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Antivirals for Influenza

Updated August 2026

≤48 h	12 h	>48 h
Start treatment within 48 hours of symptom onset for healthy patients with uncomplicated influenza	The goal — earlier is better. Do not wait for diagnostic test results to start therapy.	Still treat — hospitalized, complicated, high-risk[b], or severe/progressive illness. Oseltamivir preferred if hospitalized.

KEY PRACTICE POINTS FOR TREATMENT OF INFLUENZA WITH ANTIVIRALS

(see footnotes c and d for information on antiviral **prophylaxis** of influenza)

For **healthy** patients with **uncomplicated** influenza, start antiviral treatment within 48 hours of symptom onset (goal: 12 hours).[1,7] Treatment may shorten symptom duration by about one day and reduce household transmission.[2,19] It may also reduce the risk of otitis media in young children.[1]

For **hospitalized** patients, or outpatients with **complications** (e.g., pneumonia, worsening of comorbidity) or at **higher risk**[b] for complications, or with **severe** or **progressive** illness, with suspected or confirmed influenza, start an antiviral (oseltamivir preferred for hospitalized patients) as soon as possible, even if >48 hours have passed since symptom onset.[1,7] Early antiviral treatment may reduce the risk of in-hospital death and the duration of hospitalization.[1] The decision to start therapy should not wait for diagnostic test results.[1]

Longer durations of oseltamivir or peramivir treatment may be needed in patients who are severely or critically ill.[1,7] There are currently little data for increased efficacy with the use of baloxavir other than as a one-time dose.[10,12]

Oseltamivir, zanamivir, and peramivir are **neuraminidase inhibitors**, while baloxavir is a **selective endonuclease (polymerase acidic protein) inhibitor**.[1,10] Data do not support using a combination of antivirals for the treatment of influenza.[1,7,12]

The frequency of antiviral **resistance is very low**.[1] Resistance can emerge during treatment, especially in immunocompromised patients on long courses.[1]

THE FOUR ANTIVIRALS AT A GLANCE

Oseltamivir
oral · Tamiflu, generics

Treatment
75 mg BID × 5 days (≥13 years)

Approval:
FDA ≥14 days of age; Health Canada ≥1 year

Cost, 5-day course[a]
US $20 · Canada $10

Antiviral of choice for severely ill hospitalized patients and preferred in pregnancy[1,7]

Zanamivir
inhaled · Relenza

Treatment
10 mg (two inhalations) BID × 5 days

Approval:
FDA and Health Canada ≥7 years

Cost, 5-day course[a]
US $60 · Canada $50

Avoid in pulmonary disease (bronchospasm risk); contraindicated in milk protein allergy[4,9]

Peramivir
intravenous · Rapivab · US only

Treatment
600 mg IV over 15–30 min × one dose (≥13 years)

Approval:
FDA ≥6 months. Approved but not marketed in Canada

Cost per 600 mg dose[a]
US $950

Consider if oral/enteric oseltamivir cannot be tolerated or absorbed[17]

Baloxavir
oral · Xofluza

Treatment
40 mg (20 to <80 kg) × one dose

Approval:
FDA ≥5 years (treatment and prophylaxis); Health Canada ≥12 years and ≥40 kg, treatment only

Cost per 40 mg tablet[a]
US $170 · Canada $180

Separate from calcium, iron, magnesium, selenium, zinc[10]

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Oseltamivir, oral (Tamiflu, generics)

