

2005 Electrotherapy Modality References @ Feb 2006

The following is a summary of some of the key papers published in 2005. I do not claim that it is complete, but includes many that I have found over recent months

Bioelectromagnetics

- Adair, E. R., D. W. Blick, et al. (2005). "Thermophysiological responses of human volunteers to whole body RF exposure at 220 MHz." Bioelectromagnetics **26**(6): 448-61.
- Barnes, F. and Y. Kwon (2005). "A theoretical study of the effects of RF fields in the vicinity of membranes." Bioelectromagnetics **26**(2): 118-24.
- Bervar, M. (2005). "Effect of weak, interrupted sinusoidal low frequency magnetic field on neural regeneration in rats: functional evaluation." Bioelectromagnetics **26**(5): 351-6.
- Challis, L. J. (2005). "Mechanisms for interaction between RF fields and biological tissue." Bioelectromagnetics **Suppl 7**: S98-S106.
- Cosman, E. R. (2005). "A comment on the history of the pulsed radiofrequency technique for pain therapy." Anesthesiology **103**(6): 1312; author reply 1313-4.
- Cosman, E. R., Jr. and E. R. Cosman, Sr. (2005). "Electric and thermal field effects in tissue around radiofrequency electrodes." Pain Med **6**(6): 405-24.
- De Pedro, J. A., A. J. Perez-Caballer, et al. (2005). "Pulsed electromagnetic fields induce peripheral nerve regeneration and endplate enzymatic changes." Bioelectromagnetics **26**(1): 20-7.
- Gabriel, C. (2005). "Dielectric properties of biological tissue: variation with age." Bioelectromagnetics **Suppl 7**: S12-8.
- Gugkova, O., S. V. Gudkov, et al. (2005). "[The study of the mechanisms of formation of reactive oxygen species in aqueous solutions on exposure to high peak-power pulsed electromagnetic radiation of extremely high frequencies]." Biofizika **50**(5): 773-9.
- Juutilainen, J. (2005). "Developmental effects of electromagnetic fields." Bioelectromagnetics **Suppl 7**: S107-15.
- Oschman, J. L. (2005). "Energy and the healing response."
- Oschman, J. L. (2005). "Energy and the healing response." J Bodywork Mov Ther **9**(1): 3-15.
- Saunders, R. D. and C. D. McCaig (2005). "Developmental effects of physiologically weak electric fields and heat: an overview." Bioelectromagnetics **Suppl 7**: S127-32.
- Straume, A., G. Oftedal, et al. (2005). "Skin temperature increase caused by a mobile phone: a methodological infrared camera study." Bioelectromagnetics **26**(6): 510-9.

- Ventura, C. (2005). "CAM and cell fate targeting: molecular and energetic insights into cell growth and differentiation." Evid Based Complement Alternat Med **2**(3): 277-83.
- Vincze, G., N. Szasz, et al. (2005). "On the thermal noise limit of cellular membranes." Bioelectromagnetics **26**(1): 28-35.
- Zhang, Y., J. Ding, et al. (2005). "Influence of pulsed electromagnetic field with different pulse duty cycles on neurite outgrowth in PC12 rat pheochromocytoma cells." Bioelectromagnetics **26**(5): 406-11.

Electrical Stimulation

- Aydin, G., S. Tomruk, et al. (2005). "Transcutaneous electrical nerve stimulation versus baclofen in spasticity: clinical and electrophysiologic comparison." Am J Phys Med Rehabil **84**(8): 584-92.
- Bhadra, N. and K. L. Kilgore (2005). "High-frequency electrical conduction block of mammalian peripheral motor nerve." Muscle Nerve **32**(6): 782-90.
- Bijak, M., M. Rakos, et al. (2005). "Stimulation parameter optimization for FES supported standing up and walking in SCI patients." Artif Organs **29**(3): 220-3.
- Carraro, U., K. Rossini, et al. (2005). "Muscle fiber regeneration in human permanent lower motoneuron denervation: relevance to safety and effectiveness of FES-training, which induces muscle recovery in SCI subjects." Artif Organs **29**(3): 187-91.
- Chae, J., D. T. Yu, et al. (2005). "Intramuscular electrical stimulation for hemiplegic shoulder pain: a 12-month follow-up of a multiple-center, randomized clinical trial." Am J Phys Med Rehabil **84**(11): 832-42.
- Chan, A. Y. and E. Li (2005). "Electric shock wave lithotripsy (ESWL) as a pain control measure in dermatomyositis with calcinosis cutis-old method, new discovery." Clin Rheumatol **24**(2): 172-3.
- Chapman, C. E., J. P. Blondin, et al. (2005). "Perception of local DC and AC electric fields in humans." Bioelectromagnetics **26**(5): 357-66.
- Gallasch, E., D. Rafolt, et al. (2005). "Evaluation of fes-induced knee joint moments in paraplegics with denervated muscles." Artif Organs **29**(3): 207-11.
- Goetz, L. L. and S. A. Stiens (2005). "Abdominal electric stimulation facilitates penile vibratory stimulation for ejaculation after spinal cord injury: a single-subject trial." Arch Phys Med Rehabil **86**(9): 1879-83.
- Gregory, C. M. and C. S. Bickel (2005). "Recruitment patterns in human skeletal muscle during electrical stimulation." Phys Ther **85**(4): 358-64.
- Gregory, C. M., R. H. Williams, et al. (2005). "Metabolic and phenotypic characteristics of human skeletal muscle fibers as predictors of glycogen utilization during electrical stimulation." Eur J Appl Physiol **95**(4): 276-82.

