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Enhancing arthritis treatment with yoga and dietary modifications

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Abstract
Arthritis is a chronic condition characterized by inflammation and pain in the joints. It affects millions of people worldwide, with osteoarthritis and rheumatoid arthritis being the most common types. While conventional treatments primarily focus on pain relief and slowing disease progression, complementary therapies like yoga and dietary interventions have gained attention for their potential to improve symptoms of arthritis and enhance quality of life. This article explores the impact of yoga and dietary changes on arthritis management.

Keywords: Focus, article, impact

Introduction
Arthritis is a medical condition characterised by inflammation or swelling of one or more joints. It recounts more than 100 conditions that influence the joints, tissue around the joints, and other connective tissues. Arthritis is of various kinds depending on the specific symptoms, but usually include joint pain and stiffness (Centers for Disease Control and Prevention) [1]. Arthritis is a common term that is derived from the Greek word *arthro,* which means joint and the suffix *-itis,* which means inflammation (Mahan & Escott-Stump, 2008) [2]. Arthritis is a term that is often used to refer to any disorder that affect the joints while the rheumatic disease is an umbrella term that influence joints, tendons, ligaments, bones and muscles (NIH, USA) [3]. Arthritis is a type of rheumatic disease. About 73% of people living with osteoarthritis are older than 55 years, and 60% are female [4, 5].
Arthritis can affect a person's daily life activities such as running, walking, sitting, bathing, use of toilet, and degrades the quality of life. Arthritis can be caused by ageing such as osteoarthritis, it can be an autoimmune disorder such as rheumatoid arthritis, or can be inborn error of metabolism such as gout.

Role of Yoga and Dietary modifications in arthritis management:
Yoga is an ancient Indian mind-body practice that combines physical postures, breathing techniques, and meditation. Recent research suggests yoga may provide both physical and psychological benefits for people with arthritis.
Physical Benefits of Yoga for Arthritis The gentle movements and stretches in yoga can help reduce joint pain and stiffness while also improving flexibility, balance, and strength. A randomized controlled trial published in the Journal of Rheumatology found that sedentary adults with knee osteoarthritis who practiced yoga had significantly less pain, better physical function, and walking pace compared to a control group after 8 weeks [6].
Another study looked at yoga's effects on rheumatoid arthritis, an autoimmune disease causing inflammation and deformity of the joints. Patients assigned to a bi-weekly yoga practice for 6 months had greater reductions in disease activity scores versus a control group doing no yoga [7].

Yogic Management
Asanas - The main asanas done for the prevention and control of arthritis are as follows:-
Sukshama Vyayama – Toe bending, ankle bending, ankle rotation, knee bending, half/full butterfly, wrist bending and rotation, elbow bending and rotation, shoulder socket rotation,

Neck movements etc [8].
As the flexibility of the joints increases, other asanas should be added to the practice. Like- Shashankasana, Marjari Asana, Shashanka-Bhujangasana and Akarna Dhanurasana.
Finally, Suryanamaskara should be practiced as per one's capacity. By doing Surya Namaskar for 6 to 12 cycles every morning, it is possible to remain free from the effects of arthritis throughout life.
Pranayama - Abdominal breathing, Nadishodhan pranayama and Bhastrika pranayama increase the digestive power and by increasing the flow of life force in the nadis, they remove any obstructions in them. This is the life force of the body Increases and helps in keeping it healthy.
Meditation - Practicing meditation relieves mental and emotional stress. By practicing meditation and relaxation, positive thoughts develop in a person [9].

Anti-Inflammatory Diets
Several dietary patterns have been associated with lower levels of inflammation and potential benefits for arthritis management. The Mediterranean diet, rich in fruits, vegetables, whole grains, olive oil, and fish, has been linked to reduced inflammation and improved physical function in individuals with rheumatoid arthritis [10]. Similarly, the Dietary Approaches to Stop Hypertension (DASH) diet, which emphasizes fruits, vegetables, whole grains, and low-fat dairy products, has shown promising results in reducing markers of inflammation [11].

