

References

1. D. T. Felson, "Developments in the clinical understanding of osteoarthritis," *Arthritis Research & Therapy*, vol. 11, no. 1, article 203, 2009.
2. J. Samuels, S. Krasnokutsky, and B. Abramson, "Osteoarthritis: a tale of three tissues," *Bulletin of the NYU Hospital for Joint Diseases*, vol. 66, no. 3, pp. 244–250, 2008.
3. M. B. Goldring and S. R. Goldring, "Osteoarthritis," *Journal of Cellular Physiology*, 2007.213, 626–634.
4. S. Krasnokutsky, J. Samuels, and S. B. Abramson, "Osteoarthritis in 2007," *Bulletin of the NYU Hospital for Joint Diseases*, 2007.65,222–228.
5. E. C. Huskisson, "Glucosamine and chondroitin for osteoarthritis," *Journal of International Medical Research*, 2008.36,1161–1179.
6. D. P. Guh, W. Zhang, N. Bansback et al., "The incidence of co-morbidities related to obesity and overweight: a systematic review and meta-analysis," *BMC Public Health*, 2009.9,88.
7. T. D. Spector and A. J. MacGregor, "Risk factors for osteoarthritis: genetics," *Osteoarthritis and Cartilage*, 2004.12,S39–S44.
8. F. M. Cicuttini and T. D. Spector, "Genetics of osteoarthritis," *Annals of the Rheumatic Diseases*, 1996. 55, 665–667.
9. N. Verzijl, J. DeGroot, Z. C. Ben et al., "Crosslinking by advanced glycation end products increases the stiffness of the collagen network in human articular cartilage: a possible mechanism through which age is a risk factor for osteoarthritis," *Arthritis & Rheumatism*, 2002, 46, 114–123
10. S. Tanamas, F. S.Hanna, F.M. Cicuttini, A. E. Wluka, P. Berry, and D. M. Urquhart, "Does knee malalignment increase the risk of development and progression of knee osteoarthritis? A systematic review," *Arthritis & Rheumatism*,2009.61,459–467.
11. M. E. Russell, K. H. Shivanna, N. M. Grosland, and D. R. Pedersen, "Cartilage contact pressure elevations in dysplastic hips: a chronic overload model," *Journal of Orthopaedic Surgery and Research*, 2006. 1, 1, article 6
12. D. O. Clegg, D. J. Reda, C. L. Harris et al., "Glucosamine, chondroitin sulfate, and the two in combination for painful knee osteoarthritis," *The New England Journal of Medicine*, 2006. 354,.795–808.
13. O. Bruyere, N. Burlet, P. D. Delmas et al., "Evaluation of symptomatic slow-acting drugs in osteoarthritis using the GRADE system," *BMC Musculoskeletal Disorders*, 2008, 9, 165.
14. O. Bruyere, K. Pavelka, L. C. Rovati et al., "Glucosamine sulfate reduces osteoarthritis progression in postmenopausal women with knee osteoarthritis: evidence from two 3-year studies," *Menopause*, 2004, 11,138–143.
15. T. E. Towheed, L. Maxwell, T. P. Anastassiades et al., "Glucosamine therapy for treating osteoarthritis," *Cochrane Database of Systematic Reviews*, no. 2, 2005.

