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## ALLERGEN IMMUNOTHERAPY: A MODEL OF HUMAN ANTIGEN-SPECIFIC TOLERANCE ABSTRACT

Allergen immunotherapy is highly effective in patients with severe seasonal hayfever. Both subcutaneous and sublingual routes of administration are effective when given for 3 years and have been shown to induce long-term tolerance for at least several years ythereafter. The mechanism of immunotherapy has been shown to involve suppression of local tissue eosinophilia and decreases in the IgE-dependent activation of mast cells and basophils through the induction of 'protective' long-lived memory T cell and B cell responses. In a recent single centre Immune Tolerance Network NIAID-funded double-blind placebo-controlled clinical trial (n=106), we showed that whereas 2 years grass pollen SLIT and SCIT were highly effective, 2 years was insufficient for long-term tolerance. There were coordinated effects observed on all 3 arms of the immune response with suppression of local and systemic effector cells, a decrease in antigen-specific Class II tetramer-positive T cells and increases in 'functional' IgG blocking antibody responses that paralleled the clinical response to treatment. (Scadding G et al., JAMA 2017;317;615-25).

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