Cystic Fibrosis Research News

Citation:

Machogu E, Cao Y, Miller T, Simpson P, Levy H, Quintero D, Goday PS.Comparison of WHO and CDC growth charts in predicting pulmonary outcomes in cystic fibrosis. J Pediatr Gastroenterol Nutr. 2015 Mar;60(3):378-83.

What was your research question?

The study evaluated the difference between the growth charts of the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC). We specifcally looked at the relationship between growth measurements at 2 years of age and lung function at 6 to 8 years of age.

Why is this important?

In 2008, the Cystic Fibrosis Foundation (CFF) recommended that children reach a weight-for-length (WFL) ratio of at least the 50th percentile by age 2. This recommendation was based on the CDC growth charts. Since then, WHO growth charts have been universally recommended to monitor growth of all children until age 2. The CDC and WHO growth charts are very different. For instance, children with similar growth appear better nourished on the WHO charts compared to the CDC charts. Thus, it is important to understand how well the two different charts predict lung function in early childhood.

What did you do?

We examined lung function outcomes at 6 years old arranged by growth at 2 years old using the different growth charts. Specifically, we examined the association between growth at age 2 and lung function at age 6 when using WHO and CDC charts. We also looked at the association between weight change from ages 2 to 6 years and lung function at ages 6 to 8 years.

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What did you find?

We found that children reaching the 50th percentile on WHO growth charts by age 2 had lower lung function at age 6 than children who reached the 50th percentile for both the CDC and WHO charts. Continued weight gain between 2 and 6 years was associated with a higher lung function at age 6 to 8 years.

What does this mean and reasons for caution?

This means that children at age 2 should reach a higher percentile on the WHO growth chart than the CDC growth chart in order to achieve higher lung function at ages 6-8. However, children who achieved the 50th percentile on the WHO chart also achieved normal lung function. Their lung function was lower than the children who achieved the 50th percentile on both charts.

What's next?

The CF Foundation has revised their recommendation for growth goals. Now, children should reach the 75th percentile by age 2 using WHO growth charts. This change in recommendation was partly due to what this paper found.