

Do women gain a child and lose a tooth?

Written by The Conversation

‘Gain a child, lose a tooth’ is a phrase that’s bugged me for a while.

The basic premise here is that, along with back-ache, reflux and stretch-marks, tooth loss is a very natural consequence of pregnancy. A 2005 [study](#) found just how common this belief is among parents. In a large US survey, around 20% of women believe that they would lose a tooth after the conclusion of each pregnancy.

While at first glance this figure may not your breath away, let me rephrase it like this: close to one in five women get pregnant with the belief that with each new son or daughter they will be left with one less tooth in their head. Two pregnancies and they hand over two teeth, three or more and they have to start sucking their food. And they sign up to pregnancy willingly?

Luckily for us, there is now a body of research that has examined the dental health of new mums, and will help us determine whether pregnancy really does damage the pearly whites.

Pregnancy and tooth loss

The Danish also have a proverb that quantifies the dental cost of child-bearing - *et barn, en tand* (a child, a tooth) - and it was in Denmark that one of the first rigorous studies in this area was conducted. Kaare Christensen and colleagues

[investigated](#)

the medical records of 1821 women and 1057 men, who were around 80 years old on average. When the researchers analysed the results, they found a highly intriguing association that indicated that more children a women had, the worse her dental problems.

Take, for example, the women in the study who reported being toothless. Women who had given birth to 5 or more children were the most likely to be toothless, and this proportion decreased for women with 3, 2 or 1 child, with childless women being the least likely to be toothless. When the data from the men were examined, there was no relationship between the number of children they had sired and the number of teeth that remained in their head. The relationship between the number of children and the number of remaining teeth was specific to mothers.

Do women gain a child and lose a tooth?

Written by The Conversation

On its own, one may think that this finding is a fluke. But a number of [other studies](#) have also found that teeth loss is more common among women with a large number of children. This old wives' tale, it seems, is absolutely true.

What in the world could be causing this?

Social influences on tooth loss

I'm sure that it will come as no shock to you that people from socially disadvantaged backgrounds are [more likely](#) to end up toothless in their old age. Interestingly enough, in many countries around the world, couples who have more children are also

[more likely](#) to be living in socially disadvantaged circumstances. Could the link between the number of pregnancies and tooth loss merely be reflection of poor social circumstances?

The scientific evidence at this stage suggests that the answer to this question is no.

The first indication of this came from the Danish study described previously. Christensen and colleagues divided the women into two groups according to their social background. If their finding that 'more children equalled less teeth' was due to social factors, then we would not expect to find this pattern when women from different social backgrounds were analysed separately. The researchers did undertake these analyses, and the pattern of results did not change one iota. Even among the high socio-economic class, women were more likely to be toothless if they had given birth to a large number of children.

Further [evidence](#) that social factors may not underlie the association between child-rearing and dental health came from Stefanie Russell and her colleagues at Yale University. The researchers investigated 2653 US women who had had at least one pregnancy. Women were asked to complete a long questionnaire relating to their social and health background, including a crucial question asking about the total number of permanent teeth that are 'missing' or 'missing and replaced' because of disease. The researchers constructed a measure of the socioeconomic circumstances of each woman based on family income, education and occupation. Women were then divided into being either in a high (wealthy), medium (moderate wealth) or low (poor) socioeconomic position.

Do women gain a child and lose a tooth?

Written by The Conversation

The findings were highly similar to those of the Danish study: tooth loss was more common among women with more children, irrespective of their socioeconomic circumstance. For example, women in a high socioeconomic position who had no children, reported an average of 0.8 teeth lost, while women with 4 or more children had lost an average of 5 teeth. The same pattern of findings was observed for those in the middle (women with no children = 1.4 teeth lost; women with 4 or more children = 7.5 teeth lost) and low (women with no children = 2.2 teeth lost; women with 4 or more children = 8.8 teeth lost) socioeconomic position.

Social factors, it seems, is not the cause of the relationship between child-bearing and teeth loss.