Cost[a] of 5-day course (75 mg BID): US $20; Canada $10

PEDIATRIC DOSE	ADULT DOSE	COMMENTS
TREATMENT (duration 5 days [longer duration can be considered for hospitalized patients who remain severely ill after 5 days][1]) FDA-approved: ≥14 days of age.[3] Health Canada-approved: ≥1 year of age.[8] Note: AMMI Canada recommend assessing the use of oseltamivir in infants less than 1 year on a case-by-case basis.[7] CDC and AAP recommend oseltamivir for all ages.[1] AAP provides dosing guidance for both term and premature infants.[1,13] **Birth to 8 months, TERM infants (per AAP):**[13] 3 mg/kg/dose BID. See ref 1 for preterm dosing. **9 to 11 months:**[13] 3.5 mg/kg BID. **One year and older:**[3,8,13] 15 kg or less: 30 mg BID. >15 kg to 23 kg: 45 mg BID. >23 kg to 40 kg: 60 mg BID. >40 kg: 75 mg BID.	**TREATMENT** (duration 5 days [longer duration can be considered for hospitalized patients who remain severely ill after 5 days][1]) **≥13 years:**[3,8] 75 mg BID **Kidney Impairment:**[3,8] CrCl 31 to 60 mL/min: 30 mg BID. CrCl 11 to 30 mL/min: 30 mg once daily. **Hemodialysis:**[3,8] Initial dose of 30 mg, then 30 mg after each dialysis, not to exceed five days for most patients. **Peritoneal Dialysis:**[3,8] 30 mg (single dose) prior to dialysis.	Serious skin reactions (e.g., Stevens-Johnson syndrome) and neuropsychiatric events (e.g., hallucinations, delirium, abnormal behavior) have been reported.[3,8] Taking with food may increase GI tolerability.[8] Not recommend for patients with CrCl ≤10 mL/min who are not on dialysis.[3,8] Some experts recommend 150 mg BID (in patients with normal kidney function) for immunocompromised or severely ill, hospitalized, adult patients, but additional benefit from this higher dose is unproven.[1] Influenza antiviral of choice for severely ill hospitalized patients.[1,7] Preferred antiviral for pregnant patients.[1,7] May use adult dosage adjustments in kids >40 kg.[1] Premature infants may a have slower clearance due to immature kidney function.[1,7]
PROPHYLAXIS (duration varies by indication[c,d]) FDA- and Health Canada-approved: ≥1 year of age.[3,8] AAP and CDC: ≥3 months.[1] <3 months if they are critically ill (per CDC and AMMI Canada).[1,7] **3 months to less than 1 year:**[1,7] 3 mg/kg once daily. **1 year and older:**[3,8] ≤15 kg: 30 mg once daily. >15 kg to 23 kg: 45 mg once daily. >23 kg to 40 kg: 60 mg once daily. >40 kg: 75 mg once daily.	**PROPHYLAXIS** (duration varies by indication[c,d]) **13 years and older:** 75 mg once daily.[3,8] **Kidney Impairment:**[3,8] CrCl 31 to 60 mL/min: 30 mg once daily. CrCl 11 to 30 mL/min: 30 mg every two days. **Hemodialysis:**[3,8] 30 mg immediately, then 30 mg after alternate dialysis cycles. **Peritoneal Dialysis:**[3,8] 30 mg immediately, then 30 mg once weekly.	

Zanamivir, inhaled (Relenza)

Cost[a] of 5-day course: US $60; Canada $50

DOSE	COMMENTS
TREATMENT FDA- and Health Canada-approved:[4,9] ≥7 years **10 mg (two inhalations) BID for five days.**[4,9] No adjustment necessary for kidney impairment.[4] **PROPHYLAXIS** FDA-approved: ≥5 years.[4] Health Canada-approved: ≥7 years.[9] **10 mg (two inhalations) once daily** for 10 days (household contact).[4,9] Give for 28 days for community outbreaks.[4,9] Also see footnotes c and d	Avoid in patients with pulmonary disease (e.g., asthma, COPD) due to risk of bronchospasm.[4,9] Contraindicated in patients with a milk protein allergy.[4,9] **Serious skin reactions** (e.g., Stevens-Johnson syndrome), neuropsychiatric effects (e.g., delirium, abnormal behavior [especially in pediatrics]), and serious allergic reactions have been reported.[4,9] Unknown efficacy for **nursing home residents**.[4,9] CDC does not routinely recommend inhaled zanamivir in hospitalized patients due to a lack of data.[1] Per AMMI Canada, zanamivir should be considered for patients who have not responded to oseltamivir, failed oseltamivir prophylaxis, or if influenza B is strongly suspected.[7]

