

Preoperative micronutrient gap: high prevalence yet we focus on postoperative treatment - systematic review



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I have no potential conflict of interest to report.

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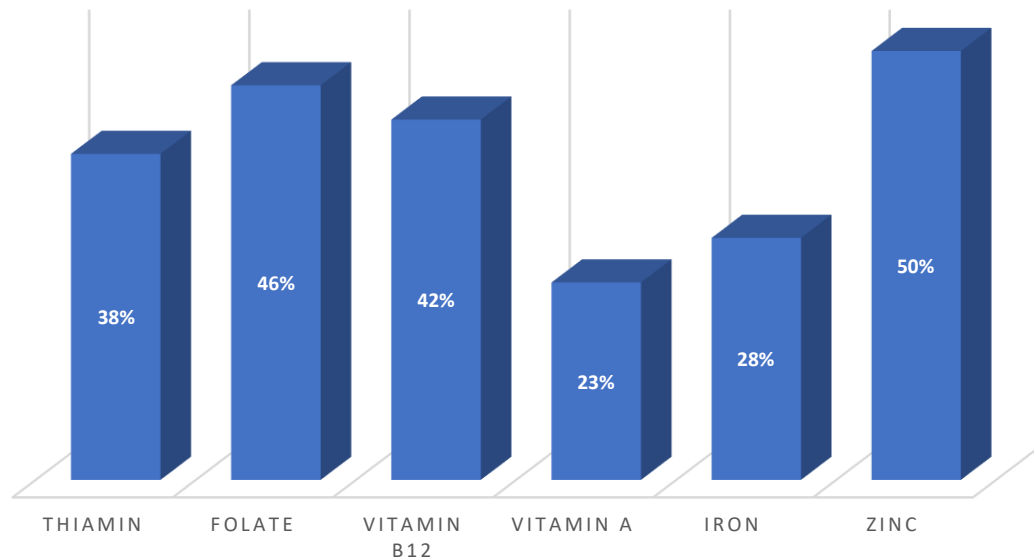
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Preoperative micronutrient deficiency rates are high¹⁻³

