Together we can...
Stop
TUBERCULOSIS

Ensemble nous pouvons...
Mettre fin à LA TUBERCULOSE
Tuberculosis Screening and Contact Management Guidelines 2012

The Tuberculosis Screening and Contact Management Guidelines 2012 are produced by the Communicable Disease Control Program of Ottawa Public Health (OPH). The contents of these guidelines are based on the Canadian Tuberculosis Standards, 6th Edition (2007), Risk Assessment and Prevention of Tuberculosis Among Travelers 2009 (Committee to Advise on Tropical Medicine and Travel) and the Compendium of Pharmaceuticals and Specialties (CPS) 2012.

Table of Contents

Table of Contents ....................................................................................................................... 2
  Introduction ............................................................................................................................ 3
  Ottawa Public Health Reporting Requirements ................................................................. 3
  Tuberculin Skin Test (TST) .................................................................................................... 3
    Considerations when administering a TST ................................................................. 4
    Contraindications to administering a TST ................................................................. 4
    The following steps should be taken when administering a TST ................................ 4
    Reading the TST ................................................................................................................. 5
  Screening of a patient with no known contact with TB ..................................................... 6
  Assessing if a two-step TST is indicated .......................................................................... 6
    A two-step TST should be performed as follows: .................................................... 7
  Interpreting the TST result ................................................................................................. 7
  Assessing a positive TST result ....................................................................................... 9
  Management of a known contact of an infectious TB case ............................................ 9
    Criteria to Assess Risk of TB Transmission: ............................................................. 9
  Indications for treatment of LTBI .................................................................................... 10
  Treatment of LTBI ............................................................................................................. 11
Introduction

The World Health Organization (WHO) estimates that one-third of the world’s population is infected with *Mycobacterium tuberculosis*. In Canada, the reported incidence rate and number of cases of tuberculosis (TB) disease have continued to decrease over the past two decades. People infected with *Mycobacterium tuberculosis*, referred to as latent tuberculosis infection (LTBI), may develop active TB disease. Therefore, the screening for, and treatment of LTBI is a critical element of preventing TB disease. Ottawa Public Health (OPH) has developed the *Tuberculosis Screening and Contact Management Guidelines 2012* to support health care providers in their efforts to stop TB in our community. Together we can …Stop tuberculosis.

Ottawa Public Health Reporting Requirements

The Communicable Disease Control Program follows all cases of TB disease in the city of Ottawa and supplies antibiotics for patients being treated for active TB disease or LTBI. Under Ontario’s *Health Protection and Promotion Act* (HPPA), all health care providers are required to report the following to the local Medical Officer of Health:

- **New and suspect cases of pulmonary or extra-pulmonary TB** within one business day by calling 613-580-6744, ext. 24224
- **All positive tuberculin skin tests (TST)**, regardless of plans for treatment for LTBI by using the Tuberculin Skin Test Report form
- **The outcome of treatment for patients with LTBI**, using the completed Outcome of Latent Tuberculosis Infection Treatment form that is included with the patient’s LTBI medication

Patient consent is not required for reporting the above information. *The Personal Health Information Protection Act* (PHIPA) explicitly allows health care providers to disclose health information without consent when required by law.

Tuberculin Skin Test (TST)

A TST is used to determine the presence of LTBI. This intradermal test is currently the most accurate, consistent and reliable method for detecting TB infection. It should only be administered and read by a trained health care provider. It is not to be confused with the BCG vaccination that is given to prevent TB disease.

