

Information letter for health care professionals.

From January 22th 2024, Opgroeien will implement the “ 2024 Flemish growth curve 0-2 years” for routine growth monitoring of infants and toddlers. This growth curve, developed by an ad hoc expert committee (Stuurgroep actualisatie Vlaamse groeicurven) , is based on recent and representative data from a cohort of children born in Flanders. These children were exclusively breast fed for the first 6 months of life and were measured regularly during scheduled "Child and Family" (“Kind en Gezin”) consultations organized by the Flemish Agency “Opgroeien”.

The decision to develop a new growth curve was partly driven by the increasing prevalence of breastfeeding and a rising number of newborns from parents of non-Belgian origin. The widespread use of prescriptive growth curves for infant growth monitoring based on exclusively breastfed children was a, equally important driver. By design, only 20 % of the infants in the 2004 growth curve were still breastfed at 1 month of age and parents and grandparents of all included were of Belgian or European origin.

For the development of the “2024 Flemish growth curve 0–2 years”, growth data up to the age of 30 months from infants and toddlers born between January 2006 and December 2019, available in the “Mirage” electronic database of “Opgroeien”, were utilized. This database includes data of weight, length and head circumference as measured by trained collaborators during routine health visits (1,3, 4, 8, 12, 16 weeks and 6, 9, 12, 15, 24, 30 months) as well as the data on feeding pattern (formula, breast or mixed feeding at 6 and 26 weeks).

The post-natal growth curves were estimated using data from 24 553 boys and 25 149 girls, who were all term born singletons exclusively breastfed for at least 6 months, excluding caesarian section or admission to a neonatal intensive care unit. From these, a total of 231 343 measurements in boys and 237 030 in girls were available for curve fitting. Reference curves were estimated with the LMS method, after exclusion of the 0.5% most extreme values on either side of the distribution to account for possible outliers (although there was no discernible effect on the reference curves). Growth curves were developed for weight, length, head circumference and BMI for age as well as weight for length (WFL). Data are made available as tables with LMS coefficients by week or month of age (by

centimeter for WFL) for digital presentation and “print charts” with either SD lines (corresponding to z-scores – 2.5, - 2, -1, 0, 1, 2, 2.5) or percentiles (3, 10, 25, 50, 75, 90, 97), complemented with the ± 2.5 SD lines.

As expected, the 2024 curve shows slightly higher body weight SD lines/ percentiles (and to a lesser degree also for length) between birth and 6 months and slightly lower body weight percentiles thereafter, when compared to the reference from 2004. Consequently, weight for height and BMI SD lines/percentiles are also higher during the first 6 months of life. No significant differences were observed for head circumference.

The 2024 growth curves correspond – by design – better to the patterns that are typically observed in breastfed children, and is thus less likely to flag a deflection in weight and length between 6 and 24 months as abnormal. Fewer children in the first year of life will be classified as overweight given the higher +2 SD lines on the WFL curve.

The universal use of the 2024 growth curve aims to prevent inappropriate counseling for overweight in the first 6 months of life in breastfed infants, and to promote breastfeeding up to the age of 6 months, as recommended by the WHO. Additionally, it is more sensitive to detect excessive weight gain after the age of 6 months . Ultimately, the goal of the 2024 growth curve is to promote healthy growth and to reduce the risk of childhood overweight and associated metabolic disorders later in life.

*Stuurgroep actualisatie Vlaamse groeireferenties

Prof dr Willem Staels, kinderendocrinoloog , dienst kindergeneeskunde UZ Brussel, Brussel

Prof dr Jean De Schepper, onderzoeker , faculteit Geneeskunde en Farmacie VUB, Brussel

Dr Mathieu Roelants, epidemioloog, departement Zorg, Vlaanderen, Brussel

Diederik Vancoppenolle, wetenschappelijk adviseur, Opgroeien, Brussel

Dr Liesbet Vergauwen, adviserend arts, Opgroeien, Brussel

Dr Tine Cornelissen, adviserend arts, Opgroeien, Brussel

Mevr. Christel Geebelen, lactatiekundige IBCLC, Opgroeien, Brussel

Prof dr Filip Cools, neonatoloog, dienst neonatologie, UZ Brussel, Brussel

Prof dr Inge Gies, kinderendocrinoloog, dienst kindergeneeskunde, UZ Brussel, Brussel