- Hofer, C., C. Forstner, et al. (2005). "In vivo assessment of conduction velocity and refractory period of denervated muscle fibers." Artif Organs **29**(6): 436-9.
- Ikoma, A., H. Handwerker, et al. (2005). "Electrically evoked itch in humans." Pain **113**(1-2): 148-54.
- Karademir, K., K. BAYKAL, et al. (2005). "A peripheric neuromodulation technique for curing detrusor overactivity: Stoller afferent neurostimulation." Scandinavian Journal of Urology & Nephrology **39**(3): 230-233.
- Kern, H., S. Salmons, et al. (2005). "Recovery of long-term denervated human muscles induced by electrical stimulation." Muscle Nerve **31**(1): 98-101.
- Kroeling, P., A. Gross, et al. (2005). "Electrotherapy for neck disorders." Cochrane Database Syst Rev(2): CD004251.
- Kroeling, P., A. R. Gross, et al. (2005). "A Cochrane review of electrotherapy for mechanical neck disorders." Spine **30**(21): E641-8.
- Lyons, C. L., J. B. Robb, et al. (2005). "Differences in quadriceps femoris muscle torque when using a clinical electrical stimulator versus a portable electrical stimulator." Phys Ther **85**(1): 44-51.
- Modlin, M., C. Forstner, et al. (2005). "Electrical stimulation of denervated muscles: first results of a clinical study." Artif Organs **29**(3): 203-6.
- Scott, W. B., S. C. Lee, et al. (2005). "Switching stimulation patterns improves performance of paralyzed human quadriceps muscle." Muscle Nerve **31**(5): 581-8.
- Yan, T., C. W. Hui-Chan, et al. (2005). "Functional electrical stimulation improves motor recovery of the lower extremity and walking ability of subjects with first acute stroke: a randomized placebo-controlled trial." Stroke **36**(1): 80-5.

Electrical Stimulation for Wound Healing

- (2005). "Electrical stimulation or electromagnetic therapy as adjunctive treatments for chronic skin wounds." Technol Eval Cent Asses Program Exec Summ **20**(2): 1-3.
- Burssens, P., R. Forsyth, et al. (2005). "Influence of burst TENS stimulation on collagen formation after Achilles tendon suture in man. A histological evaluation with Movat's pentachrome stain." Acta Orthop Belg **71**(3): 342-6.
- Hampton, S. and L. King (2005). "Healing an intractable wound using bio-electrical stimulation therapy." Br J Nurs **14**(15): S30-2.
- Kloth, L. C. (2005). "Electrical stimulation for wound healing: a review of evidence from in vitro studies, animal experiments, and clinical trials." Int J Low Extrem Wounds **4**(1): 23-44.
- Petrofsky, J., E. Schwab, et al. (2005). "Effects of electrical stimulation on skin blood flow in controls and in and around stage III and IV wounds in hairy and non hairy skin." Med Sci Monit **11**(7): CR309-16.

Roeckl-Wiedmann, I., M. Bennett, et al. (2005). "Systematic review of hyperbaric oxygen in the management of chronic wounds." Br J Surg **92**(1): 24-32.

Heat Therapies

Adair, E. R., D. W. Blick, et al. (2005). "Thermophysiological responses of human volunteers to whole body RF exposure at 220 MHz." Bioelectromagnetics **26**(6): 448-61.

Alekseev, S. I., A. A. Radziewsky, et al. (2005). "Local heating of human skin by millimeter waves: effect of blood flow." Bioelectromagnetics **26**(6): 489-501.

Cosman, E. R., Jr. and E. R. Cosman, Sr. (2005). "Electric and thermal field effects in tissue around radiofrequency electrodes." Pain Med **6**(6): 405-24.

Haemmerich, D., D. J. Schutt, et al. (2005). "Measurement of temperature-dependent specific heat of biological tissues." Physiol Meas **26**(1): 59-67.

Robertson, V. J., A. R. Ward, et al. (2005). "The effect of heat on tissue extensibility: a comparison of deep and superficial heating." Arch Phys Med Rehabil **86**(4): 819-25.

Saunders, R. D. and C. D. McCaig (2005). "Developmental effects of physiologically weak electric fields and heat: an overview." Bioelectromagnetics **Suppl 7**: S127-32.

Stephan, F., S. Ghiglione, et al. (2005). "Effect of excessive environmental heat on core temperature in critically ill patients. An observational study during the 2003 European heat wave." Br J Anaesth **94**(1): 39-45.

Ice and Cold Therapies

Ibrahim, T., S. M. Ong, et al. (2005). "The effects of different dressings on the skin temperature of the knee during cryotherapy." Knee **12**(1): 21-3.

Interferential Therapy

Defrin, R., E. Ariel, et al. (2005). "Segmental noxious versus innocuous electrical stimulation for chronic pain relief and the effect of fading sensation during treatment." Pain **115**(1-2): 152-60.