16. F. Richy, O. Bruyere, O. Ethgen et al., "Structural and symptomatic efficacy of glucosamine and chondroitin in knee osteoarthritis: a comprehensive meta-analysis," *Archives of Internal Medicine*, 2003. 163,1514–1522.
17. N. Poolsup, C. Suthisang, P. Channark, and W. Kittikulsuth, "Glucosamine long-term treatment and the progression of knee osteoarthritis: systematic review of randomized controlled trials," *Annals of Pharmacotherapy*, 2005, 39,1080–1087.
18. D. Uebelhart, "Clinical review of chondroitin sulfate in osteoarthritis," *Osteoarthritis and Cartilage*, 2008.16, S19–S21.
19. Y.H. Lee, J.H.Woo, S. J.Choi, J. D. Ji, and G. G. Song, "Effect of glucosamine or chondroitin sulfate on the osteoarthritis progression: a meta-analysis," *Rheumatology International*, 2010. 30,357–363.
20. M. C. Hochberg, M. Zhan, and P. Langenberg, "The rate of decline of joint space width in patients with osteoarthritis of the knee: a systematic review and meta-analysis of randomized placebo-controlled trials of chondroitin sulfate," *Current Medical Research and Opinion*, 2008. 24, 3029–3035.
21. Kahan, D. Uebelhart, F. De Vathaire, P. D. Delmas, and J. Y. Reginster, "Long-term effects of chondroitins 4 and 6 sulfate on knee osteoarthritis: the study on osteoarthritis progression prevention, a two-year, randomized, doubleblind, placebo-controlled trial," *Arthritis & Rheumatism*, 2009, 60, 524–533.
22. B. A. Michel, G. Stucki, D. Frey et al., "Chondroitins 4 and 6 sulfate in osteoarthritis of the knee: a randomized, controlled trial," *Arthritis & Rheumatism*, 2005.52,779–786.
23. S. Dahmer and R. M. Schiller, "Glucosamine," *American Family Physician*, 2008, 78, 471–476.
24. S. G. Kirkham and R. K. Samarasinghe, "Review article: glucosamine," *Journal of Orthopaedic Surgery (Hong Kong)* 2009,17,72–76.
25. P. J. Gregory, M. Sperry, and A. F. Wilson, "Dietary supplements for osteoarthritis," *American Family Physician*, 2008.77,177–184.
26. O. Bruyere and J. Y. Reginster, "Glucosamine and chondroitin sulfate as therapeutic agents for knee and hip osteoarthritis," *Drugs & Aging*, 2007. 24, 573–580.
27. J. Y. Reginster, O. Bruyere, and A. Neuprez, "Current role of glucosamine in the treatment of osteoarthritis," *Rheumatology*, 2007, 46, 731–735.
28. D. D. Edelist and M. F. Evans, "Do glucosamine and chondroitin treat the symptoms of osteoarthritis?" *Canadian Family Physician*, 2001. 47, 275–277.
29. T. E. McAlindon, M. P. LaValley, J. P. Gulin, and D. T. Felson, "Glucosamine and chondroitin for treatment of osteoarthritis: a systematic quality assessment and metaanalysis," *Journal of the American Medical Association*, 2000. 283, 1469–1475.
30. J. A. Block, T. R. Oegema, J. D. Sandy, and A. Plaas, "The effects of oral glucosamine on joint health: is a change in research approach needed?" *Osteoarthritis and Cartilage*, 2010.18, 5–11.
31. D. Uebelhart, "Clinical review of chondroitin sulfate in osteoarthritis," *Osteoarthritis and Cartilage*, 2008.16, S19–S21.
32. A. Kahan, D. Uebelhart, F. De Vathaire, P. D. Delmas, and J. Y. Reginster, "Long-term effects of chondroitins 4 and 6 sulfate on knee osteoarthritis: the study on osteoarthritis progression prevention, a two-year, randomized, doubleblind, placebo-controlled trial," *Arthritis & Rheumatism*, 2009. 60, 524–533.