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Peramivir, intravenous (Rapivab) (US only)

Note: approved but not marketed in Canada.
Cost per 600 mg dose:[a] US $950

PEDIATRIC DOSE	ADULT DOSE	COMMENTS
TREATMENT FDA-approved: ≥6 months.[5] **6 months to 12 years:** 12 mg/kg (up to 600 mg) IV infusion over at least 15 to 30 minutes × one dose.[5] **Kidney impairment (2 to 12 years):**[5] CrCl 30 to 49 mL/min: 4 mg/kg (up to 200 mg) × one dose. CrCl 10 to 29 mL/min: 2 mg/kg (up to 100 mg) × one dose. **Longer duration (e.g. 5 to 10 days) can be considered for hospitalized patients.**[16]	**TREATMENT** US: ≥13 years.[5] **600 mg (3 vials) IV infusion over 15 to 30 minutes × one dose.**[5] **Kidney Impairment:**[5] CrCl 30 to 49 mL/min: 200 mg × one dose. CrCl 10 to 29 mL/min: 100 mg × one dose. **Hemodialysis:**[5] Give after hemodialysis based on kidney function. **Longer duration (e.g., 5 to 10 days) can be considered for hospitalized patients.**[1,16]	The most common adverse reaction is diarrhea.[5] Serious skin reactions (e.g., Stevens-Johnson syndrome), anaphylaxis, and neuropsychiatric events (e.g., hallucinations, delirium, abnormal behavior) have been reported.[5] Consider using if a patient cannot tolerate or absorb oral/enteric oseltamivir (e.g., patients with suspected or known gastric stasis, malabsorption, or GI bleeding).[17] Limited data in immunocompromised patients and in those over 65 years.[5] Does **not** appear to have benefit compared to placebo in patients with serious influenza requiring hospitalization.[1,14]

Baloxavir, oral (Xofluza)

Cost per 40 mg tablet:[a] US $170; Canada $180

DOSING	COMMENTS
FDA-approved for treatment and prophylaxis:[10] ≥5 years Health Canada-approved for treatment only:[18] ≥12 years and ≥40 kg **<20 kg (US only):**[10] 2 mg/kg (oral suspension [bottles]) × one dose OR 30 mg packet × one dose (15 to <20 kg) Note: only tablets available at time of writing **20 kg (40 kg in Canada) to <80 kg:**[10,18] 40 mg tablet × one dose. **≥80 kg:**[10,18] 80 mg × one dose **Kidney or Liver impairment** No dose adjustments are needed in patients with moderate kidney impairment (CrCl ≥50 mL/minute) or mild and moderate liver impairment (Child-Pugh class A or B).[10,18] No data available in patients with severe kidney or liver impairment.[10,18]	Generally well-tolerated. The most common adverse effects are vomiting (5 to 12 years old) and diarrhea.[10] Appears to have less nausea and vomiting than oseltamivir.[3,10] Avoid taking baloxavir at the same time as products containing calcium (including dairy), iron, magnesium, selenium, or zinc due to a decrease in baloxavir absorption. Peak baloxavir absorption occurs at four hours.[10] Consider avoiding dairy and supplements until baloxavir is absorbed. Post-exposure prophylaxis: reduced household transmission vs placebo (NNT = 9).[11] Baloxavir appears to work as well as oseltamivir for the treatment of uncomplicated influenza in some high-risk **outpatients**.[15] No data in severely ill outpatients or immunocompromised patients.[1] Adding baloxavir to standard-of-care treatment with a neuraminidase inhibitor (i.e., oseltamivir, zanamivir, peramivir) does NOT improve time to clinical improvement in hospitalized patients with severe influenza.[12] Resistant strains of influenza have been detected after treatment with baloxavir, with higher risk in patients <12 years of age.[1]

