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Improved nutritional status after a weight loss formula diet: A cohort study exploring safety
in a randomised controlled trial

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Introduction: Poor micronutrients status may be found in obese subjects. Weight loss leads to health benefits, while possibly also to inadvertent changes in micronutrient status and bone loss.

Methods: As part of a recent RCT in obese knee osteoarthritis patients following an intensive weight loss program, plasma vitamin D, ferritin and B₁₂, and bone mineral content (BMC) were measured. Participants were obese (BMI>30); Age>50 years, with knee osteoarthritis, and followed an 8 week all-provided Cambridge formula very low-energy or low-energy diet followed by 8 weeks 1200 kcal/day program with normal food including 2 Cambridge Diet formula products a day. Statistical analyses were based on paired sample t-tests.

Results: 175 patients (142 women) completed the follow-up (w16). Mean age was 63 years (SD: 6). At baseline mean values were: weight 102.4 kg (14.5), BMI 37.1 (4.4), vitamin D 48.9 nmol/L (20.1), Ferritin 117.1 µg/L (94.6), vitamin B₁₂ 293.2 pmol/L (120.1), BMC 2780.7 g (462.5). At week 16 the participants had lost a mean of 14.0 kg (95%CI: -14.7to-13.3; P<0.0001). Vitamin D and B₁₂ increased by 15.3 nmol/L (95%CI: 13.2 to 17.3; P<0.0001) and 43.7 pmol/L (95%CI: 32.1 to 55.4; P<0.0001) respectively, and ferritin increased non-significantly by 6.4 µg/L (95%CI: -2.5 to 15.2; P=0.16). BMC was unchanged (P=0.18).

Conclusion: Although intensive weight loss and formula diets have been suspected to have a negative impact on vitamin and mineral status the Cambridge Weight Plan® formula diet significantly increased vitamin D and B₁₂ levels but ferritin and bone mineral content were unchanged

Trial Registration: ClinicalTrials.gov Identifier: NCT00655941

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