Opioid Conversion Charts (Adults) 2024 Update

As with any equivalence table, these opioid conversions are only a guide because comprehensive data is lacking and there is significant inter-individual variation.
For palliative care patients, please refer to local palliative care guidance such as the Guidelines on the management of cancer pain in adults with life limiting illness.

The Faculty of Pain Medicine, Australia and New Zealand College of Anaesthetists (FPM ANZCA) have developed an opioid equianalgesic calculator app to help support opioid conversion calculations. Alternative resources include the Oxford University Hospitals conversion calculator. The prescribing considerations below should be used in conjunction with any opioid conversion tools or apps.

Prescribing considerations

- Switching from one opioid to another should only be recommended or supervised by a healthcare practitioner with adequate competence and sufficient experience. If uncertain, ask for advice from a more experienced practitioner[2].
- When converting from one opioid to another, the initial dose depends on the relative potency of the two drugs and route of administration[2].
- An individualised approach is necessary[2].
- Careful monitoring during conversion is necessary to avoid under or over-dosing[3].
- When reviewing or changing opioid prescriptions ensure that the total dose of opioid taken in a 24-hour period has been considered. When switching between different opioids, the calculated equivalent dose should be reduced in most cases to prevent patients from receiving too much opioid during this period[3](i.e. start with the lower dose and titrate according to individual response).
- Patient factors such as clinical condition, pain severity, age, frailty, hepatic and renal function, patient's response to previous opioids and current opioid doses should be taken into account. Patients should be monitored after any changes in their pain management and dose titration may be required.
- Specialist advice should be sought before switching opioids in patients receiving high doses of oral morphine (≥ 120 mg/24 hours) or equivalent doses of other opioids[3].
- Consider reducing doses in renal impairment (eGFR 30-50ml/min/1.73m^2). **Seek advice if renal function below 30ml/min/1.73m^2.**
- The half-life and time to onset of action of the two drugs needs to be considered when converting so that the patient does not experience breakthrough pain or receive too much opioid during the conversion period[3].
- Always use the same branded product where possible to avoid patient confusion. When converting opioids, be aware that some modified release preparations are available as 12-hourly or 24-hour release.

- Once the conversion has occurred, the dose of the new opioid should be titrated carefully in each patient according to individual response and patient monitored closely for side effects and efficacy, especially when switching at high doses[2].
- Withdrawal symptoms (e.g. sweating, yawning and abdominal cramps, restlessness, anxiety) occur if an opioid is stopped/dose reduced abruptly.
- It is good practice to document your rationale for opioid switching and clinical reasoning.

ORAL to **ORAL** medicines conversion

Oral analgesic	Approximate potency ratio to oral Morphine*	Worked example in adults These are approximations and the available preparations should be taken into consideration when prescribing
• Codeine • Dihydrocodeine	0.1	• 30mg Codeine approximately equivalent to 3mg oral Morphine • 30mg Dihydrocodeine approximately equivalent to 3mg oral Morphine
• Tramadol	0.1	• 100mg Tramadol approximately equivalent to 10mg oral Morphine
• Oxycodone	1.5	• 6.6mg Oxycodone approximately equivalent to 10mg oral Morphine
• Tapentadol	0.4	• 25mg Tapentadol approximately equivalent to 10mg oral Morphine
• Hydromorphone	5	• 2mg Hydromorphone approximately equivalent to 10mg oral Morphine
Methadone: ○ *Conversion between opioids and methadone is complicated and depends on starting dose and duration of administration.* ○ *Conversions to and from methadone should always be with specialist advice.* ○ *Conversion methods used by palliative care may vary from those used by pain specialists.*		

**The relative potency information from Faculty of Pain Medicine (FPM) guidance/BNF.*

For palliative care see the Bristol Palliative Care Collaboration guidance.

These ratios are a guide and individual patient factors should always be taken into account.

ORAL to **TRANSDERMAL** medicines conversion

Reserve for chronic **stable** pain in patients on 30mg or more of oral morphine (or equivalent) with either:

- Swallowing problems, or poor GI absorption
- Poor compliance with oral medicines due to cognitive or physical reasons
- Renal impairment (eGFR 30-50ml/min/1.73m^2).

Oral Morphine to Fentanyl patch

Previous analgesia should be phased out gradually, for example continue current oral opioid for 12 hours after applying first patch (oral morphine Immediate Release (IR) dose every 4 hours for 3 doses, or final oral morphine Modified Release (MR) dose taken when first patch applied), unless there is a risk of opioid toxicity (seek specialist advice)[1].

