

**SECTION 6:
CONVERTING FROM
ONE LONG-ACTING OPIOID TO ANOTHER**

Issues to Consider

Consider converting between long-acting opioids when:

- Dose-limiting or severe adverse effects develop, and reducing the dose has no effect or leads to significantly increased pain.
- Tolerance develops (rapid escalation of dose without expected analgesia) in patients with chronic pain that has been otherwise opioid-responsive.
- Required by health plan formulary.

Before converting:

- Rule out patient-related pharmacokinetic changes (e.g. absorption, metabolism, drug-drug interactions) and disease progression.
- Consider the possibility of unrealistic patient perceptions and expectations, non-compliance or drug diversion.
- Maximize the use of non-opioid analgesics where appropriate.

Remember: there is insufficient evidence to demonstrate any difference between opioids in their ability to relieve pain. Analgesia is more dependent on dose than drug. Therefore, unrelieved pain alone may not be sufficient reason to switch from one opioid to another.

Converting Among High Doses of Opioid

In a patient taking chronic, high doses some recommend tapering the original opioid while initiating the new to avoid over-dosing or under-dosing, as described below:

1. Decrease the original opioid by 50% and begin the new opioid at 50% of the calculated, projected dose.
2. Gradually increase or decrease the dose over several days based on patient tolerability, e.g. 25% increments per week.
3. Once an adequate level of analgesia is attained, discontinue the old opioid and adjust the new as needed.

Converting Long-Acting Opioids to Methadone

Methadone requires slow, careful dose titration. ***“Start low and go slow.”***

- Patients who have previously been on high doses of opioids, are 65 years of age or older, or who have renal dysfunction, liver disease, or pulmonary disease, are best converted using lower equianalgesic doses to yield smaller methadone doses. Overestimation of the methadone dose may otherwise result.
- The following dosing suggestions represent a conservative approach that was developed by the Veterans Health Administration for gradual methadone conversion.

Calculating the initial dose for methadone titration

Because methadone's potency increases with increasing prior opioid exposure, patients who have been on higher opioid doses are converted differently than those who have been on lower doses. You must therefore first:

- ▶ Step 1. Calculate the patient's total opioid dose in terms of morphine to determine the conversion ratio. (See the box, this section.)
- ▶ **Step 2a. If converting from less than 200 mg per day of morphine or its equivalent (e.g. Morphine 200 mg/ day, Oxycodone 130 mg/day, Hydromorphone 50 mg/day, or Hydrocodone/APAP 5/500 8 tabs/ day):**
 - Start methadone at 5 mg po q8hours.
 - To titrate, increase by 5mg q8hours every 5-7 days as needed.
- ▶ **Step 2b. If converting from between 200 mg to 500 mg per day of morphine or its equivalent:**
 - Start with 7% of the morphine equivalent dose divided q8hours.
 - To titrate, increase by 5 mg q8hours every 5-7 days as needed.
- ▶ **Step 2c. If converting from greater than 500 mg per day of morphine or its equivalent:**
 - **Consider consultation.**
 - Initially, taper the current opioid by reducing it 1/3 at the same time methadone is initiated.
 - Start methadone at 2.3% of the morphine equivalent dose divided q8hours.
 - Reduce the dose of the previous opioid by 1/3 again every 5 days, while adding the same 2.3% of the morphine equivalent dose divided q8hours every 5-7 days.
 - The total conversion should take approximately 15 days.

If the patient develops intolerable sedation, hold or decrease the following methadone dose and adjust the dosing regimen as necessary.

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Calculating the daily morphine equivalent dose:

1. If the patient is only on morphine, simply total the daily dose. If on other opioids, calculate the daily morphine equivalent dose as follows.
2. Calculate the average total dose of each long-acting and short-acting opioid given over 24 hours.

Total Dose Drug A ___

Total Dose Drug B ___

3. Divide each average 24 hr dose by the equianalgesic dose (ED) in the chart for that opioid to get the “equianalgesic dose units (EDU).”

$$\frac{\text{Total Dose Drug A}}{\text{ED Drug A}} = \text{EDU Drug A}$$

$$\frac{\text{Total Dose Drug B}}{\text{ED Drug B}} = \text{EDU Drug B}$$

4. Add the equianalgesic dose units for all drugs.

$$\text{EDU Drug A} + \text{EDU Drug B} = \text{Total EDU}$$

5. Multiply the total EDU by morphine 30 mg to find the morphine equivalent dose.

$$\text{Total EDU} \times \text{morphine 30 mg} = \text{morphine equivalent dose}$$

OPIOID	EQUIANALGESIC DOSE (ED) – PO (MG)*
Morphine	30
Fentanyl	See Part II, Section 6
Hydrocodone	30
Hydromorphone	7.5
Levorphanol	1 (for chronic opioid users)
Meperidine	300
Methadone	2-4 (for chronic opioid users)
Oxycodone	20
Codeine	200

* All conversions must be adjusted for standard dosing intervals.

