

## Opioid Dose Conversion Guidance

This guide aims to help you work out what dose of an opioid pain killer is the correct dose for your patient if you have to make a change from what they are currently taking. Further information can be found at <https://book.pallcare.info/index.php?op=plugin&src=opiconv>

The conversions below are approximate and vary between individuals. At higher doses these variations require the consideration of a reduction (of around 25%) in the dose when converting from one strong opioid to another as there is a risk of sedative side effects.

### **Choice of opioid**

This is obviously dependent on the individual patient, but as a general rule, use:

- Morphine as first line opioid via oral and subcutaneous routes
- Oxycodone as second line (oral or subcutaneous) when an opioid rotation is required for reasons of lack of efficacy or intolerable side effects from morphine (such as sleepiness, nausea or hallucinations).
- Alfentanil is another alternative via the subcutaneous route for patients with severe renal impairment
- If volume of subcutaneous morphine or oxycodone in a subcutaneous infusion becomes an issue at larger doses, consider changing to diamorphine or alfentanil
- Reduce doses of oral opioids in renal impairment
- Use alfentanil as first line in renal impairment requiring syringe driver

The breakthrough PRN dose of any of these opioids should usually be one sixth of the total daily dose but see the notes below concerning patients with renal failure.

### **Oral weak opioids**

These are all about 10 times less potent than morphine. This means divide the dose of the weak opioid by 10 to get the equivalent oral morphine dose.

<b>Drug/Preparation</b>	<b>Maximum daily dose</b>	<b>Approximate equivalent dose of oral morphine in 24 hours (to maximum daily dose of weak opioid preparation)</b>
Codeine phosphate	240mg	24mg
Dihydrocodeine	240mg	24mg
Tramadol	400mg	40mg

Examples:

*A patient taking co-codamol 8/500 taken 8 tablets a day will be taking an equivalent of 5mg morphine in 24hr.*

*A patient taking co-codamol 30/500 taken 8 tablets a day will be taking an equivalent of 20mg morphine in 24hr.*

### **Oral and subcutaneous strong opioids**

Use the **potency factor** to:

- divide the morphine dose by this factor to estimate the alternative opioid dose
- multiply the alternative opioid dose by this number to estimate oral morphine dose

<b>Opioid</b>	<b>Potency factor to morphine</b>	<b>Equivalent dose to 30 mg oral morphine</b>	<b>Equivalent oral morphine dose to 10mg of opioid</b>
Morphine (oral)	1	30mg	10mg
Morphine (sc)	2	15mg	20mg
Diamorphine (sc)	3	10mg	30mg
Oxycodone (oral)	2	15mg	30mg
Oxycodone (sc)	4	7.5mg	40mg
Alfentanil (sc)	30	1mg	300mg
Hydromorphone	7.5	4mg	75mg

*Examples:*

*To convert 60 mg of oral morphine/24hr to subcutaneous morphine divide by 2 = 30 mg/24hr.*

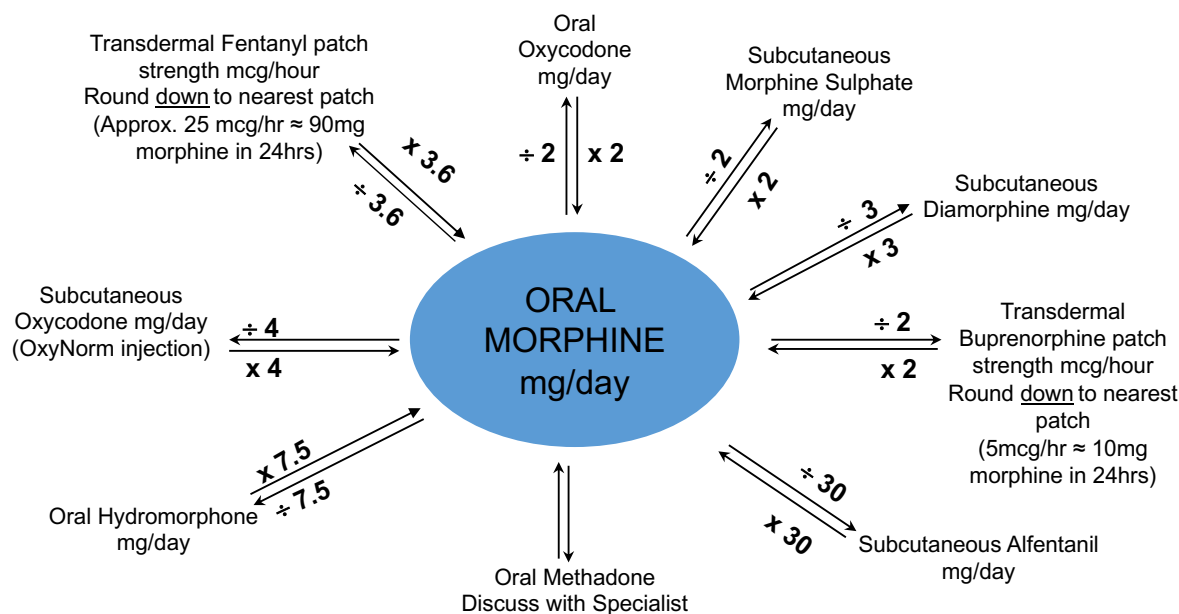
*To convert 30 mg of oral morphine/12hr to oral oxycodone divide by 2=15mg/12hr*

