

## **Appendix 1. Inclusion and Exclusion Criteria**

### **Inclusion Criteria**

- a)  $\geq 16$  years of age (parental consent to be obtained for participants  $< 18$  years old)
- b) Ultrasound dating scan  $< 14$  weeks' gestation
- c) Singleton pregnancy
- d) Pregnant with an intent to deliver in hospital
- e) Able to understand written or spoken English or has their own interpreter willing to translate
- f) Willing and able to use the home monitoring equipment
- g) Within category 1 of the American Society of Anaesthesiologists' classification of physical status at enrolment ("A normal healthy patient without any clinically important co-morbidity and without a clinically significant past/present medical history"). Women with the following conditions would be included in the 4P study, under the above definition:

Obesity

Smoking

Diabetes

Renal disease without hypertension

High BP at recruitment (defined as SBP  $> 140$ mmHg and DBP  $> 90$ mmHg not previously diagnosed with hypertension)

Gestational hypertension or pre-eclampsia diagnosed in a previous pregnancy (even if treated, as long as essential hypertension did not develop)

### **Exclusion Criteria**

Any known medical condition expected by the recruiting clinician to alter maternal vital signs, such as:

Hypertension (defined as systolic BP  $> 140$ mmHg and diastolic BP  $> 90$ mmHg) ever requiring treatment

Congenital cardiac disease

Ischemic cardiac disease

Bronchiectasis

Fibrotic lung disease

Current malignant disease

**Appendix 2. Standard Operating Procedure for Action on Raised Blood Pressure.**  
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**STANDARD OPERATING PROCEDURE**

**Nuffield Department of Women's &  
 Reproductive Health**

**SOP No: 005-V2**

**SOP Title: Action on Raised Blood Pressure  
 above 140/90 mmHg**



**SOP Number 005-V2**

**SOP Title Action on Raised Blood Pressure above 140/90 mmHg**

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## 1. PURPOSE

The purpose of this SOP is to describe actions to be taken by the 4P midwife when she sees that a raised BP of over 140/90 mmHg has been sent to the study database by a 4P participant.

## 2. INTRODUCTION

The 4P study aims to capture 14 days of physiological readings from participating women using a kit of home monitoring equipment in the postpartum period. Blood Pressure, pulse, oxygen saturation levels, temperature and respiratory rate will be measured.

The participant is required to manually enter the blood pressure and temperature into the tablet computer; the pulse and oxygen saturation levels are directly transferred to the tablet via Bluetooth.

The data are sent automatically to a study data base from the tablet computer.

In order to provide adequate care in the circumstances in which a blood pressure reading rises, an algorithm (Figure A2) has been developed to alert participants, should blood pressure reach a level at which increased surveillance is required.

- If the participant has any concerning symptoms such as headache/visual disturbance, abdominal pain, offensive PV loss, diarrhoea/vomiting they should contact a healthcare professional regardless of their blood pressure reading.
- If on checking their blood pressure, the reading is >140/90 mmHg, a message will be displayed on the tablet computer asking the participant to repeat the BP measurement in 30 minutes.
- If the BP at 30 minutes is >150/100 mmHg a message will be displayed on the tablet computer asking the participant to contact a healthcare professional to arrange review. If the blood pressure reading is >140/90 mmHg but < 150/100 mmHg at 30 minutes, a message will be displayed on the tablet computer asking the participant to contact a healthcare professional to arrange a review within the next 48 hrs.
- If the BP reading is <140/90 mmHg at 30 minutes, no action is required.

This healthcare professional could be the GP, community midwife, the Day Assessment Unit at the Horton Hospital in Banbury or the John Radcliffe Hospital in Oxford; or if out of hours, the Maternity Assessment Unit at the JR or Delivery Suite at the Horton Hospital, where standard procedures for treating pregnancy related hypertension are in place.

## STANDARD OPERATING PROCEDURE

Nuffield Department of Women's &  
Reproductive Health

SOP No: 005-V2

SOP Title: Action on Raised Blood Pressure  
above 140/90 mmHg



The phone numbers for the hospital delivery suites and assessment units will be displayed on the tablet computer. The participants will be told at the point of receiving their home monitoring equipment that the data they are sending back to the study data base will **NOT** be monitored by medical or midwifery staff. The onus is therefore upon the participant to contact the healthcare services when advised to do so.

In the event of the 4P midwives seeing a raised blood pressure (> 140/90 mmHg) on the study data base, reasonable action needs to be taken to ensure the participant has accessed medical assistance as recommended by the tablet computer warning. This is to ensure that the midwife is fulfilling her duty of care towards a patient under the NMC's Code of Conduct (NMC, 2012).

### 3. SCOPE

It is important to stress to the participants that the data they are sending back to the data base are **NOT** being monitored daily by a doctor or a midwife.

The onus is upon the participant to contact the healthcare services for assistance when advised to do so and to take responsibility for her own health and well being

The 4P midwives should take action **only** if a raised BP is identified when the 4P midwives look at the data base **incidentally**.

The 4P midwives are **NOT** expected to monitor the data base every day, as the 4P study is **NOT** a home monitoring study.

### 4. DEFINITIONS

Raised blood pressure is any blood pressure reading above 140 mmHg systolic and 90 mmHg diastolic.

See algorithm (figure A2) for thresholds for action.



## 5. RESPONSIBILITIES

When the 4P midwives access the study data base incidentally, it is their responsibility to contact any 4P participants whose blood pressure has risen above the determined threshold of >140/90 mmHg and to ask whether action has been taken.

## 6. SPECIFIC PROCEDURE

- 6.1 If a raised BP is seen on the 4P study data base, the 4P midwife will identify the participant by looking at the 4P track sheet which contains both the m-health number and INTERBIO number and the participant's name, address and phone number.
- 6.2 The 4P midwife will contact the participant by telephone and ask her whether she has contacted healthcare services for review of her blood pressure.
- 6.3 If the participant has contacted healthcare services, no further action is required by the 4P midwife.
- 6.4 If the participant has not contacted healthcare services, the 4P midwife will ask her to do so.
- 6.5 In the event of (3) or (4), the 4P midwife will document; (i) time of high BP reading; (ii) time it was seen by 4P midwife; (iii) time action was taken and what that action was (or if none, state none required). This will be recorded on the 4P tracking sheet.

## 7. FORMS/TEMPLATES TO BE USED

4P tracking sheet

## 8. INTERNAL AND EXTERNAL REFERENCES

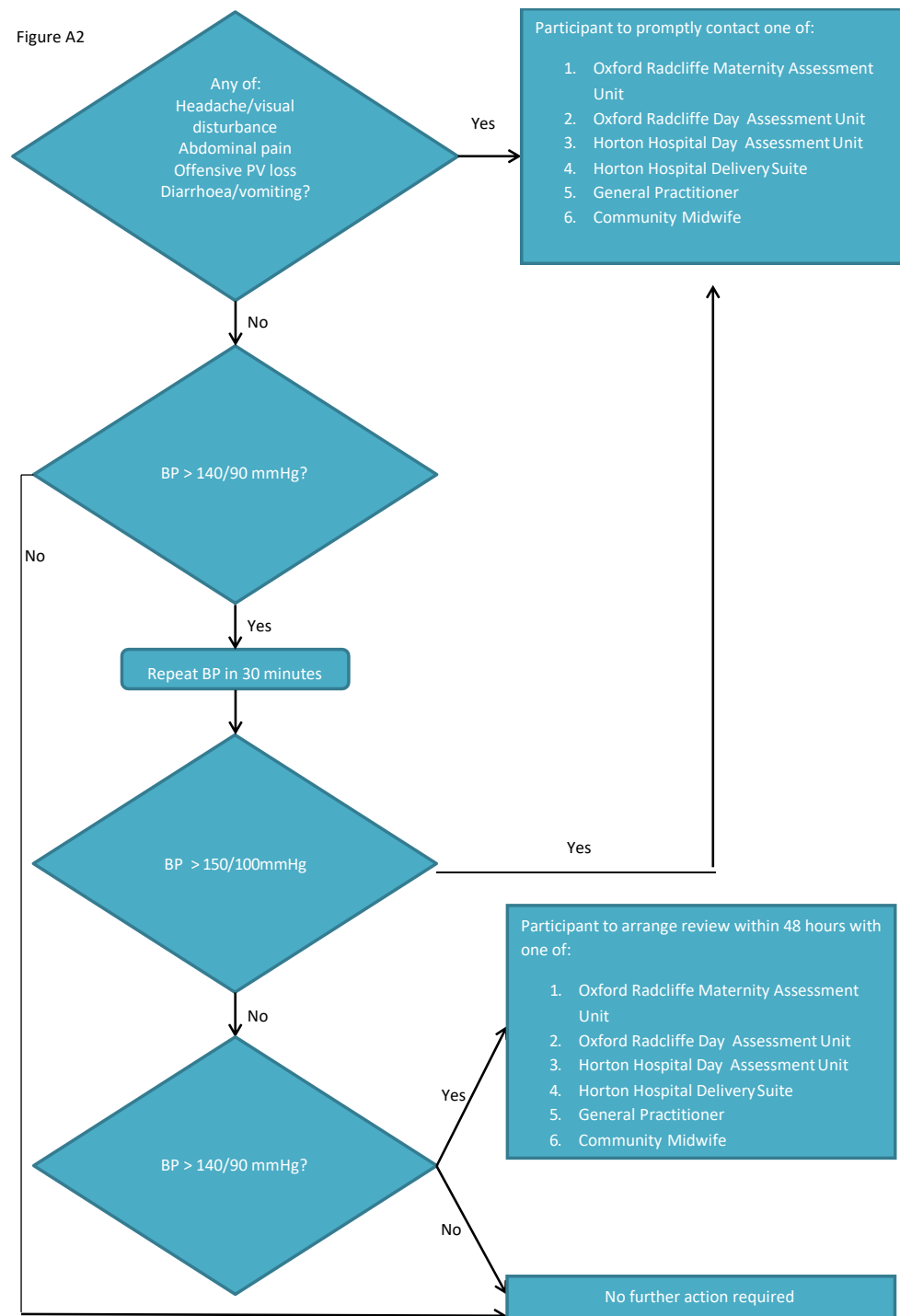
The code: Standards of conduct, performance and ethics for nurses and midwives, NMC, London, 2012

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**Figure A2. Thresholds for action on raised blood pressure in the postpartum period.**



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### Appendix 3. Statistical Appendix

#### Sample size calculation

To determine the sample size, we considered the precision of the data in estimating specific centiles.

We assumed data were normally distributed at each day after birth. The SE of the  $p^{th}$  centile is given using the standard formula (1):

$$SEp = SD \sqrt{(1 + \frac{1}{2} Z_p^2)/n}$$

Where SE is the standard error, SD is the standard deviation of the measurement of interest (which may change according to gestational age),  $Z_p$  is the value of the standard normal distribution corresponding to the  $p^{th}$  centile, and n is the sample size. To create an evidence-based early warning score we desired a 95% CI with an SE of  $< 0.10 \times SD$  at the boundaries.

Our sample size calculations are based on conservative estimates as they do not take account of the effect of serial measurements from the same women (2). Using Royston's design factor of 2.3, a longitudinal study of 1000 women could have equivalent precision to a cross-sectional study of around 2300 women (3).

#### Approach to obtaining best fit for the data

We explored different statistical methods to achieve the best fit to the data. In brief, these methods included: mean and SD using fractional polynomials (4); Cole's lambda, mu and sigma method (5);

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the lambda, mu, sigma and Box-Cox t distribution method (6); the lambda, mu, sigma and Box-Cox power exponential method; the skew power exponential method; the skew t distribution method; and multilevel models. To present curves, we tried different smoothing techniques including fractional polynomial (7), cubic splines (5), and penalised splines (8).

We assessed goodness of fit by visual inspection of empirical centiles versus fitted centiles, quantile-quantile plots of the residuals, plots of residuals versus fitted values, and the distribution of fitted Z scores across days since birth.

We used bootstrap resampling methods to estimate 95% confidence intervals for the centiles at 24 hour intervals following birth, with 50 bootstrap replicates. We repeated the analysis on each of the replicates and used the standard deviation of these results as an approximation for the standard error.

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## Appendix 4. Comparison of Baseline Characteristics of Postpartum Cohort to Women Who Did Not Contribute Postpartum Vital Sign Data

<i>Maternal baseline characteristics</i>	Included in antenatal but not postpartum analysis  N=132	Included in postpartum analysis  N=909
Maternal age (years) $\pm$ SD	30.6 (5.6)	32.2 (4.7)
Maternal weight (kg) $\pm$ SD	71.3 (14.5)	67.9 (13.7)
Maternal BMI (kg/m <sup>2</sup> ) $\pm$ SD	25.8 (4.8)	24.8 (4.7)
BMI category	63 (47.7)	546 (60.2)
- Normal (18.5-24.9 kg/m <sup>2</sup> ) (%)		
- Overweight (25.0-29.9 kg/m <sup>2</sup> ) (%)	46 (34.8)	239 (26.4)
- Obese ( $\geq$ 30 kg/m <sup>2</sup> ) (%)	23 (17.4)	122 (13.5)
Nulliparous (%)	52 (39.4)	408 (44.9)
Ethnicity:	106 (80.3)	783 (86.1)
- White (%)		
- Asian (%)	12 (9.1)	40 (4.4)
- African/Caribbean (%)	7 (5.3)	16 (1.8)
- Mixed (%)	2 (1.5)	16 (1.8)
- Other (%)	5 (3.8)	54 (5.9)
Smoker (%)	23 (17.4)	56 (6.2)
Anemia* (%)	1 (0.8)	6 (0.7)
Pre-gestational diabetes (%)	0 (0)	6 (0.7)
Pre-existing hypertension <sup>†</sup> (%)	2 (1.5)	15 (1.7)
Cardiac disease <sup>††</sup> (%)	1 (0.7)	11 (1.2)
Pre-existing renal disease (%)	5 (3.8)	19 (2.1)

Baseline maternal characteristics for postpartum cohort and women who did not contribute postpartum vital sign data. Values are mean  $\pm$ SD for continuous variables, and number (percentage) for categorical values. BMI= Body Mass Index (kg/m<sup>2</sup>). \*defined as Hb <110 g/L, <sup>†</sup> unmedicated, <sup>††</sup>(non-ischemic non-congenital).

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## **Appendix 5. Analysis to Assess the Agreement between Self- and Clinician-Recorded Observations**

These Bland-Altman plots represent the agreement between clinician-recorded and self-recorded vital signs recorded within one hour of each other. The purpose of this analysis was to ascertain whether it was appropriate to pool both sets of measurements in the primary analyses. Since the vital signs were not necessarily recorded simultaneously, but may be up to an hour apart, we do not expect perfect agreement. The main interest was to assess whether there was a systematic bias (i.e. the mean difference is not equal to zero) between clinician and self-recorded vital signs. Any bias would be concerning since this would suggest that clinician and self-recorded measurements may systematically differ, i.e. are not measuring the same thing.

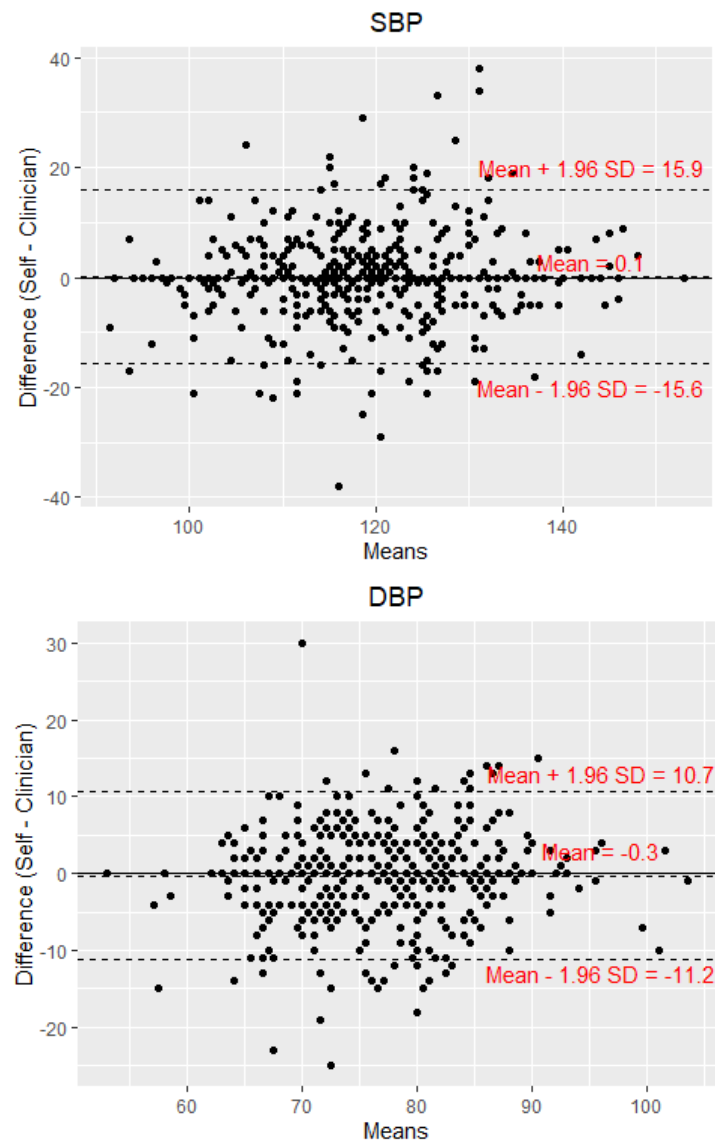
There were 517 sets of observations where there were duplicate readings within one hour of each other. The Bland-Altman plots below show little evidence of any bias, since in each case the mean difference is near to zero. In some cases, there is considerable variability (notably heart rate), but this is commensurate with the measurements being recorded up to an hour apart. We were thus satisfied that it was appropriate to combine clinician and self-recorded observations in our primary analyses.

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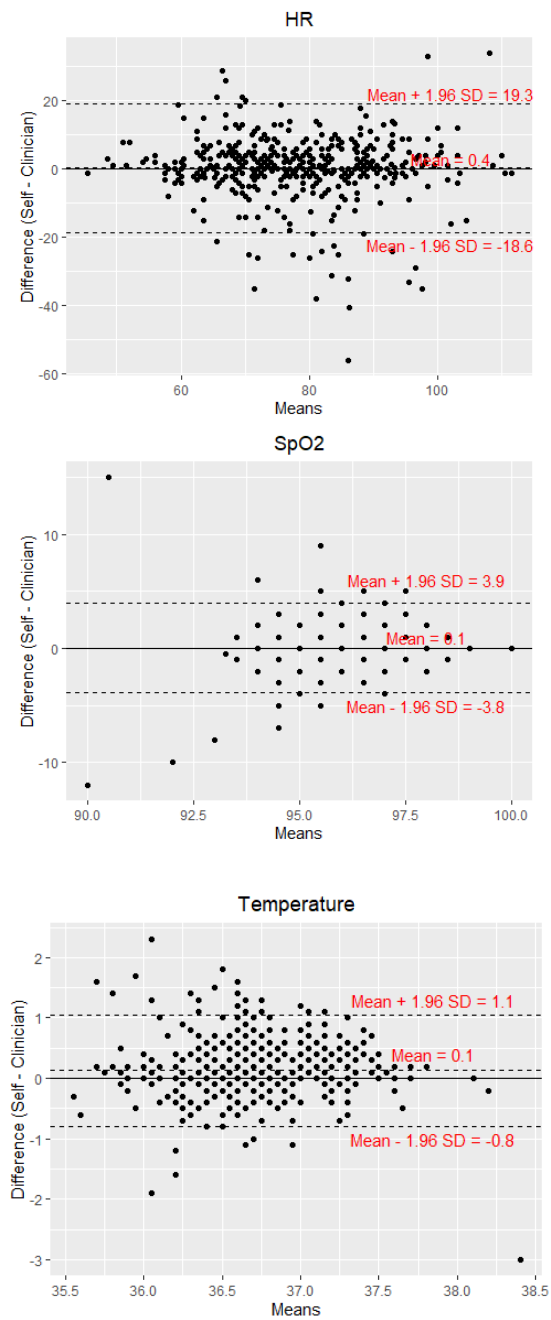
**Figure A5. Bland-Altman plot to assess the agreement between self- and clinician-taken observations.**



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## Appendix 6. Values for smoothed centiles for maternal vital signs (BP, HR, RR, SpO<sub>2</sub>, Temperature)

### Blood pressure

**Table S6.1. Smoothed Centiles for Systolic Blood Pressure and Diastolic Blood Pressure (mmHg) According to Day Postpartum (PN) for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

	Centiles for Systolic Blood Pressure (95% CI)				
Day PN	3rd	10th	50th	90th	97th
0	87.6 (77.1, 98.1)	99.8 (96.2, 103.5)	116.1 (114.4, 117.9)	133.1 (129.2, 137.1)	146.8 (134.6, 159.0)
1	97.6 (96.0, 99.2)	103.8 (102.7, 105.0)	117.1 (116.1, 118.0)	130.8 (129.5, 132.2)	137.6 (135.6, 139.7)
2	99.0 (98.0, 100.0)	105.0 (104.3, 105.8)	118.2 (117.6, 118.8)	132.0 (131.2, 132.7)	138.7 (137.5, 139.8)
3	100.3 (99.5, 101.1)	106.3 (105.6, 106.9)	119.5 (119.0, 120.0)	133.5 (132.8, 134.2)	140.3 (139.3, 141.3)
4	101.3 (100.3, 102.3)	107.3 (106.5, 108.1)	120.7 (120.1, 121.3)	134.8 (134.1, 135.6)	141.7 (140.7, 142.7)
5	101.8 (100.7, 102.8)	107.8 (107.0, 108.6)	121.2 (120.7, 121.7)	135.5 (134.8, 136.2)	142.5 (141.5, 143.6)
6	101.6 (100.7, 102.5)	107.7 (107.0, 108.4)	121.2 (120.5, 121.8)	135.6 (134.8, 136.3)	142.8 (141.8, 143.8)
7	101.0 (100.1, 101.9)	107.2 (106.5, 107.8)	120.6 (120.0, 121.2)	135.1 (134.4, 135.9)	142.6 (141.4, 143.8)
8	100.3 (99.5, 101.1)	106.4 (105.8, 106.9)	119.7 (119.1, 120.2)	134.1 (133.3, 134.9)	141.5 (140.3, 142.7)
9	99.6 (98.8, 100.4)	105.4 (104.8, 106.0)	118.5 (118.0, 119.0)	132.7 (132.0, 133.4)	139.9 (138.9, 141.0)
10	98.9 (98.1, 99.6)	104.5 (104.0, 105.0)	117.3 (116.8, 117.8)	131.4 (130.8, 132.0)	138.5 (137.6, 139.4)
11	98.3 (97.6, 98.9)	103.8 (103.3, 104.3)	116.4 (115.9, 116.9)	130.4 (129.7, 131.1)	137.4 (136.4, 138.5)
12	97.9 (97.2, 98.6)	103.3 (102.8, 103.9)	115.9 (115.3, 116.4)	129.8 (129.1, 130.6)	136.9 (135.8, 138.0)
13	97.8 (97.1, 98.5)	103.2 (102.7, 103.7)	115.7 (115.2, 116.2)	129.7 (128.9, 130.4)	136.8 (135.6, 137.9)
14	97.9 (87.4, 108.4)	103.2 (99.6, 106.8)	115.7 (113.9, 117.4)	129.7 (125.7, 133.7)	136.9 (124.7, 149.1)
	Centiles for Diastolic Blood Pressure (95% CI)				
Day PN	3rd	10th	50th	90th	97th
0	59.1 (52.9, 65.3)	63.3 (61.0, 65.6)	73.6 (72.4, 74.9)	86.0 (82.9, 89.1)	92.6 (83.9, 101.3)
1	59.7 (58.5, 61.0)	64.1 (63.3, 65.0)	74.6 (73.8, 75.3)	86.3 (85.0, 87.6)	92.3 (90.0, 94.6)
2	60.5 (59.7, 61.3)	65.1 (64.5, 65.7)	75.6 (75.0, 76.2)	86.8 (86.0, 87.6)	92.4 (91.1, 93.6)
3	61.4 (60.8, 62.0)	66.2 (65.8, 66.6)	76.7 (76.3, 77.2)	87.6 (87.1, 88.2)	92.9 (92.1, 93.6)
4	62.3 (61.5, 63.1)	67.2 (66.7, 67.6)	77.8 (77.4, 78.1)	88.4 (87.8, 89.0)	93.5 (92.4, 94.5)
5	62.9 (62.2, 63.6)	67.9 (67.3, 68.4)	78.4 (78.0, 78.8)	88.9 (88.4, 89.4)	93.8 (93.1, 94.6)
6	63.2 (62.4, 63.9)	68.1 (67.6, 68.7)	78.6 (78.2, 79.0)	89.0 (88.6, 89.5)	93.9 (93.2, 94.6)
7	63.1 (62.5, 63.6)	68.0 (67.5, 68.4)	78.4 (78.0, 78.8)	88.8 (88.3, 89.2)	93.6 (93.0, 94.2)
8	62.6 (62.1, 63.2)	67.4 (67.0, 67.9)	77.7 (77.4, 78.1)	88.1 (87.6, 88.6)	93.0 (92.3, 93.6)

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9	62.0 (61.4, 62.5)	66.7 (66.3, 67.1)	76.9 (76.5, 77.2)	87.2 (86.7, 87.6)	92.0 (91.4, 92.7)
10	61.3 (60.7, 61.9)	66.0 (65.6, 66.3)	76.0 (75.7, 76.4)	86.2 (85.8, 86.6)	91.0 (90.4, 91.6)
11	60.7 (59.9, 61.4)	65.4 (64.9, 65.8)	75.3 (74.9, 75.7)	85.4 (84.9, 85.9)	90.2 (89.6, 90.9)
12	60.3 (59.1, 61.4)	65.0 (64.3, 65.6)	74.8 (74.5, 75.2)	84.9 (84.4, 85.4)	89.8 (88.9, 90.6)
13	60.0 (59.2, 60.8)	64.7 (64.2, 65.2)	74.6 (74.2, 74.9)	84.6 (84.2, 85.0)	89.5 (88.9, 90.2)
14	59.9 (53.7, 66.1)	64.7 (62.4, 67.0)	74.5 (73.3, 75.7)	84.6 (81.5, 87.7)	89.6 (80.9, 98.3)

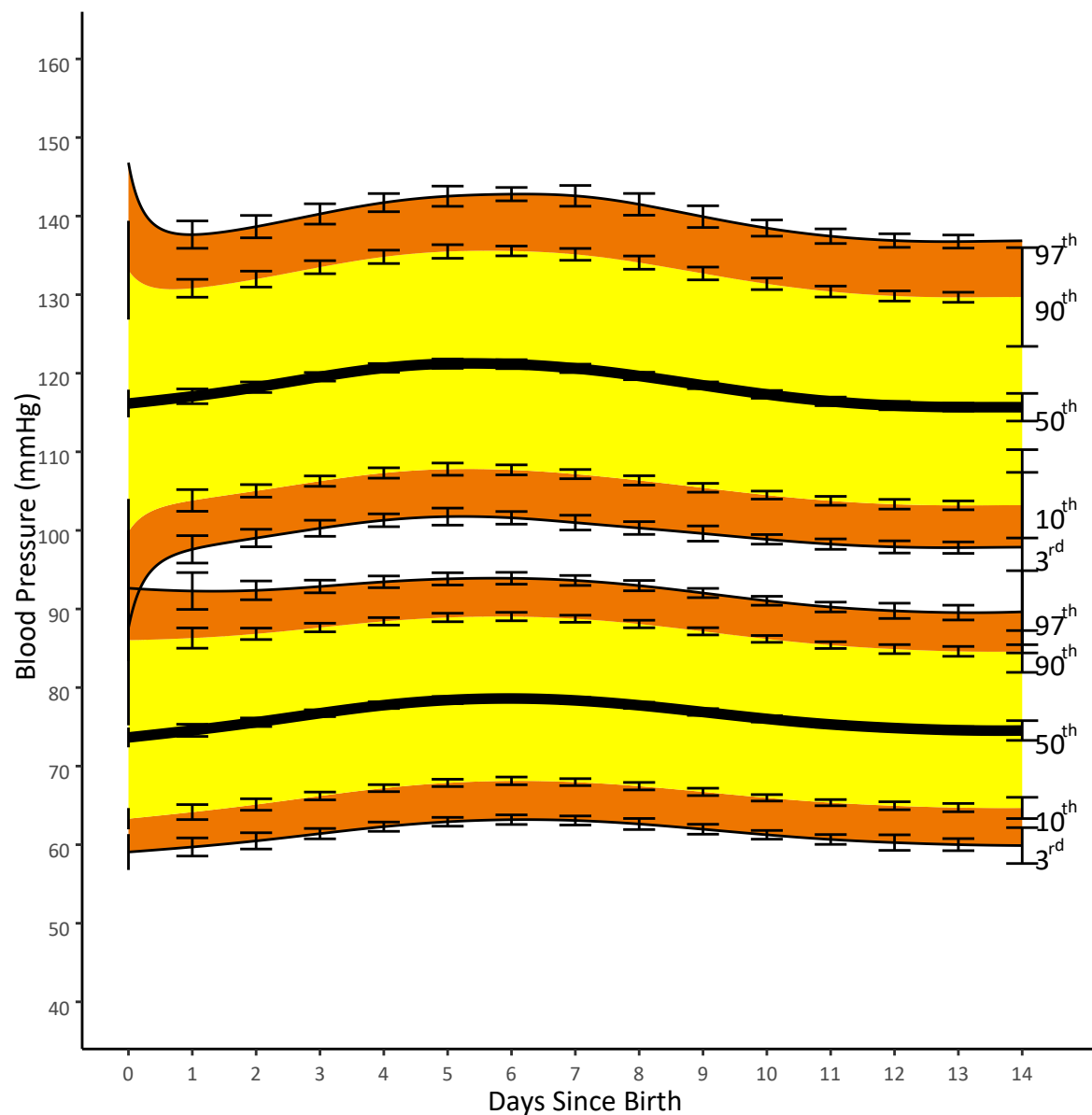
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**Figure S6.1. Smoothed centiles for systolic blood pressure and diastolic blood pressure (mmHg); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles with corresponding 95% confidence intervals.**



