

PRESENTATION Ampoules containing Morphine Sulphate 10 milligrams in 1ml.	INDICATIONS Pain associated with suspected myocardial infarction (analgesic of first choice). Severe pain. The decision about which analgesia and which route should be guided by clinical judgement (<i>refer to adult and child pain management guidelines</i>).
ACTIONS Morphine is a strong opioid analgesic drug for parenteral administration for pain relief. It is particularly useful for treating severe continuous pain of visceral or soft tissue origins. Morphine produces sedation, euphoria and analgesia; it may both depress respiration and induce hypotension. Histamine is released following morphine administration, this may contribute to its vasodilatory effects and it may also cause bronchoconstriction.	CONTRA-INDICATIONS Do NOT give morphine in the following circumstances: Children under 1 year of age. Respiratory depression (Adult <10 breaths per minute, Child <20 breaths per minute). Hypotension (actual, not estimated, systolic blood pressure <90mmHg in adults, <80mmHg in school children, <70mmHg in pre-school children). Administration of morphine to patients with clinical signs of haemorrhagic or cardiogenic shock may precipitate irreversible hypotension. Head injury with significantly impaired consciousness (Glasgow Coma Score <12). Phaeochromocytoma (tumour on the adrenal gland). This is a rare condition which is usually unknown to the patient or has been identified and treated. Known hypersensitivity to morphine. Known severe renal or hepatic impairment.

CAUTIONS

Use with extreme caution (minimal doses) during pregnancy. **NOTE** not to be used for pain associated with labour where Entonox is the analgesia of choice.

Morphine should be given **with great caution** to patients with chest injuries, particularly those with any respiratory difficulty, although if respiration is inhibited by pain, morphine may actually improve respiratory status.

Patients with other respiratory problems e.g. asthma, COPD.

Head injury. Agitation following head injury may be due to acute brain injury, hypoxia or pain. The decision to administer analgesia to agitated head injured patients is a clinical one. It is essential however, that any such patient who receives analgesia is closely monitored as opiates may cause disproportionate respiratory depression and hence increase intracranial pressure.

Acute alcohol intoxication. All opioid drugs potentiate the central nervous system depressant effects of alcohol and they should therefore be used with great caution in patients who have consumed a significant amount of alcohol.

Patients taking antidepressants, sedatives or major tranquilliser drugs, as these will potentiate the respiratory and cardiovascular depressant effects of morphine.

Patients taking monoamine oxidase inhibitors (MAOIs) **SHOULD NOT** be given morphine until their drug information card has been checked.

SIDE EFFECTS

Respiratory depression.

Cardiovascular depression.

Nausea and vomiting.

Drowsiness.

Pupillary constriction.

DOSAGE AND ADMINISTRATION

ENSURE that NALOXONE is available and that the appropriate dose for the age/weight of children is known before morphine is administered.

Morphine, when given IV takes a minimum of 2-3 minutes to begin to work, with the peak effect not being achieved for 10-20 minutes.

Due to the variable absorption rate of morphine when given IM, particularly in the cardiac and trauma patient, this route should **NOT** be used.

If morphine is used in trauma, larger doses (**5–20 milligrams**) may be needed.

Administration must be in conjunction with pain score monitoring.

Morphine **should** be diluted with sodium chloride 0.9% or water for injection to make a concentration of 10 milligrams in 10ml (1 milligram in 1ml).

Route: IV

Concentration – 10 milligrams in 10ml (see above)

AGE	DOSE	VOLUME
Adult	5 milligrams	5.0ml
Elderly >65	2.5 milligrams	2.5ml
11 years	3.5 - 7.1 milligrams	3.5ml-7.1ml
10 years	3.2 - 6.4 milligrams	3.2ml-6.4ml
9 years	2.9 - 5.7 milligrams	2.9ml-5.7ml
8 years	2.6 - 5.2 milligrams	2.6ml-5.2ml
7 years	2.3 - 4.6 milligrams	2.3ml-4.6ml
6 years	2.1 - 4.1 milligrams	2.1ml-4.1ml
5 years	1.9 - 3.7 milligrams	1.9ml-3.7ml
4 years	1.6 - 3.3 milligrams	1.6ml-3.3ml
3 years	1.4 - 2.9 milligrams	1.4ml-2.9ml
2 years	1.2 - 2.4 milligrams	1.2ml-2.4ml
18 months	1.1 - 2.2 milligrams	1.1ml-2.2ml
12 months	0.98 - 2 milligrams	0.98ml-2.0ml
<12 months	N/A	N/A

Administer by slow IV injection (rate of approximately 1 milligram per minute, titrated to response) whilst observing the patient over the next 5-10 minutes for effect.

ADULTS - If pain is not reduced to a tolerable level after 5 minutes, further **5 milligram** doses may be given by slow IV injection at 5 minute intervals to **20 milligrams maximum**. The patient should be closely observed throughout remaining treatment and transfer. In medical cases, smaller doses tend to be more effective (**2.5-5 milligrams**).

CHILDREN - The doses and volumes given are the initial and maximum doses. Administer **0.1ml/kg** (equal to **0.1 milligrams/kg**) as an initial slow bolus over 2-3 minutes. If pain is not reduced to a tolerable level after 5-10 minutes then further doses of up to **0.1 milligrams/kg**, titrated to response, may be repeated, at 5-10 minute intervals, up to the **maximum dose 0.2 milligrams/kg**.

NOTE: peak effect of each dose may not occur until 10-20 minutes after administration.

SPECIAL PRECAUTIONS

Naloxone reverses the effects of morphine and should be given if there is any indication of respiratory or cardiovascular depression. It must always be immediately available (refer to naloxone monograph for dosing).

Hypotension may be corrected by fluid therapy, however, caution should be exercised in the patient with cardiac inadequacy, and this option is more appropriate to the trauma scenario.

Morphine frequently induces nausea or vomiting, which in the case of myocardial infarction may increase cardiac workload. Slow IV administration of morphine and use of the lowest dose required to achieve analgesia will minimise this risk of vomiting, but the motion of the ambulance may exaggerate nausea.

ADDITIONAL INFORMATION

Morphine is a Class A controlled drug under Schedule 2 of the Misuse of Drugs Regulations of 1985, and must be stored and its prescription and administration documented in accordance with these regulations.

Morphine is not licensed for use in children but its use has been approved by the Medicines and Healthcare products Regulatory Agency (MHRA) for 'off label' use. This means that it can legally be administered under these guidelines by Paramedics.

Unused morphine in open vials or syringes must be discarded, preferably in the presence of a witness.