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Effects of curcumin supplementation on muscle damage and anti-oxidant in sarcopenia elderly

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Curcumin is a major component of turmeric and is commonly used as a spice and food-coloring agent. The desirable preventive or putative therapeutic properties of curcumin in animal studies have been considered to be associated with its antioxidant capacity and protective effect on exercise induced muscle damage. The purpose of this study was to investigate the effects of curcumin supplementation on muscle mass, muscle damage, and anti-oxidant in sarcopenia elderly. Subjects required to receive 8 weeks of curcumin supplementation and exercise training, before and after 8 weeks completion of the body composition, functional fitness, blood anti-oxidation and anti-inflammatory marker of the test.

Results: There was not improvement in muscle mass and functional fitness after 8 weeks intervention, while the activity of antioxidant enzymes SOD, GPx, and Catalase increased, but there was not significant difference between before and after intervention. Muscle damage marker LDH after intervention was significantly lower than before intervention ($p < 0.05$). The above results showed that 8 weeks curcumin supplemented with exercise training can significantly improve the muscle damage.

**Recent Publications**

1. Bowen, T.S., Schuler, G., & Adams, V. (2015). Skeletal muscle wasting in cachexia and sarcopenia: molecular pathophysiology and impact of exercise training. *J Cachexia Sarcopenia Muscle*, 6(3), 197-207.
2. He, Y., Yue, Y., Zheng, X., Zhang, K., Chen, S., & Du, Z. (2015). Curcumin, inflammation, and chronic diseases: how are they linked? *Molecules*, 20(5), 9183-213.
3. Jin, B. & Li, Y.P. (2007). Curcumin prevents lipopolysaccharide-induced atrogen-1/MAFbx upregulation and muscle mass loss. *Journal of Cellular Biochemistry*, 100(4), 960-9.
4. Joseph, A.M., Adhietty, P.J., & Leeuwenburgh, C. (2016). Beneficial effects of exercise on age-related mitochondrial dysfunction and oxidative stress in skeletal muscle. *Journal of Physiology*, 594(18), 5105-5123.
5. Zdzienicki, D., Oesser, S., Baumstark, M.W., Gollhofer, A., & Konig, D. (2015). Collagen peptide supplementation in combination with resistance training improves body composition and increases muscle strength in elderly sarcopenic men: a randomised controlled trial. *British Journal of Nutrition*, 114(8), 1237-45

Biography

Shu-Lin Lee has her expertise in exercise evaluation and nutrition intervention in improving health. In the past few years, her study focused on exercise and nutrition (or supplementation) intervention in elderly and metabolic syndrome subjects. Her research team want to explore the benefits of nutrients or herbal medicines to improve health.

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