

## Appendix 1. Reproductive Health Baseline Questionnaire

RHB –Version 02/01/2008

Form Completion Date \_\_\_/\_\_\_/20\_\_\_  
mm dd yy

*The following set of questions is for females only.*

1. Have you had irregular periods (less than 8 periods a year) throughout life starting in your teens?  0. No  1. Yes

2. Have you ever had the following symptoms before age 45?

- |  |                                |                                 |
|--|--------------------------------|---------------------------------|
| 2.1 Excess facial, chest or body hair                                      | <input type="checkbox"/> 0. No | <input type="checkbox"/> 1. Yes |
| 2.2 Male pattern baldness, such as thinning of hair at the crown or temple | <input type="checkbox"/> 0. No | <input type="checkbox"/> 1. Yes |
| 2.3 Severe adult acne  | <input type="checkbox"/> 0. No | <input type="checkbox"/> 1. Yes |

3. Has a healthcare professional ever told you that you have/had polycystic ovary syndrome (PCOS)?

0. No  1. Yes

↓  
*Go to question 4*

Are you currently treating your PCOS?

0. No  1. Yes

↓  
*Go to question 4*

3.1 How are you currently treating your PCOS? (Check "no" or "yes" to each)

No	Yes	No	Yes
<input type="checkbox"/>	<input type="checkbox"/> Exercise	<input type="checkbox"/>	<input type="checkbox"/> Prescription medication
<input type="checkbox"/>	<input type="checkbox"/> Diet		

4. In the **past 12 months** have you taken any hormonal medication, such as HRT, the pill, or fertility medication?

0. No  1. Yes

↓  
*Go to question 5*

4.1 Please indicate which type of hormonal medication you have taken in the **past 12 months**:

- 1. Hormone replacement therapy → *Skip to question 9, next page*
- 2. Hormonal birth control (such as pill, ring, shot, Mirena) → *Skip to question 12, next page*
- 3. Fertility medication → *Skip to question 12, next page*

Thinking back over the **past 12 months**...

5. In how many of those months did you have a period? # \_\_\_\_\_ *If zero, please skip to question 9, next page*

6. What was the usual length of your menstrual cycle (interval from the first day of period to the first day of next period)?

Menke MN, King WC, White GE, Gosman GG, Courcoulas AP, Dakin GF, et al. Contraception and conception after bariatric surgery. *Obstet Gynecol* 2017; 130.

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1. Less than 21 days     
 2. 21 – 35 days     
 3. More than 35 days     
 4. Too irregular to estimate

7. On average, how many days did your period (bleeding) last?

1. 1 – 4 days     
 2. 5 – 7 days     
 3. 8 – 9 days     
 4. More than 9 days

8. Did you have spotting or bleeding that occurred at times other than your menstrual period?

0. No     
 1. Yes

↓  
Skip to  
question 12

<input type="checkbox"/> 1. Yes ↓ 8.1 In how many of the <b>past 12 months</b> did this occur? _____ (months) →	Skip to question 12
---	---------------------------

9. How old were you when you had your last natural menstrual period? \_\_\_\_\_ (years)

10. Why did your natural menstrual period stop (*check only one response*)?

- Medication
- Natural menopause
- Hysterectomy alone
- Hysterectomy and oophorectomy
- Oophorectomy alone
- Endometrial ablation
- Chemotherapy
- Chronic illness
- Prolactin, adrenal gland or thyroid problem
- Pregnancy
- No known reason
- Other (Specify: \_\_\_\_\_ )

11. Please indicate how bothersome the following symptoms have been in the **past month**:

	Not at all (1)	Slightly (2)	Moderately (3)	Quite a bit (4)	Extremely (5)
11.1 Hot flashes or flushes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.2 Sleep disturbance (difficulty falling or staying asleep or early wakening)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.3 Vaginal dryness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. Have you **ever** tried to become pregnant?

- 0. No → *Skip to question 16*
- 1. Yes

13. Has there **ever** been at least 12 months in your life when you were regularly having sexual intercourse with a man and not using **any** form of birth control and yet you did not become pregnant?

- 0. No
- 1. Yes → Specify age this first happened: \_\_ \_\_ (years)

14. Have you **ever** talked to a doctor or had tests done because of problems becoming pregnant?

- 0. No → *Skip to question 16*
- 1. Yes

15. Have you **ever** taken any fertility medication to help you become pregnant (such as Clomid, Serophene, Gonal-F, Follistim)?

- 0. No
- 1. Yes

16. Total number of times you have been pregnant? # \_\_\_\_\_ *If zero, please skip to question 17.*

**If at least one pregnancy,**

Starting with your first pregnancy, please use the table below to report the following:

- your age when you became pregnant
- whether you were taking fertility medication when you became pregnant
- whether you had a live birth, still birth (baby lost after 20 weeks or 5 months), or miscarriage (fetus lost before 20 weeks or 5 months) or other outcome

	your age	fertility med used?		<i>Please check one outcome per pregnancy</i>			
		No (0)	Yes (1)	live birth (1)	still birth (2)	miscarriage (3)	other outcome (4)
Preg. 1	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preg. 2	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preg. 3	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preg. 4	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preg. 5	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preg. 6	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preg. 7	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preg. 8	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I have had more than 8 pregnancies

**If you are 50 years old or older, please skip Questions 17-20. If you are 49 or younger please continue.**

17. In the past 12 months how often have you used birth control when having sexual intercourse with a man?

0. Not sexually active with a man       2. Rarely       4. Most of the time  
 1. Never       3. About half the time       5. All of the time

18. In the **past 12 months** have you used (or has your partner used) birth control for any reason?

0. No       1. Yes



Skip to question 19

18.1 Specify method of birth control you have used in the <b>past 12 months</b> (Check “no” or “yes” for each item).			
No	Yes	No	Yes
<input type="checkbox"/>	<input type="checkbox"/> Pills, monthly (including one week of placebo or no pills, get period)	<input type="checkbox"/>	<input type="checkbox"/> Diaphragm
<input type="checkbox"/>	<input type="checkbox"/> Pills, continuous use (new pack every 3 weeks, no period)	<input type="checkbox"/>	<input type="checkbox"/> Cervical cap
<input type="checkbox"/>	<input type="checkbox"/> Mini Pill, continuous use (progestin only, get period)	<input type="checkbox"/>	<input type="checkbox"/> Male or female condom
<input type="checkbox"/>	<input type="checkbox"/> Patch or ring	<input type="checkbox"/>	<input type="checkbox"/> Contraceptive foams, creams, jellies
<input type="checkbox"/>	<input type="checkbox"/> Injections of medications (shots) or implantation of a medication release device	<input type="checkbox"/>	<input type="checkbox"/> Natural family planning, rhythm method or having sex during “safe” times
<input type="checkbox"/>	<input type="checkbox"/> IUD → <input type="checkbox"/> Mirena <input type="checkbox"/> Copper <input type="checkbox"/> Don’t know	<input type="checkbox"/>	<input type="checkbox"/> Withdrawal
		<input type="checkbox"/>	<input type="checkbox"/> Hysterectomy: your uterus was surgically removed
		<input type="checkbox"/>	<input type="checkbox"/> Tubal ligation: your tubes were tied
		<input type="checkbox"/>	<input type="checkbox"/> Vasectomy: your partner was sterilized
		<input type="checkbox"/>	<input type="checkbox"/> Other (Specify: _____ )

19. Please rate how important it is to you to be able to ever become pregnant in the future on a scale from 0 to 10, where 0 is of no importance and 10 is the most important thing in your life. # \_\_\_\_\_ ( 0 – 10)

20. When do you think you will try to become pregnant?

1. Never     2. In next 12 months     3. In next 12-24 months     4. After 24 months     5. Not sure

## Appendix 2. Reproductive Health Follow-up Questionnaire

RHF –Version 01/01/2010

Form Completion Date \_\_\_\_ / \_\_\_\_ / 20 \_\_\_\_  
mm dd yy

*The following set of questions is for females only.*

1. Has a healthcare professional ever told you that you have/had polycystic ovary syndrome (PCOS)?

0. No       1. Yes

↓  
*skip to Q2*

1.1 How are you **currently** treating your PCOS? (Check “no” or “yes” to each item.)

- | No                       | Yes                      | No                       | Yes                      |
|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                          | No treatment             |                          | Exercise                 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                          | Diet                     |                          | Prescription medication  |

2. In the **past 12 months** have you taken any hormonal medication, such as hormone replacement therapy (HRT), the pill, or fertility medication?

