

## Remifentanyl: Use as a Sedative in Critical Care

**Remifentanyl is Consultant Intensivist prescription only**

### Indications

Overnight ventilation  
Severe acute asthma  
Head injuries / patients with low GCS needing neurological assessment  
Difficult to wean patients  
Patients with renal or hepatic dysfunction

### Cautions

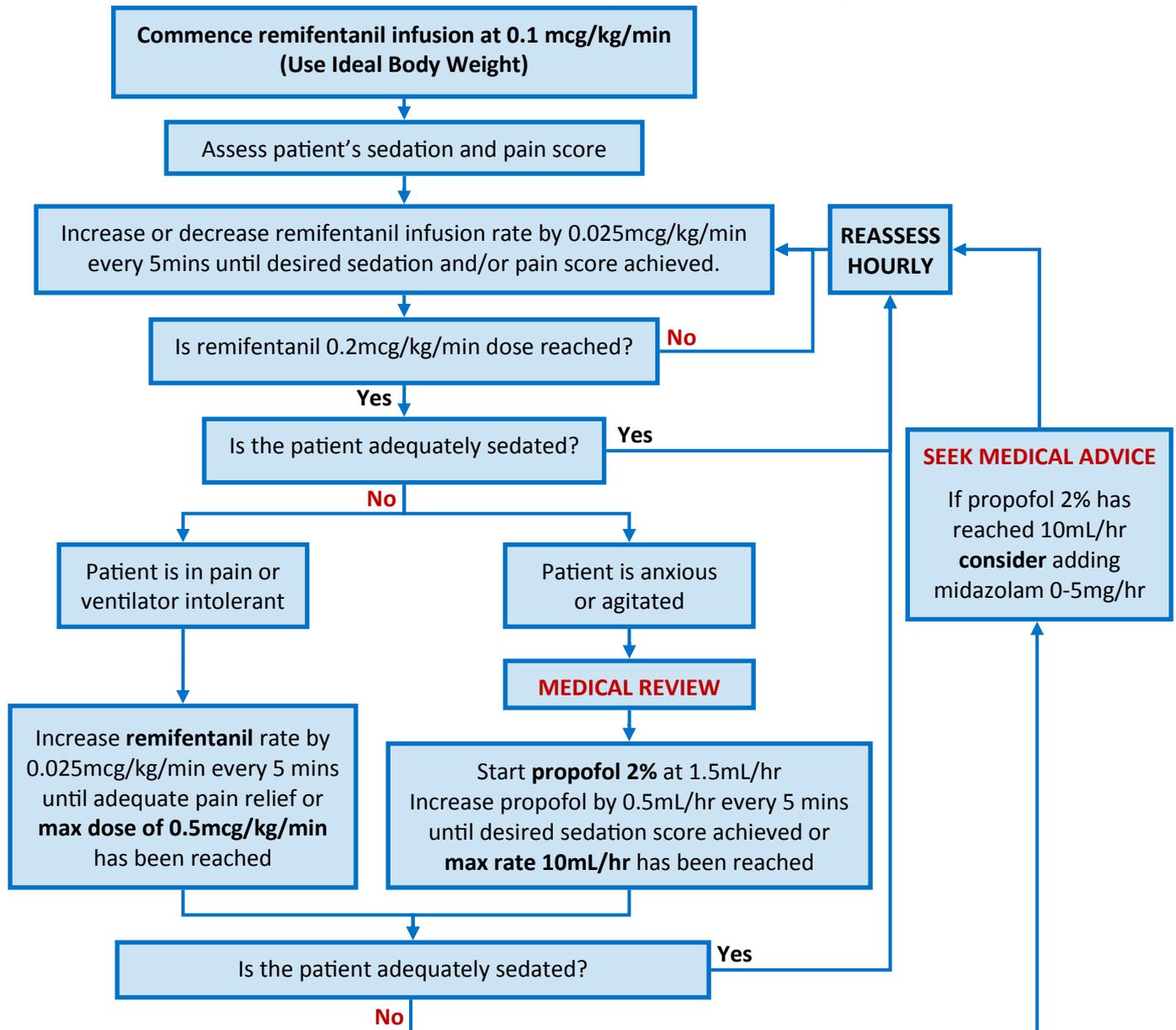
Remifentanyl is very potent.

