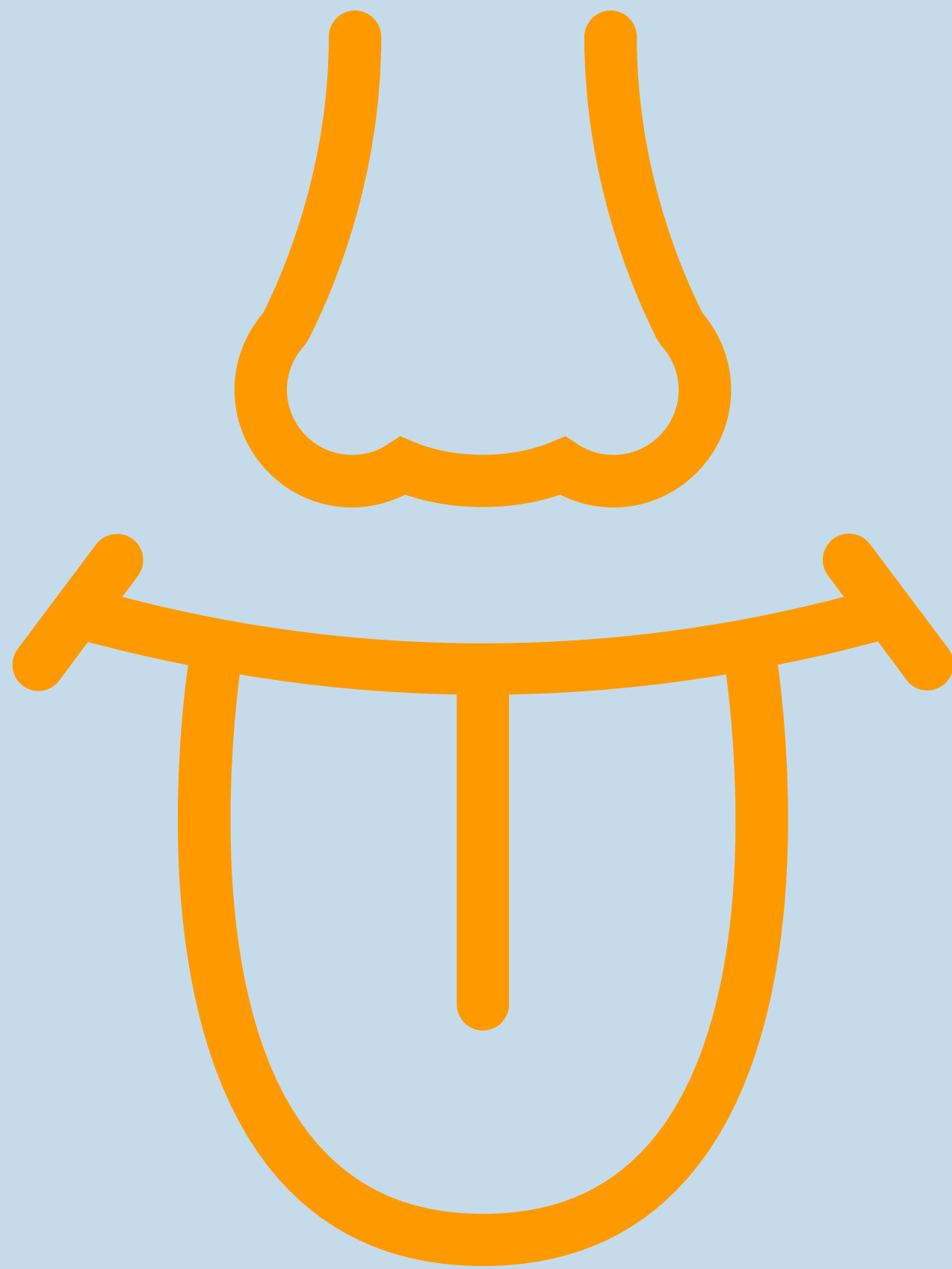




# Development of the Foetal Senses

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## Taste and Smell





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Welcome to this Foetal Senses resource, shared through the Butterfly Baby Club, which focuses on... the development of taste and smell in the womb. The resource is divided into two parts. The first part explores how babies develop and use their sense of taste and smell, and the second part describes a sense-based mindfulness activity that expectant parents can share with their unborn babies.

Let's begin by exploring how babies develop their sense of taste and smell in the womb...

Taste and smell are two of the most used senses within the womb. Certain molecules from food and drinks consumed by the mother will pass through the bloodstream, influencing the smell and taste of the amniotic fluids around the baby. This gives the baby their very first opportunity to experience a particular or local cuisine, different smells and flavours. The sense of taste and smell are closely interlinked and work in unison. Taste allows us to tell if something is sweet, bitter, salty or sour whilst smell allows us to recognise, distinguish and perceive flavour in food and scents in our environment.

