Growth Chart Use

Alberta Training Module
Alberta Health Services
March 2014
Outline

✓ Importance of growth monitoring
✓ New growth charts in Alberta
✓ AHS growth chart use protocol
✓ Summary / key practice changes
✓ Resources
✓ Questions
Importance of growth monitoring
Growth monitoring

- Serial measurements over time reflect a child’s growth pattern.
- One time measures reflect a child’s current size.
- The following monitoring intervals are suggested:
  - baseline measurements at birth
  - within 1 to 2 weeks of birth
  - at 2, 4, 6, 9, 12, 18 and 24 months
  - yearly after age 2
Purpose of a growth chart

- Tool to accurately plot serial measurements
  - weight, length/height, head circumference
- Assists health professionals in monitoring growth and development of children
  - identifies growth concerns
  - not intended as a diagnostic tool
New growth charts in Alberta
Why adopt new growth charts?

- Reflect optimal growth of infants, children and adolescents
- Growth standard versus growth reference
- Two Canadian charts based on WHO data:
  - WHO Growth Charts for Canada
  - CPEG Growth Charts
- CPEG charts recommended by Alberta Health and Alberta Health Services
## Growth standard versus reference

<table>
<thead>
<tr>
<th>WHO Growth Standards Birth to 5 years of age</th>
<th>CDC Growth Reference Birth to 5 years of age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth <strong>standard</strong> - how children “should” grow</td>
<td>Growth <strong>reference</strong> - how children “did” grow</td>
</tr>
<tr>
<td>Based on growth of <strong>breastfed</strong> infants</td>
<td>Based on growth of mainly <strong>formula</strong> fed infants</td>
</tr>
<tr>
<td>Lighter, longer/taller sample of children</td>
<td>Sampled from a population with a presence of overweight/obesity</td>
</tr>
<tr>
<td>Data set is <strong>international</strong></td>
<td>Data set is <strong>US</strong> only</td>
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</tbody>
</table>
Rationale for using CPEG charts

• Meet needs of specialty pediatric clinicians
  – weight-for-age curve after 10 years of age
  – additional percentiles within the normal range
  – removal of extreme percentiles

• Common chart for all practice areas

• Consensus from health professionals in Alberta
CPEG: weight-for-age over 10
AHS Growth Chart Use Protocol
AHS growth measurement protocol

- Implemented in 2012 in public health settings
- Topics covered include:
  - equipment for weighing and measuring;
  - maintenance and calibration of equipment;
  - infection prevention and control; and
  - guidelines for weighing and measuring weight, length/height and head circumference.
AHS growth chart use protocol

PROTOCOL

<table>
<thead>
<tr>
<th>Protocol</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth Chart Use</td>
<td>March 10, 2014</td>
</tr>
<tr>
<td>Nutrition Services</td>
<td>Declaration</td>
</tr>
<tr>
<td>Standards Protocol</td>
<td>Page 1 of 16</td>
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</tbody>
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OBJECTIVES

The objective of the protocol is to optimize Alberta's monitoring practices and child health outcomes by providing guidelines to ensure accurate and reliable plotting, interpretation of growth, and standards, and ensuring recommended growth charts for infants, children, and adolescents (up to 19 years of age). The Canadian Pediatric Endocrine Group (CPEG) growth charts, which are based on World Health Organization (WHO) data, are the standard charts for use in Alberta Health Services (AHS).

This protocol will address:
1. Growth chart selection
2. Calculations: Age and BMI
3. Plotting
4. Understanding pediatric growth assessment and growth charts
5. Interpretation of growth
6. Further assessment, monitoring, and referral

Appendices to the protocol include:
Appendix A—Growth monitoring summary sheet
Appendix B—CPEG growth charts (2012)
Appendix C—Fenton preterm growth charts (2013)

APPLICABILITY

This protocol applies to all AHS staff and students involved in childhood growth monitoring within an AHS program or in an AHS site.

