

The effect of tobacco smoking on MSK health



Implication for
clinical practice:
systematic review

Smoking was associated with negative impacts on bones, joints, muscles, cartilage and ligaments

Context

Tobacco smoke has more than 700 harmful chemical compounds and has known adverse consequences on most human body systems. There have been a lot of reviews focussing on other body systems but not specifically looking at the musculoskeletal system. The musculoskeletal system is one of the largest in the body and an intact and functioning musculoskeletal system is necessary to perform activities of daily living and maintain quality of life. This review aimed to summarise evidence related to the effect of smoking on the musculoskeletal system.

Methods

A search of 3 online databases from January 2007 to March 2017 was conducted. Inclusion criteria was English language studies, human subjects, investigating the effects of smoking on the musculoskeletal system. This strategy yielded 243 results which were broken down into 7 categories (effect on bones, joints, skeletal muscles, cartilage, tendons, ligaments, and intrauterine and second hand smoking effects).

Results

- Sufficient evidence was found at the bone level for smoking being associated with decreased bone mineral density, increased likelihood of fracture, delayed fracture healing, increased alveolar bone loss, increased risk of periodontitis, increased peri-implant bone loss and implant failure.
- There is evidence that smoking increases disease activity in patients with Rheumatoid Arthritis and decreases their response to therapy for this, there is also evidence of a negative impact on outcomes in patients with Osteoarthritis.
- There was clear evidence that smoking is associated with decreased skeletal muscle strength.
- There is some evidence that smoking has a harmful association with knee cartilage in terms of increased volume, decreased strain ratio and poor postoperative outcome.
- Smoking was also found to be associated with thinner Achilles and patella tendons and a higher incidence of severe rotator cuff tears and poor functional and stability scores following ligament surgery.

Reference

[Al-Bashaireh, A. M., Haddad, L. G., Weaver, M., Kelly, D. L., Chengguo, X., & Yoon, S. \(2018\). The effect of tobacco smoking on musculoskeletal health: a systematic review. Journal of environmental and public health, 2018.](#)