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Cystic Fibrosis Research News

Title:
Nutritional Status and Lung Function in Children with Pancreatic-Sufficient Cystic Fibrosis

Lay Title:
Is Body Mass Index Associated with Better Lung Function in Children with Pancreatic-Sufficient Cystic Fibrosis?

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What was your research question?
Many studies have linked adequate weight to better lung function in persons with cystic fibrosis (CF). However, most studies have analysed cohorts that are mostly pancreatic-insufficient. We wanted to study if gaining weight is as crucial for children with CF and normal pancreatic function.

Why is this important?
If weight is not as crucial for children with normal pancreatic function, this could mean less pressure for patients, families, and providers to attain a body mass index (BMI) above the 50th percentile. This may be particularly important given recent reports of increasing rates of overweight and obesity in people with CF.

What did you do?
We analysed data from the US CF Foundation Patient Registry, examined the association between BMI and FEV1 in children with pancreatic-sufficient CF (PS-CF), and compared it to the association in pancreatic-insufficient CF (PI-CF). We also analysed the decline in FEV1 with age, depending on BMI groups and pancreatic status.

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What did you find?

In children with PS-CF, higher BMI was associated with better lung function, but the slope was much smaller: for each 1-point higher BMI, FEV1 was 2% higher in PI-CF but only 0.9% higher in PS-CF. Moreover, in PS-CF, overweight and obesity may be linked with lower lung function. Finally, the rate of decline in FEV1 with age was very small in children with PS-CF (only -0.6% per year), and it did not depend on their body weight. By age 20 years, participants with PS-CF had FEV1 >90% regardless of BMI group.

What does this mean and reasons for caution?

In children with PS-CF, BMI remains an important determinant of lung function. However, it may be less critical to attain a BMI >50th percentile; and BMI ≥85th percentile may be detrimental.

What's next?

Nutritional goals could potentially be less stringent for children with CF and normal pancreatic function, as higher BMI was not linked to markedly better FEV1, and lower BMI was not associated with faster loss of lung function. Equally important, we need to confirm if being overweight/obese may be bad for lung function in persons with CF.

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