

Oseltamivir (*Tamiflu*[®]) Doses in Children

Available as: 12 mg/mL mixture or 30 mg, 45 mg and 75 mg capsules

Treatment dose

Patient age	Patient weight	Dose (Using 12 mg/mL suspension)	
		<p><i>Children under 1 year: give instructions in <u>ml</u> only</i></p> <p><i>Children over 1 year: give instructions in <u>mg</u> or <u>ml</u></i></p> <p>Note: Instruction leaflet provided in <i>Tamiflu</i> package only gives doses in mg. <i>Tamiflu</i> syringe that comes with the bottle is marked for 30, 45 & 60 mg doses.</p>	
< 1 year <i>(based on 2 – <3 mg/kg per dose)</i> <i>See notes below regarding use in this age group*</i>	≤ 3 kg	<p>DO NOT USE TAMIFLU SYRINGE FOR CHILDREN < 1 YEAR</p> <p>(Dispensing syringe that comes with the bottle is not suitable for measuring appropriate amounts)</p> <p>USE ORAL SYRINGE ONLY IN THIS AGE GROUP</p>	6 mg = 0.5 mL on oral syringe
	> 3 to 4 kg		9 mg = 0.75 mL on oral syringe
	> 4 to 6 kg		12 mg = 1.0 mL on oral syringe
	> 6 to 9 kg		18 mg = 1.5 mL on oral syringe
	> 9 to 12 kg		24 mg = 2.0 mL on oral syringe
	> 12 to 14 kg		30 mg = 2.5 mL on oral syringe
≥ 1 year	≤ 15 kg	30 mg mark on <i>Tamiflu</i> syringe (= 2.5 mL on oral syringe) or 30 mg Paediatric <i>Tamiflu</i> capsule [†]	twice daily for 5 days
	> 15 to 23 kg	45 mg mark on <i>Tamiflu</i> syringe (= ~4.0 mL on oral syringe) or 45 mg Paediatric <i>Tamiflu</i> capsule [†]	
	> 23 to 40 kg	60 mg mark on <i>Tamiflu</i> syringe (= 5.0 mL on oral syringe) or 2 x 30 mg Paediatric <i>Tamiflu</i> capsules [†]	
	> 40 kg (adult dose)	75 mg (45 mg + 30 mg mark) on <i>Tamiflu</i> syringe or 75 mg 'adult' capsule [†] (= ~6.5 mL on oral syringe)	

[†] See instructions on next page for dispersing contents of capsule if unable to swallow whole

Post-exposure prophylaxis dose

Same doses and volumes as above but once daily for 10 days.

Infants < 3 months: *prophylaxis not recommended unless the situation is deemed critical due to limited data on use in this age group.*

Zanamivir (*Relenza*[®]) Dose in Children

Available as: 5 mg diskhaler

Treatment dose

Patient age	Dose	Requires ability to use diskhaler.
> 5 years	Two 5 mg inhalations (10 mg total) bd for 5 days.	

Post-exposure prophylaxis dose

Same dose as above but once daily for 10 days.

Treatment with Oseltamivir (*Tamiflu*[®]) or Zanamivir (*Relenza*[®]) should be limited to:

- All children with suspected influenza who are **severely unwell** (who will usually be admitted) including those under 1 year of age.
 - Children < 5 yrs old, particularly those < 2 yrs old are at highest risk of complications.
- All children with suspected influenza who are at **high risk for complications**, including
 - Chronic pulmonary (including asthma), cardiovascular, renal, hepatic, hematological (including sickle cell disease), neurologic, neuromuscular, or metabolic disorders (including diabetes mellitus).
 - immunosuppression, including that caused by medications, asplenia.
 - Those receiving long-term aspirin therapy.
- Children **over 1 year of age** who meet the current DHS clinical case definition for **H1N1 Influenza 09** (human swine influenza) virus infection who are **moderately or severely ill** ('Protect' phase).