### **Transdermal opioids**

*NB. At lower doses, fentanyl conversions are less accurate.*

<b>Buprenorphine patch (microgram/hr)</b>	<b>Approximate 24 hour oral morphine dose (mg)</b>	<b>Breakthrough oramorph dose (mg)</b>	<b>Fentanyl patch (microgram/hr)</b>
5	10	1.5	
10	20	3	
20	40	5	12
35	90	15	25
52.5	130	20	37
70	180	30	50
	270	40	75
	360	60	100

Some people find calculating conversions easier using the figure below



**Always go through the centre of the chart (via oral morphine) when converting between opioids. These are approximate conversions and review will be needed to establish the optimum dose for the patient.**

### **Prescribing in renal impairment**

The safest drugs to use subcutaneously in renal failure are alfentanil for continuous subcutaneous infusion.

Alfentanil has a very short duration of action so is not suitable as a breakthrough medication. A reduced dose of morphine or oxycodone should be prescribed for this.

Alfentanil SC is 30 times as potent as oral morphine, and 15 times as potent as SC morphine.

Example:

*A patient is using morphine 150mg/24hours orally =alfentanil 5mg/24hours (150mg/30)  
Prescribe morphine SC 10mg PRN calculated as follows:*

*Using current analgesic usage*

*Breakthrough dose oral morphine: 150mg/6 = 25mg orally PRN*

*Breakthrough dose SC morphine: 25mg/2=12.5mg SC.*

*Reduced by 20%=10mg SC*

## **Opioid preparations**

### **Morphine**

Immediate release oral morphine:

- Morphine sulfate liquid 10mg/5ml, 100mg/5ml.
- Morphine sulfate immediate release tablets 10mg, 20mg, 50mg.

Modified release oral morphine:

- Zomorph capsules† 10mg, 30mg, 60mg, 100mg, 200mg

† indicates that capsule can be opened and contents sprinkled on food or drink

Morphine sulphate injection:

- 1ml ampoule: 10mg/ml, 15mg/ml, 20mg/ml, 30mg/ml,
- 2ml ampoule: 60mg/2ml

### **Diamorphine injection**

There is a national shortage of lower dose ampoules indicated by \*

Ampoules 5mg\*, 10mg\*, 30mg, 100mg, 500mg.

Dissolve in water for injection.

### **Oxycodone**

Immediate release oral oxycodone

- Oxycodone liquid, 5mg/5ml, 10mg/ml.
- Oxycodone immediate release capsules, 5mg, 10mg, 20mg.

Modified release oral oxycodone:

- Oxycodone modified release tablets, 5mg, 10mg, 15mg, 20mg, 40mg, 60mg, 80mg, 120mg (For twice daily administration).

Oxycodone injection:

1ml ampoule: 10mg/ml, 50mg/1ml.

2ml ampoule: 20mg/2ml

### **Alfentanil injection**

2ml ampoule: 500microgram/ml (1mg in 2ml)

10ml ampoule: 500microgram/ml (5mg in 10ml)