The do’s and don’ts in caring for pregnancies after bariatric surgery

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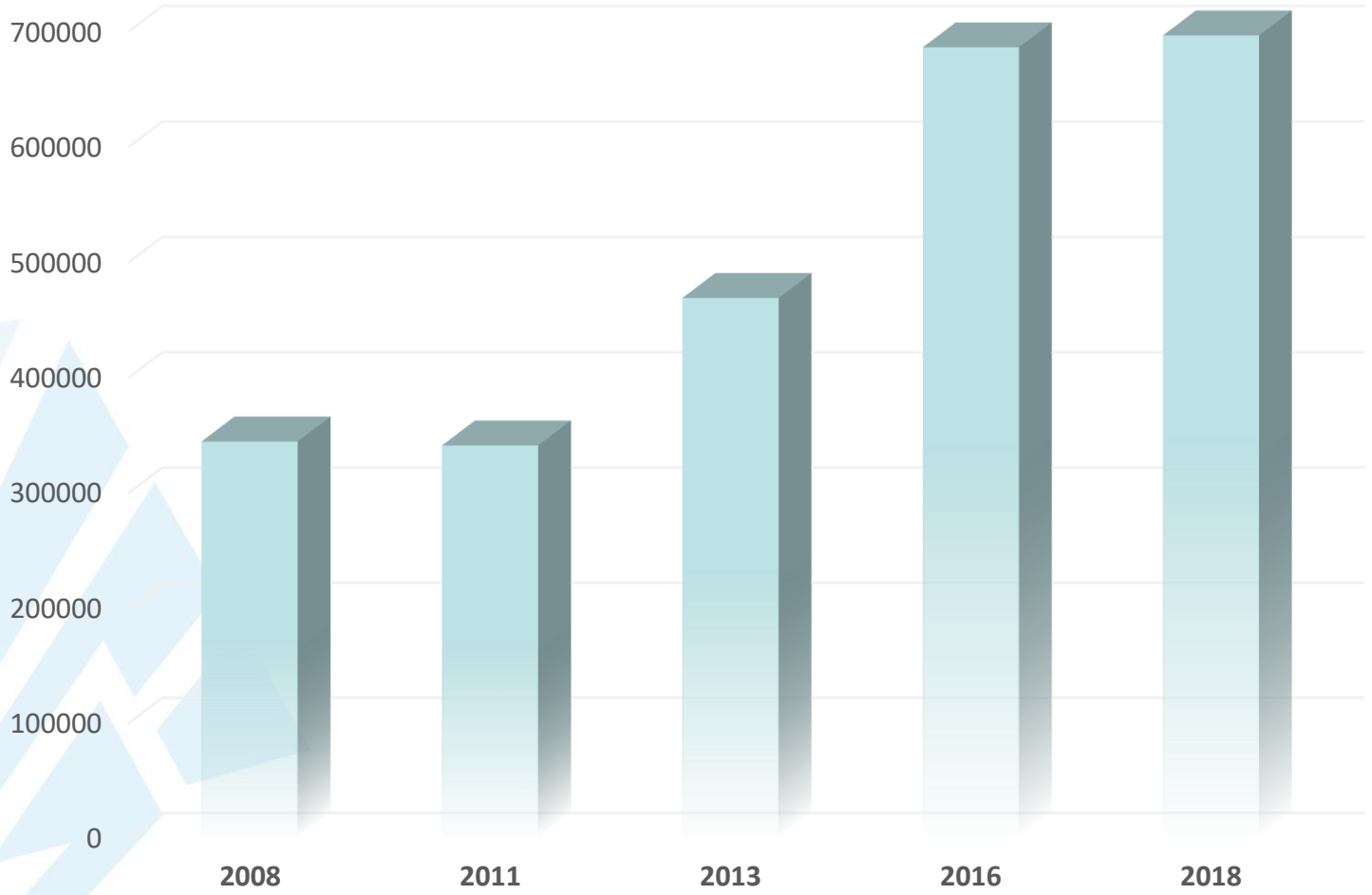
Trends in number of procedures (IFSO)