NOTE: The Interferon Gamma Release Assay (IGRA) is an alternative method to diagnose LTBI. It is currently available through Gamma-Dynacare Medical Laboratories for a fee and is not funded by the Ontario Ministry of Health and Long-Term Care. It can be clinically useful in selected circumstances. Please see Current Recommendations on Interferon Gamma Release Assays for the Diagnosis of Latent Tuberculosis Infection (http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/10vol36/acs-5/index-eng.php).
Considerations when administering a TST

A number of important factors must be considered prior to administering a TST, including:

- When extensive burns or eczema are present on both forearms, use the outside of the forearm or the upper arm
- When a patient has a major viral infection such as measles, chickenpox, or mononucleosis, reschedule the TST at least one month after resolution of disease
- TSTs should be scheduled either on the same day as, or at least one month after receiving a live-virus vaccine such as measles, mumps, rubella, chickenpox, oral polio, or yellow fever

A patient can have a TST even if he/she:

- Has a common cold
- Has recently been vaccinated with non-live virus or bacterial vaccines
- Is pregnant or breastfeeding
- Has received BCG vaccination in the past
- Gives a history of a positive TST, other than blistering, that is not documented
- Is taking a low dose of a systemic glucocorticoid (<15 mg prednisone or equivalent daily)

Contraindications to administering a TST

The administration of a TST is contraindicated when there has been:

- A severe blistering reaction to tuberculin in the past
- An anaphylactic response to tuberculin in the past
- Documentation of active TB disease now or in the past or a clear history of treatment for LTBI in the past. In such individuals, the test is not dangerous but is of no clinical use.

The following steps should be taken when administering a TST

- Verify the expiry date of the vial of antigen. Draw up the antigen into the syringe just before use to reduce risk of oxidation.
- Upon opening a vial, date it. Discard in one month. The vial should be kept at 2-8°C, in the dark except when the antigen is being withdrawn for administration.
- Cleanse the inner aspect of the forearm about 10 cm (4 inches) below the elbow with an alcohol swab and let it dry.
- Hold the skin taut and insert the needle (26 or 27 gauge) with the bevel up, at a 5° to 15° angle.
- Inject 0.1 ml of 5 tuberculin units (5-TU) of purified protein derivative (PPD) intradermally.
- Observe the injection site for the appearance of a small wheal of 6 to 10 mm diameter, which will disappear within 10 to 15 minutes after injection.
- If no wheal appears or the fluid substantially leaks out, repeat the test on the opposite forearm or 10 cm from the original site.
- Do not cover the injection site with a bandage.
- Advise the patient not to scratch the site and to continue with regular activities.
- Document the date of injection, dose given (5-TU, 0.1 ml), manufacturer, lot number, expiration date, site of injection, and the name of the person administering the TST.
Reading the TST

- Reading of the TST should be performed 48 to 72 hours after administration.
- If the TST cannot be read within 72 hours because of unforeseen circumstances, it should be repeated at a location far enough from the previous test so that the reactions do not overlap.
- Measure **induration** (not redness). Blistering, which can occur in 3% to 4% of subjects with positive tests, should be noted.
- Use your finger to identify the edges of the induration.
- Then use the tip of a ballpoint pen pushed at a 45° degree angle toward the site of the injection. The tip will stop at the edge of the induration. Repeat on the opposite side of the induration.
- Measure the transverse diameter (at a right angle to the long axis of the forearm) and record in **millimetres** (mm). If the measurement falls between demarcations on the ruler, record the smaller of the two numbers. Recordings of “negative”, “doubtful”, or “positive” are not acceptable.
- Be aware that approximately 2% to 3% of persons tested will have localized redness or rash (without induration) within the first 12 hours. These are allergic reactions, are not serious and do not indicate TB infection. They are not a contraindication to future TSTs.
- Document the date of the reading, the measurement of induration in mm, any adverse reaction such as blistering and the name of the person reading the TST.
Screening of a patient with no known contact with TB

It is important to assess a patient to determine if he/she is a candidate for screening using the high risk criteria presented in the table below.

