

Flu vaccinations as effective in active healthy elderly compared to the young

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Scientists from A*STAR's Singapore Immunology Network (SIgN) and

clinicians from Singapore's National University Hospital (NUH) have found that when it comes to influenza vaccinations, healthy elderly individuals are able to mount immune responses that are quantitatively and qualitatively similar to young individuals. This was discovered through post-vaccination measurements of the levels of antibodies in their body fluids. The research findings also suggest that antibody responses in the elderly, induced by the influenza vaccinations, are not impaired by frailty levels of these elderly subjects.

These findings show that [elderly adults](#), regardless of frailty level, should be recommended to receive seasonal [influenza](#) vaccinations to protect themselves. This is in line with recommendations under the National Adult Immunisation Schedule 1 (NAIS) issued by Singapore's Ministry of Health (MOH), with recommended influenza vaccinations for those aged 65 years and above. However, it is important to note that individuals should consult their doctor for advice on whether they are suitable to receive any specific vaccines.

"Influenza is highly contagious and can even be deadly to some people who develop complications such as pneumonia. These studies serve to reinforce the message that the elderly should get vaccinated to protect themselves, to reduce the risk of contracting the flu," said Professor Paul Tambyah, Senior Consultant from the Division of Infectious Diseases at NUH.

In a clinical study that was published in parallel in the journal *Immunity & Ageing*, healthy elderly subjects were fully capable of mounting robust immune responses to an influenza vaccine comparable to that of young subjects, tracked by measuring levels of plasmablasts (precursor cells of short- and long-lived plasma cells), neutralising antibodies, and HAI (hemagglutination-inhibition) responses.

In another study published in the *Frontiers in Immunology* journal, no

significant differences were observed between frail and non-frail elderly with respect to pre-existing antibody levels from past exposures, and post-vaccination antibody responses.

"One might intuitively think that a younger person's [immune response](#) to a flu vaccination would be significantly stronger than an elderly person's. However, we were pleasantly surprised to find that the elderly participants of the study mounted very robust antibody responses comparable to the younger individuals, even those elderly considered to be frail" said Dr. Anis Larbi, Senior Principal Investigator at A*STAR's SgN. "Of course there are other factors at play, including genetics, previous exposures to the viruses, [nutritional status](#) and more, and we have already embarked on further studies to investigate the relationship between some of these factors," he added.

The elderly subjects from these studies were recruited through the ongoing Singapore Longitudinal Ageing Study (SLAS-2) driven by the National University of Singapore (NUS), a population-based cohort study of ageing and health among Chinese elderly in Singapore, led by Principal Investigator, A/Prof Ng Tze Pin, from the Department of Psychological Medicine, Yong Loo Lin School of Medicine, NUS.

The [research findings](#) related to vaccine-induced immunity can have a significant impact as the information might guide policy decisions on relevant aspects such as the frequency, dosage and composition of influenza vaccine administered to the elderly, or future rational vaccine design strategies.

More information: Vipin Narang et al. Influenza Vaccine-Induced Antibody Responses Are Not Impaired by Frailty in the Community-Dwelling Elderly With Natural Influenza Exposure, *Frontiers in Immunology* (2018). [DOI: 10.3389/fimmu.2018.02465](https://doi.org/10.3389/fimmu.2018.02465)

Xavier Camous et al. Healthy elderly Singaporeans show no age-related humoral hyporesponsiveness nor diminished plasmablast generation in response to influenza vaccine, *Immunity & Ageing* (2018). [DOI: 10.1186/s12979-018-0137-4](https://doi.org/10.1186/s12979-018-0137-4)

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