Periodontitis is a chronic inflammatory disease caused by microorganisms and characterized by progressive destruction of the tooth supporting apparatus. Severe forms of the disease represent the sixth-most prevalent condition in the world, with an overall prevalence of about 8-11%.

A similar type of disease occurs in tissues surrounding dental implants. Thus, peri-implantitis is a plaque-associated pathological condition, characterized by inflammation in peri-implant connective tissue together with loss of supporting bone. Peri-implantitis lesions are 2-3 times larger than those in periodontitis. Peri-implantitis lesions also exhibit more pronounced tissue destruction, as revealed by faster progression of disease than in periodontitis at teeth.

In the presentation the major clinical, radiological and histopathological characteristics of the two diseases will be described using results from analysis of human biopsy material and experimental models. Cellular composition and pathogenic mechanisms of the two lesions will be discussed. The unique access to samples representing the biofilm and/or host response from diseased sites in the oral environment will be emphasized and the role of the two diseases as disease models will be discussed.