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Knowledge and Presumptions - The Role of Biofilms in Chronic Infections

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Biofilms are increasingly associated with many chronic infections across the health field. The main problem with chronic infections is that biofilms are difficult to treat as bacteria in biofilms are tolerant to antimicrobials and the immune system. However, we have recently shown that the chronic infections also contain a lot of single cells too and acute infections also contain biofilms. The single cells are probably not comparable to in vitro planktonic bacteria, but we do not know the role of the single bacteria. In addition, increasing evidence suggest that the microenvironment within especially chronic infections is special and possibly governs the disease progression and to some extent the treatment recalcitrance.

In this presentation, I will highlight the challenge that biofilms pose in implant-related infections, wounds and CF lungs, both in relation to treatment but also to the immune system. I will discuss the idea behind the infectious microenvironment and different hypothesis as to how chronic infections initiate. Lastly, I will present novel data on the transcriptomic response of the human body towards the presence of infecting bacteria and how this can be used for diagnostics.