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EXAMPLE: Your patient is on OxyContin 80 mg po bid for chronic severe degenerative back pain. She is losing her insurance next month and wants to switch to something less expensive. She would like to try methadone. You calculate:

- Total daily dose of Oxycontin is 160 mg.
- To calculate the EDU for this you find the equianalgesic dose conversion for oxycodone on the chart to be 20 mg and divide: $\frac{160}{20} = 8$ EDU.
- To find the morphine equivalent dose, you multiply 8 EDU x morphine 30 mg = morphine 240 mg.
- 7% of the morphine equivalent dose is $.07 \times 240 \text{ mg} = 16.8$.
- "Starting low," you decide to begin methadone at 15 mg a day, dosed 5 mg po q8hours.
- You warn the patient that the full effect of the methadone will not occur for 5-7 days and schedule a follow-up appointment for that time. You ask the patient to call if she feels overly sedated or has other concerning side effects.
- You counsel the patient that individuals vary in their sensitivity to methadone and she may need significantly more (e.g. 15 mg q6) or less (e.g. 2.5 mg bid) depending on her response.

Converting from OxyContin to Long-Acting Morphine or Methadone

The following table summarizes conversions from commonly used doses of OxyContin:

CURRENT OXYCONTIN DOSE	MS EQUIVALENT DOSE PER DAY	ALTERNATIVE DRUG	APPROXIMATE DOSE*
10 mg BID	30 mg	Ext release morphine Methadone	15 mg BID 5 mg TID [†]
20 mg BID	60 mg	Ext release morphine Methadone	30 mg BID 5 mg TID [†]
40 mg BID	120 mg	Ext release morphine Methadone	60 mg BID 5 mg TID [†]
60 mg BID	180mg	Ext release morphine Methadone	3 x 30 mg BID or 1 x 60 mg BID plus 1 x 30 mg BID 5 mg q8h [†]
80 mg BID	240 mg	Ext release morphine Methadone	2 x 60 mg BID See example above

**The dose is an approximate target dose and should be used as a guide only. Dosing must be individualized to the patient and clinical setting.*

Increase by 5 mg q8h every 5-7 days as needed.

[†] See text above for methadone prescribing.

Conversions Involving Transdermal Fentanyl (TDF)

There is limited data on conversion of transdermal fentanyl to other opioids.

- The following algorithm is the manufacturer’s recommendation and is based on clinical trials with oral morphine. The conversion ratios have not been extensively tested with other opioids.
- The manufacturer also states that the algorithm results in under-dosing of up to 50% of patients. A conservative approach using PRN doses of short-acting opioids for breakthrough pain is appropriate.
- Further, because steady state serum levels of fentanyl are not attained for about 3-6 days after application of the patch, a low dose of the previously used opioid (at least 25% of the dose used during the previous 24 hours) should be prescribed to avoid withdrawal.

Converting from other opioids to Transdermal Fentanyl

- ▶ Step 1. Calculate the total daily morphine equivalent dose in order to use the morphine to TDF conversion chart.

Calculating the daily morphine equivalent dose:

1. If the patient is only on morphine, simply total the daily dose. If on other opioids, calculate the daily morphine equivalent dose as follows.
2. Calculate the average total dose of each long-acting and short-acting opioid given over 24 hours.

Total Dose Drug A ___

Total Dose Drug B ___

3. Divide each average 24 hr dose by the equianalgesic dose (ED) in the chart for that opioid to get the “equianalgesic dose units (EDU).”

$$\frac{\text{Total Dose Drug A}}{\text{ED Drug A}} = \text{EDU Drug A}$$

$$\frac{\text{Total Dose Drug B}}{\text{ED Drug B}} = \text{EDU Drug B}$$

4. Add the equianalgesic dose units for all drugs.

$$\text{EDU Drug A} + \text{EDU Drug B} = \text{Total EDU}$$

5. Multiply the total EDU by morphine 30 mg to find the morphine equivalent dose.

$$\text{Total EDU} \times \text{morphine 30 mg} = \text{morphine equivalent dose}$$

OPIOID	EQUIANALGESIC DOSE (ED) – PO (MG)*
Morphine	30
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- ▶ Step 2. Locate the estimated morphine-equivalent dose in the chart below.

ORAL MORPHINE DOSE (MG/DAY)	TD FENTANYL DOSE (MCG/HR)
45-134	25
135-224	50
225-314	75
315-404	100
405-494	125
495-584	150
585-674	175
675-764	200
765-854	225
855-944	250
945-1034	275
1035-1124	300

- ▶ Step 3. Initiate at the recommended dose and continue at least 25% of the original opioid until the patient approaches steady state (about 6 days after first application).
- ▶ Step 4. Titrate upwards no more often than every 3 days after the first dose or every 6 days thereafter until effective analgesia is achieved, based on daily requirements of short-acting breakthrough opioids.
- ▶ Step 5. The following total daily PRN doses suggest the need to add 25 mcg/h to the dose of fentanyl calculated above.
 - MSIR = 90 mg/24 h
 - Oxycodone = 45 mg/24 h
 - Hydromorphone = 12 mg/24 h
 - Codeine = 300 mg/24 h