Biological influences on tooth loss

There are two main biological theories for why pregnancy may impact on dental health.

Perhaps the better known theory relates to the calcium requirements of the developing baby. Calcium is the most abundant mineral in the human body, and 99% of this is stored in the bones and teeth. The developing baby requires a significant amount of calcium, particularly during the second and third trimesters when the skeleton is forming. To allow for this, the pregnant body performs a number of amazing feats, such as increasing the amount of calcium that it absorbs from ingested food, and critically, taking some of the calcium from the maternal skeleton and giving it to the fetal skeleton. The bone mineral content of women decreases by between [1% and 4%](#) across pregnancy, and much of that is thought to be transferred to the fetus.

There is a common belief that calcium from the mother's teeth may be leached during pregnancy in a similar way to maternal bone in order to help the growth of the developing baby. However, studies have actually found this not to be the case. Way back in 1943, David Dragiff and Macwel Karshan [undertook](#) detailed chemical analyses of teeth extracted from pregnant and non-pregnant women. They found little differences in the mineral content in the teeth of the pregnant women, and importantly, no reduction in the levels of calcium. The teeth of women do not 'soften' during pregnancy, and this theory is simply false.

A second biological theory linking pregnancy and tooth loss concerns the relatively common condition of gingivitis, or inflammation of the gums. A stunningly [high proportion](#) of women experience gingivitis during pregnancy, with estimates ranging from 30% to 100%. Gingivitis

Do women gain a child and lose a tooth?

Written by The Conversation

often leads to swelling in the gums, which can then cause an increase in the mobility of the tooth in its bony socket. The wobbliness of a tooth isn't too much of a worry, as this in itself rarely leads to tooth loss. What is more of a concern is the persistent inflammation that comes along with gingivitis, and it is this that can lead to teeth dropping out of our head.

The exact reason for why gingivitis is more common among pregnant women remains a mystery. Currently, the most common view among scientists is that this may have something to do with the 100 fold increase in the levels of oestrogen and progesterone that slosh around a woman's body during pregnancy. The higher levels of hormones increases blood flow to the gums, causing these to be more sensitive, irritable and swollen. The hormonal changes may also hinder the body's normal response to bacteria, which enables plaque to build-up on the teeth and make the fangs more susceptible to gingivitis.

[Studies](#) have found the pregnancy leads to clear changes in the tissue that surrounds and supports the teeth. For example, a group of Finnish researchers [studied](#) the teeth of 30 pregnant women at three different stages throughout their pregnancy. Several dental changes were observed between the first and second trimesters of pregnancy. These included an increase in periodontal pockets (a space near the point at which the gums contact the tooth) and greater bleeding from the gums when gently prodded.

The challenge now for scientists is to understand how these changes in periodontal health during pregnancy may increase the susceptibility of women to gingivitis. Once this link is discovered, we will have finally gotten to the bottom of why women gain a child, and lose a tooth.

Myth or reality?

Women who have had more pregnancies really are more likely to lose their teeth. Interestingly, this association is not because of the socioeconomic position of mothers, but rather appears to be a biological phenomenon.

The better known theory of why this may occur – that the growing baby drains the calcium from the mother's teeth– is false. If the mother's calcium intake is insufficient during pregnancy, then the additional calcium required for the development of the baby's skeleton will come from the mother's bones, not her teeth. The most likely scenario is that other factors that come along with pregnancy, such as the higher-than-normal levels of hormones, change the oral

Do women gain a child and lose a tooth?

Written by The Conversation

environment and increases a woman's susceptibility to dental disease and subsequent tooth loss.

This column is an extract from [Will Mozart Make my Baby Smart](#) .

Click [here](#) if you would like to be on the mailing list for this column.

Disclosure

Andrew Whitehouse receives funding from the NHMRC, ARC and the Autism CRC

Read more <http://theconversation.com/do-women-gain-a-child-and-lose-a-tooth-43602>