- Please note that Fentanyl should not be used in opioid naïve patients with non-cancer pain.
- When a patient's equivalent morphine use is in between two strengths, the lower strength fentanyl patch should be used and patient monitored.
- Evaluation of analgesic effect should not be made before 24 hours from fentanyl patch initiation to allow for gradual increase in plasma fentanyl concentration[6].
- Patients and carers should be informed about safe use, including correct administration and disposal, strict adherence to dosage instructions, and the symptoms and signs of opioid overdosage[3].
- Packet should be torn open, not cut. Apply patch to dry, non-irritated, non-irradiated, non-hairy skin on torso or upper arm. Remove patch after 72 hours. A new patch should be applied to a new site (avoid same area for several days). Fold used patches in half and put in bin.
- Immediate release morphine or oxycodone can be used for breakthrough pain.
- Caution: absorption may be increased by heat and cause toxicity, so local heat sources should be avoided e.g. heat pad, hot water bottle. Patients should avoid taking a hot bath, sauna or sunbathing. Absorption may also be increased when a patient has a fever so they will be at increased risk of opioid toxicity.
- Patches should be removed immediately in case of breathing difficulties, marked drowsiness, confusion, dizziness, or impaired speech, and patients and carers should seek prompt medical attention[3].

The fentanyl equivalence table below should **not** be used for opioid naïve patients or those stable on immediate release morphine for several weeks.

Fentanyl equivalences in this table are for patients on well-tolerated opioid therapy for **long** periods. Conversion ratios vary and these figures are a guide

only. Morphine equivalences for fentanyl transdermal opioid preparations have been approximated to allow comparison with available preparations of oral morphine. Consider seeking advice from local pain or palliative care teams if converting to high strength opioid patches to reduce any associated risks.

72-hour Fentanyl Patch Strength (micrograms/hour)	24-hour Oral Morphine dose equivalent (mg/day)			
	BNF/FPM	SmPC[1] (For patients on stable and well tolerated opioid therapy)	SmPC[2] (For patients who have a need for opioid rotation or clinically less stable patients)	Bristol and Weston Palliative Care Collaborative[3] (for information only)
100micrograms/hour	240mg	210 to 269mg	315 to 404mg	315 to 404mg
75micrograms/hour	180mg	150 to 209mg	225 to 314mg	225 to 314mg
50micrograms/hour	120mg	90 to 149mg	135 to 224mg	135 to 224mg
25micrograms/hour	60mg	45 to 89mg	90 to134mg	60 to 134mg
12micrograms/hour	30mg	<44mg	<90mg	<60mg

SmPC [1]: Recommended starting dosage of Durogesic DTrans® based upon daily oral morphine dosage (**for patients on stable and well tolerated opioid therapy:** conversion ratio of oral morphine to transdermal fentanyl is approximately equal to **100:1**)
SmPC[2]: Recommended starting dosage of Durogesic DTrans® based upon daily oral morphine dose (for patients who have a need for opioid rotation or **for clinically less stable patients**: conversion ratio of oral morphine to transdermal fentanyl is approximately equal to **150:1**)
[3]: Based on the Summary of Product Characteristics. Note - taking the midpoint of the range a fentanyl patch 25 micrograms/hour is equivalent to 90mg of oral morphine/24h (ratio 150:1), whereas BNF states 25micrograms/hour is equivalent to 60mg of oral morphine/24h (ratio 100:1).

Oral Morphine to Buprenorphine patch

- Transdermal buprenorphine patches are not suitable for acute pain or in those patients whose analgesic requirements are changing rapidly because the long time to steady state prevents rapid titration of the dose[3].
- Different branded products have different recommended conversion ratios, detailed in their Summary of Product Characteristics available here: https://www.medicines.org.uk/emc
- Patches must be prescribed by brand, dose and duration** to avoid confusion between 3-day (72 hours), 4-day (96 hours) or 7-day (168 hours) patches.

- When a patient's equivalent morphine use, is in between two strengths, the lower strength patch should be used and response monitored.
- Consider seeking advice from local pain or palliative care teams if converting to high strength opioid patches to reduce any associated risks.
- When starting, evaluation of analgesia should not be evaluated until the patch has been in place for the specified timeframe.
- Apply patch to dry, non-irritated, non-hairy skin on upper torso. Site replacement patch in a different area (avoid same area for several days).