<table>
<thead>
<tr>
<th>Individuals at high risk for having LTBI</th>
<th>Individuals at high risk for progressing from LTBI to TB disease</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Those who:</strong></td>
<td><strong>Those who:</strong></td>
</tr>
<tr>
<td>• Have lived in high TB incidence</td>
<td>• Have HIV infection</td>
</tr>
<tr>
<td>countries (rate of 30 or higher per</td>
<td>• Have a history of TB disease without adequate treatment</td>
</tr>
<tr>
<td>100,000 population). See International</td>
<td>• Have an abnormal chest x-ray with fibronodular disease or</td>
</tr>
<tr>
<td>TB Incidence Rates at <a href="http://www.phac-">http://www.phac-</a></td>
<td>granuloma</td>
</tr>
<tr>
<td>aspc.gc.ca/tbpc-labt/itir-eng.php</td>
<td>• Have diabetes</td>
</tr>
<tr>
<td>• Have travelled or plan to travel in</td>
<td>• Are immunosuppressed due to glucocorticoid use (&gt;15 mg</td>
</tr>
<tr>
<td>high TB incidence countries. See</td>
<td>prednisone or equivalent daily), tumor necrosis factor</td>
</tr>
<tr>
<td>Committee to Advise on Tropical</td>
<td>(TNF)-alpha inhibitor use, cancer, chronic renal failure</td>
</tr>
<tr>
<td>Medicine and Travel recommendations</td>
<td>requiring hemodialysis, transplantation, or silicosis</td>
</tr>
<tr>
<td>at <a href="http://www.phac-aspc.gc.ca/publicat">http://www.phac-aspc.gc.ca/publicat</a></td>
<td>• Are underweight (&lt; 90% of ideal body weight; typically BMI &lt; 20)</td>
</tr>
<tr>
<td>/ccdr-rmtc/09vol35/acs-dcc-5/index-eng.php</td>
<td>• Have a history of substance abuse</td>
</tr>
<tr>
<td>• Are homeless or under-housed</td>
<td>• Smoke cigarettes (i.e. one pack/day)</td>
</tr>
<tr>
<td>• Live in Aboriginal communities with</td>
<td>• Are 0-4 years of age</td>
</tr>
<tr>
<td>high rates of TB disease</td>
<td></td>
</tr>
<tr>
<td>• Live or work in long-term care or</td>
<td></td>
</tr>
<tr>
<td>correctional facilities</td>
<td></td>
</tr>
<tr>
<td>• Are at risk of occupational exposure</td>
<td></td>
</tr>
<tr>
<td>(e.g. health care workers likely to</td>
<td></td>
</tr>
<tr>
<td>work with cases of TB disease)</td>
<td></td>
</tr>
</tbody>
</table>

Assessing if a two-step TST is indicated

A single TST may elicit little response yet stimulate an anamnestic immune response, so that a second TST at any time from one week to one year later will elicit a much greater response. This phenomenon, called the booster effect, is important to detect as it could be confused with tuberculin conversion. Two-step testing boosts the reaction size in such infected persons but does not sensitize uninfected persons to tuberculin.

A two-step TST is indicated when a person will require a TST to be conducted at regular intervals, such as a health care worker, an individual who stays for a prolonged period of time in areas with high TB incidence, (see Committee to Advise on Tropical Medicine and Travel recommendations at http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/acs-dcc-5/index-eng.php), an individual being admitted as a resident to a long-term care facility or an inmate of a correctional facility.

If there is a documented negative TST result (<10 mm) during the preceding 12 months, or a documented negative result of a prior two-step TST (<10 mm each test) at any time, a single step test is sufficient.
A two-step TST should be performed as follows:

- Administer the initial test
- Read the test in 48 to 72 hours and record the result in mm
- If the result is not positive (as outlined in the table below), schedule a second test 1 to 4 weeks later
- Administer the second test on the opposite arm
- Read the second test 48 to 72 hours after administration and record the result in mm

The result of the second test should be used as the baseline in planning treatment and follow-up. After a two-step TST has been documented, all future testing will require only one TST. Although it is not harmful to repeat a two-step TST, it is not necessary to do so.