0. No       1. Yes

↓  
*skip to Q3*

2.1 Please indicate which type of hormonal medication you have taken in the **past 12 months**:

1. Hormone replacement therapy → *skip to Q7, next page*  
 2. Hormonal birth control (such as pill, ring, shot, Mirena) → *skip to Q9, next page*  
 3. Fertility medication → *skip to Q9, next page*

Thinking back over the **past 12 months...**

3. In how many of those months did you have a period? # \_\_\_\_\_ *If zero, please skip to Q7, next page*

4. What was the usual length of your menstrual cycle (interval from the first day of period to the first day of next period)?

1. Less than 21 days       2. 21 – 35 days       3. More than 35 days       4. Too irregular to estimate

5. On average, how many days did your period (bleeding) last?

1. 1 – 4 days       2. 5 – 7 days       3. 8 – 9 days       4. More than 9 days

6. Did you have spotting or bleeding that occurred at times other than your menstrual period?

0. No       1. Yes

↓  
*skip to Q9*

6.1 In how many of the **past 12 months** did this occur? \_\_\_\_\_ (months) → *Skip to Q9*

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Page 5 of 33

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7. Please indicate how bothersome the following symptoms have been in the past month:

	Not at all (1)	Slightly (2)	Moderately (3)	Quite a bit (4)	Extremely (5)
7.1 Hot flashes or flushes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.2 Sleep disturbance (difficulty falling or staying asleep or early wakening)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.3 Vaginal dryness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Why did your natural menstrual period stop (*check only one response*)?

- Natural menopause
- Hysterectomy alone (*uterus removed, not both ovaries removed*)
- Hysterectomy and oophorectomy (*uterus and both ovaries removed*)
- Oophorectomy alone (*both ovaries removed; uterus not removed*)
- Endometrial ablation (*lining of uterus destroyed, uterus not removed*)
- Medication
- Chemotherapy
- Chronic illness
- Prolactin, adrenal gland or thyroid problem
- Pregnancy
- Breast feeding
- No known reason
- Other (Specify: \_\_\_\_\_ )

***If you marked one of these choices you are done.  
Please do not answer the remainder of this survey***

9. Are you 50 years old or older?

- 0. No → *go to Q 10*
- 1. Yes → *You are done. Please do not answer the remainder of this survey.*

10. In the **past 12 months** have you regularly been having sexual intercourse with a man and not used any form of birth control and yet you did not become pregnant?

- 0. No
- 1. Yes

11. In the **past 12 months** how often have you used birth control when having sexual intercourse with a man?

- 0. Not sexually active with a man
- 1. Never
- 2. Rarely
- 3. About half the time
- 4. Most of the time
- 5. All of the time

12. In the **past 12 months** have you (or has your partner) used birth control for any reason?

- 0. No → skip to Q13
- 1. Yes → Complete 12.1 in box below.

12.1 Specify all methods of birth control you have used in the **past 12 months** (Check “no” or “yes” for each).

No (0)	Yes (1)		No (0)	Yes (1)
<input type="checkbox"/>	<input type="checkbox"/> Pills, monthly (including one week of placebo or no pills, get period)		<input type="checkbox"/>	<input type="checkbox"/> Diaphragm
<input type="checkbox"/>	<input type="checkbox"/> Pills, continuous use (new pack every 3 weeks, no period)		<input type="checkbox"/>	<input type="checkbox"/> Cervical cap
<input type="checkbox"/>	<input type="checkbox"/> Mini Pill, continuous use (progestin only, get period)		<input type="checkbox"/>	<input type="checkbox"/> Male or female condom
<input type="checkbox"/>	<input type="checkbox"/> Patch or ring		<input type="checkbox"/>	<input type="checkbox"/> Contraceptive foams, creams, jellies
<input type="checkbox"/>	<input type="checkbox"/> Injections of medications (shots) or implanatation of a medications release device		<input type="checkbox"/>	<input type="checkbox"/> Natural family planning, rhythm method or having sex during “safe” times
<input type="checkbox"/>	<input type="checkbox"/> IUD →	<input type="checkbox"/> Mirena	<input type="checkbox"/>	<input type="checkbox"/> Withdrawal
		<input type="checkbox"/> Copper	<input type="checkbox"/>	<input type="checkbox"/> Tubal ligation: your tubes were tied
		<input type="checkbox"/> Don’t know	<input type="checkbox"/>	<input type="checkbox"/> Vasectomy: your partner was sterilized
			<input type="checkbox"/>	<input type="checkbox"/> Other (Specify: _____ )

13. Have you tried to become pregnant in the **past 12 months**?

- 0. No → skip to Q16
- 1. Yes

14. In the **past 12 months** have you talked to a doctor or had tests done because of problems becoming pregnant?

- 0. No → skip to Q16
- 1. Yes

15. In the **past 12 months** have you taken any fertility medication to help you become pregnant (such as Clomid, Serophene, Gonal-F, Follistim)?

- 0. No
- 1. Yes

16. **Since having bariatric surgery** how many times have you been pregnant?



# \_\_\_\_\_ *If zero, → Thank you. You have completed the survey packet.  
If one or more → Please continue to the next page.*

17. Are you **currently** pregnant?  
0. No → *skip to Q18*  
1. Yes



17.1 Due date \_\_\_ / \_\_\_ / 20\_\_\_ (If you do not know exact date, complete month and year)  
                  mm    dd           yy

17.2 Were you on fertility treatment when you became pregnant?  
0. No  
1. Yes

18. In the **past 12 months**, have you had any pregnancies **end** (due to miscarriage, ectopic or tubal pregnancy, abortion, still birth or live birth)?  
 0. No → *Thank you. You have completed the survey packet.*  
 1. Yes → *Please continue.*

19. How many pregnancies have **ended** in the **past 12 months**: # \_\_\_\_\_

*Please continue to the next page to complete a pregnancy questionnaire for each pregnancy that has ended in the past 12 months. If you do not have enough pregnancy questionnaires, please ask the research staff for more. Thank you!*

### Appendix 3. Reproductive Health Pregnancy Questionnaire

RHP –Version 01/01/2010

Form Completion Date \_\_\_\_ / \_\_\_\_ / 20 \_\_\_\_  
mm dd yy

Pregnancy # \_\_\_\_\_

**Instructions:** Please complete a Pregnancy Questionnaire for each pregnancy that **ENDED in the past 12 months**. To identify each pregnancy please start by providing important dates. If you do not know the exact date, please write your best guess for the month and year.

