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PERSONAL EXPERIENCE ON MANAGING MY KNEE PAIN SUCCESSFULLY

The "DiPiro's Pharmacotherapy – A Pathophysiologic Approach" includes a chapter dedicated to osteoarthritis (OA). Age is identified as one of the risk factors for developing OA. Although genetics are thought to play a role, no single genetic variant responsible for OA has been pinpointed. The pathophysiology of OA involves damage to the cartilage in the joints. Cartilage possesses viscoelastic properties which provide lubrication during motion, absorb shock during rapid movement, and offer load support.

Cartilage composition comprises water (70%), collagen (10%), proteoglycans (8%), chondrocytes, other proteins, and long hyaluronic acid molecules[1]. Joints receive additional protection from muscles bridging the joint, ligaments, and the shock-absorbing properties of subchondral bone.

Multiple factors may contribute to OA, resulting in cartilage damage and consequent pain upon joint usage. The pain experienced in OA is not due to the destruction of cartilage itself but rather the loss of cartilage function. This pain arises from the activation of nociceptive nerve endings within the joint by mechanical or chemical irritants[2,3].

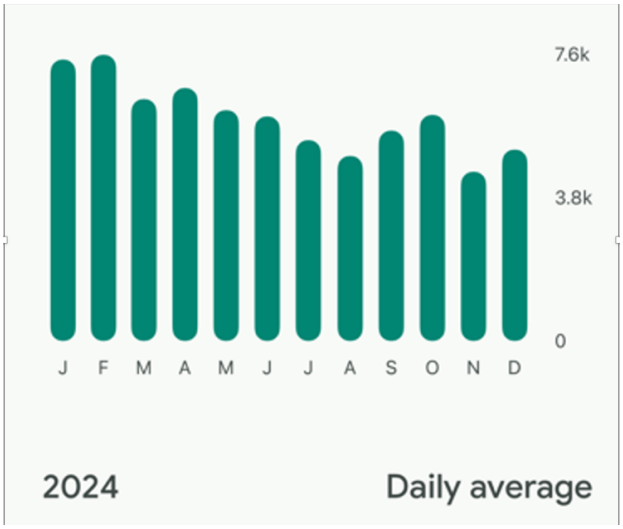
The desired outcomes in managing OA include relieving pain and stiffness, improving joint mobility, limiting functional impairment, and enhancing the quality of life[4,5]. Non-pharmacological therapy is the only approach that can delay the progression of OA[6,7]. Pharmacological interventions for OA include acetaminophen, topical NSAIDs applied to specific joints, and topical capsaicin.

The primary objective is to reduce pain, and the recommendation for treating OA is to start with acetaminophen, 4 gm per day, if there are no contraindications. Application of topical NSAIDs over specific joints and oral prescription of COX-2 inhibitors would be the next step. If additional pain relief is needed, duloxetine and occasionally hyaluronic acid injections are recommended. Dipiro's book states that "there is a general agreement that glucosamine and/or chondroitin and topical medications lack uniform efficacy in the treatment of hip and knee OA pain and are not preferred treatment options".

In late March 2024, while playing racquetball, I experienced pain. The pain was severe enough to discontinue playing. I haven't played since that day. An X-ray at the physician's office led to a diagnosis of osteoarthritis [Fig 1], and a pharmacological recommendation to take acetaminophen or apply Voltaren cream (diclofenac) to alleviate pain. The physician also recommended undergoing physiotherapy.

Fig 1 – Knee x-ray that was performed in June 2024

Fig 2 shows the steady decline in number of steps that I could take after March 2024.



Over ten sessions of physical therapy enabled me to walk with less discomfort, averaging just over 5000 steps per day. In January and February of 2025, while traveling and irregular with physical therapy exercises, the number of steps fell to around 4000, most of which came from walking within the house, and additional steps were minimal [Fig 4].

After returning to the US in March 2025, I noticed an advertisement for 'Treatmedy' on Facebook. Due to the significant impact of osteoarthritis (OA) on my quality of life, I decided to investigate further. Treatmedy claims to treat OA by enhancing collagen synthesis in cartilage through laser and infrared.

A search on PubMed revealed a randomized controlled study by Siriratna et al.[8], indicating that high-intensity laser therapy is more effective in alleviating pain for patients with knee osteoarthritis. Additionally, a meta-analysis by Ahmad et al.[9] found low and high-intensity laser therapy as an adjunctive to rehabilitation exercise to be effective in reducing pain, stiffness, and improving function in knee OA. The potential biological mechanism underlying the positive impact of laser in knee OA may involve the altered expression of eleven proteins in the synovium of patients with knee OA[10].

