



# The Impact of COVID-19 on Faltering Growth in Infants & Children



Vickie Bevan, Paediatric Dietitian,  
Great Western Hospital, Swindon

When the United Kingdom entered the first lockdown in March 2020, part of the response to the COVID-19 pandemic by healthcare professionals (HCP) was a rapid switch to remote and digital consultations, which resulted in a dramatic reduction in the number of face-to-face contacts with children and their families.

With limited or no access to health visiting services, the shift to virtual hospital appointments, and the closure of community baby-weighing clinics, what will be the impact of the COVID-19 pandemic on the growth of infants and children?

## Growth monitoring for infants and children pre-COVID-19 pandemic

The UK government's 'Healthy Child Programme' states that: *'In England, every family should be offered five health and wellbeing reviews, from prenatal to 2.5 years.'*<sup>1</sup>

This universal offer should be face-to-face, delivered by a health visitor, or under their supervision, at the following time points:

- Antenatal contact after 28-weeks
- 10-14 days after birth
- 6-8 weeks of age
- 12-16 weeks of age
- 9-12 months of age.

Growth is an important indicator of a child's health and wellbeing. Health reviews under the Healthy Child Programme provide an important opportunity to assess growth and development and ensure early identification of any issues, for example faltering growth.

In addition, children who attend hospital outpatient departments would also routinely be weighed by a HCP.

## Growth monitoring for infants and children during COVID-19 pandemic

Measuring and assessing the growth of young children is a skilled task and needs to be carried out by appropriately trained practitioners.

From birth to two years of age, infants should be weighed on Class III baby scales and length must be measured using a length mat/board.

It is important that growth measurements are accurately plotted onto the appropriate growth chart to assess the child's pattern of growth, and confirm that they are following a centile line, and therefore growing as expected.

However, during the pandemic the majority of HCPs - 60% - reported asking parents and carers to measure their children at home.<sup>2</sup> Barriers to obtaining measurements by this method included lack of suitable equipment available, lack of parental confidence to undertake accurate measurements, and an unwillingness of parents and carers to perform the measurements.

There is also an inherent risk of inaccurate measurement leading to the incorrect identification/misidentification of faltering growth; and the unsuitability of this method in situations where there are pre-existing safeguarding concerns.

According to the *Babies in Lockdown* report, produced by charities Best Beginnings, Home Start UK and The Parent-Infant Foundation, just 1-in-10 surveyed parents, with children under two years of age, saw a health visitor face-to-face during lockdown.<sup>3</sup>

Between 2015-2019 the number of health visitors in England also fell from 12,094 to 9,164 – 18% of the full-time equivalent workforce.<sup>4</sup> This was due to public health budget cuts, and a failure to protect health visitors’ preventative role in many areas, after health visiting commissioning moved from NHS England to local authorities in 2013.<sup>5</sup>

## Defining faltering growth

The NICE guideline NG75: *Faltering growth: recognition and management of faltering growth in children* recommends using the criteria shown in **Table 1** as thresholds for concern when considering faltering growth.<sup>6</sup>

## Causes of faltering growth

Energy requirements during infancy are naturally very high in order to support rapid growth.<sup>7</sup> Reasons for weight faltering are typically multifactorial, with inadequate nutrition being the most common

cause of insufficient weight gain.<sup>8</sup> However, faltering growth may also be a consequence of poor maternal mental health, poverty or neglect. In addition, children who have underlying health conditions may experience faltering growth – either directly related to the condition, or as a result of feeding difficulties, increased nutritional requirements, malabsorption or increased losses, such as vomiting and diarrhoea. See **Table 2**.

## Impact of the COVID-19 pandemic on social factors related to faltering growth

Multiple studies have revealed deteriorations in mental health and wellbeing during the COVID-19 pandemic,<sup>9</sup> with some groups having been more likely to experience poor or deteriorating mental health during this time. These include women, young adults, aged between 18 and 34, depending on the study, adults with pre-existing mental or physical health conditions, adults experiencing loss of income or employment, and adults in deprived neighbourhoods. On average, adults living with children reported a rise in symptoms of anxiety, psychological distress, and stress. Research also points to a rise in the levels of postnatal depression seen during the pandemic.<sup>10</sup>

In addition, financial and food insecurity, loneliness and increased time spent on childcare and home schooling have been associated with worsening mental health and wellbeing among parents.<sup>11</sup>

