

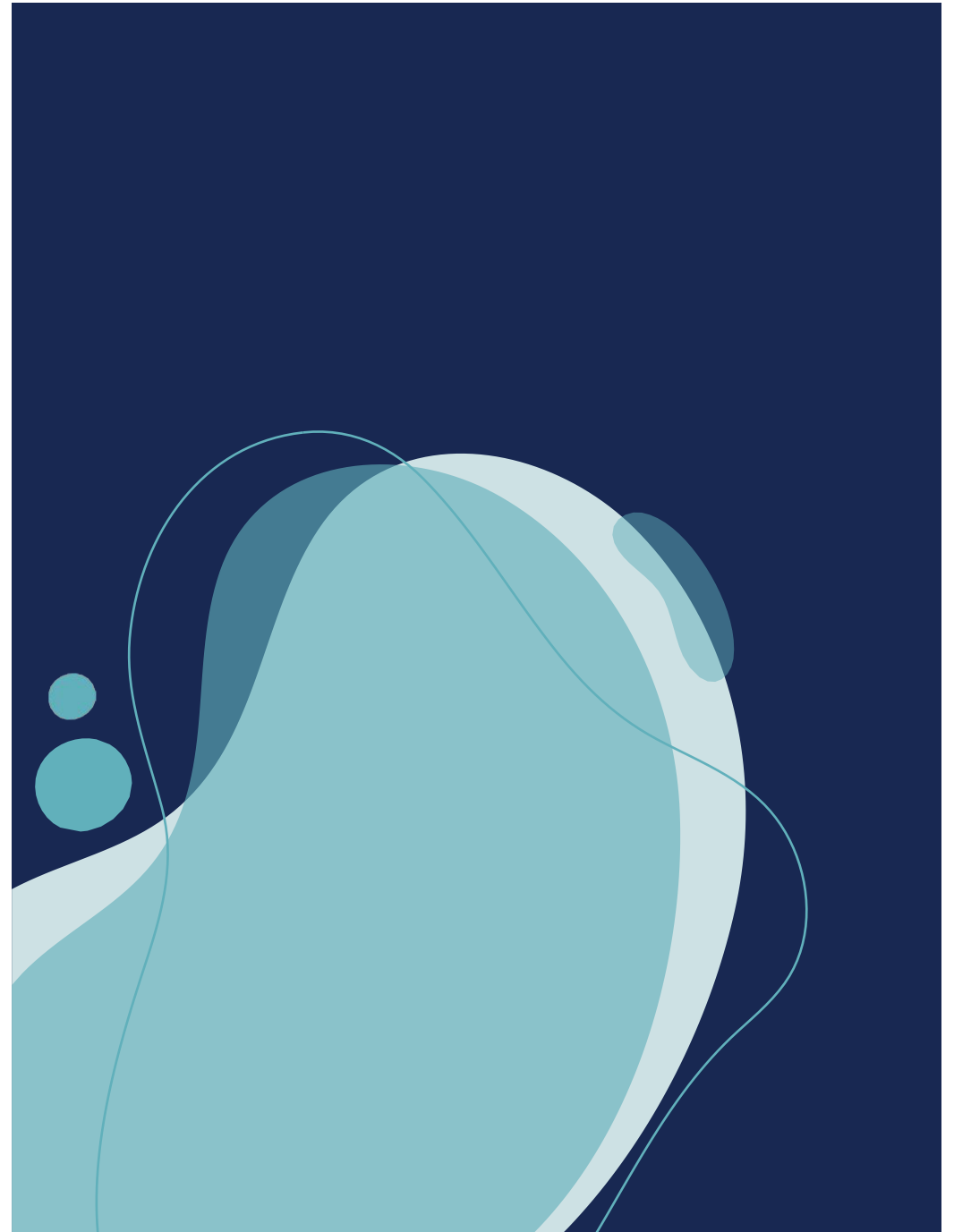


Activated Probiotics'
Clinical Update and
Training Session:

Biome Osteo™ Probiotic

THURSDAY 20 FEBRUARY 2020

PRESENTERS: BLAIR NORFOLK & REBECCA EDWARDS



The Activated Probiotics® Difference



Key research partnerships



Microencapsulation



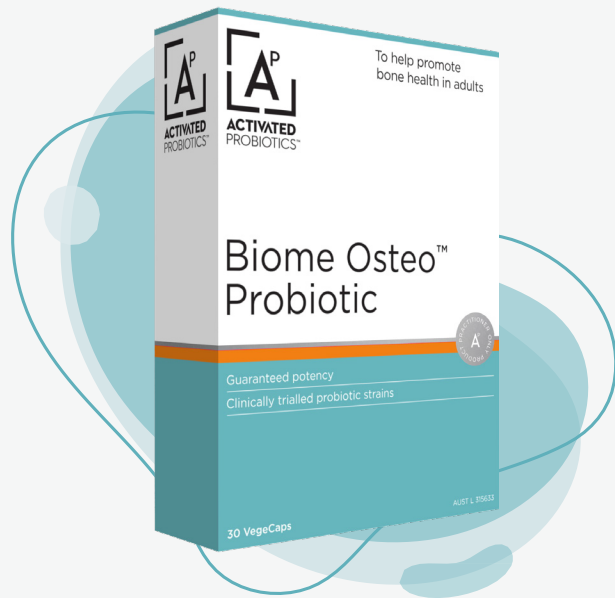
Strain selection and identification
(DSM/ATCC)



Unique packaging to
maintain product integrity

Biome Osteo™

Probiotic



78%

proven to reduce the rate of bone loss by 78% in a double-blind, placebo-controlled clinical trial.

Bone Health Crisis

Promote bone health in adults

7.5M

Conditions caused by low bone density affect an estimated 7.5 million Australians