Angrisani et al., 2021



BS from a gynaecologist's perspective

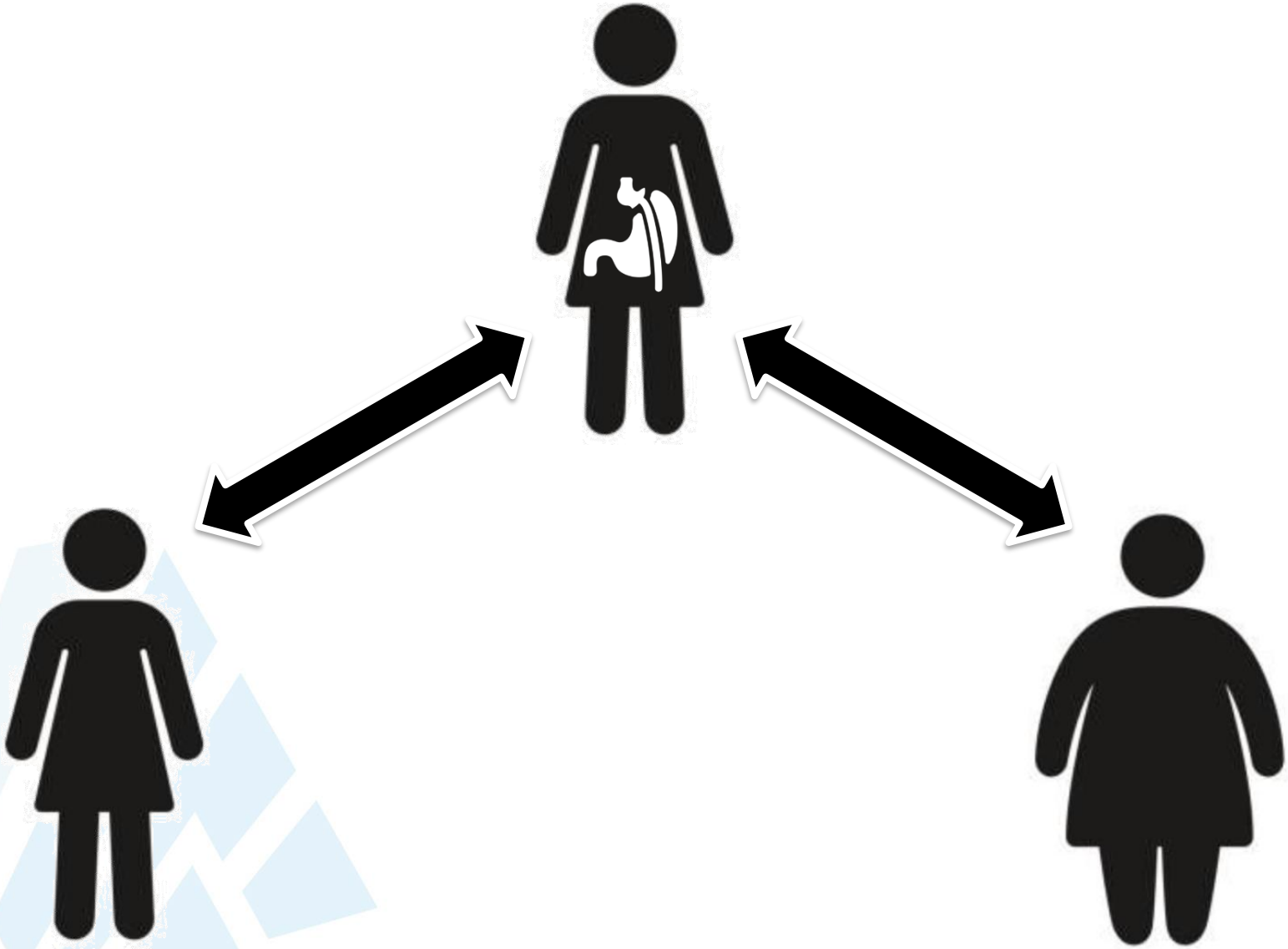
Santry et al. 2005

Table 3. Characteristics of Patients Undergoing Elective Bariatric Surgical Procedures From 1998 to 2002 Based on Data From the Nationwide Inpatient Sample

	No. (%) of Patients*					
	1998 (n = 13 365)	1999 (n = 22 809)	2000 (n = 21 082)	2001 (n = 56 781)	2002 (n = 72 177)	*P* Value for Trend†
Age, mean (SD), y	39.6 (0.28)	41.5 (0.31)	40.8 (0.28)	40.9 (0.17)	41.7 (0.21)	<.001
Age categories, y						
<18	52 (0.4)	141 (0.6)	119 (0.4)	196 (0.4)	195 (0.3)	.09
18-34	4321 (32.3)	6052 (26.5)	8932 (28.7)	16 312 (28.7)	19 488 (27.0)	.007
35-49	6832 (51.1)	11 301 (49.6)	15 574 (50.1)	27 819 (49.0)	34 732 (48.1)	.01
50-64	2032 (15.2)	5029 (22.0)	6240 (20.0)	12 085 (21.3)	17 055 (23.6)	<.001
>64	127 (1.0)	286 (1.3)	217 (0.7)	368 (0.6)	706 (1.0)	.29
Women	10 782 (81.3)	18 595 (81.6)	26 493 (85.2)	47 714 (84.0)	60 671 (84.1)	.003

