

Guide to Prescribing Treatment for Latent Tuberculosis Infection



Rifampin (RIF) – 4R

Adult Dosage

10 milligrams per kilogram (mg/kg)
(600 mg maximum)

Pediatric Dosage

15 to 20 mg/kg
(600 mg maximum)

Interval, Duration, Administration and Completion Criteria

Daily for four months

Self-administration

Completion:

120 doses within a six-month period

Indications

- Preferred for people of all ages.
- May be used in people living with HIV who are not taking ART or who are taking ART with acceptable drug-drug interactions with RIF.¹

Abbreviations: antiretroviral therapy (ART); central nervous system (CNS); directly observed therapy (DOT); integrase strand transfer inhibitor (INSTI); non-nucleoside reverse transcriptase inhibitor (NNRTI); protease inhibitors (PI); tenofovir alafenamide fumarate (TAF)

An additional regimen, three months of daily INH and RIF, is included in the Centers for Disease Control and Prevention (CDC) recommendation as a possible alternative but is not routinely used by the New York City Department of Health and Mental Hygiene (NYC Health Department) Bureau of TB Control.

1. Visit hivinfo.nih.gov for the latest guidelines and complete list of contraindicated medications.
2. Risk is increased with age, alcohol use and concurrent hepatotoxic drugs.

Rifampin (RIF) – 4R

Potential Laboratory Abnormalities

- Elevation of liver function tests²
- Neutropenia
- Thrombocytopenia

Adverse Reactions

- Anorexia
- Nausea/vomiting
- Jaundice
- Abdominal pain
- Hepatitis
- Rash
- Fever or influenza-like symptoms
- Easy bruising or bleeding

Considerations

- Body secretions (including urine and semen), as well as contact lenses may turn orange
- Levels of methadone, warfarin, hormonal contraceptives, oral hypoglycemic agents (except metformin), organ transplant medications, beta-blockers, and antifungals may be reduced with concomitant RIF use; consult with prescribing provider when considering RIF.
 - Methadone dosage may need to be increased to avoid opioid withdrawal. Monitor patient for withdrawal and consult with methadone maintenance program as needed.
 - May impair glucose control in patients with diabetes.
 - For patients who use hormonal contraceptives, advise adding a barrier method or switching to a non-hormonal option.

Not recommended for: People with a history of severe RIF-induced reaction; people living with HIV who are taking certain ART (for example, most PIs, NNRTIs, INSTIs, and TAF-containing regimens)¹; people exposed to RIF-resistant tuberculosis (TB)

Isoniazid (INH) and Rifapentine (RPT) – 3HP

| | | |
|---|--|--|
| Adult Dosage | INH Age 12 years and older: 15 mg/kg rounded up to nearest 50 or 100 mg (900 mg maximum) | RPT (based on person's weight) <ul style="list-style-type: none"> • 10.0 to 14.0 kg: 300 mg • 14.1 to 25.0 kg: 450 mg |
| Pediatric Dosage | INH Age 2 to 11 years: 25 mg/kg rounded up to nearest 50 or 100 mg (900 mg maximum) | <ul style="list-style-type: none"> • 25.1 to 32.0 kg: 600 mg • 32.1 to 49.9 kg: 750 mg • ≥ 50.0 kg: 900 mg max |
| Interval, Duration, Administration and Completion Criteria | Weekly for 12 weeks Directly-observed therapy (DOT) preferred, but self-administration is acceptable. Completion: 12 scheduled weekly doses within a 16-week period | |
| Indications | <ul style="list-style-type: none"> • Preferred for people age 2 years and older. • May be used in people living with HIV who are not taking ART or who are taking ART with acceptable drug-drug interactions with RPT.¹ | |

1. Visit hivinfo.nih.gov for the latest guidelines and complete list of contraindicated medications.
2. Risk is increased with age, alcohol use and concurrent hepatotoxic drugs.
3. Breastfeeding is not contraindicated in women taking INH. A supplement with pyridoxine (vitamin B6) is recommended for women who are nursing and taking a full dose of INH. Infants who are breastfed and whose mothers are receiving INH should receive vitamin B6 because they receive small amounts of the drug in breast milk. Infants who require INH therapy should receive their own therapeutic dose of INH and vitamin B6

Isoniazid (INH) and Rifapentine (RPT) – 3HP

Potential Laboratory Abnormalities

- Elevation of liver function tests²
- Neutropenia
- Thrombocytopenia

Adverse Reactions

- As with INH and RIF, **and also** including:
- Influenza-like symptoms
 - Polyarthralgia
 - Hypersensitivity reaction (ranging from mild reactions, such as dizziness, to more severe reactions, including life-threatening hypotension and thrombocytopenia)

Considerations

See considerations for INH and RIF.