29%

of all premature deaths are associated with fragility fractures

\$3.84B

estimated cost of bone disease on healthcare system per annum by 2022

78% REDUCTION IN BONE LOSS WITH BIOME OSTEO™ PROBIOTIC

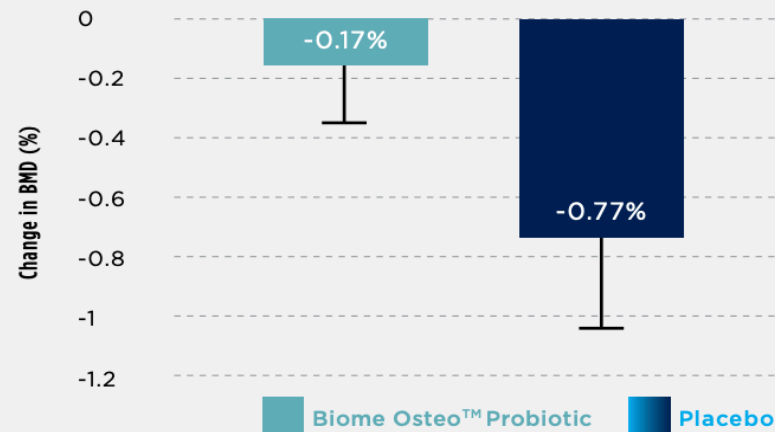


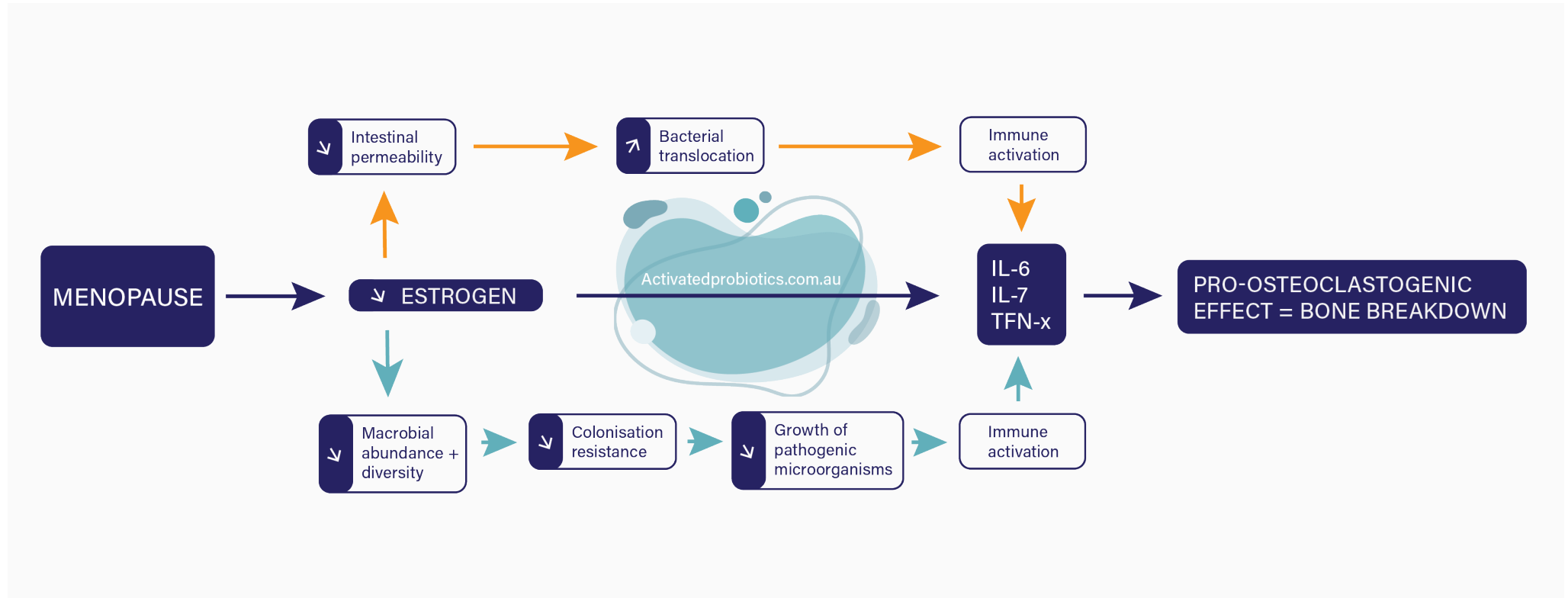
Figure 2:

Percentage change in bone mineral density (BMD) assessed at the lumbar spine by DXA. The mean change over the 12 month study period was $-0.17 \pm 2.12\%$ in the group supplemented with *Biome Osteo™ Probiotic*, compared to $-0.77\% \pm 2.7\%$ in the placebo group. The difference between the groups was statistically significant ($p=0.04$).

REFERENCES: Jansson P-A, Curiaç D, Lazou Ahrén I, Hansson F, Martinsson Niskanen T, Sjögren K, et al. Probiotic treatment using a mix of three *Lactobacillus* strains for lumbar spine bone loss in postmenopausal women: a randomised, double-blind, placebo-controlled, multicentre trial. *Lancet Rheumatol* [Internet]. 2019 Nov;1(3):e154–62.

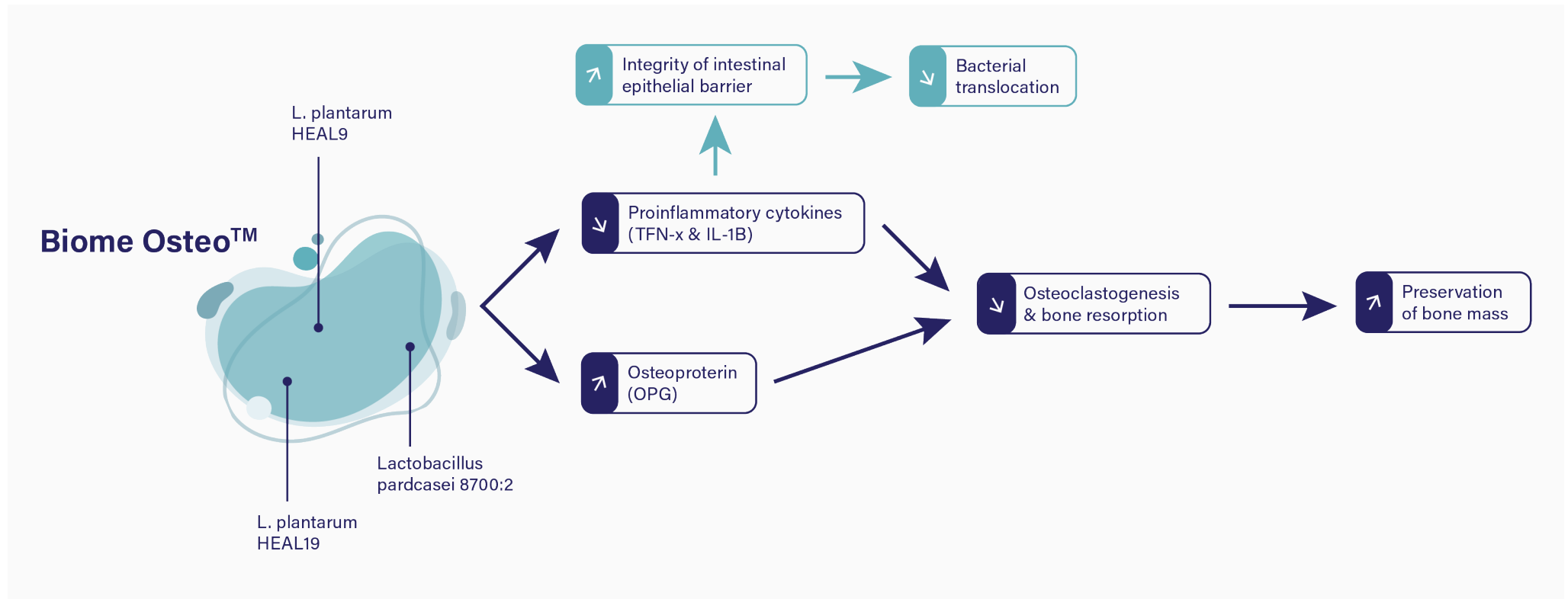
Impact of low estrogen on gut-bone signalling axis

