

## Letter to the Editor

# On mechanism of action of sublingual immunotherapy

We read with interest the article by Antúnez et al. (1). 'Two year follow-up of immunological response in mite-allergic children treated with sublingual immunotherapy. Comparison with subcutaneous administration'. However, the discussion does not consider recent development in knowledge on mechanisms of action of sublingual immunotherapy and in particular its comparison with subcutaneous immunotherapy. The traditional, subcutaneous route of administration has the capacity to alter the phenotype of allergen-specific Th cells, which in allergic subjects are mostly Th2 cells characterized by production of IL-4, IL-5, IL-13, IL-17, and IL-32 cytokines. Immunotherapy-induced changes result in a Th1-type response (immune deviation) related to an increased IFN-gamma and IL-2 production as well as in a Th2 reduced activity, through a mechanism of anergy or tolerance, the latter related to the generation of allergen-specific T regulatory (Treg) cells, which produce cytokines such as IL-10 and TGF-beta (2).

The sublingual route of administration was thought to act by different mechanisms because early trials did not found such changes, but subsequent studies employing higher doses of allergen extracts suggested that antiinflammatory mechanisms are similar for the two forms of subcutaneous and sublingual immunotherapy (3), with a particular involvement in the latter of mucosal dendritic cells (4), the role of which was not considered in the discussion. What the

authors claim in their conclusions for future studies was actually already highlighted in recent investigations.

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