Pediatric Growth Charts

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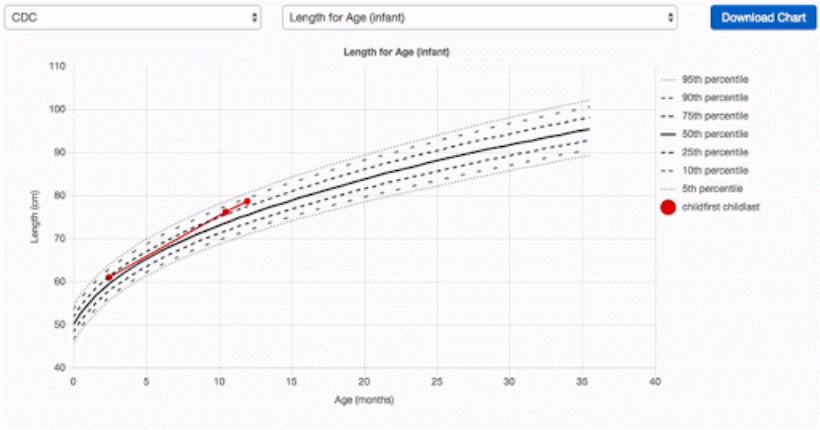
Growth Charts v2 (Percentile)



A growth chart can give providers/parents a general picture of how a child is developing physically. By comparing a child's measurements – *weight, length, and head circumference* – to those of other children of the same age and sex and these same measurements from previous checkups, a provider can determine whether a baby is growing healthily.

Example: Let's say a child was growing along the same pattern until he/she was 2 years old, then suddenly started growing at a much slower rate than other kids. That might indicate a health problem. Providers could see that by looking at a growth chart.

A. The **U.S. Centers for Disease Control (CDC)** recommends that doctors use the charts from the **World Health Organization (WHO)** for the first 24 months of a child's life.

B. The measurements in the WHO charts are based on infants whose length is measured while they are lying down.

C. After age 2, providers typically use the **CDC's growth charts**, which are similar to **WHO** but based on different data points. The charts from both **WHO/CDC** show length in inches and centimeters as well as weight in pounds and kilograms. Both charts also use percentiles, which compare averages of children broken down by age.

1. What do Growth Charts measure?

- Weight *(measured in ounces and pounds, or grams and kilograms)*
- Height *(measured while lying down in children under age 3, and while standing up in children over age 3)*
- Head circumference *(measured by the head size taken by wrapping a measuring tape around the back of the head above the eyebrows)*

What Are Percentiles?

- Percentiles are measurements that show where a child is compared with others. On growth charts, the percentiles are shown as lines drawn in curved patterns.
- When a provider plots a child's weight and height on the chart, they see which percentile line those measurements land on. The higher the percentile number, the bigger a child is compared with other kids of the same age and gender, whether it's for height or weight; the lower the percentile number, the smaller the child is.

For example, a 4-year-old boy/girl's weight is in the 10th percentile which means that 10% of boys/girls in that age

weigh less than he/she does and 90% of 4-year-old boys/girls weigh more.

How Are Percentiles Determined?

- The CDC created the growth charts that are most commonly used in the United States. They were last updated in 2000.
- After collecting growth measurements from thousands of U.S. children over a period of time, the CDC was able to show the range of these measurements on one chart, using percentile curves.
- Being in a high or a low percentile does not necessarily mean that a child is healthier or has a growth or weight problem.

Example: 6-year-old boy/girl, who is in the 10th percentile for weight, is also in the 10th percentile for height. So 10% of kids are shorter and weigh less than he/she is, and most kids — 90% — are taller and weigh more. That just means that he/she is smaller than average per say.

Resource: How to Read a Growth Chart: Percentiles Explained

Growth Charts for Special Needs (Down Syndrome + Pre-Term)

Some children don't meet the same threshold for growth data as others in their age and sex categories. DrChrono EHR uses **AAP Down Syndrome** growth charts and **Fenton Preterm** growth charts for children born prematurely.

Down Syndrome + Pre-Term

- We received feedback from our customers who requested to add growth charts that pertain to children with Down Syndrome and Pre-Term. The American Academy of Pediatrics recommended using WHO/CDC growth charts for patients with Down Syndrome and/or Pre-Term. *However, after we researched with our customers, practices still want to reference Down Syndrome / Pre-Term specific related growth charts which we've now provided into the platform from data via the CDC.*
- These charts can help providers monitor growth among children with Down Syndrome / Pre-Term and assess how well a child with Down Syndrome / Pre-Term is growing when compared to others in a certain demographic.

What is next to come in future revisions?

- The ability to share the growth charts with the patients to the patient portal from the same workflow. Currently, the print-out option is supported both on the web/iOS but we need to build out the framework to allow providers to share this in a much quicker fashion if needed. This was never an option in Growth Charts v1.
- The option to set a default growth chart selection/generation when the provider navigates to the growth chart part of the system for a quicker workflow improvement.
- We've also added the navigation of growth charts to be viewed from the clinical notes workflow. We've received feedback to possibly allow the same workflow on the appointment popup which has been undecided till further data is received to justify the build.
- Annotation (free-draw tool-set) within a Growth Chart for reference point markers for provider/patient.

Early Adopters:

- Internal departments can now download the TestFlight version to their iOS applications via https://testflight.apple.com/join/FwxhgkFd (Use this link through your iOS device) -- In turn, navigate to the feature rollout tool and search for "*Show interactive growth charts for patients"* to enable functionality on both web/iOS.
- The iOS applications are backward compatible so it can support **both** Growth Charts v1 (legacy) and Growth Charts v2 (new). We'll be sunsetting Growth Charts v1 at the end of Q1.