

## REFERENCES

- Allen, T. J., & Proske, U. (2006). Effect of muscle fatigue on the sense of limb position and movement. *Exp Brain Res*, 170(1), 30-38.
- Armstrong, R. B. (1984). Mechanisms of exercise-induced delayed onset muscular soreness: a brief review. *Med Sci Sports Exerc*, 16(6), 529-538.
- Armstrong, R. B. (1990). Initial events in exercise-induced muscular injury. *Med Sci Sports Exerc*, 22(4), 429-435.
- Atkinson, G., & Nevill, A. M. (1998). Statistical methods for assessing measurement error (reliability) in variables relevant to sports medicine. *Sports Med*, 26(4), 217-238.
- Baechle, T. R., Earle, R. W. (2000). *Essentials of Strength Training and Conditioning* (second ed.). Hong Kong: Human kinetics.
- Bajaj, P., Graven-Nielsen, T., & Arendt-Nielsen, L. (2001). Post-exercise muscle soreness after eccentric exercise: psychophysical effects and implications on mean arterial pressure. *Scand J Med Sci Sports*, 11(5), 266-273.
- Bishop, D. (2003). Warm up I: potential mechanisms and the effects of passive warm up on exercise performance. *Sports Med*, 33(6), 439-454.
- Bisset, L. M., Russell, T., Bradley, S., Ha, B., & Vicenzino, B. T. (2006). Bilateral sensorimotor abnormalities in unilateral lateral epicondylalgia. *Arch Phys Med Rehabil*, 87(4), 490-495.
- Bowers, E. J., Morgan, D. L., & Proske, U. (2004). Damage to the human quadriceps muscle from eccentric exercise and the training effect. *J Sports Sci*, 22(11-12), 1005-1014.

- Brockett, C., Warren, N., Gregory, J. E., Morgan, D. L., & Proske, U. (1997). A comparison of the effects of concentric versus eccentric exercise on force and position sense at the human elbow joint. *Brain Res*, 771(2), 251-258.
- Brockett, C. L., Morgan, D. L., & Proske, U. (2001). Human hamstring muscles adapt to eccentric exercise by changing optimum length. *Med Sci Sports Exerc*, 33(5), 783-790.
- Brooks, S. V., & Faulkner, J. A. (1996). The magnitude of the initial injury induced by stretches of maximally activated muscle fibres of mice and rats increases in old age. *J Physiol*, 497 (Pt 2), 573-580.
- Byrne, C., Twist, C., & Eston, R. (2004). Neuromuscular function after exercise-induced muscle damage: theoretical and applied implications. *Sports Med*, 34(1), 49-69.
- Cameron, M. H. (2003). *Physical agents in rehabilitation: From research to practice* (second ed.). Missouri: Saunders.
- Carriére, P. (1993). The periaqueductal gray and defensive behavior: functional representation and neuronal organization. *Behav Brain Res*, 58(1-2), 27-47.
- Cheung, K., Hume, P., & Maxwell, L. (2003). Delayed onset muscle soreness : treatment strategies and performance factors. *Sports Med*, 33(2), 145-164.
- Clarkson, P. M., Nosaka, K., & Braun, B. (1992). Muscle function after exercise-induced muscle damage and rapid adaptation. *Med Sci Sports Exerc*, 24(5), 512-520.
- Clarkson, P. M., Byrnes, W. C., McCormick, K. M., Turcotte, L. P., & White, J. S. (1986). Muscle soreness and serum creatine kinase activity following isometric, eccentric, and concentric exercise. *Int J Sports Med*, 7(3), 152-155.