At around weeks six to seven of pregnancy, the baby's mouth starts to form at a very basic level and brain cells also start forming around this time. A few weeks later the cells responsible for the ability to smell, called olfactory cells, start to develop in the brain. This is the first of many necessary steps required for the sense of smell, and for the baby to take their first sniff.

# Taste and Smell continued...



A few weeks later, between weeks 12 and 13, some primitive taste buds start to develop in the tiny grooves of the tongue called papillae and nerve cells start to grow towards the tongue and the taste buds. Some weeks later, around week 16, many of the taste buds and nerve connections are ready to experience their first taste of life.

In weeks 22 to 24 the baby finally gains their sense of smell, which also enhances their ability to taste. Babies prefer sweet tastes and smells in the womb and will swallow more of the surrounding liquid if this is sweet, rather than bitter or sour.

Some research suggests that an expectant mother's diet influences the preferred food of her baby postnatally and even later in life. A study assessing a baby's tolerance of garlic found that when the babies were exposed to the smell of garlic shortly after birth, the babies who had been frequently exposed to garlic through their mother's diet *in utero* did not turn away from the garlic, while the babies of mothers who consumed little garlic during pregnancy turned away.

The same children's relationship to garlic was observed at eight and nine years of age, with children who had been exposed to garlic in the womb eating significantly more when the meal contained garlic than when the meal did not contain garlic. They also ate more food with garlic generally compared to children that were not exposed to garlic in the womb. This highlights that babies' experiences of flavours and foods before birth can influence their eating habits in childhood and perhaps beyond. Therefore, the food choices that pregnant mothers make can directly influence their baby's later food preferences.



# Taste and Smell continued...



A consistent diet during pregnancy and the postnatal period has also been found to influence breastfeeding, with babies recognising the familiar smells and tastes from the amniotic fluid. This often helps the baby to find the nipple and latch early. Babies use their sense of smell, and their experiences in the womb, to recognise their mother and other primary caregivers after birth. This is especially useful for newborns who have a more advanced sense of smell and taste at birth than sight.

A baby's sense of smell can also influence their physiological state by helping to calm and stabilising them. For this reason, it can be useful for mothers to place a freshly used breast pad in the cot when putting their baby to sleep. A thin quilt or muslin that has been worn by a parent can also help other caregivers to settle the baby in the parent's absence.

Now it's time to share a sense-based activity with your baby...

For this mindfulness session you will need a warm drink, for example tea, decaffeinated coffee, hot chocolate or whichever drink you wish to enjoy.

Find a place to sit with your drink where you feel comfortable and relaxed. This activity is designed to help you connect with your baby whilst focusing on the sense of taste and smell.

Begin by placing one or both hands on your belly to reaffirm your physical connection with your baby. You may want to keep one hand on your belly throughout the session to maintain the connection with your baby during your sensory experience.

# Taste and Smell continued...



Take a few mindful breaths, in through your nose and out through your mouth.

Don't rush, take your time to get used to this circular breathing.

Now, either lean over your warm drink, or bring it up under your nose, breathe in, taking a deep breath through your nose. What can you smell?

Take a moment to think about how the smell makes you feel. Is it comforting? Does the smell take you back to a fond memory? How does that make you feel? Notice which aromas are long and lingering and which ones are shorter, only staying with you for a little while. If you are drinking tea, maybe there are some hints of flower or fruit? If you are drinking coffee, does it smell dark or light?

Take a moment to tell your baby what you are smelling. Whatever thoughts, feelings and memories come to mind, describe these to your baby.

When you are ready, take your first sip of the warm drink. Keep the liquid in your mouth and do not swallow it just yet. Let this warm liquid roll over your tongue, feeling the sensations of it in your mouth.

Maybe the liquid touches your teeth, does this feel strange or soothing? Is the liquid getting colder in your mouth? How does this affect the flavour? Perhaps the liquid moving around your mouth is even making a sound?

Now it is time to swallow your drink. How does this feel?

# Taste and Smell continued...



Tell your baby what you are feeling and what flavours you are experiencing, include your baby in your experience. Try to think of this from your baby's perspective. What do you think they can taste? The bitterness of your cup of tea or sweetness from the sugar? Your little one is also part of your taste journey through the tastes and smells they will sense within the amniotic fluid.

If you like, you can continue this meditation for your entire drink. Take small sips and enjoy the wealth of sensations this warm drink creates in your mouth. Immerse yourself in this experience with your baby.

Once you are ready to finish your mindfulness experience, take a few long deep breaths and enjoy just 'being' with your baby.

That brings us to the end of this sensory activity. We hope that the mindfulness session has been a relaxing and enjoyable experience for you and your baby.

The next resource in this series focuses on... the development of sight in the womb.