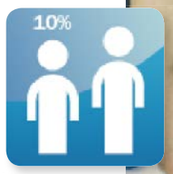
Growth

Problem

Some of the 19-year-old POPS participants have remained much smaller than their peers, especially those born small and/or too light for the duration of pregnancy. POPS participants who were born with a normal height and weight for gestational age at birth, but who had shown growth retardation during their time in the incubator, also remained small. And of course, those born at term can also experience growth retardation. Many children in these three groups catch up, but some remain small. When a child hasn't caught up yet after two years, the child will often remain small at 19 years of age.

Chance of growth retardation at 19 years of age:

10%

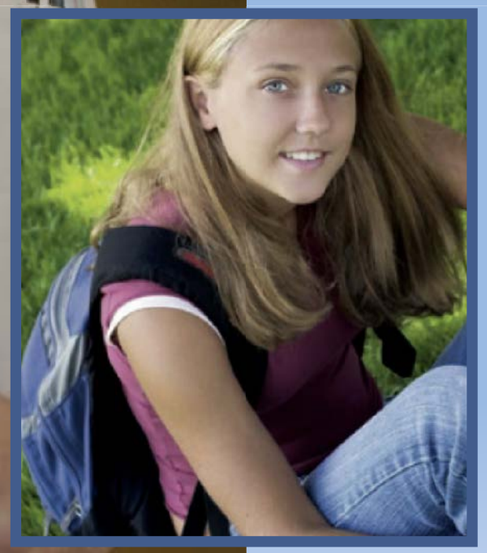


Known cause?

Not really. It is possible that children need all their energy to fight disease and simply survive in the period after birth. As a result the body has less energy left for growth. The body is not always able to recover and catch up afterwards.

Can you do something about it?

Yes, sometimes. A small group might benefit from growth hormone therapy starting at the age of five. The hospital needs to review per specific child whether this therapy is beneficial.



Physical outcomes of the POPS cohort

Insulin sensitivity

Problem

If people are insulin resistant, they have a greater risk of diabetes later in life. At 19 years of age the POPS participants appear to be more insulin resistant than the average person. The risk of diabetes mellitus is therefore higher. Especially those who were very small at birth, and who are overweight at their 19 years of age, are at risk.

Is it bad?

Yes. Having diabetes is not good for your overall health. Moreover, you will have a greater risk of cardiovascular disease.

What's the cause?

Because of their difficult start in life, these babies might produce more stress hormones. This effect might be permanent and the body might continue to produce more stress hormones. This stress hormone (cortisol) has an effect on insulin resistance.

Do you need to take special tests?

No.

Can you do something about it?

Yes. People who are born preterm should take extra care to lead healthy lives. It is important to get enough exercise, to eat healthy, and to avoid being overweight.

Physical outcomes of the POPS cohort

Kidney damage

2,7%

Problem

A small part of the POPS children excrete higher levels of protein in their urine. This indicates that the kidneys are not working optimally. Over time, the kidneys can continue to deteriorate. This can have serious consequences and you might even need dialysis.

What's the cause?

The kidneys of children born preterm are often smaller than average. The kidneys have less capacity and more easily excrete protein. High blood pressure might also cause kidney damage.

Should you test it?

2.7% of the POPS participants have high protein levels in their urine.

Can you do something about it?

When you are born preterm it is wise to let the doctor check the protein levels in your urine every five years. This can be done by simply dipping a dipstick in the urine.

Is it treatable?

Yes. A significant amount of protein in the urine should be treated with specific antihypertensive drugs.

High blood pressure

10%

Problem

Some of the 19 year old POPS participants have high blood pressure. Their blood pressure is often not very high, and therefore they might not notice anything. Yet, high blood pressure is very serious, because it can affect the kidneys, heart and blood vessels. Furthermore, blood pressure increases as people age. The effect of high blood pressure therefore increases over time.

Chance of high blood pressure?

Approximately 10% of the POPS participants had hypertension at 19 years of age.

What's the cause?

It could be related to the amount of stress experienced around birth. When babies are born very preterm, their blood pressure is often too low. It is possible that the body reacts by increasing the blood pressure, and in effect the body might produce more stress hormones. This effect might be permanent, even after the blood pressure stabilizes.

Is it wise to monitor your blood pressure?

Certainly! But if your blood pressure is normal, you don't need to monitor it for the next year, or the next two or three years.

Can you do something about it?

Yes. Maintain a healthy weight and remain fit. If this doesn't work, there are also medications to lower blood pressure.

Dealing with pain

The POPS researchers have found that the 19 year old POPS participants who experienced quite a lot of pain at birth, deal better with pain than the 19-year-olds who experienced relatively less pain. Men have a higher pain threshold and pain tolerance than women.

Hearing problems

Problem

Some of the POPS participants hear at the age of 19 less than the average. Strikingly, a number of children who had bad hearing when they were five years of age, had improved hearing at the age of 19 years. The hearing of a (smaller) number of POPS participants worsened.

What's the cause?

Hearing problems are often a result of conduction loss when there is fluid behind the eardrum because of an ear infection. Or the eardrum was retracted or torn by recurrent infections. Because babies who are born preterm are more susceptible to colds and other diseases of the throat, nose and ears, conduction loss is more common than in children born at term. The conduction loss often heals by itself. In a small group of children the auditory nerve does not send sound stimuli to the brain or the brain is not able to interpret sounds.

Can you do something about it?

Often something can be done, and often a lot is already being done. Ear tubes are a good solution when children have conductive hearing loss. If it is diagnosed soon the treatment can start at a young age. This is important because timely treatment benefits speech or language development greatly. Nowadays, the hearing of children is already being tested in the incubator. This was not the case yet when the POPS participants were born in 1983.

Lung- and respiratory problems

1:3

Problem

The POPS participants have more lung problems than average, when they are 19 years old. The symptoms are similar to asthma and are often treated as such. That might not be entirely correct because the symptoms might appear very similar to asthma, but sometimes it might not really be asthma. Strikingly, the POPS participants less often have hay fever and eczema.

What's the cause?

At birth the lungs are still immature and part of the children get ventilated. Sometimes, the lungs function less efficient as a result, and the child is less able to intensively exercise, more often gets acidified muscles, and runs out of breath quicker.

Chance of respiratory problems?

One in three POPS participants has respiratory complaints.

Should you pay attention to something?

Yes. Do you have asthma-like complaints? Tell the doctor about being born preterm and ask for a referral to the hospital, so the correct diagnosis can be made.

Can you do something about it?

Proper treatment can reduce symptoms.

European Foundation for the Care of Newborn Infants (EFCNI) - April 2017

Source: Translation of the Dutch POPS-19 magazine (pages 12-15) "POPS-19. Vervolgonderzoek levenslange zorg voor te vroeg geboren kinderen", free for download at: **www.tno.nl/pops**

Special thanks to: Dr Sylvia van der Pal and Professor Erik Verrips