

# Suggestion on Revision of Goals of Length Growth Rate for Preterm Infants

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## Introduction & Background

- The selection of growth chart can depend on local practice and preference. (Fenton vs. Olsen)
- Extrauterine growth restriction is more common in preterm infants .
- The growth goal for preterm infants should promote **proportional weight per length growth**, which is a marker of lean body mass deposition.
- Inappropriate length growth and fat-free mass (FFM) gains** are associated with inflammation and illness as well as later neurodevelopment problems.
- Protein**, not calories, is the “**rate-limiting nutrient**” to weight gain.
- Increased protein intake leads to length growth** without a concomitant growth on weight.

## Analysis

### Average Length Growth Velocity for Preterm Infants

2009 ADA Pocket Guide to Neonatal Nutrition → **0.8 – 1.1 cm / week**

### Goals of Length Growth Velocity for Preterm Infants

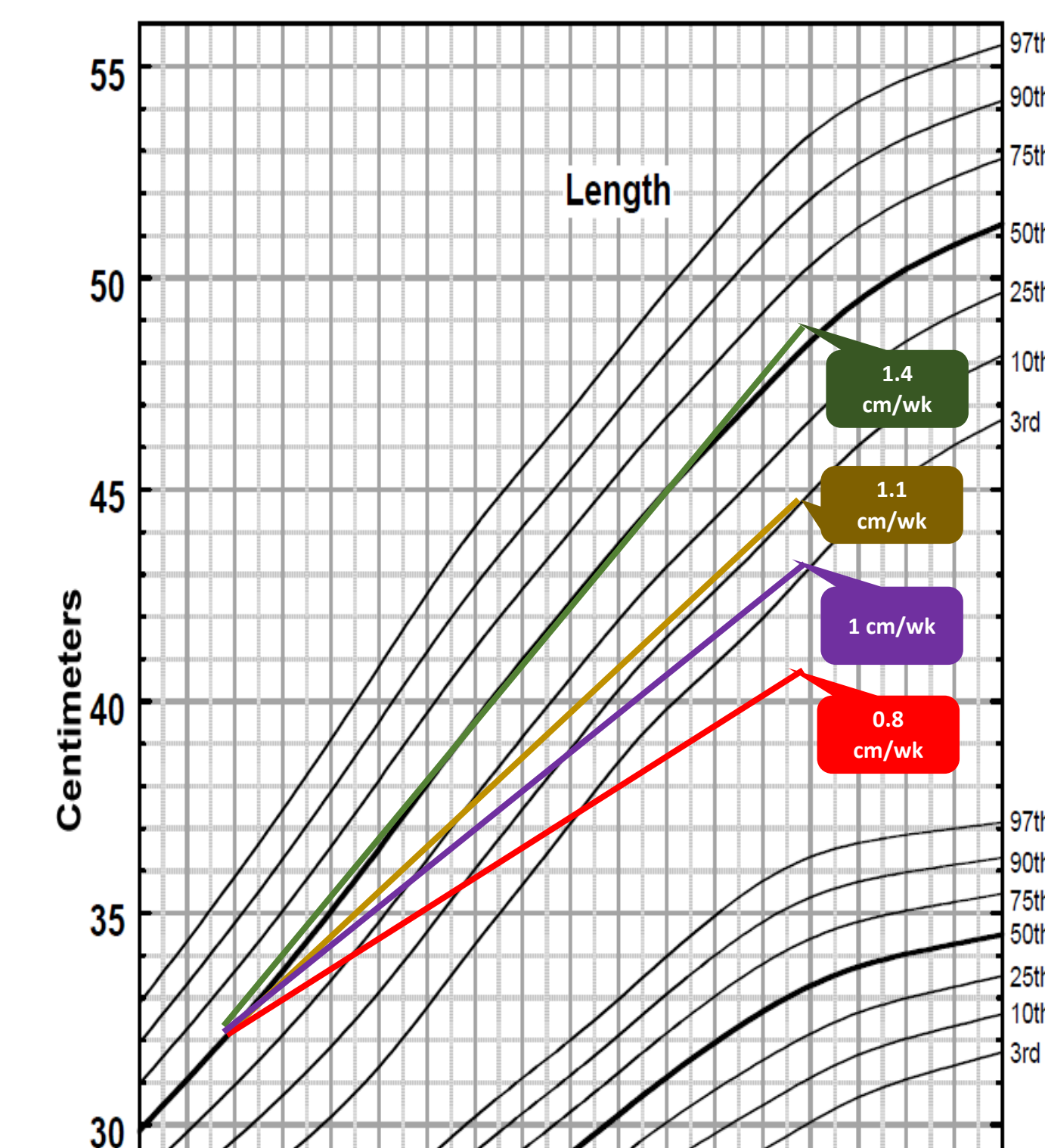
2015 UpToDate → **1 cm / week**

Current NICU Protocol in Valley Medical Center (VMC) → **0.8 – 1.1 cm / week**

#### Current Protocol:

- Low value (0.8 cm/week) when starting at the 50<sup>th</sup> percentile, it is below the 3<sup>rd</sup> percentile at 37 weeks.
  - High value (1.1 cm/week) when starting at the 50<sup>th</sup> percentile, it is at around the 10<sup>th</sup> percentile at 37 weeks.
- Olsen Growth Chart Used at VMC:**
- 50% (Average) growth velocity from the Olsen curves is **1.4 cm/week for length**.

An Example of the Olsen Growth Chart (Female)



## Objectives

- To identify a need for revision of current protocol in VMC NICU
- To promote proportional weight per length growth for preterm infants
- To provide close monitoring and better intervention for preterm infants

## Methods

- Reviewed extensive literature about growth charts for preterm infants
- Reviewed current goals of length growth velocity for preterm infants
- Analyzed current goals of length growth velocity for preterm infants in VMC NICU

## Conclusion & Suggestion

- The percentile at 37 weeks of the lower value (0.8cm/week) in the VMC protocol is **too low**.
- It is suggested that **goal for length (linear) growth for preterm infants is 1.1 – 1.4 cm/week**, which would maintain infants at around the 50<sup>th</sup> – 60<sup>th</sup> percentile (when starting at the 50<sup>th</sup> percentile) based on the Olsen growth chart.
- We can promote appropriate length growth by **optimizing the protein-energy ratio, and it is critical to continue close monitoring of their growth**.