Humoral Response to Vaccination of Influenza Infected Subjects

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How does the antibody-specific vaccination response of obese/overweight and healthy weight individuals that contracted influenza compare?

Research has found that the influenza vaccination response of obese individuals compared to healthy individuals is significantly different, posing a problem since vaccination is currently the best form of protection against the flu. With 30% of the American population considered obese as of 2014, it is critical that we understand the influence that obesity has on the effectiveness of a person’s immune system and its ability to fight off invading pathogens. If vaccination is not protecting a large percentage of our population from a virus that causes annual epidemics and threatens pandemics, then another influenza pandemic, like that which occurred in 2009, could be a possibility. It is important that we continue to conduct studies to investigate why obese individuals are more susceptible to contracting the flu and possibly begin to reassess how protective vaccination is for an increasingly obese population.
**Results**

**What Was Found**
- Those who were vaccinated and still contracted the flu had an increase in IgG antibody titer. This means that they did respond to the vaccine.

**Scientific Significance**
- 90% of the flu positive subjects were overweight/obese, which indicated that although they responded to the vaccine by producing antibody, it was ineffective in protecting against flu infection. This further implies that obesity plays an underlying role in the immune system’s ability to protect against flu infection.

**Worldwide Significance**
- Vaccination is the best way to prevent serious influenza infection. Obese/overweight individuals are more likely to contract influenza even if vaccinated. Further investigation as to why this is the case is critical to address questions on how to protect overweight/obese individuals against a deadly seasonal virus.