1. What is the date (or month and year) you conceived (became pregnant)? \_\_\_\_ / \_\_\_\_ / 20 \_\_\_\_  
mm dd yy

2. What was your due date? \_\_\_\_ / \_\_\_\_ / 20 \_\_\_\_  
mm dd yy

3. What was the outcome of your pregnancy and the date of that outcome?

1. Live birth → delivery date: \_\_\_\_ / \_\_\_\_ / 20 \_\_\_\_  
mm dd yy

2. Still birth (baby lost after 20 weeks or 5 months) → delivery date: \_\_\_\_ / \_\_\_\_ / 20 \_\_\_\_  
mm dd yy

3. Ectopic or tubal pregnancy → date pregnancy ended: \_\_\_\_ / \_\_\_\_ / 20 \_\_\_\_  
mm dd yy

4. Miscarriage (fetus lost before 20 weeks or 5 months) → date of miscarriage: \_\_\_\_ / \_\_\_\_ / 20 \_\_\_\_  
mm dd yy

5. Abortion → date of abortion: \_\_\_\_ / \_\_\_\_ / 20 \_\_\_\_  
mm dd yy

4. Do you remember how many weeks pregnant you were when your pregnancy ended?

0. No → 4.1 Please estimate in months, how long you were pregnant: \_\_\_\_\_ (months)

1. Yes → 4.2 How many weeks were you pregnant? \_\_\_\_\_ (weeks)

**Please answer all questions on this form with regards to this pregnancy only.**

5. With how many fetuses (babies) were you pregnant?

1 (singleton)  4 (quadruplets)

2 (twins)  5 or more

3 (triplets)

6. Do you remember how much you weighed when you became pregnant?

0. No → 6.1 Please make your best guess of how much you weighed when you became pregnant: \_\_\_\_\_ pounds

1. Yes → 6.2 How much did you weigh when you became pregnant? \_\_\_\_\_ pounds

7. Do you remember how much weight you gained during your pregnancy?

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0. No → 7.1 Please provide your best guess of how many pounds you gained: \_\_\_\_\_ pounds

1. Yes → 7.2 How many pounds did you gain? \_\_\_\_\_ pounds

8. Were you on fertility treatment when you became pregnant?

0. No → skip to Q9

1. Yes ↴

8.1 Do you know what fertility treatments you received?

-3. Not Sure → skip to Q9

0. No → skip to Q9

1. Yes ↴

8.1.1 Please check "No" or "Yes" for each item:

No      Yes

      Clomiphene Citrate (Clomid)

      Metformin (Glucophage)

      Letrozole (Femara)

      Injectable FSH Medications (e.g., Gonal-F, Follistim)

      Intrauterine Insemination

      In Vitro Fertilization

      Other (Specify: \_\_\_\_\_)

9. Did you receive prenatal care (medical care to follow the progress of your pregnancy)?

0. No

1. Yes

10. Did you have severe vomiting that required medication or hospitalization during your pregnancy?

-3. Not Sure → skip to Q11

0. No → skip to Q11

1. Yes ↴

10.1. Were you hospitalized for vomiting?

0. No

1. Yes

11. Did you have pre-eclampsia or toxemia (protein in your urine and high blood pressure) during your pregnancy?

-3. Not Sure → skip to Q12

0. No → skip to Q12

1. Yes ↴

11.1 Were you hospitalized for pre-eclampsia during your pregnancy?

-3. Not Sure

0. No

1. Yes

11.2 Did you receive magnesium sulfate (a medication given to women with pre-eclampsia during labor to prevent seizures)?

-3. Not Sure

0. No

1. Yes

12. Did you have gestational diabetes (diabetes diagnosed only during pregnancy) during your pregnancy?
- 3. Not Sure → skip to Q13
0. No → skip to Q13
1. Yes ↴

12.1. Were you hospitalized for gestational diabetes during your pregnancy?

-3. Not Sure

0. No

1. Yes

12.2. Did you receive treatment for gestational diabetes during your pregnancy?

0. No → skip to Q13

1. Yes ↴

12.2.1 Please check "No" or "Yes" for each treatment.

No	Yes	
<input type="checkbox"/>	<input type="checkbox"/>	a. Diet
<input type="checkbox"/>	<input type="checkbox"/>	b. Oral medication
<input type="checkbox"/>	<input type="checkbox"/>	c. Insulin
<input type="checkbox"/>	<input type="checkbox"/>	d. Other (Specify: _____)

13. Did you have surgery during your pregnancy other than a c-section?
0. No → skip to Q14
1. Yes ↴

13.1 Please check "No" or "Yes" to indicate which surgical procedures you had during your pregnancy:

No	Yes	
<input type="checkbox"/>	<input type="checkbox"/>	Cerclage (placement of stitches in the cervix to hold it closed)
<input type="checkbox"/>	<input type="checkbox"/>	Oophorectomy (ovary(ies) removed)
<input type="checkbox"/>	<input type="checkbox"/>	Ovarian cystectomy (cyst on ovary removed)
<input type="checkbox"/>	<input type="checkbox"/>	Appendectomy (removal of appendix)
<input type="checkbox"/>	<input type="checkbox"/>	Cholecystectomy (removal of gallbladder)
<input type="checkbox"/>	<input type="checkbox"/>	Tubal ligation (tubes tied)
<input type="checkbox"/>	<input type="checkbox"/>	Other surgery (Specify: _____)

14. Were you admitted to the Intensive Care Unit (ICU) during or immediately after your pregnancy?

-3. Not Sure

0. No

1. Yes → Please specify why: \_\_\_\_\_

**Directions:**

- If this pregnancy did not end in a still birth or live birth, please skip to the **last page** of this survey. Thank you.
- If you had a still birth or live birth please continue to the **next page**.

15. Did you go into preterm labor (contractions which started before 37 weeks of pregnancy with dilation of your cervix) during this pregnancy?

-3. Not Sure → skip to Q16

0. No → skip to Q16

1. Yes → 15.1 Were you hospitalized for pre-term labor?  0. No  1. Yes

15.2 How many weeks pregnant were you? \_\_\_\_\_ (weeks)

16. Did your water break prior to 37 weeks?

-3. Not Sure → skip to Q17

0. No → skip to Q17

1. Yes → 16.1 How many weeks pregnant were you when your water broke? \_\_\_\_\_ (weeks)

17. Did you have a vaginal delivery?

0. No → skip to Q18

1. Yes → 17.1 Please check "No" or "Yes" to each to specify if you have had any of the following complications after delivery:

No Yes

a. Infection of a vaginal tear

b. Unintentional loss of urine

c. Unintentional loss of stool

d. Other, (Specify: \_\_\_\_\_)

18. Did you have a cesarean section (c-section)?

0. No → skip to Q19

1. Yes → 18.1 What was the main reason?:

-3. Not sure

1. Prior c-section

2. Baby was breech (head was up)

3. Multiples birth (2 or more babies)

4. Labor not progressing

5. Baby not tolerating labor (distress)

6. Other (Specify: \_\_\_\_\_)

18.2 Did you have a wound complication after your c-section? (e.g., an infection, needed to have incision opened)

-3. Not sure

**Directions:**

- If this pregnancy did not end in a live birth, please skip to the **last page** of this survey. Thank you.
- If you had a live birth please continue to the **next page**.

19. Please complete the questions below regarding your **live born infant(s) from this pregnancy only**.

	Birth Weight	Length	Birth defect?		Birth injury?		NICU admission?	
			No (0)	Yes (1)	No (0)	Yes (1)	No (0)	Yes (1)
Baby 1	____ lbs ____ oz	____ inches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baby 2	____ lbs ____ oz	____ inches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baby 3	____ lbs ____ oz	____ inches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baby 4	____ lbs ____ oz	____ inches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baby 5	____ lbs ____ oz	____ inches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Check here if more than 5 babies.*

20. If your child had a birth defect, birth injury (e.g. fracture, dislocation, nerve damage), or Neonatal Intensive Care Unit (NICU) admission, please provide additional information below:

Type of birth defect: \_\_\_\_\_

Type of birth injury: \_\_\_\_\_

Reason for NICU admission: \_\_\_\_\_



21. Following delivery, did you breast feed?

0. No

1. Yes



*skip to next  
page*

21.1 How long did you breast feed?

- 1. Currently breastfeeding
- 2. Less than 6 weeks
- 3. 6 weeks to less than 3 months
- 4. 3 months to less than 6 months
- 5. 6 months or longer

Please continue to next page.

