

Nutritional guidance before, during and following pregnancy

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I have no potential conflict of interest to report

Preconception – The ideal

- Bariatric surgery
 - Timing, which procedure?
 - Weight stable
- Good nutritional intake
- Folic acid, vitamin A
- Alcohol, caffeine, foods to avoid during pregnancy



Preconception planning after bariatric surgery – the reality

- Age, history of infertility, criteria for IVF
- 26-41% pregnant within 1 year
- May no longer be under specialist bariatric care
- Nutritional blood tests
- Vitamin and mineral supplements
- Nutritional intake may not be better



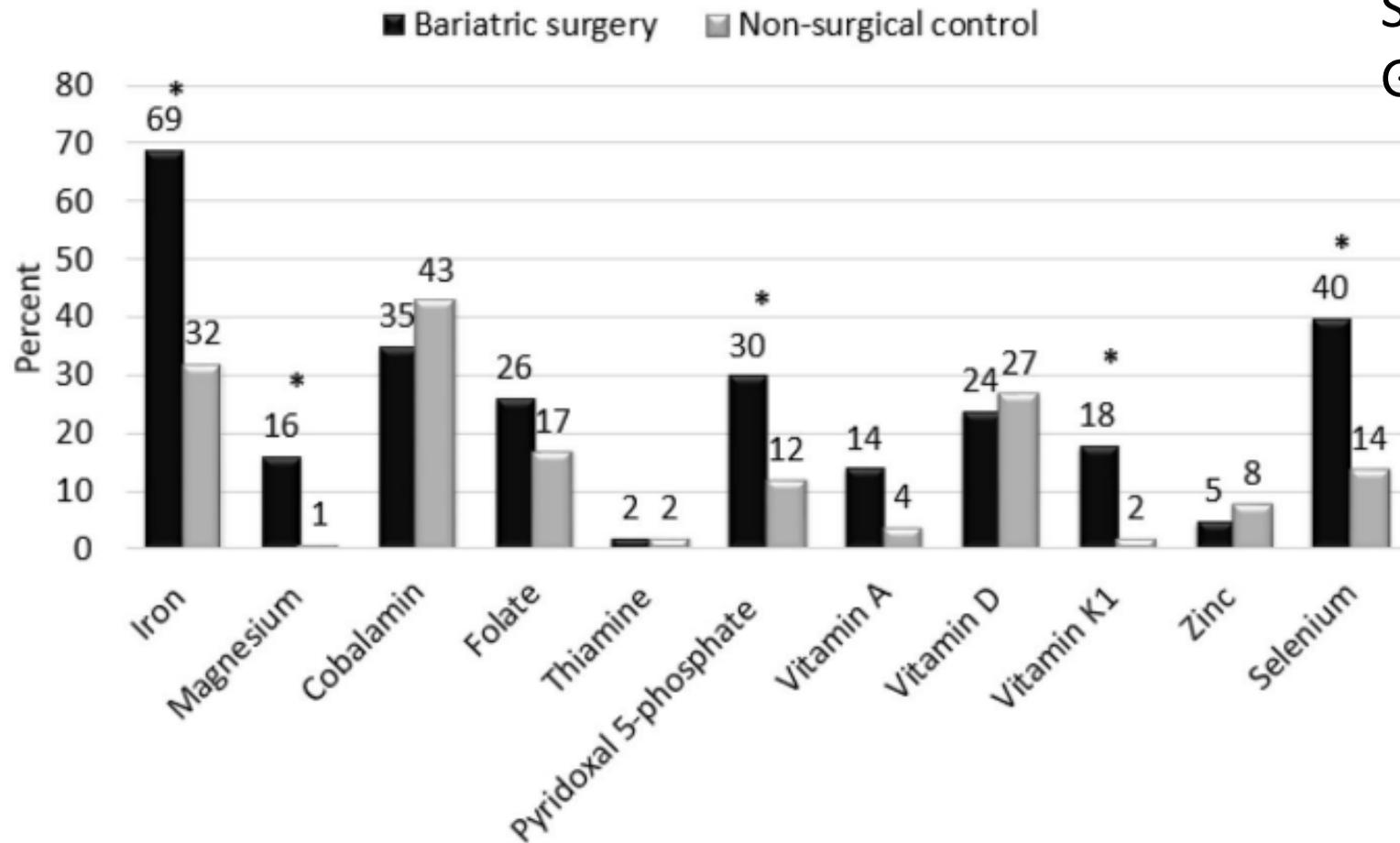
Pregnancy

- Morning sickness
 - Eating little and often
 - Avoiding sickness 'triggers' – certain foods, smells. (Cold food may help)
- Hyperemesis gravidarum
 - Extreme nausea, vomiting, weight loss, dehydration
 - Medical help
 - Thiamine
- Gestational diabetes
 - No oral glucose tolerance test
 - Home glucose monitoring



Micronutritional deficiency in pregnancy. Bechensteen et al., 2024

A



Sleeve gastrectomy
Gastric bypass

Haematinics – not just about anaemia



Megaloblastic anaemia, peripheral neuropathy
Prevention of neural tube defects
> 400 mcg till end of first trimester
5 mg if has obesity or diabetes (UK / Europe, Australia) but under review for obesity



Megaloblastic anaemia, acute degeneration of spinal cord
Neural tube defects. Children - cognitive and neurological impairment
Deficiency masked by high doses of folic acid
Indeterminate: Total B12 Between 180 and 350 nanograms (133 and 258 pmol) per litre



Anaemia, fatigue, weakness, preterm labour and low birth weight

Vitamin D, calcium, pregnancy and lactation

- Serum 25 OH vitamin D levels of 75 nmol/L or greater
- World Health Organisation - 1200 mg of calcium during pregnancy. > needed post-bariatric surgery
