

## PRESENTER

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# PERINATAL SMOKING IN MOTHERS AND FATHERS: LONGITUDINAL ASSOCIATIONS WITH INFANT BIRTH OUTCOMES.

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## Background

Smoking in pregnancy is an established risk for poor infant birth outcomes.<sup>[1-4]</sup>

Knowledge on the maternal and paternal impacts of smoking in the preconception and early weeks of pregnancy, is limited.

Understanding the impacts of parental smoking is critical to informing earlier approaches to prevention.

## Aims

Examine the association of maternal and paternal smoking at preconception, periconception and during pregnancy, with infant birth outcomes.

## Methods

## Sample

Triple B  
Pregnancy  
Cohort Study

- Longitudinal study of parental substance use and mental health, and the impacts on family and child development.<sup>[5]</sup>
- Participants were recruited between 2008 and 2013 from hospitals and health services in NSW and WA.



## Exposure

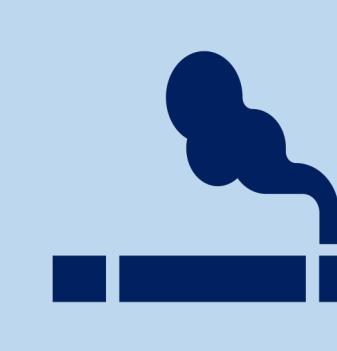
Preconception  
3 months prior to conception

1,620  
mothers

Periconception  
Conception to ~6 weeks

820  
fathers

## Pregnancy



Any smoking ('yes'/no')

Trimester 1  
~6 weeks to 12 weeksTrimester 2  
13 weeks to 27 weeksTrimester 3  
28 weeks to birth

## Birth



## Outcomes

## Birth

- Low birth weight
- Prematurity
- Small head circumference
- Small size for gestational age
- Admission to neonatal intensive care unit (NICU)

## Results



20%

of mothers  
smoked at  
preconception

17%

of pregnant  
mothers smoked  
before pregnancy  
awareness

<10%

of pregnant  
mothers smoked  
during pregnancy



24%

of fathers smoked  
at preconception  
and pregnancy

Maternal smoking across the perinatal period was associated with higher odds of infant admission to NICU.

Pregnancy maternal smoking was associated with higher odds of low birth weight, prematurity, and small size for gestational age.

There was little evidence of associations between paternal smoking at preconception and pregnancy with infant birth outcomes.



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of smoking  
mothers had  
a smoking  
partner

	Mothers				Fathers <sup>a</sup>		
	Preconception	Periconception	Trimester 1	Trimester 2	Trimester 3	Preconception	Pregnancy
Low birth weight	1.5 (0.8, 2.8)	1.6 (0.8, 3.1)	<b>2.8 (1.3, 6.2)</b>	<b>2.4 (1.0, 5.8)</b>	<b>2.7 (1.2, 6.4)</b>	1.4 (0.5, 3.8)	0.8 (0.2, 2.6)
Prematurity	1.4 (0.8, 2.5)	1.7 (0.9, 2.9)	<b>3.2 (1.6, 6.4)</b>	<b>2.5 (1.2, 5.1)</b>	<b>2.7 (1.4, 5.5)</b>	0.8 (0.3, 2.0)	0.6 (0.2, 1.8)
Small size for gestational age	1.0 (0.5, 1.9)	1.0 (0.5, 2.0)	1.7 (0.8, 3.8)	<b>2.4 (1.1, 5.4)</b>	<b>2.7 (1.2, 6.2)</b>	1.4 (0.6, 3.1)	1.0 (0.4, 2.5)
Small head circumference	1.5 (0.8, 2.5)	1.3 (0.7, 2.3)	1.7 (0.8, 3.7)	1.6 (0.7, 3.7)	1.6 (0.7, 3.8)	1.1 (0.5, 2.5)	0.8 (0.3, 2.1)
Admission to NICU	<b>1.7 (1.2, 2.3)</b>	<b>1.6 (1.1, 2.4)</b>	<b>2.0 (1.2, 3.2)</b>	<b>2.1 (1.2, 3.5)</b>	<b>2.3 (1.4, 3.8)</b>	1.0 (0.6, 1.7)	1.1 (0.6, 1.8)

Note: Odds ratios | Bolded values indicate significance p < 0.05 | Adjusted for age at birth, highest level of education, socioeconomic status (SES), number of children in care, country of birth and infant sex.

<sup>a</sup> Due to low cell size, socioeconomic status and number of children in care were omitted for associations with small head circumference and low birth weight, respectively, in paternal analyses only.

## Conclusions &amp; Recommendations

In this cohort, parents continued to smoke during the perinatal period, even after pregnancy awareness.

Maternal smoking at preconception and, during all stages of pregnancy, was associated with low birth weight, prematurity and small size for gestational age.

Effects strengthened across the pregnancy period suggesting that continued use of tobacco was associated with poorer infant birth outcomes.

Given widespread knowledge of the effects of second-hand smoke on child development, it is likely that fathers chose to smoke away from their partners to reduce impacts on the developing foetus.

Targeted smoking cessation support for parents prior to, and in the early weeks of pregnancy, is required.

Future research in more diverse samples of fathers is needed to clarify the role of paternal smoking on offspring.

Infants perinatally exposed to tobacco should be routinely screened for indicators of poorer development.