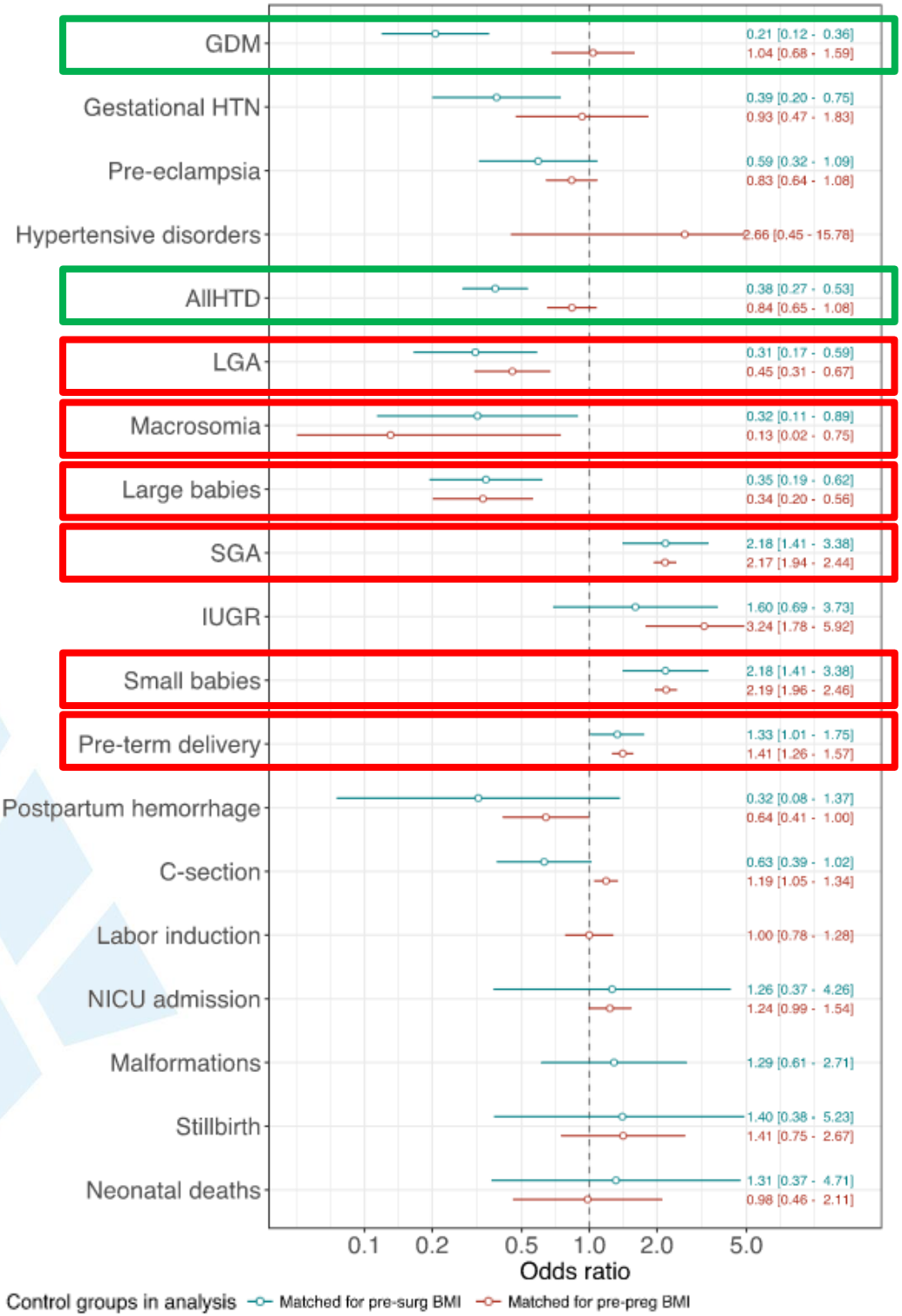
	Obese vs control		Morbidly obese vs control	
Outcome	Adjusted OR (95% CI)	*P*-value	Adjusted OR (95% CI)	*P*-value
Gestational diabetes	2.6 (2.1-3.4)	<.0001	4.0 (3.1-5.2)	<.01
Gestational hypertension	2.5 (2.1-3.0)	<.0001	3.2 (2.6-4.0)	<.01
Preeclampsia	1.6 (1.1-2.25)	.007	3.3 (2.4-4.5)	<.01
Birth weight >4500 g	2.0 (1.4-3.0)	.0006	2.4 (1.5-3.8)	<.01
Birth weight >4000 g	1.7 (1.4-2.0)	<.0001	1.9 (1.5-2.3)	<.01
Preterm delivery	1.1 (0.9-1.5)	.4	1.5 (1.1-2.1)	.01
Operative vaginal delivery	1.0 (0.8-1.3)	.9	1.7 (1.2-2.2)	<.01
PPROM	1.3 (0.9-2.0)	.14	1.3 (0.8-2.2)	.2
IUGR	0.9 (0.5-1.6)	.82	0.8 (0.4-1.8)	.6
Placenta previa	1.3 (0.7-2.5)	.4	0.7 (0.3-2.0)	.6
Placental abruption	1.0 (0.6-1.9)	.9	1.0 (0.5-2.2)	.9

