

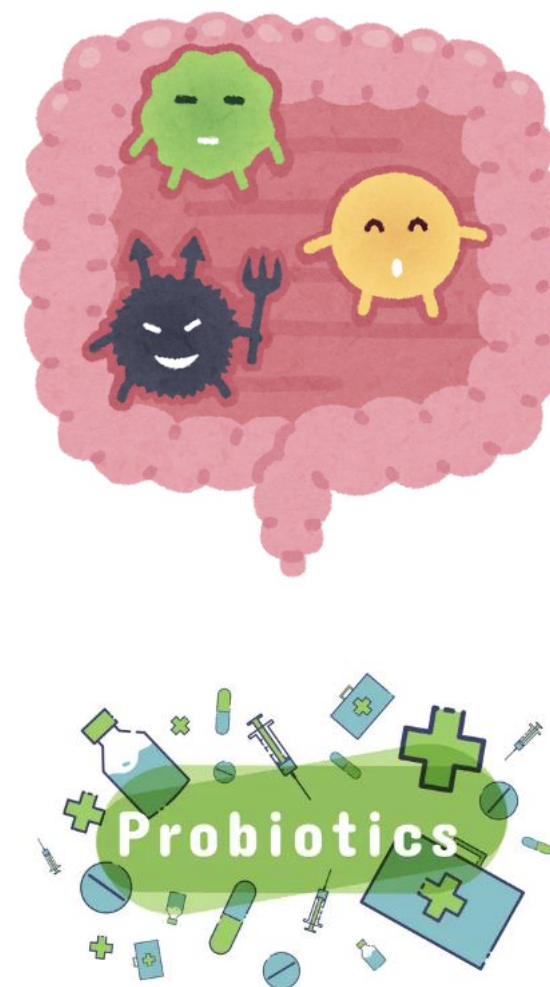
Effect of multi-strain probiotic supplementation on magnesium and calcium metabolism in obese postmenopausal women: a randomized trial

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INTRODUCTION & AIM



Excess body fat disturbs the delicate balance of calcium in the body by influencing parathyroid hormone (PTH) levels and vitamin D metabolism, often leading to lower magnesium levels. Recent research suggests that single-strain probiotics can positively influence gut health and mineral balance in obese individuals. Yet, the potential of multistrain probiotics in addressing these issues among obese postmenopausal women remains largely unexplored. This study seeks to uncover how multistrain probiotic supplementation, administered at varying doses, impacts magnesium and calcium metabolism in this specific demographic.