Osteoarthritis
The most common form of arthritis, OA involves the degeneration of cartilage, the smooth tissue that covers the ends of bones in a joint. This leads to pain, swelling, and reduced motion in the joints. It often affects the knees, hips, lower back, and hands [12].

Management of Osteoarthritis
1) **Weight management**- A study conducted on knee Osteoarthritis patients with intentional weight loss therapy including Diet with or without exercise found that subjects who lost highest weight (≥20% of weight) had the less pain and better function than other three groups of lower weight loss (Messier *et al.,* 2018) [13]. Obesity can be a risk factor for the occurrence of knee osteoarthritis. Obese patient with knee osteoarthritis is clinically benefitted by weight loss in pain lessening and for enhanced functions (Lee & Kean, 2012) [14].
2) **Diet rich in calcium and other macro-minerals-** osteoarthritis symptoms can be alleviated with elevated dietary magnesium and potassium intake, and can help in higher quality of life, and milder comorbid conditions in patients with knee osteoarthritis (Zhang *et al.,* 2022) [15].
3) **Vitamins –** vitamins might be inlying to the development and progression of osteoarthritis. Vitamin D plays a crucial role in the development and maintenance of the skeleton, as well as bone and cartilage metabolism, and its deficiency involves in the pathological process of OA. Vitamin E improves chondrocyte growth and shows anti-inflammatory activity, as well as plays crucial role in the prevention of cartilage degeneration. In human OA cartilage, vitamin K deficiency produces abnormal growth plate calcification and inappropriate mineralization of cartilage (Zheng *et al.,* 2018) [16].
4) **Antioxidants-** redox species and their imbalance in the body can trigger oxidative stress and can generate specific diseases. Antioxidant-rich diet may provide an easy and economical way to treat Knee osteoarthritis (Tudorachi *et al.,* 2021) [17]. Diet which is mainly based on animal foods have low antioxidant content while plant -based diet that includes variety of foods rich in antioxidants, because it contains thousands of bioactive antioxidants phytochemicals found in plants which are conserved in many foods and beverages (Carlsen *et al.,* 2010) [18].

Rheumatoid arthritis (RA)
An autoimmune disorder where the body's immune system attacks its own tissues, particularly the synovium, the lining of the membranes that surround the joints. This causes inflammation that can damage joint tissue and bones, leading to severe pain and deformity. RA often affects the hands, feet, and wrists symmetrically.

Management of rheumatoid arthritis (RA)
Red meat- a high-level consumption of red meat may act as risk factor for inflammatory arthritis (Pattison *et al.,* 2004) [19]. High consumption of red meat is linked to an early onset of RA, particularly in patients who smoke or are overweight. The patients who are at risk of developing RA might benefit from consuming less red meat (Jin *et al.,*2021) [20].

Vegetarian or vegan diet
some RA patients can benefit from dietary intervention. A portion of RA patients seem to benefit from dietary changes. Fasting, gluten-free vegan diets, and/or a customised dietary reintroduction protocol are the dietary interventions providing the most significant effect (Sharma *et al.,* 2024) [21].

Omega-3 fatty acids- Polyunsaturated fatty acids, such as omega-3 fatty acids, influence both health and disease. They may reduce and modify the inflammatory response caused by autoimmunity and function as precursors to lipid mediators of inflammation. They may lessen rheumatoid arthritis disease activity and have been demonstrated to treat or prevent experimental arthritis (Kostoglou-Athanassiou *et al.,* 2020) [22].

Calcium and Phosphorus- a case-control study conducted on RA patients found statistically significant increases in serum phosphorous levels and decreases in serum levels of calcium. These results concur with those of several previous research (Agarwal *et al.,* 2017) [23].
A meta-analysis showed that the higher risk of RA was associated with obesity, smoking, coffee consumption, lower educational attainment, and Graves' disease (Gu *et al.,* 2023) [24].