* Weiss et al. 2004



Pre-pregnancy BMI
- Important for the clinician

Pre-surgery BMI
- Important for the patient



NNB = 5

NNB = 8

NNB = 6

NNB = 13

NNB = 7

NNH = 21

NNH = 21

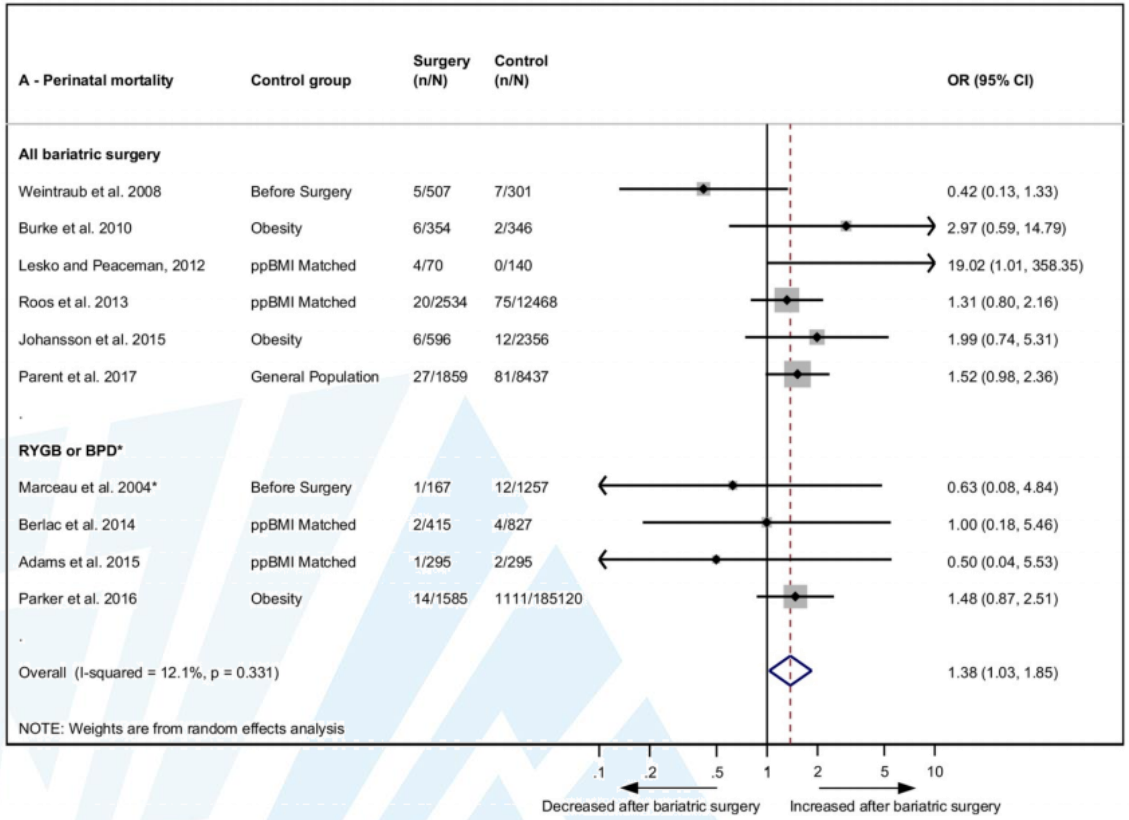
NNH = 35

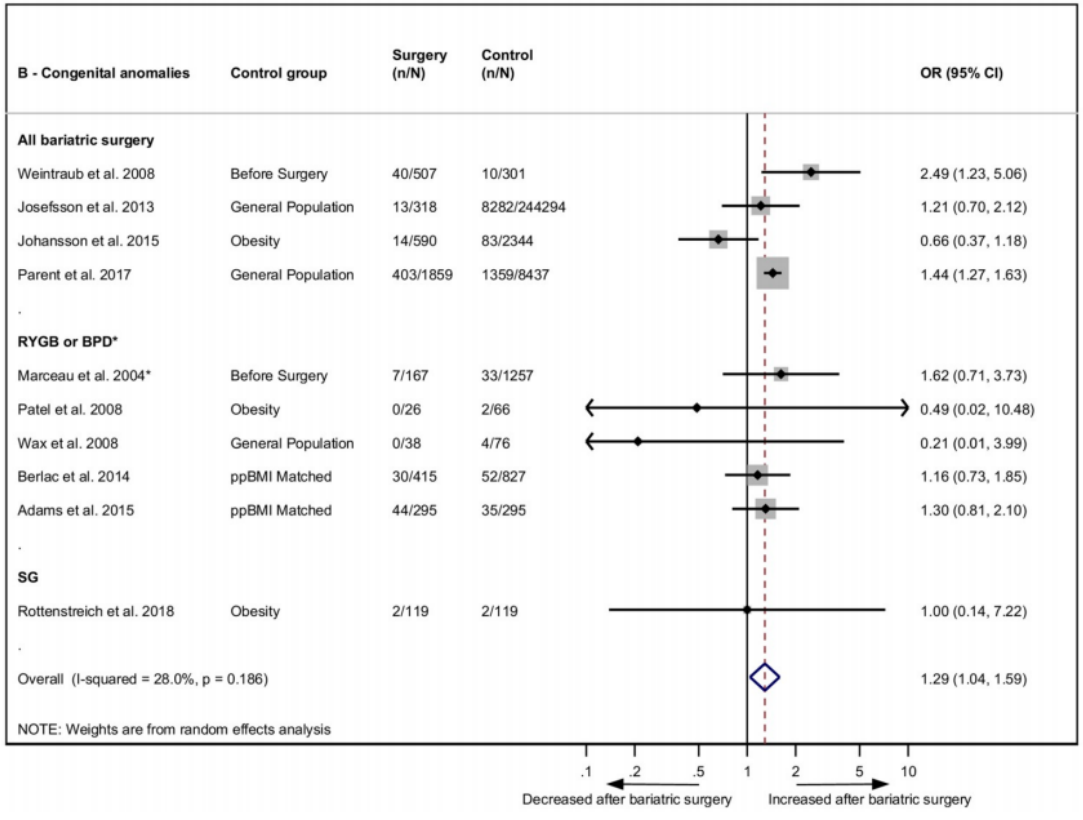
Kwong. Obstetric outcomes after bariatric surgery. Am J Obstet Gynecol 2018.

PLOS | MEDICINE

Pregnancy after bariatric surgery and adverse perinatal outcomes: A systematic review and meta-analysis

Zainab Akhter[1]*, Judith Rankin[1], Dries Ceulemans[2], Lem Ngongalah[1], Roger Ackroyd[3], Roland Devlieger[2], Rute Vieira[4], Nicola Heslehurst[1]





Overview

After surgery

Periconception

First trimester

Second trimester

Third trimester

Postpartum and lactation

Research gaps

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BARIATRIC SURGERY/PREGNANCY

WILEY obesityreviews

Pregnancy after bariatric surgery: Consensus recommendations for periconception, antenatal and postnatal care

SCAN ME


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Nicola Heslehurst
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Orit Blumenfeld
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After surgery

