Table: Recommended Daily Dosage of Seasonal Influenza Antiviral Medications for Treatment and Chemoprophylaxis for the 2008-09 Season—United States

Note: New as of April 25, 2009 - Antiviral resistance testing results for cases of swine influenza A (H1N1) virus infection detected in the United States.

Note: On December 19, 2008, CDC issued Interim Recommendations for the Use of Influenza Antivirals for the 2008-09 Season.

The interim results of antiviral resistance testing performed on influenza viruses tested by CDC for the 2008-09 influenza season are summarized in the table below.

Swine Influenza As of April 25, 2009	Isolates tested (n)	Resistant Viruses, Number (%)		Isolates tested (n)	Resistant Viruses, Number (%)
		Oseltamivir	Zanamivir		Adamantanes*
Swine Influenza A (H1N1)	7	0	0	15	15

Data from October 1, 2008 - March 29, 2009	Isolates tested (n)	Resistant Viruses, Number (%)		Isolates tested (n)	Resistant Viruses, Number (%)
		Oseltamivir	Zanamivir		Adamantanes*
Influenza A (H1N1)	654	649 (99.2%)	0 (0)	605	3 (0.5%)
Influenza A (H3N2)	94	0 (0)	0 (0)	94	94 (100%)
Influenza B	274	0 (0)	0 (0)	N/A*	N/A*

For updated CDC antiviral resistance testing data, see http://www.cdc.gov/flu/weekly/.

* The adamantanes (amantadine and rimantadine) are not effective against influenza B viruses.

The table below provides the daily dosage information for the four FDA approved influenza antiviral medications for treatment and chemoprophylaxis of seasonal influenza in the United States for the 2008-09 season. On December 19, 2008, CDC issued interim recommendations for the use of influenza antiviral medications for the 2008-09 Season based on information about antiviral resistance among circulating influenza viruses.

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Antiviral agent		Age group (yrs)				
		1-6	7-9	10-12	13-64	65 and older

Zanamivir*	Treatment, influenza A and B	N/A†	10 mg (2 inhalations) twice daily	10 mg (2 inhalations) twice daily	10 mg (2 inhalations) twice daily	10 mg (2 inhalations) twice daily
	Chemoprophylaxis, influenza A and B	**Ages 1-4** N/A	**Ages 5-9** 10 mg (2 inhalations) once daily	10 mg (2 inhalations) once daily	10 mg (2 inhalations) once daily	10 mg (2 inhalations) once daily
Oseltamivir	Treatment†, influenza A and B	Dose varies by child's weight§	Dose varies by child's weight§	Dose varies by child's weight§	75 mg twice daily	75 mg twice daily
	Chemoprophylaxis, influenza A and B	Dose varies by child's weight¶	Dose varies by child's weight¶	Dose varies by child's weight¶	75 mg/day	75 mg/day
Amantadine**	Treatment, influenza A	5 mg/kg body weight/day up to 150 mg in 2 divided doses††	5 mg/kg body weight/day up to 150 mg in 2 divided doses††	100 mg twice daily§§	100 mg twice daily	less than or equal to 100 mg/day
	Prophylaxis, influenza A	5 mg/kg body weight/day up to 150 mg in 2 divided doses††	5 mg/kg body weight/day up to 150 mg in 2 divided doses††	100 mg twice daily§§	100 mg twice daily§	less than or equal to 100 mg/day
Rimantadine¶¶	Treatment#, influenza A	N/A##	N/A	N/A	100 mg twice daily§§$	100 mg/day
	Prophylaxis, influenza A	5 mg/kg body weight/day up to 150 mg in 2 divided doses††	5 mg/kg body weight/day up to 150 mg in 2 divided doses††	100 mg twice daily§§	100 mg twice daily§	100 mg/day$$
Duration of Treatment	**Treatment**	Recommended duration for antiviral treatment is 5 days.				
	Chemoprophylaxis	Recommended duration is 5-7 days after the last known exposure. For control of outbreaks in long-term care facilities and hospitals, CDC recommends antiviral chemoprophylaxis for a minimum of two weeks, and up to one week after the last known case was identified.				