**Directions:**

- Please list the names and locations of where you received care for this pregnancy.
- Please complete as much information as you can. Write NONE for any locations that are not applicable.
- Please tell the Research Coordinator if you had any medical procedures performed at an **out-patient surgical facility/hospital/birthing center** during your pregnancy for any reason, including delivery.

**Fertility treatment:**

Approximate date of care: \_\_\_/\_\_\_/\_\_\_\_ - \_\_\_/\_\_\_/\_\_\_\_

Name of Health Care Provider(s): \_\_\_\_\_

Name of Medical Practice: \_\_\_\_\_

Address: \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip code \_\_\_\_\_

**Prenatal Care:**

Approximate date of care: \_\_\_/\_\_\_/\_\_\_\_ - \_\_\_/\_\_\_/\_\_\_\_

Name of Health Care Provider(s): \_\_\_\_\_

Name of Medical Practice: \_\_\_\_\_

Address: \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip code \_\_\_\_\_

**Medical clinic, hospital or birthing center for end of pregnancy (e.g., delivery, miscarriage, abortion):**

Approximate date of care: \_\_\_/\_\_\_/\_\_\_\_

Name of Health Care Provider(s): \_\_\_\_\_

Name of Medical Practice: \_\_\_\_\_

Address: \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip code \_\_\_\_\_

**Hospitalization during pregnancy (not necessarily related to pregnancy):**

Approximate date of care: \_\_\_/\_\_\_/\_\_\_\_

Name of Health Care Provider(s): \_\_\_\_\_

Name of Medical Practice: \_\_\_\_\_

Address: \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip code \_\_\_\_\_

**Additional location (specify reason for care): \_\_\_\_\_**

Approximate date of care: \_\_\_/\_\_\_/\_\_\_\_

Name of Health Care Provider(s): \_\_\_\_\_

Name of Medical Practice: \_\_\_\_\_

Address: \_\_\_\_\_



City \_\_\_\_\_ State \_\_\_\_\_ Zip code \_\_\_\_\_

**Please ask the LABS coordinator for an additional form if you have more locations to record.**

#### Appendix 4. Conception Adjudication

One hundred fifty-four women reported any post-surgical pregnancies. Two authors (MM, GW) performed independent adjudication of the number of pregnancies per participant. The majority of women (n=120) were consistent between all forms and assessments. All data collection forms (Event and Complications Form, Short Form, Reproductive Health Form and Pregnancy Form) were reviewed to determine the number of pregnancies for the remaining 34 women. When the adjudicators did not agree on the number of pregnancies (N=2), a third author (WK) assisted the two adjudicators to resolve differences. Once the number of pregnancies was determined (237 pregnancies), a conception date was assigned to each pregnancy. The majority of conception dates were self-reported (70.9%). The table below describes how the remaining conception dates were estimated.

#### Source of Conception Dates after Bariatric Surgery Among Women Aged 18–44 Years Who Reported at Least One Pregnancy Since Surgery

Conception date	N	%
Reported conception date	168	70.9
Estimated conception date	52	21.9
Due date minus 280 days	12	5.1
End date minus mean length of pregnancies in this cohort (211 days)	26	11.0
Date reported currently pregnant minus half the mean length of pregnancies in this cohort (106 days)	4	1.7
Date halfway between date of last known pregnancy status and date new pregnancy was reported	10	4.2
Unknown (could not be estimated from available data)	17	7.2

Menke MN, King WC, White GE, Gosman GG, Courcoulas AP, Dakin GF, et al. Contraception and conception after bariatric surgery. *Obstet Gynecol* 2017; 130.

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## Appendix 5. Sensitivity Analysis

A sensitivity analysis was performed to examine the robustness of results with respect to the missing at random assumption. Among those missing vs. not missing assessment of unprotected intercourse at follow-up, the prevalence of unprotected intercourse at other follow-ups appeared higher at other time points after controlling for baseline factors that were independently related to completeness of follow-up data (site, education level, and body mass index) (see the Table below). Therefore, a sensitivity analysis was performed using imputed data. When missing unprotected intercourse status was followed by known unprotected intercourse status, the missing status was imputed from a logistic regression model containing baseline variables related to the completeness of follow-up data (i.e. site, education level, and body mass index) or to the prevalence of unprotected intercourse (race, any contraception use, and primary infertility) <sup>1</sup>. To impute missing unprotected intercourse status that was not followed by known unprotected intercourse status, a pattern mixture model that did not assume missing at random was used<sup>2</sup>. Finally, multiple imputation was used to combine the results from 30 imputed datasets. The modeled prevalence estimates and 95% CI from the sensitivity analysis are reported in **Appendix 6**. The modeled prevalence of unprotected intercourse by time point and test of change in prevalence over time utilizing imputed data not assuming data missing at random, were similar to the primary analysis (**Appendix 6**).

<sup>1</sup> Li KH. Imputation using Markov chains. J Stat Comput Simul. 1988;30(1):57-79.

<sup>2</sup> Pattern-mixture models. In: Molenberghs G, Kenward MG. Missing Data in Clinical Studies. Hoboken, NJ: John Wiley & Sons Inc; 2007: Chap 16.

### Modeled Prevalence of Unprotected Intercourse by Time Point by Whether that Outcome was Observed or Missing at Each Follow-up Assessment.\*

	Whether Outcome Known, modeled % (95% Confidence Intervals)											
	Year 1		Year 2		Year 3		Year 4		Year 5		Year 7	
Unprotected intercourse, %	Observed (N=411)	Missing (N=161)	Observed (N=285)	Missing (N=219)	Observed (N=260)	Missing (N=207)	Observed (N=229)	Missing (N=215)	Observed (N=219)	Missing (N=199)	Observed (N=138)	Missing (N=225)
Baseline	39.0 (29.7-51.3)	55.8 (42.3-73.9)	39.5 (30.3-51.8)	47.9 (36.9-62.3)	40.0 (30.8-52.1)	45.9 (35.3-59.7)	38.0 (29.2-49.4)	47.6 (36.7-62.0)	37.2 (28.6-48.5)	47.3 (36.7-61.1)	33.5 (25.5-44.1)	46.3 (36.1-59.5)
Year 1			44.3 (34.1-57.5)	53.3 (41.3-68.8)	44.8 (34.7-58.0)	51.3 (39.7-66.4)	42.6 (33.0-55.0)	53.1 (41.2-68.8)	41.5 (32.1-53.7)	52.5 (40.9-67.5)	37.8 (28.9-49.5)	52.1 (40.9-66.6)
Year 2	41.3 (31.4-54.5)	59.3 (44.7-78.9)			42.4 (32.6-55.3)	48.5 (37.2-63.4)	40.2 (30.9-52.5)	50.4 (38.7-65.7)	39.4 (30.3-51.5)	50.0 (38.6-64.9)	35.4 (26.7-47.0)	49.5 (38.5-63.8)
Year 3	42.4 (32.2-56.1)	60.7 (45.5-81.2)	42.8 (32.6-56.3)	52.3 (40.0-68.4)			41.6 (32.0-54.3)	52.6 (40.0-69.2)	40.9 (31.4-53.3)	52.2 (39.9-68.3)	36.4 (27.5-48.2)	51.0 (39.4-66.0)
Year 4	45.1 (34.2-59.7)	64.4 (48.2-86.3)	45.8 (35.0-60.1)	56.2 (42.9-73.7)	46.8 (36.1-60.9)	53.7 (40.6-71.2)			44.2 (34.0-57.5)	57.0 (43.6-74.7)	39.7 (30.1-52.3)	55.4 (42.7-72.0)
Year 5	37.3 (27.9-49.8)	53.1 (39.5-71.6)	38.2 (28.8-50.8)	47.1 (35.6-62.4)	39.4 (29.9-51.9)	45.1 (33.9-60.2)	37.8 (28.8-49.7)	48.3 (36.4-64.4)			34.1 (25.7-45.3)	47.8 (36.4-62.8)

Menke MN, King WC, White GE, Gosman GG, Courcoulas AP, Dakin GF, et al. Contraception and conception after bariatric surgery. Obstet Gynecol 2017; 130.