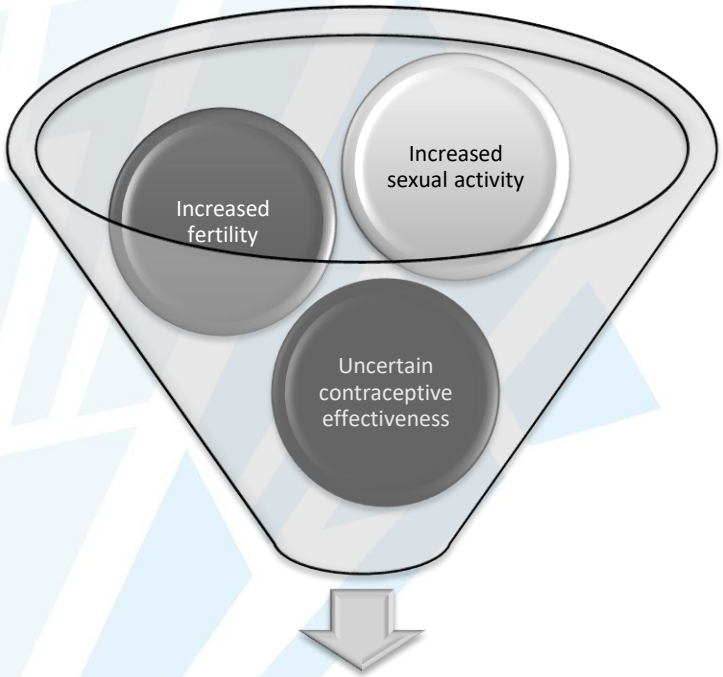
Interval to conception

JAMA Surgery | Original Investigation

Bariatric Surgery in Women of Childbearing Age, Timing Between an Operation and Birth, and Associated Perinatal Complications

Brodie Parent, MD; Ira Martopullo, BS; Noel S. Weiss, MD, DrPH; Saurabh Khandelwal, MD; Emily E. Fay, MD; Ali Rowhani-Rahbar, MD, PhD

Contraception



Unplanned pregnancies

Overview

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Periconception

First trimester

Second trimester

Third trimester

Postpartum and lactation

Research gaps

Periconception and during pregnancy

Nutrition and micronutient deficiencies!

Periconception and during pregnancy

Mental Health

Depression and Anxiety: Lack of Associations with an Inadequate Diet in a Sample of Pregnant Women with a History of Bariatric Surgery—a Multicenter Prospective Controlled Cohort Study

Goele Jans[1,2] · Christophe Matthys[3,4] · Annick Bogaerts[1,2,5] · Lieveke Ameye[1] · Frank Delaere[6] · Kristien Roelens[7] · Anne Loccufier[8] · Hilde Logghe[9] · Ben De Becker[10] · Johan Verhaeghe[1,11] · Roland Devlieger[1,10,11]

Table 3 Antenatal anxiety and depression scores in women with previous bariatric surgery compared to those in obese controls

	Bariatric surgery $N=54$	Obese $N=25$	P value
T1 state anxiety	43 ± 11	34 ± 9	< 0.001
≥ 40	31 (57)	4 (16)	< 0.001
T1 trait anxiety	42 ± 11	37 ± 10	0.05
≥ 40	25 (46)	9 (36)	0.47
T1 depression	9 ± 6	8 ± 5	0.29
≥ 13	12 (22)	3 (12)	0.36
T3 state anxiety	43 ± 12	38 ± 9	0.04
≥ 40	26 (54)	8 (32)	0.09
T3 trait anxiety	41 ± 11	37 ± 8	0.08
≥ 40	25 (52)	9 (36)	0.22
T3 depression	8 ± 5	7 ± 4	0.17
≥ 13	9 (19)	2 (8)	0.31

Scores presented as mean ± std. The proportion of women being "highly anxious" (≥ 40) or at major risk for depression (≥ 13) was presented as n (%)