Hurley, D. A., S. M. McDonough, et al. (2005). "A descriptive study of the usage of spinal manipulative therapy techniques within a randomized clinical trial in acute low back pain." Man Ther **10**(1): 61-7.

Turkan, A., Y. Inci, et al. (2005). "The short-term effects of physical therapy in different intensities of urodynamic stress incontinence." Gynecol Obstet Invest **59**(1): 43-8.

Laser Therapy

- Bjordal, J. M., R. A. Lopes-Martins, et al. (2006). "A randomised, placebo controlled trial of low level laser therapy for activated Achilles tendinitis with microdialysis measurement of peritendinous prostaglandin E2 concentrations." Br J Sports Med **40**(1): 76-80; discussion 76-80.
- Brondon, P., I. Stadler, et al. (2005). "A study of the effects of phototherapy dose interval on photobiomodulation of cell cultures." Lasers Surg Med **36**(5): 409-13.
- Brosseau, L., G. Wells, et al. (2005). "Randomized controlled trial on low level laser therapy (LLLT) in the treatment of osteoarthritis (OA) of the hand." Lasers Surg Med **36**(3): 210-219.
- Chow, R. T. and L. Barnsley (2005). "Systematic review of the literature of low-level laser therapy (LLLT) in the management of neck pain." Lasers Surg Med **37**(1): 46-52.
- Doshi, S. N. and T. S. Alster (2005). "Combination radiofrequency and diode laser for treatment of facial rhytides and skin laxity." J Cosmet Laser Ther **7**(1): 11-5.
- Fillipin, L. I., J. L. Mauriz, et al. (2005). "Low-level laser therapy (LLLT) prevents oxidative stress and reduces fibrosis in rat traumatized Achilles tendon." Lasers Surg Med **37**(4): 293-300.
- Gigo-Benato, D., S. Geuna, et al. (2005). "Phototherapy for enhancing peripheral nerve repair: a review of the literature." Muscle Nerve **31**(6): 694-701.
- Karu, T. I., L. V. Pyatibrat, et al. (2005). "Cellular effects of low power laser therapy can be mediated by nitric oxide." Lasers Surg Med **36**(4): 307-14.
- Khan, M. H., R. K. Sink, et al. (2005). "Intradermally focused infrared laser pulses: thermal effects at defined tissue depths." Lasers Surg Med **36**(4): 270-80.
- Moore, P., T. D. Ridgway, et al. (2005). "Effect of wavelength on low-intensity laser irradiation-stimulated cell proliferation in vitro." Lasers Surg Med **36**(1): 8-12.
- Nahra, H. and L. Plaghki (2005). "Innocuous skin cooling modulates perception and neurophysiological correlates of brief CO2 laser stimuli in humans." Eur J Pain **9**(5): 521-30.
- Pikkula, B. M., D. W. Chang, et al. (2005). "Comparison of 585 and 595 nm laser-induced vascular response of normal in vivo human skin." Lasers Surg Med **36**(2): 117-23.
- Siedentopf, C. M., F. Koppelstaetter, et al. (2005). "Laser acupuncture induced specific cerebral cortical and subcortical activations in humans." Lasers Med Sci **20**(2): 68-73.
- Vinck, E., P. Coorevits, et al. (2005). "Evidence of changes in sural nerve conduction mediated by light emitting diode irradiation." Lasers Med Sci **20**(1): 35-40.

- Vinck, E. M., B. J. Cagnie, et al. (2005). "Green light emitting diode irradiation enhances fibroblast growth impaired by high glucose level." Photomed Laser Surg **23**(2): 167-71.
- Wong, B. J., N. Pandhoh, et al. (2005). "Identification of chondrocyte proliferation following laser irradiation, thermal injury, and mechanical trauma." Lasers Surg Med **37**(1): 89-96.

Magnetic Therapy

- Bailey, W. H. and J. A. Nyenhuis (2005). "Thresholds for 60 Hz magnetic field stimulation of peripheral nerves in human subjects." Bioelectromagnetics **26**(6): 462-8.
- Binhi, V. N. and C. F. Blackman (2005). "Analysis of the structure of magnetic fields that induced inhibition of stimulated neurite outgrowth." Bioelectromagnetics **26**(8): 684-9.
- Lyskov, E., N. Kalezic, et al. (2005). "Low frequency therapeutic EMF differently influences experimental muscle pain in female and male subjects." Bioelectromagnetics **26**(4): 299-304.
- Schimmelpfeng, J., K. F. Weibezahn, et al. (2005). "Neuronal outgrowth of PC-12 cells after combined treatment with nerve growth factor and a magnetic field: influence of the induced electric field strength." Bioelectromagnetics **26**(1): 74-7.
- Sosa, M., J. Bernal-Alvarado, et al. (2005). "Magnetic field influence on electrical properties of human blood measured by impedance spectroscopy." Bioelectromagnetics **26**(7): 564-70.
- Zhadin, M. and F. Barnes (2005). "Frequency and amplitude windows in the combined action of DC and low frequency AC magnetic fields on ion thermal motion in a macromolecule: theoretical analysis." Bioelectromagnetics **26**(4): 323-30.