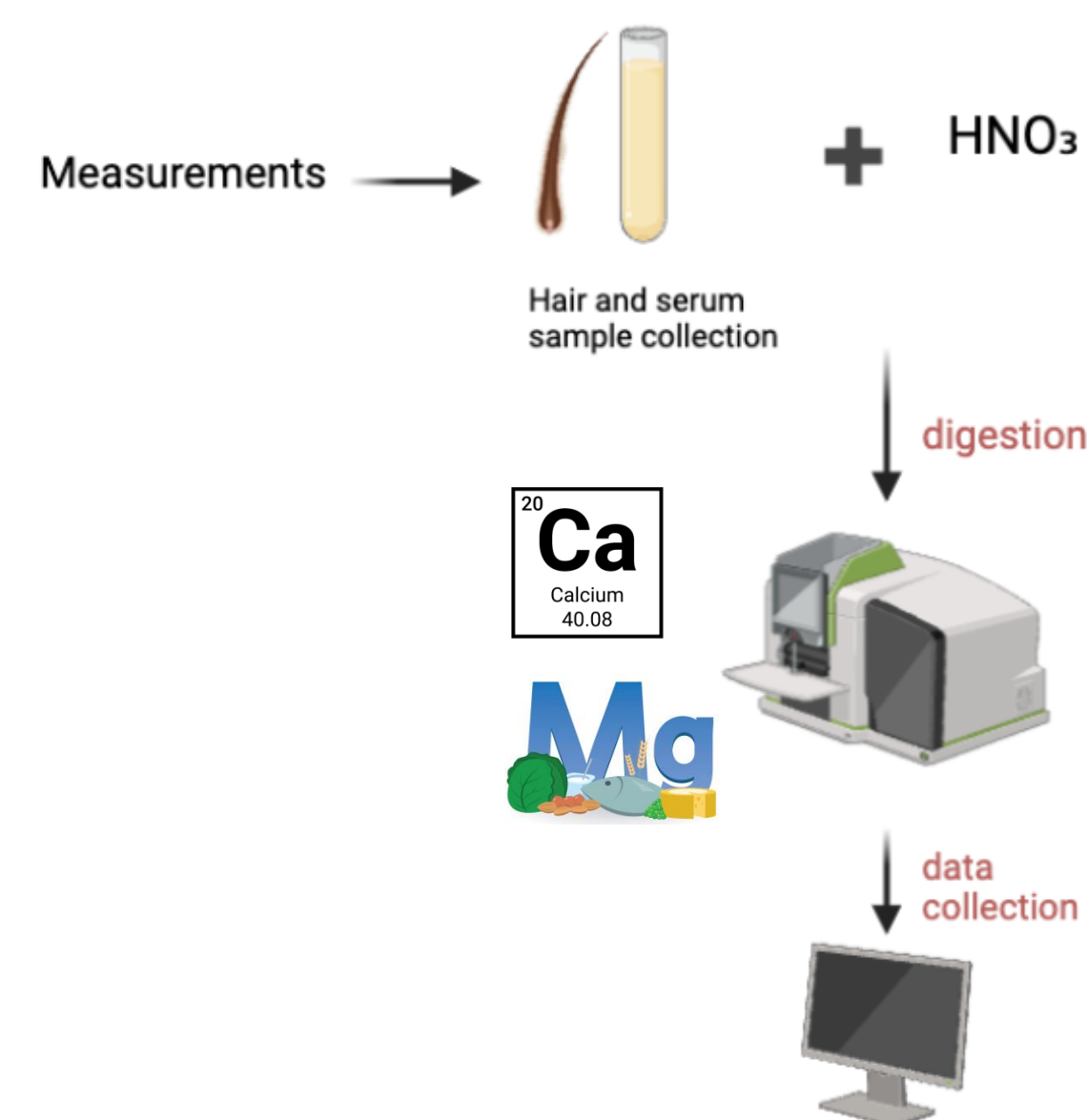
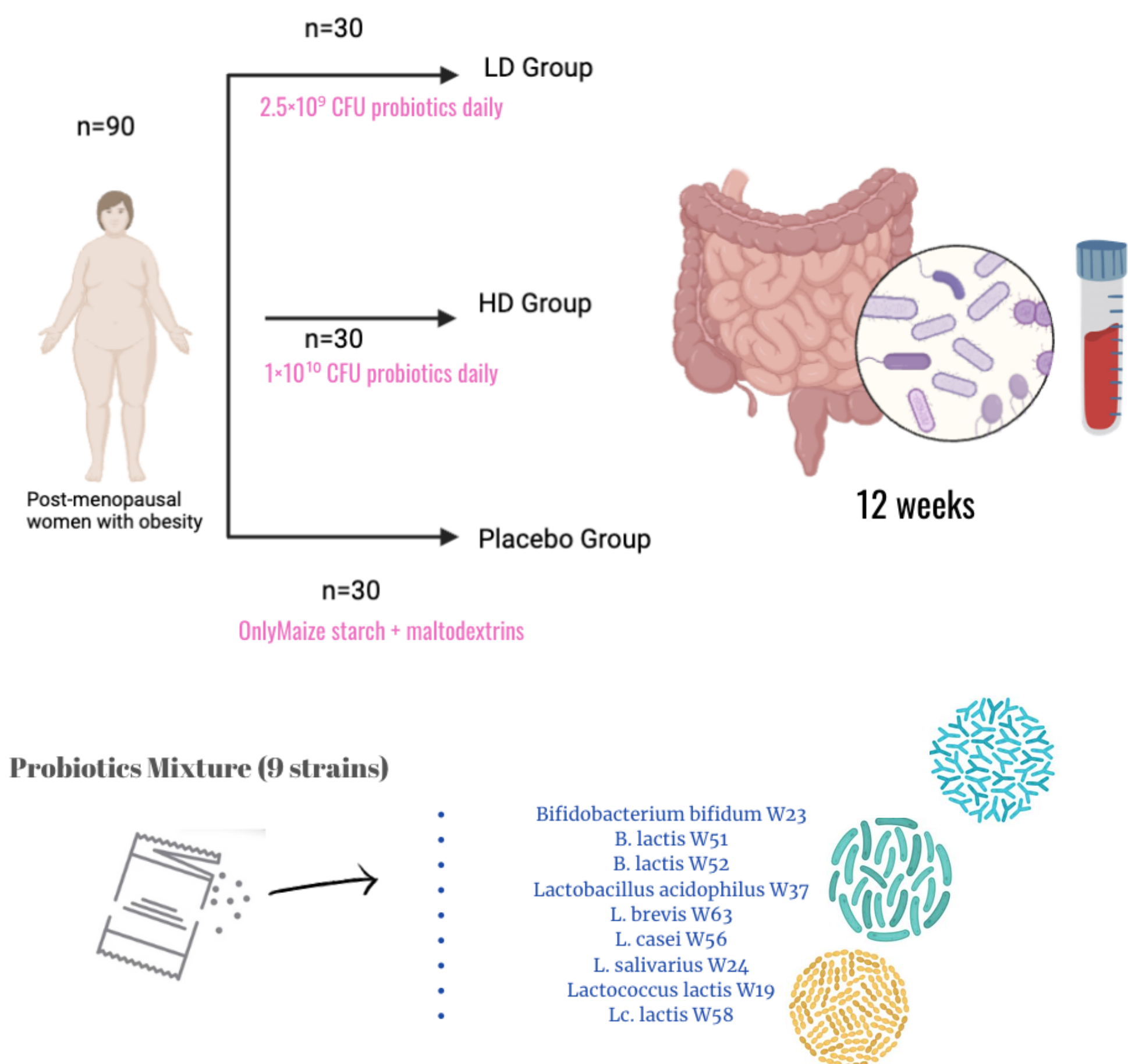
RESULTS & DISCUSSION