I ordered the product from treatmedy.com, which arrived within a week and cost approximately $180 per piece [Fig 3]. Based on the shape and look, I refer to it as "Knee helmet". I use it every day for 10 minutes on both knees. When switched on, it provides massage, heat, and infrared laser therapy. Noticing an improvement after a few days, I have used it regularly. Even during travel, it is brought along to ensure daily treatment.

Fig 3 – My knee helmet obtained from treatmedy.com

My daily steps have increased over the past three months [Fig 4], often exceeding 8000 steps on many occasions without experiencing pain. My current routine includes the following: 10 minutes of "knee helmet" therapy upon waking, twice daily doses of one Qnol capsule (1500 mg curcumin) and one tablet of glucosamine chondroitin (Osteo-biflex), 30 minutes of swimming plus 15 minutes of water aerobics daily, and exercises recommended by physiotherapy three days a week.

Fig 4 – Average number of steps taken daily in 2025. I started using treatmedy [knee helmet] regularly since March 2025.

The effectiveness of the "knee helmet" was shared with my physician during a regular visit, suggesting that the physician consider mentioning this product to patients seeking treatment for OA. My long-term goal is to return to playing racquet ball and skiing by fall of 2026.

I am sharing this personal story to educate other patients suffering from knee pain. I have no conflict of interest in recommending this product and readers may explore other products with similar functionality available in the market.

References

1. Kumar V, Abbas AK, Aster J. Bones, joints, and soft tissue tumors. *Robbins Basic Pathology*. 10th ed. New York: Elsevier, Inc.; 2018.
2. Glyn-Jones S, Palmer AJ, Agricola R, et al. Osteoarthritis. *Lancet.* 2015;386(9991):376–387. [PubMed: 25748615]
3. Felson DT, Neogi T Osteoarthritis. In: Jameson JL, Fauci AS, Kasper DL, Hauser SL, Longo DL, Loscalzo J, eds. *Harrison's Principles of Internal Medicine.* 20th ed. New York, NY: McGraw-Hill Education; 2017. accessmedicine.mhmedical.com/content.aspx?aid=1155953712.
4. Bennell KL, Hunter DJ, Hinman RS. Management of osteoarthritis of the knee. *BMJ.* 2012;345:e4934. [PubMed: 22846469]
5. Hochberg MC, Altman RD, April KT, et al. American College of Rheumatology 2012 recommendations for the use of nonpharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee. *Arthritis Care Res (Hoboken).* 2012;64(4):465–474. 10.1002/acr.21596 [PubMed: 22563589] .
6. Hootman JM, Murphy LB, Omura JD, et al. Health care provider counseling for physical activity or exercise among adults with arthritis—United States, 2002 and 2014. *MMWR Morb Mortal Wkly Rep.* 2018;66(5152):1398–1401. [PubMed: 29300722]
7. Guglielmo D, Hootman JM, Murphy LB, et al. Health care provider counseling for weight loss among adults with arthritis and overweight or obesity—United States, 2002–2014. *MMWR Morb Mortal Wkly Rep.* 2018;67(17):485–490. [PubMed: 29723172]
8. Siriratna P, Ratanasutiranont C, Manissorn T, Santiniyom N, Chira-Adisai W. Short-Term Efficacy of High-Intensity Laser Therapy in Alleviating Pain in Patients with Knee Osteoarthritis: A Single-Blind Randomised Controlled Trial. Pain Res Manag. 2022 Oct 21;2022:1319165. doi: 10.1155/2022/1319165. PMID: 36313402; PMCID: PMC9616657.
9. Ahmad MA, A Hamid MS, Yusof A. Effects of low-level and high-intensity laser therapy as adjunctive to

rehabilitation exercise on pain, stiffness and function in knee osteoarthritis: a systematic review and meta-analysis. Physiotherapy. 2022 Mar;114:85-95. doi: 10.1016/j.physio.2021.03.011. Epub 2021 Mar 26. PMID: 34654554.

10. Barabás K, Bakos J, Zeitler Z, Bálint G, Nagy E, Lakatos T, Kékesi AK, Gáspár L, Szekanecz Z. Effects of laser treatment on the expression of cytosolic proteins in the synovium of patients with osteoarthritis. Lasers Surg Med. 2014 Oct;46(8):644-9. doi: 10.1002/lsm.22268. Epub 2014 Jun 7. PMID: 24909318.