



Smoking During Pregnancy Modifies the Effect Of 17P on Subsequent Preterm Birth: A 2012-2015 SC PRAMS Analysis

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South Carolina Department of Health and Environmental Control

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17 Alpha-Hydroxyprogesterone Caproate (17P)

- Prescribed to pregnant women with a history of preterm birth (PTB) to prevent a subsequent PTB^{1,2}
- Heyborne et al (2017) study³
 - Identified a modifying effect of smoking during pregnancy on the effectiveness of 17P in reducing subsequent PTB
 - Done retrospectively from a randomized control trial on 17P effectiveness

17P on SC PRAMS Phase 7

- Phase 7: 2012-2015
- Only information available about 17P receipt, since done in outpatient/at home setting

34. During *your most recent* pregnancy, did a doctor, nurse, or other health care worker try to keep your new baby from being born too early by giving you a series of weekly shots of a medicine called Progesterone, Makena®, or 17P (17 alpha-hydroxyprogesterone)?

- No
- Yes
- I don't know



Do population-based survey data reflect the modifying effect of smoking during pregnancy on 17P effectiveness for reducing subsequent PTB in SC?

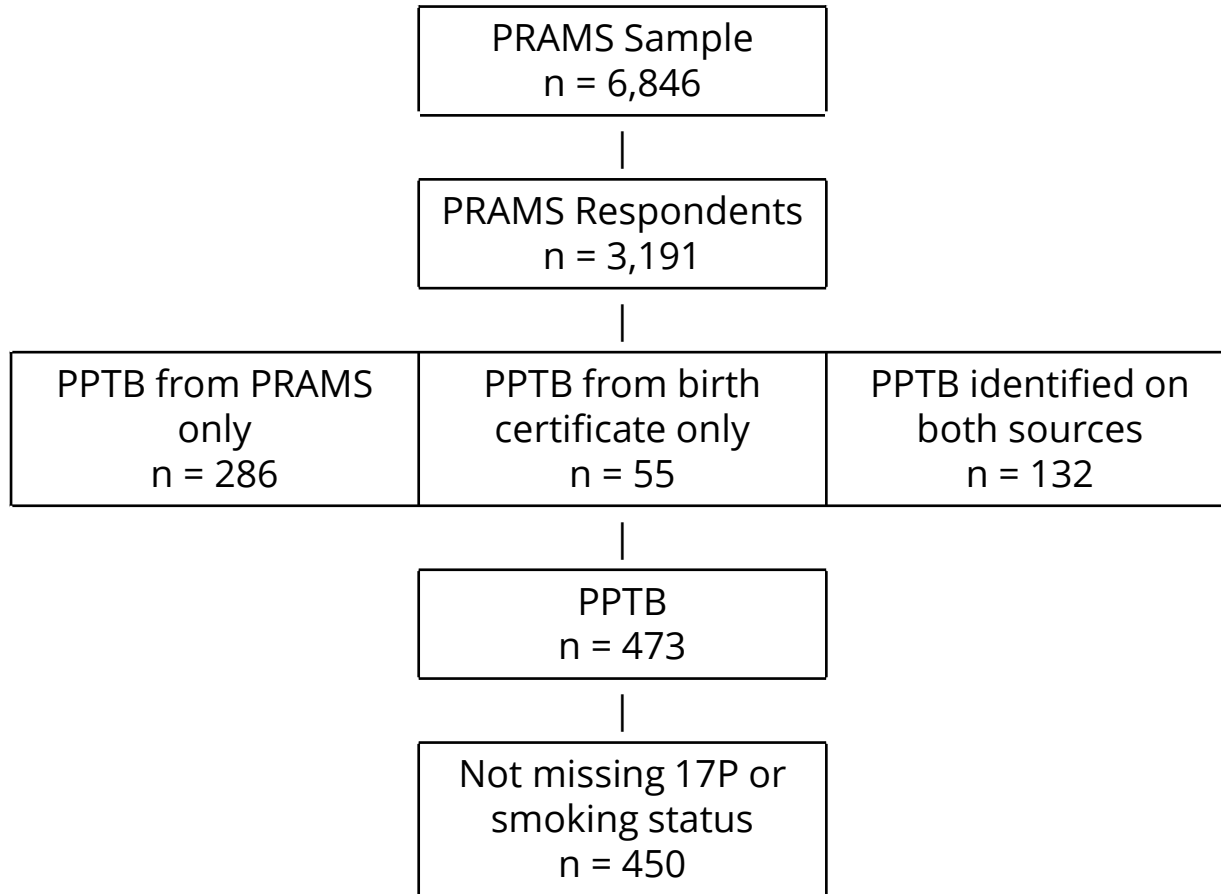
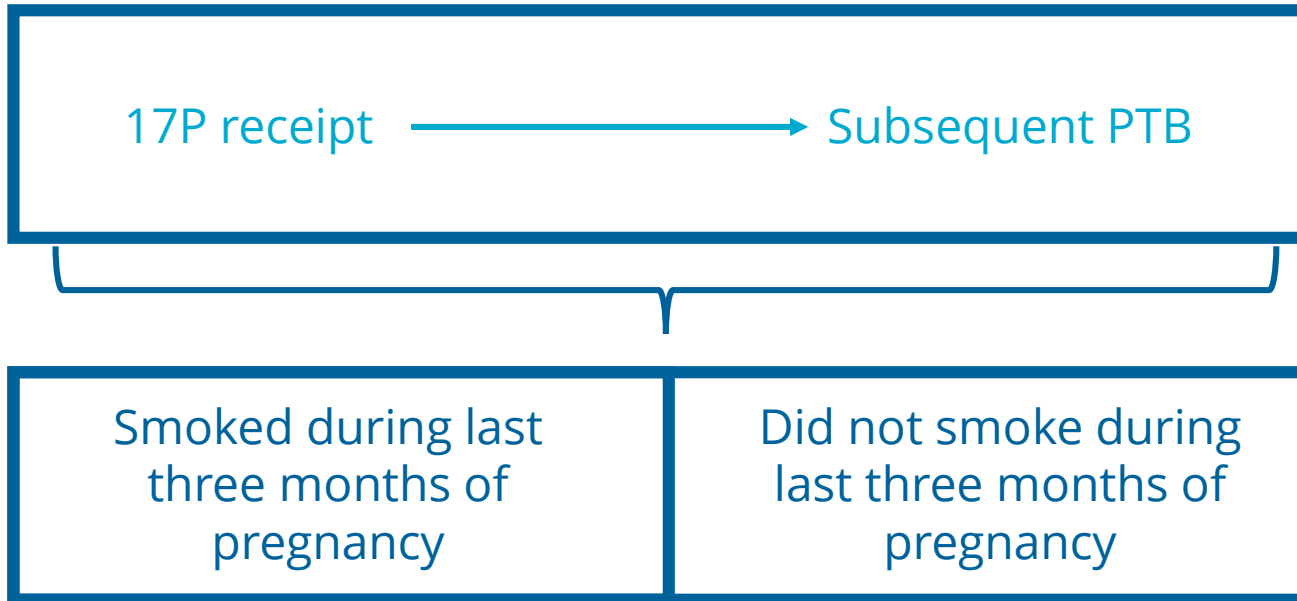