NSAID's and Tissue Repair

- Bhattacharyya, T., R. Levin, et al. (2005). "Nonsteroidal antiinflammatory drugs and nonunion of humeral shaft fractures." Arthritis Rheum **53**(3): 364-7.
- Hanson, C. A., P. S. Weinhold, et al. (2005). "The effect of analgesic agents on the healing rat medial collateral ligament." Am J Sports Med **33**(5): 674-9.
- Wheeler, P. and M. E. Batt (2005). "Do non-steroidal anti-inflammatory drugs adversely affect stress fracture healing? A short review." Br J Sports Med **39**(2): 65-9.

Shock Wave Therapy

- Burton, A. M. and T. J. Overend (2005). "Low-energy extracorporeal shock wave therapy: a critical analysis of the evidence for effectiveness in the treatment of plantar fasciitis." Physical Therapy Reviews **10**(3): 152-162.
- Gerdesmeyer, L., C. von Euff, et al. (2005). "Antibacterial effects of extracorporeal shock waves." Ultrasound Med Biol **31**(1): 115-9.
- Rompe, J. D. (2005). "Shock-wave therapy for plantar fasciitis." J Bone Joint Surg Am **87**(3): 681-2; author reply 682-3.
- Rompe, J. D., A. Meurer, et al. (2005). "Repetitive low-energy shock wave application without local anesthesia is more efficient than repetitive low-energy shock wave application with local anesthesia in the treatment of chronic plantar fasciitis." J Orthop Res **23**(4): 931-41.
- Sabeti-Aschraf, M., R. Dorotka, et al. (2005). "Extracorporeal shock wave therapy in the treatment of calcific tendinitis of the rotator cuff." Am J Sports Med **33**(9): 1365-8.
- Stasinopoulos, D. and M. I. Johnson (2005). "Effectiveness of extracorporeal shock wave therapy for tennis elbow (lateral epicondylitis)." Br J Sports Med **39**(3): 132-6.
- Thomson, C. E., F. Crawford, et al. (2005). "The effectiveness of extracorporeal shock wave therapy for plantar heel pain: a systematic review and meta-analysis." BMC Musculoskeletal Disorders **6**: 19-.
- Wang, C. J., F. S. Wang, et al. (2005). "The effect of shock wave treatment at the tendon-bone interface-an histomorphological and biomechanical study in rabbits." J Orthop Res **23**(2): 274-80.

Shortwave, Pulsed Shortwave and other PEME

- Adair, E. R., D. W. Blick, et al. (2005). "Thermophysiological responses of human volunteers to whole body RF exposure at 220 MHz." Bioelectromagnetics **26**(6): 448-61.
- Alekseev, S. I., A. A. Radzievsky, et al. (2005). "Local heating of human skin by millimeter waves: effect of blood flow." Bioelectromagnetics **26**(6): 489-501.
- Allen, S. J., E. R. Adair, et al. (2005). "Empirical and theoretical dosimetry in support of whole body radio frequency (RF) exposure in seated human volunteers at 220 MHz." Bioelectromagnetics **26**(6): 440-7.
- Brucker, J. B., K. L. Knight, et al. (2005). "An 18-day stretching regimen, with or without pulsed, shortwave diathermy, and ankle dorsiflexion after 3 weeks." J Athl Train **40**: 276-80.
- Callaghan, M. J., P. E. Whittaker, et al. (2005). "An evaluation of pulsed shortwave on knee osteoarthritis using radiolucoscintigraphy: a randomised, double blind, controlled trial." Joint Bone Spine **72**(2): 150-5.