Abbreviations: AAP = American Academy of Pediatrics; AMMI = Association of Medical Microbiology and Infectious Disease; BID = twice daily; COPD = chronic obstructive pulmonary disease; CrCl = creatinine clearance; GI = gastrointestinal; IDSA = Infectious Diseases Society of America; IV = intravenous; n/a = not available at time of publication; NNT = number need to treat

a. Cost is wholesale acquisition cost (WAC) of the generic product, when available. US medication pricing by Elsevier, accessed August 2026.

b. Patients at high-risk for complications from influenza include:[6,7]

- children less than 5 years of age (especially those <2 years of age) and adults 65 years and older.
- persons with chronic conditions such as pulmonary disease (including asthma, COPD, cystic fibrosis), heart disease, kidney disease, liver disease, blood disorders (including sickle cell disease), cancer, metabolic disorders (including diabetes mellitus), or neurologic and neurodevelopment conditions.
- persons who are immunosuppressed, including those on immunosuppressants and with HIV infection.
- pregnant or postpartum patients (two weeks [US] or up to four weeks [Canada] after delivery/end of pregnancy).
- persons younger than 19 years who are on long-term aspirin therapy.
- non-Hispanic Black, Hispanic or Latino, Native Americans, Alaska Natives, and Indigenous persons.
- persons who are morbidly obese (e.g., body mass index ≥40 kg/m^2).
- residents of chronic care facilities (e.g., nursing homes).

c. Duration of Prophylaxis:

Post-exposure prophylaxis. CDC and IDSA recommend a duration of prophylaxis (oseltamivir, zanamivir) of seven days after last exposure. Product labeling recommends a duration of at least 10 days (zanamivir: 10 days for household contact).[3,4,8,9] In Canada (per labeling and AMMI), oseltamivir duration should be 14 days if the index case is a child or elderly person.[7,8]

Community Outbreaks. Give oseltamivir for up to 6 weeks (up to 12 weeks for immunocompromised patients).[3,8] Give zanamivir for 28 days.[3,9] High-risk persons may receive prophylaxis for the duration of the influenza season.[16]

Institutional outbreaks. Continue oseltamivir or zanamivir for at least 14 days, including 7 days after symptom onset of the last known case.[1,16,19] Consider oseltamivir for 14 days as a bridge between staff vaccination (inactivated) and the development of immunity.[7,19]

d. Prophylaxis.

Antiviral prophylaxis (seasonal, pre-exposure, or post-exposure) is NOT recommended for most patients.[1]

Per AMMI Canada, early treatment is preferred over routine **PRE-exposure** prophylaxis due to potential development of drug resistance. Pre-exposure prophylaxis can be considered during community outbreaks for:[7,b]

- high-risk persons during the 14 days following administration of an inactivated influenza vaccine.
- high-risk persons and their close contacts if circulating strains are not covered by the current year's influenza vaccine.
- high-risk persons with contraindications to vaccination OR expected poor response to vaccination.
- family members or healthcare workers with contraindications to vaccination with ongoing exposure to unvaccinated high-risk[b] persons.

Consider **POST-exposure** prophylaxis (or early treatment) for:

- high-risk[b] persons who are not protected with vaccination.[7,19] For example: a poor response to vaccination is expected (e.g., patients on immunosuppressants);[7,19] there are contraindications to vaccination;[7,19] age <6 months.[7]
- unvaccinated household contacts of a high-risk person[b]

Post-exposure prophylaxis is ideally started within 48 hours (max four days, per AMMI Canada) of exposure.[7,19]

During institutional outbreaks, per IDSA, all exposed residents should receive antiviral prophylaxis.[19]

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