Why is my child not growing properly?

Written by: DR HELEN SPOUDEAS
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Edited by: NICHOLAS HOWLEY

As a parent, it’s natural to worry if your child isn’t growing as fast as you would expect. Perhaps you think they're falling behind their friends at school in terms of development.

While in many cases short stature is due to short parental heights, some children can be affected by conditions that interfere with their normal growth. In this article, leading endocrinologist Dr Helen Spoudeas explains these conditions and as well as clarifying if undernutrition plays a role.

What are the most common causes of growth failure?

The three most common causes of growth failure are **growth hormone deficiency**, **skeletal dysplasia** and **delayed puberty** (also called precocious puberty).

Less commonly, growth failure can be caused by a **lack of nutrition** at a very early age, including in the womb. This is usually associated with a failure to thrive (gain weight appropriately).

Growth hormone deficiency

Growth hormone (GH) is one of the hormones made in the pituitary gland, sited in the deep midbrain and controlled by the hypothalamus above it. Failure to produce growth hormone could mean:

- **a genetic problem** – from isolated cases of GH gene deletion or transcription defects causing pituitary maldevelopment to syndromes such as Prader-Willi syndrome; Genetic Turner's syndrome results in skeletal dysplasia but we now know it is not a GH deficient (but GH resistant) state.

- **a physical problem** – such as a tumour within, or pressing on, the gland, or a brain injury that has compromised its function over time.

Aside from removing any tumours that are present, **growth hormone deficiency is easy and rewarding to treat** – it simply involves taking daily hormone injection supplements to make up for the lack of growth hormone in your body.

Skeletal problems

Skeletal problems can also be thought of as "growth-hormone resistant" conditions. In other words, **certain parts of your body, such as your limb bones or spine, disproportionately fail to respond to the normal growth hormone production levels**. This means that growth hormone supplements are not as effective – no matter how much you take, your bones are unlikely to respond. Therefore, the only skeletal dysplasia for which growth hormone treatment is licensed is Turner syndrome. However, the doses have to be much higher than a natural replacement for a much smaller benefit.

In some cases, this condition is known as **dwarfism**. Some of the most common skeletal problems associated with short stature include achondroplasia and hypochondroplasia.

Delayed puberty (also called precocious puberty)

About 3 in every 100 children will experience a delay in the **onset** of puberty. Puberty is a process that takes several years to complete. If your child hasn't shown any sign of breast budding (girl), testicular enlargement (boy) or pubic hair by the age of 14, it's a good idea to see a doctor.

Delayed puberty is a particularly common cause of growth failure in boys of this age. It is often straightforward to treat with sex hormones (oestrogen or testosterone) to trigger puberty. However, sometimes it can result from underlying causes which need their own investigation and treatment. I describe delayed puberty in more detail in my other article: Delayed puberty: late bloomer or medical condition?

Lack of nutrition

Throughout pregnancy and the first year of life, nutrition is essential for growth. Failing to get adequate nutrition will tend to leave you permanently shorter throughout life. However, it's equally important not to overfeed a baby, as this can actually make you both too tall and too heavy later in life.

By contrast, beyond this first year, **it's difficult to compromise the growth rate through malnutrition**. Still, malnutrition and failure to thrive in childhood tend to lead to delayed puberty and growth problems if it remains unaddressed.

If you're worried about your child's growth, it's important to visit a doctor – ideally an endocrinologist who specialises in growth disorders, such as Dr Helen Spoudeas. Visit her profile to learn how she can help you and your child.