

## **International Fetal and Newborn Growth Consortium for the 21st Century- Written evidence (PRT0040)**

The International Fetal and Newborn Growth Consortium for the 21<sup>st</sup> Century (INTERGROWTH-21<sup>st</sup>)

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**Subject: Improving health outcomes in preterm infants by standardising size assessment at birth, feeding practices and measurement of postnatal growth**

### **Summary**

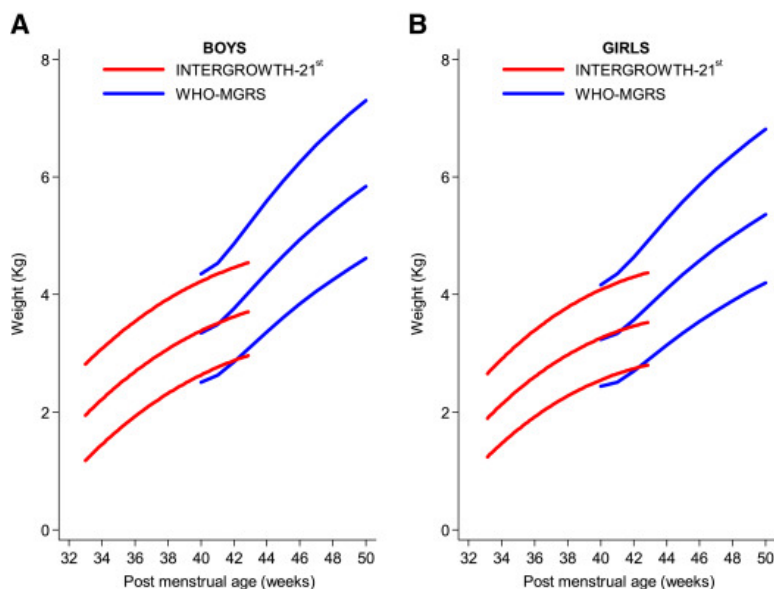
The INTERGROWTH-21<sup>st</sup> Consortium, that is dedicated to global maternal and perinatal health research and policy implementation, welcomes the opportunity to contribute to the House of Lords Preterm Birth Committee's inquiry. We advocate for the adoption within the NHS of the **international INTERGROWTH-21<sup>st</sup> standards for assessing newborn size at birth and the postnatal growth of preterm infants** that complement the WHO Child Growth Standards.

### **What are the INTERGROWTH-21<sup>st</sup> standards?**

INTERGROWTH-21<sup>st</sup> is a multidisciplinary network of more than 300 scientists and clinicians from 27 institutions in 18 countries worldwide, coordinated by the University of Oxford. We are dedicated to preventing the deaths of millions of small vulnerable newborns that occur as a result of preterm birth and/or poor intrauterine growth.

To meet this goal, we built upon the WHO Multicentre Growth Reference Study (MGRS), which in 2006 released the WHO Child Growth Standards, age-based charts for height, weight, and body mass index, for monitoring and assessing the growth of children from age 0 to 5 years of age.<sup>1</sup> The WHO Child Growth Standards were implemented in the UK in 2009 (replacing the UK1900 reference) on the recommendation of the Royal College of Paediatrics and Child Health and the Scientific Advisory Committee on Nutrition.

The WHO Child Growth Standards are based on infants born at term (grouped as one entity) posing the question how to measure preterm babies at birth and postnatally. To close this knowledge gap, INTERGROWTH-21<sup>st</sup> published, in a set of papers in *Lancet* journals between 2014 and 2016,<sup>2-6</sup> new sex and *gestational age specific* birth size standards for term, preterm and very preterm newborns, as well as postnatal growth standards to monitor preterm newborns, which overlap with the WHO Child Growth Standards by 64 weeks postmenstrual age.



INTERGROWTH-21<sup>st</sup> Newborn Size Standards complementing the WHO Child Growth Standards

## **Evidence-base supporting the use of the INTERGROWTH-21<sup>st</sup> Standards**

The methodology that produced the INTERGROWTH-21<sup>st</sup> standards overcame the limitations of previous preterm charts.<sup>7,8</sup> Firstly, the project followed the same participants from <14 weeks' gestation until 2 years of age, which allowed all measures to be compared within the same population (as opposed to studies using measures from different populations at different times).

Secondly, the project produced prescriptive standards, as opposed to the available references. In brief, previously used references describe how fetuses, newborns, or children have grown at a particular place and time (even decades ago). Standards, on the other hand, define how preterm infants should grow under optimal conditions considering their degree of maturation. The concept of using prescriptive standards such as the WHO Child Growth Standards, which are perfectly complemented by the INTERGROWTH-21<sup>st</sup> standards, is well established internationally.

Thirdly, the INTERGROWTH-21<sup>st</sup> preterm postnatal growth standards have important features that distinguish them from existing charts, e.g. the use of human milk to achieve optimal postnatal growth and the availability of morbidity data. Even more importantly is that the standards are derived from 1759 repeated measures taken in the follow-up postnatal period to 64 weeks, as opposed to many charts in current use that are not based on longitudinal data. Some charts are even based on the belief that preterm newborns should follow fetal growth patterns. However, we believe the use of such charts promotes rapid weight gain during the first months of life and may be a critical contributor to obesity in later life.<sup>9,10</sup> To facilitate best practice, the INTERGROWTH-21<sup>st</sup> Consortium, in collaboration with The Global Health Network and the University of Oxford, has made available an online course on "Preterm infant feeding and growth monitoring: Implementation of the INTERGROWTH-21<sup>st</sup> protocol".

The multicentre, population-based nature of the INTERGROWTH-21<sup>st</sup> Project (eight urban sites in Brazil, China, India, Italy, Kenya, Oman, UK and USA), involving healthy pregnant women receiving evidence-based antenatal care, has dispelled the erroneous notion that there are substantive biological or genetic reasons why certain ethnic groups have high preterm birth rates.<sup>3</sup> In fact, the overall preterm birth rate of 4.9% we reported in the INTERGROWTH-21<sup>st</sup> Project, with a very low rate of babies born between 24 and 33 weeks' gestation, is a public health message for all countries. This is especially important for the UK as 19 ethnic groups were identified in the 2021 population census contributing to the well-documented inequities in maternity care and outcomes.

### **Current use of the INTERGROWTH-21<sup>st</sup> standards internationally and in the UK**

WHO and the Centers for Disease Control and Prevention (CDC) have since the 2015 Zika epidemic recommended the use of the INTERGROWTH-21<sup>st</sup> standards to monitor newborn size at birth.<sup>11,12</sup> At the international level, many countries have implemented the use of either the fetal, newborn or preterm postnatal growth standards, such as Argentina, Brazil, France, Nigeria and Sri Lanka.

In 2023, a collaboration between the *Lancet* and *BJOG* launched the Small Vulnerable Newborn (SVN) concept, a new framework to bring together the three conditions of preterm birth, small for gestational age (SGA), and low birthweight (LBW) to present a unified front in the fight towards every newborn reaching their highest attainable standard of health.<sup>13</sup> The global estimates of the prevalence of SVNs are based on the INTERGROWTH-21<sup>st</sup> newborn size standards.<sup>14,15</sup>

In contrast, in the UK, national implementation has not occurred: the INTERGROWTH-21<sup>st</sup> standards have only been implemented in a few NHS Trusts, such as St. George's University Hospitals and University Hospitals Leicester NHS Trusts. Tommys, a UK charity researching the causes of preterm birth, and the developer of the My Prem Baby app to track fetal,

newborn and postnatal growth of preterm infants – are also using the INTERGROWTH-21<sup>st</sup> standards in all their material.

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