

Antiviral Agents for Treatment and Chemoprophylaxis of Influenza

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Neuraminidase Inhibitor Resistance Testing at CDC: U.S. Samples Collected Since October 1, 2011

	Oseltamivir		Zanamivir	
	Virus Samples tested (n)	Resistant Viruses, Number (%)	Virus Samples tested (n)	Resistant Viruses, Number (%)
Influenza A (H3N2)	309	0 (0.0)	309	0 (0.0)
Influenza B	46	0 (0.0)	46	0 (0.0)
2009 H1N1	71	0 (0.0)	61	0 (0.0)

- All U.S. viruses tested since October 1, 2011 have been susceptible to neuraminidase inhibitors (oseltamivir and zanamivir);
- However, rare sporadic cases of oseltamivir-resistant 2009 H1N1 and A(H3N2) virus infections have been detected worldwide.
- Due to high levels of resistance to adamantanes (amantadine and rimantadine) among Influenza A viruses, adamantane use is *not* recommended.

Guidance for Antiviral Agents, 2011-2012

- Oseltamivir or zanamivir for influenza A (all subtypes) and B virus infections
- Antiviral treatment is recommended *as early as possible* for any patient with confirmed or suspected influenza who:
 - has severe, complicated, or progressive illness, or
 - requires hospitalization, or
 - is at higher risk for influenza complications, or
 - is non high-risk if early treatment can be given based on clinical judgment
- Initiation of therapy should *not* be delayed (while waiting for results of diagnostic testing) if clinically indicated

Groups at Higher Risk for Influenza Complications

- Persons <2 or ≥ 65 years of age;
- Persons with the following conditions:
 - chronic pulmonary (including asthma),
 - cardiovascular (except hypertension),
 - renal, hepatic, hematological (including sickle cell) disease,
 - neurological, neuromuscular, or metabolic disorders (including diabetes mellitus);
- Immunosuppression, including that caused by medications or by HIV infection;
- Women who are pregnant or post-partum (2 weeks)
- Persons younger than 19 years of age who are receiving long-term aspirin therapy;
- American Indians and Alaskan Natives;
- Persons who are morbidly obese (body-mass index ≥ 40);
- Residents of nursing homes and other chronic-care facilities.

Inhaled Zanamivir Dosing

- ❑ **Treatment, Influenza A and B**
 - Ages 7 years and older: 10mg (two inhalations) twice daily
 - Ages <7 years: not FDA-approved
- ❑ **Chemoprophylaxis, Influenza A and B**
 - Ages 5 years and older: 10mg (two inhalations) once daily
 - Ages <5 years: not FDA-approved
- ❑ **Not recommended for persons with underlying airways disease**
- ❑ **Administration requires correct use of inhalation device**

Oral Oseltamivir Dosing

□ Treatment, Influenza A and B

- Ages 13 years and older: 75mg twice daily
- Ages 1-12 years: dosed by weight; those >40kg receive adult dose

□ Chemoprophylaxis, Influenza A and B

- Ages 13 years and older: 75mg once daily
- Ages 1-12 years: dosed by weight; those >40kg receive adult dose

□ Not FDA approved for children aged <1 year

- Limited data re: dosing
- Dosing recommended under Emergency Use Authorization (EUA; expired June 2010): Recommended by ACIP-CDC for 2011-2012:
 - Treatment: 3 mg/kg twice daily
 - Chemoprophylaxis: not recommended for <3 months; 3 mg/kg/day for those 3-11 months

Duration of Treatment and Chemoprophylaxis

□ Therapy:

- Recommended course is 5 days
- Longer courses may be considered for persons who remain severely ill after 5 days of treatment

□ Chemoprophylaxis:

- Recommended course is 10 days following household exposures; 7 days after most recent exposure in other situations
- For control of outbreaks in long-term care facilities and hospitals, prophylaxis for a minimum of two weeks and up to 1 week following last exposure is recommended