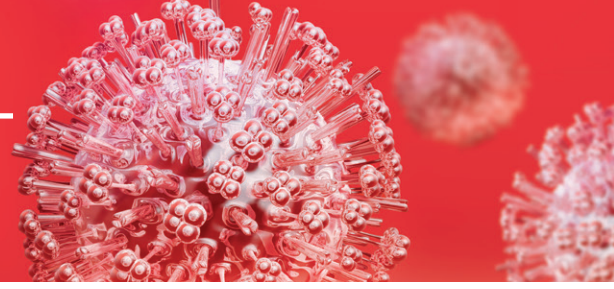
SEQIRUS

CELL-BASED SEASONAL INFLUENZA VACCINE TECHNOLOGY EXPLAINED



ACCORDING TO THE U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC), THE BEST WAY TO PREVENT SEASONAL INFLUENZA IS FOR PEOPLE SIX MONTHS OF AGE AND OLDER TO RECEIVE AN ANNUAL INFLUENZA VACCINE.[1*]

In February and September of each year, the World Health Organization (WHO) uses surveillance data to recommend **influenza virus strains for inclusion in vaccines** for the approaching Northern and Southern Hemisphere influenza seasons, respectively.[2]

Then, vaccine manufacturers begin the development process of their vaccines based on these specific recommendations.[2]

*The CDC makes no preferential recommendation for a specific influenza vaccine when more than one licensed, recommended, and age-appropriate vaccine is available.

SEASONAL INFLUENZA VACCINE EFFECTIVENESS MAY VARY FROM YEAR TO YEAR.[2,3]

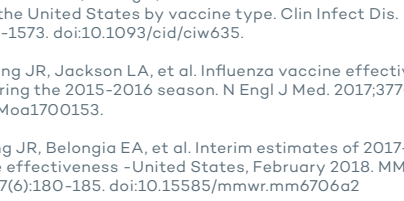
There are several factors that may impact vaccine effectiveness. One of them is strain mismatch due to changes in the circulating influenza virus strains or egg-adaptation:

Changes in the Circulating Influenza Virus Strains

After vaccine strain selection, changes in the circulating influenza virus strains can create a mismatch between the circulating influenza virus(es) and vaccine strains, which may contribute to reduced vaccine effectiveness.[4]

Egg-Adaptation

A mismatch can occur when the selected vaccine strains mutate inside the chicken egg during production.[3]



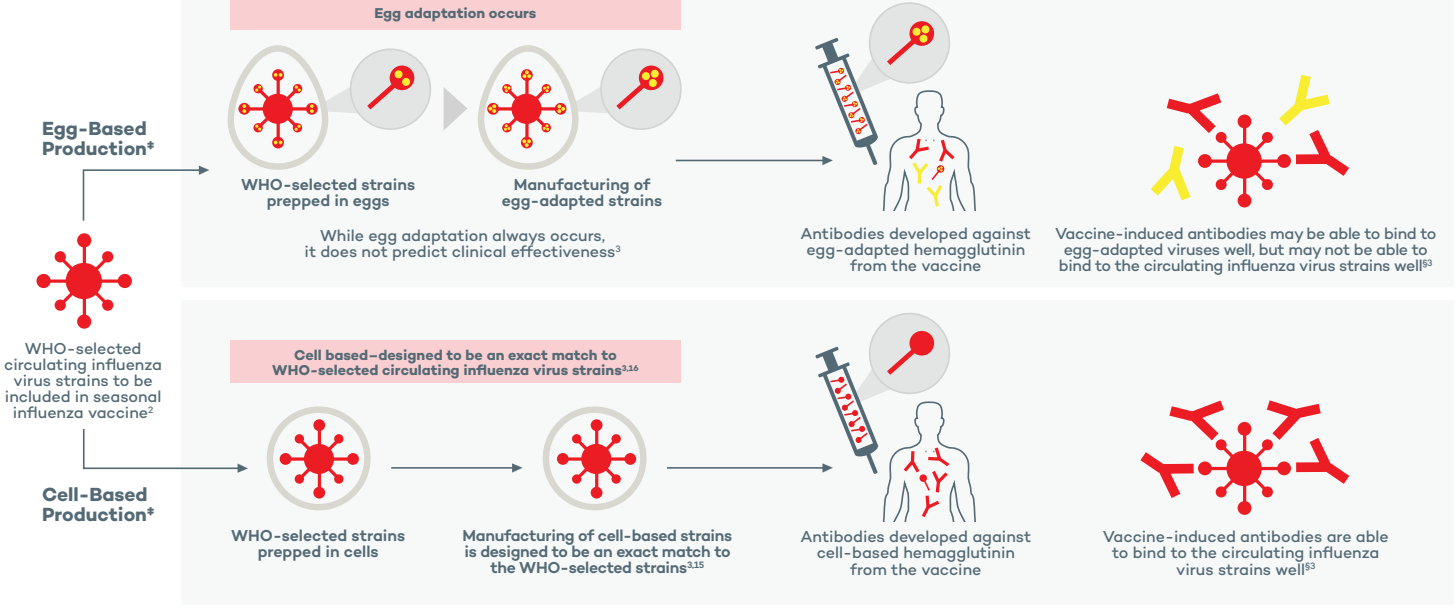
Strain mismatch occurred in 6 of the 10 influenza seasons between 2010/11 and 2019/20* in the U.S.; in half of these strain mismatch occurred due to egg-adaptation in the vaccine strains during vaccine production.[5-14]

*Preliminary end of season estimates for the 2019-2020 influenza season by the Centers for Disease Control and Prevention

CELL-BASED INFLUENZA VACCINES AVOID EGG-ADAPTATION

Some egg-adaptive mutations may cause hemagglutinin* to be antigenically different from the WHO-selected circulating influenza virus strains.[3,15,16]

*Hemmagglutinin is a surface protein of an influenza virus.



†Match to the WHO-selected circulating influenza virus strains does not predict clinical effectiveness
‡These graphics provide a simplified overview of the egg-based and cell-based influenza vaccine production processes
§This depiction assumes the circulating strain matches the WHO-selected circulating influenza virus strains

CELL-BASED INFLUENZA VACCINE MANUFACTURING IS AN ALTERNATIVE OPTION TO TRADITIONAL EGG-BASED MANUFACTURING.[3]

Cell-based influenza vaccines avoid egg-adaptation and are designed to produce an exact match to the virus strains selected by the WHO.[3,15]

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