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Research gaps

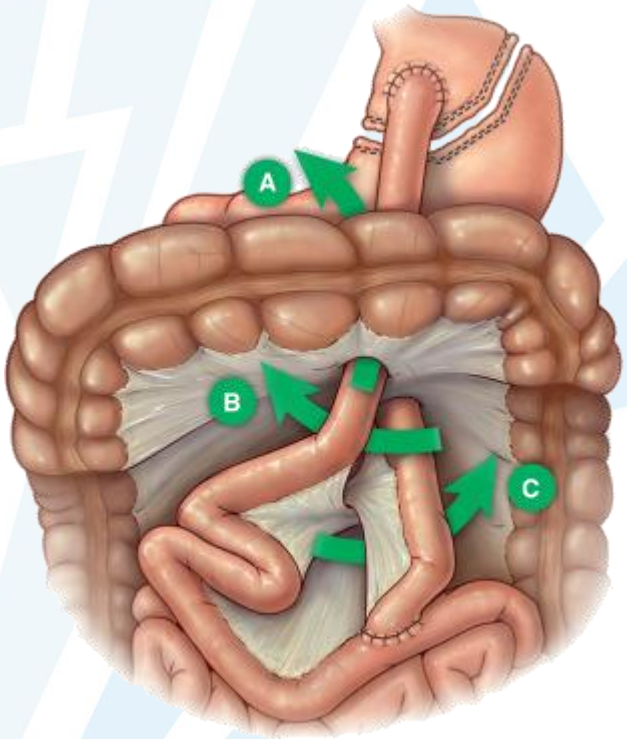
First trimester

Check Vitamins

Check Vomiting

Check Sugar

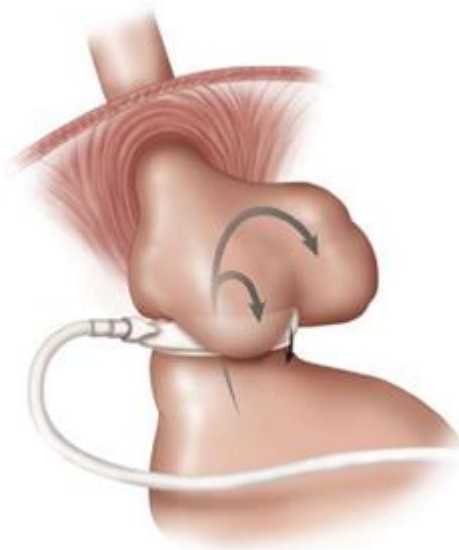
Check Weight



Surgical complications

~ 2-11%

High mortality!



