in striking contrast to that for radial shockwave therapy. The evidence for the use of RSW is overwhelming!

The Business

Recently, a key lecture was given at the OCA Annual Meeting in Toronto, the focus of which was building a successful practice. Statements were made in which communication, professionalism, high customer satisfaction and caring were all salient points. These are accolades that shockwave therapy elicits and exemplifies.

Dr. Sterling in Kelowna, B.C., stated he has been able to cure people who have suffered for years from untreatable back pain, and now the community is embracing his treatments. Patients come from miles away to be treated. He has a treatment that people talk about, desire and seek. The introduction of computers is an apt analogy. At first computers were large, expensive and intimidating. Now, almost everyone uses them on a daily basis. Radial shockwave is a new innovation that, with more education and teaching, will become the mainstay of many treatments.

Orthopedic surgeons and chiropractors are forming closer bonds in Ontario and Alberta. Dr. Nick Mohtadi, a world-renowned sports orthopedic surgeon, was asked to join the board meetings at the Alberta Chiropractic Association in order to develop a strategy to bring the chiropractors and orthopedic surgeons together to improve health care in Alberta. It is this same forward-thinking, and bonding within the chiropractic and medical communities, regarding radial shockwave therapy, that will enhance patient care in Canada.

I will share with you the experience of Dr. Lawrence Micheli, a chiropractor in the downtown Toronto core at the Toronto Athletic Club Sport Medicine Clinic. Dr. Micheli states, "I have had

great treatment outcomes from day one. I always treated soft tissue injuries very effectively with the use of active release techniques (ART), acupuncture and exercise prescription but my outcomes have improved with the ... shockwave machine. Ever since I started integrating shockwave therapy into my treatment plans my patients have been getting better, faster. Not only did my patient outcomes improve, but clinic revenue has also steadily increased. It is a great feeling to get my weekend-warrior clients and Bay-Street-gentlemen back to their grueling physical activities with the use of shockwave therapy.”

Adding shockwave is a financially sound decision and is almost risk free. The machine costs only \$376 per month, with some clinics treating over one hundred patients per month.

One does not have to be a financial analyst to see the great upside for anyone’s business practice and clinic. Together with his athletic therapists and physiotherapists, Dr. Micheli has performed more than 3.5 million “shocks” over the past year at his clinic with great results. Dr. Micheli was reticent, at first, but after he started the treatments and saw the successful outcomes for patients, he has never looked back.

In conclusion, with education and practice in the technique of radial shockwave therapy, patients have benefited from chiropractors’ use of the therapy, nation wide. The potential is limitless!

For more information and reference material, please visit www.shockwavecanadainc.com

Dr. Robert Gordon is an orthopedic surgeon with the University Health Network – Toronto Western Hospital and the William Osler Health Centre in Ontario. He specializes in knee and shoulder arthroscopy procedures and is an advocate of radial shockwave therapy. Dr. Gordon also teaches radial shockwave technique at CMCC in Toronto and has lectured at numerous chiropractic seminars. He can be reached at 416-545-1166.

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