INSELSPITAL
UNIVERSITÄTSSPITAL BERN
HÔPITAL UNIVERSITAIRE DE BERNE
KINDERKLINIKEN Bern

SCILD
Swiss CF Infant Lung Development

BILD Cohort
Basel Bern Infant Lung Development Cohort

Nasal microbiome in infants with cystic fibrosis

Background and aim of the study: The composition of all the bacteria that colonize an individual and their genetic material is called the 'microbiome'. We know that certain body parts harbor specific bacteria. Healthy individuals have a relatively stable microbiome, whereas individuals with chronic diseases can have an unstable or changing microbiome. It was shown in different studies that the microbiome plays a role in the development of disease and defense against infections. Children and older patients with cystic fibrosis (CF), have an altered microbiome of the lungs and airways. However, we do not know the composition of the respiratory microbiome and its natural development in early stages of disease in patients with CF.

Measurements: Nasal swabs were collected fortnightly and the nasal microbiome was then compared between 31 infants with CF from the SCILD cohort (n=461) and 47 infants without CF (n = 872) from the BILD cohort.

Results: Differences in the composition of the microbiome was detected between infants with CF and healthy infants. Additionally, an altered microbiome could be shown during and after the administration of antibiotics. The results show that the microbiome of children with CF is already different during their first year of life. The results can potentially be used in further studies, e.g. to look into the effect that antibiotics have on the microbiome.

Publication: Mika et al.; The nasal microbiota in infants with cystic fibrosis in the first year of life: a prospective cohort study. Lancet Respiratory Medicine 2016

Responsible for the project: Prof. Dr. med. Philipp Latzin