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## Heart Rate

**Table S6.2. Smoothed Centiles for Heart Rate (bpm) According to Day Postpartum (PN) for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles (95% CI)**

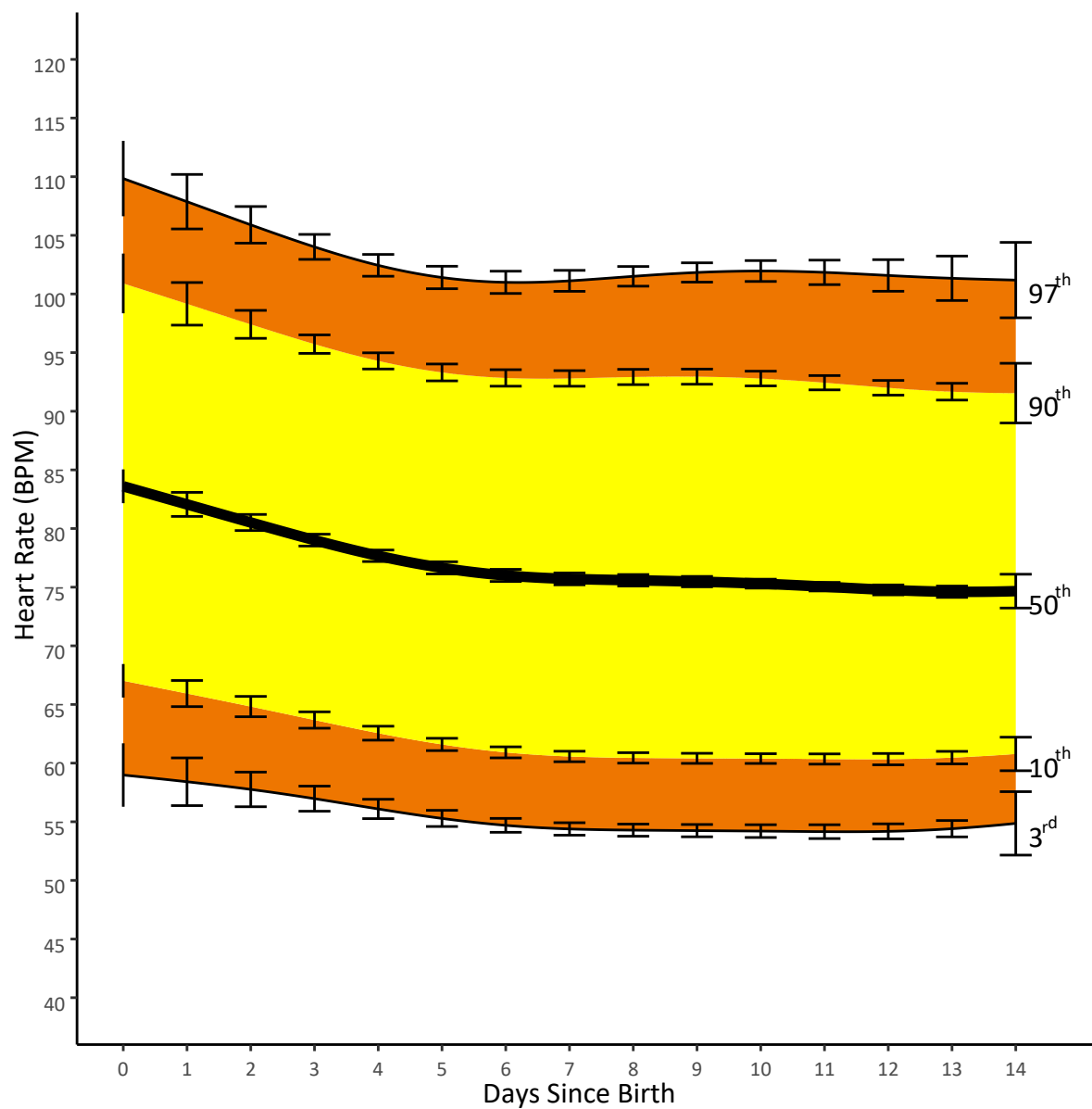
Day PN	Centiles for Heart Rate (95% CI)				
	3 <sup>rd</sup>	10 <sup>th</sup>	50 <sup>th</sup>	90 <sup>th</sup>	97 <sup>th</sup>
0	59.0 (56.2, 61.7)	67.0 (65.6, 68.5)	83.6 (82.2, 85.0)	100.9 (99.2, 102.6)	109.8 (107.5, 112.1)
1	58.4 (56.4, 60.4)	65.9 (64.9, 67.0)	82.1 (81.1, 83.0)	99.2 (98.0, 100.3)	107.9 (106.2, 109.5)
2	57.8 (56.3, 59.2)	64.8 (64.1, 65.5)	80.5 (79.9, 81.1)	97.4 (96.6, 98.2)	105.9 (104.7, 107.1)
3	57.0 (55.9, 58.0)	63.7 (63.1, 64.2)	79.0 (78.6, 79.5)	95.7 (95.1, 96.3)	104.0 (103.0, 105.0)
4	56.1 (55.3, 56.9)	62.6 (62.0, 63.1)	77.7 (77.3, 78.1)	94.3 (93.6, 94.9)	102.4 (101.5, 103.4)
5	55.3 (54.6, 56.0)	61.6 (61.1, 62.1)	76.6 (76.2, 77.1)	93.3 (92.6, 94.0)	101.4 (100.4, 102.4)
6	54.7 (54.1, 55.3)	60.9 (60.4, 61.4)	76.0 (75.5, 76.5)	92.8 (92.1, 93.6)	101.0 (100.0, 102.0)
7	54.4 (53.8, 55.0)	60.6 (60.1, 61.1)	75.7 (75.2, 76.2)	92.8 (92.0, 93.6)	101.1 (100.2, 102.1)
8	54.3 (53.7, 54.9)	60.4 (60.0, 60.9)	75.6 (75.1, 76.1)	92.9 (92.2, 93.6)	101.5 (100.6, 102.4)
9	54.2 (53.7, 54.8)	60.4 (59.9, 60.9)	75.5 (75.0, 75.9)	92.9 (92.2, 93.7)	101.8 (100.9, 102.8)
10	54.2 (53.6, 54.8)	60.4 (59.9, 60.9)	75.3 (74.8, 75.7)	92.8 (92.1, 93.5)	102.0 (100.9, 103.0)
11	54.2 (53.5, 54.8)	60.3 (59.8, 60.9)	75.0 (74.6, 75.5)	92.4 (91.7, 93.2)	101.8 (100.7, 103.0)
12	54.2 (53.5, 54.8)	60.3 (59.8, 60.9)	74.8 (74.2, 75.3)	92.0 (91.3, 92.7)	101.6 (100.3, 102.9)
13	54.4 (53.8, 55.0)	60.5 (59.9, 61.0)	74.6 (74.1, 75.2)	91.7 (90.9, 92.4)	101.3 (99.7, 103.0)
14	54.9 (52.1, 57.6)	60.8 (59.3, 62.2)	74.7 (73.3, 76.0)	91.5 (89.8, 93.3)	101.2 (98.9, 103.5)

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**Figure S6.2. Smoothed centiles for heart rate (bpm); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles with corresponding 95% confidence intervals.**



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## **Respiratory rate**

### *Tapping method*

It was not possible to generate smoothed centiles due to relatively few data as RR measured using the tapping method was only taken at midwife visits during the postpartum period. Therefore we pooled the data into four periods of 3.5 days and calculated the empirical centiles. These are presented below.

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**Table S6.3. Centiles for Respiratory Rate (Breaths per Minute) According to Days**

**Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI) From Tapping Method**

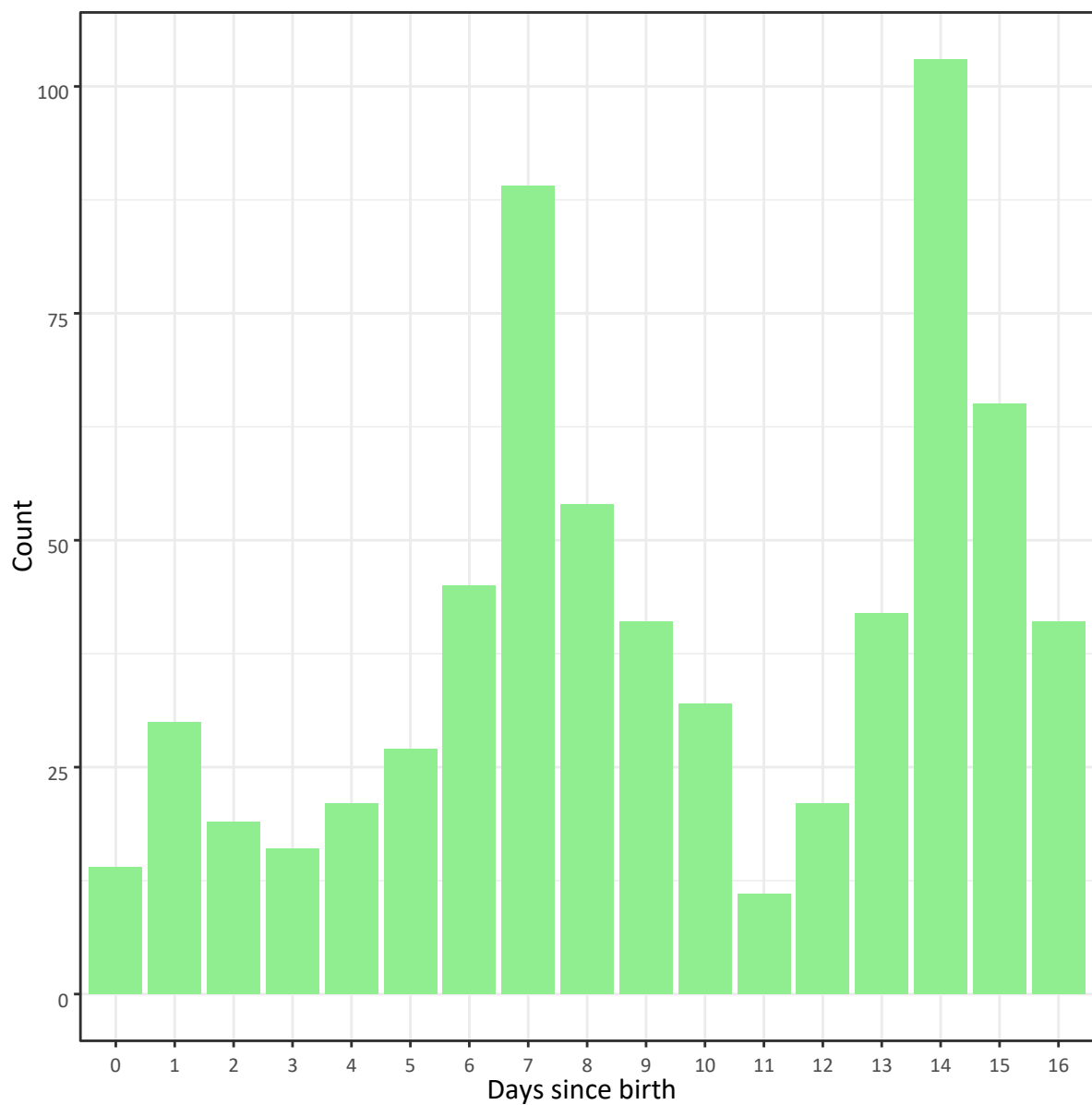
<b>Period</b>	<b>3rd centile</b>	<b>10th centile</b>	<b>50th centile</b>	<b>90th centile</b>	<b>97th centile</b>
1st 3.5 days	9.8	11.2	15.2	21.5	22.7
2nd 3.5 days	9.8	11.0	15.5	20.3	23.2
3rd 3.5 days	9.2	10.5	15.0	20.6	22.8
4th 3.5 days	8.9	10.6	15.0	20.2	22.3

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**Figure S6.3. Number of recorded measurements of respiratory rate from tapping method.**



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### *Photoplethysmography (PPG) method*

We recorded raw PPG data at the same time as heart rate and SpO<sub>2</sub> from a Nonin Bluetooth WristOx2 3150. Raw PPG signals were recorded for at least 60 seconds.

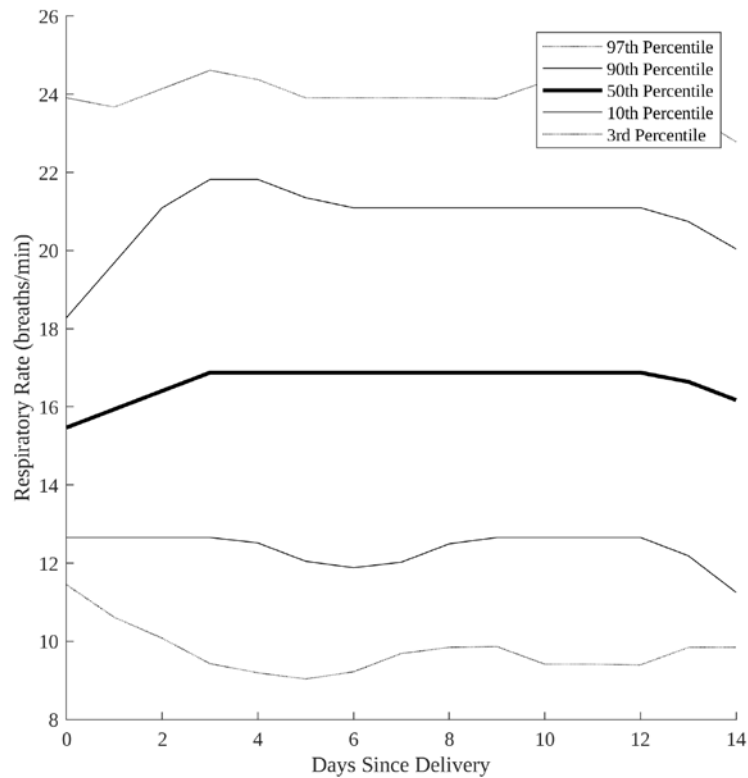
We processed the raw PPG signals in MATLAB (<https://uk.mathworks.com>). We used the methodologies used for processing the PPG signals, and subsequently processing the respiratory signals extracted from the PPG signals previously described (1-3).

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**Figure S6.4. Smoothed percentiles in PPG estimated RR from pipeline A for each day after birth.**



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## Oxygen saturation (SpO<sub>2</sub>)

**Table S6.5. Smoothed Centiles for Oxygen Saturation SpO<sub>2</sub> (%) According to Day Postpartum (PN) for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

	Centiles for Oxygen Saturations SpO <sub>2</sub> (95% CI)				
Day PN	3 <sup>rd</sup>	10 <sup>th</sup>	50 <sup>th</sup>	90 <sup>th</sup>	97 <sup>th</sup>
0	92.6 (92.1, 93.0)	94.0 (93.8, 94.2)	95.9 (95.8, 96.1)	97.5 (97.3, 97.6)	98.2 (98.0, 98.4)
1	92.7 (92.4, 93.1)	94.1 (94.0, 94.3)	96.1 (96.0, 96.2)	97.6 (97.5, 97.7)	98.4 (98.2, 98.5)
2	92.9 (92.6, 93.1)	94.3 (94.1, 94.4)	96.2 (96.1, 96.3)	97.7 (97.7, 97.8)	98.5 (98.4, 98.6)
3	93.0 (92.8, 93.2)	94.4 (94.3, 94.4)	96.3 (96.3, 96.3)	97.9 (97.8, 97.9)	98.6 (98.5, 98.7)
4	93.1 (93.0, 93.3)	94.4 (94.3, 94.5)	96.4 (96.3, 96.4)	97.9 (97.9, 98.0)	98.6 (98.6, 98.7)
5	93.2 (93.1, 93.3)	94.5 (94.4, 94.5)	96.4 (96.3, 96.4)	97.9 (97.9, 98.0)	98.6 (98.6, 98.7)
6	93.2 (93.1, 93.4)	94.5 (94.4, 94.5)	96.4 (96.3, 96.4)	97.9 (97.9, 98.0)	98.6 (98.5, 98.7)
7	93.3 (93.1, 93.4)	94.4 (94.4, 94.5)	96.3 (96.3, 96.4)	97.9 (97.8, 97.9)	98.5 (98.5, 98.6)
8	93.3 (93.1, 93.4)	94.4 (94.4, 94.5)	96.3 (96.2, 96.3)	97.8 (97.8, 97.9)	98.5 (98.4, 98.5)
9	93.3 (93.1, 93.4)	94.4 (94.3, 94.5)	96.3 (96.2, 96.3)	97.8 (97.7, 97.8)	98.5 (98.4, 98.5)
10	93.3 (93.1, 93.4)	94.4 (94.3, 94.5)	96.3 (96.2, 96.3)	97.8 (97.7, 97.8)	98.4 (98.4, 98.5)
11	93.3 (93.1, 93.4)	94.4 (94.3, 94.5)	96.2 (96.2, 96.3)	97.8 (97.7, 97.8)	98.5 (98.4, 98.5)
12	93.3 (93.1, 93.4)	94.4 (94.3, 94.5)	96.2 (96.2, 96.3)	97.8 (97.7, 97.8)	98.5 (98.4, 98.5)
13	93.3 (93.2, 93.5)	94.4 (94.3, 94.5)	96.2 (96.2, 96.3)	97.8 (97.7, 97.8)	98.5 (98.4, 98.5)
14	93.3 (92.9, 93.8)	94.4 (94.2, 94.6)	96.2 (96.1, 96.4)	97.8 (97.6, 97.9)	98.5 (98.3, 98.6)

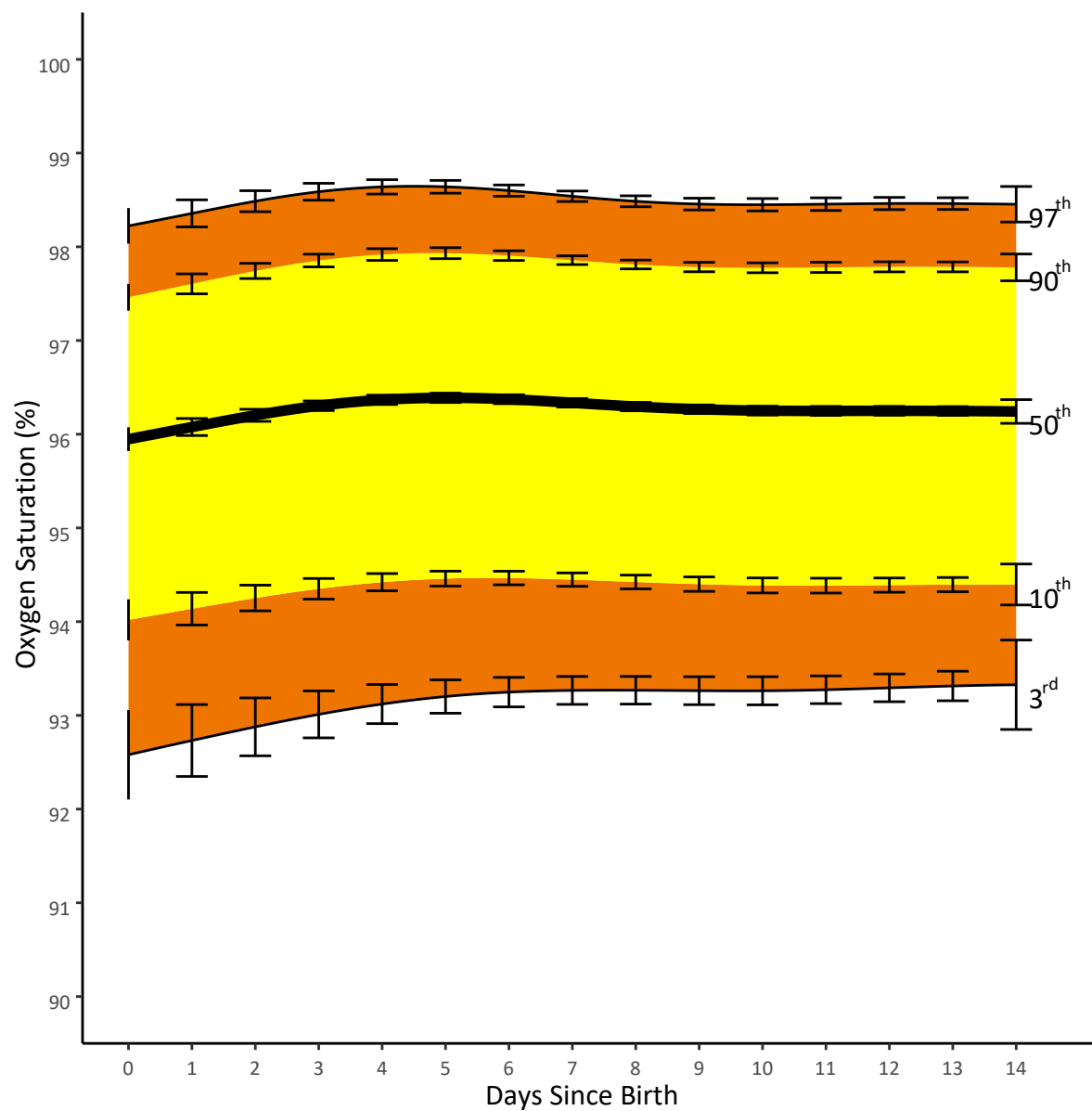
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**Figure S6.5. Smoothed centiles for oxygen saturation SpO<sub>2</sub> (%); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles with corresponding 95% confidence intervals.**



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## Temperature

**Table S6.6. Smoothed Centiles for Temperature (°C) According to Day Postpartum (PN) for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

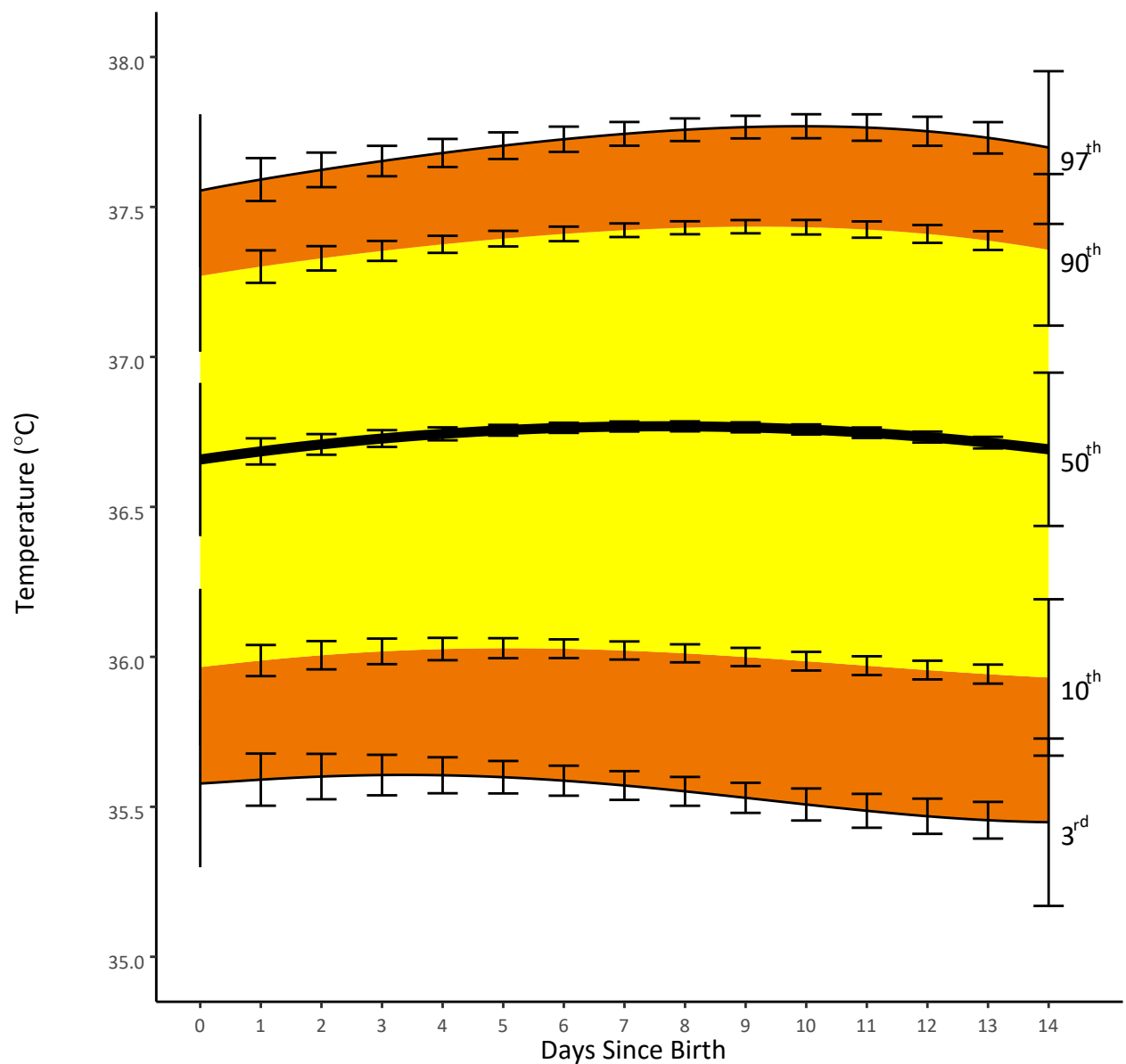
	Centiles for Temperature (95% CI)				
Day PN	3 <sup>rd</sup>	10 <sup>th</sup>	50 <sup>th</sup>	90 <sup>th</sup>	97 <sup>th</sup>
0	35.58 (35.30, 35.86)	35.97 (35.71, 36.23)	36.66 (36.40, 36.91)	37.27 (37.02, 37.52)	37.55 (37.30, 37.81)
1	35.59 (35.50, 35.68)	35.99 (35.94, 36.04)	36.69 (36.64, 36.73)	37.30 (37.25, 37.36)	37.59 (37.52, 37.66)
2	35.60 (35.53, 35.68)	36.01 (35.96, 36.05)	36.71 (36.67, 36.74)	37.33 (37.29, 37.37)	37.62 (37.57, 37.68)
3	35.61 (35.54, 35.67)	36.02 (35.98, 36.06)	36.73 (36.70, 36.76)	37.35 (37.32, 37.39)	37.65 (37.60, 37.70)
4	35.61 (35.55, 35.67)	36.03 (35.99, 36.06)	36.74 (36.72, 36.77)	37.38 (37.35, 37.40)	37.68 (37.63, 37.73)
5	35.60 (35.54, 35.65)	36.03 (36.00, 36.06)	36.76 (36.74, 36.77)	37.39 (37.37, 37.42)	37.70 (37.66, 37.75)
6	35.59 (35.54, 35.64)	36.03 (36.00, 36.06)	36.76 (36.75, 36.78)	37.41 (37.39, 37.43)	37.73 (37.68, 37.77)
7	35.57 (35.52, 35.62)	36.02 (35.99, 36.05)	36.77 (36.75, 36.78)	37.42 (37.40, 37.45)	37.74 (37.70, 37.78)
8	35.55 (35.50, 35.60)	36.01 (35.98, 36.04)	36.77 (36.75, 36.79)	37.43 (37.41, 37.45)	37.76 (37.72, 37.80)
9	35.53 (35.48, 35.58)	36.00 (35.97, 36.03)	36.77 (36.75, 36.78)	37.43 (37.41, 37.46)	37.77 (37.73, 37.80)
10	35.51 (35.45, 35.56)	35.99 (35.95, 36.02)	36.76 (36.74, 36.78)	37.43 (37.41, 37.46)	37.77 (37.73, 37.81)
11	35.49 (35.43, 35.54)	35.97 (35.94, 36.00)	36.75 (36.73, 36.76)	37.42 (37.40, 37.45)	37.76 (37.72, 37.81)
12	35.47 (35.41, 35.53)	35.96 (35.92, 35.99)	36.73 (36.71, 36.75)	37.41 (37.38, 37.44)	37.75 (37.70, 37.80)
13	35.46 (35.39, 35.52)	35.94 (35.91, 35.97)	36.71 (36.69, 36.73)	37.39 (37.36, 37.42)	37.73 (37.68, 37.78)
14	35.45 (35.17, 35.73)	35.93 (35.67, 36.19)	36.69 (36.44, 36.95)	37.36 (37.10, 37.61)	37.70 (37.44, 37.95)

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**Figure S6.6. Smoothed centiles for temperature (°C); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles with corresponding 95% confidence intervals.**



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## **Appendix 7. Restrictive Population Definition, Demographics and Analysis**

The restrictive population was defined as follows:

Age <40 years

BMI >18.5 to <30 kg/m<sup>2</sup>

Non smoker

No cardiac disease

No respiratory disease

No renal disease

No hepatic disease

No gastrointestinal disease

No endocrine disease

No pre-gestational diabetes

No hematological disease

No history of venous thrombo-embolism

No active malignancy

No severe maternal conditions (measures were excluded following the time stamp of diagnosis)

Applying the “restrictive” population definitions reduced the cohort to 550/909 women.