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Year 7	35.4 (25.4-49.2)	50.3 (35.9-70.6)	35.8 (25.9-49.5)	43.6 (31.7-59.9)	36.9 (26.9-50.7)	41.4 (29.8-57.4)	35.6 (25.9-48.9)	44.9 (32.6-62.1)	35.4 (25.9-48.5)	45.8 (33.3-63.1)		
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\*Excludes Assessments in Which Women Reported No Sexual Activity with a Male Partner in the Past 12 Months, Trying to Conceive, or Pregnancy.

Menke MN, King WC, White GE, Gosman GG, Courcoulas AP, Dakin GF, et al. Contraception and conception after bariatric surgery. *Obstet Gynecol* 2017; 130.

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## Appendix 6. Observed and Modeled Prevalence of Contraceptive Need and Use\* after Bariatric Surgery among Women Aged 18–44 Years (N=670)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 7	<i>P</i>		
							Year 1 vs Year 2	Year 1 vs Year 7	Year 2-7 linear trend
<b>Observed</b>	n(%) n=495	n(%) n=377	n(%) n=351	n(%) n=301	n(%) n=282	n(%) n=173			
No intercourse	68 (13.7)	46 (12.2)	39 (11.1)	38 (12.6)	29 (10.3)	17 (9.8)	-	-	-
Protected intercourse	218 (44.0)	157 (41.6)	143 (40.7)	117 (38.9)	131 (46.5)	84 (48.6)	-	-	-
Unprotected intercourse	187 (37.8)	121 (32.1)	120 (34.2)	109 (36.2)	89 (31.6)	52 (30.0)	-	-	-
Tried to conceive	22 (4.4)	53 (14.1)	49 (14.0)	38 (12.6)	33 (11.7)	20 (11.6)	-	-	-
<b>Modeled<sup>†</sup> (N=584)</b>	n(95%CI)	n(95%CI)	n(95%CI)	n(95%CI)	n(95%CI)	n(95%CI)			
No intercourse	12.7(9.4-16.0)	11.3(8.0-14.7)	11.1(7.7-14.4)	12.4(8.8-16.1)	10.4(7.0-13.8)	9.7(5.2-14.2)		Overall:0.59	
Protected intercourse	40.5(35.6-45.4)	37.1(31.9-42.2)	36.7(31.4-42.1)	33.9(28.5-39.3)	41.7(35.9-47.6)	43.6(36.5-50.8)		Overall:0.09	
Unprotected intercourse <sup>‡</sup>	41.5(36.4-46.6)	36.6(31.2-42.0)	36.3(30.8-41.8)	42.2(36.2-48.2)	36.2(30.2-42.1)	34.0(26.7-41.2)		Overall: 0.10	
Tried to conceive	4.3(2.4-6.3)	13.1(9.3-17.0)	12.9(9.0-16.9)	11.8(7.6-16.0)	10.2(6.5-14.0)	10.6(6.0-15.3)	<.001	0.003	0.02
<b>Sensitivity analysis</b>									
Unprotected intercourse <sup>‡</sup>	37.2(33.4-41.4)	33.7(29.4-38.7)	34.0(29.3-39.5)	37.6(32.3-43.7)	33.0(27.7-39.2)	30.6(23.9-39.2)		Overall: 0.11	

\*Only assessed in a subset of women at baseline due to inappropriate skip pattern in survey.

<sup>†</sup>Adjusted for factors related to missing follow-up (site, education level, and baseline body mass index).

<sup>‡</sup> The following number of women in the “unprotected intercourse” category reported a pregnancy in the same 12 month period: Year 1: 7, Year 2: 12, Year 3: 12, Year 4: 7, Year 5: 11, and Year 7: 6. Due to how the data was collected we cannot determine whether they always used contraception prior to pregnancy

**Appendix 7. Observed Prevalence of Contraceptive Use for Any Reason\* Before and After Bariatric Surgery among Women Aged 18–44 Years, Overall and By the Most Common Surgical Procedures (N=670)**

	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Year 7
	No/total(%)	No/total(%)	No/total(%)	No/total(%)	No/total(%)	No/total(%)	No/total(%)
<b>Overall</b>							
<b>Contraception use</b>							
Any type	325/579 (56.1)	328/506 (64.8)	263/393 (66.9)	224/354 (63.3)	181/306 (59.2)	184/294 (62.6)	119/176 (67.6)
More than 1 type	129/574 (22.5)	123/497 (24.8)	87/392 (22.2)	77/350 (22.0)	64/306 (20.9)	58/290 (20.0)	39/175 (22.3)
Only oral ( <i>no other method</i> )	55/571 (9.6)	54/494 (10.9)	39/391 (10.0)	21/349 (6.0)	18/305 (5.9)	31/290 (10.7)	15/173 (8.7)
<b>Methods of Contraception<sup>†</sup></b>							
Oral, not progestin only	118/539 (21.9)	111/491 (22.6)	77/312 (24.7)	60/232 (25.9)	48/181 (26.5)	61/183 (33.3)	29/119 (24.4)
Oral, progestin only	4/536 (0.8)	6/491 (1.2)	9/313 (2.9)	3/232 (1.3)	4/181 (2.2)	2/183 (1.1)	2/119 (1.7)
Non-oral hormonal <sup>‡</sup>	50/537 (9.3)	45/490 (9.2)	34/313 (10.9)	31/231 (13.4)	30/181 (16.6)	22/183 (12.0)	14/119 (11.8)
IUD	38/534 (7.1)	47/490 (9.6)	49/313 (15.7)	55/230 (23.9)	53/181 (29.3)	49/183 (26.8)	31/118 (26.3)
Barrier <sup>§</sup>	124/534 (23.2)	119/484 (24.6)	89/310 (28.7)	75/231 (32.5)	59/181 (32.6)	55/179 (30.7)	33/117 (28.2)
Sterilization <sup>  </sup>	73/510 (14.3)	85/478 (17.8)	73/290 (25.2)	65/207 (31.4)	47/144 (32.6)	45/156 (28.9)	34/94 (36.2)
Non-hormonal less reliable <sup>¶</sup>	56/535 (10.5)	54/489 (11.0)	42/312 (13.5)	24/230 (10.4)	22/181 (12.2)	24/183 (13.1)	12/117 (10.3)
Emergency/Plan B	0	1/466 (0.2)	2/286 (0.7)	1/199 (0.5)	1/139 (0.7)	1/145 (0.7)	1/88 (1.1)
Endometrial ablation and Novasure <sup>#</sup>	1/564 (0.2)	2/467 (0.4)	1/285 (0.4)	0	0	2/146 (1.4)	0
<b>RYGB</b>							
<b>Contraception use</b>							
Any contraception method	235/419 (56.1)	237/360 (65.8)	187/275 (68.0)	170/262 (64.9)	130/226 (57.5)	132/211 (62.6)	87/129 (67.4)
More than 1 method of contraception	98/416 (23.6)	95/358 (26.5)	66/276 (23.9)	61/258 (23.6)	43/227 (18.9)	42/208 (20.2)	30/129 (23.3)
Only oral ( <i>no other method</i> )	39/414 (9.4)	44/356 (12.4)	31/275 (11.3)	17/257 (6.6)	17/226 (7.5)	25/208 (12.0)	13/127 (10.2)
<b>Methods of Contraception<sup>b</sup></b>							
Oral, progestin only	87/386 (22.5)	87/351 (24.8)	64/224 (28.6)	49/178 (27.5)	37/130 (28.5)	50/131 (38.2)	25/87 (28.7)
Non-oral hormonal <sup>‡</sup>	2/383 (0.5)	6/351 (1.7)	6/224 (2.7)	3/178 (1.7)	4/130 (3.1)	2/131 (1.5)	2/87 (2.3)
IUD	35/384 (9.1)	38/350 (10.9)	26/224 (11.6)	27/177 (15.3)	22/130 (16.9)	17/131 (13.0)	9/87 (10.3)
Barrier <sup>§</sup>	32/382 (8.4)	37/350 (10.6)	36/224 (16.1)	39/176 (22.2)	39/130 (30.0)	34/131 (26.0)	22/86 (25.6)
Sterilization <sup>  </sup>	88/382 (23.0)	86/349 (24.6)	65/223 (29.2)	54/176 (30.7)	38/130 (29.2)	36/127 (28.4)	25/86 (29.1)
Non-hormonal less reliable <sup>¶</sup>	51/365 (14.0)	57/343 (16.6)	51/209 (24.4)	51/156 (32.7)	33/105 (31.4)	31/114 (27.2)	25/69 (36.2)
Emergency/Plan B	41/384 (10.7)	42/351 (12.0)	28/223 (12.6)	18/175 (10.3)	14/130 (10.8)	17/131 (13.0)	8/85 (9.4)
Endometrial ablation <sup>#</sup>	0	0	1/206 (0.5)	0	0	0	0
	0	1/337 (0.3)	1/206 (0.5)	0	0	1/108 (0.9)	0

