Growth charts: *reading & interpretation.*

A quick reference for interpreting percentiles, recognizing the patterns that matter, and knowing when channel-crossing warrants referral. WHO and CDC frameworks by age.

WHICH CHART TO USE, AND WHY

AGE	CHART	WHY
0 to 24 months	**WHO Standards 2006**	Describe how a healthy child *should* grow under optimal conditions, breastfed. Include length-for-age, weight-for-age, weight-for-length and head circumference-for-age.
2 to 20 years	CDC Reference 2000	A growth reference (not a standard); allows continuous tracking to age 20, including BMI-for-age.
BMI > 95th	CDC Extended 2022	Extended BMI-for-age curves for severe obesity, where the 2000 charts performed poorly above the 97th.

The 24-month transition isn't trivial: you switch from recumbent length to standing height, and height measures ~0.7 cm less. Flag that percentile “drop” to families ahead of time to avoid needless alarm. BMI-for-age is not used before age 2.

READ THE PATTERN, NOT THE POINT

The channel beats the number

A child steady at the 10th, following their channel, is usually well. A single percentile says little; the **trajectory** says everything.

Channel-crossing = a signal

Sustained crossing of two major percentile lines (up or down) deserves attention: it may be physiologic catch-up/catch-down or the first sign of a problem.

Head circumference

In the first 2 years it's a neurologic and nutritional screen. Rapid crossing up or down is assessed separately from weight and length.

Proportionality

Compare weight, length and HC against each other. Short stature with proportional weight suggests something different from faltering growth where weight drops first.

PRACTICAL THRESHOLDS & REFERRAL

FINDING	ACTION / INTERPRETATION
Weight-for-length < 5th (WHO, <2 y)	Action threshold: faltering weight (or marked drop in velocity). The statistical normal range is 2nd–98th (−2/+2 SD)
BMI-for-age < 15th (≥2 y)	At risk for undernutrition
BMI-for-age ≥ 85th and <95th (≥2 y)	Overweight
BMI-for-age ≥ 95th (≥2 y)	Obesity — use CDC Extended and screen per AAP CPG 2023
BMI > 120% of the 95th or > 35 kg/m²	Severe (class II) obesity — use extended BMI curves
Sustained crossing of ≥2 channels	Re-check measurement, intake, context; consider referral
Height-for-age < 3rd or low velocity	Work up short stature / growth velocity

ALARM VELOCITIES & PREMATURITY

FINDING	ACTION / INTERPRETATION
Prepubertal weight velocity < 1 kg/year	Monitor closely
Prepubertal height velocity < 5 cm/year	Monitor / work up short stature
Height at 12–24 months	Normal is usually > 10 cm/year
Prematurity — correct age	Weight to 24 m · height to 40 m · HC to 18 m

> *The percentile is a snapshot. Growth velocity is the film — and it's the film that diagnoses.*

Professional educational material — not a substitute for clinical judgment or local guidelines. Adapt thresholds to your population and institutional protocol.

Sources: WHO Child Growth Standards 2006; CDC Growth Reference 2000 and Extended BMI-for-age 2022; CDC/AAP MMWR 2010 (RR-9); AAP Clinical Practice Guideline 2023. Verified 2026.

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