

Background

- Limited data are available regarding the predictive value of various symptoms for pediatric influenza illness.
- Past studies have shown that among unvaccinated febrile children suspected of having influenza, fever, cough, headache, and sore throat are predictive of influenza.^{1,2}
- Limited data exist for general respiratory illness, and no data exist for vaccinated children.

Objective

- To identify symptoms associated with culture-confirmed influenza illness in children receiving live attenuated influenza vaccine (LAIV), trivalent inactivated influenza vaccine (TIV), or placebo

Methods

- In 5 prospective studies of LAIV compared with placebo or TIV in children 6 months to 17 years of age, symptoms were collected for respiratory illnesses during 5- to 8-month surveillance periods.³⁻⁸
- LAIV is approved for use in eligible children 2 years of age and older.
- Symptoms associated with positive influenza culture (odds ratio >1.0) were determined using logistic regression; significance was determined at a threshold of $P < 0.05$.

Results

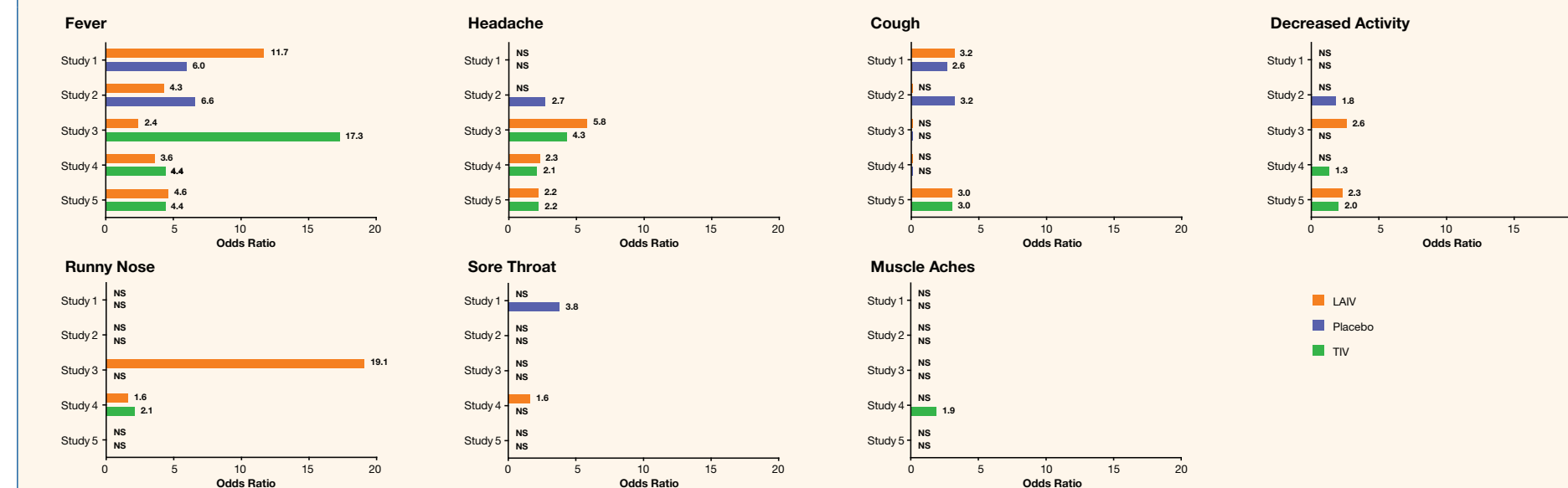
- Study characteristics are presented in **Table 1**.

Study	Control	Number of Samples	Age Group	Predominant Strains	Influenza Seasons
Study 1 ⁵	Placebo	4532	11–23 mo	A/H3N2 and B	2002–2003
Study 2 ^{4,7}	Placebo	4837	15–71 mo	A/H3N2	1996–1998
Study 3 ³	TIV	4060	6–71 mo	A/H3N2 and B	2002–2003
Study 4 ⁶	TIV	16,206	6–59 mo	A/H3N2 and B	2004–2005
Study 5 ⁸	TIV	2320	6–17 y	A/H3N2 and B	2002–2003

TIV=trivalent inactivated influenza vaccine.

- Of the symptoms analyzed, cough, decreased activity, fever, headache, muscle aches, runny nose, and sore throat were found to be associated with positive influenza culture (**Figure 1**).

Figure 1. Odds Ratios of Symptoms Significantly* Associated With Influenza Illness by Study and Treatment



LAIV=live attenuated influenza vaccine; NS=not significant; TIV=trivalent inactivated influenza vaccine.* $P < 0.05$.

Conclusions

- Consistent with previous studies⁹ among unvaccinated children, fever, cough, sore throat, and headache were most strongly associated with positive influenza culture.
- Similar results were seen among vaccinated older children.
- Among vaccinated younger children, fever, runny nose, and headache were most strongly associated with influenza.
- The association with fever was stronger for TIV vs LAIV recipients, consistent with previous observations of greater incidence of fever among TIV vs LAIV recipients who develop influenza despite vaccination.¹⁰

References

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