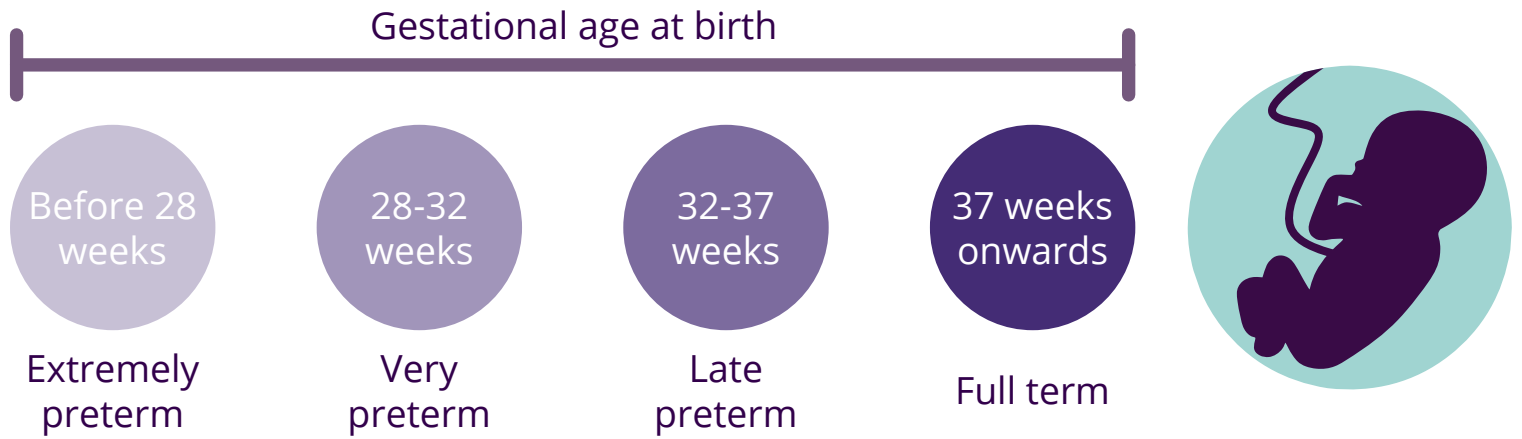


PRETERM BIRTH



What do we mean by full term and preterm birth?



A term baby has been through all stages of growth and development expected to occur *in utero*

How common is preterm birth?

More than 1 in 10 babies

Are born preterm every year worldwide and the percentage of global preterm births is increasing

2000 9.77% 2014 10.60%

The 2014 figure equates to an estimated 14.84 million live preterm births worldwide

Take a look at some statistics from around the world:

Source: <https://ptb.srhr.org/>

 2000: 7.16% 2014: 8.60%	 2000: 5.51% 2014: 11.41%	 2000: 10.04% 2014: 12.43%	 2000: 11.40% 2014: 9.56%
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What are survival rates like?

Thanks to advances in medical treatment and improved care, more preterm infants are not only surviving but going on to lead lives without life-changing health conditions, especially in countries with well-developed healthcare systems



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 874721. Results reflect the author's view only. The European Commission is not responsible for any use that may be made of the information it contains.

PRETERM BIRTH



What are typical causes and risk factors for premature labour and preterm birth?

Infections For example, in the mother's kidneys, urinary tract or womb

Health conditions Such as diabetes or pre-eclampsia (high blood pressure that develops during pregnancy)

Abnormalities For example, with the shape of the uterus or a short cervix

Pregnancy history The mother has previously delivered a baby preterm or was born preterm herself

Multiple pregnancy The mother is expecting twins, triplets or more!

Medical reasons If there is a health risk to either the mother or baby if the pregnancy continues, such as pre-eclampsia or a maternal diagnosis of cancer

Lifestyle choices Smoking, drinking alcohol or taking other drugs during the pregnancy

Other factors Such as age, ethnicity, stress, domestic violence and extreme temperatures

Most preterm births happen without warning and can't be effectively predicted with blood or physical tests



Signs that a preterm labour might occur include unusual vaginal discharge or bleeding, contractions or cramps, an unusual persistent lower backache or pain, a feeling of pressure in the pelvis or abdomen, or the water breaking, which means that the amniotic fluid that the baby 'floats in' has started to leak out

What happens if the mother goes into premature labour?

The mother may receive medication to try to delay the birth and prepare her for an unexpected early delivery, for example by moving to a specialised hospital

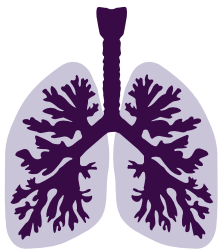


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PRETERM BIRTH



What medication might a preterm baby receive?

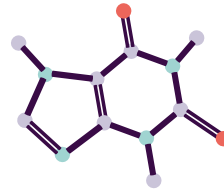


Steroids known as antenatal corticosteroids may be given to speed up the baby's lung development to try to avoid respiratory conditions

Surfactant can be given to enable proper lung function



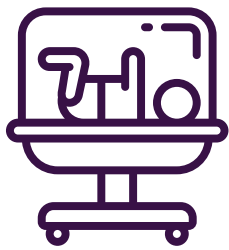
Magnesium sulphate is quite often given indirectly (via the mother) to help protect the baby's brain from injury



Caffeine can help extremely preterm babies to control the pattern of their breathing

The organs most typically affected by preterm birth are the gut, brain and lung

Some babies may need to spend weeks or even months in the Neonatal Intensive Care Unit (NICU)



In the NICU, babies receive specialist attention, equipment, medication and care from specially trained healthcare professionals such as neonatal nurses

They may need help to breathe, feed or regulate their body temperature

Children born extremely preterm are the most at risk for potentially life-changing health conditions

These can include cerebral palsy, other problems with movement and coordination, respiratory illnesses, hearing and visual impairment and changes to brain function



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PRETERM BIRTH



People born preterm may act differently to people born at term

Disruptions to the growth of the brain are caused by preterm birth and by the processes that lead to it



These changes in the brain can affect a person's whole life

Preterm birth is considered a risk factor for behavioural disorders such as autism spectrum disorder (ASD) and attention deficit hyperactivity disorder (ADHD)

Children and adults born preterm may face challenges with:

Speech and language skills

Working memory

Executive function

Behavioural issues

Relationships with others

Anxiety or depression

PREMSTEM researchers hope to improve the quality of life for both preterm-born infants and their families

Looking after a child with brain injury related to preterm birth (for which no treatments are currently available) can be challenging, both emotionally and financially

PREMSTEM is investigating a therapy option using human mesenchymal stem cells (H-MSCs) from donated umbilical cord tissue

PREMSTEM is also developing a handheld imaging tool to diagnose brain injury at the cot side using ultrafast ultrasound



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