**Interpreting the TST result**

a) When no previously documented TST result is available, the following guidelines should be used to interpret the result:

<table>
<thead>
<tr>
<th>TST induration size</th>
<th>Situation in which reaction is considered positive (indicating probable LTBI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 mm</td>
<td>• HIV infection with immune suppression and the probability of TB infection is high (i.e. patient is from a population with a high prevalence of TB infection, is a close contact of an infectious TB case, or has an abnormal chest x-ray)</td>
</tr>
</tbody>
</table>
| 5-9 mm              | • HIV infection  
|                     | • Close contact with a case of infectious TB  
|                     | • Abnormal chest x-ray with fibronodular disease  
|                     | • Other immune suppression, such as TNF-alpha inhibitor use or chemotherapy |
| 10+ mm              | • All others |

**Interpreting the TST result**

a) When no previously documented TST result is available, the following guidelines should be used to interpret the result:
b) When a previously documented TST result is available, the following guidelines should be used to interpret the result:

<table>
<thead>
<tr>
<th>Previous TST induration size</th>
<th>Current TST induration size</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 5 mm</td>
<td>10 mm or greater</td>
<td>Conversion</td>
</tr>
<tr>
<td>&lt; 5 mm</td>
<td>6 mm or greater increase from previous test result</td>
<td>Conversion if source case is highly infectious, if close or prolonged contact, if contact is under age 5 or if contact has impaired immunity</td>
</tr>
<tr>
<td>5-9 mm</td>
<td>6 mm or greater increase from previous test result</td>
<td>Conversion if an outbreak situation or if immune compromised with an increased risk of TB</td>
</tr>
<tr>
<td>5-9 mm</td>
<td>10 mm or greater increase from previous test result</td>
<td>Conversion in other situations</td>
</tr>
</tbody>
</table>

Conversion indicates LTBI. It should not be confused with the booster effect which may be seen in two-step testing.

If the previously documented TST induration size was 10 mm or greater, there is no value in doing another TST now.

**Causes of false negative reactions to the TST**

A number of factors can cause a false negative reaction to a TST, including:

- Poor injection technique (a wheal <5 mm when the test was administered)
- Immune suppression due to advanced age, glucocorticoid use (at least 15 mg/day of prednisone or equivalent for 1 month or longer), cancer therapy agents, or HIV infection, especially if advanced (CD4 count < 500 $\times 10^6$/L)
- Malnutrition, particularly when there has been recent weight loss
- Severe illness, including TB disease
- Major viral illness or immunization with a live vaccine in the previous 4 weeks
- Age of less than six months

**History of BCG Vaccination**

The BCG (Bacille Calmette-Guérin) is a live, attenuated vaccine derived from *M. bovis*. Previous BCG vaccination is not a contraindication to tuberculin skin testing.

A BCG vaccination is the likely cause of a positive TST if it was received after 12 months of age and the individual is either a Canadian-born non-Aboriginal or an immigrant/visitor from a country with low TB incidence. When interpreting a TST result, a history of BCG vaccination should be ignored when the person:

- Is a close contact of a case of infectious TB
- Has HIV infection
- Has an abnormal chest x-ray consistent with inactive TB
- Is a high risk individual (see Screening section above)
- Received a BCG vaccination in infancy (first year of life), is now 10 years of age or older and the TST result is > 10 mm
The Online TST/IGRA Interpreter (http://www.tstin3d.com) estimates the risk of active tuberculosis for an individual with a TST result of ≥ 5 mm, based on the clinical profile. It is intended for adults tested with standard tuberculin (5 TU PPD) and/or a commercial Interferon Gamma Release Assay (IGRA). It is highly recommended for use prior to making a final decision about treatment of LTBI.

