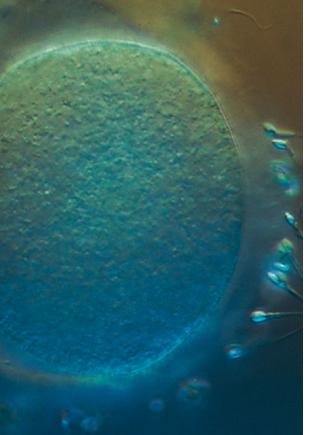




Bundeszentrale für gesundheitliche Aufklärung



1

# Egg and sperm cells fuse together

A new person coming into being is something truly special. However, life doesn't start at birth, instead first occurring at an earlier stage in the womb. When a woman and man engage in sexual intercourse and the man ejaculates sperm into the woman's vagina, millions of sperm cells swim up through the vagina to the woman's egg cell. Of the millions of sperm cells travelling through the vagina, only a few make their way to the egg. And only one single sperm cell successfully fuses together with the egg. Once fertilised, the egg contains all the building blocks required to create a new human.



# Finding room to grow in the uterus

After the egg and sperm cell have fused together, the fertilised egg splits into two cells. These cells are identical and adhere firmly to each other. Over the coming days, the fertilised egg travels to the uterus, where it continues to split into more cells repeatedly. By day two, the egg has split into four cells, then eight and so on. Soon enough, the cluster of cells will resemble a tiny raspberry. Thousands of new cells are formed every second. At this stage, we refer to the cluster of cells as an embryo. Once the embryo reaches the uterus, it starts looking for a place to continue growing. This is how a new human being is created based on the blueprint provided by the mother and father, protected in the mother's womb and

provided with nourishment by her through the umbilical cord. At this point, a gynaecologist can use an ultrasound device to check up on the baby, even though it is still smaller than an apple seed at the 3–4-week mark. Nevertheless, it's possible to already make out a tiny heart beating. The embryo is now four weeks old.

A head, arms and legs start to emerge

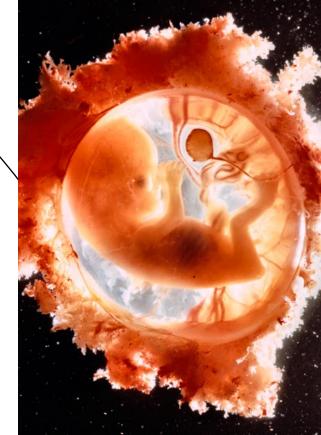
Over the next four weeks, the ball-shaped embryo will start to elongate. The brain and spinal column start to form, with arms and legs growing from four tiny buds. Fingers and toes will soon be formed. The embryo is growing at a rapid pace. It has doubled in size in the first eight weeks alone! At just eight weeks' old, the embryo is roughly as big as a large grape.



4.

### First movements

The baby can properly move by this point. It's able to grab with its hands and wiggle its feet. Frowning is even a skill the baby has already mastered. All of the baby's organs are there, but not fully developed as of yet. The baby floats around in a bubble of amniotic fluid akin to an astronaut in space. Without the ability to breathe or eat, it gets all the nourishment it requires from mum through the umbilical cord. Once the baby is at the 12-week mark, it is around six centimetres long.



**5.** 

## Growing at a rapid pace

The baby is still small enough it could fit in a chicken egg with room to spare. But it won't remain that way for long at the speed it's growing. The baby can twist and turn in the amniotic sac and is certainly active. It also sleeps from time to time, regardless of the hour of the day or night. At 16 weeks, the baby is roughly 16 centimetres long and weighs over 100 grams.





## Starting to hear and taste things

By now, the baby can make out sounds from its surroundings, like the sound of its siblings laughing and playing around, for example. That being said, it doesn't like things to get too noisy. Sometimes it will suck its thumb. Food isn't the only thing transported from mum to baby through the umbilical cord. The baby also receives numerous important antibodies against illness in this way. Waste produced by the baby is also transported out by the umbilical cord. Around the 20-week mark, the baby will be roughly 25 centimetres big and weigh 400 grams. A gynaecologist will be now able to see whether the baby has a vagina or penis using an ultrasound device. The baby is now at the 20-weeks mark.



7

# Able to clench fists and play

There's still room for the baby to move around in the womb. It kicks and fidgets in the amniotic sac. The baby continues to sleep from time to time. At this point, it can clench its fist and play with the umbilical cord. This helps to train its brain. Small eyelashes start to grow on the baby's eyes and the first downy hairs appear on its head. Now it is roughly 28 centimetres big and weighs 800 grams. The baby is now at the 24-week mark.



## Eyes open for the first time



Mum's belly is visibly growing at this point. It's even possible to see the baby moving and doing somersaults from outside. If you place your hand on the belly of a pregnant woman, you will occasionally feel the baby kick. The baby's bones are growing stronger every day, with its fingernails and toenails getting harder. Shortly, the baby will open its eyes for the first time and blink. At 28 weeks, the baby weighs just over one kilogram and is roughly 33 centimetres in size.





The baby now looks almost the same as it will on the day of its birth. Apart from its lungs, all of the baby's organs are fully developed. The baby inhales amniotic fluid into its lungs to prepare itself for breathing after birth. From time to time this can lead to hiccups, which mum can feel in her belly. During this period, the baby's weight doubles from one to two kilograms. Once the baby reaches 32 weeks, it is around 37 centimetres long.

At this point, space in mum's womb is getting tight. But there are still a few important things that need to occur before birth. The baby gains weight so that it doesn't get cold. Each day, it drinks roughly half a litre of amniotic fluid, which also exits at the other end. This helps to train the baby's stomach, kidneys and bladder. At this stage, the baby is around the 36-week mark. Almost all babies turn in the womb so that their head is facing downwards. This is the reason why the majority of babies are born head first.



### A Happy birthday!

Just a few more days until baby makes an appearance! No one is able to predict the date on which a baby will be born with complete certainty. Mum can usually feel when it's time for the baby to come thanks to contractions. Contractions often hurt mum, but they help both her and the child. During contractions, the muscles of the uterus tighten, which helps to slowly move the baby down the birth canal. Most babies are born in a hospital, however some enter the world in birthing centres or at home. Many are born vaginally, whereas others are delivered via caesarean section. The baby is now at the 40-weeks mark. Regardless of where or how the baby enters the world, a midwife is always at mum's side to help. Fathers also often attend the birth. Each birth is a true miracle marking the creation of a new, completely unique human being.

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\* The images used in this publication were selected on the basis of their comprehensibility, availability and, above all, suitability to illustrate a baby's development as clearly as possible.