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Research gaps

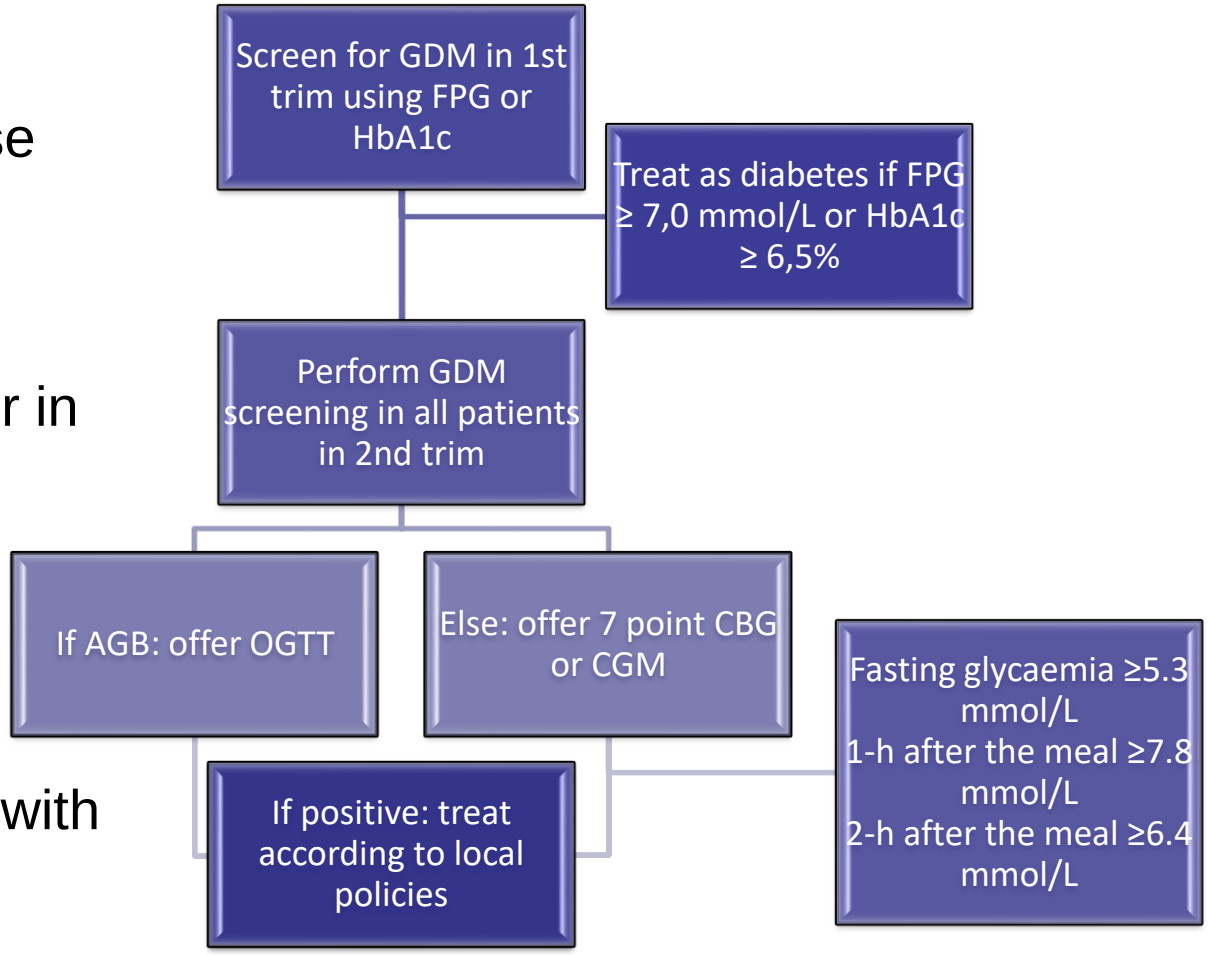
Second trimester

Gestational diabetes

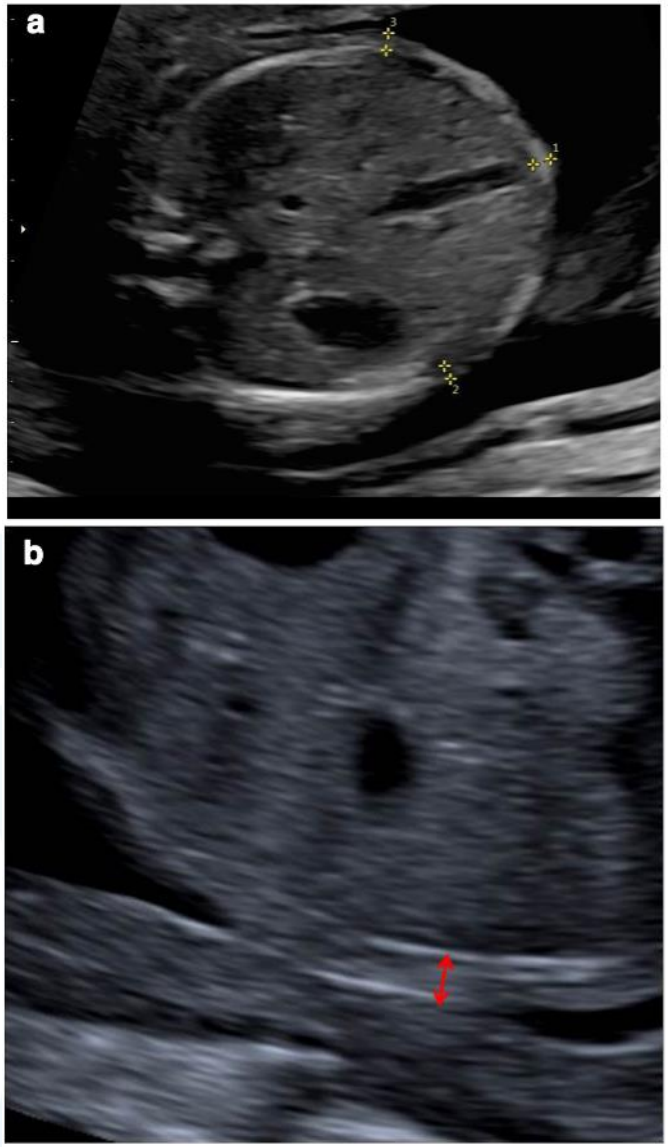
Andrade et al. 2016: Evaluation of the tolerance of the OGTT showed adverse events in 65%.

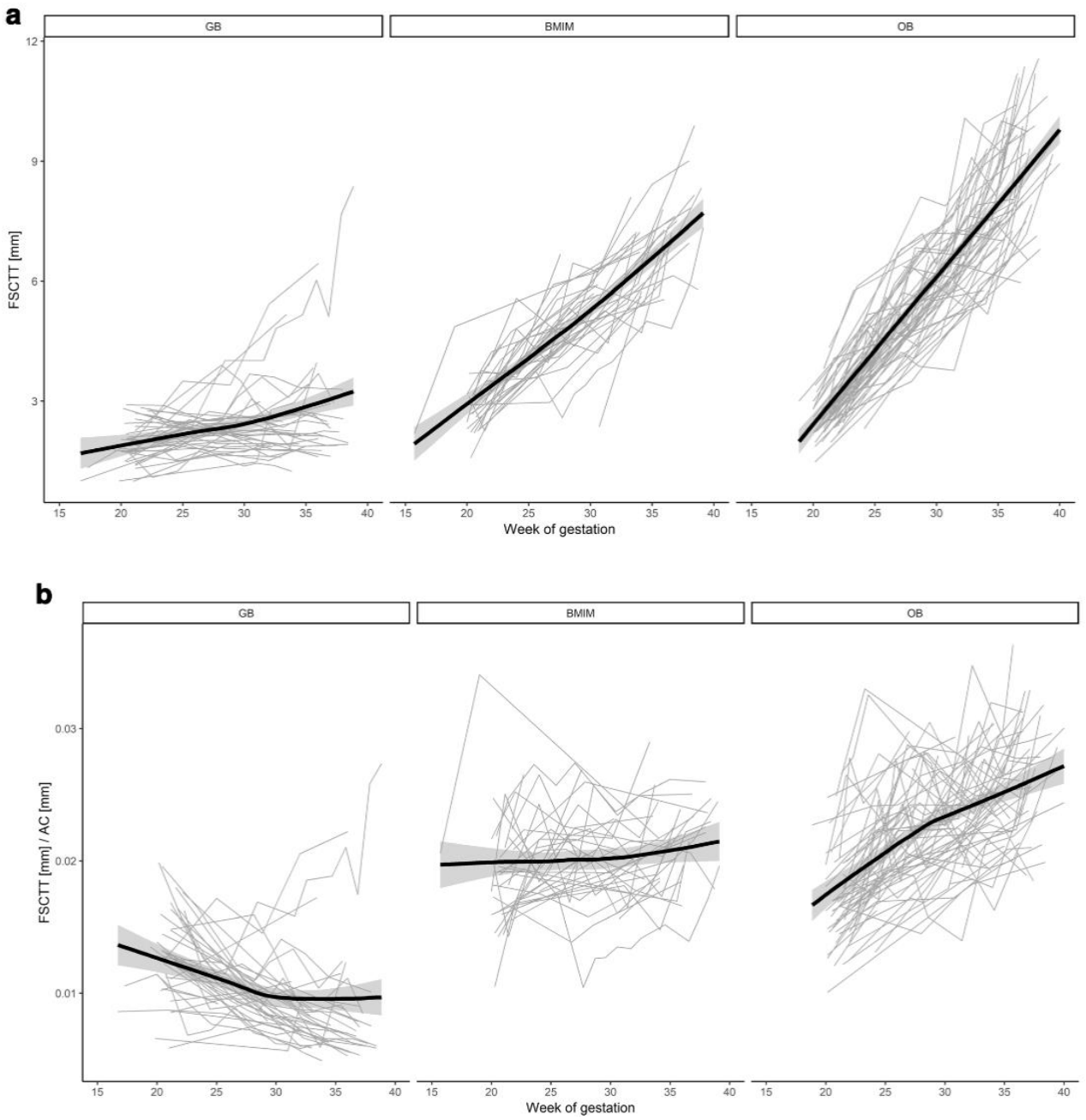
Rottenstreich et al. 2018. Reactive hypoglycaemia was significantly higher in women with RYGB (83%) than among women with prior sleeve gastrectomy (54%) or ABG (12%)