- Chang, K., W. H. Chang, et al. (2005). "Pulsed electromagnetic fields stimulation affects osteoclast formation by modulation of osteoprotegerin, RANK ligand and macrophage colony-stimulating factor." J Orthop Res **23**(6): 1308-14.
- Cosman, E. R., Jr. and E. R. Cosman, Sr. (2005). "Electric and thermal field effects in tissue around radiofrequency electrodes." Pain Med **6**(6): 405-24.
- Doshi, S. N. and T. S. Alster (2005). "Combination radiofrequency and diode laser for treatment of facial rhytides and skin laxity." J Cosmet Laser Ther **7**(1): 11-5.
- Dziedzic, K., J. Hill, et al. (2005). "Effectiveness of manual therapy or pulsed shortwave diathermy in addition to advice and exercise for neck disorders: a pragmatic randomized controlled trial in physical therapy clinics." Arthritis Rheum **53**(2): 214-22.
- Erdine, S., A. Yucel, et al. (2005). "Effects of pulsed versus conventional radiofrequency current on rabbit dorsal root ganglion morphology." Eur J Pain **9**(3): 251-6.
- Fini, M., G. Giavaresi, et al. (2005). "Pulsed electromagnetic fields reduce knee osteoarthritic lesion progression in the aged Dunkin Hartley guinea pig." J Orthop Res **23**(4): 899-908.
- Hannay, G., D. Leavesley, et al. (2005). "Timing of pulsed electromagnetic field stimulation does not affect the promotion of bone cell development." Bioelectromagnetics **26**(8): 670-6.
- Jan, M. H., H. M. Chai, et al. (2006). "Effects of repetitive shortwave diathermy for reducing synovitis in patients with knee osteoarthritis: an ultrasonographic study." Phys Ther **86**(2): 236-44.
- Kaab, M. J., H. J. Bail, et al. (2005). "Monopolar radiofrequency treatment of partial-thickness cartilage defects in the sheep knee joint leads to extended cartilage injury." Am J Sports Med **33**(10): 1472-8.
- Kumar, V. S., D. A. Kumar, et al. (2005). "Optimization of pulsed electromagnetic field therapy for management of arthritis in rats." Bioelectromagnetics **26**(6): 431-9.
- Laufer, Y., R. Zilberman, et al. (2005). "Effect of pulsed short-wave diathermy on pain and function of subjects with osteoarthritis of the knee: a placebo-controlled double-blind clinical trial." Clin Rehabil **19**(3): 255-63.
- Meshkinpour, A., P. Ghasri, et al. (2005). "Treatment of hypertrophic scars and keloids with a radiofrequency device: A study of collagen effects." Lasers Surg Med **37**(5): 343-9.
- Midura, R. J., M. O. Ibiwoye, et al. (2005). "Pulsed electromagnetic field treatments enhance the healing of fibular osteotomies." J Orthop Res **23**(5): 1035-46.
- Robertson, V. J., A. R. Ward, et al. (2005). "The effect of heat on tissue extensibility: a comparison of deep and superficial heating." Arch Phys Med Rehabil **86**(4): 819-25.
- Van Zundert, J., A. J. de Louw, et al. (2005). "Pulsed and continuous radiofrequency current adjacent to the cervical dorsal root ganglion of the rat induces late cellular activity in the dorsal horn." Anesthesiology **102**(1): 125-31.

TENS

- (2005). "Sacral nerve stimulation for urinary control." Clin Privil White Pap(227): 1-8.
- Aydin, G., S. Tomruk, et al. (2005). "Transcutaneous electrical nerve stimulation versus baclofen in spasticity: clinical and electrophysiologic comparison." Am J Phys Med Rehabil **84**(8): 584-92.
- Bertalanffy, A., A. Kober, et al. (2005). "Transcutaneous electrical nerve stimulation reduces acute low back pain during emergency transport." Acad Emerg Med **12**(7): 607-11.
- Chiu, T. T., C. W. Hui-Chan, et al. (2005). "A randomized clinical trial of TENS and exercise for patients with chronic neck pain." Clin Rehabil **19**(8): 850-60.
- Dickinson, C. M. and J. Fiske (2005). "A review of gagging problems in dentistry: 2. Clinical assessment and management." Dent Update **32**(2): 74-6, 78-80.
- Fallgatter, A. J., A. C. Ehlis, et al. (2005). "Age effect on far field potentials from the brain stem after transcutaneous vagus nerve stimulation." Int J Psychophysiol **56**(1): 37-43.
- French, L. (2005). "Dysmenorrhea." Am Fam Physician **71**(2): 285-91.
- Hargitai, I. A., R. G. Sherman, et al. (2005). "The effects of electrostimulation on parotid saliva flow: a pilot study." Oral Surg Oral Med Oral Pathol Oral Radiol Endod **99**(3): 316-20.
- King, E. W., K. Audette, et al. (2005). "Transcutaneous electrical nerve stimulation activates peripherally located alpha-2A adrenergic receptors." Pain **115**(3): 364-73.
- Linazasoro, G., N. Van Blercom, et al. (2005). "Etiological and therapeutical observations in a case of belly dancer's dyskinesia." Mov Disord **20**(2): 251-3.
- Luijpen, M. W., D. F. Swaab, et al. (2005). "Effects of transcutaneous electrical nerve stimulation (TENS) on memory in elderly with mild cognitive impairment." Behav Brain Res **158**(2): 349-57.
- Lund, I., T. Lundeberg, et al. (2005). "Gender differences in electrical pain threshold responses to transcutaneous electrical nerve stimulation (TENS)." Neurosci Lett **375**(2): 75-80.
- Macgregor, K., S. Gerlach, et al. (2005). "Cutaneous stimulation from patella tape causes a differential increase in vasti muscle activity in people with patellofemoral pain." J Orthop Res **23**(2): 351-8.
- Mangold, S., T. Keller, et al. (2005). "Transcutaneous functional electrical stimulation for grasping in subjects with cervical spinal cord injury." Spinal Cord **43**(1): 1-13.
- Miller, L., P. Mattison, et al. (2005). "The effects of transcutaneous electrical nerve stimulation on spasticity." Physical Therapy Reviews **10**(4): 201-208.