Notes

- Treatment should **commence as soon as possible** after onset of symptoms.
- Treatment should be given **within 48 hours of onset of symptoms**. With severe disease in the context of pandemic influenza treatment may be considered after 48 hours of onset of symptoms.
- *Recommendations on use of antivirals may change as data on antiviral effectiveness, adverse effects from antiviral use and the nature of the virus become available.*

Oseltamivir (*Tamiflu*[®])

- ***Children < 1 year of age:** Oseltamivir to be used when benefit of antiviral therapy considered to outweigh the risks. Limited safety and dosage data in this age group. (Basis of precautions: data on weaning rats given the equivalent of 1000 mg/kg with evidence of greater CSF penetration and potential neurotoxicity.)
- ***Children < 3 months of age:** prophylaxis not recommended unless the situation is deemed critical due to limited data on use in this age group.
- ***Children < 7 days of age:** seek specialist advice, wider spacing of doses may be required.
- **Contraindications:** Creatinine clearance <10 ml/min, routine haemodialysis or continuous peritoneal dialysis: wider spacing of doses may be required. Hypersensitivity to Oseltamivir or components, fructose intolerance (oral suspension). Seek specialist advice.
- **Precautions:** Creatinine clearance between 10 and 30 ml/min (adjust treatment dose to once daily, prophylaxis dose to alternate day), pregnant and breast-feeding women (Category B1).
- **Breast feeding:** The UK Health Protection Agency has recommended the use of Oseltamivir as the antiviral of first choice for the treatment and prophylaxis of pandemic influenza in women who are breast feeding. Seek specialist advice.
- **Drug interactions:** No significant interactions identified.
- **Side effects:** Nausea & vomiting (up to 10%), abdominal pain, insomnia, headache, fatigue, conjunctivitis. Neuropsychiatric events reported. Rare reports of anaphylaxis and severe skin reactions.
- **Administration:** To be taken with food to minimise GI upset (commonest with the first dose).

- **Vomiting after Oseltamivir capsules:** The following is adapted from NSW Therapeutic Advisory Group interim guidelines, which are based on the pharmacokinetics of Oseltamivir in adults, and assume patient is taking Oseltamivir with food:

If a patient vomits:

- **within 30 minutes** of administration - repeat dose should be given
- **after 30 minutes** of administration - repeat dose if capsule visible in vomitus.

If the patient vomits after a repeat dose:

- confirm the patient is taking the medication with food (which may reduce N&V)
- consider antiemetic therapy to assist completing the antiviral course
- consider Zanamivir (*Relenza*) inhalation as alternative antiviral.

- **Opening Oseltamivir capsules for dispersal (if mixture unavailable or unsuitable)**

For 30 mg, 45 mg, 60 mg and 75 mg doses:

- the capsules may be opened and the powder contents mixed with something sweet e.g. chocolate sauce, honey, yogurt.
- use the following
 - 30 mg dose: use 30 mg capsule
 - 45 mg dose: use 45 mg capsule
 - 60 mg dose: use 2 x 30 mg capsules
 - 75 mg dose: use 75 mg capsule
- the powder tastes bitter so mix thoroughly.
- use immediately and swallow all of the mixture.

For all other doses:

- mix powder contents of 75 mg capsule with 5 mL water to produce a mixture of **15 mg/mL**.
- mix well and keep mixing until the dose is measured.
- discard the amount not needed.
- mix the required volume with something sweet e.g. chocolate sauce, honey, yogurt.
- use immediately.
- if 75 mg capsule is not available, other size capsules may be used, with correspondingly smaller amounts of diluent (water) to provide a 15 mg/mL mixture.

Zanamivir (Relenza®)

- **Contraindications:** Not recommended for treatment or prophylaxis in individuals with underlying airways disease (eg **asthma**) due to risk of serious bronchospasm. Do not use in patients with history of allergic reaction to any ingredient including **lactose** (which contains milk proteins).
- **Precautions:** pregnancy and breastfeeding (category B1). Seek specialist advice.
- **Pregnancy:** The UK Health Protection Agency has recommended the use of Zanamivir as the antiviral of first choice for the treatment and prophylaxis of pandemic influenza during pregnancy. Seek specialist advice.
- **Side effects:** Very rare – allergic reactions, angioedema, urticaria, bronchospasm, dyspnoea. Neuropsychiatric events reported.

For further information on Oseltamivir and Zanamivir consult the full Product Information.

Enquiries: please contact: Drug Information Centre, Royal Children's Hospital: (03) 9345 5208.