33. B. A. Michel, G. Stucki, D. Frey et al., "Chondroitins 4 and 6 sulfate in osteoarthritis of the knee: a randomized, controlled trial," *Arthritis & Rheumatism*, 2005, 52, 779–786.
34. D. Uebelhart, M. Malaise, R. Marcolongo et al., "Intermittent treatment of knee osteoarthritis with oral chondroitin sulfate: a one-year, randomized, double-blind, multicentre study versus placebo," *Osteoarthritis and Cartilage*, 2004.12, 269–276.
35. D. Uebelhart, E. J. Thonar, P. D. Delmas, A. Chantraine, and E. Vignon, "Effects of oral chondroitin sulfate on the progression of knee osteoarthritis: a pilot study," *Osteoarthritis and Cartilage*, 1998, 6, 39–46.
36. B. F. Leeb, H. Schweitzer, K. Montag, and J. S. Smolen, "A metaanalysis of chondroitin sulfate in the treatment of osteoarthritis," *The Journal of Rheumatology*, 2000. 27, 205–211.
37. L. Balogh, A. Polyak, D. Mathe et al., "Absorption, uptake and tissue affinity of high-molecular-weight hyaluronan after oral administration in rats and dogs," *Journal of Agricultural and Food Chemistry*, 2008, 56, 10582–10593.
38. D. S. Kalman, M. Heimer, A. Valdeon, H. Schwartz, and E. Sheldon, "Effect of a natural extract of chicken combs with a high content of hyaluronic acid (Hyal-Joint) on pain relief and quality of life in subjects with knee osteoarthritis: a pilot randomized double-blind placebo-controlled trial," *Nutrition Journal*, 2008, 7, 3.
39. L. Lippiello Walsh T, Fienhold M. The association of lipid abnormalities with tissue pathology in human osteoarthritic articular cartilage. *Metabolism*. 1991;40:571–576.
40. L. Lippiello, Fienhold M, Grandjean C. Metabolic and ultrastructural changes in articular cartilage of rats fed dietary supplements of omega-3 fatty acids. *Arthritis Rheum*. 1990;33:1029–1036.
41. M. Arita, Bianchini F, Aliberti J, Sher A, Chiang N, Hong S, Yang R, Petasis NA, Serhan CN. Stereochemical assignment, antiinflammatory properties, and receptor for the omega-3 lipid mediator resolvin E1. *J Exp Med*. 2005;201:713–722.
42. R. Goldberg, Katz. J. A meta-analysis of the analgesic effects of omega-3 polyunsaturated fatty acid supplementation for inflammatory joint pain. *Pain* 2007, 129, 210-223
43. G. Halpern. Anti-inflammatory effects of a stabilized lipid extract of *Perna canaliculus* *Allerg Immunol (Paris)* 2000;32:272–278.
44. L. Bui, Bierer TL. Influence of green lipped mussels (*Perna canaliculus*) in alleviating signs of arthritis in dogs. *Vet Ther*. 2003;4:397–407
45. B. Audeval, Bouchacourt P. Efficacy of *Perna canaliculus* green-lipped mussel extract in gonarthrosis: a double-blind placebo-controlled trial. *Gazette Médicale*. 1986;93:111–116.
46. R.G.Gibson, Gibson SL, Conway V, Chappell D. *Perna canaliculus* in the treatment of arthritis. *Practitioner*. 1980;224:955–960
47. R. Hesslink Jr, Armstrong D, III, Nagendran MV, Sreevatsan S, Barathur R. Cetylated fatty acids improve knee function in patients with osteoarthritis. *J Rheumatol*. 2002;29:1708–1712.
48. L. Tetlow, Woolley DE. Expression of vitamin D receptors and matrix metalloproteinases in osteoarthritic cartilage and human articular chondrocytes in vitro. *Osteoarthritis Cartilage*. 2001;9:423–431. doi: 10.1053/joca.2000.0408.
49. T.E. McAlindon, Felson DT, Zhang Y, Hannan MT, Aliabadi P, Weissman B, Rush D, Wilson PW, Jacques P. Relation of dietary intake and serum levels of vitamin D to

- progression of osteoarthritis of the knee among participants in the Framingham Study. *Ann Intern Med*. 1996;125:353–359.
50. N. Lane, Gore LR, Cummings SR, Hochberg MC, Scott JC, Williams EN, Nevitt MC. Serum vitamin D levels and incident changes of radiographic hip osteoarthritis: a longitudinal study. Study of Osteoporotic Fractures Research Group. *Arthritis Rheum*. 1999;42:854–860.
51. T.E McAlindon, Jacques P, Zhang Y, Hannan MT, Aliabadi P, Weissman B, Rush D, Levy D, Felson DT. Do antioxidant micronutrients protect against the development and progression of knee osteoarthritis? *Arthritis Rheum*. 1996;39:648–656.
52. W. Jonas Rapoza CP, Blair WF. The effect of niacinamide on osteoarthritis: a pilot study. *Inflamm Res*. 1996;45:330–334
53. T. Helliwell, Kelly SA, Walsh HP, Klenerman L, Haines J, Clark R, Roberts NB. Elemental analysis of femoral bone from patients with fractured neck of femur or osteoarthritis. *Bone*. 1996;18:151–157.
54. R. Newnham Essentiality of boron for healthy bones and joints. *Environ Health Perspect*. 1994;102(Suppl 7):83–85.
55. O. Warholm, Skaar S, Hedman E, Molmen HM, Eik L. The effects of a standardized herbal remedy made from a subtype of *Rosa canina* in patients with osteoarthritis: a double-blind, randomized, placebo-controlled clinical trial. *Curr Ther Res*. 2003;64:21–31.
56. Rein E, Kharazmi A, Winther K. A herbal remedy, Hyben Vital (stand. powder of a subspecies of *Rosa canina* fruits), reduces pain and improves general wellbeing in patients with osteoarthritis – a double-blind, placebo-controlled, randomised trial. *Phytomedicine*. 2004;11:383–391.
57. P. Usha, Naidu MUR. Randomised, double-blind, parallel, placebo-controlled study of oral glucosamine, methylsulfonylmethane and their combination in osteoarthritis. *Clinical Drug Investigation*. 2004;24:353–363.
58. LS. Kim , Axelrod LJ, Howard P, Buratovich N, Waters RF. Efficacy of methylsulfonylmethane (MSM) in osteoarthritis pain of the knee: a pilot clinical trial. *Osteoarthritis Cartilage*. 2006;14:286–294
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References

