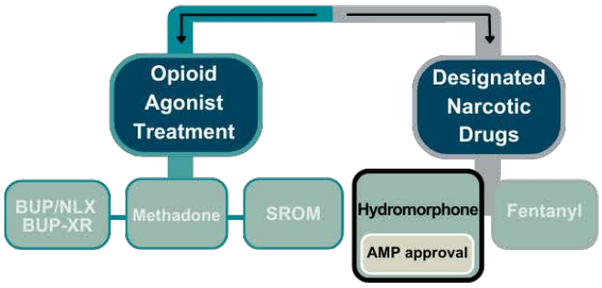
Hydromorphone

For the Treatment of Opioid Use Disorder (OUD)

Opioid Dependency Treatment (ODT) Intensity Continuum

Lower Intensity → Higher Intensity

Withdrawal Management | **Opioid Agonist Treatment (OAT)** | **Designated Narcotic Drugs (DND)**



Prescribers may consider a co-prescription of OAT and DND medications where appropriate.

People may use different medications along the treatment continuum at various times depending on their preferences, comorbidities, treatment goals, efficacy of the medications, and life circumstances. Hydromorphone (HM) is one such treatment that can be used alone or in combination with OAT medications. Healthcare providers and individuals need to work together to explore the available treatment options and determine the most suitable intervention based on the individual's unique needs. This personalized approach is essential for successful treatment outcomes, reducing the risk of unregulated opioid use, and mitigating any potential harm.

HM is the primary designated narcotic drug (DND) available for individuals with moderate to severe opioid use disorder (OUD). HM, used for the treatment of OUD, must be prescribed and administered within an Opioid Dependency Program (ODP) licensed to provide Narcotic Transition Services (NTS). Under the Community Protection and Opioid Stewardship Standards, an individual is eligible for NTS if they have been unable to initiate or stabilize on buprenorphine and methadone or slow-release oral morphine (SROM). Individuals must be approved by an Addiction Medicine Physician (AMP) before commencing treatment.

Prescribing and administering HM under the MHSPR is permitted to stabilize an individual with OUD, during their admission to a hospital for other indications. For continuity of care, an individual receiving NTS can continue being administered HM if they are an in-patient of an approved hospital, admitted to an emergency department and has been assigned a most responsible practitioner, or detained at a designated facility under the Mental Health Act.

PHARMACODYNAMICS

Hydromorphone is a semi-synthetic derivative of morphine and is available in both oral and parenteral formulations. Hydromorphone produces both therapeutic and adverse effects by interacting with opioid receptors located throughout the body. It acts as a full opioid agonist, binding with and activating opioid receptors to produce a wide spectrum of pharmacologic effects including analgesia, dysphoria, euphoria, somnolence, respiratory depression, diminished gastrointestinal mobility, altered circulatory dynamics, miosis, histamine release as well as physical dependence.

Oral Hydromorphone: Onset of action is approximately 30 minutes with a duration of action of about 4 hours.
IV Hydromorphone: Onset of action is approximately 5 minutes with a duration of action of about 4 hours.
IM Hydromorphone: Onset of action is approximately 20 minutes with a duration of action of about 4 hours.

TIME BETWEEN DOSES

Hydromorphone doses should be at least **3 hours apart** when provided within a **licensed NTS** (hospital settings may vary)

ADMINISTRATION

Hydromorphone is prescribed as daily witnessed ingestion or injection. Both oral and parenteral routes can be administered up to **3 times per day.** Route of administration should consider individual preferences and practices. **Oral hydromorphone does not need to be trialed prior to parenteral administration.** A reduction in daily sessions is supported to facilitate individual goals and circumstances. A pre-intake assessment is completed by healthcare provider to assess for intoxication prior to administration.
Oral (PO): Can be given with water or juice.
IV/IM: Individuals can choose to either self-administer their prepared dose under the supervision of a healthcare provider or receive their IM injection from a nursing staff member.

CONTRAINDICATIONS

- Known hypersensitivity to hydromorphone or sulfites.
- Acute respiratory depression, asthma with severe bronchospasm, or severe chronic obstructive pulmonary disease
- Gastrointestinal obstruction (including paralytic ileus)
- Significant acute intoxication with a central nervous system depressant (e.g., opioids, alcohol, benzodiazepines)

1.5-2:1

Equianalgesic ratio: Oral HM to parenteral HM

CAUTIONARY POPULATIONS

Renal (non-dialysis): use with caution; use lower doses and longer dosing intervals.
Hepatic: use with caution; use lower doses and longer dosing intervals.
Youth and Older Adults
Existing injection-related infections (e.g., endocarditis, abscess, and bacteremia)
Pregnant Individuals

Prior to initiating hydromorphone, a urine drug screen (UDS) should be performed to confirm the presence of opioids. A UDS is not to be used punitively but to facilitate open communication.