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**Table A7.1. Baseline Maternal Characteristics for Restrictive, Excluded, and Total**

**Pragmatic Populations**

<i>Maternal baseline characteristics</i>	Included in restricted population N=550	Excluded from restricted population N=359	Total N=909
Maternal age (years) $\pm$ SD	32.0 (3.9)	32.4 (5.7)	32.2 (4.7)
Maternal weight (kg) $\pm$ SD	64.2 (9.5)	73.5 (16.8)	67.9 (13.7)
Maternal BMI (kg/m <sup>2</sup> ) $\pm$ SD	23.3 (2.9)	26.9 (5.8)	24.8 (4.7)
BMI category			
- Normal (18.5-24.9 kg/m <sup>2</sup> ) (%)	398 (72.6)	148 (41.2)	546 (60.2)
- Overweight (25.0-29.9 kg/m <sup>2</sup> ) (%)	150 (27.4)	89 (24.8)	239 (26.4)
- Obese ( $\geq$ 30 kg/m <sup>2</sup> ) (%)	0 (0)	122 (34.0)	122 (13.5)
Nulliparous (%)	254 (46.2)	154 (42.9)	408 (44.9)
Ethnicity:			
- White (%)	472 (85.8)	311 (86.6)	783 (86.1)
- Asian (%)	19 (3.5)	21 (5.8)	40 (4.4)
- African/Caribbean (%)	10 (1.8)	6 (1.7)	16 (1.8)
- Mixed (%)	10 (1.8)	6 (1.7)	16 (1.8)
- Other (%)	39 (7.1)	15 (4.2)	54 (5.9)
Smoker (%)	0 (0)	56 (15.6)	56 (6.2)
Anemia* (%)	2 (0.4)	4 (1.1)	6 (0.7)
Pre-gestational diabetes (%)	0 (0)	6 (1.7)	6 (0.7)
Pre-existing hypertension <sup>†</sup> (%)	0 (0)	15 (4.2)	15 (1.7)
Cardiac disease <sup>††</sup> (%)	0 (0)	11 (3.1)	11 (1.2)
Pre-existing renal disease (%)	0 (0)	19 (5.3)	19 (2.1)

Values are mean  $\pm$ SD for continuous variables, and number (percentage) for categorical values. *BMI= Body Mass Index (kg/m<sup>2</sup>). \*defined as Hb <110 g/L, <sup>†</sup> unmedicated, <sup>††</sup>(non-ischemic non- congenital).*

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In the restrictive group, systolic blood pressure increased from the day of birth: median, or 50<sup>th</sup> centile (3<sup>rd</sup> to 97<sup>th</sup> centile) 115 (95 to 136) mmHg to reach a maximum of median (3<sup>rd</sup> to 97<sup>th</sup> centile) 120 (102 to 140) mmHg 5.2 days postpartum, an increase (95% CI) of 5 (2 to 8) mmHg. Systolic blood pressure then decreased to a nadir of median (3<sup>rd</sup> to 97<sup>th</sup> centile) 115 (98 to 134) mmHg 14 days postpartum, a difference (95% CI) of -6 (-6 to -5) mmHg from maximum to minimum systolic BP.

Diastolic blood pressure was lowest on the day of birth: median, or 50<sup>th</sup> centile (3<sup>rd</sup> to 97<sup>th</sup> centile) 74 (59 to 89) mmHg. Diastolic blood pressure then rose to reach a maximum of median (3<sup>rd</sup> to 97<sup>th</sup> centile) 78 (63 to 93) mmHg 6 days postpartum, a difference (95% CI) of 4 (2 to 6) mmHg from minimum to maximum diastolic BP. Diastolic blood pressure subsequently decreased: median (3<sup>rd</sup> to 97<sup>th</sup> centile) 74 (59 to 88) mmHg 14 days postpartum, a difference (95% CI) of -4 (-5 to -3) mmHg.

**Table A7.2. Smoothed Centiles for Systolic Blood Pressure and Diastolic Blood Pressure (mmHg) for Restrictive Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

	Centiles for Systolic Blood Pressure (95% CI)
--	---

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Day PN	3rd	10th	50th	90th	97th
0	94.8 (90.5, 99.1)	102.1 (98.4, 105.8)	115.2 (112.8, 117.6)	128.4 (125.9, 130.9)	135.9 (132.4, 139.4)
1	96.7 (94.5, 98.9)	103.4 (101.4, 105.3)	116.1 (114.7, 117.5)	129.1 (127.8, 130.4)	136.0 (134.3, 137.7)
2	98.4 (97.1, 99.7)	104.6 (103.6, 105.7)	117.3 (116.3, 118.2)	130.2 (128.9, 131.5)	136.8 (135.2, 138.4)
3	100.0 (98.8, 101.1)	106.0 (105.2, 106.7)	118.6 (117.8, 119.3)	131.6 (130.4, 132.8)	138.1 (136.6, 139.6)
4	101.2 (100.1, 102.2)	107.1 (106.3, 107.8)	119.7 (119.1, 120.3)	132.8 (131.7, 133.8)	139.2 (137.8, 140.6)
5	101.7 (100.5, 103.0)	107.5 (106.6, 108.5)	120.1 (119.6, 120.7)	133.3 (132.3, 134.2)	139.7 (138.3, 141.1)
6	101.7 (100.5, 103.0)	107.5 (106.6, 108.3)	120.0 (119.4, 120.6)	133.1 (132.3, 134.0)	139.6 (138.2, 141.0)
7	101.3 (100.3, 102.3)	106.9 (106.2, 107.7)	119.4 (118.7, 120.0)	132.5 (131.7, 133.3)	139.0 (137.9, 140.0)
8	100.6 (99.7, 101.5)	106.1 (105.4, 106.8)	118.4 (117.9, 119.0)	131.5 (130.8, 132.3)	138.0 (137.0, 138.9)
9	99.7 (98.9, 100.6)	105.2 (104.5, 105.9)	117.4 (116.8, 117.9)	130.4 (129.7, 131.1)	136.8 (135.9, 137.8)
10	98.9 (98.0, 99.8)	104.2 (103.5, 104.9)	116.3 (115.7, 116.9)	129.3 (128.6, 130.0)	135.7 (134.8, 136.7)
11	98.2 (97.4, 99.1)	103.5 (102.8, 104.2)	115.5 (114.8, 116.1)	128.4 (127.7, 129.2)	134.9 (133.9, 135.8)
12	97.8 (96.9, 98.7)	103.0 (102.3, 103.7)	114.9 (114.2, 115.6)	127.9 (127.1, 128.8)	134.4 (133.4, 135.4)
13	97.6 (96.9, 98.4)	102.8 (102.2, 103.4)	114.7 (114.1, 115.3)	127.7 (127.0, 128.5)	134.3 (133.3, 135.2)
14	97.6 (93.3, 101.9)	102.7 (99.0, 106.5)	114.6 (112.2, 117.0)	127.7 (125.2, 130.2)	134.3 (130.9, 137.8)

Day PN	Centiles for Diastolic Blood Pressure (95% CI)				
	3rd	10th	50th	90th	97th
0	58.8 (56.4, 61.3)	63.5 (61.5, 65.5)	73.6 (71.9, 75.4)	84.1 (82.2, 86.1)	89.1 (86.6, 91.7)
1	59.4 (58.1, 60.7)	64.1 (63.1, 65.1)	74.3 (73.4, 75.1)	84.7 (83.7, 85.6)	89.6 (88.3, 91.0)
2	60.2 (59.0, 61.3)	64.9 (64.1, 65.7)	75.1 (74.4, 75.7)	85.5 (84.7, 86.2)	90.4 (89.3, 91.5)
3	61.1 (59.9, 62.3)	65.8 (65.0, 66.6)	76.0 (75.5, 76.6)	86.5 (85.8, 87.1)	91.4 (90.4, 92.4)
4	61.9 (60.9, 63.0)	66.7 (65.9, 67.5)	77.0 (76.5, 77.5)	87.4 (86.8, 88.1)	92.3 (91.4, 93.3)
5	62.5 (61.6, 63.4)	67.3 (66.6, 68.0)	77.6 (77.2, 78.1)	88.0 (87.5, 88.6)	92.9 (92.1, 93.7)
6	62.7 (61.9, 63.5)	67.5 (66.9, 68.1)	77.8 (77.4, 78.2)	88.1 (87.6, 88.7)	93.0 (92.2, 93.8)
7	62.5 (61.8, 63.2)	67.3 (66.8, 67.8)	77.5 (77.1, 78.0)	87.8 (87.2, 88.3)	92.6 (91.8, 93.3)
8	62.0 (61.3, 62.7)	66.8 (66.2, 67.3)	76.9 (76.4, 77.4)	87.0 (86.4, 87.6)	91.8 (91.1, 92.5)
9	61.3 (60.6, 62.1)	66.1 (65.5, 66.6)	76.1 (75.6, 76.6)	86.1 (85.5, 86.6)	90.7 (90.1, 91.4)
10	60.7 (59.9, 61.5)	65.4 (64.8, 66.0)	75.3 (74.8, 75.8)	85.2 (84.6, 85.7)	89.8 (89.1, 90.4)
11	60.1 (59.2, 60.9)	64.8 (64.3, 65.3)	74.7 (74.3, 75.1)	84.4 (83.9, 84.9)	89.0 (88.3, 89.6)
12	59.7 (58.7, 60.7)	64.4 (63.8, 64.9)	74.2 (73.8, 74.7)	83.9 (83.3, 84.4)	88.4 (87.4, 89.4)
13	59.4 (58.5, 60.3)	64.2 (63.6, 64.7)	74.0 (73.5, 74.4)	83.6 (83.1, 84.1)	88.1 (87.4, 88.8)
14	59.3 (56.8, 61.7)	64.1 (62.1, 66.1)	74.0 (72.2, 75.7)	83.6 (81.6, 85.5)	88.1 (85.6, 90.7)

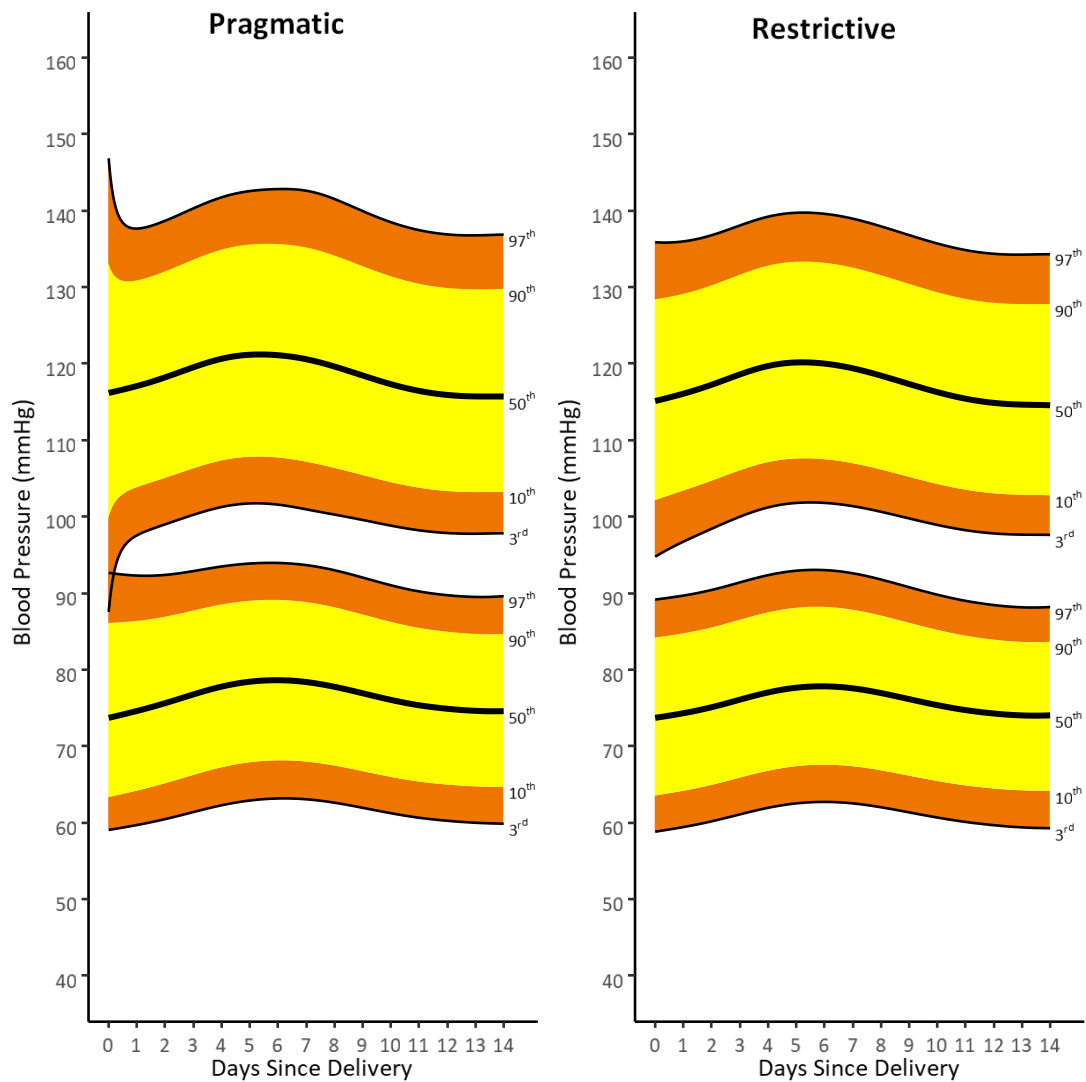
Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Figure A7.1. Smoothed centiles for blood pressure (mmHg); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for all participants (pragmatic) and restrictive cohorts.**



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**Table A7.3. Smoothed Centiles for Heart Rate (bpm) for Restrictive Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

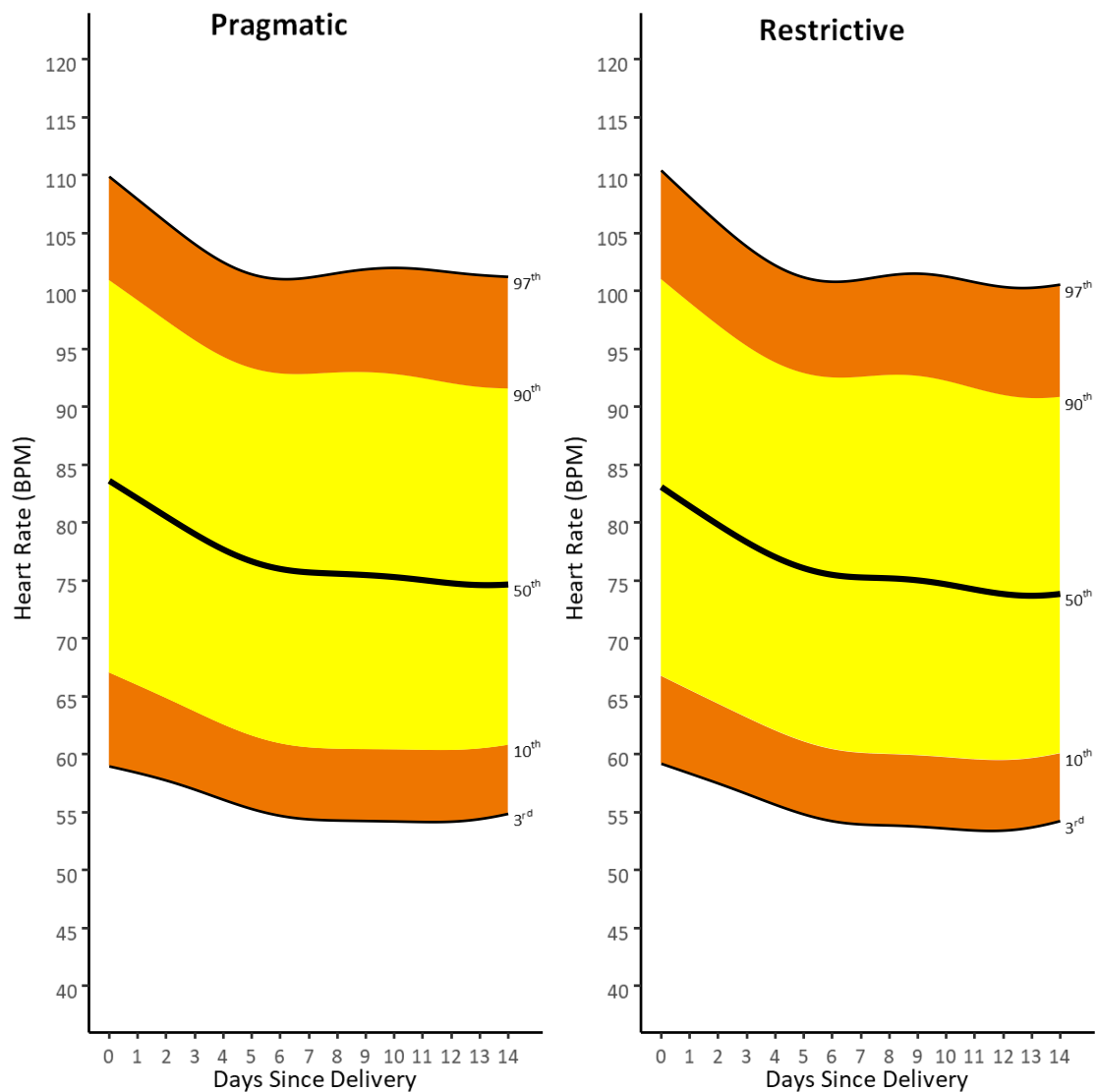
Day PN	Centiles for Heart Rate (95% CI)				
	3rd	10th	50th	90th	97th
0	59.2 (54.6, 63.8)	66.7 (64.5, 69.0)	83.1 (81.0, 85.2)	101.0 (98.3, 103.7)	110.4 (106.7, 114.0)
1	58.4 (54.9, 61.8)	65.5 (63.8, 67.3)	81.4 (79.9, 82.9)	99.0 (97.0, 100.9)	108.1 (105.3, 110.8)
2	57.5 (55.1, 59.9)	64.3 (63.1, 65.6)	79.8 (78.8, 80.8)	97.0 (95.7, 98.4)	105.8 (103.8, 107.9)
3	56.6 (55.0, 58.2)	63.2 (62.2, 64.1)	78.3 (77.6, 79.0)	95.2 (94.2, 96.2)	103.8 (102.2, 105.4)
4	55.7 (54.6, 56.7)	62.0 (61.3, 62.8)	77.0 (76.4, 77.7)	93.8 (92.9, 94.7)	102.2 (100.8, 103.5)
5	54.8 (54.0, 55.6)	61.1 (60.4, 61.7)	76.1 (75.5, 76.7)	92.9 (92.0, 93.7)	101.1 (99.9, 102.3)
6	54.2 (53.5, 55.0)	60.4 (59.8, 61.0)	75.5 (74.9, 76.1)	92.5 (91.7, 93.3)	100.8 (99.7, 101.8)
7	54.0 (53.2, 54.8)	60.1 (59.5, 60.7)	75.3 (74.7, 75.9)	92.5 (91.8, 93.3)	100.9 (100.0, 101.9)
8	53.9 (53.1, 54.7)	60.0 (59.4, 60.6)	75.2 (74.6, 75.8)	92.7 (92.0, 93.4)	101.3 (100.3, 102.3)
9	53.8 (53.0, 54.5)	59.9 (59.3, 60.4)	75.0 (74.5, 75.6)	92.6 (91.9, 93.4)	101.5 (100.4, 102.5)
10	53.6 (53.0, 54.3)	59.7 (59.2, 60.2)	74.7 (74.2, 75.2)	92.2 (91.3, 93.1)	101.2 (100.1, 102.3)
11	53.4 (52.8, 54.1)	59.5 (59.0, 60.0)	74.2 (73.7, 74.8)	91.6 (90.6, 92.5)	100.7 (99.5, 102.0)
12	53.4 (52.7, 54.1)	59.5 (58.9, 60.0)	73.9 (73.2, 74.5)	91.0 (90.0, 92.0)	100.3 (98.7, 101.9)
13	53.7 (52.9, 54.5)	59.6 (59.0, 60.2)	73.7 (73.0, 74.4)	90.7 (89.6, 91.8)	100.2 (97.8, 102.6)
14	54.2 (49.7, 58.8)	60.1 (57.8, 62.3)	73.9 (71.8, 76.0)	90.8 (88.1, 93.5)	100.5 (96.8, 104.2)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Figure A7.2. Smoothed centiles for heart rate (bpm); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for all participants (pragmatic) and restrictive cohorts.**



Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A7.4. Smoothed Centiles for Oxygen Saturation SpO<sub>2</sub> (%) for Restrictive Cohort**

**According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup> and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for oxygen saturation SpO <sub>2</sub> (95% CI)				
	3rd	10th	50th	90th	97th
0	92.5 (91.8, 93.1)	93.9 (93.6, 94.2)	95.9 (95.7, 96.0)	97.4 (97.3, 97.6)	98.2 (98.0, 98.4)
1	92.6 (92.1, 93.1)	94.1 (93.9, 94.3)	96.1 (95.9, 96.2)	97.6 (97.5, 97.7)	98.4 (98.2, 98.6)
2	92.8 (92.4, 93.1)	94.2 (94.1, 94.4)	96.2 (96.1, 96.3)	97.8 (97.7, 97.9)	98.5 (98.4, 98.7)
3	92.9 (92.7, 93.2)	94.3 (94.2, 94.5)	96.3 (96.3, 96.4)	97.9 (97.8, 98.0)	98.7 (98.6, 98.8)
4	93.0 (92.8, 93.3)	94.4 (94.3, 94.5)	96.4 (96.3, 96.5)	98.0 (97.9, 98.1)	98.7 (98.6, 98.8)
5	93.1 (92.9, 93.3)	94.5 (94.4, 94.6)	96.5 (96.4, 96.5)	98.0 (97.9, 98.1)	98.7 (98.7, 98.8)
6	93.2 (93.0, 93.4)	94.5 (94.4, 94.6)	96.4 (96.4, 96.5)	98.0 (97.9, 98.1)	98.7 (98.6, 98.8)
7	93.2 (93.1, 93.4)	94.5 (94.4, 94.6)	96.4 (96.4, 96.5)	97.9 (97.9, 98.0)	98.6 (98.6, 98.7)
8	93.3 (93.1, 93.4)	94.5 (94.4, 94.6)	96.4 (96.3, 96.4)	97.9 (97.8, 97.9)	98.6 (98.5, 98.6)
9	93.3 (93.1, 93.4)	94.5 (94.4, 94.5)	96.3 (96.3, 96.4)	97.8 (97.8, 97.9)	98.5 (98.5, 98.6)
10	93.3 (93.1, 93.4)	94.4 (94.3, 94.5)	96.3 (96.2, 96.4)	97.8 (97.7, 97.9)	98.5 (98.4, 98.6)
11	93.3 (93.1, 93.4)	94.4 (94.3, 94.5)	96.3 (96.2, 96.3)	97.8 (97.7, 97.9)	98.5 (98.4, 98.6)
12	93.3 (93.1, 93.4)	94.4 (94.3, 94.5)	96.3 (96.2, 96.3)	97.8 (97.7, 97.9)	98.5 (98.4, 98.6)
13	93.3 (93.1, 93.5)	94.4 (94.3, 94.5)	96.3 (96.2, 96.3)	97.8 (97.8, 97.9)	98.6 (98.5, 98.6)
14	93.4 (92.7, 94.0)	94.4 (94.1, 94.7)	96.3 (96.1, 96.4)	97.8 (97.7, 98.0)	98.6 (98.4, 98.8)

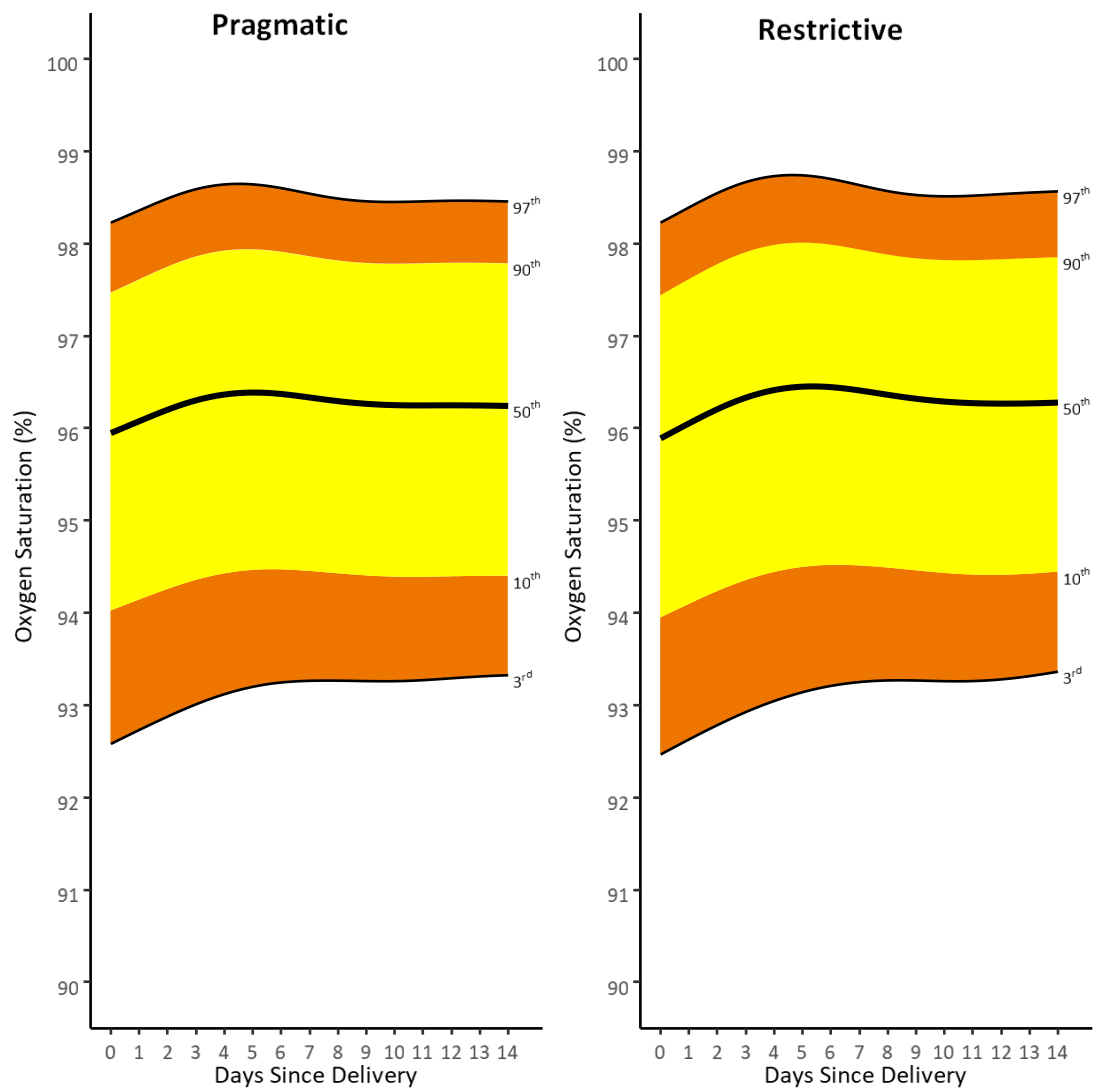
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**Figure A7.3. Smoothed centiles for oxygen saturation SpO<sub>2</sub> (%); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for all participants (pragmatic) and restrictive cohorts.**



Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A7.5. Smoothed Centiles for Temperature (°C) for Restrictive Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