Continued on the next page.

Menke MN, King WC, White GE, Gosman GG, Courcoulas AP, Dakin GF, et al. Contraception and conception after bariatric surgery. *Obstet Gynecol* 2017; 130.

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## Appendix 7. (continued)

	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Year 7
	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)
<b>LAGB</b>							
<b>Contraception use</b>							
Any type	80/134 (59.7)	76/120 (63.3)	63/93 (67.7)	44/74 (59.5)	45/69 (65.2)	44/68 (64.7)	26/36 (72.2)
More than 1 type	27/135 (20.0)	24/116 (20.7)	16/92 (17.4)	11/74 (14.9)	16/69 (23.2)	12/67 (17.9)	7/36 (19.4)
Only oral ( <i>no other method</i> )	16/134 (11.9)	10/115 (8.7)	8/92 (8.7)	3/74 (4.1)	1/69 (1.5)	4/67 (6.0)	2/36 (5.6)
<b>Methods of Contraception †</b>							
Oral, not progestin only	29/130 (22.3)	22/118 (18.6)	12/70 (17.1)	7/43 (16.3)	8/45 (17.8)	7/44 (15.9)	2/27 (7.4)
Oral, progestin only	1/130 (0.8)	0	3/71 (4.2)	0	0	0	0
Non-oral hormonal ‡	15/130 (11.5)	7/118 (5.9)	8/71 (11.3)	4/43 (9.3)	8/45 (17.8)	4/44 (9.1)	4/27 (14.8)
IUD	5/129 (3.9)	9/118 (7.6)	11/71 (15.5)	13/43 (30.2)	13/45 (28.9)	14/44 (31.8)	8/27 (29.6)
Barrier §	32/129 (24.8)	25/114 (21.9)	16/69 (23.2)	14/44 (31.8)	16/45 (35.6)	14/44 (31.8)	5/26 (19.2)
Sterilization ¶	19/122 (15.6)	26/114 (22.8)	20/64 (31.3)	13/41 (31.7)	13/34 (38.2)	13/35 (37.1)	9/20 (45.0)
Non-hormonal less reliable ¶¶	14/128 (10.9)	9/116 (7.8)	9/71 (12.7)	5/44 (11.4)	6/45 (13.3)	6/44 (13.6)	3/27 (11.11)
Emergency/Plan B	0	0	0	0	0	0	1/17 (5.9)
Endometrial ablation §§	1/133 (0.8)	1/107 (0.9)	0	0	0	1/31 (3.2)	0

Abbreviations IUD, intrauterine device; LAGB, laparoscopic adjustable gastric band; RYGB, Roux-en-Y gastric bypass; NA, not applicable.

\* Includes use at any frequency in the past 12 months.

† More than one method could be reported.

‡ Injection, implant, patch or ring.

§ Male or female condom, cervical cap, diaphragm, or contraceptive foams, creams or jellies.

¶ Vasectomy, hysterectomy, tubal ligation/occlusion, endometrial ablation

¶¶ Natural family planning, rhythm method, withdrawal.

# Self-reported as a contraceptive method

**Appendix 8. Modeled Prevalence of Contraceptive Use for Any Reason\* Prior to and After Bariatric Surgery Among Women Aged 18–44 Years, Overall and by the Most Common Surgical Procedures**

	Model N <sup>‡</sup>	% (95% CI)							P	
		Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Year 7	Year 1 vs baseline	Year 1-7 linear trend
<b>Overall</b>										
<b>Contraception Use</b>										
Any type	587	52.3 (47.9-56.6)	60.3 (55.5-65.1)	61.6 (56.5-66.8)	57.0 (51.5-62.5)	53.1 (47.3-58.8)	57.7 (51.9-63.5)	64.1 (57.1-71.2)	<.001	0.99
More than one type	584	19.1 (15.8-22.4)	21.0 (17.3-24.6)	18.6 (14.9-22.4)	18.6 (14.6-22.6)	16.9 (13.0-20.8)	16.1 (12.3-19.9)	18.0 (12.9-23.2)	Overall: 0.54	
Only oral ( <i>no other method</i> )	584	8.9 (6.5-11.4)	9.7 (6.9-12.5)	9.0 (6.2-11.8)	5.2 (2.9-7.5)	5.0 (2.5-7.5)	9.7 (6.1-13.3)	7.6 (3.6-11.6)	0.81	0.75
<b>Methods of Contraception<sup>§</sup></b>										
Oral, not progestin only	545	19.3 (16.0-22.7)	20.2 (16.6-23.9)	22.1 (17.6-26.5)	21.8 (16.8-26.8)	22.6 (17.2-28.0)	26.9 (21.1-32.8)	21.0 (14.7-27.3)	Overall: 0.12	
Non-oral hormonal <sup>  </sup>	545	8.3 (6.1-10.6)	8.5 (6.0-10.9)	9.9 (6.6-13.1)	11.0 (7.0-15.0)	12.2 (8.0-16.5)	9.7 (6.0-13.4)	10.0 (5.0-14.9)	Overall: 0.57	
Intrauterine device	544	6.4 (4.5-8.4)	8.8 (6.2-11.4)	12.8 (9.2-16.4)	19.4 (14.6-24.1)	23.1 (17.3-28.9)	19.7 (14.5-24.8)	20.2 (14.4-25.9)	0.02	<.001
Barrier <sup>¶</sup>	543	18.4 (15.2-21.5)	19.0 (15.7-22.4)	21.5 (17.4-25.6)	23.6 (19.0-28.2)	23.4 (18.6-28.1)	20.2 (15.7-24.8)	20.7 (14.8-26.5)	Overall: 0.19	
Sterilization <sup>#</sup>	531	13.6 (10.5-16.6)	17.6 (14.0-21.1)	22.9 (18.2-27.7)	29.3 (23.2-35.4)	29.1 (22.3-35.9)	29.3 (22.5-36.1)	32.1 (24.1-40.1)	0.02	<0.01
Non-hormonal, less reliable <sup>**</sup>	544	9.5 (7.0-12.1)	10.0 (7.3-12.7)	12.4 (8.7-16.2)	9.5 (6.0-13.1)	11.0 (6.7-15.3)	11.8 (7.5-16.0)	8.9 (4.4-13.5)	Overall: 0.57	

Table continued on next page.