Not recommended for: People with a history of severe RIF-, RPT-, or INH-induced reaction; people who are pregnant or breastfeeding³; people living with HIV who are taking certain ART (for example, most PIs, NNRTIs, INSTIs, and TAF-containing regimens)¹; people exposed to INH- or RIF-resistant TB

Abbreviations: antiretroviral therapy (ART); central nervous system (CNS); directly observed therapy (DOT); integrase strand transfer inhibitor (INSTI); non-nucleoside reverse transcriptase inhibitor (NNRTI); protease inhibitors (PI); tenofovir alafenamide fumarate (TAF)

An additional regimen, three months of daily INH and RIF, is included in the Centers for Disease Control and Prevention (CDC) recommendation as a possible alternative but is not routinely used by the New York City Department of Health and Mental Hygiene (NYC Health Department) Bureau of TB Control.

Isoniazid (INH) – 6H/9H

Adult Dosage

Daily Dosing
5 mg/kg
(300 mg maximum)

Pediatric Dosage

10 to 20 mg/kg
(300 mg maximum)

Interval, Duration, Administration and Completion Criteria[†]

Daily for six months

Daily for nine months

Self-administration

Self-administration

Completion:
180 doses within a nine-month period

Completion:
270 doses within a 12-month period

Indications

- May be used for people of all ages, but no longer a preferred regimen. Of the six-month and nine-month regimens, the six-month regimen is preferred.
- May be used if RIF or INH/RPT is contraindicated.

[†]Biweekly INH dosing, as Directly Observed Therapy, is available but not preferred.

-
2. Risk is increased with age, alcohol use and concurrent hepatotoxic drugs.
 3. Breastfeeding is not contraindicated in women taking INH. A supplement with pyridoxine (vitamin B6) is recommended for women who are nursing and taking a full dose of INH. Infants who are breastfed and whose mothers are receiving INH should receive vitamin B6 because they receive small amounts of the drug in breast milk. Infants who require INH therapy should receive their own therapeutic dose of INH and vitamin B6.

Isoniazid (INH) – 6H/9H

Adverse Reactions

- Anorexia
- Nausea/vomiting
- Jaundice
- Abdominal pain
- Hepatitis
- Rash
- Persistent fatigue
- Peripheral neuropathy
- Arthralgia
- CNS effects including headache, poor memory or concentration, depression
- Lupus-like syndrome
- Acne

Potential Laboratory Abnormalities

- Elevation of liver function tests²

Considerations

- Prescribe Vitamin B6 (pyridoxine) at 25 mg/day to decrease peripheral and CNS effects and for patients with chronic use of alcohol or who are pregnant, breastfeeding³ or malnourished; or have HIV, cancer, diabetes, chronic kidney or liver disease, or preexisting peripheral neuropathy.
- Aluminum-containing antacids reduce INH absorption and, if needed, should be taken two hours after INH and should not be taken within two hours of taking TB medications.
- Levels of acetaminophen, cimetidine, phenytoin, disulfiram, carbamazepine, valproate, clopidogrel and citalopram may be increased with concomitant INH use; may need to adjust dose based on drug levels, or prescribe another medication or consult with the prescribing provider.
- Drug-induced lupus-like syndrome may occur (for example, fatigue, joint pain, muscle pain).
- Avoid alcohol and tyramine-containing foods (for example, aged cheese, red wine, certain types of fish).

Not recommended for: People with a history of severe INH-induced reaction (for example, hepatic, skin or allergic reaction) or neuropathy; people exposed to INH-resistant TB

Treatment counseling and follow-up for all patients

- **Identify an optimal treatment regimen based on a patient's dosing and administration preferences (for example, the number of pills per dose, Directly Observed Therapy versus self-administration).**
- **Counsel patients about latent tuberculosis infection and emphasize the need for treatment adherence and completion (see Box 12 in the City Health Information):***
 - Explain potential adverse reactions and the importance of notifying their health care provider if adverse reactions occur.
 - Provide appropriate educational materials at treatment initiation.
 - Use appointment reminders to facilitate monthly clinical checkups.
- **Conduct monthly clinical evaluation and review for:**
 - Signs and symptoms of active TB disease
 - Adverse reactions to TB medications
 - Adherence to treatment
 - New medications with potential drug-drug interactions
- **Perform baseline assessments of liver function tests (LFTs) (for example, aspartate aminotransferase, alanine aminotransferase, alkaline phosphatase) for people:**
 - With HIV infection or other immunosuppressive conditions
 - With a history of hepatitis (for example, viral hepatitis) or other liver disease
 - With a history of chronic alcohol or injection drug use
 - Who are pregnant or postpartum (three months or less after delivery)
 - Who are being treated with other potentially hepatotoxic agents
- **Monitor LFTs if baseline labs are elevated, adverse reactions occur, or if otherwise clinically indicated with conditions listed above. LTBI medications should be withheld and patients evaluated if:**
 - LFTs are three times or greater than normal with presence of symptoms.
 - LFTs are five times or greater than normal in an asymptomatic patient.
 - When LFTs have returned to normal, consider an alternate regimen with close clinical and laboratory monitoring.
- **Follow up with serial monitoring as needed.**

For questions or consultation, call the NYC Health Department's TB Hotline at 844-713-0559, available Monday to Friday, 9 a.m. to 5 p.m.

*Visit the City Health Information clinical bulletin to learn more: on.nyc.gov/chi-tb-testing.