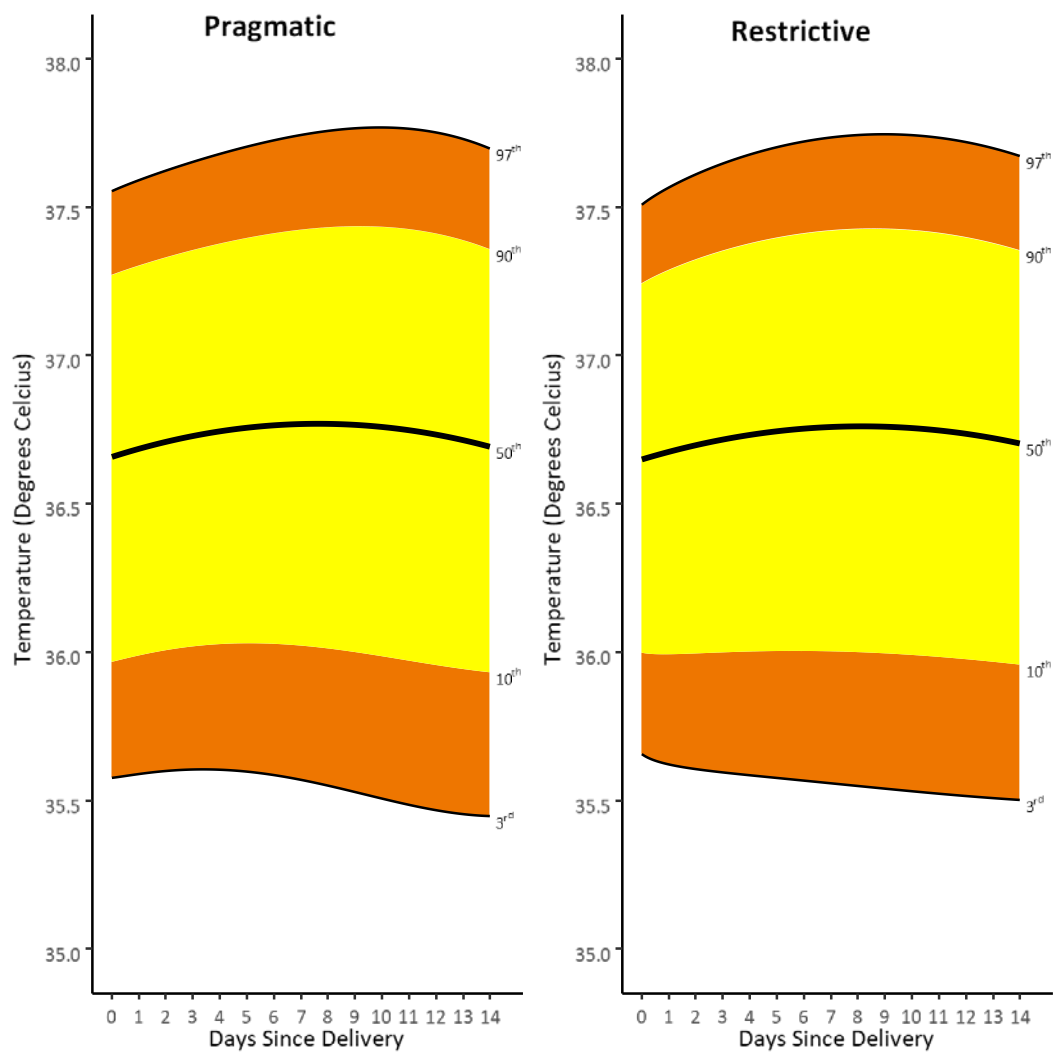
Day PN	Centiles for temperature (95% CI)				
	3 <sup>rd</sup>	10 <sup>th</sup>	50 <sup>th</sup>	90 <sup>th</sup>	97 <sup>th</sup>
0	35.66 (35.10, 36.22)	36.00 (35.64, 36.36)	36.65 (36.54, 36.76)	37.24 (36.86, 37.62)	37.51 (36.98, 38.04)
1	35.63 (35.48, 35.77)	35.99 (35.89, 36.09)	36.68 (36.61, 36.74)	37.29 (37.22, 37.35)	37.56 (37.47, 37.65)
2	35.61 (35.52, 35.70)	36.00 (35.94, 36.06)	36.70 (36.65, 36.74)	37.32 (37.27, 37.37)	37.61 (37.54, 37.67)
3	35.60 (35.53, 35.67)	36.00 (35.96, 36.04)	36.72 (36.68, 36.75)	37.35 (37.31, 37.39)	37.64 (37.59, 37.70)
4	35.59 (35.53, 35.64)	36.00 (35.97, 36.03)	36.73 (36.71, 36.76)	37.38 (37.34, 37.41)	37.67 (37.63, 37.72)
5	35.58 (35.53, 35.63)	36.00 (35.97, 36.03)	36.75 (36.72, 36.77)	37.39 (37.37, 37.42)	37.70 (37.65, 37.74)
6	35.57 (35.52, 35.62)	36.00 (35.97, 36.04)	36.75 (36.73, 36.77)	37.41 (37.38, 37.44)	37.72 (37.68, 37.76)
7	35.56 (35.51, 35.61)	36.00 (35.97, 36.04)	36.76 (36.74, 36.78)	37.42 (37.39, 37.45)	37.73 (37.69, 37.77)
8	35.55 (35.50, 35.60)	36.00 (35.96, 36.04)	36.76 (36.73, 36.79)	37.43 (37.40, 37.45)	37.74 (37.70, 37.78)
9	35.54 (35.48, 35.60)	36.00 (35.95, 36.04)	36.76 (36.73, 36.79)	37.43 (37.39, 37.46)	37.74 (37.70, 37.79)
10	35.53 (35.47, 35.59)	35.99 (35.95, 36.03)	36.76 (36.72, 36.79)	37.42 (37.39, 37.46)	37.74 (37.69, 37.79)
11	35.52 (35.46, 35.58)	35.98 (35.94, 36.02)	36.75 (36.72, 36.78)	37.41 (37.38, 37.45)	37.73 (37.68, 37.78)
12	35.52 (35.46, 35.57)	35.98 (35.94, 36.01)	36.74 (36.71, 36.76)	37.40 (37.36, 37.43)	37.72 (37.66, 37.77)
13	35.51 (35.45, 35.57)	35.97 (35.94, 36.00)	36.72 (36.70, 36.74)	37.38 (37.34, 37.41)	37.70 (37.64, 37.75)
14	35.50 (35.43, 35.57)	35.96 (35.92, 36.00)	36.70 (36.68, 36.73)	37.35 (37.31, 37.39)	37.67 (37.61, 37.73)

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**Figure A7.4. Smoothed centiles for temperature (°C); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for all participants (pragmatic) and restrictive cohorts.**



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## Appendix 8. Parity Subgroup Demographics and Analysis

**Table A8.1. Baseline Maternal Characteristics for Nulliparous, Parous, and Total Populations**

<i>Maternal baseline characteristics</i>	<b>Nulliparous N=408</b>	<b>Parous N=501</b>	<b>Total N=909</b>
Maternal age (years) $\pm$ SD	31.1 (4.8)	33.1 (4.5)	32.2 (4.7)
Maternal weight (kg) $\pm$ SD	67.3 (13.2)	68.4 (14.0)	67.9 (13.7)
Maternal BMI (kg/m <sup>2</sup> ) $\pm$ SD	24.4 (4.5)	25.0 (4.8)	24.8 (4.7)
BMI category			
- Normal (18.5-24.9 kg/m <sup>2</sup> ) (%)	263 (64.6)	283 (56.6)	546 (60.2)
- Overweight (25.0-29.9 kg/m <sup>2</sup> ) (%)	98 (24.1)	141 (28.2)	239 (26.4)
- Obese ( $\geq$ 30 kg/m <sup>2</sup> ) (%)	46 (11.3)	76 (15.2)	122 (13.5)
Ethnicity:			
- White (%)	350 (85.8)	433 (86.4)	783 (86.1)
- Asian (%)	18 (4.4)	22 (4.4)	40 (4.4)
- African/Caribbean (%)	3 (0.7)	13 (2.6)	16 (1.8)
- Mixed (%)	7 (1.7)	9 (1.8)	16 (1.8)
- Other (%)	30 (7.4)	24 (4.8)	54 (5.9)
Smoker (%)	19 (4.7)	37 (7.4)	56 (6.2)
Anemia* (%)	3 (0.7)	3 (0.6)	6 (0.7)
Pre-gestational diabetes (%)	0 (0)	6 (1.2)	6 (0.7)
Pre-existing hypertension <sup>†</sup> (%)	7 (1.7)	8 (1.6)	15 (1.7)
Cardiac disease <sup>††</sup> (%)	6 (1.5)	5 (1.0)	11 (1.2)
Pre-existing renal disease (%)	4 (1.0)	15 (3.0)	19 (2.1)

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Values are mean  $\pm$ SD for continuous variables, and number (percentage) for categorical values. *BMI= Body Mass Index (kg/m<sup>2</sup>). \*defined as Hb <110 g/L, <sup>†</sup> unmedicated, <sup>††</sup>(non-ischemic non-congenital).*

**Table A8.2. Smoothed Centiles for Systolic Blood Pressure and Diastolic Blood Pressure (mmHg) for Nulliparous Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Systolic Blood Pressure (95% CI)				
	3rd	10th	50th	90th	97th
0	94.8 (90.5, 99.1)	102.1 (98.4, 105.8)	115.2 (112.8, 117.6)	128.4 (125.9, 130.9)	135.9 (132.4, 139.4)
1	96.7 (94.5, 98.9)	103.4 (101.4, 105.3)	116.1 (114.7, 117.5)	129.1 (127.8, 130.4)	136.0 (134.3, 137.7)
2	98.4 (97.1, 99.7)	104.6 (103.6, 105.7)	117.3 (116.3, 118.2)	130.2 (128.9, 131.5)	136.8 (135.2, 138.4)
3	100.0 (98.8, 101.1)	106.0 (105.2, 106.7)	118.6 (117.8, 119.3)	131.6 (130.4, 132.8)	138.1 (136.6, 139.6)
4	101.2 (100.1, 102.2)	107.1 (106.3, 107.8)	119.7 (119.1, 120.3)	132.8 (131.7, 133.8)	139.2 (137.8, 140.6)
5	101.7 (100.5, 103.0)	107.5 (106.6, 108.5)	120.1 (119.6, 120.7)	133.3 (132.3, 134.2)	139.7 (138.3, 141.1)
6	101.7 (100.5, 103.0)	107.5 (106.6, 108.3)	120.0 (119.4, 120.6)	133.1 (132.3, 134.0)	139.6 (138.2, 141.0)
7	101.3 (100.3, 102.3)	106.9 (106.2, 107.7)	119.4 (118.7, 120.0)	132.5 (131.7, 133.3)	139.0 (137.9, 140.0)
8	100.6 (99.7, 101.5)	106.1 (105.4, 106.8)	118.4 (117.9, 119.0)	131.5 (130.8, 132.3)	138.0 (137.0, 138.9)
9	99.7 (98.9, 100.6)	105.2 (104.5, 105.9)	117.4 (116.8, 117.9)	130.4 (129.7, 131.1)	136.8 (135.9, 137.8)
10	98.9 (98.0, 99.8)	104.2 (103.5, 104.9)	116.3 (115.7, 116.9)	129.3 (128.6, 130.0)	135.7 (134.8, 136.7)
11	98.2 (97.4, 99.1)	103.5 (102.8, 104.2)	115.5 (114.8, 116.1)	128.4 (127.7, 129.2)	134.9 (133.9, 135.8)
12	97.8 (96.9, 98.7)	103.0 (102.3, 103.7)	114.9 (114.2, 115.6)	127.9 (127.1, 128.8)	134.4 (133.4, 135.4)
13	97.6 (96.9, 98.4)	102.8 (102.2, 103.4)	114.7 (114.1, 115.3)	127.7 (127.0, 128.5)	134.3 (133.3, 135.2)
14	97.6 (93.3, 101.9)	102.7 (99.0, 106.5)	114.6 (112.2, 117.0)	127.7 (125.2, 130.2)	134.3 (130.9, 137.8)

Day PN	Centiles for Diastolic Blood Pressure (95% CI)				
	3rd	10th	50th	90th	97th
0	58.8 (56.4, 61.3)	63.5 (61.5, 65.5)	73.6 (71.9, 75.4)	84.1 (82.2, 86.1)	89.1 (86.6, 91.7)
1	59.4 (58.1, 60.7)	64.1 (63.1, 65.1)	74.3 (73.4, 75.1)	84.7 (83.7, 85.6)	89.6 (88.3, 91.0)
2	60.2 (59.0, 61.3)	64.9 (64.1, 65.7)	75.1 (74.4, 75.7)	85.5 (84.7, 86.2)	90.4 (89.3, 91.5)
3	61.1 (59.9, 62.3)	65.8 (65.0, 66.6)	76.0 (75.5, 76.6)	86.5 (85.8, 87.1)	91.4 (90.4, 92.4)
4	61.9 (60.9, 63.0)	66.7 (65.9, 67.5)	77.0 (76.5, 77.5)	87.4 (86.8, 88.1)	92.3 (91.4, 93.3)
5	62.5 (61.6, 63.4)	67.3 (66.6, 68.0)	77.6 (77.2, 78.1)	88.0 (87.5, 88.6)	92.9 (92.1, 93.7)
6	62.7 (61.9, 63.5)	67.5 (66.9, 68.1)	77.8 (77.4, 78.2)	88.1 (87.6, 88.7)	93.0 (92.2, 93.8)
7	62.5 (61.8, 63.2)	67.3 (66.8, 67.8)	77.5 (77.1, 78.0)	87.8 (87.2, 88.3)	92.6 (91.8, 93.3)
8	62.0 (61.3, 62.7)	66.8 (66.2, 67.3)	76.9 (76.4, 77.4)	87.0 (86.4, 87.6)	91.8 (91.1, 92.5)
9	61.3 (60.6, 62.1)	66.1 (65.5, 66.6)	76.1 (75.6, 76.6)	86.1 (85.5, 86.6)	90.7 (90.1, 91.4)
10	60.7 (59.9, 61.5)	65.4 (64.8, 66.0)	75.3 (74.8, 75.8)	85.2 (84.6, 85.7)	89.8 (89.1, 90.4)
11	60.1 (59.2, 60.9)	64.8 (64.3, 65.3)	74.7 (74.3, 75.1)	84.4 (83.9, 84.9)	89.0 (88.3, 89.6)
12	59.7 (58.7, 60.7)	64.4 (63.8, 64.9)	74.2 (73.8, 74.7)	83.9 (83.3, 84.4)	88.4 (87.4, 89.4)
13	59.4 (58.5, 60.3)	64.2 (63.6, 64.7)	74.0 (73.5, 74.4)	83.6 (83.1, 84.1)	88.1 (87.4, 88.8)
14	59.3 (56.8, 61.7)	64.1 (62.1, 66.1)	74.0 (72.2, 75.7)	83.6 (81.6, 85.5)	88.1 (85.6, 90.7)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A8.3. Smoothed Centiles for Systolic Blood Pressure and Diastolic Blood Pressure (mmHg) for Parous Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Systolic Blood Pressure (95% CI)				
	3rd	10th	50th	90th	97th
0	97.3 (93.9, 100.7)	103.4 (100.2, 106.6)	116.4 (113.4, 119.5)	129.5 (126.3, 132.7)	135.6 (132.1, 139.2)
1	97.5 (95.9, 99.1)	103.5 (102.1, 104.9)	116.5 (115.2, 117.8)	129.7 (128.3, 131.1)	135.9 (134.2, 137.6)
2	98.0 (97.0, 99.1)	104.0 (103.2, 104.9)	117.1 (116.3, 117.9)	130.4 (129.3, 131.4)	136.7 (135.3, 138.1)
3	99.0 (98.0, 100.1)	105.0 (104.3, 105.8)	118.2 (117.5, 118.8)	131.6 (130.8, 132.5)	138.1 (136.9, 139.3)
4	100.1 (98.9, 101.2)	106.1 (105.3, 106.9)	119.3 (118.7, 120.0)	133.1 (132.3, 133.9)	139.7 (138.7, 140.8)
5	100.6 (99.5, 101.8)	106.8 (106.0, 107.5)	120.1 (119.6, 120.6)	134.0 (133.3, 134.8)	140.9 (139.8, 142.0)
6	100.7 (99.7, 101.7)	106.9 (106.3, 107.5)	120.3 (119.8, 120.7)	134.4 (133.8, 135.1)	141.5 (140.4, 142.7)
7	100.3 (98.8, 101.8)	106.6 (105.8, 107.3)	119.9 (119.4, 120.5)	134.2 (133.2, 135.1)	141.5 (139.4, 143.5)
8	99.8 (98.8, 100.8)	105.9 (105.2, 106.5)	119.0 (118.4, 119.6)	133.2 (132.2, 134.2)	140.4 (138.7, 142.1)
9	99.1 (98.4, 99.8)	104.9 (104.3, 105.5)	117.8 (117.2, 118.3)	131.7 (130.9, 132.6)	138.8 (137.6, 139.9)
10	98.3 (97.6, 99.1)	103.9 (103.2, 104.5)	116.5 (115.9, 117.2)	130.3 (129.5, 131.2)	137.3 (136.1, 138.4)
11	97.8 (97.0, 98.6)	103.2 (102.5, 103.9)	115.7 (115.0, 116.4)	129.5 (128.4, 130.5)	136.4 (135.0, 137.8)
12	97.7 (96.9, 98.4)	103.0 (102.4, 103.6)	115.4 (114.8, 116.1)	129.2 (128.3, 130.2)	136.2 (134.9, 137.6)
13	97.8 (97.1, 98.5)	103.1 (102.4, 103.7)	115.4 (114.7, 116.2)	129.3 (128.4, 130.2)	136.4 (135.2, 137.6)
14	97.8 (94.4, 101.2)	103.1 (99.9, 106.2)	115.4 (112.3, 118.5)	129.3 (126.1, 132.5)	136.5 (132.9, 140.0)

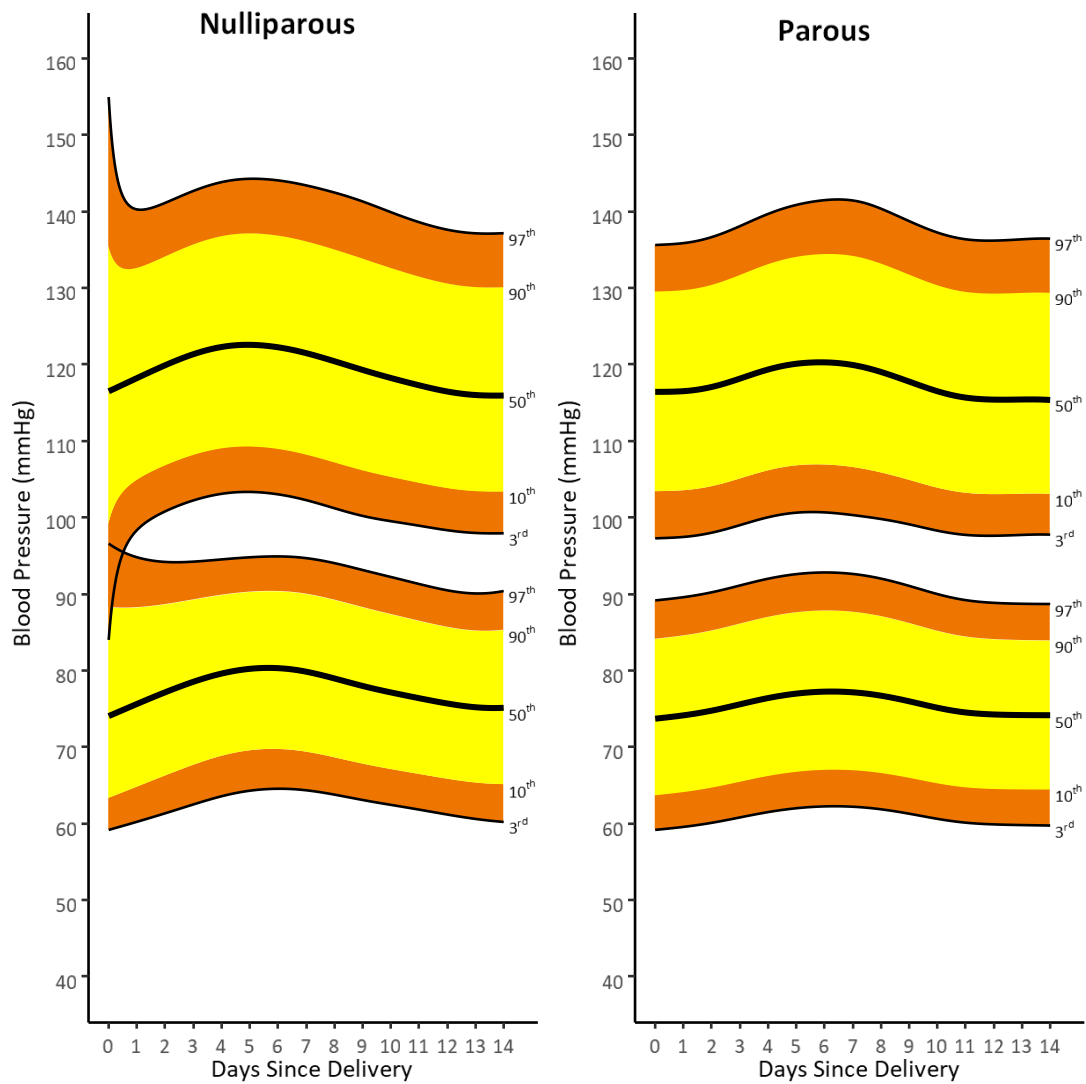
Day PN	Centiles for Diastolic Blood Pressure (95% CI)				
	3rd	10th	50th	90th	97th
0	59.1 (56.7, 61.6)	63.7 (61.5, 65.8)	73.7 (71.3, 76.0)	84.1 (81.4, 86.8)	89.1 (86.1, 92.2)
1	59.5 (58.2, 60.9)	64.1 (63.0, 65.1)	74.1 (73.1, 75.1)	84.5 (83.4, 85.7)	89.6 (88.1, 91.0)
2	60.1 (59.1, 61.1)	64.7 (64.0, 65.4)	74.7 (74.1, 75.3)	85.2 (84.4, 86.0)	90.2 (89.1, 91.3)
3	60.8 (60.0, 61.6)	65.4 (64.9, 66.0)	75.6 (75.1, 76.0)	86.1 (85.4, 86.8)	91.1 (90.2, 92.1)
4	61.5 (60.5, 62.6)	66.2 (65.6, 66.8)	76.4 (75.9, 76.9)	87.0 (86.3, 87.6)	92.0 (90.9, 93.2)
5	62.0 (61.2, 62.8)	66.7 (66.1, 67.3)	77.0 (76.5, 77.5)	87.6 (86.9, 88.2)	92.6 (91.8, 93.5)
6	62.3 (61.3, 63.2)	67.0 (66.3, 67.6)	77.3 (76.8, 77.8)	87.8 (87.2, 88.4)	92.9 (92.0, 93.7)
7	62.2 (61.5, 63.0)	66.9 (66.4, 67.5)	77.2 (76.7, 77.6)	87.6 (87.2, 88.1)	92.7 (92.0, 93.3)
8	61.9 (61.0, 62.8)	66.6 (66.0, 67.2)	76.7 (76.2, 77.2)	87.1 (86.5, 87.7)	92.0 (91.2, 92.9)
9	61.3 (60.6, 62.0)	66.0 (65.4, 66.5)	76.0 (75.5, 76.4)	86.2 (85.7, 86.7)	91.1 (90.4, 91.7)
10	60.6 (59.8, 61.4)	65.2 (64.7, 65.8)	75.1 (74.7, 75.5)	85.2 (84.7, 85.7)	90.0 (89.3, 90.7)
11	60.1 (59.1, 61.1)	64.7 (64.1, 65.3)	74.5 (74.0, 74.9)	84.4 (83.8, 85.0)	89.2 (88.4, 89.9)
12	59.9 (58.0, 61.8)	64.5 (63.7, 65.3)	74.2 (73.8, 74.7)	84.1 (83.3, 84.8)	88.8 (86.9, 90.7)
13	59.8 (58.6, 61.0)	64.4 (63.8, 65.0)	74.1 (73.7, 74.6)	83.9 (83.4, 84.4)	88.7 (88.0, 89.4)
14	59.7 (57.2, 62.2)	64.4 (62.3, 66.5)	74.1 (71.8, 76.5)	83.9 (81.2, 86.6)	88.6 (85.6, 91.7)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Figure A8.1. Smoothed centiles for blood pressure (mmHg); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for nulliparous and parous cohorts.**



Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A8.4. Smoothed Centiles for Heart Rate (bpm) for Nulliparous Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Heart Rate (95% CI)				
	3rd	10th	50th	90th	97th
0	61.3 (57.5, 65.0)	68.5 (66.1, 70.8)	85.9 (83.7, 88.1)	104.6 (101.2, 107.9)	113.1 (108.9, 117.3)
1	60.5 (57.8, 63.3)	67.7 (66.0, 69.4)	84.5 (82.8, 86.1)	102.3 (99.9, 104.7)	110.5 (107.5, 113.6)
2	59.8 (57.8, 61.8)	66.8 (65.6, 68.1)	83.1 (81.9, 84.2)	100.1 (98.4, 101.8)	108.1 (105.9, 110.3)
3	59.0 (57.5, 60.5)	66.0 (65.1, 67.0)	81.8 (80.9, 82.6)	98.1 (96.9, 99.4)	105.9 (104.3, 107.6)
4	58.3 (57.1, 59.5)	65.3 (64.4, 66.2)	80.7 (80.0, 81.4)	96.7 (95.7, 97.6)	104.4 (103.0, 105.7)
5	57.7 (56.5, 58.8)	64.7 (63.8, 65.5)	79.9 (79.3, 80.5)	95.8 (94.9, 96.6)	103.5 (102.2, 104.7)
6	57.2 (56.0, 58.3)	64.2 (63.3, 65.0)	79.4 (78.8, 80.1)	95.4 (94.5, 96.2)	103.2 (101.9, 104.4)
7	56.8 (55.6, 58.0)	63.8 (62.9, 64.7)	79.2 (78.5, 79.8)	95.3 (94.4, 96.2)	103.3 (102.0, 104.5)
8	56.5 (55.4, 57.6)	63.5 (62.6, 64.3)	78.9 (78.2, 79.7)	95.4 (94.4, 96.4)	103.5 (102.1, 104.8)
9	56.2 (55.2, 57.2)	63.1 (62.3, 64.0)	78.7 (77.9, 79.4)	95.3 (94.3, 96.3)	103.6 (102.2, 104.9)
10	56.0 (55.1, 56.9)	62.9 (62.2, 63.6)	78.3 (77.6, 79.1)	95.1 (94.1, 96.1)	103.5 (102.1, 104.8)
11	55.8 (55.0, 56.6)	62.6 (62.0, 63.3)	77.9 (77.2, 78.6)	94.7 (93.7, 95.7)	103.3 (101.7, 104.8)
12	55.6 (54.8, 56.4)	62.4 (61.8, 63.1)	77.4 (76.7, 78.1)	94.1 (93.0, 95.2)	103.1 (100.9, 105.3)
13	55.5 (54.6, 56.5)	62.3 (61.5, 63.1)	76.9 (76.2, 77.6)	93.6 (92.2, 95.0)	103.0 (99.7, 106.4)
14	55.7 (51.9, 59.5)	62.3 (60.0, 64.6)	76.6 (74.3, 78.8)	93.3 (89.9, 96.6)	103.1 (98.9, 107.3)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A8.5. Smoothed Centiles for Heart Rate (bpm) for Parous Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Heart Rate (95% CI)				
	3rd	10th	50th	90th	97th
0	57.8 (53.8, 61.9)	66.3 (64.1, 68.5)	82.2 (80.3, 84.1)	98.3 (95.8, 100.8)	107.1 (103.7, 110.4)
1	57.4 (54.5, 60.3)	65.1 (63.5, 66.6)	80.4 (79.1, 81.8)	96.6 (94.7, 98.5)	105.4 (102.7, 108.0)
2	56.8 (54.8, 58.8)	63.8 (62.7, 64.9)	78.7 (77.7, 79.7)	95.0 (93.5, 96.4)	103.7 (101.5, 105.8)
3	56.0 (54.6, 57.4)	62.5 (61.6, 63.3)	77.0 (76.3, 77.7)	93.3 (92.1, 94.4)	101.9 (100.1, 103.8)
4	55.0 (53.9, 56.1)	61.1 (60.4, 61.9)	75.4 (74.8, 76.0)	91.7 (90.7, 92.7)	100.3 (98.7, 101.9)
5	54.1 (53.2, 55.0)	60.0 (59.3, 60.7)	74.1 (73.6, 74.7)	90.6 (89.7, 91.4)	99.2 (97.8, 100.6)
6	53.4 (52.6, 54.3)	59.2 (58.5, 60.0)	73.3 (72.8, 73.9)	90.0 (89.2, 90.7)	98.6 (97.5, 99.8)
7	53.2 (52.4, 54.0)	58.9 (58.2, 59.6)	73.0 (72.5, 73.6)	89.9 (89.2, 90.6)	98.8 (97.7, 99.9)
8	53.1 (52.4, 53.9)	58.8 (58.2, 59.5)	73.0 (72.4, 73.6)	90.1 (89.3, 90.8)	99.2 (98.1, 100.4)
9	53.2 (52.5, 53.8)	58.9 (58.3, 59.5)	72.9 (72.3, 73.6)	90.2 (89.3, 91.0)	99.6 (98.3, 101.0)
10	53.2 (52.6, 53.9)	59.0 (58.3, 59.6)	72.9 (72.2, 73.5)	90.1 (89.1, 91.1)	99.9 (98.2, 101.5)
11	53.3 (52.6, 53.9)	59.0 (58.3, 59.6)	72.7 (72.1, 73.4)	89.9 (88.8, 90.9)	99.8 (97.9, 101.6)
12	53.4 (52.7, 54.2)	59.1 (58.4, 59.7)	72.6 (72.0, 73.3)	89.6 (88.6, 90.6)	99.4 (97.5, 101.4)
13	53.8 (53.0, 54.6)	59.3 (58.6, 60.0)	72.7 (72.1, 73.4)	89.5 (88.6, 90.5)	99.1 (97.3, 101.0)
14	54.5 (50.4, 58.5)	59.8 (57.6, 61.9)	73.1 (71.2, 75.0)	89.7 (87.2, 92.2)	98.9 (95.6, 102.3)