- Oda, M., N. Kitagawa, et al. (2005). "Quantitative and fiber-selective evaluation of dose-dependent nerve blockade by intrathecal lidocaine in rats." J Pharmacol Exp Ther **312**(3): 1132-7.
- Radhakrishnan, R. and K. A. Sluka (2005). "Acetazolamide, a carbonic anhydrase inhibitor, reverses inflammation-induced thermal hyperalgesia in rats." J Pharmacol Exp Ther **313**(2): 921-7.
- Radhakrishnan, R. and K. A. Sluka (2005). "Deep tissue afferents, but not cutaneous afferents, mediate transcutaneous electrical nerve stimulation-Induced antihyperalgesia." J Pain **6**(10): 673-80.
- Rasche, D. (2005). "[Against severest pain. A new nerve stimulator tested]." MMW Fortschr Med **147**(12): 21.
- Schiff, J. D. and J. P. Mulhall (2005). "Neuroprotective strategies in radical prostatectomy." BJU Int **95**(1): 11-4.
- Schmidt, J., A. Irouschek, et al. (2005). "A priming technique accelerates onset of neuromuscular blockade at the laryngeal adductor muscles." Can J Anaesth **52**(1): 50-4.

Tissue Healing & Wound Repair

- Blaney Davidson, E. N., A. Scharstuhl, et al. (2005). "Reduced transforming growth factor-beta signaling in cartilage of old mice: role in impaired repair capacity." Arthritis Research & Therapy **7**: R1338-R1347.
- Bonifasi-Lista, C., S. P. Lake, et al. (2005). "Viscoelastic properties of the human medial collateral ligament under longitudinal, transverse and shear loading." J Orthop Res **23**(1): 67-76.
- Bonnet, C. S. and D. A. Walsh (2005). "Osteoarthritis, angiogenesis and inflammation." Rheumatology (Oxford) **44**(1): 7-16.
- Boyce, S. H., M. A. Quigley, et al. (2005). "Management of ankle sprains: a randomised controlled trial of the treatment of inversion injuries using an elastic support bandage or an Aircast ankle brace." Br J Sports Med **39**(2): 91-6.
- Chan, Y. S., Y. Li, et al. (2005). "The use of suramin, an antifibrotic agent, to improve muscle recovery after strain injury." Am J Sports Med **33**(1): 43-51.
- Chen, M. A. and T. M. Davidson (2005). "Scar management: prevention and treatment strategies." Curr Opin Otolaryngol Head Neck Surg **13**(4): 242-7.
- Chen, S. Z., J. Li, et al. (2005). "Effects of vacuum-assisted closure on wound microcirculation: an experimental study." Asian J Surg **28**(3): 211-7.
- Chiang, E. P., D. E. Smith, et al. (2005). "Inflammation causes tissue-specific depletion of vitamin B6." Arthritis Res Ther **7**(6): R1254-62.

- Davidson, D., A. Blanc, et al. (2005). "Fibroblast growth factor (FGF) 18 signals through FGF receptor 3 to promote chondrogenesis." J Biol Chem **280**(21): 20509-15.
- Desmouliere, A., C. Chaponnier, et al. (2005). "Tissue repair, contraction, and the myofibroblast." Wound Repair Regen **13**(1): 7-12.
- Distler, J. H., D. S. Pisetsky, et al. (2005). "Microparticles as regulators of inflammation: novel players of cellular crosstalk in the rheumatic diseases." Arthritis Rheum **52**(11): 3337-48.
- Dressler, M. R., D. L. Butler, et al. (2005). "Effects of age on the repair ability of mesenchymal stem cells in rabbit tendon." J Orthop Res **23**(2): 287-93.
- Ferretti, M., A. Srinivasan, et al. (2005). "Anti-inflammatory effects of continuous passive motion on meniscal fibrocartilage." J Orthop Res **23**(5): 1165-71.
- Fong, K. D., M. C. Trindade, et al. (2005). "Microarray analysis of mechanical shear effects on flexor tendon cells." Plast Reconstr Surg **116**(5): 1393-404; discussion 1405-6.
- Fukai, T., A. Takeda, et al. (2005). "Wound healing in denervated rat skin." Wound Repair Regen **13**(2): 175-80.
- Genc, H., M. Saracoglu, et al. (2005). "Long-term ultrasonographic follow-up of plantar fasciitis patients treated with steroid injection." Joint Bone Spine **72**(1): 61-5.
- Hanson, C. A., P. S. Weinhold, et al. (2005). "The effect of analgesic agents on the healing rat medial collateral ligament." Am J Sports Med **33**(5): 674-9.
- Hanson, D., D. Langemo, et al. (2005). "Understanding wound fluid and the phases of healing." Adv Skin Wound Care **18**(7): 360-2.
- Hattori, K., K. Ikeuchi, et al. (2005). "Quantitative ultrasonic assessment for detecting microscopic cartilage damage in osteoarthritis." Arthritis Res Ther **7**(1): R38-46.
- Hopf, H. W., J. J. Gibson, et al. (2005). "Hyperoxia and angiogenesis." Wound Repair Regen **13**(6): 558-64.
- Huang, Y. C., C. T. Chen, et al. (2005). "A natural compound (ginsenoside Re) isolated from *Panax ginseng* as a novel angiogenic agent for tissue regeneration." Pharm Res **22**(4): 636-46.
- Ikarashi, K., B. Li, et al. (2005). "Bone marrow cells contribute to regeneration of damaged glomerular endothelial cells." Kidney Int **67**(5): 1925-33.
- Inglis, J. J., A. Nissim, et al. (2005). "The differential contribution of tumour necrosis factor to thermal and mechanical hyperalgesia during chronic inflammation." Arthritis Res Ther **7**(4): R807-16.
- Jarvinen, T. A., T. L. Jarvinen, et al. (2005). "Muscle injuries: biology and treatment." Am J Sports Med **33**(5): 745-64.
- Jaspers, R. T., R. Brunner, et al. (2005). "Healing of the aponeurosis during recovery from aponeurotomy: morphological and histological adaptation and related changes in mechanical properties." J Orthop Res **23**(2): 266-73.