- 1 Raje N, Dinakar C. Overview of Immunodeficiency Disorders. *Immunol Allergy Clin North Am* 2015; 35: 599–623.
- 2 Thomsen SF. Epidemiology and natural history of atopic diseases. *Eur Clin Respir J* 2015; 2. DOI:10.3402/ecrj.v2.24642.
- 3 Rosenblum MD, Remedios KA, Abbas AK. Mechanisms of human autoimmunity. *J Clin Invest* 2015; 125: 2228–33.

- 4 Vighi G, Marcucci F, Sensi L, Di Cara G, Frati F. Allergy and the gastrointestinal system. *Clin Exp Immunol* 2008; 153 Suppl 1: 3–6.
- 5 Statovci D, Aguilera M, MacSharry J, Melgar S. The Impact of Western Diet and Nutrients on the Microbiota and Immune Response at Mucosal Interfaces. *Front Immunol* 2017; 8: 838.
- 6 Mezouar S, Chantran Y, Michel J, *et al.* Microbiome and the immune system: From a healthy steady-state to allergy associated disruption. *Hum Microbiome J* 2018; 10: 11–20.
- 7 Chandra RK. Nutrition and the immune system: an introduction. *Am J Clin Nutr* 1997; 66: 460S–463S.
- 8 Shi Y, Zhao X, Zhao J, *et al.* A mixture of *Lactobacillus* species isolated from traditional fermented foods promote recovery from antibiotic-induced intestinal disruption in mice. *J Appl Microbiol* 2018; 124: 842–54.
- 9 Underwood MA. Probiotics and Innate and Adaptive Immune Responses in Premature Infants. *For Immunopathol Dis Therap* 2016; 7: 1–15.
- 10 Maldonado Galdeano C, Cazorla SI, Lemme Dumit JM, Vélez E, Perdigón G. Beneficial Effects of Probiotic Consumption on the Immune System. *Ann Nutr Metab* 2019; 74: 115–24.
- 11 Hill MJ. Intestinal flora and endogenous vitamin synthesis. *Eur J Cancer Prev* 1997; 6 Suppl 1: S43–5.
- 12 King S, Glanville J, Sanders ME, Fitzgerald A, Varley D. Effectiveness of probiotics on the duration of illness in healthy children and adults who develop common acute respiratory infectious conditions: a systematic review and meta-analysis. *Br J Nutr* 2014; 112: 41–54.
- 13 King S, Glanville J, Sanders ME, Fitzgerald A, Varley D. Effectiveness of probiotics on the duration of illness in healthy children and adults who develop common acute respiratory infectious conditions: a systematic review and meta-analysis. *Br J Nutr* 2014; 112: 41–54.
- 14 Hao Q, Dong BR, Wu T. Probiotics for preventing acute upper respiratory tract infections. *Cochrane Database Syst Rev* 2015; published online Feb 3. DOI:10.1002/14651858.CD006895.pub3.
- 15 Lenoir-Wijnkoop I, Merenstein D, Korchagina D, Broholm C, Sanders ME, Tancredi D. Probiotics Reduce Health Care Cost and Societal Impact of Flu-Like Respiratory Tract Infections in the USA: An Economic Modeling Study. *Front Pharmacol* 2019; 10: 980.
- 16 Permpoonpattana P, Hong HA, Khaneja R, Cutting SM. Evaluation of *Bacillus subtilis* strains as probiotics and their potential as a food ingredient. *Benef Microbes* 2012; 3: 127–35.
- 17 Tejero-Sariñena S, Barlow J, Costabile A, Gibson GR, Rowland I. In vitro evaluation of the antimicrobial activity of a range of probiotics against pathogens: Evidence for the effects of organic acids. *Anaerobe* 2012; 18: 530–8.
- 18 McKenzie YA, Thompson J, Gulia P, Lomer MCE. British Dietetic Association systematic review of systematic reviews and evidence-based practice guidelines for the use of probiotics in the management of irritable bowel syndrome in adults (2016 update). *J Hum Nutr Diet* 2016; 29: 576–92.
- 19 Ishaque SM, Khosruzzaman SM, Ahmed DS, Sah MP. A randomized placebo-controlled clinical trial of a multi-strain probiotic formulation (Bio-Kult®) in the management of diarrhea-predominant irritable bowel syndrome. *BMC Gastroenterol* 2018; 18: 71.

