

# Does term induction of labour increase the risk of subsequent spontaneous preterm birth?

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## Introduction

Induction of labour (IOL) is a mean of initiating contractions in women who are not in labour<sup>1</sup>. This is performed using cervical ripening agents such as vaginal prostaglandins or mechanical dilator. As IOL carries its own risk, it is only considered when the maternal and/or fetal risk of continuing the pregnancy outweighs the risk of IOL. In 2016, the IOL rate in Australia was 40.5% compared to 31.6% in 2006<sup>2</sup>.

As the rate of IOL increases, there is limited data on the effects of IOL on subsequent pregnancies. The only study available by Levine et al. suggests that IOL is not a risk factor for subsequent spontaneous preterm birth<sup>3</sup>. Hence, this study evaluates the rate of subsequent spontaneous preterm birth in women with a previous induction of labour at term compared to women with a previous spontaneous labour at term.



## Methods

A retrospective study at Royal Brisbane and Women's Hospital (RBWH) of women with consecutive deliveries from January 2014 to December 2017. Singleton pregnancies who present for induction of labour or in spontaneous labour at term in the index pregnancy were included. Data was extracted from electronic charts.

Women were stratified into two groups: women with a previous term induction of labour vs women with a previous term spontaneous labour. T-test was used to assess the outcome of spontaneous preterm birth in the subsequent pregnancy by comparing both groups.



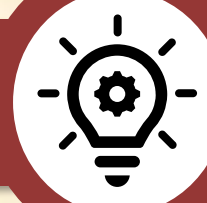
## Results

408 women with consecutive deliveries at RBWH met the inclusion criteria; of which 273 (66.9%) had a previous term induction of labour and 135 (33.1%) had a previous term spontaneous labour. The overall subsequent spontaneous preterm birth rate was 4.6%.

The group with term IOL were not more likely to have a subsequent preterm birth compared to the group with term spontaneous labour ( $p=0.7217$ ). There was no increase risk of preterm birth comparing each IOL method ie Augmentation with Syntocinon ( $p=0.2752$ ), Cooks catheter ( $p=0.088$ ), Cervidil & Prostins ( $p=0.8547$ ).

**Table 1:** Outcomes of subsequent singleton pregnancy based on the different methods of induction of labour

Method of IOL	Preterm births	Term births	p-value
All	12	261	0.7217
Augmentation	4	147	0.2752
Cooks catheter	0	7	0.0880
Cervidil & Prostins	4	65	0.8547



## Conclusion

It is suggestive that induction of labour does not increase the risk of subsequent spontaneous preterm birth more than a spontaneous labour at term. However, further analysis including a larger cohort of patients may improve the validity of this finding.



## References

1. Queensland Health. Induction of labour guidelines. 2017.
2. Australian Institute of Health and Welfare. National Core Maternity Indicators. 2018.
3. Levine et. al. Term induction of labor and subsequent preterm birth. American Journal of Obstetrics & Gynaecology Apr 2014.