Freitas et al. 2014: 50% of all post-BS pregnant women would be diagnosed with GDM but this diagnosis did not affect pregnancy outcomes



Second trimester





*Yerlikaya-Schatten et al. 2020

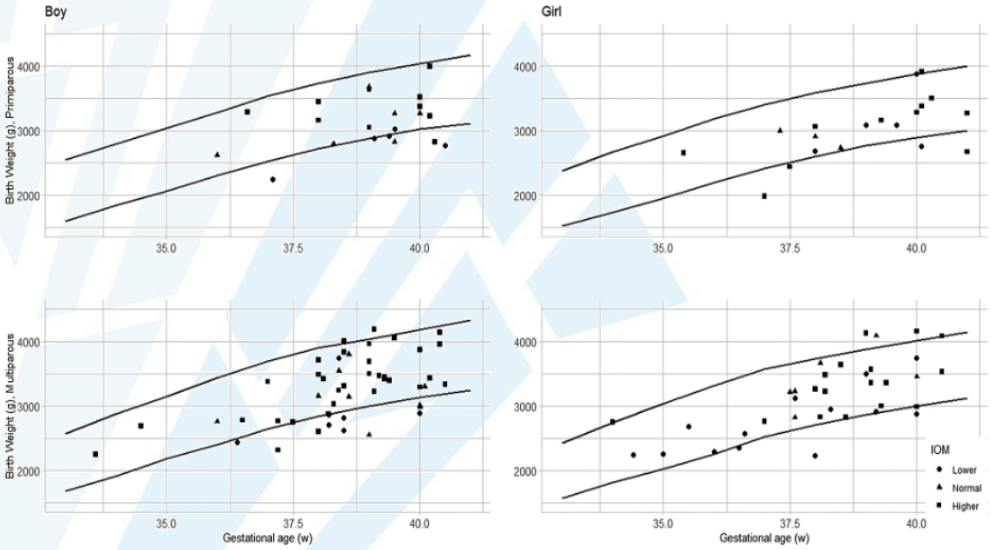
Second trimester

Institute of Medicine guidelines on gestational weight gain

Weight category	Recommended gestational weight gain
Underweight (BMI <18.5 kg/m^2)	12.5–18 kg
Normal weight (BMI 18.5–25 kg/m^2)	11.5–16 kg
Overweight (BMI 25–30 kg/m^2)	7–11 kg
Obese (BMI >40 kg/m^2)	5–9 kg

Overview of adherence to Institute of Medicine guidelines per BMI category

	Total, n = 127
GWG lower than IOM, n (%)	30 (24%)
GWG according to IOM, n (%)	26 (20%)
GWG higher than IOM, n (%)	71 (56%)



Overview of adherence to Institute of Medicine guidelines per BMI category

	Total, n = 127 SGA
GWG lower than IOM, n (%)	14 (47%)
GWG according to IOM, n (%)	4 (15%)
GWG higher than IOM, n (%)	9 (13%)

* Ceulemans et al. 2021, SOARD

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After surgery

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Third trimester

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Second trimester

Third trimester

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Postpartum

Do not forget about contraception!

Offer follow-up screening to patients with a diagnosis of GDM

Healthy pregnancies after bariatric surgery

Contraception

- Postpone pregnancy until weight has stabilised
- Avoid oral contraception and encourage long-acting reversible contraceptive methods such as IUD

Diet

- Reduce quick-absorbing carbohydrates and opt for protein and low glycaemic index alternatives
- Avoid caffeine and alcohol
- Frequent, smaller meals

Supplements

Vit D >40mcg	Iron 45-60mg
Vit E 15mg	Copper 2mg
Vit K 90-120µg	Selenium 50µg

Thiamine >12mg
Zinc 8-15mg per 1mg copper
Calcium 1200-1500mg
Vit A 5000IU (B-carotene)
Folic acid 0.4mg, 4-5mg for GDM/obesity

Nutrient levels

- Check serum indices (micronutrients, protein and albumin, FBC, INR) after surgery, preconception, and every trimester in pregnancy and supplement as necessary

Diabetes

- Avoid OGTT due to risk of dumping syndrome
- Monitor HbA1c every trimester if personal history of diabetes or risk factors
- CGM or seven point CBG between 24 and 28 weeks

Gestational weight gain

- Monitor GWG according to IOM guidelines and screen for associated complications if necessary

Fetal monitoring

- Monitor fetal growth every trimester
- Assess for congenital anomalies or developmental problems such as intracranial bleeds

Surgical issues

- Inflate and deflate LAGB according to hyperemesis, GWG, and fetal growth
- Assess for internal herniation when abdominal pain is reported and treat promptly

Mental health

- Screen for substance abuse, anxiety, or other mental health disorders
- Offer follow up during and after pregnancy

Breastfeeding

- Breast milk is not compromised after surgery and breastfeeding is recommended
- Monitor maternal micronutrients during lactation