BACKGROUND

Growth monitoring and promotion of optimal growth are essential components of health care for all children. Serial growth measurements (e.g., weight, length/height, and head circumference), and interpretation of these measurements when plotted on an age and gender appropriate growth chart, help to confirm a child’s healthy growth and development. They also help in the early identification of a potential nutritional or health problem, so that action can be taken before a child’s health is seriously compromised.
Using the growth chart protocol

1. Growth chart selection
2. Calculations: Age and BMI
3. Plotting
4. Understanding pediatric growth assessment and growth charts
5. Interpretation of growth
6. Further assessment, monitoring or referral
Growth chart selection
CPEG growth charts

<table>
<thead>
<tr>
<th>Age ranges</th>
<th>Growth chart</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth to 24 Months</td>
<td>Birth to 24 months: boys and girls head circumference and weight-for-length</td>
<td>Head circumference</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weight-for-length</td>
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<td>Birth to 24 months: boys and girls length and weight for age</td>
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<td></td>
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<td>Weight-for-age</td>
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<tr>
<td>2 to 19 Years</td>
<td>2 to 19 years: boys and girls body mass index (BMI) for age</td>
<td>Body mass index (BMI)-for-age</td>
</tr>
<tr>
<td></td>
<td>2 to 19 years: boys and girls height and weight for age</td>
<td>Height-for-age</td>
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<tr>
<td></td>
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<td>Weight-for-age</td>
</tr>
</tbody>
</table>
CPEG growth charts: birth - 24 months
CPEG growth charts: 2 - 19 years

Canadian Pediatric Endocrine Group

Adapted from WHO growth reference study and US NHANES data

2 to 19 YEARS: Boys body mass index (BMI) for age

BMI = Weight(kg) / Height(m)²

*BMI = Weight(kg) / Height(m)² x 10000

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Plotting pre-term infants

• Updated 2013 Fenton preterm growth charts can be used for preterm infants in the NICU or early post-discharge setting.

• CPEG growth charts can be used after 0 weeks corrected age (term).

• Corrected age should be used for plotting until 24 months corrected age.
Fenton preterm growth chart
Growth charts for medical conditions

CPEG growth charts:

• Should be used to assess growth patterns for children with intellectual, developmental, genetic or other conditions

Specialized growth charts for these conditions (e.g. Down syndrome, cerebral palsy):

• May be used by specialists/in specialty clinics to provide additional information
• Should be used in conjunction with the CPEG charts
Calculations: Age and BMI
Calculating age

Age can be calculated using a calendar.

Birth date: 27/Jan/2013
Assessment date: 13/Oct/2013
Age at assessment: 8 months, 2 weeks, 2 days
Preterm: corrected vs. postnatal age

Example:
Postnatal/chronological age = 13 weeks
Corrected age = 3 weeks
Weight = 3.0 kg
Preterm: correcting age

Corrected age:

- Should be used until 24 months corrected age
- Based on 40 weeks gestation

Step 1 - # of weeks preterm =
40 weeks – gestational age at birth (completed weeks)

Step 2 - Corrected age =
Postnatal/chronological age (completed months and weeks) – [# of weeks preterm]
Preterm: correcting age

Example: a baby born at 34 weeks is now 6 months, 3 weeks postnatal/chronological age

Step 1: # of weeks preterm =
40 weeks – 34 weeks = 6 weeks preterm

Step 2: Corrected age =
(6 months 3 weeks) – 6 weeks = 5 months 1 week
Body Mass Index (BMI)-for-age

- Should be determined for all children ages 2 and older
- Assesses weight relative to height
- Effective screening tool
- Can be determined using a calculator or BMI wheel
Calculating BMI

BMI = \frac{\text{weight (kg)}}{\text{height (cm)}} \div \text{height (cm)} \times 10000

E.g. A child’s weight is 12.7 kg and height is 97.8 cm.

\begin{align*}
\text{BMI} &= \frac{12.7 \text{ kg}}{97.8 \text{ cm}} \div 97.8 \text{ cm} \times 10000 \\
\text{BMI} &= 13.277 \\
\text{BMI} &= 13.3
\end{align*}
How to plot

• Plot measurements on appropriate growth chart.

• Plot as accurately as possible.

• Judge whether the plotted point seems reasonable.

• If not, check age calculation, measurements and/or plotting and re-measure if necessary.
How to plot

1. On horizontal axis, find age or length.

2. On vertical axis, find weight, length/height, BMI or head circumference.

3. Use a ruler or right angle triangle. Follow the child’s age/measurements from the horizontal and vertical axis’ to find the point where they intersect.