**Table 1: Faltering growth criteria<sup>6</sup>**

During the first few days of life	After the first few days of life	Body mass index (BMI) in children over the age of two years – suspect faltering growth if the following
<ul style="list-style-type: none"> <li>Weight loss of more than 10% of birth weight, or weight does not return to birth weight by three weeks of age</li> </ul>	<ul style="list-style-type: none"> <li>Weight falls across one or more weight centile spaces and birthweight was below the 9<sup>th</sup> centile</li> <li>Weight falls across two or more weight centile spaces and birthweight was between the 9<sup>th</sup> and 91<sup>st</sup> centiles</li> <li>Weight falls across three or more weight centile spaces and birthweight was above the 91<sup>st</sup> centile</li> <li>Current weight is below the 2<sup>nd</sup> centile for age, regardless of birthweight</li> </ul>	<ul style="list-style-type: none"> <li>BMI is below the 2<sup>nd</sup> centile</li> <li>BMI is below the 0.4<sup>th</sup> centile</li> </ul>

Note: A centile space being the space between adjacent centile lines on the UK WHO growth charts

**Table 2: Possible causes of faltering growth**

Inability to achieve sufficient energy intake	Increased nutritional requirements	Inability to digest/absorb/utilise nutrients	Excessive nutrient losses	Social factors
<ul style="list-style-type: none"> <li>Feeding difficulties</li> <li>Oral hypersensitivity/aversive feeding</li> <li>Poor progression/delayed introduction of complementary foods</li> <li>Chronic constipation</li> </ul>	<ul style="list-style-type: none"> <li>Congenital heart disease</li> <li>Respiratory disease</li> <li>Chronic infection</li> </ul>	<ul style="list-style-type: none"> <li>Cows’ milk protein allergy</li> <li>Cystic fibrosis</li> <li>Coeliac disease</li> <li>Inherited metabolic disorders</li> <li>Endocrine conditions</li> <li>Genetic conditions</li> </ul>	<ul style="list-style-type: none"> <li>Vomiting</li> <li>Gastro-oesophageal reflux disease</li> <li>Pyloric stenosis</li> <li>Chronic diarrhoea</li> </ul>	<ul style="list-style-type: none"> <li>Parental factors (attitudes, beliefs, knowledge)</li> <li>Poverty</li> <li>Neglect</li> <li>Abuse</li> <li>Substance misuse</li> <li>Depression and anxiety (including post-natal depression)</li> <li>Social isolation</li> </ul>

“...during the pandemic a majority of HCPs – 60% – reported asking parents and carers to measure their children at home.”

During the initial stages of the pandemic, there was a decrease in the employment rate and increases in the unemployment rates for both men and women (Figure 1).<sup>12</sup> For those who remained employed came the uncertainty for many families of an unanticipated decrease in household income due to them being furloughed.

From April 2020 to October 2021 concerns around food insecurity, including food availability and affordability, significantly increased.<sup>13</sup> Research from the Food Standards Agency also revealed that the proportion of people skipping meals, or cutting the size of meals, because they did not have enough money to buy food considerably increased. Significantly more families reported using food banks by the end of 2021 compared to at the start of the pandemic. People from larger households – more than four people – those in younger age groups – 16-24 years – and households with a child present were more likely to be ‘food insecure’ across all these measures of food insecurity.

The social factors discussed above are already known to contribute to poor growth during infancy and childhood, but the COVID-19 pandemic has increased the number of families in the UK who will have experienced a range of parenting challenges, such as difficulties with feeding, poor routine, disorganised, disrupted and chaotic lifestyles, poverty and food insecurity.

### Conclusion

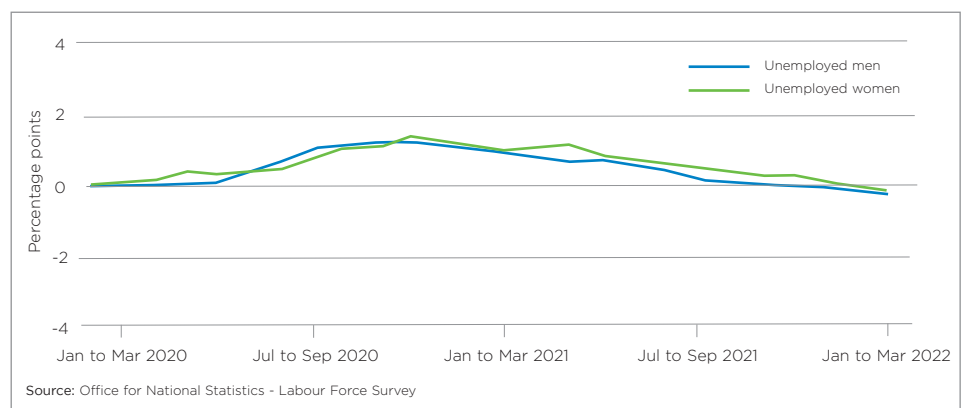
Although difficult to define, pre-pandemic the prevalence of faltering growth in the UK was estimated to be around 5-10% of children.<sup>14</sup>

Lack of monitoring by health visitors, through the reduction in face-to-face visits and appointments, coupled with an increase in the social determinants of faltering growth means that the additional effects of the COVID-19 pandemic may produce a perfect storm for increasing the number of infants and children vulnerable to suboptimal growth.

