Designing a more effective flu vaccine

A growing body of evidence suggests that a history of exposure to influenza virus might be undermining the effectiveness of the annual flu vaccine. Partial immunity developed during prior flu seasons—either through natural infection or vaccination—might interfere with the body's response to a new vaccine, such that vaccination mainly boosts the recognition of prior influenza strains, but does little to create the ability to fight new strains.

...

To get decades-long immunity against the new strains, the flu strains from the vaccine need to be taken to the lymph nodes, where they can be used to train a new set of naïve B cells and induce long-lived memory B cells specifically tailored to recognize the unique features of the vaccine strains. To find out what happens inside lymph nodes after influenza vaccination, [immunologist Ali] Ellebedy, teamed up with co-authors [associate professor of medicine] Rachel Presti [and professor of radiology] Sharlene Teefey.

Follow the latest news and policy debates on sustainable agriculture, biomedicine, and other 'disruptive' innovations. Subscribe to our newsletter. SIGN UP

As Ellebedy noted, "Our study shows that the influenza vaccine can engage both [short and long term] cells in the germinal centers [in the lymph nodes], but we still don't know how often that happens. But given that influenza vaccine effectiveness hovers around 50%, it probably doesn't happen as often as we would like. That brings up the importance of promoting strategies to boost the germinal centers as a step toward a universal influenza vaccine."

Read the original post