NOTE: Zanamivir is manufactured by GlaxoSmithKline (Relenza — inhaled powder). Zanamivir is approved for treatment of persons aged 7 years and older and approved for chemoprophylaxis of persons aged 5 years and older. Oseltamivir is manufactured by Roche Pharmaceuticals (Tamiflu® — tablet) Oseltamivir is approved for treatment or chemoprophylaxis of persons aged 1 year and older. Amantadine manufacturers include Endo Pharmaceuticals (Symmetrel® — tablet and syrup); Geneva Pharms Tech (Amantadine HCL — capsule);
USL Pharma (Amantadine HCL — capsule and tablet); and Alpharma, Carolina Medical, Copley Pharmaceutical, HiTech Pharma, Mikart, Morton Grove, and Pharmaceutical Associates (Amantadine HCL — syrup), and Sandoz. Rimantadine is manufactured by Forest Laboratories (Flumadine® — tablet and syrup); Corepharma, Impax Labs (Rimantadine HCL — tablet), and Amide Pharmaceuticals (Rimantadine HCL — tablet). No antiviral medications are approved for treatment or chemoprophylaxis of influenza among children younger than 1 year of age. This information is based on data published by the Food and Drug Administration (FDA).

* Zanamivir is administered through oral inhalation by using a plastic device included in the medication package. Patients will benefit from instruction and demonstration of the correct use of the device. Zanamivir is not recommended for those persons with underlying airway disease.

† A reduction in the dose of oseltamivir is recommended for persons with creatinine clearance less than 30 mL/min.

§ The treatment dosing recommendation for children who weigh 15 kg or less is 30 mg twice a day. For children who weigh more than 15 kg and up to 23 kg, the dose is 45 mg twice a day. For children who weigh more than 23 kg and up to 40 kg, the dose is 60 mg twice a day. For children who weigh more than 40 kg, the dose is 75 mg twice a day.

¶ The chemoprophylaxis dosing recommendation for children who weigh less than 15 kg is 30 mg once a day. For who weigh more than 15 kg and up to 23 kg, the dose is 45 mg once a day. For children who weigh more than 23 kg and up to 40 kg, the dose is 60 mg once a day. For children who weigh more than 40 kg, the dose is 75 mg once a day.

** The drug package insert should be consulted for dosage recommendations for administering amantadine to persons with creatinine clearance less than or equal to 50 mL/ min/1.73m2.

†† 55 mg/kg body weight of amantadine or rimantadine syrup = 1 tsp/22 lbs.

§§ Children aged 10 years and older who weigh less than 40 kg should be administered amantadine or rimantadine at a dosage of 5 mg/kg body weight/day.

¶¶ A reduction in dosage to 100 mg/day of rimantadine is recommended for persons who have severe hepatic dysfunction or those with creatinine clearance less than 10 mL/min. Other persons with less severe hepatic or renal dysfunction taking 100 mg/day of rimantadine should be observed closely, and the dosage should be reduced or the drug discontinued, if necessary.

Only approved by FDA for treatment among adults.

Not applicable.

$Rimantadine is approved by FDA for treatment among adults. However, certain specialists in the management of influenza consider rimantadine appropriate for treatment among children. Studies evaluating the efficacy of amantadine and rimantadine in children are limited, but they indicate that treatment with either drug diminishes the severity of influenza A infection when administered within 48 hours of illness onset.

$$ Older nursing-home residents should be administered only 100 mg/day of rimantadine. A reduction in dosage to 100 mg/day should be considered for all persons aged 65 years and older, if they experience possible side effects when taking 200 mg/day.

Related Links

- **Prevention & Control of Influenza – Recommendations of the Advisory Committee on Immunization Practices (ACIP) 2008**
- **Prevention & Control of Influenza – Recommendations of the Advisory Committee on Immunization Practices (ACIP) 2004**

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