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Host-microbe cross-talk in the lung microenvironment: implications for understanding and treating chronic lung disease

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The reciprocal interaction between microbes and host in the lung is increasingly recognised as an important determinant of health. The complexity of this cross-talk needs to be taken into account when studying diseases and developing future new therapies. <https://bit.ly/2VKYUfT>

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ABSTRACT Chronic respiratory diseases are highly prevalent worldwide and will continue to rise in the foreseeable future. Despite intensive efforts over recent decades, the development of novel and effective therapeutic approaches has been slow. However, there is new and increasing evidence that communities of micro-organisms in our body, the human microbiome, are crucially involved in the development and progression of chronic respiratory diseases. Understanding the detailed mechanisms underlying this cross-talk between host and microbiota is critical for development of microbiome- or host-targeted therapeutics and prevention strategies. Here we review and discuss the most recent knowledge on the continuous reciprocal interaction between the host and microbes in health and respiratory disease. Furthermore, we highlight promising developments in microbiome-based therapies and discuss the need to employ more holistic approaches of restoring both the pulmonary niche and the microbial community.