Vaccines for Aging

Can immunization therapies help older people stay functional?

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A key issue in the development of COVID-19 vaccines concerned their potential effectiveness in elderly people, one of the populations most vulnerable to the coronavirus. Previous findings showed that immunization responses are typically weak in seniors; as a result, researchers worried that vaccines might not help these individuals. This reflects a longstanding question scientists have sought to answer regarding the inoculation of older adults: how to defeat the age-related decline of the body's immune response to infections and vaccinations.

Before researchers' all-out efforts produced the COVID-19 vaccines in record time, scientists had developed successful vaccines to support healthy aging in older people. These include the seasonal flu vaccine and the vaccines against shingles and bacterial pneumonia.

Interestingly, researchers don't fully comprehend the way these vaccines work or how exactly aging affects the immune system.

"Given the improvements in clinical efficacy that licensed vaccines for older adults have already demonstrated, it is imperative that we understand their mechanisms of action," wrote the authors of a recent paper on "Immunosenescence and Human Vaccine Immune Responses."

Because the effectiveness of vaccines in older people depends on a number of factors besides chronological age and health status, scientists are using more comprehensive approaches to better understand how such individuals respond to these therapies.

One approach is to evaluate genetic markers for signs of how well or poorly someone might respond to infections and vaccinations. In addition, scientists are considering the effects of external factors, such as nutrition, physical activity, drug treatments and other illnesses, on the immune system.

Perhaps then, researchers might just achieve their ultimate goal: to design increasingly effective personalized vaccines to improve the quality of life of older people.

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