Gout
A type of inflammatory arthritis that occurs when urate crystals accumulate in a joint, causing intense pain and swelling. It often affects the big toe, but can occur in other joints as well. Gout is often linked to diet and can be exacerbated by foods high in purines, such as red meat and seafood.

Management of Gout
Purines- purines are one of two chemical compounds that cells use to make the building blocks of DNA and RNA. Examples of purines are adenine and guanine. Purines are also found in meat and meat products. They are broken down by

the body to form uric acid, which is passed in the urine (National cancer Institute, USA, 2024) [25]. Acute purine consumption nearly fivefold raises the likelihood of recurrent gout attacks in gout sufferers. Lowering or eliminating consumption of purine-rich foods, particularly those derived from animals, may help lower the incidence of gout flare-ups (Zhang *et al.*, 2012) [26]. The food's overall purine content and the kinds of purine bases that are present should be considered. Eating meals with >200 mg/100 g of purines, particularly those with a high hypoxanthine ratio, is thought to provide a significant risk for hyperuricemia. Meats from animals, fish, and some shrimps are included in this group. It is highly advised to consume high amounts of low-purine foods, such as cereals, dairy products, beans, vegetables, mushrooms, and soybean products. Purine-rich food should be eaten in moderation. Good dietary habits with a good balance of nutrients are recommended (Kaneko *et al.*, 2014) [27].

Conclusion

Combining yoga and dietary interventions offers a holistic approach to managing arthritis. Yoga can improve physical function, reduce pain, and enhance mental well-being, while a balanced diet rich in anti-inflammatory and antioxidant foods can mitigate inflammation and improve overall health. Individuals with arthritis should consider incorporating these complementary therapies into their treatment regimen, in consultation with their healthcare provider, to optimize their quality of life and manage their symptoms more effectively.

This article has discussed various types of arthritis and its harmful effects on health and here is given yogic practices and dietary modifications of each complication to eliminate the effects of arthritis but is researcher has a humble request to follow these practices under the guidance of an expert.