Transdermal buprenorphine changed as **weekly** (7 day) intervals

Equivalent 24-hour dose oral morphine (mg/day)		**Buprenorphine patch strength 7- day patch*** (micrograms/hour)**
Bristol and Weston Palliative Care Collaborative** (for information only)	**BNF/FPM**	
9mg to 14mg	12mg	5 micrograms/hour
18mg to 28mg	24mg	10 micrograms/hour
27mg to 41mg	36mg	15 micrograms/hour
36mg to 65mg	48mg	20 micrograms/hour

Transdermal buprenorphine changed **every three or four days** (twice weekly)

24-hour dose oral morphine (mg/day)		**Buprenorphine patch strength three or four days (twice weekly) patch*** (micrograms/hour)**
Bristol and Weston Palliative Care Collaborative** (for information only)	**BNF/FPM**	
63mg to 97mg	84mg	35 micrograms/hour
95mg to 145mg	126mg	52.5micrograms/hour
126mg to 193mg	168mg	70 micrograms/hour

*** In general practice prescribing support software will advise on the BNSSG ICB current preferred brand.

****Conversion based on manufacturer's recommended ratio of 95:1 for oral morphine: transdermal buprenorphine. Current literature suggests oral morphine: transdermal buprenorphine ratio has a variance of 75:1 to 115:1.

Note: there is likely to be significant inter-individual variation in converting to a buprenorphine patch and this table should therefore be considered a guide only.

Prescribing opioids in renal impairment

- Opioids should be used with great care in patients with renal disease especially in opioid naive patients, those on long-acting preparations and those with changing

and severe renal impairment.

- Patients should always be started at the lowest possible dose and monitored closely before repeated dosing. If required doses should only be very gradually increased every 3-4 days to help prevent side effects.
- Extreme caution with all opioids in patients with impaired renal function.
- Morphine and its active metabolites accumulate in renal impairment and can cause opioid toxicity.
- When considering whether or not to switch to an alternative opioid, the clinical situation needs to be taken in to account e.g. how well the patient is tolerating morphine despite reduced renal function, and how rapidly the renal function is likely to deteriorate.
- Consider switching from or reducing the dose of morphine in renal impairment (eGFR is 50 – 30 ml/min/1.73m^2). Consider seeking specialist advice.

Other resources:

- St Peter's Hospice 24-hour Clinical Advice Line telephone number: 0117 9159430
- Weston Hospice 24-hour Clinical Advice Line telephone number: 01934 423900
- Hospital Specialist Palliative Care Teams:
    - North Bristol: 0117 4140519
    - UHBW: 0117 3423507
- Opioid calculator from Faculty of Pain Medicine for Australia and New Zealand http://www.opioidcalculator.com.au/
- Oxford University Hospitals, Resources for GPs regarding opioids and chronic pain https://www.ouh.nhs.uk/services/referrals/pain/opioids-chronic-pain.aspx
- West of Scotland Chronic Pain Education Group, Pain Management - Guidance on Opioid Switching tool

Pain Management Opioid Dose Converter (paindata.org)

- Specialist Pharmacy Service, Switching between oral morphine and other oral opioids in adult palliative cancer care patients – *Please note this **only** applies to pain management in palliative care settings*

https://www.sps.nhs.uk/articles/switching-between-oral-morphine-and-other-oral-opioids-in-adult-palliative-cancer-care-patients/#:~:text=opioid%20conversions

References:

1.Bristol and Weston Palliative Care Collaborative, Guidelines on management of pain due to cancer in adults, July 2022 https://www.stpetershospice.org/media/42mnd4xj/guidelines-on-the-management-of-cancer-pain-in-adults-with-life-limiting-illness.pdf
2.Faculty of Pain Medicine of the Royal College of Anaesthetists – Opioids Aware - Dose equivalents and changing opioids https://www.fpm.ac.uk/opioids-aware-structured-approach-opioid-prescribing/dose-equivalents-and-changing-opioids
3.BNF https://bnf.nice.org.uk/
4.PrescQIPP, Bulletin 284: Chronic pain https://www.prescqipp.info/our-resources/bulletins/bulletin-284-chronic-pain/
5.Scottish palliative care guidance, fentanyl patches information sheet https://www.palliativecareguidelines.scot.nhs.uk/guidelines/medicine-information-sheets/fentanyl-patches.aspx
6.Summary of Product Characteristics for various opioid medications accessed via Electronic Medicines Compendium https://www.medicines.org.uk/emc