- Cleary, M. A., Kimura, I. F., Sitler, M. R., & Kendrick, Z. V. (2002). Temporal Pattern of the Repeated Bout Effect of Eccentric Exercise on Delayed-Onset Muscle Soreness. *J Athl Train*, 37(1), 32-36.
- Dannecker, E. A., Koltyn, K. F., Riley, J. L., 3rd, & Robinson, M. E. (2003). Sex differences in delayed onset muscle soreness. *J Sports Med Phys Fitness*, 43(1), 78-84.
- Dannecker, E. A., Hausenblas, H. A., Kaminski, T. W., & Robinson, M. E. (2005). Sex differences in delayed onset muscle pain. *Clin J Pain*, 21(2), 120-126.
- Dover, G., & Powers, M. E. (2003). Reliability of Joint Position Sense and Force-Reproduction Measures During Internal and External Rotation of the Shoulder. *J Athl Train*, 38(4), 304-310.
- Draper, D. O., Harris, S. T., Schulthies, S., Durrant, E., Knight, K. L., & Ricard, M. (1998). Hot-Pack and 1-MHz Ultrasound Treatments Have an Additive Effect on Muscle Temperature Increase. *J Athl Train*, 33(1), 21-24.
- Ebbeling, C. B., & Clarkson, P. M. (1989). Exercise-induced muscle damage and adaptation. *Sports Med*, 7(4), 207-234.
- Evans, R. K., Knight, K. L., Draper, D. O., & Parcell, A. C. (2002). Effects of warm-up before eccentric exercise on indirect markers of muscle damage. *Med Sci Sports Exerc*, 34(12), 1892-1899.
- Fess, E. E. (1992). Grip Strength. In Casanova JS (Ed.), *Clinical Assessment Recommendations* (second ed., pp. 41-45). Chicago: American Society of Hand Therapists.

- Frey Law, L. A., Evans, S., Knudtson, J., Nus, S., Scholl, K., & Sluka, K. A. (2008). Massage reduces pain perception and hyperalgesia in experimental muscle pain: a randomized, controlled trial. *J Pain*, 9(8), 714-721.
- Friden, J., & Lieber, R. L. (1992). Structural and mechanical basis of exercise-induced muscle injury. *Med Sci Sports Exerc*, 24(5), 521-530.
- Friden, J., & Lieber, R. L. (2001). Eccentric exercise-induced injuries to contractile and cytoskeletal muscle fibre components. *Acta Physiol Scand*, 171(3), 321-326.
- Frost, S. A., Raja, S. N., Campbell, J. N., Mayer, R. A., Khan, A. A. (1991). Does hyperalgesia to cooling stimuli characterize patients with sympathetically maintained pain (reflex sympathetic dystrophy)? In Dubner R, Bond MR (Ed.), *Proceedings of the VIth World Congress on Pain*. Amsterdam: Elsevier.
- Ge, H. Y., Madeleine, P., & Arendt-Nielsen, L. (2004). Sex differences in temporal characteristics of descending inhibitory control: an evaluation using repeated bilateral experimental induction of muscle pain. *Pain*, 110(1-2), 72-78.
- Gibson, W., Arendt-Nielsen, L., & Graven-Nielsen, T. (2006). Delayed onset muscle soreness at tendon-bone junction and muscle tissue is associated with facilitated referred pain. *Exp Brain Res*, 174(2), 351-360.
- Gleeson, N., Eston, R., Marginson, V., & McHugh, M. (2003). Effects of prior concentric training on eccentric exercise induced muscle damage. *Br J Sports Med*, 37(2), 119-125; discussion 125.