INDUCTION AND TITRATION OF IV HYDROMORPHONE

Standard IV

Split doses occur within the same session and occur 20 minutes apart, if initial dose is tolerated well. They are identified as Dose A and B.

Day	Session 1	Session 2	Session 3
1	**Dose A:** 10mg **Dose B:** 15mg Max Dose: 25mg	**Dose A:** 25mg **Dose B:** 15mg Max Dose: 40mg	**Dose A:** 40mg **Dose B:** 15mg Max Dose: 55mg
2	**Dose A:** 45mg **Dose B:** 15mg Max Dose: 60mg	**Dose A:** 60mg **Dose B:** 15mg Max Dose: 75mg	**Dose A:** 75mg **Dose B:** 15mg Max Dose: 90mg
3	Administer maximum tolerated dose on Day 2.	Administer maximum tolerated dose on Day 2.	Administer maximum tolerated dose on Day 2.

Accelerated IV Titration

1	**Dose A:** 20mg **Dose B:** 20mg Max Dose: 40mg	**Dose A:** 40mg **Dose B:** 20mg Max Dose: 60mg	**Dose A:** 60mg **Dose B:** 20mg Max Dose: 80mg
2	**Dose A:** 70mg **Dose B:** 20mg Max Dose: 90mg	**Dose A:** 90mg **Dose B:** 20mg Max Dose: 110mg	**Dose A:** 110mg **Dose B:** 20mg Max Dose: 130mg
3	Administer maximum tolerated dose on Day 2.	Administer maximum tolerated dose on Day 2.	Administer maximum tolerated dose on Day 2.

INDUCTION AND TITRATION OF PO HYDROMORPHONE

Standard PO

Begin treatment with 8-24mg of PO hydromorphone. Increase each dose by 8mg, until 64mg and withdrawal/cravings are minimized, then reassess.

Day	Session 1	Session 2	Session 3
1	**8-24mg** [starting dose]	**16-32mg** [Starting dose + 8mg]	**24-40mg** [Session 2 dose +8mg]
2	**32-48mg** [Max Day 1 dose + 8mg]	**40-56mg** [Session 1 dose +8mg]	**48-64 mg** [Session 2 dose +8mg]
3+	Continue with dose increases of 8mg per session, until a therapeutic dose is reached. Review doses daily for ongoing titration. Individuals with fentanyl tolerance may require doses greater than 100mg TID.		

MONITORING AFTER HYDROMORPHONE ADMINISTRATION

Individuals should be asked to stay in the clinic for **15-20 minutes** after they dose their medication. Health professionals can use this period to observe and engage. After monitoring, a **post-administration assessment** is performed to inform dosing (e.g., lowering dose if sedation occurs) and ensure safety (e.g., respond to respiratory depression). Monitoring duration may decrease on the recommendation of the prescriber, once individuals are on a stable dose.

STABILIZATION OF HYDROMORPHONE

A therapeutic dose of hydromorphone will relieve withdrawal symptoms, prevent opioid-induced euphoria, and reduce cravings for approximately 4 hours without causing sedation or other significant side effects. There is no documented maximum dose. However, the practicalities of swallowing a high volume of tablets or injecting large volumes of liquid may limit an individual's tolerance to the dose.

Number of Consecutive Missed Days/Doses	TRADITIONAL MISSED DOSING SCHEDULE Dose Adjustment Schedule for PO & IV
<3 days/ 9 doses (whichever comes first)	Return to last tolerated dose.
>3 days/ 9 doses (whichever comes first)	Assess for maintained tolerance and consult a prescriber for dosing parameters. Hydromorphone split dosing does not need to be resumed.

Each individual should be provided with harm reduction resources and education, including a community based naloxone kit and information on where to access Supervised Consumption Services.

*For more information regarding maintained high tolerance missed dose protocols please contact an Opioid Dependency Program (ODP) licensed to provide Narcotic Transition Services (NTS).

References

Alberta Health Services. (2022). Calgary Opioid Dependency Program High Tolerance Missed Dosing Protocol. Calgary, Alberta.

British Columbia Centre on Substance Use (BCCSU). (2017). *Guidance for Injectable Opioid Agonist Treatment for Opioid Use Disorder.* Retrieved from https://www.bccsu.ca/wp-content/uploads/2021/07/BC_iOAT_Guideline.pdf

British Columbia Centre on Substance Use. (2022, January). *Opioid Use Disorder, Practice Update.* Retrieved from https://www.bccsu.ca/wp-content/uploads/2022/02/Opioid-Use-Disorder-Practice-Update-February-2022.pdf

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AddictionMedicine.Resources@recoveryalberta.ca

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MENTAL HEALTH AND ADDICTION SERVICES