

## Association of Down's syndrome and water fluoride level: a systematic review of the evidence

### ABSTRACT

There is no conclusive evidence to suggest an association between water fluoride levels and the incidence of Down's syndrome.

### INTRODUCTION

The onset and persistence of inflammatory arthritis (IA) are significantly linked to decreased hypothalamic-pituitary-adrenal activity, specifically a suppressed immune-stimulating reaction. The most biologically important steroid hormones are DHEA and its sulfate ester, which are predominantly produced in the human adrenal cortex. Low serum concentrations of these weak androgens can confirm hypothalamic-pituitary-adrenal hypofunction more easily than glucocorticoid secretion. The correlation between low early-morning cortisol concentrations and high levels of interleukin-6, as well as glucocorticoids and testosterone, is significant in young women with RA who exhibit reduced levels. According to Masi et al., DHEAS concentrations were reduced in women before men went through menopausal age and normal in a study conducted by Heikilla & Co. However, the results in the latter report may have been due to differences in laboratory testing methods used to determine DHEA levels or RA in Finnish patients. DHEAS concentration within serum and synovial tissue decreases significantly in established RA. It is even more significant in patients who take glucocorticoids. In the latter case, DHA replacement has been suggested as a way to minimize glucocorticoid-induced side effects. The severity of disease in RA was found to be higher than the basal DHEA levels due to decreased acute phase response, and NSAIDs play a similar role in attenuating hypothalamic-pituitary-adrenal axis function. The hypothalamic-pituitary-adrenal axis' hyporesponsiveness to stress and loss of the diurnal rhythm are also common disturbances in various forms of RA, including insulin resistance. We conducted a study in which 87 patients with IA (RA, spondyloarthropathy [SpA], or undifferentiated inflammatory arthritis [UIA]) were subjected to this treatment and found that the acute-phase response, previous glucocorticoid usage, current NSAID treatment, duration of disease, and insulin resistance were all contributing factors to lowered serum DHEAS concentrations in IA.

### CONCLUSION

Research findings indicate that methanogens present in dairy cattle's rumen fluid exhibit a diverse range of evolutionary traits. One group corresponds closely to the type strain of *M. ruminantium*, while other groups represent non-retained or not yet found in culture collections. The sequence analysis revealed that the set of probes for specific groups of methanogens developed by Raskin et al. did not hybridize with a potentially significant group of rumen methanogen sequences identified in this study. Additional research is required to ascertain the quantitative significance of newly identified groups and how their diversity varies with animal diet.