- Kawamura, S., L. Ying, et al. (2005). "Macrophages accumulate in the early phase of tendon-bone healing." J Orthop Res **23**(6): 1425-32.
- Knobloch, K., R. Kraemer, et al. (2006). "Achilles tendon and paratendon microcirculation in midportion and insertional tendinopathy in athletes." Am J Sports Med **34**(1): 92-7.
- Kobayashi, S., H. Baba, et al. (2005). "Effect of mechanical compression on the lumbar nerve root: localization and changes of intradiscal inflammatory cytokines, nitric oxide, and cyclooxygenase." Spine **30**(15): 1699-705.
- Kobayashi, S., H. Baba, et al. (2005). "Localization and changes of intraneural inflammatory cytokines and inducible-nitric oxide induced by mechanical compression." J Orthop Res **23**(4): 771-8.
- Le Maitre, C. L., A. J. Freemont, et al. (2005). "The role of interleukin-1 in the pathogenesis of human intervertebral disc degeneration." Arthritis Res Ther **7**(4): R732-45.
- Li, S., N. F. Huang, et al. (2005). "Mechanotransduction in endothelial cell migration." J Cell Biochem **96**(6): 1110-26.
- Li, W. W., K. Talcott, et al. (2005). "The role of therapeutic angiogenesis in tissue repair and regeneration." Adv Skin Wound Care **18**(9): 501-2.
- Li, W. W., K. E. Talcott, et al. (2005). "The Role of Therapeutic Angiogenesis in Tissue Repair and Regeneration." Adv Skin Wound Care **18**(9): 491-500.
- Li, Y., S. Negishi, et al. (2005). "The use of relaxin improves healing in injured muscle." Ann N Y Acad Sci **1041**: 395-7.
- Liang, H. C., C. T. Chen, et al. (2005). "Loading of a novel angiogenic agent, ginsenoside Rg1 in an acellular biological tissue for tissue regeneration." Tissue Eng **11**(5-6): 835-46.
- Manacu, C. A., J. Martel-Pelletier, et al. (2005). "Endothelin-1 in osteoarthritic chondrocytes triggers nitric oxide production and upregulates collagenase production." Arthritis Res Ther **7**(2): R324-32.
- Michaels, J. t., M. Dobryansky, et al. (2005). "Topical vascular endothelial growth factor reverses delayed wound healing secondary to angiogenesis inhibitor administration." Wound Repair Regen **13**(5): 506-12.
- Negishi, S., Y. Li, et al. (2005). "The effect of relaxin treatment on skeletal muscle injuries." Am J Sports Med **33**(12): 1816-24.
- O'Brien, A. V., P. Jones, et al. (2005). "Conservative hand therapy treatments in rheumatoid arthritis--a randomized controlled trial." Rheumatology (Oxford).
- Opalenik, S. R. and J. M. Davidson (2005). "Fibroblast differentiation of bone marrow-derived cells during wound repair." Faseb J **19**(11): 1561-3.
- Pangborn, C. A. and K. A. Athanasiou (2005). "Growth factors and fibrochondrocytes in scaffolds." J Orthop Res **23**(5): 1184-90.
- Radi, Z. A. and N. K. Khan (2005). "Effects of cyclooxygenase inhibition on bone, tendon, and ligament healing." Inflamm Res **54**(9): 358-66.

- Razavi, S. M., M. Ibrahimpoor, et al. (2005). "Abdominal surgical site infections: incidence and risk factors at an Iranian teaching hospital." BMC Surg **5**(1): 2.
- Sheikh, A. Y., M. D. Rollins, et al. (2005). "Hyperoxia improves microvascular perfusion in a murine wound model." Wound Repair Regen **13**(3): 303-8.
- Thornton, G. M., J. C. Johnson, et al. (2005). "Strength of medial structures of the knee joint are decreased by isolated injury to the medial collateral ligament and subsequent joint immobilization." J Orthop Res **23**(5): 1191-8.
- Zhang, Z., J. M. McCaffery, et al. (2005). "Growth and integration of neocartilage with native cartilage in vitro." J Orthop Res **23**(2): 433-9.
- Zhou, D., H. S. Lee, et al. (2005). "Differential MMP-2 activity of ligament cells under mechanical stretch injury: an in vitro study on human ACL and MCL fibroblasts." J Orthop Res **23**(4): 949-57.