References

1. Centers for Disease Control and Prevention (CDC), United states of America; c2024.
2. Mahan LC, Escott-Stump S. Medical Nutrition Therapy for Rheumatic Disease. Krause's Food & Nutrition Therapy, 12th International Edition. Saunders ELSEVIER Publisher; c2008, p. 1043.
3. National Institute of Arthritis and Musculoskeletal and skin diseases (NIH), USA; c2024. https://www.niams.nih.gov/.
4. GBD, 2019. Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: A systematic analysis for the Global Burden of Disease Study; c2019. https://vizhub.healthdata.org/gbd-results/.
5. https://www.who.int/news-room/fact-sheets/detail/osteoarthritis
6. Kolasinski SL, Garfinkel M, Tsai AG, Matz W, Dyke AV, Schumacher Jr HR. Iyengar yoga for treating symptoms of osteoarthritis of the knees: A pilot study. Journal of Alternative & Complementary Medicine. 2005;11(4):689-693.
7. Badsha H, Chhabra V, Leibman C, Mofti A, Kong KO. The benefits of yoga for rheumatoid arthritis: results of a preliminary, structured 8-week program. Rheumatology international. 2009;29(12):1417-1421.
8. Sarswati Swami S. Asana Pranayama Mudra Bandha. Yoga Publication Trust, Munger, Bihar, India; c2013. ISBN:978-81-86336-14-4
9. Sarswati Swami S. Roga aur Yoga. Yoga Publication Trust, Munger, Bihar, India; c2013, ISBN:978-81-86336-12-0
10. Forsyth C, Kouvari M, D'Cunha NM, Georgousopoulou, EN, Panagiotakos DB, Mellor DD, *et al*. The effects of the Mediterranean diet on rheumatoid arthritis prevention and treatment: A systematic review of human prospective studies. Rheumatology international. 2018;38(5):737-747.
11. Saneei P, Hashemipour M, Kelishadi R, Esmaillzadeh A. Effects of the Dietary Approaches to Stop Hypertension (DASH) diet on serum inflammatory markers: A systematic review and meta-analysis of randomized trials. Clinical Nutrition. 2014;33(6):1032-1042.
12. Osteoarthritis. Arthritis Foundation. https://www.arthritis.org/diseases/osteoarthritis
13. Messier SP, Resnik AE, Beavers DP, Mihalko SL, Miller GD, Nicklas BJ, *et al*. Intentional Weight Loss in Overweight and Obese Patients With Knee Osteoarthritis: Is More Better?. Arthritis care & research. 2018;70(11):1569-1575. https://doi.org/10.1002/acr.23608.
14. Lee R, Kean WF. Obesity and knee osteoarthritis. Inflammopharmacology. 2012;20:53-58.
15. Zhang Y, Chen T, Luo P, Li S, Zhu J, Xue S, *et al*. Associations of Dietary Macroelements with Knee Joint Structures, Symptoms, Quality of Life, and Comorbid Conditions in People with Symptomatic Knee Osteoarthritis. Nutrients. 2022;14(17):3576. https://doi.org/10.3390/nu14173576.
16. Zheng XY, Liang J, Li YS, Tu M. Role of fat-soluble vitamins in osteoarthritis management. JCR: Journal of Clinical Rheumatology. 2018;24(3):132-137.
17. Tudorachi NB, Totu EE, Fifere A, Ardeleanu V, Mocanu V, Mircea C, *et al.* The implication of reactive oxygen species and antioxidants in knee osteoarthritis. Antioxidants. 2021;10(6):985.
18. Carlsen MH, Halvorsen BL, Holte K, Bøhn SK, Dragland S, Sampson L, *et al*. The total antioxidant content of more than 3100 foods, beverages, spices, herbs and supplements used worldwide. Nutrition Journal. 2010;9(1):1-11.
19. Pattison DJ, Symmons DP, Lunt M, Welch A, Luben R, Bingham SA, *et al*. Dietary risk factors for the development of inflammatory polyarthritis: evidence for a role of high level of red meat consumption. Arthritis and Rheumatism. 2004;50(12):3804-3812. https://doi.org/10.1002/art.20731.
20. Jin J, Li J, Gan Y, Liu J, Zhao X, Chen J, et al. Red meat intake is associated with early onset of rheumatoid arthritis: A cross-sectional study. Scientific Reports. 2021;11(1):5681.
21. Sharma P, Brown S, Sokoya EM. Re-evaluation of dietary interventions in rheumatoid arthritis: can we improve patient conversations around food Choices?. Rheumatology International; c2024. p. 1-11.
22. Kostoglou-Athanassiou I, Athanassiou L, Athanassiou P. The Effect of Omega-3 Fatty Acids on Rheumatoid Arthritis. Mediterranean journal of rheumatology. 2020;31(2):190-194. https://doi.org/10.31138/mjr.31.2.190.
23. Agarwal VK, Karnani N, Raj R. Study of Calcium and Phosphorus Levels in Patients with Rheumatoid Arthritis. 2017;08(01):975-977.
24. Gu P, Pu B, Liu T, Yue D, Xin Q, Li HS, *et al*. Appraising causal risk and protective factors for rheumatoid arthritis. Bone & Joint

Research. 2023;12(9):601-614. https://doi.org/10.1302/2046-3758.129.BJR-2023-0118.R1.
25. National cancer Institute, USA; c2024. https://www.cancer.gov/publications/dictionaries/cancer-terms/def/purine.
26. Zhang Y, Chen C, Choi H, Chaisson C, Hunter D, Niu J, Neogi T. Purine-rich foods intake and recurrent gout attacks. Annals of the rheumatic diseases. 2012;71(9):1448-1453. https://doi.org/10.1136/annrheumdis-2011-201215.
27. Kaneko K, Aoyagi Y, Fukuuchi T, Inazawa K, Yamaoka N. Total purine and purine base content of common foodstuffs for facilitating nutritional therapy for gout and hyperuricemia. Biological & pharmaceutical bulletin. 2014;37(5):709-721. https://doi.org/10.1248/bpb.b13-00967.