4. Draw a small dot at the intersecting point.
Understanding pediatric growth assessment and growth charts
Understanding percentiles

Percentile lines:

- Used to identify where a child plots relative to other children of the same age and sex
- If a child’s weight is on the 75th percentile, it means that 75 of 100 children (75%) weigh less and 25 (25%) weigh more.
Describing a plotted point

Percentile Lines:
3, 10, 25, 50, 75, 90 (85 for BMI), 97

Child A is on the 97th percentile.

Child B is between the 50th and the 75th percentile.
Core growth messages

Pediatric growth assessment & counselling is based on these messages:

- Growth assessment is a health screening tool.
- Growth is one sign of general health.
- Growth patterns are assessed for the individual.
- Growth may reflect family growth patterns.
- Growth pattern over time is more important than one single measurement.
Interpretation of growth
Interpreting growth pattern

• Consider all measures of growth collectively.

• Growth pattern over time is more important than one single measurement.

• Shifts from a child’s previously established growth pattern may indicate a growth concern.

• Cut-off points provide guidance for further assessment, monitoring or referral but are not diagnostic.
Growth related to mode of feeding

Breastfed:
• The CPEG growth charts are based on the growth of infants who were primarily breastfed.

Non-breastfed:
• After the first few months of life, may show an upward shift in growth on the CPEG growth charts.
• A child’s growth pattern and whether they are breast or non-breastfed should be considered before suggesting any changes in feeding.
Growth of a breastfed infant

CDC

CPEG
Growth Monitoring Summary Sheet
Growth Monitoring Summary Sheet

Measure length/height, weight, head circumference, calculate BMI and plot on the appropriate CPEG growth chart according to the Childhood Growth Measurement and Growth Chart Use Protocols (AHS).

Document as per site process.

Review all plotted growth measurements on client's record. If any of the plotted points seem unreasonable/in error or show an unexpected shift in growth, check the age calculation, measurements and/or plotting, and if necessary, re-measure and re-plot.

Growth measurements are on or between identified cut-offs and consistent with previous growth pattern.

Shift in growth pattern
- Sharp incline/decline movement across percentiles, nearing a cut-off point
- Growth line is flat

Below 3rd percentile:
Birth to 24 months weight-for-length
2 to 19 years BMI-for-age weight-for-age

Above 90th percentile:
Birth to 24 months weight-for-length
2 to 19 years BMI-for-age height-for-age

Above 85th percentile:
Birth to 24 months weight-for-length
2 to 19 years BMI-for-age height-for-age

Head circumference for-age (Birth to 24 Months)
Below 3rd percentile and growing slowly or
Above 97th percentile and growing rapidly

Key Messages for Families

“Growth pattern appears normal”
“Growth pattern may be changing”
“Weight may be low”
“Length/height may be low”
“Weight may be ahead of length/height”
“Head circumference is small” or “large”

Provide Core Growth Messages and review Standard Discussion Points (see reverse). Consider all factors that are currently affecting growth.

Offer appropriate resources and discuss relevant community programs.

This may be a normal growth pattern, however it signals a need for further assessment and monitoring. Consider a follow-up visit to track growth sooner than the next scheduled routine appointment.

Determine if a referral to another health professional is needed:
• Physician should be notified* if the growth line is flat, if this is the first time the child has plotted outside of expected parameters and/or professional judgment indicates. Follow-up with physician may be recommended.
• Offer/recommend a referral* to a dietitian if individualized nutrition guidance is indicated.
• Refer* to a lactation consultant or other pediatric specialist if indicated.

*Obtain consent, notify or refer as per site process.

Offer appropriate resources and discuss relevant community programs.

March 2014
Using cut-off points
Using cut-offs: Birth to 24 months

Head circumference:

Generally no cause for concern if:

- on or above 3rd and on or below 97th percentile and growth is consistent with previous growth pattern

Signals the need for further assessment:

- below 3rd percentile and growing slowly
- above 97th percentile and growing rapidly
Head circumference cut-offs

Key message for families:
Head circumference is large

Key message for families:
Head circumference is small

Macrocephaly

Microcephaly
Growth Monitoring Summary Sheet

Measure length/height, weight, head circumference, calculate BMI and plot on the appropriate CPEG growth chart according to the *Childhood Growth Measurement and Growth Chart Use Protocols* (AHS).