The further economic shock of the cost-of-living crisis now being experienced by many families across the UK, will add to the negative downside shock of the pandemic years on the nutrition, growth and development of children.

The UK government has recently launched a new policy paper in response to the impact of lockdown on babies and families: *‘The best start for life: a vision for the 1,001 critical days’*.<sup>15</sup> This sets out an ambitious programme of work to transform how families are supported during the 1,001 critical days from conception to the age of two. The goal is to ensure the best support throughout that period, setting babies up to maximise their potential for lifelong emotional and physical wellbeing. It focuses on six key action areas, which include developing a modern, skilled and empowered ‘Start for Life’ workforce to meet the needs of families. Will it be enough? The next few years will tell.

**Figure 1: Unemployment rates of men and women during the initial stages of the pandemic**



References: 1. Department of Health (2009). Healthy Child Programme – Pregnancy and the first five years of life. Accessed online: [www.gov.uk/government/publications/healthy-child-programme-pregnancy-and-the-first-5-years-of-life](http://www.gov.uk/government/publications/healthy-child-programme-pregnancy-and-the-first-5-years-of-life) (May 2022). 2. British Dietetic Association Paediatric Specialist Group (2019). Survey of health care professional's growth monitoring practices before, during and after COVID-19 pandemic. British Dietetic Association. 3. Best Beginnings, Home-Start UK, and the Parent-Infant Foundation UK (2020). Babies in Lockdown: listening to parents to build back better. Accessed online: <https://parentinfantfoundation.org.uk/our-work/campaigning/babies-in-lockdown/> (May 2022). 4. House of Commons HC 526 (2020). House of Commons Petitions Committee: The impact of Covid-19 on maternity and parental leave. The Government's response to Coronavirus: maternity leave (parliament.uk) Accessed online: <https://committees.parliament.uk/publications/2186/documents/24746/default/> (May 2022). 5. Institute of Health Visiting (2020). Comment. 6. NICE (2017). NICE guideline (NG75) Faltering growth: recognition and management of faltering growth in children. Accessed online: [www.nice.org.uk/guidance/ng75](http://www.nice.org.uk/guidance/ng75) (May 2022). 7. Scientific Advisory Committee on Nutrition (2011). Dietary reference values for energy. Accessed online: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/339317/SACN\\_Dietary\\_Reference\\_Values\\_for\\_Energy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/339317/SACN_Dietary_Reference_Values_for_Energy.pdf) (May 2022). 8. Shaw V. Clinical Paediatric Dietetics, 5th Edition, Wiley Blackwell Publishing Ltd; 2020. 9. UK Government (2022). COVID-19 mental health and wellbeing surveillance: report. Accessed online: [www.gov.uk/government/publications/covid-19-mental-health-and-wellbeing-surveillance-report](http://www.gov.uk/government/publications/covid-19-mental-health-and-wellbeing-surveillance-report) (May 2022). 10. Davenport M, et al. (2020). Moms Are Not OK: COVID-19 and Maternal Mental Health. Front Glob Womens Health.; 1: 1. 11. UK Government (2022). COVID-19 mental health and wellbeing surveillance: report. [www.gov.uk/government/publications/covid-19-mental-health-and-wellbeing-surveillance-report](http://www.gov.uk/government/publications/covid-19-mental-health-and-wellbeing-surveillance-report) (May 2022). 12. Office for National Statistics Employment in the UK (2022). Estimates of employment, unemployment and economic inactivity for the UK Employment in the UK. Accessed online: [www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/employmentintheuk/may2022](http://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/employmentintheuk/may2022) (May 2022). 13. Food Standards Agency (2022). COVID-19 Consumer Tracker. The COVID-19 consumer research. Accessed online: [www.food.gov.uk/news-alerts/news/covid-19-consumer-tracker-waves-9-to-12-report-published](http://www.food.gov.uk/news-alerts/news/covid-19-consumer-tracker-waves-9-to-12-report-published) (May 2022). 14. NICE (2018). Clinical knowledge summary: Faltering Growth. Accessed online: <https://cks.nice.org.uk/topics/faltering-growth/background-information/prevalence/> (May 2022). 15. Department of Health and Social Care (2021). The best start for life: a vision for the 1,001 critical days The best start for life: a vision for the 1,001 critical days. Accessed online: [www.gov.uk/government/publications/the-best-start-for-life-a-vision-for-the-1001-critical-days](http://www.gov.uk/government/publications/the-best-start-for-life-a-vision-for-the-1001-critical-days) (May 2022).