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Elderly immune system needs a boost

Older cancer sufferers need treatments tailored to their aging immune systems

Elderly cancer patients need a combination of treatments tailor-made to their specific needs to successfully combat the disease. The challenge is to boost their immune response to cancer vaccines, because like the rest of our organs, our immune system ages and gradually becomes less efficient as we get older. [Dr. Joseph Lustgarten](#), from the [Mayo Clinic College of Medicine](#) in the US, reviews the effects of aging on the immune system and strategies used to activate a stronger antitumor immune response in the elderly, including genetic modifications in animal models. His findings¹ have just been published in the latest issue of [Springer's journal *Cancer Immunology, Immunotherapy*](#).



Aging of the immune system coincides with higher rates of cancer in the elderly. There is a wealth of research on the effects of harnessing the power of the body's own immune defences to recognize and destroy tumors (immunotherapy), yet very little of this work takes into account the effects of aging on the immune system. [Older individuals do not respond to vaccine therapy as well as younger adults](#).

Dr. Lustgarten's paper summarizes some of the defects found in the old immune system which affect antitumor responses; strategies used to [improve the efficiency of older people's immune response](#); and the use of animal models to [identify how it might be possible to manipulate the old immune system, for more effective immunotherapeutic interventions in older patients](#).

Vaccination strategies that [effectively stimulate antitumor immune responses](#) in both younger and older patients are dependent on combining different therapies. [The therapies must keep the balance between activating a safe and effective antitumor immune response and inducing an autoimmune reaction](#).

Dr Lustgarten concludes: ["The immune system of the elderly is very different from the young and it is difficult to extrapolate results obtained in the young, for use in the old."](#) Our job in the next few years is to figure out how to robust the old immune system by understanding, at a molecular level, its intrinsic defects to properly stimulate antitumor responses. Only then can we successfully [customize](#) tumor vaccines to be effective for the treatment of tumors in the old."

Reference

1. Lustgarten J (2009). Cancer, aging and immunotherapy: lessons learned from animal models. *Cancer Immunology, Immunotherapy*; DOI 10.1007/s00262-009-0677-8

The full-text article is available to journalists as a pdf.

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