**TREAT LIKE AN INOTROPE: DO NOT BOLUS!** For procedures increase infusion rate by 25%

Overdose can cause bradycardia and hypotension. In event of over administration **halve rate** and review.

Do not delay with syringe changes –have new syringe ready and start it within 3 min

Consider administering alternate analgesia 30 minutes prior to discontinuing remifentanyl infusion



### Preparation and administration

Dilute 5mg of remifentanil to 50mL with sodium chloride 0.9% to give a 100microgram/mL solution.

Administer using a syringe driver via a dedicated line.

Administer via a central venous access device as the preparation has a low pH. If a central venous access device is unavailable, administer via a large peripheral vein and resite cannula at first signs of inflammation.

Administration is licenced for 72 hours infusion only.

IV lines should be aspirated **before** flushing after discontinuation

### Example Calculation

Administer 0.1mcg/kg/min to a patient with an ideal body weight of 70kg using a solution of 100mcg/mL:

$$\text{Remifentanil infusion rate (mL/hour)} = \frac{0.1\text{mcg/kg/min} \times 70\text{kg} \times 60\text{mins}}{100\text{mcg/mL}} = 4.2\text{mL/hour}$$

### Calculate Ideal Body Weight (Devine formula)

**Men:** Ideal Body Weight (in kilograms) = 50 + 2.3 kg per inch over 5 feet.

**Women:** Ideal Body Weight (in kilograms) = 45.5 + 2.3 kg per inch over 5 feet

Examples: Ideal body weight for a 6 foot 2inch man = 50kg + (2.3kg x 14) = 82.2kg

Ideal body weight for a 5 foot 6inch woman = 45.5kg + (2.3kg x 6) = 59.3kg

Ideal Body Weight	Dose (mcg/kg/min)								
	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.5
	Infusion Rate (mL/hour)								
40kg	0.6	1.2	1.8	<b>2.4</b>	3	3.6	4.2	4.8	12
50kg	0.75	1.5	2.25	<b>3</b>	3.75	4.5	5.25	6	15
60kg	0.9	1.8	2.7	<b>3.6</b>	4.5	5.4	6.3	7.2	18
70kg	1.05	2.1	3.15	<b>4.2</b>	5.25	6.3	7.35	8.4	21
80kg	1.2	2.4	3.6	<b>4.8</b>	6	7.2	8.4	9.6	24

### Extubation and discontinuation of Remifentanil

To ensure a smooth emergence from a remifentanil-based regimen the infusion rate should be titrated in stages to 0.1 microgram/kg/min over a period up to 1 hour prior to extubation.

Following extubation, the infusion rate should be reduced by 25% decrements in at least 10-minute intervals until the infusion is discontinued.

During weaning from the ventilator the remifentanil infusion should not be increased and only down titration should occur, supplemented as required with alternative analgesics.

When other opioid agents are administered as part of the regimen for transition to alternative analgesia, the patient must be carefully monitored. The benefit of providing adequate analgesia must always be balanced against the potential risk of respiratory depression.

### References

Injectable Medicines Guide, Remifentanil Monograph. Accessed via medusa.wales.uk on 26/04/18

Summary of Product Characteristics, Remifentanil, Wockhardt UK Ltd. Last updated 10/03/17 accessed via eMC on 26/4/18

The use of this guideline is subject to professional judgment and accountability. This guideline has been prepared carefully and in good faith for use within the Department of Critical Care at Brighton and Sussex University Hospitals. The decision to implement this guideline is at the discretion of the on-call critical care consultant in conjunction with appropriate critical care medical/ nursing staff.