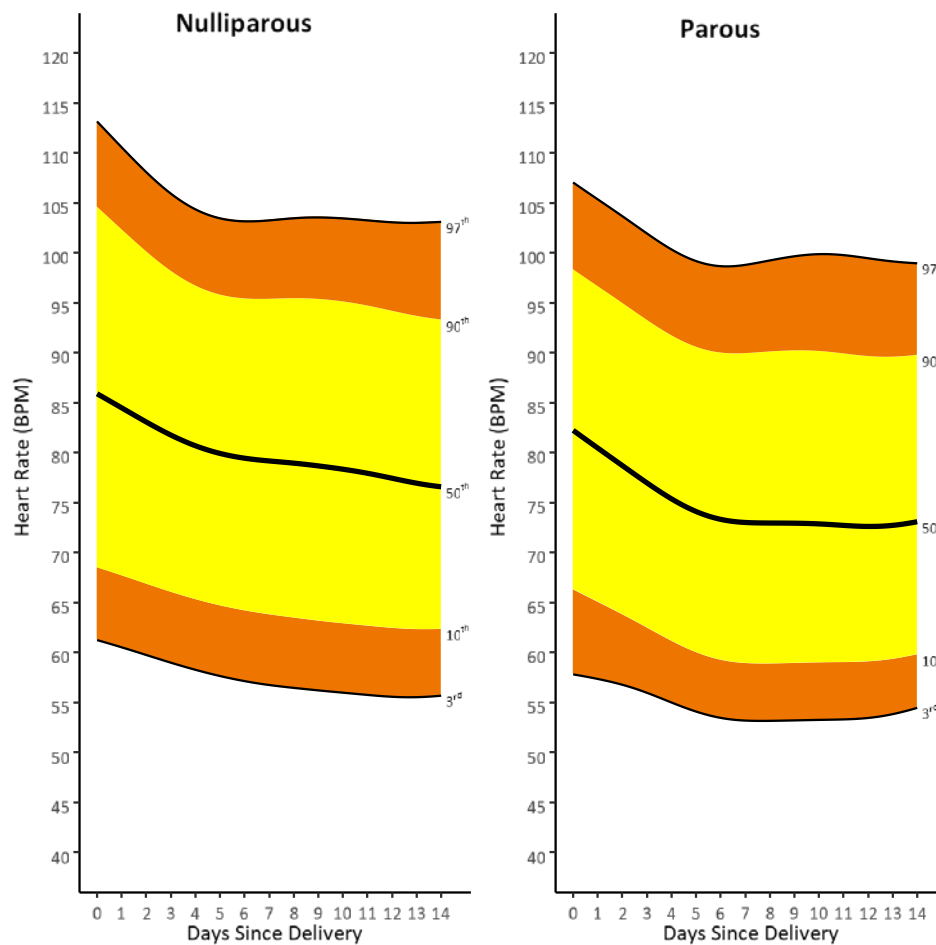
Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Figure A8.2. Smoothed centiles for heart rate (beats per minute); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for nulliparous and parous cohorts.**



Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A8.6. Smoothed Centiles for Oxygen Saturation SpO<sub>2</sub> (%) for Nulliparous Cohort**  
**According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Oxygen Saturation (95% CI)				
	3rd	10th	50th	90th	97th
0	92.4 (91.4, 93.3)	93.9 (93.5, 94.3)	96.0 (95.8, 96.2)	97.6 (97.3, 97.8)	98.3 (97.9, 98.7)
1	92.7 (92.1, 93.2)	94.1 (93.8, 94.4)	96.1 (96.0, 96.3)	97.7 (97.5, 97.9)	98.5 (98.2, 98.7)
2	92.9 (92.6, 93.3)	94.3 (94.1, 94.5)	96.3 (96.1, 96.4)	97.8 (97.7, 98.0)	98.6 (98.4, 98.7)
3	93.2 (92.9, 93.4)	94.4 (94.3, 94.6)	96.4 (96.3, 96.5)	97.9 (97.8, 98.0)	98.7 (98.5, 98.8)
4	93.3 (93.1, 93.6)	94.5 (94.4, 94.6)	96.4 (96.3, 96.5)	98.0 (97.9, 98.1)	98.7 (98.6, 98.8)
5	93.5 (93.2, 93.7)	94.6 (94.5, 94.7)	96.4 (96.4, 96.5)	98.0 (97.9, 98.1)	98.7 (98.6, 98.7)
6	93.5 (93.3, 93.7)	94.6 (94.5, 94.7)	96.4 (96.4, 96.5)	97.9 (97.9, 98.0)	98.6 (98.5, 98.7)
7	93.5 (93.3, 93.8)	94.6 (94.5, 94.7)	96.4 (96.3, 96.5)	97.9 (97.8, 98.0)	98.5 (98.5, 98.6)
8	93.5 (93.3, 93.7)	94.6 (94.4, 94.7)	96.4 (96.3, 96.4)	97.9 (97.8, 97.9)	98.5 (98.4, 98.6)
9	93.5 (93.3, 93.7)	94.5 (94.4, 94.6)	96.3 (96.3, 96.4)	97.8 (97.8, 97.9)	98.5 (98.4, 98.6)
10	93.5 (93.3, 93.6)	94.5 (94.4, 94.6)	96.3 (96.2, 96.4)	97.8 (97.7, 97.9)	98.5 (98.4, 98.6)
11	93.4 (93.2, 93.6)	94.5 (94.3, 94.6)	96.3 (96.2, 96.4)	97.8 (97.7, 97.9)	98.5 (98.4, 98.6)
12	93.4 (93.2, 93.6)	94.5 (94.4, 94.6)	96.3 (96.2, 96.4)	97.8 (97.7, 97.9)	98.5 (98.4, 98.6)
13	93.4 (93.2, 93.7)	94.5 (94.4, 94.6)	96.3 (96.2, 96.4)	97.8 (97.7, 97.9)	98.5 (98.4, 98.6)
14	93.5 (92.5, 94.4)	94.5 (94.1, 94.9)	96.3 (96.1, 96.5)	97.8 (97.6, 98.1)	98.5 (98.1, 98.9)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A8.7. Smoothed Centiles for Oxygen Saturation SpO<sub>2</sub> (%) for Parous Cohort**

**According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

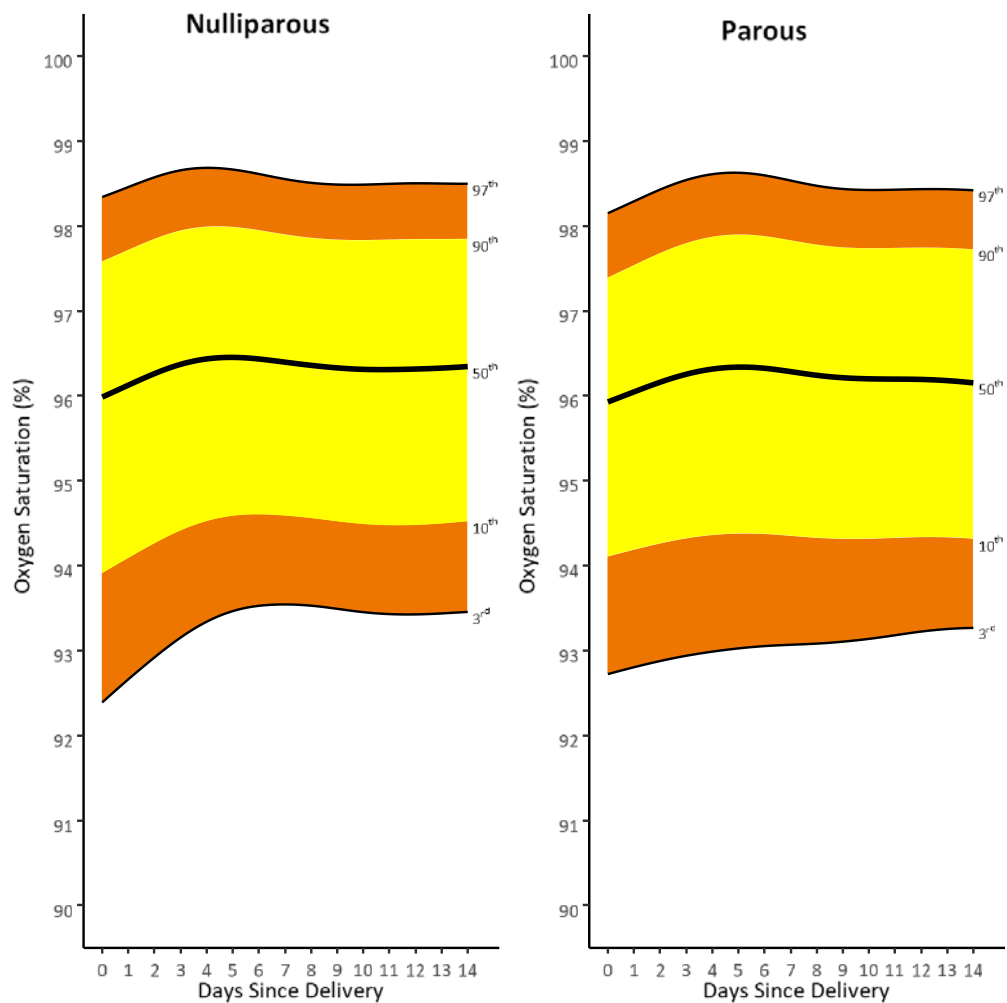
Day PN	Centiles for Oxygen Saturation (95% CI)				
	3rd	10th	50th	90th	97th
0	92.7 (92.1, 93.3)	94.1 (93.8, 94.4)	95.9 (95.8, 96.1)	97.4 (97.2, 97.5)	98.2 (97.9, 98.4)
1	92.8 (92.3, 93.3)	94.2 (94.0, 94.4)	96.0 (95.9, 96.1)	97.5 (97.4, 97.7)	98.3 (98.1, 98.5)
2	92.9 (92.5, 93.3)	94.3 (94.1, 94.4)	96.2 (96.1, 96.2)	97.7 (97.6, 97.8)	98.4 (98.3, 98.6)
3	92.9 (92.6, 93.3)	94.3 (94.2, 94.4)	96.3 (96.2, 96.3)	97.8 (97.7, 97.9)	98.5 (98.4, 98.7)
4	93.0 (92.7, 93.3)	94.4 (94.2, 94.5)	96.3 (96.2, 96.4)	97.9 (97.8, 98.0)	98.6 (98.5, 98.7)
5	93.0 (92.8, 93.3)	94.4 (94.3, 94.5)	96.3 (96.3, 96.4)	97.9 (97.8, 98.0)	98.6 (98.5, 98.7)
6	93.1 (92.8, 93.3)	94.4 (94.3, 94.5)	96.3 (96.3, 96.4)	97.9 (97.8, 98.0)	98.6 (98.5, 98.7)
7	93.1 (92.8, 93.3)	94.3 (94.2, 94.4)	96.3 (96.2, 96.3)	97.8 (97.8, 97.9)	98.5 (98.5, 98.6)
8	93.1 (92.8, 93.3)	94.3 (94.2, 94.4)	96.2 (96.2, 96.3)	97.8 (97.7, 97.8)	98.5 (98.4, 98.6)
9	93.1 (92.9, 93.3)	94.3 (94.2, 94.4)	96.2 (96.2, 96.3)	97.7 (97.7, 97.8)	98.4 (98.4, 98.5)
10	93.1 (92.9, 93.4)	94.3 (94.2, 94.4)	96.2 (96.1, 96.3)	97.7 (97.7, 97.8)	98.4 (98.3, 98.5)
11	93.2 (93.0, 93.4)	94.3 (94.2, 94.4)	96.2 (96.1, 96.3)	97.7 (97.7, 97.8)	98.4 (98.4, 98.5)
12	93.2 (93.0, 93.4)	94.3 (94.2, 94.4)	96.2 (96.1, 96.3)	97.7 (97.7, 97.8)	98.4 (98.4, 98.5)
13	93.3 (93.1, 93.4)	94.3 (94.2, 94.4)	96.2 (96.1, 96.2)	97.7 (97.7, 97.8)	98.4 (98.3, 98.5)
14	93.3 (92.7, 93.9)	94.3 (94.0, 94.6)	96.2 (96.0, 96.3)	97.7 (97.6, 97.9)	98.4 (98.2, 98.7)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Figure A8.3. Smoothed centiles for oxygen saturation SpO<sub>2</sub> (%); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for nulliparous and parous cohorts.**



Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A8.8. Smoothed Centiles for Temperature (°C) for Nulliparous Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Temperature (95% CI)				
	3rd	10th	50th	90th	97th
0	35.81 (35.05, 36.57)	36.12 (35.46, 36.78)	36.67 (36.09, 37.26)	37.17 (36.60, 37.74)	37.40 (36.82, 37.99)
1	35.70 (35.51, 35.88)	36.06 (35.96, 36.16)	36.70 (36.64, 36.76)	37.26 (37.18, 37.34)	37.53 (37.39, 37.66)
2	35.66 (35.53, 35.79)	36.05 (35.98, 36.12)	36.72 (36.68, 36.77)	37.32 (37.26, 37.37)	37.59 (37.50, 37.69)
3	35.65 (35.54, 35.75)	36.05 (36.00, 36.10)	36.75 (36.72, 36.78)	37.36 (37.32, 37.39)	37.64 (37.57, 37.71)
4	35.64 (35.55, 35.73)	36.06 (36.01, 36.10)	36.77 (36.74, 36.80)	37.39 (37.36, 37.42)	37.68 (37.63, 37.73)
5	35.64 (35.56, 35.72)	36.06 (36.02, 36.11)	36.79 (36.76, 36.82)	37.42 (37.39, 37.45)	37.71 (37.67, 37.75)
6	35.64 (35.56, 35.72)	36.07 (36.03, 36.11)	36.80 (36.77, 36.83)	37.44 (37.41, 37.47)	37.73 (37.69, 37.78)
7	35.64 (35.57, 35.71)	36.08 (36.03, 36.12)	36.82 (36.78, 36.85)	37.45 (37.42, 37.49)	37.75 (37.71, 37.79)
8	35.64 (35.57, 35.71)	36.08 (36.03, 36.12)	36.82 (36.79, 36.85)	37.46 (37.43, 37.50)	37.76 (37.72, 37.81)
9	35.63 (35.56, 35.70)	36.08 (36.03, 36.12)	36.82 (36.79, 36.85)	37.47 (37.43, 37.50)	37.77 (37.72, 37.81)
10	35.62 (35.55, 35.69)	36.07 (36.02, 36.11)	36.82 (36.79, 36.85)	37.46 (37.43, 37.50)	37.76 (37.71, 37.81)
11	35.60 (35.52, 35.68)	36.06 (36.01, 36.10)	36.81 (36.78, 36.84)	37.45 (37.42, 37.49)	37.75 (37.70, 37.81)
12	35.58 (35.48, 35.67)	36.04 (35.98, 36.09)	36.79 (36.76, 36.82)	37.43 (37.40, 37.47)	37.74 (37.68, 37.80)
13	35.54 (35.43, 35.66)	36.01 (35.94, 36.07)	36.77 (36.73, 36.80)	37.41 (37.37, 37.44)	37.71 (37.65, 37.77)
14	35.50 (35.35, 35.64)	35.97 (35.89, 36.05)	36.73 (36.70, 36.77)	37.37 (37.34, 37.41)	37.68 (37.61, 37.75)

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**Table A8.9. Smoothed Centiles for Temperature (°C) for Parous Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

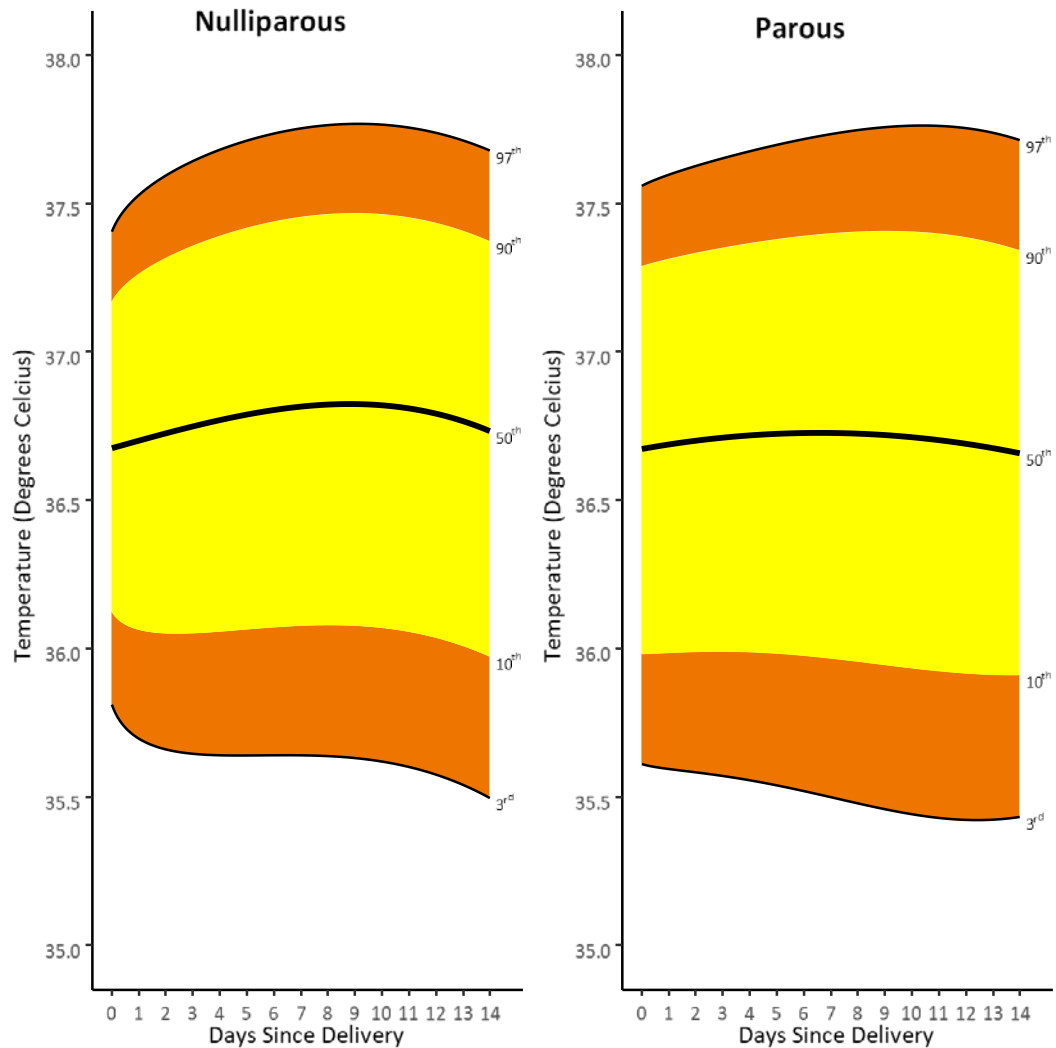
Day PN	Centiles for Temperature (95% CI)				
	3rd	10th	50th	90th	97th
0	35.61 (35.03, 36.20)	35.98 (35.51, 36.45)	36.67 (36.37, 36.97)	37.29 (37.00, 37.57)	37.56 (37.23, 37.89)
1	35.60 (35.48, 35.72)	35.98 (35.91, 36.06)	36.69 (36.63, 36.75)	37.31 (37.24, 37.38)	37.59 (37.51, 37.68)
2	35.59 (35.50, 35.67)	35.99 (35.93, 36.04)	36.70 (36.66, 36.74)	37.33 (37.29, 37.37)	37.62 (37.57, 37.68)
3	35.57 (35.50, 35.65)	35.99 (35.94, 36.04)	36.71 (36.68, 36.74)	37.35 (37.31, 37.38)	37.65 (37.60, 37.70)
4	35.56 (35.49, 35.63)	35.99 (35.94, 36.03)	36.72 (36.69, 36.75)	37.36 (37.33, 37.40)	37.67 (37.62, 37.72)
5	35.54 (35.48, 35.60)	35.98 (35.94, 36.02)	36.72 (36.70, 36.75)	37.38 (37.35, 37.41)	37.70 (37.65, 37.74)
6	35.52 (35.46, 35.58)	35.97 (35.93, 36.02)	36.73 (36.70, 36.75)	37.39 (37.36, 37.42)	37.72 (37.67, 37.76)
7	35.50 (35.44, 35.56)	35.97 (35.92, 36.01)	36.73 (36.70, 36.75)	37.40 (37.37, 37.43)	37.73 (37.68, 37.78)
8	35.48 (35.42, 35.54)	35.95 (35.91, 36.00)	36.72 (36.70, 36.75)	37.40 (37.37, 37.43)	37.75 (37.70, 37.80)
9	35.46 (35.39, 35.52)	35.94 (35.89, 35.99)	36.72 (36.69, 36.75)	37.41 (37.37, 37.44)	37.76 (37.70, 37.81)
10	35.44 (35.37, 35.51)	35.93 (35.88, 35.98)	36.71 (36.69, 36.74)	37.40 (37.37, 37.44)	37.76 (37.71, 37.82)
11	35.43 (35.35, 35.50)	35.92 (35.87, 35.97)	36.70 (36.68, 36.73)	37.40 (37.36, 37.43)	37.76 (37.70, 37.82)
12	35.42 (35.34, 35.49)	35.91 (35.87, 35.96)	36.69 (36.67, 36.72)	37.39 (37.35, 37.42)	37.76 (37.69, 37.82)
13	35.42 (35.34, 35.50)	35.91 (35.86, 35.95)	36.68 (36.65, 36.70)	37.37 (37.33, 37.41)	37.74 (37.67, 37.82)
14	35.43 (35.33, 35.52)	35.91 (35.85, 35.96)	36.66 (36.62, 36.69)	37.34 (37.29, 37.39)	37.72 (37.63, 37.80)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Figure A8.4. Smoothed centiles for temperature (°C); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for nulliparous and parous cohorts.**



Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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## Appendix 9. Epidural Subgroup Demographics and Analysis

**Table A9.1. Baseline Maternal Characteristics for Women With and Without Epidural Analgesia, and Total Populations**

<i>Maternal baseline characteristics</i>	<b>Epidural N=226</b>	<b>No epidural N=683</b>	<b>Total N=909</b>
Maternal age (years) $\pm$ SD	32.2 (5.0)	32.2 (4.6)	32.2 (4.7)
Maternal weight (kg) $\pm$ SD	67.6 (14.8)	68.0 (13.3)	67.9 (13.7)
Maternal BMI (kg/m <sup>2</sup> ) $\pm$ SD	24.7 (5.0)	24.8 (4.5)	24.8 (4.7)
BMI category			
- Normal (18.5-24.9 kg/m <sup>2</sup> ) (%)	138 (61.1)	408 (59.9)	546 (60.2)
- Overweight (25.0-29.9 kg/m <sup>2</sup> ) (%)	54 (23.9)	185 (27.2)	239 (26.4)
- Obese ( $\geq$ 30 kg/m <sup>2</sup> ) (%)	34 (15.0)	88 (12.9)	122 (13.5)
Nulliparous (%)	152 (67.3)	256 (37.5)	408 (44.9)
Ethnicity:			
- White (%)	194 (85.8)	589 (86.2)	783 (86.1)
- Asian (%)	14 (6.2)	26 (3.8)	40 (4.4)
- African/Caribbean (%)	5 (2.2)	11 (1.6)	16 (1.8)
- Mixed (%)	2 (0.9)	14 (2.0)	16 (1.8)
- Other (%)	11 (4.9)	43 (6.3)	54 (5.9)
Smoker (%)	11 (4.9)	45 (6.6)	56 (6.2)
Anemia* (%)	5 (2.2)	1 (0.1)	6 (0.7)
Pre-gestational diabetes (%)	1 (0.4)	5 (0.7)	6 (0.7)
Pre-existing hypertension <sup>†</sup> (%)	5 (2.2)	10 (1.5)	15 (1.7)
Cardiac disease <sup>††</sup> (%)	3 (1.3)	8 (1.2)	11 (1.2)
Pre-existing renal disease (%)	3 (1.3)	16 (2.3)	19 (2.1)

Values are mean  $\pm$ SD for continuous variables, and number (percentage) for categorical values. BMI= Body Mass Index (kg/m<sup>2</sup>). \*defined as Hb <110 g/L, <sup>†</sup> unmedicated, <sup>††</sup>(non-ischemic non-congenital).

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**Table A9.2. Smoothed Centiles for Systolic Blood Pressure and Diastolic Blood Pressure (mmHg) for Nonepidural Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Systolic Blood Pressure (95% CI)				
	3rd	10th	50th	90th	97th
0	85.2 (71.1, 99.3)	99.5 (94.7, 104.2)	116.5 (114.0, 119.1)	134.1 (128.3, 139.9)	149.8 (133.2, 166.4)
1	97.8 (96.4, 99.2)	104.0 (102.7, 105.2)	117.1 (116.0, 118.2)	130.5 (129.1, 132.0)	137.2 (134.7, 139.7)
2	99.1 (97.6, 100.5)	105.0 (104.0, 106.0)	118.0 (117.3, 118.8)	131.5 (130.5, 132.6)	138.0 (136.6, 139.5)
3	100.3 (99.0, 101.6)	106.3 (105.4, 107.1)	119.4 (118.7, 120.0)	133.1 (132.1, 134.0)	139.7 (138.5, 140.9)
4	101.3 (100.3, 102.4)	107.3 (106.5, 108.1)	120.6 (119.9, 121.3)	134.5 (133.4, 135.6)	141.3 (139.8, 142.8)
5	101.7 (100.8, 102.6)	107.8 (106.9, 108.6)	121.1 (120.4, 121.7)	135.2 (134.2, 136.2)	142.2 (140.8, 143.6)
6	101.4 (100.5, 102.4)	107.6 (106.8, 108.4)	120.9 (120.3, 121.6)	135.2 (134.3, 136.2)	142.4 (141.0, 143.8)
7	100.8 (99.7, 102.0)	107.0 (106.3, 107.7)	120.4 (119.8, 121.0)	134.8 (133.9, 135.6)	142.2 (140.7, 143.7)
8	100.3 (99.5, 101.1)	106.3 (105.6, 106.9)	119.4 (118.8, 120.1)	133.7 (132.8, 134.6)	141.1 (139.8, 142.4)
9	99.6 (98.9, 100.3)	105.3 (104.7, 105.9)	118.2 (117.7, 118.8)	132.3 (131.6, 133.1)	139.5 (138.4, 140.6)
10	98.8 (97.9, 99.7)	104.4 (103.7, 105.0)	117.1 (116.4, 117.7)	131.0 (130.2, 131.9)	138.1 (136.8, 139.4)
11	98.1 (97.3, 99.0)	103.6 (102.9, 104.3)	116.2 (115.5, 116.8)	130.1 (129.2, 131.0)	137.1 (135.8, 138.5)
12	97.8 (96.9, 98.7)	103.2 (102.4, 103.9)	115.6 (115.0, 116.2)	129.6 (128.7, 130.5)	136.7 (135.4, 138.0)
13	97.7 (96.9, 98.5)	103.0 (102.4, 103.6)	115.4 (114.9, 116.0)	129.5 (128.5, 130.4)	136.6 (135.4, 137.8)
14	97.7 (83.6, 111.8)	103.0 (98.2, 107.7)	115.4 (112.8, 117.9)	129.5 (123.7, 135.3)	136.7 (120.1, 153.3)

Day PN	Centiles for Diastolic Blood Pressure (95% CI)				
	3rd	10th	50th	90th	97th
0	59.5 (50.8, 68.2)	63.8 (60.8, 66.7)	74.1 (72.6, 75.7)	86.4 (83.0, 89.8)	92.9 (82.1, 103.7)
1	59.9 (58.4, 61.4)	64.4 (63.2, 65.6)	74.8 (74.0, 75.7)	86.4 (85.3, 87.4)	92.2 (90.4, 94.0)
2	60.5 (59.5, 61.5)	65.2 (64.4, 66.0)	75.7 (75.1, 76.3)	86.7 (86.0, 87.4)	92.0 (91.0, 93.1)
3	61.3 (60.4, 62.2)	66.2 (65.6, 66.8)	76.7 (76.1, 77.3)	87.4 (86.7, 88.0)	92.4 (91.5, 93.2)
4	62.2 (61.2, 63.1)	67.1 (66.6, 67.7)	77.6 (77.1, 78.2)	88.1 (87.5, 88.7)	92.9 (91.9, 93.9)
5	62.8 (62.0, 63.7)	67.8 (67.3, 68.3)	78.3 (77.8, 78.7)	88.6 (88.0, 89.1)	93.3 (92.6, 94.1)
6	63.2 (62.4, 63.9)	68.1 (67.6, 68.6)	78.5 (78.1, 78.8)	88.7 (88.1, 89.2)	93.4 (92.6, 94.2)
7	63.1 (62.5, 63.8)	68.0 (67.5, 68.5)	78.2 (77.9, 78.6)	88.4 (88.0, 88.9)	93.2 (92.6, 93.8)
8	62.7 (62.0, 63.5)	67.5 (67.0, 68.0)	77.7 (77.2, 78.1)	87.9 (87.5, 88.3)	92.7 (91.9, 93.4)
9	62.0 (61.3, 62.8)	66.7 (66.3, 67.2)	76.8 (76.4, 77.2)	87.0 (86.6, 87.3)	91.8 (91.2, 92.4)
10	61.2 (60.6, 61.8)	65.9 (65.5, 66.3)	75.9 (75.5, 76.3)	86.0 (85.7, 86.4)	90.8 (90.2, 91.3)
11	60.5 (59.7, 61.2)	65.2 (64.8, 65.6)	75.2 (74.8, 75.6)	85.2 (84.7, 85.7)	89.9 (89.2, 90.6)
12	59.9 (58.7, 61.2)	64.7 (64.1, 65.3)	74.7 (74.3, 75.2)	84.7 (84.1, 85.3)	89.4 (88.1, 90.6)
13	59.6 (58.8, 60.4)	64.4 (64.0, 64.9)	74.5 (74.0, 75.0)	84.4 (83.8, 85.0)	89.1 (88.4, 89.7)
14	59.4 (50.7, 68.1)	64.3 (61.4, 67.2)	74.4 (72.9, 76.0)	84.3 (81.0, 87.7)	89.0 (78.2, 99.8)