- Goodwin, G. M., McCloskey, D. I., & Matthews, P. B. (1972). The contribution of muscle afferents to kinaesthesia shown by vibration induced illusions of movement and by the effects of paralysing joint afferents. *Brain*, 95(4), 705-748.
- Graven-Nielsen, T., & Mense, S. (2001). The peripheral apparatus of muscle pain: evidence from animal and human studies. *Clin J Pain*, 17(1), 2-10.
- Gray, S., & Nimmo, M. (2001). Effects of active, passive or no warm-up on metabolism and performance during high-intensity exercise. *J Sports Sci*, 19(9), 693-700.
- Guyton, A. C., Hall, J. E. (2006). *Textbook of Medical Physiology* (eleventh ed.). Philadelphia: Elsevier Saunders.
- Hannuksela, M. L., & Ellahham, S. (2001). Benefits and risks of sauna bathing. *Am J Med*, 110(2), 118-126.
- High, D. M., Howley, E. T., & Franks, B. D. (1989). The effects of static stretching and warm-up on prevention of delayed-onset muscle soreness. *Res Q Exerc Sport*, 60(4), 357-361.
- Hoeger Bement, M. K., Weyer, A., Hartley, S., Yoon, T., & Hunter, S. K. (2009). Fatiguing exercise attenuates pain-induced corticomotor excitability. *Neurosci Lett*, 452(2), 209-213.
- Hoeger, W. W. K., Hoeger, S. A. (1999). *Principles and labs for physical fitness* (second ed.). Colo. Morton: Englewood.
- Hovind, H., & Nielsen, S. L. (1974). Effect of massage on blood flow in skeletal muscle. *Scand J Rehabil Med*, 6(2), 74-77.

- Hubal, M. J., Rubinstein, S. R., & Clarkson, P. M. (2007). Mechanisms of variability in strength loss after muscle-lengthening actions. *Med Sci Sports Exerc*, 39(3), 461-468.
- Jamurtas, A. Z., Theocharis, V., Tofas, T., Tsiokanos, A., Yfanti, C., Paschalis, V., et al. (2005). Comparison between leg and arm eccentric exercises of the same relative intensity on indices of muscle damage. *Eur J Appl Physiol*, 95(2-3), 179-185.
- Johansson, P. H., Lindstrom, L., Sundelin, G., & Lindstrom, B. (1999). The effects of preexercise stretching on muscular soreness, tenderness and force loss following heavy eccentric exercise. *Scand J Med Sci Sports*, 9(4), 219-225.
- Jones, D. A., Newham, D. J., & Clarkson, P. M. (1987). Skeletal muscle stiffness and pain following eccentric exercise of the elbow flexors. *Pain*, 30(2), 233-242.
- Kamimura, T., & Ikuta, Y. (2001). Evaluation of grip strength with a sustained maximal isometric contraction for 6 and 10 seconds. *J Rehabil Med*, 33(5), 225-229.
- Kauppinen, K. (1997). Facts and fables about sauna. *Ann N Y Acad Sci*, 813, 654-662.
- Khamwong, P., Nosaka, K., Pirunsan, U., Paungmail, A. (2010). Reliability of muscle function and sensory perception measurements of the wrist extensors. *Physiother Theory Pract. (in-press: DOI: 10.3109/09593980903300470)*
- Koh, T. J. (2002). Do small heat shock proteins protect skeletal muscle from injury? *Exerc Sport Sci Rev*, 30(3), 117-121.
- Koltyn, K. F., & Arbogast, R. W. (1998). Perception of pain after resistance exercise. *Br J Sports Med*, 32(1), 20-24.

- Koltyn, K. F., Trine, M. R., Stegner, A. J., & Tobar, D. A. (2001). Effect of isometric exercise on pain perception and blood pressure in men and women. *Med Sci Sports Exerc*, 33(2), 282-290.
- Kukkonen-Harjula, K., & Kauppinen, K. (2006). Health effects and risks of sauna bathing. *Int J Circumpolar Health*, 65(3), 195-205.
- Lavender, A. P., & Nosaka, K. (2006). Changes in fluctuation of isometric force following eccentric and concentric exercise of the elbow flexors. *Eur J Appl Physiol*, 96(3), 235-240.
- Magnusson, P., Renstrom, P. (2006). The European college of sports sciences position statement: The role of stretching exercises in sports. *Eur. J. Sport Sc.* 6(2), 87-91.
- Mayer, J. M., Mooney, V., Matheson, L. N., Erasala, G. N., Verna, J. L., Udermann, B. E., et al. (2006). Continuous low-level heat wrap therapy for the prevention and early phase treatment of delayed-onset muscle soreness of the low back: a randomized controlled trial. *Arch Phys Med Rehabil*, 87(10), 1310-1317.
- McHugh, M. P. (2003). Recent advances in the understanding of the repeated bout effect: the protective effect against muscle damage from a single bout of eccentric exercise. *Scand J Med Sci Sports*, 13(2), 88-97.
- Mense, S., & Stahnke, M. (1983). Responses in muscle afferent fibres of slow conduction velocity to contractions and ischaemia in the cat. *J Physiol*, 342, 383-397.
- Miles, M. P., & Clarkson, P. M. (1994). Exercise-induced muscle pain, soreness, and cramps. *J Sports Med Phys Fitness*, 34(3), 203-216.