Following the intervention, both supplemented groups exhibited elevated magnesium (Mg) levels in hair compared to the placebo group. Conversely, hair calcium (Ca) content was higher in the placebo group compared to the low-dose (LD) group post-intervention. Serum Mg concentration was notably higher in the LD group but lower in the high-dose (HD) group compared to the placebo. Serum Ca concentration in the LD group was lower than that observed in both the placebo and HD groups post-intervention. Additionally, hair Ca content was significantly reduced compared to the HD group following the intervention.

	placebo/B	placebo/A	probiotic 2 g/B	probiotic 2 g/A	probiotic 4 g/B	probiotic 4 g/A	P-value ^a
Plasma Mg (mmol/L)	0.82[0.72;0.90] 0.806±0.124	0.84[0.78;0.94] 0.843±0.124	0.873[0.74;0.91] 0.82±0.12	0.84[0.77;0.93] 0.842±0.135	0.821[0.72;0.9] 0.81±0.111	0.80[0.75;0.92] 0.84±0.153	NS
Hair Mg (µg/g)	55.76[42.83;65] 54.64±15.25	60.34[53.47;69.12] 60.55±18.82	53.24[44.53;80.8] 60.73±20.95	55.34[46.76;77.93] 68.26±41.8	67.81[41.11;91.06] 68.24±30.35	59.75[44.85;84.72] 66.42±25.57	NS
Plasma Ca (mmol/L)	5.48[4.94;5.63] 5.40±0.58	5.77[5.18;6.13] 5.51±1.01	5.46[5.21;5.64] 5.406±0.38	5.37[5.31;5.81] 5.24±0.77	5.58[5.12;5.71] 5.28±0.723	5.89[5.36;6.06] 5.70±0.83	NS
Hair Ca (µg/mg)	828.79[643.9;1090.5] 891.67±298.1	915.74[784;1042.2] 906.7±191.6	944.07[817.38;1208.37] 1073.25±445.72	914.84[823.1;1043.2] 956.3±294.4	967.9[676.6;1121.3] 969.7±321.3	844.11[752.1;1201.2] 962.4±283.6	< 0.05

(Data are presented as median [Q1; Q3] and mean±standard deviation, B: before intervention, A: after intervention, NS: not significant)
Kruskal–Wallis ANOVA test

METHOD



CONCLUSION

The study indicates a clear impact of probiotic supplementation on Mg levels, with more nuanced effects on Ca levels are more complex and dosage-dependent.

FUTURE WORK / REFERENCES

Future research could explore the long-term effects of probiotic supplementation on calcium and magnesium metabolism in larger and more diverse populations. Investigating different probiotic strains, doses, or combinations may help identify the most effective formulations. Additionally, studies examining the molecular mechanisms behind probiotic influence on mineral absorption would provide deeper insights into their potential health benefits.

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