Ultrasound Therapy

- Berna-Serna, J. D., J. Sanchez-Garre, et al. (2005). "Ultrasound therapy in rectus sheath hematoma." Phys Ther **85**(4): 352-7.
- Gelat, P. N., B. Zeqiri, et al. (2005). "A finite-element model of the aperture method for determining the effective radiating area of physiotherapy treatment heads." Ultrasonics **43**(5): 321-30.
- Hill, G. E., S. Fenwick, et al. (2005). "The effect of low-intensity pulsed ultrasound on repair of epithelial cell monolayers in vitro." Ultrasound Med Biol **31**(12): 1701-6.
- Hsieh, Y. L. (2006). "Effects of ultrasound and diclofenac phonophoresis on inflammatory pain relief: suppression of inducible nitric oxide synthase in arthritic rats." Phys Ther **86**(1): 39-49.
- Hsu, S. H., T. B. Huang, et al. (2005). "Ultrasound preexposure improves endothelial cell binding and retention on biomaterial surfaces." J Biomed Mater Res B Appl Biomater.
- Huang, M. H., Y. S. Lin, et al. (2005). "Use of ultrasound to increase effectiveness of isokinetic exercise for knee osteoarthritis." Arch Phys Med Rehabil **86**(8): 1545-51.
- Iwasaki, M., Y. Adachi, et al. (2005). "Hepatocyte growth factor delivered by ultrasound-mediated destruction of microbubbles induces proliferation of cardiomyocytes and amelioration of left ventricular contractile function in Doxorubicin-induced cardiomyopathy." Stem Cells **23**(10): 1589-97.
- Johansson, K. M., L. E. Adolfsson, et al. (2005). "Effects of acupuncture versus ultrasound in patients with impingement syndrome: randomized clinical trial." Phys Ther **85**(6): 490-501.
- Karagoz, I. and M. K. Kartal (2005). "The effects of residual temperature rise on ultrasound heating." Ultrasound Med Biol **31**(12): 1665-72.

- Koeke, P. U., N. A. Parizotto, et al. (2005). "Comparative study of the efficacy of the topical application of hydrocortisone, therapeutic ultrasound and phonophoresis on the tissue repair process in rat tendons." Ultrasound Med Biol **31**(3): 345-50.
- Loudon, J. K., P. E. Cagle, et al. (2005). "High frequency ultrasound: an overview of potential uses in physical therapy." Physical Therapy Reviews **10**(4): 209-215.
- Markert, C. D., M. A. Merrick, et al. (2005). "Nonthermal ultrasound and exercise in skeletal muscle regeneration." Arch Phys Med Rehabil **86**(7): 1304-10.
- Mukai, S., H. Ito, et al. (2005). "Transforming growth factor-beta1 mediates the effects of low-intensity pulsed ultrasound in chondrocytes." Ultrasound Med Biol **31**(12): 1713-21.
- Nacitarhan, V., H. Elden, et al. (2005). "The effects of therapeutic ultrasound on heart rate variability: A placebo controlled trial." Ultrasound in Medicine & Biology **31**(5): 643-648.
- Okada, K., N. Kudo, et al. (2005). "A basic study on sonoporation with microbubbles exposed to pulsed ultrasound." Journal of Medical Ultrasonics **32**: 3-11.
- Olivecrona, G. K., B. M. Hardig, et al. (2005). "Can pulsed ultrasound increase tissue damage during ischemia? A study of the effects of ultrasound on infarcted and non-infarcted myocardium in anesthetized pigs." BMC Cardiovasc Disord **5**(1): 8.
- Robinson, V. A., L. Brosseau, et al. (2005). "Therapeutic ultrasound for osteoarthritis of the knee." The Cochrane Database of Systematic Reviews **Issue 1**.
- Rosim, G. C., C. H. Barbieri, et al. (2005). "Diclofenac phonophoresis in human volunteers." Ultrasound Med Biol **31**(3): 337-43.
- Sant'Anna, E. F., R. M. Leven, et al. (2005). "Effect of low intensity pulsed ultrasound and BMP-2 on rat bone marrow stromal cell gene expression." J Orthop Res **23**(3): 646-52.
- Sena, K., R. M. Leven, et al. (2005). "Early gene response to low-intensity pulsed ultrasound in rat osteoblastic cells." Ultrasound Med Biol **31**(5): 703-8.
- Sena, K., R. M. Leven, et al. (2005). "Early gene response to low-intensity pulsed ultrasound in rat osteoblastic cells." Ultrasound in Medicine & Biology **31**(5): 703-708.
- Shetty, S., T. L. Moore, et al. (2005). "A pilot study of acetic acid iontophoresis and ultrasound in the treatment of systemic sclerosis-related calcinosis." Rheumatology (Oxford) **44**(4): 536-8.
- Sparrow, K. J., S. D. Finucane, et al. (2005). "The effects of low-intensity ultrasound on medial collateral ligament healing in the rabbit model." Am J Sports Med **33**(7): 1048-56.
- Tsai, W. C., C. C. Hsu, et al. (2005). "Ultrasound stimulation of tendon cell proliferation and upregulation of proliferating cell nuclear antigen." J Orthop Res **23**(4): 970-6.
- Yang, R. S., Y. Z. Chen, et al. (2005). "The effects of low-intensity ultrasound on growing bone after sciatic neurectomy." Ultrasound Med Biol **31**(3): 431-7.

Yang, R. S., W. L. Lin, et al. (2005). "Regulation by ultrasound treatment on the integrin expression and differentiation of osteoblasts." Bone **36**(2): 276-83.