20 Martami F, Togha M, Seifishahpar M, *et al.* The effects of a multispecies probiotic supplement on inflammatory markers and episodic and chronic migraine characteristics : A randomized double-blind controlled trial. *Cephalalgia* 2019; 0: 1–13.

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References:

1. Chavarro JE et al, 2008, Protein intake and ovulatory infertility, *Am J Obstet and Gynecol*, 198, 2, 210e1-210e7
2. Lintsen B, 2008, presented at the European Society of Human Reproduction and Embryology's annual conference
3. Weng X et al, 2008, Maternal caffeine consumption during pregnancy and the risk of miscarriage: a prospective cohort study, *Am J Obstet Gynecol*, 198, 3, 279, e1-8
4. Nawrt P et al, 2003, Effects of caffeine on human health. *Food Addit Contam*, 20, 1, 1-30
5. Tolstrup JS et al, Alcohol use as predictor for infertility in a representative population of Danish women. *Act Obstet Gynecol Scand* 2003; 82: 744-9
6. Guo H et al, 2006, Effects of cigarette, alcohol consumption and sauna on sperm morphology, *Zhonghua Nan Ke Xue*, 12: 215-7
7. Wong WY et al, 2002, Effects of folic acid and zinc sulfate on male factor subfertility: a double-blind randomised, placebo-controlled trial, *Fertility and Sterility*, 77, 3, 491-8
8. Safarinejad MR, Safarinejad S, 2009, Efficacy of selenium and/or N-acetyl-cysteine for improving semen parameters in infertile men: a double-blind, placebo controlled, randomized study, *J Urol*, 181(2):741-51
9. Greco E et al, 2005, ICSI in cases of sperm DNA damage: beneficial effect of oral antioxidant treatment, *Hum Reprod*, 20(9), 2590-4
10. Tarin J et al, 2002, Oral antioxidants counteract the negative effects of female aging on oocyte quantity and quality in the mouse, *Mol Reprod Dev*, 61, 3, 385-97
11. Crha I et al, 2003, Ascorbic acid and infertility treatment, *Cent Eur J Public Health*, 11, 2, 63-7
12. Mumford et al, 2016, Serum antioxidants are associated with serum reproductive hormones and ovulation among healthy women, *J Nutr*. 146(1):98-106
13. Akmal, M. et al, 2006, Improvement in human semen quality after oral supplementation of vitamin C. *J Med Food*, 9 (3), 440-442
14. Showell MG et al, 2011, Antioxidants for male subfertility, *Cochrane Database Syst Rev*, CD007411
15. Srivastava S, 2006, Mechanism of action of L-arginine on the vitality of spermatozoa is primarily through increased biosynthesis of nitric oxide, *Biol Reprod*, 74, 954-958
16. Gurbuz B et al, 2003, Relationship between semen quality and seminal plasma total carnitine in infertile men *J Obstet Gynae*, 23, 6, 653-6

17. Rossi E et al, 1993, Fish oil derivatives as a prophylaxis of recurrent miscarriage associated with antiphospholipid antibodies (APL): a pilot study. *Lupus*, 2, 5, 319-23
18. Safarinejad MR, 2011, Effect of omega-3 polyunsaturated fatty acid supplementation on semen profile and enzymatic anti-oxidant capacity of seminal plasma in infertile men with idiopathic oligoasthenoteratospermia: a double-blind, placebo-controlled, randomised study, *Andrologia*, 43, 1, 38-47
19. Hayes C E et al, 2003, The immunological functions of the vitamin D endocrine system. *Cell Mol Biol*, 49, 2, 277-300
20. Panda DK et al, 2001, Targeted ablation of the 25-hydroxyvitamin D 1alpha - hydroxylase enzyme: evidence for skeletal, reproductive, and immune dysfunction. *Proc Natl Acad Sci USA*. 19, 98,13,7498-503
21. Safarinejad MR, 2009, Efficacy of coenzyme Q10 on semen parameters, sperm function and reproductive hormones in infertile men. *J Urol*, 182, 1, 237-48
22. Bentov Y and Casper R, The ageing oocyte- can mitochondrial function be improved. 2013, *Fertility and Sterility*, 99, 1, 18-22
23. Comhaire F, 2010, The role of food supplementation in the treatment of the infertile couple and for assisted reproduction, *Andrologia*, 42, 5, 331-40