

## Opioid Potency Ratios

Approximate equivalent doses of strong opioid analgesics.

	Route	Period	Opioid naive	TSD	Incremental doses (mg)					Relative potency to oral morphine (24h)
					15	20	30	45	60	
Morphine	oral	4h	5mg	10mg	15	20	30	45	60	1
Morphine SR	oral	12h	15mg	30mg	45	60	90	135	180	1
Morphine	SC	4h	2.5mg	5mg	7.5	10	15	22.5 (25)	30	2
Morphine	CSCI	24h	15mg	30mg	45	60	90	135	180	2
Diamorphine	SC	4h	1.6mg (2.5mg)	3.5mg (5mg)	5	6.6 (7.5)	10	15	20	3
Diamorphine	CSCI	24h	10mg	20mg	30	40	60	90	120	3
Oxycodone	oral	4h	2.5mg	5mg	7.5	10	15	22.5 (25)	30	2
Oxycodone SR	oral	12h	7.5mg (10mg)	15mg (20mg)	22.5 (20)	30	45 (40)	67.5 (60)	90 (80)	2
Oxycodone	CSCI	24h	10mg	20mg	30	40	60	90	120	3
Fentanyl	patch	-	25µg/h				50µg/h	75µg/h	100µg/h	150
Fentanyl	CSCI	24h	0.2mg	0.4mg	0.6 (0.5)	0.8 (0.75)	1.2 (1)	1.8 (1.5)	2.4 (2)	150
Alfentanil	CSCI	24h	1mg	2mg	3	4	6	9	12	30

**KEY** CSCI = Continuous sub-cutaneous infusion SC= Subcutaneous injection

**NOTE** Buprenorphine has been added to the formulary since this table was prepared.

### General notes

When converting between strong opioids, considerable inter-patient variation will occur.

- Always reassess the patient carefully and anticipate the need to titrate the dose either upwards or downwards.
- If converting from a less sedating opioid (e.g. fentanyl or alfentanil) to morphine or diamorphine at doses that equate to 180mg oral morphine in 24h or greater, consider reducing the morphine/diamorphine dose by anything up to 30% (even more for very high doses), as the sedative effects may be much greater for an 'equianalgesic' dose.
- Incomplete cross-tolerance is sometimes seen between any two opioids; at doses higher than those given in the tables, consider reducing the new opioid dose by anything up to 30-50%

### Conversion tables

All doses in the tables are in milligrams unless otherwise specified.

Doses in (*italics*) are nearest that can be achieved from preparations available, or are closest convenient.

TSD (typical starting dose) is for patients progressing from a regular weak opioid.

### Potency ratios

Note that potency ratios are quoted, not equivalence ratios i.e.

- morphine SC 2:1 morphine PO
  - morphine SC is twice as potent as orally
  - morphine SC 1mg ≈ morphine PO 2mg

### Additional Information

Potency ratios reported for these drugs vary widely; the main conversion table is internally consistent with the following potency ratios:

- morphine **SC** 2:1 morphine **PO**<sup>638</sup>
- diamorphine **SC** 3:1 morphine **PO**<sup>638</sup>
- fentanyl patch 1:1 fentanyl **SC**<sup>647</sup>
- fentanyl patch 150:1 morphine **PO** (150:1 data sheet *Durogesic*; 100:1)<sup>667</sup>
- fentanyl **SC** 75:1 morphine **SC** (85:1; 68:1)<sup>645,647</sup>
- oxycodone **SC** 1.5:1 morphine **SC** (1.2-1.9:1)<sup>626</sup>
- oxycodone **PO** 2:1 morphine **PO** (2:1 data sheet *OxyContin*; 1.5:1)<sup>624,625</sup>
- alfentanil **SC** 10:1 diamorphine **SC**<sup>676</sup>
- fentanyl 5:1 alfentanil (4-10:1)<sup>681</sup>

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