

# What happens to your brain when you're pregnant – clumsiness, food cravings, and moodiness?

February 23 2016, by Jordan Gaines Lewis, Pennsylvania State University

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Credit: AI-generated image ([disclaimer](#))

My forgetful friend – the subject of my original article – gave birth to a baby girl on Thanksgiving Day. She's a beauty, and I know her mum agrees that the morning sickness, crazy sense of smell and forgetfulness

were worth it in the end.

In the meantime, while she's experiencing a [whole new set of biochemical processes](#) that happens when a woman becomes a mother, let's re-explore even more crazy changes that affect – or originate in – the brain during [pregnancy](#). What causes clumsiness, [food cravings](#), and moodiness?

## Tripping over everything

Anecdotally, many women report that one of their earliest signs of pregnancy was that they felt clumsier: constantly dropping their keys, spilling milk in the kitchen or tripping over their own feet. In fact, [one study reported](#) that 27% of women fell at least once during pregnancy, which is [similar to the prevalence of falls](#) in those older than 65 years.

Down the line, the clumsiness makes sense. During the final few months of pregnancy, as the baby bump grows rapidly, a pregnant woman's centre of gravity gradually shifts upward. Neural inputs related to posture – including visual, vestibular (balance and orientation), and somatosensory (touch) information – change quickly during pregnancy, and then again after birth as the centre of gravity returns. The region of the brain which integrates this information, the parietal lobe, must adjust accordingly, interpreting the new, ever-changing input correctly before sending down the proper signals for balance and coordination.



Credit: AI-generated image ([disclaimer](#))

But what explains klutziness in early pregnancy? During the first few weeks, levels of a [hormone called relaxin](#) rise rapidly. Like the name suggests, relaxin relaxes the body's joints, ligaments and muscles, which is especially useful in helping [stretch the pelvic region during delivery](#).

Although there is no scientific literature on how it relates to clumsiness, it's thought that relaxation of wrist, hand and finger muscles contributes to a looser grip, which may explain why pregnant women find themselves dropping objects more often. In some women, increased fluid retention [causes carpal tunnel syndrome](#) in the wrist, worsening these symptoms. Elevated relaxin also explains why many pregnant women experience heartburn – the muscles of the oesophagus are not as flexed, allowing gastric acid to travel upward.

## Give me all the pickles and peanut butter you've got

In general, our bodies "crave" foods we need. Craving salty foods, for example, can be a sign of dehydration or electrolyte imbalance. On the other hand, we may feel repulsed by foods that aren't good for us. As I mentioned in part one, many women go off eating meat, fish and certain plants during early pregnancy – foods more prone to microorganisms or bitter taste.

"Pregnancy cravings" are perhaps the most common, joked-about side effect of pregnancy, estimated to occur in about [60% of women](#). Pickles and sardines; scrambled eggs and chocolate; pistachio ice cream and peanut butter. Crazy hormones, right?

Perhaps surprisingly, pregnancy cravings have not been widely studied nor are they well understood. In general, [women are more likely to report](#) – and be more vocal about – food cravings than men. Women also report [desiring certain foods](#) throughout the menstrual cycle. In many ways, food cravings are culturally reinforced; a giant chocolate brownie probably doesn't fill many nutritional gaps for a woman on her period, but it sure is fun to eat when you're feeling particularly crummy.

[A study](#) from the University of Connecticut reported that food preferences vary throughout pregnancy. While bitter foods tasted especially potent and aversive during the first trimester, preference for salty and sour foods increased as women approached the second and third trimesters. It's not entirely clear why these preferences change throughout pregnancy; it's thought that craving salty foods, like potato chips, may indicate that more sodium is needed to compensate for the greater volume of blood circulating, for example.

Craving non-food substances like clay, paper, drywall or laundry starch may be a sign of a [more serious nutritional deficiency](#) (often iron) and

should be brought to the attention of a doctor.

## **Swing low, sweet (terrible) moods**

If you take away just one nugget of information after reading this piece and the other, it should be this: pregnancy is one of the most dynamic and turbulent times in a woman's life. And with so many different changes occurring so quickly, it's sometimes hard to imagine that they're all triggered by fluctuations in just a few key hormones.

During the first few weeks of pregnancy, levels of oestrogen and progesterone rise rapidly. While typically secreted by the ovaries, these two hormones are [also produced in the placenta](#) during pregnancy. By the sixth week of pregnancy, oestrogen levels are around [three times the peak levels](#) in a typical menstrual cycle.

Oestrogen and progesterone have long been known to exert powerful effects on brain functioning, and may even explain sex differences in the presentation of psychiatric disorders such as schizophrenia and depression. Oestrogen, for instance, has been linked to [increases in dopamine and serotonin receptors](#) in regions of the brain important for regulating emotions, behaviour and mood. Many women who have experimented with different hormonal birth control options, for example, undergo mood changes attributable to getting different concentrations of each hormone. In pregnancy, many women report feeling less irritable by the second trimester, once the brain's self-regulating mechanisms can better accommodate these hormone fluctuations. But, like most things, it varies from woman to woman.

Aside from hormonal changes, so much more is happening during pregnancy. Physical stressors, pain, fatigue and changes in metabolism contribute to sour feelings, as those of us who aren't pregnant can relate to anyway. With pregnancy, anxiety regarding the mother or baby's

health, fear of labour, anticipating the responsibility of raising a child or even financial concerns can be overwhelming. [Research has shown](#) that a strong support system – partner, friends and relatives – improves the expectant mother's physical and mental health, and is associated with fewer childbirth complications and less postpartum depression.

Babies certainly do make their presence known long before the sleepless nights and smelly nappies, don't they?

There's a lot we still don't understand about what happens to a woman's body (and brain) during pregnancy. Regardless, it's hard not to marvel at how all of these changes team up to make a healthy human being in just nine crazy months.

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