



# How to use the opioid conversion guide



## OPIOID CONVERSION GUIDE

These conversions are a guide only.  
Patients may vary in their response to different opioids. After changing opioid, close assessment should follow and the dose altered as necessary.

### Equianalgesic doses of oral opioids

Oral Opioid	Conversion factor (opioid dose X or ÷ by factor = morphine dose)	Practical equianalgesic dose
morphine		10 mg
hydromorphone	X 5	2 mg
oxycodone	X 1.5	5 – 7.5 mg*
codeine	÷ 8	75 – 90 mg*
tapentadol	÷ 3	50 mg*
tramadol	÷ 5	50 mg

\* dose guided by strength of medication available

**Methadone** conversions are complicated and prescribing should be restricted to medical specialists with experience of methadone prescribing for pain management.

### Subcutaneous route conversions

Opioid	Oral dose	Conversion factor (oral dose ÷ by factor = subcut dose)	Equianalgesic subcutaneous dose
morphine	30 mg	÷ 3	10 mg
hydromorphone	6 mg	÷ 3	2 mg

### Transdermal preparation conversions


Opioid	Patch strength	Equianalgesic oral morphine dose
morphine buprenorphine	5 microgram/hr	12 mg/24 hrs
fentanyl	12 microgram/hr	30 – 45 mg/24 hrs

### Sublingual preparation conversions


Opioid	Dose	Equianalgesic oral morphine dose for pain
buprenorphine tablet	200 microgram	8 – 16 mg
fentanyl tablet	100 microgram	no direct conversion initiate lowest dose and titrate to effect
fentanyl lozenge	200 microgram	no direct conversion initiate lowest dose and titrate to effect

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# Why do we need an Opioid Conversion Guide?

- There are many opioids and many formulations available (e.g. tablets, patches, injections)
  - Each opioid medication binds to opioid receptors differently
  - Therefore, a different amount of each opioid is needed to have the same analgesic effect
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# Important considerations

- All opioid conversions are a guide only
  - Patients may vary in their response to the effects of different opioids
  - Therefore, ongoing patient assessment is required after conversion for:
    - effectiveness of pain relief
    - toxicity
    - adverse effects
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# Equianalgesic dose

The dose of each opioid needed to provide the same pain relief


The dose is calculated by using a conversion factor



Conversion factor  
(opioid dose **multiplied** or **divided** by factor  
= morphine dose)

# Equianalgesic doses of oral opioids

The guide is colour coded as a visual prompt:

- **Green** shaded opioids are those **stronger** than morphine mg for mg
  - **Purple** shaded opioids are those **weaker** than morphine mg for mg
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# Calculating equianalgesic doses

Oral opioid	Conversion factor (opioid dose X or ÷ by factor = morphine dose)
morphine	
oxycodone	x 1.5

If a patient is taking Oxycontin<sup>®</sup> 15 mg bd  
(that is, 15 mg oxycodone x 2 doses/day or 30 mg oxycodone/day)

Then,

$$\begin{array}{rclcl} 30 \text{ mg oxycodone/day} & \times & \text{conversion factor} & = & \text{morphine/day} \\ \mathbf{30 \text{ mg}} & & \mathbf{x \quad 1.5} & & \mathbf{= 45 \text{ mg morphine/day}} \end{array}$$

# Calculating equianalgesic doses

Oral opioid	Conversion factor (opioid dose X or ÷ by factor = morphine dose)
morphine	
oxycodone	x 1.5

If a patient is taking morphine and is to be changed to oxycodone then it is necessary to do the reverse calculation and **divide the morphine** dose by the conversion factor.

That is,

$$\begin{array}{l} 30 \text{ mg morphine/day} \div \text{conversion factor} = \text{oxycodone/day} \\ \mathbf{30 \text{ mg}} \qquad \qquad \qquad \mathbf{\div} \qquad \mathbf{1.5} \qquad \qquad \qquad \mathbf{= 20 \text{ mg oxycodone/day}} \end{array}$$

# Equianalgesic doses of oral opioids

Oral opioid	Conversion factor (opioid dose X or ÷ by factor = morphine dose)
morphine	
codeine	÷ 8

If a patient is taking Panadeine Forte<sup>®</sup> 2 tablets qid  
that is, (2 x 30 mg codeine) x 4 doses or 240 mg codeine/day

Then,


$$\begin{array}{rcl} 240 \text{ mg codeine/day} & \div & \text{conversion factor} & = & \text{morphine/day} \\ \mathbf{240 \text{ mg}} & & \mathbf{8} & & \mathbf{= 30 \text{ mg morphine/day}} \end{array}$$



# Practical equianalgesic doses

Oral opioid	Conversion factor (opioid dose $\times$ or $\div$ by factor = morphine dose)	Practical equianalgesic dose
morphine		10 mg
oxycodone	x 1.5	5-7.5 mg*

\*Dose guided by strength of medication available

- **Practical** equianalgesic doses are listed
  - Dose **ranges** are listed for medications where the equianalgesic dose is not practical in the formulations available  
e.g. 6.6 mg oxycodone  $\times$  1.5 = 10 mg morphine
  - The dose prescribed will be guided by clinical decision making
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# Practical equianalgesic doses

Oral opioid	Conversion factor (opioid dose $\times$ or $\div$ by factor = morphine dose)	Practical equianalgesic dose
morphine		10 mg
tapentadol	$\div 3$	50 mg*
tramadol	$\div 5$	50 mg

\*Dose guided by strength of medication available


- The dose listed for tapentadol is determined by lowest strength of medication available (50 mg)
- Tapentadol is **NOT** the same strength as tramadol

# Methadone

- Conversion factors have not been provided for methadone
  - Methadone conversions are complicated
  - Prescribing should be **restricted** to medical specialists with experience of methadone prescribing for pain management
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# Subcutaneous route conversions

Opioid	Oral dose	Conversion factor (oral dose $\div$ by factor = subcut dose)	Equianalgesic subcutaneous dose
morphine	30 mg	$\div 3$	10 mg
hydromorphone	6 mg	$\div 3$	2 mg

- The conversion factor for oral to subcutaneous doses is used for calculating equivalent daily doses OR intermittent (or 'when required') doses
  - Equianalgesic doses are listed (as above) on the Guide
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# Calculating subcutaneous doses

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If a patient is taking MS Contin<sup>®</sup> 30 mg bd  
that is, 30 mg oral morphine x 2 doses/day or 60 mg oral morphine/day

Then,

60 mg oral morphine/day ÷ conversion factor = subcut morphine/day

**60 mg**                                  ÷                  **3**                                  = **20 mg subcut/morphine/day**



# Transdermal preparation conversions

Opioid	Patch strength	Equianalgesic oral morphine dose
buprenorphine	5 microgram/hr	12 mg/24 hrs
fentanyl	12 microgram/hr	30-45 mg/24 hrs

- For transdermal preparations (patches) the equianalgesic oral morphine dose is listed for the lowest strength of each patch


# Sublingual preparation conversions

Opioid	Dose	Equianalgesic oral morphine dose for pain
buprenorphine tablet	200 microgram	8-16 mg

- For buprenorphine the equianalgesic dose of oral morphine is listed

# Sublingual preparation conversions

Opioid	Dose	Equianalgesic oral morphine dose for pain
fentanyl tablet	100 microgram	no direct conversion
fentanyl lozenge	200 microgram	

- There is no direct conversion for sublingual fentanyl to other opioids including morphine
  - The recommended initial dose of tablet is 100 microgram and for the lozenge 200 micrograms
  - If pain is not relieved then the dose can be increased until effective
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