



### **Summary Barbro Melgert**

Prof. Dr. Melgert is a respiratory immunologist at the University of Groningen. Her group investigates how the immune system in the lung is impaired by toxic exposures and can be harnessed to treat chronic respiratory diseases like asthma, COPD and lung fibrosis.

Funded by consortium grants from the Dutch Lung Foundation they focus on the role of macrophages in development of asthma and COPD and viral exacerbations of these diseases using animal models and 3D lung models with direct translation to the clinic. In collaboration with pharmaceutical company Boehringer Ingelheim this has also been extended to macrophage-matrix interactions in lung fibrosis for discovery of novel antifibrotic drugs. As viral exacerbations of lung disease are an important clinical problem, her group now also participates in the EU IMI consortium INNO4VAC to test the applicability of immune-competent lung organoids as a platform for predicting vaccine effectiveness against influenza and respiratory syncytial virus. Another important cause of aggravation of lung disease is exposure to air pollutants. Our indoor environment contains many types, including the recently described novel concern of microplastics.

Funded by the ZonMW consortium MOMENTUM, Melgert works on elucidating the effects of inhalable microplastics on human lung health with again special focus on interactions between structural lung cells and the local immune system.