

## **VITAMIN D DEFICIENCY AND RISK OF INFLUENZA INFECTION**

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For many decades, vitamin D has been known to be essential for preventing and treating rickets in children and osteomalacia and osteoporosis in adults. Recently, there has been increasing evidence for other important pleiotropic effects of vitamin D, e. g. regulation of immune response and inflammation, obesity, musculoskeletal development, growth and development. Low vitamin D plasma concentrations are found in patients with cardiovascular disease, cancer, type 2 diabetes mellitus, airway inflammation and acute respiratory infection indicating that patients with low vitamin D concentrations are at risk for these diseases. In our study we reviewed PUBMED for publications regarding vitamin D concentration and acute respiratory tract infection, especially influenza A. A major number of publications demonstrated an inversed relation between plasma vitamin D plasma concentration and risk for acute respiratory tract infection. We also found a number of publications indicating an increased risk for influenza infection in patients with low vitamin D plasma concentrations. There was also an obvious link between the seasonality of low plasma vitamin D concentration and a high incidence of influenza infection in winter. Indeed, supplementation of vitamin D was followed by a reduction in the risk of respiratory tract and influenza infection in a number of studies. However, the immunological effect of influenza vaccination seems to be not affected by vitamin D supplementation. In summary, measurement of plasma vitamin D concentration and supplementation should be performed at least in patients at risk, e. g. elderly and patients with pulmonary diseases.