## Appendix 8 (continued)

	Model N <sup>c</sup>	% (95% CI)							P <sup>b</sup>	
		Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Year 7	Year 1 vs baseline	Year 1-7 linear trend
<b>Roux-en-Y gastric bypass</b>										
<b>Contraception Use</b>										
Any type	427	53.3 (47.9-58.7)	62.6 (56.7-68.6)	64.4 (57.8-71.0)	59.3 (52.5-66.0)	52.1 (45.0-59.1)	58.3 (51.2-65.3)	65.1 (56.4-73.8)	0.001	0.81
More than one type	424	21.3 (17.0-25.6)	23.8 (18.9-28.6)	21.1 (16.2-26.1)	21.1 (15.9-26.3)	16.3 (11.5-21.0)	17.1 (12.3-21.8)	20.0 (13.4-26.6)	Overall: 0.20	
Only oral ( <i>no other method</i> )	424	8.6 (5.8-11.4)	10.6 (6.9-14.2)	9.8 (6.3-13.4)	5.8 (3.1-8.6)	6.3 (3.1-9.6)	10.6 (6.2-15.0)	8.8 (3.8-13.7)	0.36	0.92
<b>Methods of Contraception<sup>§</sup></b>										
									Overall: 0.12	
Non-oral hormonal <sup>  </sup>	390	7.8 (5.2-10.3)	9.6 (6.4-12.7)	10.0 (6.2-13.9)	12.0 (7.3-16.7)	12.0 (7.0-16.9)	10.0 (5.6-14.3)	8.0 (3.1-12.9)	Overall: 0.48	
Intrauterine device	389	8.0 (5.3-10.7)	10.7 (7.0-14.3)	14.5 (9.4-19.7)	20.5 (14.2-26.8)	26.3 (18.5-34.1)	21.3 (14.4-28.2)	22.0 (14.0-29.9)	0.06	<.001
Barrier <sup>¶</sup>	389	18.9 (15.0-22.8)	19.7 (15.5-24.0)	22.3 (17.2-27.3)	22.9 (17.5-28.2)	21.8 (16.2-27.5)	18.6 (13.4-23.8)	21.5 (14.2-28.7)	Overall: 0.55	
Sterilization <sup>#</sup>	382	13.0 (9.4-16.6)	15.9 (11.9-20.0)	22.1 (16.5-27.7)	30.3 (23.0-37.7)	26.7 (19.2-34.3)	27.7 (19.8-35.5)	33.0 (23.4-42.5)	Overall: 0.18	
Non-hormonal, less reliable <sup>**</sup>	390	9.9 (6.6-13.2)	11.3 (7.7-14.9)	12.1 (7.5-16.7)	9.4 (5.3-13.4)	10.1 (5.1-15.2)	11.9 (6.7-17.1)	8.6 (3.0-14.3)	Overall: 0.81	

Table continued on next page.

**Appendix 8 (continued)**

	Model N <sup>c</sup>	% (95% CI)							P <sup>b</sup>	
		Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Year 7	Year 1 vs baseline	Year 1-7 linear trend
<b>Laparoscopic adjustable gastric band</b>										
<b>Contraception Use<sup>§</sup></b>										
Any type of contraception	137	56.8 (46.8-66.7)	60.9 (50.2-71.6)	62.7 (51.3-74.1)	55.1 (42.8-67.3)	61.4 (48.8-74.0)	60.6 (47.8-73.3)	68.3 (53.5-83.1)	Overall: 0.46	
More than one type	137	18.6 (11.0-26.2)	19.8 (11.9-27.7)	16.3 (8.5-24.0)	12.9 (5.6-20.2)	19.0 (10.2-27.9)	14.8 (6.5-23.1)	17.1 (5.9-28.3)	Overall: 0.70	
Only oral ( <i>no other method</i> )	137	11.2 (3.7-18.7)	8.2 (2.7-13.7)	8.1 (2.0-14.2)	2.9 (0.0-7.3)	1.4 (0.0-4.1)	5.7 (0.0-12.2)	5.4 (0.0-13.3)	Overall: 0.12	
<b>Methods of Contraception<sup>§</sup></b>										
Oral, not progestin only	132	20.0 (10.9-29.0)	17.5 (9.4-25.5)	16.0 (7.2-24.8)	13.0 (3.5-22.5)	15.5 (5.1-26.0)	13.5 (4.3-22.7)	6.0 (0.0-14.1)	Overall: 0.59	
Non-oral hormonal <sup>  </sup>	132	9.7 (3.4-15.9)	5.3 (1.3-9.2)	9.1 (2.6-15.6)	7.6 (0.6-14.5)	10.9 (2.6-19.1)	6.3 (1.1-11.6)	12.0 (1.1-22.9)	Overall: 0.17	
Intrauterine device	132	3.0 (0.6-5.5)	4.7 (1.2-8.3)	8.8 (2.3-15.4)	15.1 (4.1-26.1)	16.4 (4.7-28.2)	15.6 (4.4-26.9)	16.2 (4.8-27.6)	0.34	<.001
Barrier <sup>  </sup>	131	18.5 (10.8-26.2)	16.5 (9.5-23.6)	17.5 (9.2-25.8)	23.1 (11.4-34.9)	22.6 (12.4-32.8)	21.0 (11.0-31.0)	15.5 (4.9-26.0)	Overall: 0.48	
Sterilization <sup>#</sup>	126	21.4 (12.3-30.6)	33.4 (20.4-46.5)	39.7 (23.4-56.1)	37.8 (21.1-54.5)	54.5 (29.1-79.8)	46.4 (27.5-65.2)	45.2 (24.2-66.2)	0.01	0.01
Non-hormonal, less reliable <sup>**</sup>	131	11.3 (4.7-18.0)	8.8 (2.9-14.7)	13.0 (4.7-21.3)	12.0 (1.7-22.3)	12.8 (2.3-23.3)	13.6 (3.7-23.6)	9.8 (1.3-18.3)	Overall: 0.93	

\* Includes contraception at any frequency in the past 12 months.

† Models were adjusted for factors related to missing follow-up (site, education level, and baseline body mass index). If the P-value for an overall difference between time points was significant, differences between year 1 vs. baseline and a trend between years 1 and 7 were tested

‡ Sample size differs between variables due to missing data.

Menke MN, King WC, White GE, Gosman GG, Courcoulas AP, Dakin GF, et al. Contraception and conception after bariatric surgery. *Obstet Gynecol* 2017; 130.

The authors provided this information as a supplement to their article.

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§ More than one method could be reported. Progestin-only oral contraception, emergency/Plan B and endometrial ablation/Novasure were included in “any type” and “more than one type” variables shown above but were too rare to model individually. Observed data reported in **Appendix 7.**

|| Injection, implant, patch or ring.

¶ Male or female condom, cervical cap, diaphragm, or contraceptive foams, creams or jellies.

# Vasectomy, hysterectomy, tubal ligation/occlusion, endometrial ablation

\*\* Natural family planning, rhythm method, withdrawal.

## Appendix 9. Associations With Unprotected Intercourse in Years 1-7\* After Bariatric Surgery Among Women Aged 18–44 Years Who Were Not Trying to Conceive

	Unprotected Intercourse(n=446)†					
	URR‡	(95% CI)	P	ARR§	(95% CI)	P
<b>Pre-surgical status</b>						
Age, per 10 years	1.34	(1.14-1.57)	<.001	1.04	(0.87-1.24)	0.65
Non-white race (vs white)	1.45	(1.17-1.80)	<.001	1.33	(1.08-1.62)	0.01
Hispanic ethnicity (vs non-Hispanic)	1.27	(0.91-1.76)	0.16	1.43	(0.94-2.15)	0.09
Education (vs college)			0.02			0.44
High school or less	1.39	(1.10-1.76)		1.14	(0.92-1.44)	
Some college	1.20	(0.98-1.46)		1.10	(0.91-1.33)	
BMI, per 5 kg/m <sup>2</sup>	1.05	(0.99-1.12)	0.10	1.02	(0.96-1.08)	0.58
No contraception use in year prior to surgery (vs. any)	2.31	(1.93-2.75)	<.001	2.12	(1.74-2.58)	<.001
History of PCOS (vs. no)	0.85	(0.67-1.08)	0.17	1.02	(0.79-1.31)	0.89
Surgical procedure (vs. laparoscopic adjustable gastric band)			0.43			0.84
Roux-en-Y gastric bypass	1.01	(0.79-1.28)		1.03	(0.83-1.28)	
Other	1.28	(0.84-1.95)		1.14	(0.74-1.75)	
<b>Post-surgery status</b>						
Married/living as married (vs. not)	0.99	(0.83-1.17)	0.86	1.00	(0.84-1.18)	0.97
Medical insurance (vs. government)			0.43			0.57
Private	1.04	(0.81-1.34)		1.02	(0.79-1.32)	
No insurance	1.24	(0.91-1.68)		1.19	(0.87-1.63)	
Other/unknown	1.08	(0.82-1.43)		1.02	(0.77-1.36)	
Menstrual regularity (vs. irregularity)	1.19	(1.03-1.38)	0.02	1.12	(0.96-1.30)	0.16
Medical contraceptive risk <sup>  </sup> (vs none)	1.28	(1.08-1.52)	0.01	1.20	(1.02-1.40)	0.02