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**Table A9.3. Smoothed Centiles for Systolic Blood Pressure and Diastolic Blood Pressure (mmHg) for Epidural Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Systolic Blood Pressure (95% CI)				
	3rd	10th	50th	90th	97th
0	93.4 (89.4, 97.5)	101.3 (98.4, 104.2)	115.8 (113.2, 118.3)	130.8 (126.1, 135.5)	139.6 (132.9, 146.4)
1	96.9 (94.3, 99.5)	103.5 (101.5, 105.6)	117.3 (115.4, 119.3)	131.8 (128.5, 135.1)	139.2 (134.8, 143.7)
2	98.9 (96.8, 100.9)	105.2 (103.5, 106.8)	118.9 (117.4, 120.3)	133.2 (131.0, 135.5)	140.4 (137.4, 143.3)
3	100.2 (98.3, 102.1)	106.4 (105.0, 107.8)	120.1 (119.0, 121.3)	134.6 (133.0, 136.3)	141.7 (139.5, 143.9)
4	101.1 (99.0, 103.2)	107.3 (105.8, 108.8)	121.1 (120.2, 122.0)	135.7 (134.2, 137.3)	142.9 (140.7, 145.1)
5	101.6 (100.1, 103.2)	107.8 (106.6, 109.0)	121.7 (120.9, 122.5)	136.4 (135.4, 137.5)	143.7 (142.1, 145.2)
6	101.8 (100.2, 103.3)	107.9 (106.7, 109.1)	121.8 (120.8, 122.7)	136.6 (135.2, 138.0)	143.9 (142.0, 145.9)
7	101.4 (99.8, 103.0)	107.5 (106.2, 108.8)	121.3 (120.3, 122.3)	136.1 (134.5, 137.8)	143.5 (141.1, 145.9)
8	100.7 (99.0, 102.5)	106.7 (105.3, 108.2)	120.4 (119.3, 121.4)	135.1 (133.4, 136.9)	142.4 (139.9, 145.0)
9	100.0 (97.1, 102.8)	105.8 (104.4, 107.3)	119.3 (118.2, 120.4)	133.9 (132.1, 135.7)	141.1 (137.4, 144.9)
10	99.2 (97.8, 100.7)	105.0 (103.8, 106.2)	118.2 (117.2, 119.2)	132.6 (131.2, 134.0)	139.8 (137.8, 141.7)
11	98.7 (97.3, 100.2)	104.4 (103.2, 105.5)	117.3 (116.4, 118.3)	131.5 (130.2, 132.9)	138.6 (136.7, 140.6)
12	98.5 (97.0, 99.9)	104.0 (102.8, 105.2)	116.8 (115.9, 117.7)	130.8 (129.6, 132.0)	137.8 (136.1, 139.5)
13	98.5 (97.1, 100.0)	104.0 (102.8, 105.1)	116.5 (115.7, 117.4)	130.4 (129.1, 131.7)	137.4 (135.5, 139.3)
14	98.9 (94.8, 102.9)	104.2 (101.3, 107.1)	116.6 (114.1, 119.2)	130.4 (125.7, 135.1)	137.3 (130.6, 144.1)

Day PN	Centiles for Diastolic Blood Pressure (95% CI)				
	3rd	10th	50th	90th	97th
0	58.0 (55.3, 60.6)	62.1 (59.8, 64.5)	72.2 (69.7, 74.6)	84.0 (81.5, 86.6)	90.3 (86.9, 93.6)
1	59.2 (57.3, 61.2)	63.6 (61.9, 65.2)	73.8 (72.1, 75.5)	85.6 (83.8, 87.4)	91.7 (89.3, 94.1)
2	60.4 (58.4, 62.5)	64.9 (63.7, 66.2)	75.4 (74.3, 76.6)	87.2 (85.9, 88.5)	93.1 (90.5, 95.8)
3	61.6 (60.3, 62.8)	66.2 (65.3, 67.2)	76.9 (76.1, 77.7)	88.6 (87.6, 89.6)	94.4 (93.0, 95.8)
4	62.4 (61.3, 63.6)	67.2 (66.3, 68.2)	78.1 (77.4, 78.8)	89.6 (88.5, 90.7)	95.3 (93.7, 97.0)
5	63.0 (61.9, 64.0)	67.9 (67.0, 68.8)	78.7 (78.0, 79.5)	90.2 (89.2, 91.2)	95.7 (94.2, 97.2)
6	63.1 (62.2, 64.1)	68.1 (67.3, 68.9)	78.9 (78.1, 79.8)	90.2 (89.2, 91.1)	95.6 (94.2, 96.9)
7	63.0 (62.0, 64.0)	67.9 (67.1, 68.7)	78.6 (77.8, 79.5)	89.6 (88.7, 90.6)	94.9 (93.5, 96.3)
8	62.6 (61.6, 63.6)	67.4 (66.7, 68.2)	78.0 (77.2, 78.7)	88.7 (87.9, 89.6)	93.9 (92.7, 95.1)
9	62.1 (61.1, 63.2)	66.9 (66.1, 67.6)	77.2 (76.5, 77.8)	87.7 (87.0, 88.5)	92.8 (91.7, 93.9)
10	61.7 (60.7, 62.8)	66.4 (65.6, 67.1)	76.4 (75.8, 77.1)	86.8 (86.0, 87.6)	91.8 (90.7, 93.0)
11	61.5 (60.5, 62.5)	66.0 (65.3, 66.7)	75.8 (75.1, 76.5)	86.1 (85.2, 87.0)	91.1 (89.8, 92.5)
12	61.3 (60.4, 62.3)	65.7 (65.1, 66.4)	75.4 (74.7, 76.0)	85.5 (84.6, 86.5)	90.7 (89.2, 92.1)
13	61.2 (60.3, 62.1)	65.6 (65.0, 66.2)	75.1 (74.4, 75.8)	85.3 (84.4, 86.2)	90.5 (89.1, 92.0)
14	61.3 (58.7, 64.0)	65.7 (63.4, 68.1)	75.1 (72.7, 77.6)	85.4 (82.9, 88.0)	90.9 (87.6, 94.3)

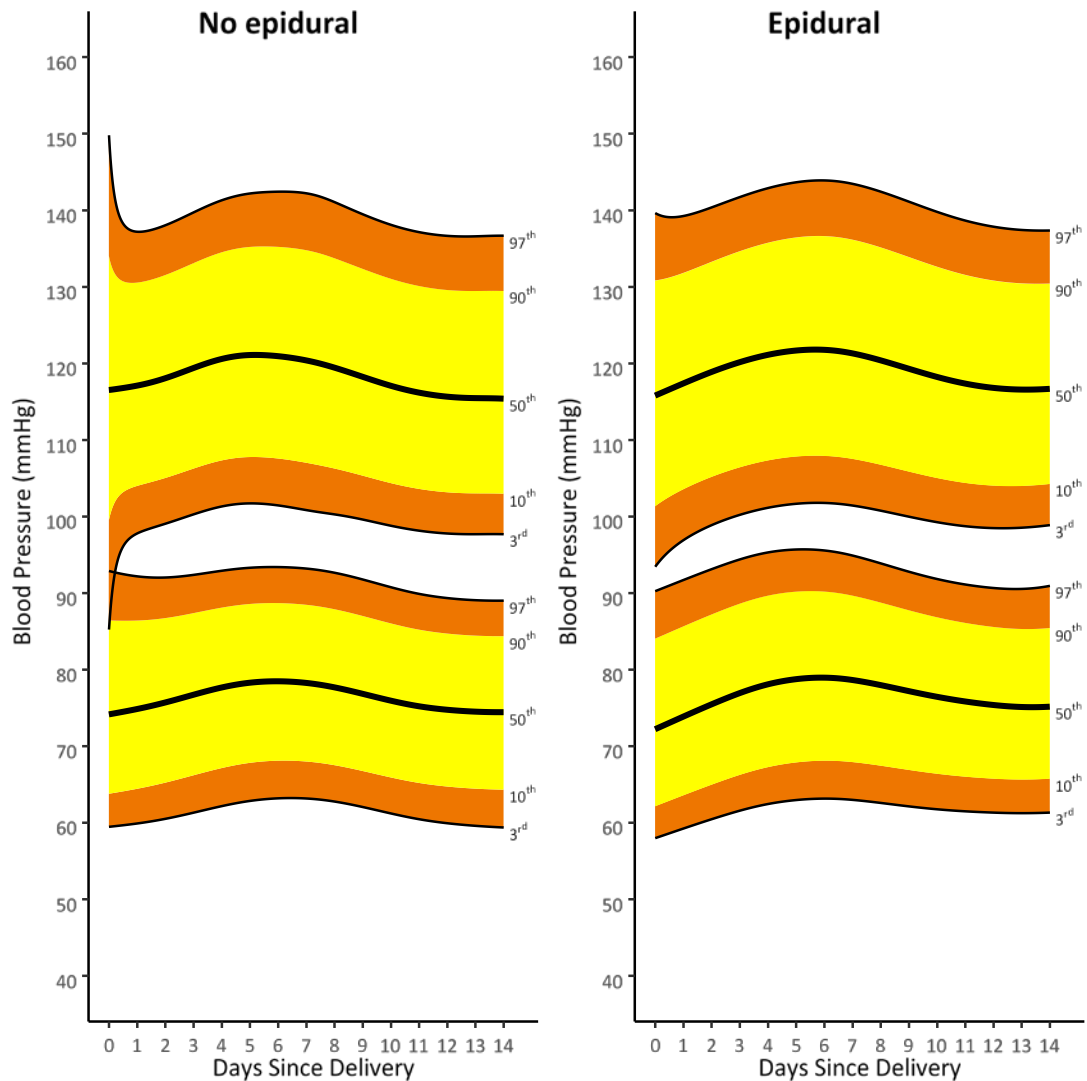
Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Figure A9.1. Smoothed centiles for blood pressure (mmHg); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for nonepidural and epidural cohorts.**



Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A9.4. Smoothed Centiles for Heart Rate (bpm) for Nonepidural Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Heart Rate (95% CI)				
	3rd	10th	50th	90th	97th
0	59.3 (55.8, 62.8)	66.8 (64.7, 68.8)	83.1 (81.4, 84.7)	100.4 (98.2, 102.5)	109.1 (106.4, 111.7)
1	58.8 (56.3, 61.2)	65.8 (64.3, 67.2)	81.6 (80.5, 82.8)	98.8 (97.3, 100.2)	107.2 (105.3, 109.2)
2	58.1 (56.4, 59.7)	64.7 (63.7, 65.7)	80.2 (79.4, 81.0)	97.1 (96.1, 98.1)	105.4 (104.0, 106.8)
3	57.3 (56.1, 58.4)	63.6 (62.9, 64.3)	78.8 (78.1, 79.4)	95.5 (94.7, 96.3)	103.6 (102.4, 104.9)
4	56.3 (55.5, 57.2)	62.5 (61.9, 63.1)	77.4 (76.9, 78.0)	94.0 (93.2, 94.8)	102.0 (100.8, 103.2)
5	55.5 (54.7, 56.3)	61.6 (61.0, 62.2)	76.4 (75.8, 77.0)	93.0 (92.2, 93.8)	101.0 (99.8, 102.1)
6	54.8 (54.0, 55.6)	60.9 (60.3, 61.5)	75.8 (75.2, 76.3)	92.5 (91.7, 93.3)	100.5 (99.4, 101.6)
7	54.4 (53.7, 55.2)	60.5 (59.9, 61.1)	75.4 (74.9, 75.9)	92.3 (91.6, 93.1)	100.6 (99.5, 101.6)
8	54.2 (53.4, 54.9)	60.2 (59.7, 60.8)	75.2 (74.7, 75.7)	92.4 (91.7, 93.1)	101.0 (99.9, 102.0)
9	54.0 (53.3, 54.7)	60.1 (59.5, 60.7)	75.0 (74.5, 75.5)	92.4 (91.7, 93.2)	101.4 (100.4, 102.5)
10	53.9 (53.2, 54.5)	60.0 (59.4, 60.6)	74.8 (74.3, 75.3)	92.4 (91.6, 93.2)	101.8 (100.6, 103.0)
11	53.8 (53.2, 54.5)	59.9 (59.4, 60.5)	74.5 (74.0, 75.1)	92.2 (91.4, 93.1)	102.0 (100.6, 103.5)
12	53.9 (53.3, 54.5)	59.9 (59.4, 60.5)	74.3 (73.7, 74.9)	92.0 (91.0, 93.0)	102.1 (100.3, 103.9)
13	54.2 (53.6, 54.9)	60.1 (59.5, 60.7)	74.2 (73.6, 74.9)	91.9 (90.9, 93.0)	102.1 (99.7, 104.5)
14	54.8 (51.3, 58.3)	60.4 (58.4, 62.5)	74.3 (72.7, 76.0)	91.9 (89.8, 94.1)	102.1 (99.5, 104.8)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A9.5. Smoothed Centiles for Heart Rate (bpm) for Epidural Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

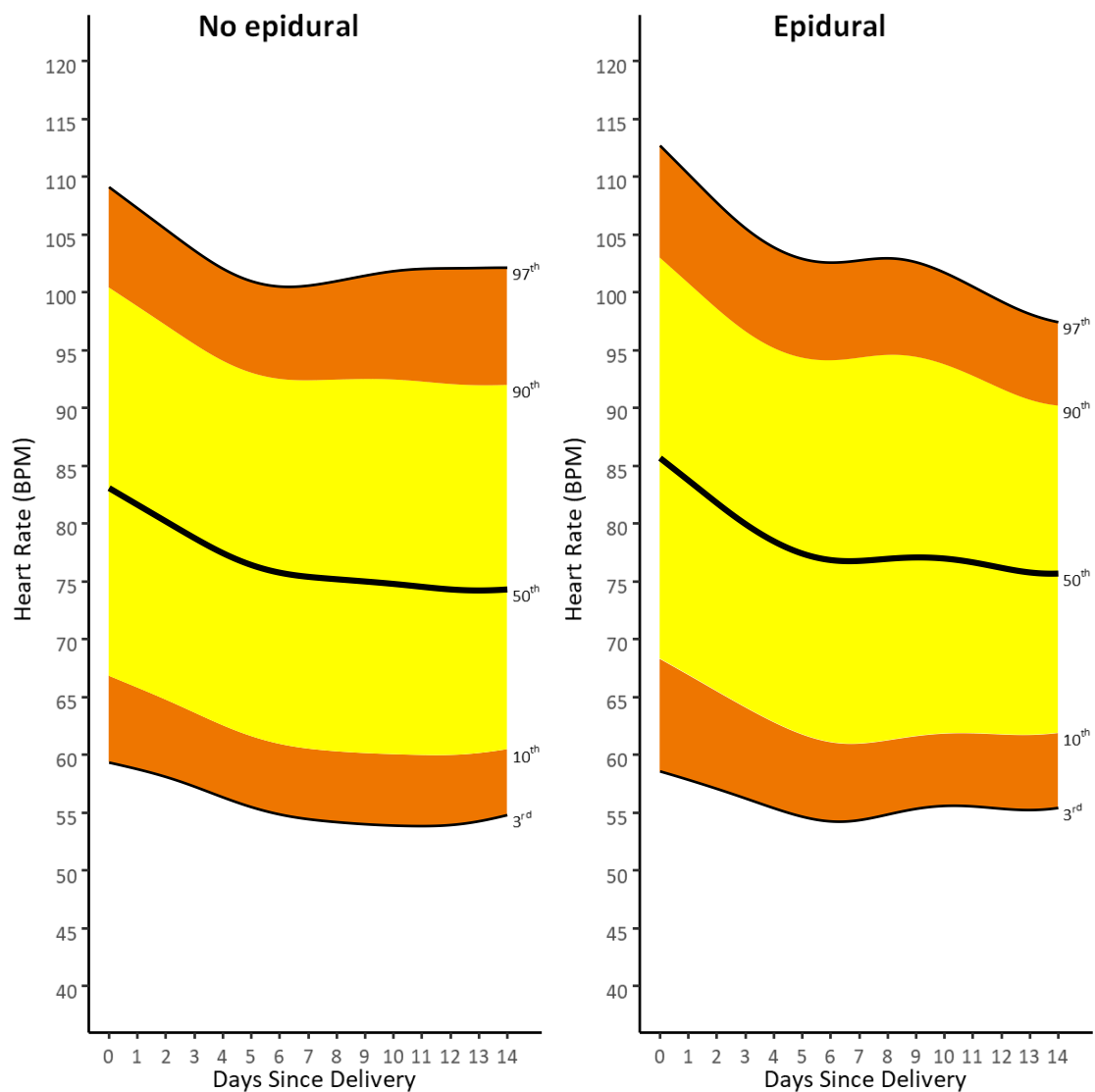
Day PN	Centiles for Heart Rate (95% CI)				
	3 <sup>rd</sup>	10 <sup>th</sup>	50 <sup>th</sup>	90 <sup>th</sup>	97 <sup>th</sup>
0	58.5 (50.1, 67.0)	68.3 (64.4, 72.2)	85.7 (82.3, 89.1)	103.0 (98.7, 107.3)	112.7 (106.3, 119.1)
1	57.8 (51.5, 64.1)	66.9 (64.0, 69.8)	83.7 (81.3, 86.2)	100.8 (97.7, 103.8)	110.2 (105.5, 114.9)
2	57.0 (52.7, 61.4)	65.5 (63.4, 67.6)	81.8 (80.1, 83.5)	98.6 (96.4, 100.8)	107.8 (104.4, 111.1)
3	56.2 (53.4, 59.0)	64.1 (62.5, 65.7)	80.0 (78.7, 81.2)	96.6 (94.9, 98.4)	105.6 (103.0, 108.1)
4	55.4 (53.5, 57.2)	62.8 (61.5, 64.1)	78.5 (77.4, 79.5)	95.2 (93.5, 96.8)	103.9 (101.7, 106.1)
5	54.7 (53.2, 56.1)	61.7 (60.5, 63.0)	77.4 (76.4, 78.4)	94.3 (92.8, 95.9)	102.9 (100.9, 104.9)
6	54.3 (52.8, 55.7)	61.1 (59.8, 62.3)	76.9 (75.8, 77.9)	94.1 (92.6, 95.6)	102.6 (100.7, 104.5)
7	54.4 (52.9, 55.8)	60.9 (59.7, 62.2)	76.8 (75.8, 77.8)	94.3 (92.9, 95.7)	102.8 (100.8, 104.7)
8	54.8 (53.4, 56.3)	61.2 (60.1, 62.4)	77.0 (76.1, 77.8)	94.6 (93.3, 95.8)	102.9 (100.9, 105.0)
9	55.3 (54.0, 56.7)	61.6 (60.5, 62.6)	77.1 (76.3, 77.9)	94.4 (93.2, 95.6)	102.6 (100.7, 104.5)
10	55.6 (54.3, 56.8)	61.8 (60.8, 62.8)	77.0 (76.1, 77.8)	93.7 (92.5, 95.0)	101.7 (99.9, 103.5)
11	55.5 (54.3, 56.7)	61.8 (60.9, 62.7)	76.7 (75.8, 77.5)	92.8 (91.5, 94.0)	100.5 (98.7, 102.3)
12	55.3 (54.1, 56.5)	61.7 (60.8, 62.6)	76.2 (75.4, 77.0)	91.6 (90.4, 92.9)	99.2 (97.3, 101.1)
13	55.2 (53.8, 56.7)	61.7 (60.7, 62.7)	75.8 (75.0, 76.5)	90.7 (89.4, 92.0)	98.1 (96.0, 100.3)
14	55.4 (47.0, 63.8)	61.9 (58.0, 65.8)	75.7 (72.3, 79.1)	90.2 (85.9, 94.5)	97.4 (91.0, 103.9)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Figure A9.2. Smoothed centiles for heart rate (bpm); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for nonepidural and epidural cohorts.**



Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A9.6. Smoothed Centiles for Oxygen Saturation SpO<sub>2</sub> (%) for Nonepidural cohort  
According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Oxygen Saturation (95% CI)				
	3rd	10th	50th	90th	97th
0	92.8 (92.3, 93.4)	94.1 (93.8, 94.4)	95.9 (95.8, 96.1)	97.5 (97.3, 97.7)	98.2 (98.0, 98.4)
1	92.9 (92.5, 93.4)	94.2 (94.0, 94.4)	96.1 (96.0, 96.2)	97.6 (97.5, 97.8)	98.4 (98.2, 98.5)
2	93.0 (92.7, 93.3)	94.3 (94.2, 94.4)	96.2 (96.1, 96.3)	97.8 (97.7, 97.9)	98.5 (98.4, 98.6)
3	93.1 (92.9, 93.4)	94.4 (94.3, 94.5)	96.3 (96.3, 96.4)	97.9 (97.8, 98.0)	98.6 (98.5, 98.7)
4	93.2 (93.0, 93.4)	94.4 (94.3, 94.5)	96.4 (96.3, 96.4)	97.9 (97.9, 98.0)	98.7 (98.6, 98.7)
5	93.2 (93.0, 93.4)	94.4 (94.3, 94.5)	96.4 (96.3, 96.4)	98.0 (97.9, 98.0)	98.6 (98.6, 98.7)
6	93.2 (93.1, 93.4)	94.4 (94.3, 94.5)	96.4 (96.3, 96.4)	97.9 (97.9, 98.0)	98.6 (98.5, 98.7)
7	93.2 (93.1, 93.4)	94.4 (94.3, 94.5)	96.3 (96.3, 96.4)	97.9 (97.8, 97.9)	98.6 (98.5, 98.6)
8	93.2 (93.1, 93.4)	94.4 (94.3, 94.5)	96.3 (96.3, 96.4)	97.8 (97.8, 97.9)	98.5 (98.4, 98.6)
9	93.2 (93.1, 93.4)	94.4 (94.3, 94.4)	96.3 (96.2, 96.3)	97.8 (97.8, 97.9)	98.5 (98.4, 98.6)
10	93.2 (93.1, 93.4)	94.4 (94.3, 94.4)	96.3 (96.2, 96.3)	97.8 (97.8, 97.9)	98.5 (98.4, 98.6)
11	93.2 (93.1, 93.4)	94.4 (94.3, 94.4)	96.3 (96.2, 96.3)	97.8 (97.8, 97.9)	98.5 (98.4, 98.6)
12	93.3 (93.1, 93.4)	94.4 (94.3, 94.5)	96.3 (96.2, 96.3)	97.8 (97.8, 97.9)	98.5 (98.4, 98.6)
13	93.3 (93.1, 93.4)	94.4 (94.3, 94.5)	96.3 (96.2, 96.3)	97.8 (97.8, 97.9)	98.5 (98.4, 98.5)
14	93.3 (92.7, 93.8)	94.4 (94.1, 94.6)	96.2 (96.1, 96.4)	97.8 (97.6, 98.0)	98.4 (98.2, 98.7)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A9.7. Smoothed Centiles for Oxygen Saturation SpO<sub>2</sub> (%) for Epidural Cohort  
According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Oxygen Saturation (95% CI)				
	3rd	10th	50th	90th	97th
0	91.8 (90.8, 92.9)	93.9 (93.3, 94.4)	96.0 (95.7, 96.3)	97.5 (97.1, 97.8)	98.3 (97.7, 98.9)
1	92.1 (91.2, 92.9)	94.0 (93.6, 94.4)	96.1 (95.8, 96.3)	97.6 (97.3, 97.8)	98.4 (98.0, 98.8)
2	92.4 (91.7, 93.0)	94.2 (93.8, 94.5)	96.2 (96.0, 96.3)	97.7 (97.5, 97.8)	98.5 (98.2, 98.7)
3	92.6 (92.1, 93.1)	94.3 (94.1, 94.5)	96.3 (96.1, 96.4)	97.7 (97.6, 97.9)	98.5 (98.3, 98.8)
4	92.9 (92.4, 93.4)	94.4 (94.2, 94.6)	96.3 (96.2, 96.5)	97.8 (97.7, 98.0)	98.6 (98.4, 98.8)
5	93.1 (92.7, 93.5)	94.5 (94.4, 94.7)	96.4 (96.3, 96.5)	97.8 (97.7, 98.0)	98.6 (98.4, 98.7)
6	93.3 (92.9, 93.7)	94.6 (94.4, 94.8)	96.4 (96.3, 96.5)	97.8 (97.7, 97.9)	98.6 (98.4, 98.7)
7	93.4 (93.1, 93.7)	94.6 (94.4, 94.8)	96.3 (96.3, 96.4)	97.8 (97.7, 97.9)	98.5 (98.4, 98.6)
8	93.4 (93.1, 93.8)	94.6 (94.4, 94.7)	96.3 (96.2, 96.4)	97.7 (97.6, 97.8)	98.4 (98.2, 98.5)
9	93.4 (93.1, 93.7)	94.5 (94.3, 94.7)	96.2 (96.1, 96.3)	97.6 (97.5, 97.7)	98.3 (98.2, 98.4)
10	93.4 (93.2, 93.7)	94.4 (94.3, 94.6)	96.2 (96.1, 96.3)	97.6 (97.5, 97.7)	98.3 (98.1, 98.4)
11	93.4 (93.2, 93.6)	94.4 (94.3, 94.6)	96.1 (96.1, 96.2)	97.6 (97.5, 97.7)	98.3 (98.2, 98.5)
12	93.4 (93.2, 93.6)	94.4 (94.3, 94.5)	96.2 (96.1, 96.2)	97.7 (97.6, 97.8)	98.4 (98.2, 98.5)
13	93.5 (93.3, 93.7)	94.4 (94.3, 94.6)	96.2 (96.1, 96.3)	97.7 (97.6, 97.8)	98.4 (98.3, 98.6)
14	93.6 (92.5, 94.6)	94.5 (93.9, 95.1)	96.2 (95.9, 96.5)	97.8 (97.5, 98.1)	98.5 (97.9, 99.0)

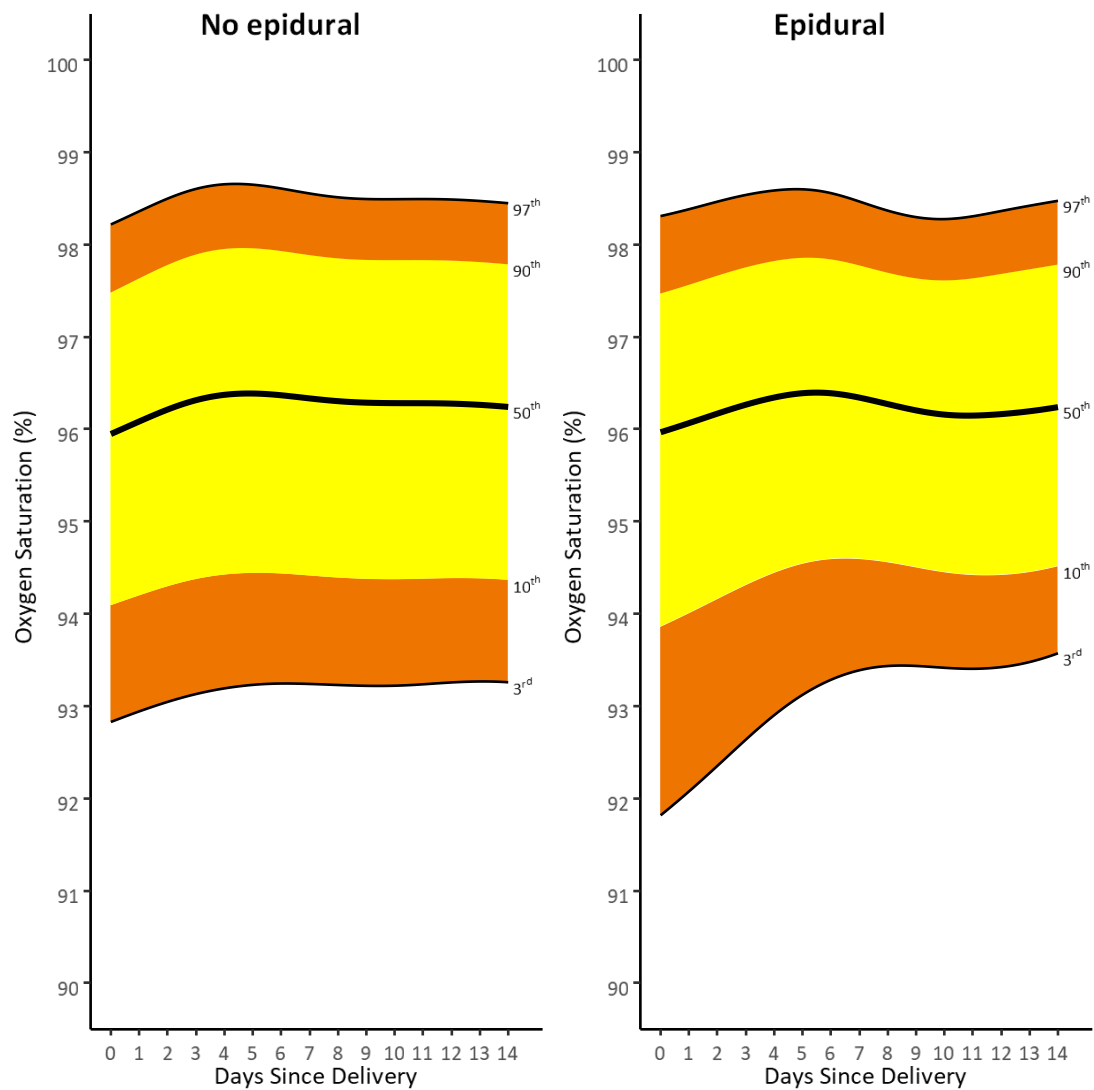
Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Figure A9.3. Smoothed centiles for oxygen saturation SpO<sub>2</sub> (%); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for nonepidural and epidural cohorts.**



Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A9.8. Smoothed Centiles for Temperature (°C) for Nonepidural Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Temperature (95% CI)				
	3rd	10th	50th	90th	97th
0	35.60 (35.41, 35.79)	35.99 (35.83, 36.16)	36.70 (36.53, 36.86)	37.30 (37.13, 37.47)	37.57 (37.39, 37.75)
1	35.59 (35.50, 35.68)	35.99 (35.93, 36.05)	36.70 (36.65, 36.75)	37.31 (37.25, 37.37)	37.59 (37.51, 37.66)
2	35.58 (35.51, 35.66)	36.00 (35.94, 36.05)	36.71 (36.67, 36.75)	37.32 (37.28, 37.36)	37.61 (37.55, 37.66)
3	35.58 (35.52, 35.64)	36.00 (35.96, 36.05)	36.72 (36.69, 36.75)	37.34 (37.31, 37.38)	37.63 (37.58, 37.68)
4	35.57 (35.52, 35.63)	36.01 (35.97, 36.04)	36.74 (36.71, 36.76)	37.36 (37.34, 37.39)	37.66 (37.61, 37.70)
5	35.57 (35.52, 35.62)	36.01 (35.98, 36.04)	36.75 (36.73, 36.77)	37.38 (37.36, 37.41)	37.69 (37.64, 37.73)
6	35.55 (35.51, 35.60)	36.01 (35.98, 36.04)	36.76 (36.74, 36.77)	37.40 (37.38, 37.43)	37.71 (37.67, 37.75)
7	35.54 (35.49, 35.59)	36.00 (35.97, 36.03)	36.76 (36.74, 36.78)	37.42 (37.39, 37.44)	37.74 (37.70, 37.78)
8	35.52 (35.46, 35.57)	35.99 (35.96, 36.03)	36.76 (36.74, 36.78)	37.43 (37.40, 37.45)	37.75 (37.71, 37.79)
9	35.50 (35.43, 35.56)	35.98 (35.94, 36.02)	36.75 (36.73, 36.77)	37.43 (37.40, 37.45)	37.76 (37.72, 37.80)
10	35.48 (35.40, 35.55)	35.96 (35.92, 36.01)	36.74 (36.72, 36.76)	37.42 (37.40, 37.45)	37.77 (37.72, 37.81)
11	35.46 (35.38, 35.54)	35.95 (35.90, 35.99)	36.73 (36.70, 36.75)	37.41 (37.38, 37.44)	37.76 (37.71, 37.81)
12	35.45 (35.36, 35.53)	35.93 (35.88, 35.98)	36.71 (36.68, 36.73)	37.39 (37.36, 37.42)	37.74 (37.69, 37.80)
13	35.45 (35.36, 35.53)	35.93 (35.88, 35.97)	36.69 (36.66, 36.71)	37.36 (37.33, 37.40)	37.72 (37.66, 37.78)
14	35.46 (35.36, 35.56)	35.93 (35.88, 35.98)	36.67 (36.64, 36.69)	37.33 (37.30, 37.37)	37.69 (37.63, 37.75)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A9.9. Smoothed Centiles for Temperature (°C) for Epidural Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Temperature (95% CI)				
	3rd	10th	50th	90th	97th
0	35.63 (34.55, 36.72)	35.97 (35.16, 36.78)	36.57 (36.05, 37.09)	37.13 (36.70, 37.56)	37.41 (37.00, 37.83)
1	35.64 (35.41, 35.87)	36.00 (35.86, 36.15)	36.64 (36.54, 36.75)	37.24 (37.07, 37.40)	37.54 (37.32, 37.76)
2	35.65 (35.51, 35.79)	36.03 (35.95, 36.11)	36.69 (36.62, 36.75)	37.30 (37.20, 37.41)	37.61 (37.46, 37.77)
3	35.66 (35.55, 35.78)	36.05 (35.98, 36.12)	36.72 (36.67, 36.78)	37.35 (37.27, 37.42)	37.67 (37.55, 37.78)
4	35.67 (35.57, 35.77)	36.07 (36.01, 36.12)	36.75 (36.71, 36.80)	37.39 (37.33, 37.45)	37.71 (37.62, 37.80)
5	35.68 (35.58, 35.77)	36.08 (36.02, 36.13)	36.78 (36.73, 36.82)	37.42 (37.37, 37.47)	37.74 (37.66, 37.82)
6	35.68 (35.59, 35.77)	36.09 (36.04, 36.14)	36.80 (36.75, 36.84)	37.44 (37.40, 37.49)	37.77 (37.70, 37.84)
7	35.67 (35.59, 35.76)	36.09 (36.04, 36.14)	36.81 (36.77, 36.85)	37.46 (37.42, 37.50)	37.79 (37.72, 37.86)
8	35.67 (35.58, 35.75)	36.09 (36.04, 36.14)	36.82 (36.78, 36.86)	37.48 (37.43, 37.52)	37.80 (37.73, 37.87)
9	35.65 (35.57, 35.74)	36.08 (36.03, 36.13)	36.82 (36.78, 36.86)	37.48 (37.44, 37.52)	37.80 (37.74, 37.87)
10	35.63 (35.55, 35.71)	36.07 (36.02, 36.12)	36.82 (36.78, 36.86)	37.48 (37.44, 37.52)	37.80 (37.73, 37.86)
11	35.60 (35.52, 35.69)	36.05 (36.01, 36.10)	36.81 (36.78, 36.84)	37.47 (37.43, 37.51)	37.79 (37.72, 37.85)
12	35.56 (35.47, 35.66)	36.03 (35.98, 36.08)	36.80 (36.77, 36.83)	37.46 (37.42, 37.50)	37.76 (37.70, 37.82)
13	35.52 (35.40, 35.64)	35.99 (35.93, 36.06)	36.78 (36.75, 36.81)	37.44 (37.39, 37.48)	37.73 (37.67, 37.80)
14	35.46 (35.30, 35.62)	35.95 (35.86, 36.04)	36.76 (36.71, 36.80)	37.41 (37.35, 37.46)	37.70 (37.62, 37.77)

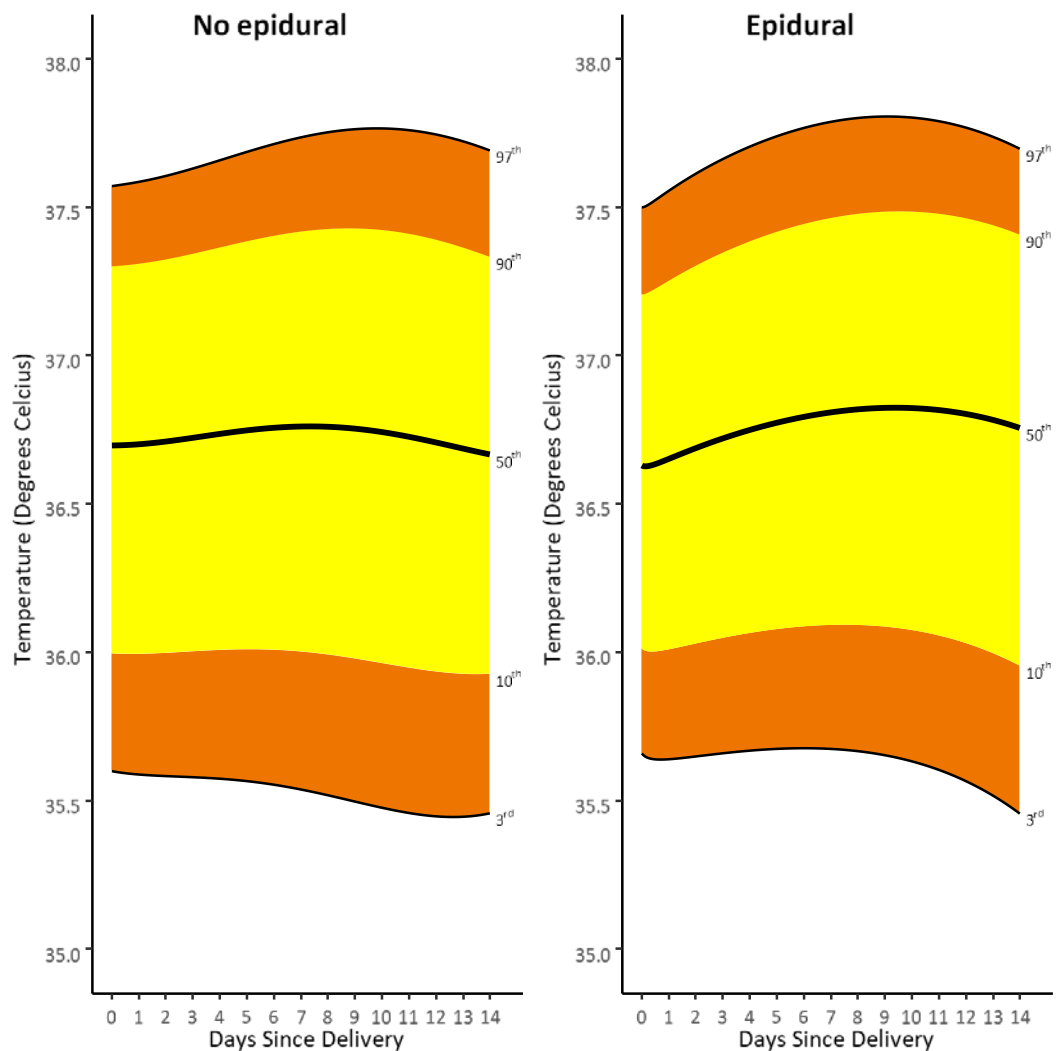
Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Figure A9.4. Smoothed centiles for temperature (°C); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for nonepidural and epidural cohorts.**



Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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## Appendix 10. Anesthesia Subgroup Demographics and Analysis

**Table A10.1. Baseline Maternal Characteristics for Women With and Without Anesthesia, and Total Populations**

<i>Maternal baseline characteristics</i>	<b>Anesthesia N=429</b>	<b>No anesthesia N=480</b>	<b>Total N=909</b>
Maternal age (years) $\pm$ SD	32.5 (5.0)	31.9 (4.5)	32.2 (4.7)
Maternal weight (kg) $\pm$ SD	67.5 (13.6)	68.2 (13.8)	67.9 (13.7)
Maternal BMI (kg/m <sup>2</sup> ) $\pm$ SD	24.8 (4.7)	24.7 (4.6)	24.8 (4.7)
BMI category			
- Normal (18.5-24.9 kg/m <sup>2</sup> ) (%)	252 (58.7)	294 (61.5)	546 (60.2)
- Overweight (25.0-29.9 kg/m <sup>2</sup> ) (%)	117 (27.3)	122 (25.5)	239 (26.4)
- Obese ( $\geq$ 30 kg/m <sup>2</sup> ) (%)	60 (14.0)	62 (13.0)	122 (13.5)
Nulliparous (%)	245 (57.1)	163 (34.0)	408 (44.9)
Ethnicity:			
- White (%)	361 (84.1)	422 (87.9)	783 (86.1)
- Asian (%)	25 (5.8)	15 (3.1)	40 (4.4)
- African/Caribbean (%)	7 (1.6)	9 (1.9)	16 (1.8)
- Mixed (%)	6 (1.4)	10 (2.1)	16 (1.8)
- Other (%)	30 (7.0)	24 (5.0)	54 (5.9)
Smoker (%)	21 (4.9)	35 (7.3)	56 (6.2)
Anemia* (%)	5 (1.2)	1 (0.2)	6 (0.7)
Pre-gestational diabetes (%)	3 (0.7)	3 (0.6)	6 (0.7)
Pre-existing hypertension <sup>†</sup> (%)	8 (1.9)	7 (1.5)	15 (1.7)
Cardiac disease <sup>††</sup> (%)	4 (0.9)	7 (1.5)	11 (1.2)
Pre-existing renal disease (%)	13 (3.0)	6 (1.3)	19 (2.1)

Values are mean  $\pm$ SD for continuous variables, and number (percentage) for categorical values. *BMI= Body Mass Index (kg/m<sup>2</sup>)*. \*defined as *Hb <110 g/L*, <sup>†</sup> *unmedicated*, <sup>††</sup> *(non-ischemic non-congenital)*.

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A10.2. Smoothed Centiles for Systolic Blood Pressure and Diastolic Blood Pressure (mmHg) for Nonanesthetic Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Systolic Blood Pressure (95% CI)				
	3rd	10th	50th	90th	97th
0	97.4 (92.5, 102.2)	103.7 (99.2, 108.3)	117.0 (113.0, 120.9)	130.5 (126.6, 134.4)	137.1 (132.5, 141.7)
1	98.0 (95.9, 100.2)	104.2 (102.3, 106.1)	117.3 (115.9, 118.7)	130.7 (129.2, 132.2)	137.2 (135.1, 139.4)
2	98.9 (97.5, 100.4)	105.0 (103.8, 106.2)	118.0 (116.9, 119.1)	131.5 (130.1, 132.9)	138.0 (136.1, 139.8)
3	100.1 (98.7, 101.6)	106.1 (105.3, 107.0)	119.2 (118.5, 119.9)	132.7 (131.7, 133.7)	139.2 (137.7, 140.8)
4	101.2 (99.9, 102.4)	107.1 (106.2, 108.0)	120.2 (119.5, 120.8)	133.8 (132.8, 134.7)	140.4 (139.0, 141.7)
5	101.6 (100.3, 102.9)	107.5 (106.6, 108.5)	120.6 (120.0, 121.2)	134.2 (133.3, 135.2)	140.8 (139.4, 142.2)
6	101.6 (100.4, 102.9)	107.5 (106.6, 108.3)	120.4 (119.9, 121.0)	134.1 (133.2, 134.9)	140.7 (139.5, 141.9)
7	101.3 (100.2, 102.4)	107.1 (106.3, 107.8)	120.0 (119.4, 120.5)	133.6 (132.8, 134.4)	140.2 (139.1, 141.3)
8	100.6 (99.6, 101.6)	106.3 (105.6, 107.1)	119.1 (118.4, 119.7)	132.6 (131.7, 133.6)	139.2 (138.0, 140.5)
9	99.7 (98.8, 100.6)	105.3 (104.6, 106.0)	117.9 (117.3, 118.6)	131.4 (130.5, 132.3)	138.0 (136.9, 139.1)
10	98.8 (97.9, 99.7)	104.3 (103.5, 105.1)	116.8 (116.0, 117.5)	130.2 (129.4, 131.0)	136.8 (135.8, 137.8)
11	98.2 (97.3, 99.1)	103.6 (102.8, 104.5)	116.1 (115.3, 116.9)	129.4 (128.6, 130.3)	136.0 (135.1, 137.0)
12	97.9 (97.0, 98.9)	103.4 (102.6, 104.2)	115.7 (115.0, 116.4)	129.2 (128.3, 130.0)	135.8 (134.7, 136.9)
13	97.9 (97.0, 98.8)	103.3 (102.6, 104.0)	115.7 (115.0, 116.3)	129.2 (128.2, 130.1)	135.9 (134.6, 137.1)
14	97.8 (92.9, 102.6)	103.2 (98.7, 107.7)	115.6 (111.6, 119.5)	129.2 (125.3, 133.1)	136.0 (131.4, 140.6)
Day PN	Centiles for Diastolic Blood Pressure (95% CI)				
	3rd	10th	50th	90th	97th
0	58.8 (57.3, 60.3)	63.8 (62.5, 65.1)	74.5 (73.2, 75.9)	85.5 (83.6, 87.4)	90.7 (88.4, 93.1)
1	59.6 (58.5, 60.6)	64.5 (63.7, 65.4)	75.1 (74.4, 75.9)	86.0 (84.8, 87.1)	91.1 (89.5, 92.6)
2	60.4 (59.5, 61.3)	65.3 (64.5, 66.1)	75.8 (75.2, 76.5)	86.5 (85.7, 87.3)	91.5 (90.4, 92.6)
3	61.3 (60.5, 62.1)	66.2 (65.5, 66.9)	76.7 (76.1, 77.2)	87.2 (86.5, 87.8)	92.1 (91.3, 92.9)
4	62.2 (61.1, 63.2)	67.0 (66.3, 67.7)	77.4 (76.9, 77.9)	87.8 (87.2, 88.4)	92.6 (91.8, 93.5)
5	62.8 (61.9, 63.7)	67.6 (67.0, 68.3)	77.9 (77.4, 78.4)	88.1 (87.5, 88.8)	92.9 (92.1, 93.7)
6	63.0 (62.0, 64.1)	67.8 (67.1, 68.5)	78.0 (77.6, 78.4)	88.1 (87.5, 88.7)	92.8 (92.0, 93.7)
7	62.9 (62.1, 63.8)	67.7 (67.1, 68.3)	77.8 (77.4, 78.2)	87.8 (87.3, 88.3)	92.4 (91.8, 93.1)
8	62.5 (61.6, 63.5)	67.3 (66.7, 67.9)	77.3 (76.9, 77.7)	87.2 (86.6, 87.8)	91.8 (91.0, 92.5)
9	61.9 (61.1, 62.8)	66.7 (66.2, 67.2)	76.7 (76.3, 77.0)	86.4 (85.9, 87.0)	91.0 (90.2, 91.7)
10	61.2 (60.5, 62.0)	66.0 (65.5, 66.5)	75.9 (75.6, 76.3)	85.6 (85.1, 86.1)	90.1 (89.5, 90.8)
11	60.6 (59.8, 61.4)	65.4 (64.9, 65.8)	75.3 (74.9, 75.7)	84.9 (84.4, 85.5)	89.4 (88.7, 90.1)
12	60.1 (58.6, 61.6)	64.9 (64.3, 65.6)	74.8 (74.4, 75.2)	84.4 (83.8, 85.1)	88.9 (87.7, 90.2)
13	59.7 (58.5, 60.9)	64.6 (64.0, 65.3)	74.6 (74.2, 75.0)	84.2 (83.6, 84.7)	88.6 (87.9, 89.4)
14	59.5 (58.0, 61.0)	64.5 (63.2, 65.8)	74.5 (73.1, 75.9)	84.1 (82.2, 86.0)	88.6 (86.2, 91.0)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A10.3. Smoothed Centiles for Systolic Blood Pressure and Diastolic Blood Pressure (mmHg) for Anesthetic Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Systolic Blood Pressure (95% CI)				
	3rd	10th	50th	90th	97th
0	82.8 (69.9, 95.8)	97.7 (93.2, 102.2)	115.5 (113.2, 117.9)	134.1 (127.3, 140.9)	150.9 (130.8, 171.0)
1	96.6 (93.4, 99.8)	103.2 (101.5, 105.0)	117.2 (115.7, 118.6)	131.6 (128.6, 134.5)	138.9 (133.6, 144.1)
2	98.7 (96.4, 100.9)	104.9 (103.8, 106.1)	118.7 (117.7, 119.7)	133.1 (131.2, 135.0)	140.1 (136.9, 143.3)
3	100.0 (98.2, 101.9)	106.3 (105.2, 107.3)	120.1 (119.3, 120.9)	134.7 (133.3, 136.0)	141.8 (139.5, 144.0)
4	101.1 (99.3, 102.9)	107.4 (106.2, 108.5)	121.3 (120.6, 122.0)	136.0 (134.9, 137.1)	143.2 (141.5, 144.9)
5	101.7 (99.8, 103.6)	108.0 (106.9, 109.1)	121.9 (121.3, 122.6)	136.8 (135.9, 137.8)	144.2 (142.5, 145.9)
6	101.7 (100.5, 102.9)	108.0 (107.2, 108.8)	122.0 (121.4, 122.6)	137.1 (136.2, 137.9)	144.7 (143.2, 146.1)
7	101.0 (99.6, 102.3)	107.4 (106.7, 108.2)	121.4 (120.8, 122.1)	136.7 (135.7, 137.7)	144.6 (142.9, 146.4)
8	100.1 (98.9, 101.2)	106.5 (105.8, 107.3)	120.4 (119.8, 121.0)	135.6 (134.6, 136.7)	143.8 (141.7, 145.9)
9	99.5 (98.4, 100.6)	105.6 (105.0, 106.3)	119.2 (118.6, 119.8)	134.2 (133.3, 135.1)	142.1 (140.4, 143.7)
10	99.0 (98.1, 100.0)	104.8 (104.2, 105.5)	118.0 (117.3, 118.7)	132.7 (131.7, 133.7)	140.3 (138.8, 141.7)
11	98.4 (97.4, 99.4)	104.0 (103.3, 104.7)	117.0 (116.2, 117.7)	131.5 (130.4, 132.6)	138.9 (137.4, 140.3)
12	97.9 (96.8, 99.0)	103.4 (102.6, 104.2)	116.2 (115.5, 116.9)	130.6 (129.6, 131.6)	138.0 (136.6, 139.4)
13	97.7 (96.6, 98.8)	103.1 (102.3, 103.9)	115.8 (115.1, 116.5)	130.2 (129.3, 131.2)	137.6 (136.1, 139.1)
14	97.8 (84.8, 110.8)	103.2 (98.6, 107.7)	115.8 (113.4, 118.1)	130.2 (123.4, 137.1)	137.7 (117.6, 157.8)

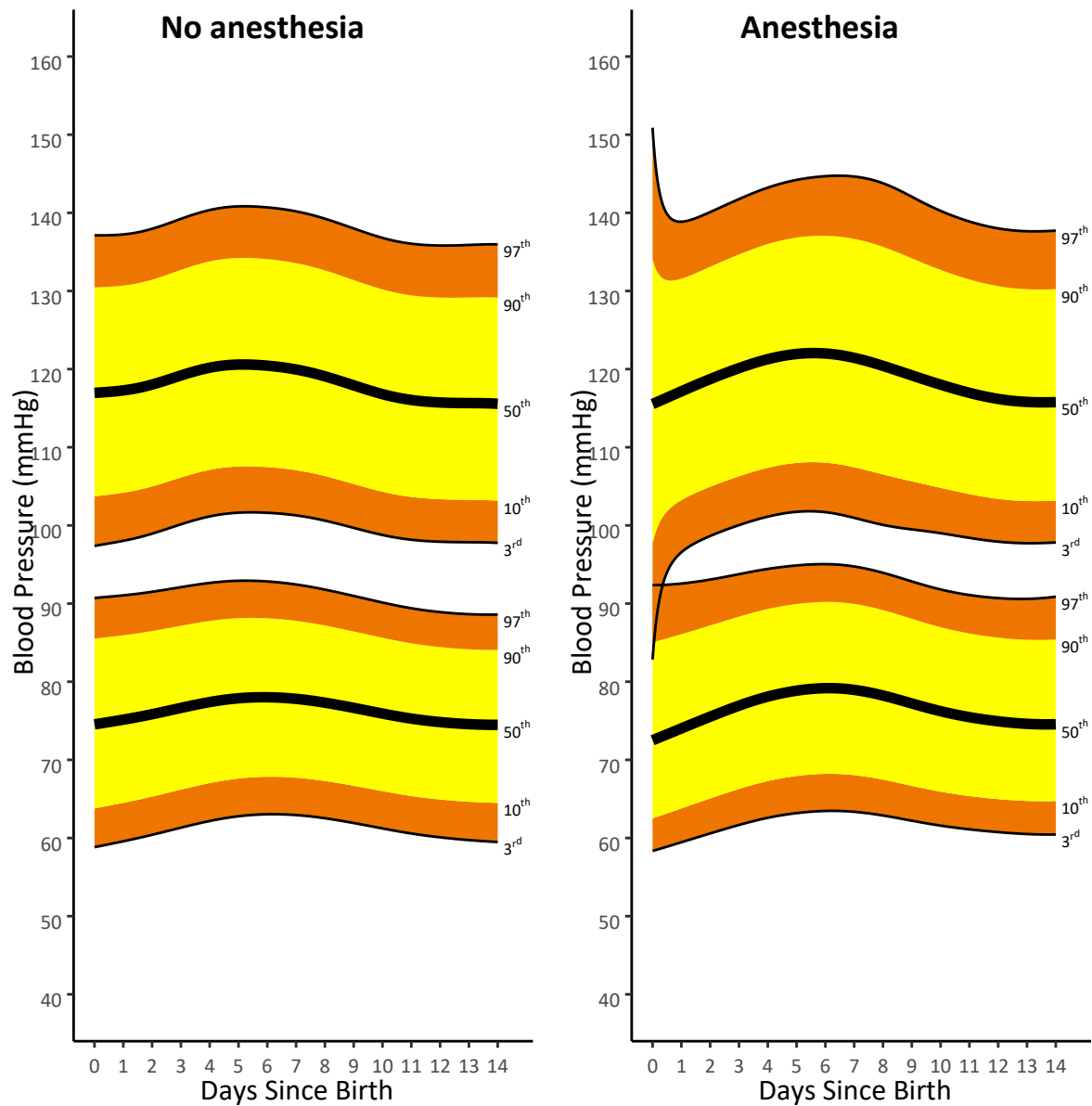
Day PN	Centiles for Diastolic Blood Pressure (95% CI)				
	3rd	10th	50th	90th	97th
0	58.3 (51.6, 65.1)	62.5 (56.7, 68.4)	72.5 (66.8, 78.3)	85.1 (77.4, 92.7)	92.4 (82.6, 102.2)
1	59.5 (57.2, 61.7)	63.8 (62.4, 65.2)	74.0 (72.7, 75.4)	86.1 (84.0, 88.2)	92.6 (89.3, 95.8)
2	60.6 (59.2, 62.0)	65.1 (64.3, 65.9)	75.5 (74.8, 76.3)	87.2 (86.1, 88.3)	93.1 (91.4, 94.7)
3	61.7 (60.3, 63.0)	66.3 (65.4, 67.2)	76.9 (76.3, 77.6)	88.3 (87.4, 89.3)	93.8 (92.3, 95.3)
4	62.6 (61.3, 63.9)	67.3 (66.4, 68.1)	78.1 (77.5, 78.7)	89.3 (88.4, 90.3)	94.4 (93.1, 95.8)
5	63.2 (62.0, 64.4)	67.9 (67.1, 68.8)	78.9 (78.2, 79.5)	89.9 (89.1, 90.8)	94.9 (93.8, 96.0)
6	63.5 (62.6, 64.3)	68.2 (67.6, 68.9)	79.2 (78.7, 79.7)	90.2 (89.5, 90.9)	95.0 (94.0, 96.1)
7	63.4 (62.6, 64.1)	68.0 (67.5, 68.6)	79.0 (78.5, 79.5)	90.0 (89.2, 90.7)	94.7 (93.7, 95.8)
8	62.9 (62.1, 63.7)	67.5 (66.8, 68.1)	78.2 (77.7, 78.8)	89.2 (88.3, 90.1)	93.9 (92.6, 95.3)
9	62.2 (61.4, 63.0)	66.7 (66.1, 67.3)	77.2 (76.6, 77.9)	88.1 (87.2, 88.9)	92.8 (91.6, 94.1)
10	61.6 (60.8, 62.4)	65.9 (65.3, 66.6)	76.2 (75.6, 76.9)	87.0 (86.1, 87.9)	91.8 (90.5, 93.1)
11	61.1 (60.4, 61.8)	65.4 (64.8, 66.0)	75.5 (74.9, 76.0)	86.2 (85.3, 87.1)	91.1 (89.7, 92.5)
12	60.8 (60.0, 61.5)	65.0 (64.3, 65.6)	74.9 (74.4, 75.4)	85.7 (84.8, 86.5)	90.7 (89.5, 92.0)
13	60.5 (59.5, 61.5)	64.7 (64.0, 65.5)	74.6 (74.1, 75.1)	85.4 (84.5, 86.2)	90.6 (89.3, 91.9)
14	60.5 (53.7, 67.2)	64.7 (58.9, 70.6)	74.6 (68.8, 80.3)	85.4 (77.8, 93.0)	90.9 (81.1, 100.7)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Figure A10.1. Smoothed centiles for blood pressure (mmHg); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for nonanesthetic and anesthetic cohorts.**



Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A10.4. Smoothed Centiles for Heart Rate (bpm) for Nonanesthetic Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Heart Rate (95% CI)				
	3rd	10th	50th	90th	97th
0	58.5 (54.3, 62.8)	65.9 (63.7, 68.1)	82.1 (80.4, 83.8)	99.1 (96.6, 101.5)	107.3 (104.4, 110.2)
1	58.1 (55.0, 61.2)	65.0 (63.4, 66.7)	80.8 (79.5, 82.0)	97.5 (95.7, 99.4)	105.7 (103.5, 107.9)
2	57.5 (55.4, 59.6)	64.1 (62.9, 65.3)	79.4 (78.5, 80.3)	96.0 (94.7, 97.4)	104.1 (102.4, 105.8)
3	56.8 (55.3, 58.2)	63.1 (62.3, 64.0)	78.1 (77.4, 78.8)	94.6 (93.5, 95.7)	102.6 (101.1, 104.1)
4	56.0 (54.9, 57.0)	62.1 (61.4, 62.8)	76.9 (76.3, 77.5)	93.3 (92.3, 94.3)	101.2 (99.9, 102.6)
5	55.2 (54.3, 56.0)	61.2 (60.6, 61.9)	76.0 (75.4, 76.5)	92.4 (91.5, 93.3)	100.3 (99.1, 101.6)
6	54.5 (53.7, 55.3)	60.6 (59.9, 61.2)	75.3 (74.8, 75.9)	91.9 (91.1, 92.8)	100.0 (98.8, 101.2)
7	54.1 (53.2, 54.9)	60.1 (59.5, 60.7)	74.9 (74.3, 75.5)	91.8 (91.0, 92.7)	100.2 (99.0, 101.4)
8	53.8 (53.0, 54.6)	59.8 (59.1, 60.4)	74.6 (74.0, 75.3)	91.9 (91.1, 92.8)	100.7 (99.5, 101.9)
9	53.5 (52.8, 54.3)	59.5 (58.9, 60.1)	74.3 (73.7, 74.9)	92.0 (91.1, 92.9)	101.4 (100.1, 102.7)
10	53.3 (52.6, 54.0)	59.3 (58.7, 59.9)	73.9 (73.3, 74.6)	92.0 (91.0, 92.9)	102.0 (100.5, 103.4)
11	53.2 (52.6, 53.8)	59.1 (58.5, 59.7)	73.6 (73.0, 74.2)	91.7 (90.8, 92.7)	102.3 (100.5, 104.0)
12	53.3 (52.7, 53.9)	59.1 (58.5, 59.6)	73.3 (72.7, 73.8)	91.5 (90.5, 92.5)	102.4 (100.3, 104.5)
13	53.7 (53.0, 54.4)	59.3 (58.8, 59.9)	73.2 (72.7, 73.7)	91.4 (90.3, 92.5)	102.5 (99.7, 105.3)
14	54.4 (50.2, 58.7)	59.8 (57.6, 62.0)	73.4 (71.7, 75.1)	91.5 (89.0, 94.0)	102.5 (99.6, 105.4)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A10.5. Smoothed Centiles for Heart Rate (bpm) for Anesthetic Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Heart Rate (95% CI)				
	3rd	10th	50th	90th	97th
0	60.2 (54.2, 66.3)	69.1 (65.9, 72.3)	86.1 (83.7, 88.5)	103.6 (100.6, 106.6)	113.1 (109.5, 116.7)
1	59.4 (55.0, 63.8)	67.6 (65.3, 70.0)	84.2 (82.5, 85.9)	101.5 (99.4, 103.6)	110.6 (108.0, 113.3)
2	58.4 (55.5, 61.4)	66.1 (64.5, 67.8)	82.2 (81.1, 83.4)	99.3 (97.8, 100.7)	108.1 (106.2, 110.1)
3	57.4 (55.5, 59.4)	64.6 (63.5, 65.8)	80.4 (79.5, 81.2)	97.2 (96.1, 98.3)	105.8 (104.2, 107.4)
4	56.4 (55.0, 57.7)	63.2 (62.3, 64.1)	78.7 (78.0, 79.4)	95.5 (94.6, 96.5)	103.9 (102.5, 105.3)
5	55.5 (54.4, 56.6)	62.1 (61.3, 62.9)	77.5 (76.9, 78.1)	94.4 (93.5, 95.3)	102.7 (101.4, 104.0)
6	55.0 (53.9, 56.0)	61.4 (60.6, 62.2)	76.9 (76.3, 77.4)	93.9 (93.1, 94.7)	102.2 (101.0, 103.4)
7	54.9 (53.9, 55.9)	61.2 (60.5, 62.0)	76.7 (76.1, 77.3)	93.9 (93.1, 94.6)	102.1 (101.0, 103.2)
8	55.1 (54.1, 56.0)	61.4 (60.6, 62.1)	76.8 (76.1, 77.4)	93.9 (93.2, 94.7)	102.2 (101.0, 103.3)
9	55.3 (54.4, 56.3)	61.6 (60.9, 62.3)	76.9 (76.2, 77.5)	93.8 (92.9, 94.6)	101.9 (100.8, 103.1)
10	55.6 (54.6, 56.5)	61.9 (61.1, 62.6)	76.9 (76.2, 77.6)	93.4 (92.5, 94.3)	101.4 (100.2, 102.6)
11	55.6 (54.6, 56.6)	62.0 (61.2, 62.8)	76.8 (76.1, 77.5)	92.8 (92.0, 93.7)	100.7 (99.5, 101.8)
12	55.6 (54.5, 56.7)	62.0 (61.1, 62.8)	76.5 (75.8, 77.3)	92.2 (91.3, 93.1)	99.9 (98.6, 101.1)
13	55.6 (54.4, 56.8)	61.9 (61.0, 62.8)	76.3 (75.5, 77.0)	91.6 (90.8, 92.5)	99.1 (97.8, 100.5)
14	55.6 (49.6, 61.7)	62.0 (58.8, 65.1)	76.2 (73.8, 78.5)	91.3 (88.3, 94.3)	98.7 (95.0, 102.3)

Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

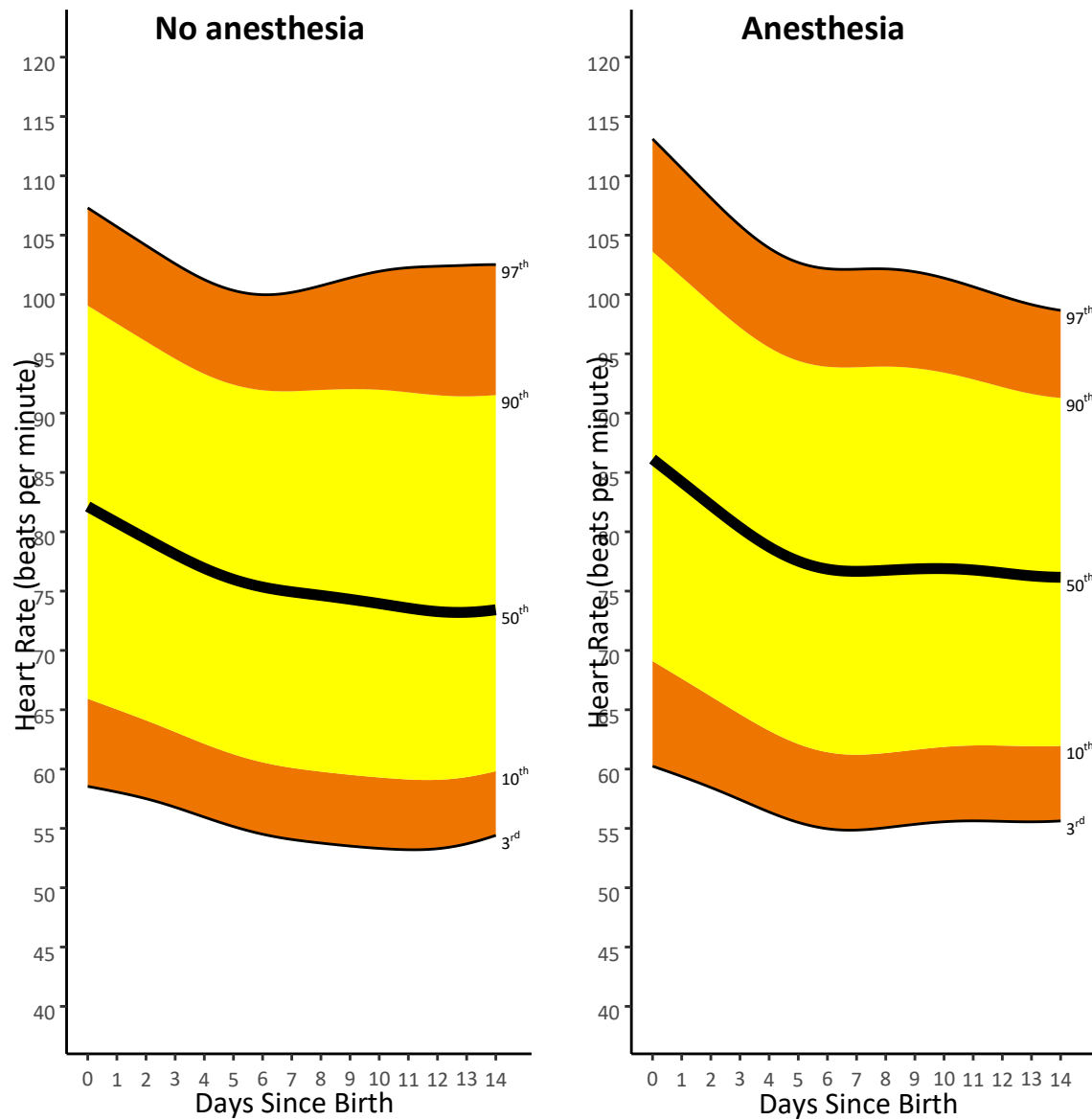
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**Figure A10.2. Smoothed centiles for heart rate (beats per minute); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for nonanesthetic and anesthetic cohorts.**



Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A10.6. Smoothed Centiles for Oxygen Saturation SpO<sub>2</sub> (%) for Nonanesthetic Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Oxygen Saturation (95% CI)				
	3rd	10th	50th	90th	97th
0	92.9 (92.3, 93.5)	94.2 (93.9, 94.4)	96.0 (95.8, 96.1)	97.5 (97.2, 97.7)	98.2 (97.9, 98.5)
1	93.0 (92.6, 93.5)	94.3 (94.1, 94.4)	96.1 (96.0, 96.2)	97.6 (97.4, 97.8)	98.4 (98.2, 98.6)
2	93.1 (92.7, 93.5)	94.3 (94.2, 94.5)	96.2 (96.1, 96.3)	97.8 (97.6, 97.9)	98.5 (98.4, 98.7)
3	93.2 (92.9, 93.5)	94.4 (94.3, 94.5)	96.3 (96.2, 96.4)	97.9 (97.8, 98.0)	98.6 (98.5, 98.8)
4	93.2 (92.9, 93.5)	94.4 (94.3, 94.5)	96.4 (96.3, 96.4)	98.0 (97.9, 98.0)	98.7 (98.6, 98.8)
5	93.2 (93.0, 93.4)	94.4 (94.3, 94.5)	96.4 (96.3, 96.4)	98.0 (97.9, 98.0)	98.7 (98.6, 98.8)
6	93.2 (93.0, 93.4)	94.4 (94.3, 94.5)	96.4 (96.3, 96.4)	97.9 (97.9, 98.0)	98.6 (98.6, 98.7)
7	93.2 (93.0, 93.4)	94.4 (94.3, 94.5)	96.3 (96.3, 96.4)	97.9 (97.8, 98.0)	98.6 (98.5, 98.7)
8	93.2 (93.0, 93.4)	94.4 (94.3, 94.5)	96.3 (96.2, 96.3)	97.9 (97.8, 97.9)	98.6 (98.5, 98.6)
9	93.2 (93.0, 93.4)	94.4 (94.3, 94.5)	96.3 (96.2, 96.3)	97.9 (97.8, 97.9)	98.5 (98.4, 98.6)
10	93.2 (93.0, 93.4)	94.4 (94.3, 94.5)	96.3 (96.2, 96.4)	97.9 (97.8, 97.9)	98.5 (98.4, 98.6)
11	93.3 (93.0, 93.5)	94.4 (94.3, 94.5)	96.3 (96.2, 96.4)	97.9 (97.8, 97.9)	98.6 (98.4, 98.7)
12	93.3 (93.1, 93.5)	94.4 (94.3, 94.5)	96.3 (96.2, 96.4)	97.8 (97.8, 97.9)	98.5 (98.4, 98.6)
13	93.3 (93.1, 93.6)	94.4 (94.3, 94.5)	96.3 (96.2, 96.3)	97.8 (97.7, 97.9)	98.5 (98.4, 98.6)
14	93.4 (92.7, 94.0)	94.4 (94.2, 94.7)	96.2 (96.1, 96.4)	97.8 (97.6, 98.0)	98.5 (98.2, 98.8)

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**Table A10.7. Smoothed Centiles for Oxygen Saturation SpO<sub>2</sub> (%) for Anesthetic Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Oxygen Saturation (95% CI)				
	3rd	10th	50th	90th	97th
0	92.0 (91.3, 92.8)	93.8 (93.5, 94.1)	95.9 (95.7, 96.1)	97.5 (97.2, 97.7)	98.2 (97.9, 98.5)
1	92.3 (91.7, 92.9)	94.0 (93.7, 94.2)	96.0 (95.9, 96.2)	97.6 (97.4, 97.7)	98.3 (98.1, 98.5)
2	92.5 (92.0, 93.1)	94.1 (93.9, 94.3)	96.2 (96.1, 96.3)	97.7 (97.6, 97.8)	98.4 (98.2, 98.6)
3	92.8 (92.4, 93.2)	94.3 (94.1, 94.5)	96.3 (96.2, 96.4)	97.8 (97.7, 97.9)	98.5 (98.4, 98.6)
4	93.0 (92.6, 93.4)	94.4 (94.2, 94.6)	96.4 (96.3, 96.4)	97.9 (97.8, 97.9)	98.6 (98.5, 98.7)
5	93.2 (92.9, 93.5)	94.5 (94.4, 94.6)	96.4 (96.3, 96.5)	97.9 (97.8, 98.0)	98.6 (98.5, 98.7)
6	93.3 (93.0, 93.6)	94.5 (94.4, 94.7)	96.4 (96.3, 96.5)	97.9 (97.8, 97.9)	98.5 (98.4, 98.6)
7	93.4 (93.1, 93.6)	94.5 (94.4, 94.6)	96.4 (96.3, 96.4)	97.8 (97.7, 97.9)	98.5 (98.4, 98.6)
8	93.4 (93.2, 93.6)	94.5 (94.4, 94.6)	96.3 (96.2, 96.4)	97.7 (97.7, 97.8)	98.4 (98.3, 98.5)
9	93.4 (93.2, 93.6)	94.5 (94.4, 94.5)	96.2 (96.2, 96.3)	97.7 (97.6, 97.8)	98.3 (98.3, 98.4)
10	93.3 (93.1, 93.5)	94.4 (94.3, 94.5)	96.2 (96.1, 96.3)	97.7 (97.6, 97.7)	98.3 (98.2, 98.4)
11	93.3 (93.2, 93.5)	94.4 (94.3, 94.5)	96.2 (96.1, 96.2)	97.7 (97.6, 97.8)	98.3 (98.2, 98.4)
12	93.3 (93.2, 93.5)	94.4 (94.3, 94.5)	96.2 (96.1, 96.3)	97.7 (97.6, 97.8)	98.4 (98.3, 98.5)
13	93.3 (93.1, 93.5)	94.4 (94.3, 94.5)	96.2 (96.2, 96.3)	97.7 (97.7, 97.8)	98.4 (98.3, 98.5)
14	93.3 (92.6, 94.1)	94.4 (94.1, 94.7)	96.2 (96.0, 96.4)	97.8 (97.5, 98.0)	98.4 (98.1, 98.7)

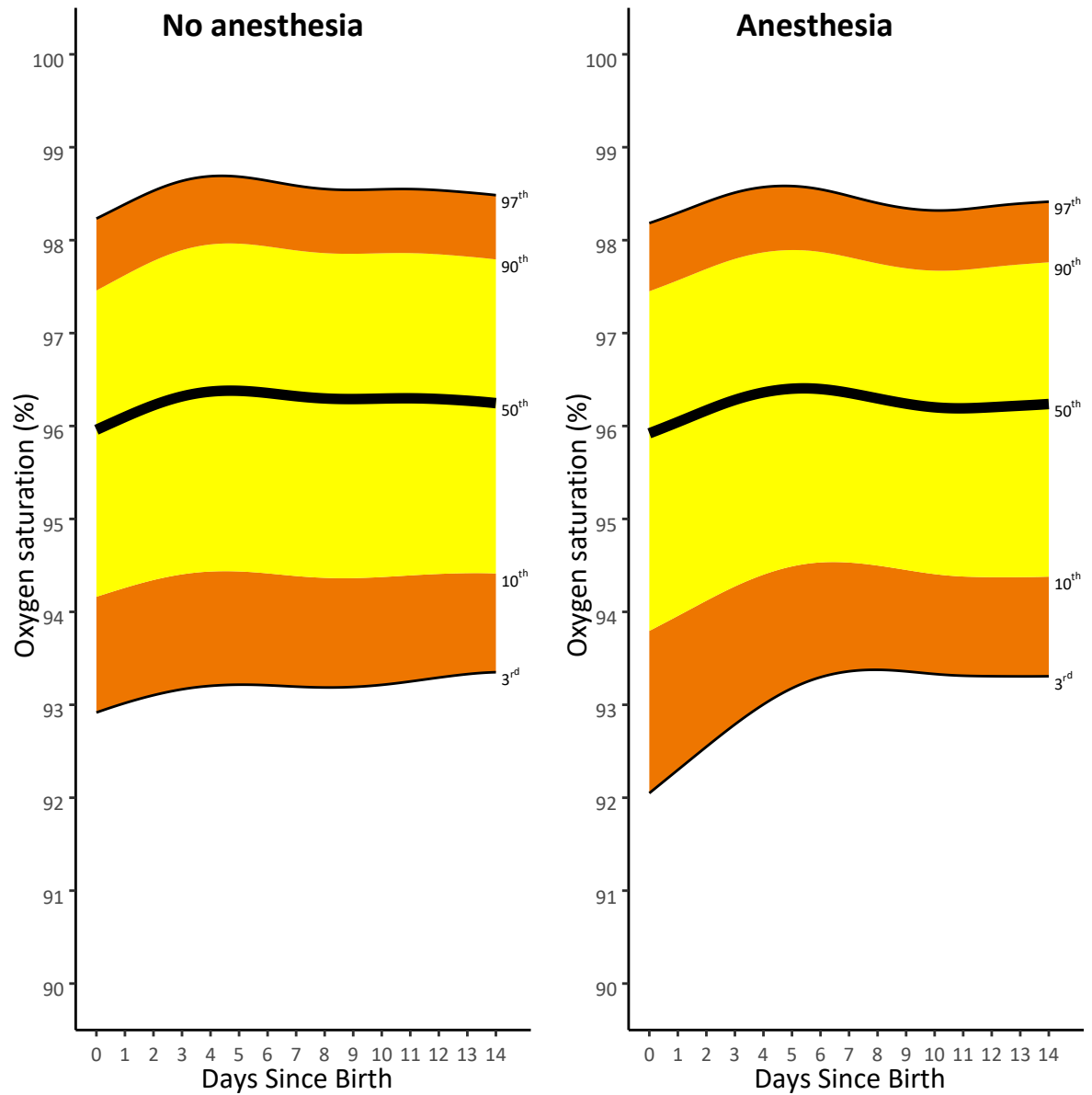
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**Figure A10.3. Smoothed centiles for oxygen saturation SpO<sub>2</sub> (%); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> centiles for nonanesthetic and anesthetic cohorts.**



Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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**Table A10.8. Smoothed Centiles for Temperature (°C) for Nonanesthetic Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Temperature (95% CI)				
	3rd	10th	50th	90th	97th
0	35.49 (NA, NA)	35.91 (NA, NA)	36.63 (NA, NA)	37.24 (NA, NA)	37.51 (NA, NA)
1	35.53 (35.36, 35.70)	35.95 (35.85, 36.06)	36.68 (36.63, 36.74)	37.29 (37.22, 37.36)	37.56 (37.48, 37.64)
2	35.55 (35.44, 35.65)	35.97 (35.91, 36.04)	36.71 (36.66, 36.75)	37.32 (37.27, 37.37)	37.59 (37.54, 37.65)
3	35.55 (35.45, 35.65)	35.98 (35.92, 36.04)	36.72 (36.68, 36.76)	37.34 (37.30, 37.38)	37.62 (37.57, 37.67)
4	35.55 (35.46, 35.63)	35.99 (35.93, 36.04)	36.73 (36.70, 36.76)	37.36 (37.33, 37.39)	37.64 (37.60, 37.68)
5	35.54 (35.46, 35.61)	35.98 (35.94, 36.03)	36.73 (36.71, 36.76)	37.37 (37.35, 37.40)	37.67 (37.63, 37.70)
6	35.52 (35.46, 35.59)	35.97 (35.93, 36.01)	36.73 (36.71, 36.76)	37.38 (37.36, 37.41)	37.69 (37.65, 37.72)
7	35.51 (35.45, 35.57)	35.96 (35.93, 36.00)	36.73 (36.71, 36.75)	37.40 (37.37, 37.42)	37.71 (37.67, 37.74)
8	35.50 (35.44, 35.55)	35.95 (35.92, 35.99)	36.73 (36.71, 36.75)	37.40 (37.38, 37.43)	37.73 (37.69, 37.77)
9	35.48 (35.42, 35.54)	35.94 (35.91, 35.98)	36.72 (36.70, 36.74)	37.41 (37.38, 37.43)	37.75 (37.70, 37.79)
10	35.48 (35.42, 35.54)	35.94 (35.90, 35.98)	36.71 (36.69, 36.73)	37.41 (37.38, 37.44)	37.76 (37.71, 37.82)
11	35.48 (35.42, 35.55)	35.93 (35.89, 35.97)	36.70 (36.68, 36.72)	37.41 (37.37, 37.44)	37.78 (37.71, 37.84)
12	35.49 (35.43, 35.56)	35.93 (35.90, 35.97)	36.69 (36.67, 36.71)	37.40 (37.36, 37.43)	37.78 (37.71, 37.85)
13	35.51 (35.45, 35.58)	35.94 (35.91, 35.98)	36.67 (36.65, 36.69)	37.38 (37.34, 37.42)	37.78 (37.70, 37.85)
14	35.54 (35.47, 35.62)	35.96 (35.92, 35.99)	36.66 (36.63, 36.68)	37.35 (37.31, 37.40)	37.76 (37.67, 37.85)

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**Table A10.9. Smoothed Centiles for Temperature (°C) for Anesthetic Cohort According to Days Postpartum for 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> Centiles (95% CI)**

Day PN	Centiles for Temperature (95% CI)				
	3rd	10th	50th	90th	97th
0	35.83 (33.97, 37.70)	36.10 (35.08, 37.11)	36.65 (36.42, 36.88)	37.31 (36.80, 37.83)	37.75 (36.99, 38.50)
1	35.74 (35.58, 35.91)	36.07 (35.97, 36.16)	36.67 (36.60, 36.75)	37.31 (37.21, 37.41)	37.67 (37.50, 37.84)
2	35.71 (35.59, 35.83)	36.06 (35.99, 36.13)	36.71 (36.65, 36.76)	37.34 (37.28, 37.40)	37.68 (37.56, 37.80)
3	35.68 (35.58, 35.79)	36.07 (36.01, 36.12)	36.73 (36.70, 36.77)	37.37 (37.33, 37.40)	37.70 (37.60, 37.79)
4	35.67 (35.58, 35.75)	36.07 (36.02, 36.12)	36.76 (36.73, 36.79)	37.39 (37.35, 37.43)	37.72 (37.63, 37.80)
5	35.65 (35.56, 35.73)	36.07 (36.02, 36.13)	36.78 (36.75, 36.81)	37.41 (37.38, 37.45)	37.73 (37.65, 37.82)
6	35.63 (35.55, 35.71)	36.07 (36.02, 36.13)	36.80 (36.77, 36.83)	37.43 (37.39, 37.47)	37.75 (37.67, 37.82)
7	35.61 (35.54, 35.69)	36.07 (36.02, 36.12)	36.81 (36.78, 36.84)	37.45 (37.41, 37.48)	37.76 (37.69, 37.83)
8	35.59 (35.52, 35.67)	36.07 (36.01, 36.12)	36.82 (36.79, 36.85)	37.46 (37.43, 37.49)	37.76 (37.70, 37.82)
9	35.57 (35.49, 35.65)	36.06 (36.00, 36.11)	36.82 (36.80, 36.85)	37.46 (37.43, 37.49)	37.76 (37.71, 37.81)
10	35.55 (35.47, 35.63)	36.04 (35.99, 36.09)	36.82 (36.79, 36.85)	37.46 (37.43, 37.49)	37.75 (37.71, 37.80)
11	35.52 (35.43, 35.60)	36.02 (35.97, 36.07)	36.81 (36.78, 36.84)	37.44 (37.41, 37.48)	37.74 (37.69, 37.78)
12	35.48 (35.39, 35.57)	35.99 (35.94, 36.05)	36.79 (36.76, 36.82)	37.43 (37.39, 37.46)	37.71 (37.67, 37.76)
13	35.44 (35.34, 35.55)	35.96 (35.91, 36.01)	36.77 (36.73, 36.80)	37.40 (37.36, 37.44)	37.68 (37.64, 37.73)
14	35.40 (35.27, 35.53)	35.92 (35.86, 35.98)	36.73 (36.70, 36.76)	37.37 (37.33, 37.40)	37.64 (37.59, 37.69)

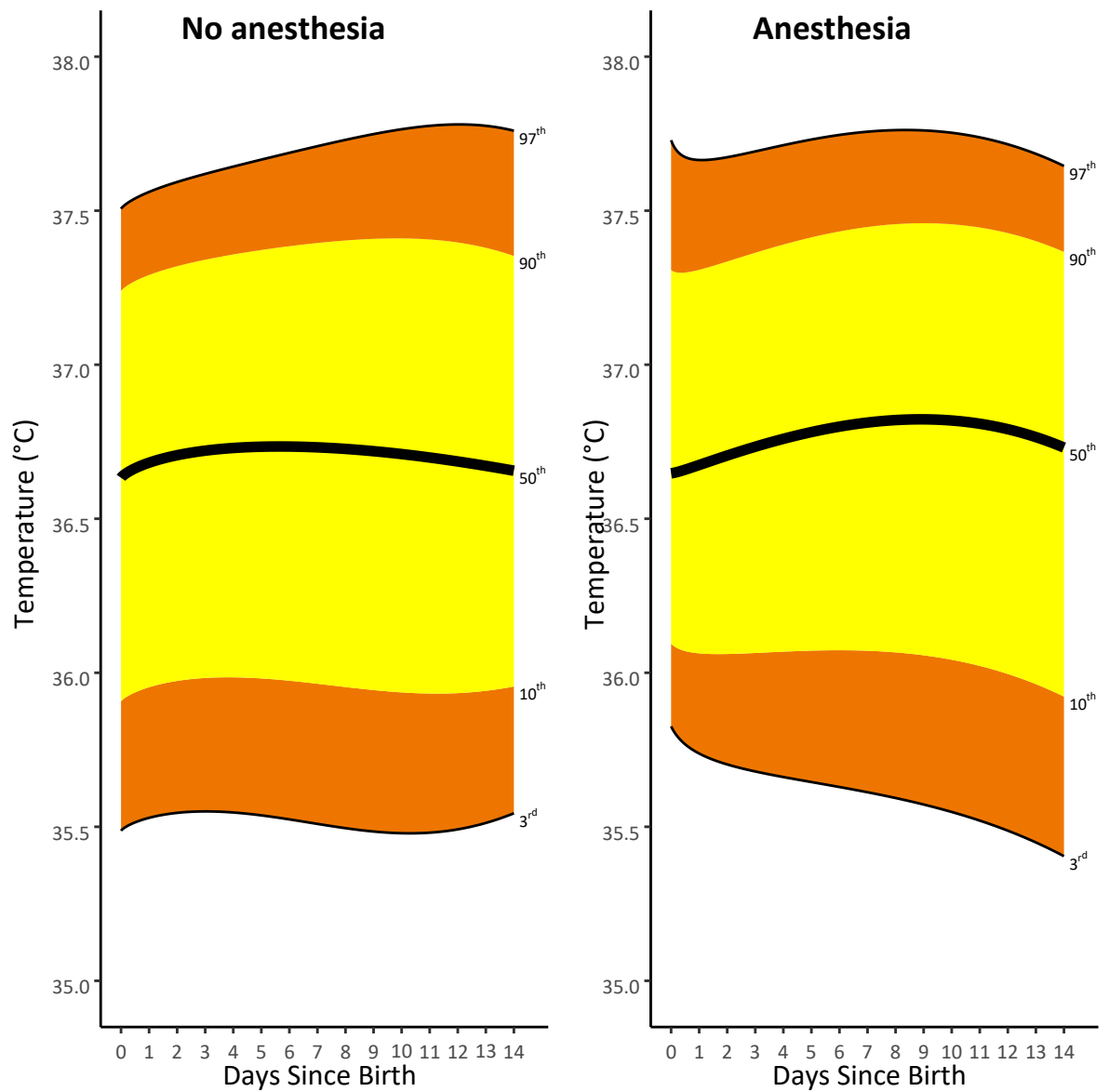
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**Figure A10.4. Smoothed centiles for temperature (°C); 3<sup>rd</sup>, 10<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup> and 97<sup>th</sup> centiles for nonanesthetic and anesthetic cohorts.**



Green LJ, Pullon R, Mackillop LH, Gerry S, Birks J, Salvi D, et al. Postpartum-specific vital sign reference ranges. *Obstet Gynecol* 2021;137.

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