

Calculation Tool for the prescription of INTRAVENOUS AMINOPHYLLINE

in Children

Name

Date of Birth

Unit Number

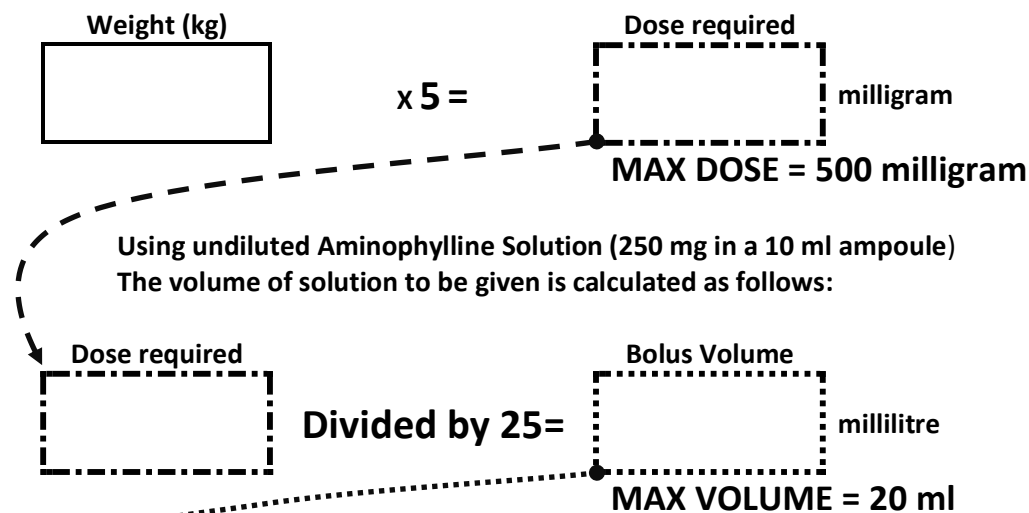
Weight (kg)

Date: _____ Name of prescriber completing this form: _____

1. Loading Dose of Aminophylline (if required)

The decision of whether a loading dose is appropriate should be discussed with the Duty Consultant. Please note that patients on oral theophylline preparations should NOT be given a loading dose.

If required the BNFC¹ recommends a loading dose of **5 milligram/kg** over 20 minutes.



Prescription Written in 'Once Only Medicines' Section as follows

Date	Medicine	Dose	Route	Time to be given	Signature
	Aminophylline (250 mg in 10ml solution)	<div style="border: 1px dashed black; padding: 2px;"> Bolus Volume (from above) in ml </div>	IV	Over 20 minutes	

For small volumes the dose can be diluted into a larger volume of sodium chloride 0.9% to allow for infusion over 20 minutes.

SENSE CHECK-> a 50 kg child will only require one ampoule of Aminophylline

References:
1. BNF for Children 2020-21
2. <https://www.sort.nhs.uk/Media/Guidelines/Drugcalculator.pdf>

Dr Carl Taylor/ Lou Pitman
Version 1 DTC Dec 2020 (for review Dec 2023)

2. Continuous Infusion of Aminophylline

a) Prepare an infusion bag of Aminophylline Solution 1 mg/ml

To prepare 250 ml of 1 milligram/ml solution:

Remove and discard 10ml of fluid from a 250ml bag of Sodium Chloride 0.9% or Dextrose 5%

Draw up 10ml of 250mg in 10ml aminophylline (= 1 ampoule) and add this to the bag

You now have 250mg of aminophylline in 250ml of fluid (= 1mg /ml)

b) Calculate the Infusion Rate of Aminophylline Solution 1mg/ml

The usual dose range as stated in the BNFC¹ and SORT² guidelines:

Under 12 Years = 1 milligram/kg/hour

12-17 years = 0.5 to 0.7 milligram/kg/hour

Therefore the maintenance infusion rate range (in ml per hour) can be calculated as follows

Age	Required Dose	Weight (kg)		Infusion Rate
12-17 years	0.5 milligram/kg/hour	[] kg	X 0.5 =	[] ml/hour
	0.6 milligram/kg/hour		X 0.6 =	[] ml/hour
	0.7 milligram/kg/hour		X 0.7 =	[] ml/hour
Under 12 years	1 milligram/kg/hour		X 1 =	[] ml/hour

Prescription Written in 'Continuous Parenteral Infusions' Section as

Date	Drug name/dose Infusion fluid & volume	Infusion Rate	Route	Prescriber's Signature & Bleep No.
	Aminophylline 250 mg in 250 ml Sodium Chloride 0.9% (or Dextrose 5%)			

Monitoring Information

Aminophylline has a narrow therapeutic index and all patients must be carefully monitored for signs of toxicity throughout treatment. Ensure all children on intravenous aminophylline are on a cardiac monitor and have serum electrolytes checked regularly to ensure they do not become hypokalaemic. The majority of these children will require intravenous fluids with added potassium to maintain serum potassium levels. Please familiarise yourself with the presentation of aminophylline toxicity at www.toxbase.org

References:

1. BNFC for Children 2020-21

2. <https://www.sort.nhs.uk/Media/Guidelines/Drugcalculator.pdf>

Dr Carl Taylor/ Lou Pitman

Version 1 DTC Dec 2020 (for review Dec 2023)