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**Growth measurements are on or between identified cut-offs and consistent with previous growth pattern.**

**Shift in growth pattern**
- sharp incline/decline
- movement across percentiles, nearing a cut-off point
- growth line is flat

**Below 3rd percentile:**
- Birth to 24 months
  - weight-for-length
  - weight-for-age
  - length-for-age
- 2 to 19 years
  - BMI-for-age
- 85th percentile

**Above 85th percentile:**
- Birth to 24 months
  - weight-for-length
  - BMI-for-age
- 2 to 19 years
  - BMI-for-age

**Head circumference -for-age (Birth to 24 Months):**
- Below 3rd percentile and growing slowly or
- Above 97th percentile and growing rapidly

**Key Messages for Families**

- "Growth pattern appears normal"
- "Growth pattern may be changing"
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Offer appropriate resources and discuss relevant community programs.
Using cut-offs: Birth to 24 months

Weight-for-length:

Generally no cause for concern if:
- on or above 3rd and on or below the 90th percentile and growth is consistent with previous growth pattern

Signals the need for further assessment:
- below 3rd percentile
- above 90th percentile
Weight-for-length cut-offs

Key message for families:
Weight may be ahead of length

Key message for families:
Weight may be low
Growth Monitoring Summary Sheet

Measure length/height, weight, head circumference, calculate BMI and plot on the appropriate CPEG growth chart according to the Childhood Growth Measurement and Growth Chart Use Protocols (AHS).

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| Growth measurements are on or between identified cut-offs and consistent with previous growth pattern. |
| Shift in growth pattern |
| - sharp incline/decline |
| - movement across percentiles, nearing a cut-off point |
| - growth line is flat |
| Below 3rd percentile: Birth to 24 months weight-for-length |
| Above 90th percentile: 2 to 19 years BMI-for-age |
| Above 85th percentile: Birth to 24 months weight-for-age |
| Head circumference for-age (Birth to 24 Months): Below 3rd percentile and growing slowly or Above 97th percentile and growing rapidly |

| Key Messages for Families |
| “Growth pattern appears normal” |
| “Growth pattern may be changing” |
| “Weight may be low” |
| “Length/height may be low” |
| “Weight may be ahead of length/height” |
| “Head circumference is small” or “large” |

Provide Core Growth Messages and review Standard Discussion Points (see reverse).
Consider all factors that are currently affecting growth.

Offer appropriate resources and discuss relevant community programs.

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Using cut-offs: 2 to 19 years

BMI-for-age:

Generally no cause for concern if:
• on or above 3rd and on or below the 85th percentile and growth is consistent with previous growth pattern

Signals the need for further assessment:
• below 3rd percentile
• above 85th percentile
BMI-for-age cut-offs

Key message for families:
Weight may be ahead of height

Overweight/Obese
Risk of overweight/Overweight
Wasted

Key message for families:
Weight may be low
# Growth Monitoring Summary Sheet

**Measure** length/height, weight, head circumference, calculate BMI and plot on the appropriate CPEG growth chart according to the *Childhood Growth Measurement and Growth Chart Use Protocols (AHS)*.

**Document as per site process.**

**Review all plotted growth measurements on client’s record.**
- If any of the plotted points seem unreasonable/in error or show an unexpected shift in growth, check the age calculation, measurements and/or plotting, and if necessary, re-measure and re-plot.

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<th>Growth measurements are on or between identified cut-offs and consistent with previous growth pattern.</th>
<th>Shift in growth pattern</th>
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<th>Above 90th percentile</th>
<th>Above 85th percentile</th>
<th>Head circumference -for-age (Birth to 24 Months):</th>
</tr>
</thead>
<tbody>
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- “Weight may be ahead of length/height” |
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Shifts in growth pattern
Shifts in growth pattern

The following shifts require further assessment:

- Inclines or declines from a child’s previously established growth pattern
  - especially if the change is nearing a cut-off point or is a sharp change

- A growth pattern that shows movement across percentiles, especially if the movement is nearing a cut-off point

- A growth pattern that remains flat
Shifts in growth pattern

Sharp decline

Movement across percentiles

Growth line is flat

Key message for families:
Growth pattern may be changing
Growth Monitoring Summary Sheet

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<th>Shift in growth pattern</th>
<th>Below</th>
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<td></td>
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Head circumference -for-age (Birth to 24 Months)

<table>
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<tr>
<th>Below</th>
<th>Above</th>
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<td>3rd percentile and growing slowly</td>
<td>97th percentile and growing rapidly</td>
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Key Messages for Families