Proposed mechanism of action



Impact of probiotics on gut-bone signalling axis

Proposed mechanisms of action:



Ohlsson C, Engdahl C, Fåk F, Andersson A, Windahl SH, Farman HH, et al. Probiotics Protect Mice from Ovariectomy-Induced Cortical Bone Loss. Ryffel B, editor. PLoS ONE. 2014 Mar 17;9(3):e92368; Ohlsson C, Sjögren K. Effects of the gut microbiota on bone mass. Trends Endocrinol Metab. 2015 Feb;26(2):69–74; McCabe LR, Parameswaran N. Advances in Probiotic Regulation of Bone and Mineral Metabolism. Calcif Tissue Int. 2018;102(4):480–8; Xu X, Jia X, Mo L, Liu C, Zheng L, Yuan Q, et al. Intestinal microbiota: a potential target for the treatment of postmenopausal osteoporosis. Bone Res [Internet]. 2017 Dec [cited 2019 Oct 8];5(1); McCabe L, Britton RA, Parameswaran N. Prebiotic and Probiotic Regulation of Bone Health: Role of the Intestine and its Microbiome. Curr Osteoporos Rep. 2015 Dec;13(6):363–71; Li J-Y, Chassaing B, Tyagi AM, Vaccaro C, Luo T, Adams J, et al. Sex steroid deficiency-associated bone loss is microbiota dependent and prevented by probiotics. J Clin Invest. 2016 Apr 25;126(6):2049–63; Rizzoli R. Nutritional influence on bone: role of gut microbiota. Aging Clin Exp Res. 2019 Jun;31(6):743–51; Collins FL, Rios-Arce ND, Schepper JD, Parameswaran N, McCabe LR. The Potential of Probiotics as a Therapy for Osteoporosis. Microbiol Spectr [Internet]. 2017 Aug 1 [cited 2019 Oct 8];5(4); Jones RM, Mulle JG, Pacifici R. Osteomicrobiology: The influence of gut microbiota on bone in health and disease. Bone. 2018 Oct;115:59–67; Quach D, Britton RA. Gut Microbiota and Bone Health. In: McCabe LR, Parameswaran N, editors. Understanding the Gut-Bone Signaling Axis [Internet]. Cham: Springer International Publishing; 2017 [cited 2019 Oct 8]. p. 47–58.; Schepper JD, Irwin R, Kang J, Dagenais K, Lemon T, Shinouskis A, et al. Probiotics in Gut-Bone Signaling. In: McCabe LR, Parameswaran N, editors. Understanding the Gut-Bone Signaling Axis [Internet]. Cham: Springer International Publishing; 2017 [cited 2019 Nov 29]. p. 225–47.



Thank
You

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