

Table 1.4 – METHODS THAT REQUIRE APPROPRIATELY TRAINED PRACTITIONERS

<ul style="list-style-type: none"> ● Ketamine analgesia 	<ul style="list-style-type: none"> ● Ketamine is a NMDA receptor antagonist with some action on opioid receptors. Depending upon the dose, it can produce analgesia, sedation or anaesthesia. It is particularly useful in serious trauma because it is less likely to significantly depress blood pressure or respiration compared to other agents. Ketamine is also useful in entrapments, where a person can be extricated with combined analgesic and sedative effects. ● When used in moderate to higher dosages, adults may experience unpleasant side effects, such as hallucinations and agitation. Ketamine produces salivation so careful airway management is important, although unnecessary interference should be avoided as laryngospasm may occasionally occur. Concurrent use of atropine may minimise excessive salivation.
<ul style="list-style-type: none"> ● Methoxyflurane (Pentrox) 	<ul style="list-style-type: none"> ● Methoxyflurane is an inhaled analgesic designed for self-administration. It can be used as a non-opioid alternative to morphine or in conjunction with morphine for very severe pain. Evidence has shown that methoxyflurane works well when combined with morphine and, therefore, morphine administration is encouraged at the earliest possible opportunity (as with Entonox) to work alongside methoxyflurane as part of a multi-modal approach to pain management.⁴ If methoxyflurane treatment has been initiated prior to the arrival of clinicians on scene, this should be continued providing the treatment is helping to manage pain and the clinician is confident in using methoxyflurane. It is particularly useful when venepuncture cannot be achieved or when there is a need for immediate relief of severe pain. It also has advantage over Entonox in patients with chest injuries/pneumothorax. ● Methoxyflurane is presented in 3 ml doses, which will provide analgesia for approximately 30 minutes with continuous inhalation, or up to 60 minutes with intermittent inhalation. Intermittent inhalation is recommended. A maximum dose of 6 ml per day is considered safe.
<ul style="list-style-type: none"> ● Intranasal opioids (e.g. Fentanyl) 	<ul style="list-style-type: none"> ● Evidence of its effectiveness in the emergency department has highlighted the potential of intranasal Fentanyl for helping paramedics treat severe pain where venous access is compromised. Studies have shown that intranasal Fentanyl compares with the analgesic standard set by intravenous administration. Also, due to the lack of significant histamine release with Fentanyl, the risk of hypotension is less; this is especially useful in trauma situations. The combined lung surface area of around 50–75 m² offers a large capillary-rich environment for absorption. In addition, the duration of action of 30 minutes offers greater control for the clinician. Intranasal Fentanyl at a dose of 1.5 mcg/kg, to a maximum of 100 mcg divided evenly between nares, appears to be a safe and effective analgesic in the pre-hospital management of acute severe pain and may be an attractive alternative to both oral and intravenous opiates.
<ul style="list-style-type: none"> ● Local anaesthetic techniques 	<ul style="list-style-type: none"> ● There is limited room for regional nerve blocks because of the environment and the need to transport the patient to hospital in a timely manner. However, they can be effective in certain circumstances of severe pain and do not induce drowsiness or disorientation. Examples include femoral nerve/fascia iliaca block for lower limb injuries such as a fractured femur. Clinicians undertaking regional analgesia techniques must be suitably trained, and should be able to manage local anaesthetic toxicity.

KEY POINTS

Pain Management in Adults

- **Timely management of pain has clinical benefits.**
- **Pain relief does not affect later diagnosis.**
- **Multimodal analgesia is effective and has to be tailored to both patient and practitioner variables.**
- **Pain measurements and re-assessments will help to monitor progress.**