- Moraska, A. (2005). Sports massage. A comprehensive review. *J Sports Med Phys Fitness*, 45(3), 370-380.
- Morhenn, V. B. (2000). Firm stroking of human skin leads to vasodilatation possibly due to the release of substance P. *J Dermatol Sci*, 22(2), 138-144.
- Newham, D. J., Jones, D. A., & Clarkson, P. M. (1987). Repeated high-force eccentric exercise: effects on muscle pain and damage. *J Appl Physiol*, 63(4), 1381-1386.
- Newham, D. J., Mills, K. R., Quigley, B. M., & Edwards, R. H. (1983). Pain and fatigue after concentric and eccentric muscle contractions. *Clin Sci (Lond)*, 64(1), 55-62.
- Nie, H., Arendt-Nielsen, L., Madeleine, P., & Graven-Nielsen, T. (2006). Enhanced temporal summation of pressure pain in the trapezius muscle after delayed onset muscle soreness. *Exp Brain Res*, 170(2), 182-190.
- Nie, H., Kawczynski, A., Madeleine, P., & Arendt-Nielsen, L. (2005). Delayed onset muscle soreness in neck/shoulder muscles. *Eur J Pain*, 9(6), 653-660.
- Nikolaidis, M. G., Paschalis, V., Giakas, G., Fatouros, I. G., Koutedakis, Y., Kouretas, D., et al. (2007). Decreased blood oxidative stress after repeated muscle-damaging exercise. *Med Sci Sports Exerc*, 39(7), 1080-1089.
- Nosaka, K., & Sakamoto, K. (2001). Effect of elbow joint angle on the magnitude of muscle damage to the elbow flexors. *Med Sci Sports Exerc*, 33(1), 22-29.
- Nosaka, K., & Clarkson, P. M. (1997). Influence of previous concentric exercise on eccentric exercise-induced muscle damage. *J Sports Sci*, 15(5), 477-483.

- Nosaka, K., Muthalib, M., Lavender, A., & Laursen, P. B. (2007). Attenuation of muscle damage by preconditioning with muscle hyperthermia 1-day prior to eccentric exercise. *Eur J Appl Physiol*, 99(2), 183-192.
- Nosaka, K., Newton, M., & Sacco, P. (2002). Delayed-onset muscle soreness does not reflect the magnitude of eccentric exercise-induced muscle damage. *Scand J Med Sci Sports*, 12(6), 337-346.
- Nosaka, K., Sakamoto, K., Newton, M., & Sacco, P. (2004). Influence of Pre-Exercise Muscle Temperature on Responses to Eccentric Exercise. *J Athl Train*, 39(2), 132-137.
- Nosaka, K., Clarkson, P. M., McGuiggin, M. E., & Byrne, J. M. (1991). Time course of muscle adaptation after high force eccentric exercise. *Eur J Appl Physiol Occup Physiol*, 63(1), 70-76.
- Nosaka, K., & Newton, M. (2002). Difference in the magnitude of muscle damage between maximal and submaximal eccentric loading. *J Strength Cond Res*, 16(2), 202-208.
- O'Connor, R., Hurley, D.A. (2003). The effectiveness of physiotherapeutic interventions in the management of delayed onset muscle soreness: A systematic review. *Phy. Ther Rev*, 8(4), 177-195.
- Paungmali, A., Vicenzino, B., & Smith, M. (2003). Hypoalgesia induced by elbow manipulation in lateral epicondylalgia does not exhibit tolerance. *J Pain*, 4(8), 448-454.
- Peterson, J. A., Tharrett, S. J. (1997). *ACSM's Health/ fitness facility standard and guidelines*. Americal College of Sports Medicine. Illinois: Human Kinetic.

