



## Non-Operative Treatment of Knee Osteoarthritis: Fear the Future?

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Non-operative treatment of knee osteoarthritis has gained special interest between patients and orthopedic surgeons, not only to alleviate pain and improve function, but also to postpone joint replacements. Projections showed an increase of 673% in the number of arthroplasties to be performed in the United States through 2030 [1,2].

Conservative treatment of osteoarthritis includes both non-pharmacological and pharmacological approaches. It should involve patient's participation and be based on a pool of actions, such as weight loss, physical therapy, exercise and, not solely on medications. Moreover, treatment should be individualized according to the patients' needs [3].

Pharmacological options have widened and are far beyond analgesics and non-steroid drugs. Chondroprotective agents and viscosupplementation prescription have increased and are now accessible to a broader part of the population. Although the improvements confirmed by clinical studies using such treatments, still today there is no consensus on which one would offer the better results [4]. Some claim that researches are biased by the influence of pharmaceutical industry, which sponsored many of them, justifying the divergent results published.

Another issue is the lack of understanding about some principles involving genetics and mechanisms of disease [5]. Recently, it has been reported the involvement of CXCR1/2 in cartilage homeostasis signaling [6]. Additionally, the activity of the biomarker TSG-6 was associated to osteoarthritis progression [7]. On the other hand, several microRNAs were described as regulating chondrocyte gene's expression with potential use on therapeutics [8]. Another approach may involve genetic manipulation of stem cells and growth factors, modulating tissue repair [9].

Understanding these mechanisms may provide a clue for the development of biological agents such as the ones used successfully in the treatment of rheumatoid arthritis. Our role as clinicians and researchers is actually to work on these issues. If not, maybe we'll be fearing the future.

### References

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