



Opioid conversion guide

How to use the 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 |
|---------------|-----------------|-------------------------------------|
| 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 200 microgram lozenge and titrate to effect |
| fentanyl lozenge | 200 microgram | |

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; and
 - toxicity; and
 - adverse effects
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Equianalgesic dose

Equianalgesic dose refers to:

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


The dose is calculated by using a 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[®]
(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[®] 2 tablets qid
that is, (2 x 30 mg codeine) x 4 doses or 240 mg codeine/day

Then,

240 mg codeine/day ÷ conversion factor = morphine/day

240 mg ÷ **8** = **30 mg morphine/day**

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 x 1.5 = 10 mg morphine
- The dose prescribed will be guided by clinical decision making


Practical equianalgesic doses

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

- 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

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 lozenge | 200 microgram | no direct conversion |

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