- Petrofsky, J. S., Bains, G., Raju, C., Lohman, E., Berk, L., Prowse, M., et al. (2009). The effect of the moisture content of a local heat source on the blood flow response of the skin. *Arch Dermatol Res*, 301(8), 581-585.
- Portney, L. G., Watkins, M. P. (2000). *Foundations of clinical research applications to practice* (second ed.). New Jersey: Prentice Hall Health.
- Prior, B. M., Jayaraman, R. C., Reid, R. W., Cooper, T. G., Foley, J. M., Dudley, G. A., et al. (2001). Biarticular and monoarticular muscle activation and injury in human quadriceps muscle. *Eur J Appl Physiol*, 85(1-2), 185-190.
- Rahmani-nia F, Rahnama N, Ebrahim K. (2004). Effects of warm-up on delayed onset muscle soreness. *Cell Mol Biol Lett*, 9,109-12.
- Reese, N. B., Bandy, W. D. (2002). *Joint range of motion and muscle length testing*. Philadelphia: W.B. Saunders.
- Rinard, J., Clarkson, P. M., Smith, L. L., & Grossman, M. (2000). Response of males and females to high-force eccentric exercise. *J Sports Sci*, 18(4), 229-236.
- Rodenburg, J. B., Steenbeek, D., Schiereck, P., & Bar, P. R. (1994). Warm-up, stretching and massage diminish harmful effects of eccentric exercise. *Int J Sports Med*, 15(7), 414-419.
- Sady, S. P., Wortman, M., & Blanke, D. (1982). Flexibility training: ballistic, static or proprioceptive neuromuscular facilitation? *Arch Phys Med Rehabil*, 63(6), 261-263.
- Safran, M. R., Garrett, W. E., Jr., Seaber, A. V., Glisson, R. R., & Ribbeck, B. M. (1988). The role of warmup in muscular injury prevention. *Am J Sports Med*, 16(2), 123-129.

- Safran, M. R., Seaber, A. V., & Garrett, W. E. (1989). Warm-up and muscular injury prevention. An update. *Sports Med*, 8(4), 239-249.
- Saxton, P. M., Clarkson, P. James, M., Miles, M. Westerfer, S., & Donnelly A. E. (1995). Neuromuscular dysfunction following eccentric exercise, *Med Sci Sports Exerc*, 27, 1185–1193.
- Sharman, M. J., Cresswell, A. G., & Riek, S. (2006). Proprioceptive neuromuscular facilitation stretching : mechanisms and clinical implications. *Sports Med*, 36(11), 929-939.
- Shellock, F. G., & Prentice, W. E. (1985). Warming-up and stretching for improved physical performance and prevention of sports-related injuries. *Sports Med*, 2(4), 267-278.
- Skurvydas, A., Kamandulis, S., Stanislovaitis, A., Streckis, V., Mankus, G., & Drazdauskas, A. (2008). Leg immersion in warm water, stretch-shortening exercise, and exercise-induced muscle damage. *J Athl Train*, 43(6), 592-599.
- Slater, H., Arendt-Nielsen, L., Wright, A., & Graven-Nielsen, T. (2003). Experimental deep tissue pain in wrist extensors--a model of lateral epicondylalgia. *Eur J Pain*, 7(3), 277-288.
- Slater, H., Arendt-Nielsen, L., Wright, A., & Graven-Nielsen, T. (2005). Sensory and motor effects of experimental muscle pain in patients with lateral epicondylalgia and controls with delayed onset muscle soreness. *Pain*, 114(1-2), 118-130.
- Sorichter, S., Koller, A., Haid, C., Wicke, K., Judmaier, W., Werner, P., et al. (1995). Light concentric exercise and heavy eccentric muscle loading: effects on CK, MRI and markers of inflammation. *Int J Sports Med*, 16(5), 288-292.