Abbreviations: ARR, adjusted relative risk; BMI, body mass index; PCOS, polycystic ovary syndrome; URR, unadjusted relative risk.

\* Associations did not differ by time point.

† Unprotected intercourse is defined as using contraception less than always while having intercourse with a male partner, not trying to conceive, and not being pregnant in the past 12 months. Participants who were pregnant, trying to conceive, or not sexually active were excluded from analysis.

‡ Unadjusted for most covariates shown in this table. However, model controlled for baseline factors related to missing follow-up data (i.e., site, pre-surgery education, and pre-surgery BMI).

§ Adjusted for covariates and site, which was related to missing follow-up data.

Menke MN, King WC, White GE, Gosman GG, Courcoulas AP, Dakin GF, et al. Contraception and conception after bariatric surgery. *Obstet Gynecol* 2017; 130. The authors provided this information as a supplement to their article.

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<sup>¶</sup> Includes ischemic heart disease history, stroke history, deep vein thrombosis history, diabetic neuropathy history, breast cancer history, endometrial cancer in past year, cervical cancer in past year, and smoking plus age  $\geq 35$  years or elevated blood pressure (systolic  $\geq 140$  mm Hg or diastolic  $\geq 90$  mm Hg) at time of assessment.

## Appendix 10. Conception Rates After Bariatric Surgery Among Women Aged 18–44 Years (N=710)

Conception rate (95% CI) per 1,000 person-years			
Time since surgery			
Overall* 0-<90 months	Early 0-<18 months	Delayed 18-<42 months	Remaining Follow-up 42<90 months
53.8 (40.0-71.1)	42.3 (30.2-57.6)	60.9 (46.9-79.2)	46.5 (34.5-61.4)

\*Median follow-up time is 6.5 (5.9, 7.0) years. 17 pregnancies included in the overall rate were excluded from the timeframe-specific rates because date of conception was not reported.

## Appendix 11. Associations With Early and Delayed Postsurgical Conception Among Women Aged 18–44 Years Who Underwent Bariatric Surgery

Pre-surgery status	Early conception: within 18 months after surgery (N=627*)						Delayed Conception: 18-<42 months after surgery (N=595*)					
	URR†	(95% CI)	P	ARR‡	(95% CI)	P	URR†	(95% CI)	P	ARR‡	(95% CI)	P
Age, per 10 years	0.38	(0.22-0.65)	<.001	0.41	(0.19-0.89)	0.03	0.32	(0.21-0.48)	<.001	0.54	(0.32-0.91)	0.02
Non-white race (vs white)	0.64	(0.24-1.70)	0.37	0.61	(0.19-1.93)	0.40	0.61	(0.27-1.35)	0.22	0.66	(0.29-1.49)	0.32
Hispanic ethnicity (vs non-Hispanic)	0.70	(0.17-2.94)	0.63	0.51	(0.12-2.19)	0.36	1.19	(0.47-2.98)	0.72	0.67	(0.23-1.95)	0.47
Education (vs college)			0.34			0.64			0.44			0.46
High school or less	1.55	(0.58-4.13)		1.57	(0.55-4.48)		1.56	(0.78-3.11)		1.59	(0.76-3.34)	
Some college	1.79	(0.83-3.86)		1.42	(0.62-3.27)		1.30	(0.73-2.31)		1.16	(0.63-2.13)	
Married/living as married (vs. not)	2.24	(1.06-4.70)	0.03	4.76	(2.02-11.21)	<.001	0.60	(0.36-0.99)	0.045	1.01	(0.58-1.78)	0.97
BMI, per 5 kg/m <sup>2</sup>	1.09	(0.88-1.35)	0.41	1.05	(0.80-1.37)	0.72	0.94	(0.79-1.13)	0.56	0.88	(0.71-1.09)	0.24
Current or recent smoker (vs. no)	1.14	(0.51-2.53)	0.75	1.32	(0.57-3.03)	0.52	1.02	(0.54-1.92)	0.95	0.85	(0.43-1.65)	0.62
No contraception use in past year (vs. any)	0.64	(0.32-1.25)	0.19	0.85	(0.39-1.89)	0.70	0.65	(0.39-1.10)	0.11	0.95	(0.53-1.71)	0.86
Menstrual regularity (vs. no)	0.70	(0.31-1.60)	0.40	0.86	(0.35-2.09)	0.74	0.88	(0.46-1.67)	0.69	0.84	(0.42-1.66)	0.61
History of PCOS (vs. no)	1.79	(0.89-3.59)	0.10	1.10	(0.50-2.40)	0.82	1.48	(0.84-2.60)	0.17	1.03	(0.57-1.87)	0.91
Importance/plan for post-surgical pregnancy (vs. unimportant or not planned)			<.001			<.001			<.001			<.001
Importance unclear	5.91	(1.90-18.41)		5.78	(1.74-19.21)		7.03	(3.26-15.18)		5.53	(2.39-12.79)	
Important	9.07	(3.41-24.13)		8.50	(2.92-24.75)		6.58	(3.23-13.42)		4.90	(2.15-11.15)	
Surgical procedure (vs. laparoscopic adjustable gastric band)			0.82			0.82			0.80			0.51
Roux-en-Y gastric bypass	0.84	(0.38-1.83)		1.17	(0.52-2.62)		1.24	(0.65-2.38)		1.41	(0.72-2.75)	
Other	0.54	(0.06-4.61)		0.65	(0.08-5.65)		1.09	(0.23-5.16)		0.87	(0.19-4.09)	

Abbreviations: ARR, adjusted relative risk; PCOS, polycystic ovary syndrome; URR, unadjusted relative risk.

\* Women with a post-surgical conception of unknown date (N=17) were excluded from analysis.

† Unadjusted for covariates shown in this table. However, model controlled for baseline factors related to missing follow-up data (i.e., site, pre-surgery education, and pre-surgery BMI).

‡ Adjusted for covariates and site, which was related to missing follow-up data.

## Appendix 12. Pregnancy Outcomes After Bariatric Surgery\* Among Women Aged 18–44 Years (N=710)

	Pregnancy Outcome				
	Live birth	Still birth	Ectopic	Miscarriage	Abortion
Outcome reported (N=183 pregnancies)	126 (68.9)	2 (1.1)	2 (1.1)	40 (21.9)	13 (7.1)
Potential values* (N=237 pregnancies)	126-180 (53.2-75.9)	2-56 (0.8-23.6)	2-56 (0.8-23.6)	40-94 (16.9-39.7)	13-67 (5.5-28.3)

\*Due to suspicion that missing outcome data (missing N=54) was related to the outcome (i.e. participants were less likely to report a non-live birth), the range of potential counts and percentages are reported with the minimum values assuming no missing outcome data were that outcome (e.g., live birth), and the maximum values assuming all missing outcome data were that outcome.