

Australian researchers unlock key to triggering labour in pregnancy

June 18 2014, by Liz Banks-Anderson



Australian researchers have identified an electrical switch in the muscle of the uterus that can control labour and may help explain why overweight pregnant women have difficulty giving birth.

The world-first discovery, published today in *Nature Communications*, is a result of a collaborative study between the University Of Melbourne, Monash University, the Royal Women's Hospital Melbourne and the Hunter Medical Research Institute in Newcastle.

After studying uterine muscle biopsies from 70 [pregnant women](#), the researchers found a uterine muscle ion channel that sends electrical

signals that control uterus contractions. This channel does not function properly in [overweight mothers](#), resulting in higher rates of Caesarean delivery.

Lead researcher Professor Helena Parkington, from Monash University said this switch needs to be turned off to allow [labour](#) contractions to occur, but remains turned on in [overweight women](#).

"The reason it stays on is that the 'molecular hand' that should turn the switch off fails to appear in sufficient quantities in the uterine muscle of overweight women when labour should be occurring. These women also respond poorly to our current methods of induction," Professor Parkington said.

Researcher Professor Shaun Brennecke from the University of Melbourne and Royal Women's Hospital said the finding significantly advances understanding of how labour progresses, with implications for all women who have complicated labours.

"The clinical significance of this discovery is that, having identified the problem responsible for dysfunctional labour in overweight women, we are now able to look at developing a safe, effective and specific treatment to correct the problem."

"For example, a drug to turn off the switch to allow normal labour to start and progress," he said.

Pregnant women who are overweight often continue pregnant past their due date or progress slowly when labour begins. Recent findings show that 52 per cent of Australian women are overweight, including 35 per cent of women aged 25-35 years of age. As a result, the proportion of overweight women in pregnancy is also rising.

Overweight [women](#) have higher rates of medical interventions around labour and birth, including higher rates of induction for prolonged pregnancy and higher rates of Caesarean section as a result of failure to progress in labour.

More information: "Diminished hERG K+ channel activity facilitates strong human labour contractions but is dysregulated in obese women." Helena C. Parkington, et al. *Nature Communications* 5, Article number: 4108. [DOI: 10.1038/ncomms5108](https://doi.org/10.1038/ncomms5108). Received 06 February 2014
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