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Further assessment, monitoring or referral
Growth Monitoring Summary Sheet

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<th>Standard Discussion Points</th>
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<tbody>
<tr>
<td>• Child’s overall health</td>
</tr>
<tr>
<td>• Presence or recent history of acute or chronic illness</td>
</tr>
<tr>
<td>• Stress or change in child’s life</td>
</tr>
<tr>
<td>• Family growth patterns</td>
</tr>
<tr>
<td>• Breastfeeding and/or formula feeding</td>
</tr>
<tr>
<td>• Feeding relationship and family meals</td>
</tr>
<tr>
<td>• Food security: availability/access to healthy food</td>
</tr>
<tr>
<td>• Age appropriate and healthy food/beverage choices</td>
</tr>
<tr>
<td>• Intake of foods high in unhealthy fats, sugar or salt</td>
</tr>
<tr>
<td>• Amount of juices and/or sweetened beverages</td>
</tr>
<tr>
<td>• Physical activity, active play or tummy time</td>
</tr>
<tr>
<td>• Sedentary behaviours</td>
</tr>
<tr>
<td>• Sleep patterns</td>
</tr>
<tr>
<td>• Body image</td>
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</tbody>
</table>

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<tbody>
<tr>
<td>• Growth assessment is a health <strong>screening tool</strong></td>
</tr>
<tr>
<td>• Growth is one sign of <strong>general health</strong></td>
</tr>
<tr>
<td>• Growth patterns are assessed for the <strong>individual</strong></td>
</tr>
<tr>
<td>• Growth may reflect <strong>family</strong> growth patterns</td>
</tr>
<tr>
<td>• Growth pattern <strong>over time</strong> is more important than one single measurement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alberta Health:</td>
</tr>
<tr>
<td>• Breastfeeding Your Baby</td>
</tr>
<tr>
<td>• Feeding Baby Infant Formula</td>
</tr>
<tr>
<td>• Feeding Baby Solid Foods from 6 to 12 months of age</td>
</tr>
<tr>
<td>• Healthy Eating &amp; Active Living for 1 to 4 and 5 to 11 Years</td>
</tr>
<tr>
<td>• Food Guide Serving Sizes for 1 to 4 and 5 to 11 Years</td>
</tr>
<tr>
<td>Alberta Health Services:</td>
</tr>
<tr>
<td>• Healthy Parents, Healthy Children – The Early Years</td>
</tr>
<tr>
<td>• When Your Child’s Weight is Ahead of Height</td>
</tr>
<tr>
<td>• When Your Child’s Weight Measures Low</td>
</tr>
<tr>
<td>Health Canada:</td>
</tr>
<tr>
<td>• Eating Well with Canada’s Food Guide (for ages 2 and over)</td>
</tr>
</tbody>
</table>

*Provide print versions or direct clients to the appropriate website.*
Standard discussion points

- Child’s overall health
- Presence or recent history of acute or chronic illness
- Stress or change in child's life
- Family growth patterns
- Breastfeeding and/or formula feeding
Standard discussion points

• Feeding relationship and family meals
• Food security: availability/access to healthy food
• Age-appropriate and healthy food/beverage choices
• Intake of foods high in unhealthy fats, sugar or salt
• Amounts of juices and/or sweetened beverages
Standard discussion points

• Physical activity, active play or tummy time

• Sedentary behaviours

• Sleep patterns

• Body image
Discussing growth with families

Step 1: Ask if families are open to discussing growth.

Step 2: Explain how growth charts are used and describe healthy growth patterns.

Step 3: Explore the factors that may be influencing growth.

Step 4: Facilitate goal setting and provide support.
Growth Monitoring Summary Sheet

Measure length/height, weight, head circumference, calculate BMI and plot on the appropriate CPEG growth chart according to the Childhood Growth Measurement and Growth Chart Use Protocols (AHS).

Document as per site process.

Review all plotted growth measurements on client’s record. If any of the plotted points seem unreasonable/in error or show an unexpected shift in growth, check the age calculation, measurements and/or plotting, and if necessary, re-measure and re-plot.

Growth measurements are on or between identified cut-offs and consistent with previous growth pattern.

