

# Women May Get a Bigger Immune Boost From Flu Shots

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Although testosterone makes men much stronger physically than women, producing large amounts of the male hormone also has drawbacks. According to findings published in the journal *Proceedings of the National Academy of Sciences*, having more of this hormone might also cause men to have a weakened response to flu vaccines as compared with women, [foxnews.com](http://foxnews.com) reported.

For the report, researchers evaluated immune responses in 53 women and 34 men after giving them a seasonal flu shot. Findings showed that the women produced more antibodies and cytokines (substances produced by the body that team up to fight disease) than the men after exposure to a particularly severe strain of the flu.

What's more, after testing the participants' blood, scientists found that participants who produced more testosterone showed weaker immune responses. (This may explain why women are better able to fight infections than males.) But the downside for females might be that producing less testosterone places them at greater risk of acquiring autoimmune diseases, such as lupus, researchers noted.

Scientists felt the findings suggest that testosterone's effect on the flu vaccine and other immune system responses may be linked with the hormone's effect on genes that break down fats in the blood.

During flu season, many doctors urge Americans to get vaccinated. [Click here](#) to read why.

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