

SUMMARY:

In my thesis I have been able to show important results from the clinical application of lung function testing in young children. Following children with congenital diaphragmatic hernia, we have shown that many survivors of CDH have significant respiratory problems. However, the continual growth of airways and lung corrects the initial pulmonary function deficit. In our study, we reported on exhaled nitric oxide in CDH survivors and found normal, non-elevated levels.

Studying children with inflammatory bowel disease, unlike as a single published study in adults, we found elevated exhaled nitric oxide also in children with non-active inflammatory bowel disease.

The fact that conventional analysis of spirometric parameters failed in predicting the course of asthma has motivated our group to next study. It was an intriguing observation, that the subjective analysis of clinical severity of obstructive lung disease can be correlated to the measurement of curvature by using a mathematical equation.

Nitric oxide is an important mediator of inflammation in several pathological conditions and the tendency to measure exhaled nitric oxide under different conditions has reached the neonatal medicine also. The multiple-breath method allows sampling of exhaled air via side stream during tidal breathing in unsedated infants. In our study, we did not find any effect of daytime on the levels of exhaled nitric oxide. Similarly to other groups, we could not show any systemic effect of feeding on exhaled nitric oxide.