Shift in growth pattern
- sharp incline/decline
- movement across percentiles, nearing a cut-off point
- growth line is flat

Below 3rd percentile:

<table>
<thead>
<tr>
<th>Birth to 24 months</th>
<th>2 to 19 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>weight-for-length</td>
<td>BMI-for-age</td>
</tr>
<tr>
<td>weight-for-age</td>
<td>weight-for-age</td>
</tr>
</tbody>
</table>

Above 85th percentile:

<table>
<thead>
<tr>
<th>Birth to 24 months</th>
<th>2 to 19 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>weight-for-length</td>
<td>BMI-for-age</td>
</tr>
</tbody>
</table>

Head circumference for-age (Birth to 24 Months):

Below 3rd percentile and growing slowly or Above 97th percentile and growing rapidly

Key Messages for Families

“Growth pattern appears normal”
“Growth pattern may be changing”
“Weight may be low”
“Length/height may be low”
“Weight may be ahead of length/height”
“Head circumference is small” or “large”

Provide Core Growth Messages and review Standard Discussion Points (see reverse). Consider all factors that are currently affecting growth.

This may be a normal growth pattern, however it signals a need for further assessment and monitoring. Consider a follow-up visit to track growth sooner than the next scheduled routine appointment.

Determine if a referral to another health professional is needed:
- Physician should be notified if the growth line is flat, if this is the first time the child has plotted outside of expected parameters and/or professional judgment indicates. Follow-up with physician may be recommended.
- Offer/recommend a referral* to a dietitian if individualized nutrition guidance is indicated.
- Refer* to a lactation consultant or other pediatric specialist if indicated.

*Obtain consent, notify or refer as per site process.

Offer appropriate resources and discuss relevant community programs.

March 2014

www.albertahealthservices.ca
Follow-up on growth concerns

• Consider follow-up sooner than next scheduled routine appointment.

• Determine need for referral to another health professional:
  • **Physician** should be notified* if the growth line is flat, if this is the first time plotting outside expected parameters and/or professional judgment indicates.
  • Offer/recommend a referral* to a **dietitian** if individualized nutrition guidance is indicated.
  • Refer* to a **lactation consultant** or other **pediatric specialist** if indicated.
Summary and Key Practice Changes
Key implementation messages

- **CPEG growth charts based on growth of infants who were primarily breastfed:**
  - may see differences in how breast and formula fed infants plot

- **Assess weight relative to height:**
  - **weight-for-length** for all children birth to 24 months
  - **BMI-for-age** for all children ages 2 to 19
Key practice changes

Cut-offs:

<table>
<thead>
<tr>
<th>Current practice:</th>
<th>New practice:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight-for-length:</td>
<td>Weight-for-length:</td>
</tr>
<tr>
<td>Below 3rd</td>
<td>Below 3rd</td>
</tr>
<tr>
<td>Above 97th</td>
<td>Above 90th</td>
</tr>
<tr>
<td>BMI-for-age:</td>
<td>BMI-for-age:</td>
</tr>
<tr>
<td>Below 5th</td>
<td>Below 3rd</td>
</tr>
<tr>
<td>Above 85th</td>
<td>Above 85th</td>
</tr>
</tbody>
</table>

Note: Cut-offs are not diagnostic.
**Key practice changes**

**New guidance for assessing shifts in growth:**

<table>
<thead>
<tr>
<th>Current practice:</th>
<th>New practice:</th>
</tr>
</thead>
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<tr>
<td>Cross 2 percentile lines/heavy centiles</td>
<td><strong>Inclines or declines</strong> from previously established growth pattern</td>
</tr>
<tr>
<td></td>
<td>- especially if nearing a <strong>cut-off point</strong> or a <strong>sharp change</strong></td>
</tr>
<tr>
<td>Movement across percentiles</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- especially if nearing a <strong>cut-off point</strong></td>
</tr>
<tr>
<td>Growth pattern that remains <strong>flat</strong></td>
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</table>
Key implementation messages

Increments:
• The CPEG growth charts have different increments than CDC growth charts.
  – Plot carefully and as accurately as possible.

Plotting preterm infants:
• Fenton preterm growth charts - before 0 weeks corrected age
• CPEG growth charts - after 0 weeks corrected age
• Consistent guidelines for use of corrected age
Resources
Growth resources in Alberta

Health professional:
• Growth chart use protocol
• Childhood growth measurement protocol
• Pediatric growth discussions: A tool for health professionals
• Weight velocity nutrition guideline

Public:
• When your child’s weight is ahead of height
• When your child’s weight measures low
Questions?