with a lower IFN-γ and a higher IL-10 secretion, typical for a shift towards an anti-inflammatory TH2 type phenotype, has also been reported. Reducing leptin levels in RA patients by fasting ameliorates the clinical signs of the disease. Leptin antagonism has therefore been suggested for prevention of developing RA in people who are genetically susceptible to RA and other autoimmune diseases.

In MS and RA, 60 to 75% of the patients are female, and in other autoimmune diseases (thyroiditis, seleroderma, lupus erythematosus, Sjögren’s disease), 85% or more of the patients are female. This is corroborant that autoimmune diseases affect women more than men. This gender effect may, at least in part, reflect the higher average leptin concentrations in women.

Autoimmune diseases show an increasing incidence in industrialised countries compared to less developed countries. Some researchers now believe that leptin helps to determine the balance between predisposition to infections and predisposition to autoimmune diseases. This could help explain why higher circulating leptin levels predispose to autoimmune diseases and lower circulating leptin levels to infection. Based on the evidence regarding relationship between leptin and autoimmune diseases, leptin antagonism has been