- Sternoga, S. G., Uhl, T. L., Arnold, B. L., & Gansneder, B. M. (2001). Duration of Maintained Hamstring Flexibility After a One-Time, Modified Hold-Relax Stretching Protocol. *J Athl Train*, 36(1), 44-48.
- Strazdins, L., & Bammer, G. (2004). Women, work and musculoskeletal health. *Soc Sci Med*, 58(6), 997-1005.
- Symons, T. B., Clasey, J. L., Gater, D.R., Yates, J. W. (2004). Effects of deep heat as a preventative mechanism on delayed onset muscle soreness. *J Strength Cond Res*, 18(1):155-161.
- Tegeder, L., Zimmermann, J., Meller, S. T., & Geisslinger, G. (2002). Release of algesic substances in human experimental muscle pain. *Inflamm Res*, 51(8), 393-402.
- Voight, M. L., Hardin, J. A., Blackburn, T. A., Tippett, S., & Canner, G. C. (1996). The effects of muscle fatigue on and the relationship of arm dominance to shoulder proprioception. *J Orthop Sports Phys Ther*, 23(6), 348-352.
- Walsh, L. D., Hesse, C. W., Morgan, D. L., & Proske, U. (2004). Human forearm position sense after fatigue of elbow flexor muscles. *J Physiol*, 558(Pt 2), 705-715.
- Warren, G. L., Lowe, D. A., & Armstrong, R. B. (1999). Measurement tools used in the study of eccentric contraction-induced injury. *Sports Med*, 27(1), 43-59.
- Weber, M. D., Servedio, F. J., & Woodall, W. R. (1994). The effects of three modalities on delayed onset muscle soreness. *J Orthop Sports Phys Ther*, 20(5), 236-242.

- Weerakkody, N. S., Whitehead, N. P., Canny, B. J., Gregory, J. E., & Proske, U. (2001). Large-fiber mechanoreceptors contribute to muscle soreness after eccentric exercise. *J Pain*, 2(4), 209-219.
- Weerakkody, N. S., Percival, P., Hickey, M. W., Morgan, D. L., Gregory, J. E., Canny, B. J., et al. (2003). Effects of local pressure and vibration on muscle pain from eccentric exercise and hypertonic saline. *Pain*, 105(3), 425-435.
- Weerapong, P., Hume, P. A., & Kolt, G. S. (2005). The mechanisms of massage and effects on performance, muscle recovery and injury prevention. *Sports Med*, 35(3), 235-256.
- Weerapong, P., Hume, P. A., Kolt, G. S. (2004). Preventative strategies for exercise-induced muscle damage. *Crit Rev Phys Rehabil*, 16(2):133-49.
- Weldon, S. M., & Hill, R. H. (2003). The efficacy of stretching for prevention of exercise-related injury: a systematic review of the literature. *Man Ther*, 8(3), 141-150.
- Wright A, T. P., O'Callaghan J, Smith J, Vicenzino B. (1994). Hyperalgesia in tennis elbow patient. *J Musculoskeletal Pain*, 2(4), 83-97.
- Wright, A., Thurnwald, P., Smith, J. (1992). An evaluation of mechanical and thermal hyperalgesia in patients with lateral epicondylalgia. *The Pain Clinic* 5, 221-227
- Zainuddin, Z., Newton, M., Sacco, P., & Nosaka, K. (2005). Effects of massage on delayed-onset muscle soreness, swelling, and recovery of muscle function. *J Athl Train*, 40(3), 174-180.