WHAT IS YOUR NEXT MOVE?

MUSCLE, JOINT & BONE HEALTH ARE CONNECTED

BONES



Scientific information for Health Care Professionals only www.nestlehealthscience.com



JOINTS

THE STAKES ARE HIGH



Mobility relies on a combination of strong muscles, a dense bone structure, and flexible, healthy joints, which collectively enable movement.



AS WE AGE, NUTRITION BECOMES A CRUCIAL DETERMINANT OF OUR MOBILITY, WHEREAS INADEQUACY CAN LEAD TO A COMPROMISED OVERALL FUNCTIONALITY.





BOTH HIGHER PROTEIN AND HIGHER VITAMIN D INTAKE COMBINED WITH CALCIUM ARE ASSOCIATED WITH BETTER STRENGTH, LEAN MASS, BONE HEALTH, PHYSICAL PERFORMANCE AND RECOVERY^{25,28-36}



Vitamin D, calcium, and protein are interdependent musculoskeletal health nutrients. Supplementing one alone will not make up for a deficiency in the others³⁸



JOINT HEALTH COMPLETES THE MOBILITY TRIAD WITH MUSCLE AND BONE. ADDRESSING CONDITIONS LIKE OA DEMANDS SUSTAINABLE AND SAFE THERAPIES.







Free alpha-2-macroglobulin surrounded by cytokines





to alpha-2-macroglobulin

Safe for long term use

Compared to NSAID, OEC-treated group has⁴⁰

Less adverse events

OEC therapy can be an effective and safer alternative for NSAIDs in OA pain management.⁴⁰



Pain management in OA

Clinically Effective



Physicians and patients rated OEC's effectiveness and tolerability as 'good/very good'41.46

Nutritional approaches to support joint function integrity

COLLAGEN^{47,48}

GLUCOSAMINE⁴⁹

HYALURONIC ACID. CHONDROITIN & COLLAGEN^{48,50,51}

Combining physical activity with nutritional interventions maximizes overall health benefits, with physical activity being a key predictor of healthy aging⁵²

INSUFFICIENT EXERCISE

The saying "Move it or lose it"

Consequences

Low physical activity is an early indicator of disability and death5!



Positive Outcomes



TAKE ACTION: RECOMMENDATIONS FOR AGING MOBILITY



Inquire about Pain Management

INTERNATIONAL EXPERT RECOMMENDATIONS FOR OLDER ADULTS (>50 YEARS OLD)



HIGH-QUALITY PROTEIN

L.0-2.0 g/kg/d (range spans the needs for healthy individuals to hose with chronic conditions, malnutrition or greater needs)²⁹

VITAMIN D

from 400-600 IU/d in Europe to 600-800 IU/d in the US⁶⁰⁻⁶³

CALCIUM

pm 700 mg/d in the UK to 1,200 mg/d in the $US^{61,63,64}$

FOR POSTMENOPAUSAL WOMEN, ESCEO ADVISES GETTING ENOUGH:



VITAMIN D 800 IU/d

CALCIUM

,000 mg/d

EXERCISING REGULARLY 3-5 times/week

PROTEIN (1.0-1.2 g/kg/d) in close proximity to exercise



Measure functional capacity (handgrip strength, walking speed, chair rise test, balance)

SCREEN - ASSESS - ADVISE



Assess dietary intake (ensure sufficient daily calories and nutrient adequacy from foods, beverages and supplements)



Discuss joint pain management (recommend safe natural options)

ABBREVIATIONS

BMD = Bone mineral density of Osteoporosis and Osteoarthritis WOMAC = Western Ontario and McMaster Universities

REFERENCES

2 Nestle Health Science Global Silverstar Segmentation Study 2015, data on file. 3 NIA. NIH. US HHS. WHO. Global Health and Ageing Report, 2011.

6 Rizzoli R et al. Maturitas. 2014 Sep;/9(1):122–132. 7 Peters AE et al. Front Bioeng Biotechnol. 2022 Aug 23;10:954837. 8 Roberts S et al. Acta Orthop. 2016 Dec;87(sup363):15-25. 9 Witard OC et al. Biogerontology. 2016 Jun;17(3):529-46. 10 Mitchell WK et al. Front Physiol. 2012 Jul 11;3:260. 11 Demontiero O et al. Ther Adv Musculoskelet Dis. 2012 Apr;4(2):61-76. 12 Shieh A et al. J Bone Miner Res. 2023 Mar;38(3):395-402.

15 Neogi T. Osteoarthritis Cartilage. 2013 Sep;21(9):1145-53. 16 Evans W. J. Nutr. 1997;127:9985–10035. 17 Kant AK et al. J Am Coll Nutr. 1999;18(1):69-76. 18 Gallagher J.C. 1990 Jun;9(3):215-27.

32 Gegua L. Curr Opin Curr Nutr Metab Care. 2009;12(6):628-633.
33 Mangano KM et al. Curr Opin Nutr Metab Care. 2014 Jan; 17(1): 69–74.
34 Sato Y et al. Cerebrovasc Dis. 2005;20(3):187-192.
35 Flicker L et al. J Am Geriatr Soc. 2005;53(11):1881-1888.
36 Neumann M et al. Nutrition. 2004 May;20(5):415-9.
37 Weaver CM et al. Osteoporos Int. 2016 Jan;27(1):367-76.
38 Wallace TC et al. Nutrition Today. 2019;54(3):107,115.

48 Bruyere O et al. Complement Ther Med. 2012 Jun;20(5):124-50.
49 Pavelká K et al. Arch Intern Med. 2002 Oct 14;162(18):2113-23.
50 Sánchez J et al. Genes Nutr. 2014 Sep;9(5):417.
51 Hochberg MC et al. Ann Rheum Dis. 2016 Jan;75(1):37-44.
52 Rosenkranz RR et al. BMC Public Health. 2013;13:1071.
53 Bonner Jr et al. Osteoporos Int. 2003;14(Suppl 2):51–522.
44 Evaries and Bone Health American Academy of Orthopaedic.

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