HIGHEST PREOPERATIVE DEFICIENCY RATE REPORTED



“Correct identified deficiencies before surgery.”^{4,5}



1 Lewis C-A., et al. (2018). *Obesity Surgery*, 28(11), 3640-3657.

2 Lewis C-A., et al. (2020). *Obesity Surgery*, 30(11), 4542-4591.

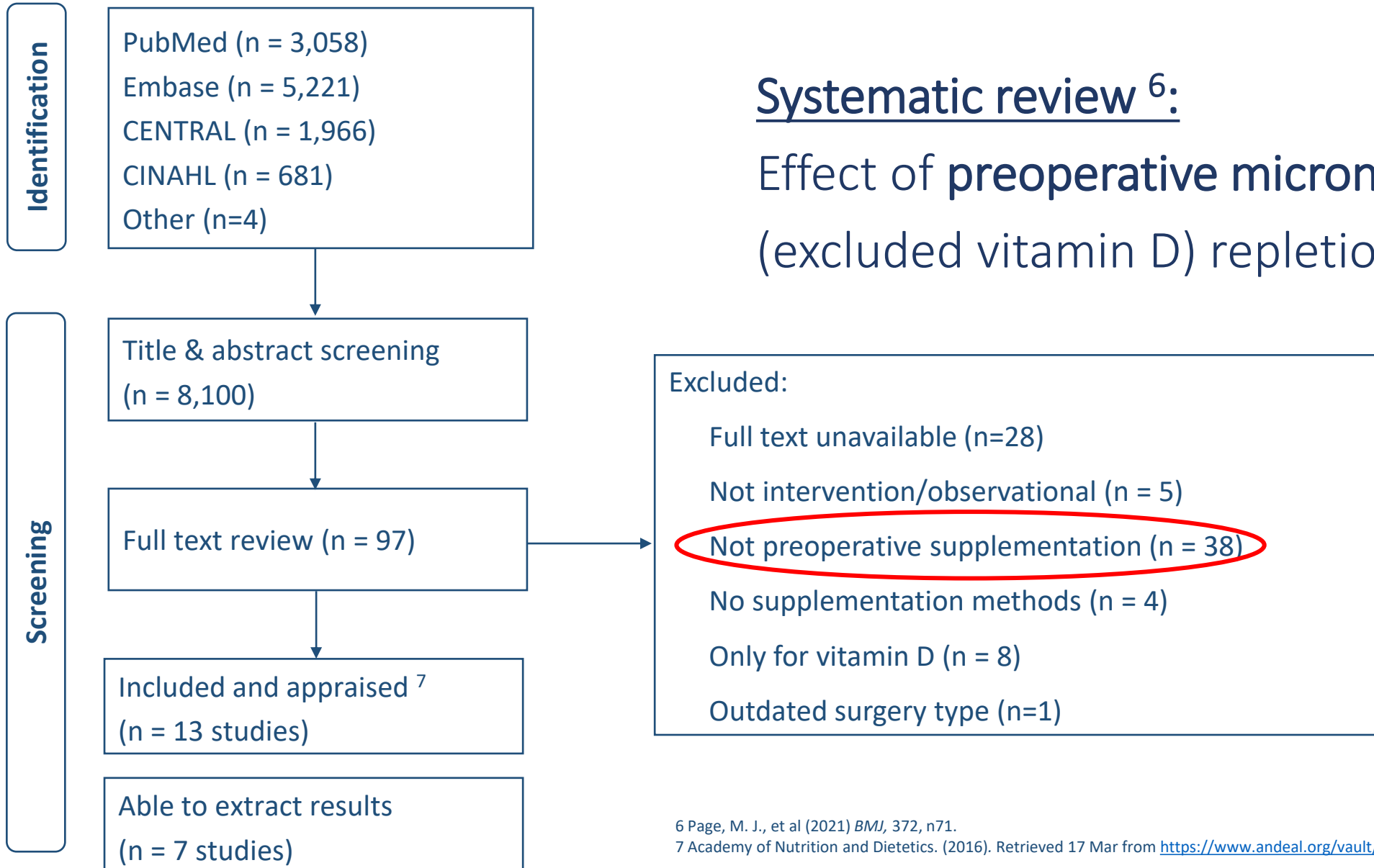
3 Mahawar, K. K., et al. (2017). *Obesity Surgery*, 27(2), 522-529.

4 Parrott, J., et al. (2017). *Surgery for Obesity and Related Diseases*, 13(5), 727-741.

5 O'Kane, M., et al. (2020) *Obesity reviews*, 21(11), e13087.

Systematic review ⁶:

Effect of preoperative micronutrient (excluded vitamin D) repletion strategies



Modes of delivery

- Oral
- IM injection
- IV infusion

⁶ Page, M. J., et al (2021) *BMJ*, 372, n71.

⁷ Academy of Nutrition and Dietetics. (2016). Retrieved 17 Mar from https://www.andeal.org/vault/2440/web/files/2016_April_EA_Manual.pdf

Key Results

↑ Improved status in at least one group via oral route

Vitamin B6 (n=2 groups)

Folate (n=4 groups)

Vitamin C (n=2 groups)

Calcium (n=4 groups)

↔ Mostly unchanged status via oral route and IM injection

Vitamin A (n=3 groups)

Vitamin E (n=2 groups)

Thiamin (n=3 groups)

Vitamin B12 (n=3 group via oral; n=1 group via IM injection)

Zinc (n=1 group)

? Inconsistent via oral route or infusion for iron

36 mg oral (n=1 group): ↔ ferritin level post-intervention but ↓ ferritin level post-surgery

80-200mg oral (n=4 groups): ↔ ferritin levels and deficiency rates

500 mg IV infusion (n=1 group): ↑ ferritin level

Take-home message

A range of repletion strategies identified in research suggested that clinical practice is likely heterogenous.

Recommendations:

- More high-quality evidence to inform guidelines
- Interdisciplinary collaboration for optimal repletion