- Raised parathyroid hormone levels in presence of normal vitamin D levels – indication that additional oral calcium is required.
- Lactation – 300-400 mg/day calcium required for production of breast milk

Calcium calculator <https://webapps.igc.ed.ac.uk/world/research/rheumatological/calcium-calculator/>

Vitamin A and pregnancy

- Deficiency - night blindness, intrauterine growth restriction. Requirements increase in 3rd trimester
- Excess vitamin A intake may result in teratogenic malformations
- WHO -general daily intake of 2664 IU or 800 µg retinol per day during pregnancy; Shawe et al maximum of 5000 IU/day
- Beta carotene preferred over retinol forms
- Challenge in managing vitamin A deficiency especially following very malabsorptive procedures (duodenal switch, SADI-S, OAGB with long biliopancreatic limb)
- WHO, 2021 -vitamin A supplementation to pregnant women only in areas where vitamin A deficiency is a severe public health problem, to prevent night blindness.



Duodenal switch (DS) and pregnancy

	A	B	C	D	E
Time post DS	5 weeks at time of DS	13 months	21 months	15 months	7 months
Weight loss in pregnancy	89kg	6.4kg	7.7kg	Little change	9kg

All healthy babies. Birth weights 2557 to 3097g.

4 women carried their babies to term, 1 was induced at 38 weeks.

Blood tests	Preconception	First trimester	Each trimester	Breastfeeding
Full blood count, folate, vitamin B12, ferritin	Every 3 months			Every 3 months
Vitamin D, calcium				
Vitamin A				
Vitamin K and PIVKAll	Every 6 months			Every 6 months
Liver function tests				
Renal function tests				
Vitamin E, zinc, copper, and selenium				

Shawe et al 2020 Obesity Reviews

Pregnancy, nutrition and bariatric surgery

- Timely preconceptual advice
- Timely engagement with bariatric surgery centre and specialist dietetic support
- Specialist antenatal care
- How do we work together to achieve this?