Figure 1. Sample inclusions

Among those with a PPTB



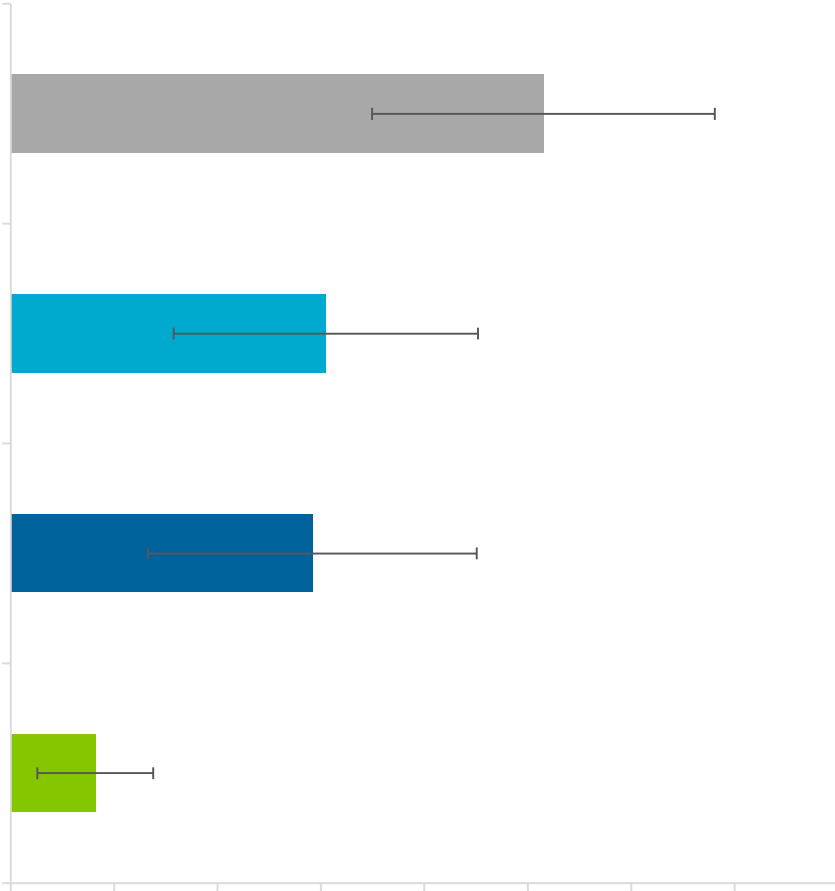
Among those with a PPTB,

26% ($\pm 8\%$) reported receiving 17P

15% ($\pm 7\%$) reported smoking during pregnancy

14% ($\pm 8\%$) of those who did not receive 17P smoked during the last 3 months of pregnancy

4% ($\pm 3\%$) of those who received 17P smoked during the last 3 months of pregnancy



Smoking during pregnancy was significantly associated with subsequent PTB among those who received 17P, but not among those who did not receive 17P

Association	Chi-square p-value
Among those who did not receive 17P, smoking*subsequent PTB	0.8106
Among those who did receive 17P, smoking*subsequent PTB	<0.0001*

Smoking during pregnancy may modify the association between 17P and subsequent PTB

Limitations

- Small sample sizes in strata
- Lack of adjustment for potential confounders
- Self-reported 17P receipt and smoking during pregnancy

These findings reveal...

- Further, **more complex** investigation into the effectiveness of 17P is needed
- The importance of incorporating smoking cessation programs into both family planning and prenatal care settings

References

1. Meis P, Klebanoff M, Thom E, et al. Prevention of Recurrent Preterm Delivery by 17 Alpha-Hydroxyprogesterone Caproate. *N Engl J Med.* 2003;348(24):2379-2385.
2. Berghella V. Progesterone and preterm birth prevention : translating clinical trials data into clinical practice. *YMOB.* 2012;206(5):376-386. doi:10.1016/j.ajog.2012.03.010.
3. Heyborne KD, Allshouse AA, Health D. Smoking, 17 Alpha-Hydroxyprogesterone Caproate, and Preterm Birth. *Am J Perinatol.* 2017;33(12):1191-1197. doi:10.1055/s-0036-1586119.



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