Assessing a positive TST result

Individuals with a positive TST result require the following evaluation to rule out active TB prior to possible LTBI treatment:

- History
- Physical exam
- Sputum testing, if cough present for 3 or more weeks with no other diagnosis

Chest x-ray, if not performed within past year or if any other signs & symptoms compatible with TB disease* are present,

Note: Indicate TST result on chest x-ray requisition

*cough (especially if productive or bloody and/or associated with pain), fever, weight loss, fatigue and/or night sweats

Management of a known contact of an infectious TB case

Ottawa Public Health will assess and advise contacts of a TB case to receive follow-up by a health care professional.

Health care professionals who become aware of an individual who may be a TB contact should contact Ottawa Public Health and review the Criteria to Assess Risk of TB Transmission below.

The risk of TB transmission is determined by:

- The infectiousness of the case
- The length of the exposure
- The physical closeness of the exposure with respect to shared air space

Criteria to Assess Risk of TB Transmission:

<table>
<thead>
<tr>
<th>Degree of Risk</th>
<th>Type of Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Risk</td>
<td>Contacts who share living or sleeping quarters or an intimate relationship</td>
</tr>
<tr>
<td>Variable Risk</td>
<td>Close non-household contacts such as a workplace, shelter, hospital room,</td>
</tr>
<tr>
<td></td>
<td>correctional facility cell or classroom, or during recreational or social</td>
</tr>
<tr>
<td></td>
<td>activities. Risk depends on the extent of exposure</td>
</tr>
<tr>
<td>Low Risk</td>
<td>Casual non-household contacts, such as remote exposure in same building</td>
</tr>
</tbody>
</table>

Ottawa Public Health and the attending physician must try to determine if any contact is at higher risk of progression to TB disease if they now have become infected. Such contacts require priority testing for LTBI. They include those individuals who:

- Have impaired immunity, such as HIV infection or
- Have a high probability of infection without TST conversion yet or
- Are 0 to 4 years of age
## Indications for treatment of LTBI

<table>
<thead>
<tr>
<th>TST reaction size</th>
<th>High Risk Groups</th>
<th>Action</th>
</tr>
</thead>
</table>
| < 5 mm            | - HIV infection with immunosuppression and the probability of LTBI is high (i.e. a patient who is from a population with a high prevalence of TB infection, is a close contact of an infectious TB case, or has an abnormal chest x-ray)  
- Other severe immunosuppression and high risk of LTBI  
- 0 to 4 years old and exposed to a case of infectious TB  
  - Do TST and begin LTBI treatment immediately  
  - Repeat TST at least 8 weeks after last exposure to an infectious TB case  
  - Stop treatment if second test is negative | Treat         |
| 5 + mm            | - HIV infection without immunosuppression  
- Recent contact with an infectious TB case  
- Fibronodular disease on chest x-ray (healed TB but not adequately treated in past)  
- Organ transplantation (related to immunosuppressant therapy)  
- Other immunosuppressive drugs, such as glucocorticoids (equivalent of > 15 mg/day of prednisone for 1 month or more); risk of TB disease increases with higher dose and longer duration | Treat         |
| 10 + mm           | - Converters (within 2 years)  
- High risk group for having LTBI or for progressing from LTBI to TB disease (see Screening section above) | Consider treatment |

The **Online TST/IGRA Interpreter** ([http://www.tstin3d.com](http://www.tstin3d.com)) estimates the risk of developing TB disease compared to the risk of developing a serious adverse reaction to treatment. It is highly recommended for use prior to making a final decision about recommending treatment of LTBI.
Treatment of LTBI

All cases of LTBI are legally reportable to Ottawa Public Health for surveillance purposes and for the provision of drugs to the prescribing physician. For patients who cannot or will not start or complete treatment for LTBI, and who are at high risk of progressing to TB disease (see Screening section above), regular follow-up for 2 years is recommended (i.e. at 6, 12 and 24 months) as this is the period of highest risk.

**NOTE:** Do not use INH alone for TB disease. Individuals with TB disease require multidrug therapy – consult a tuberculosis specialist. The following table indicates treatment options for LTBI when TB disease has been ruled out.

<table>
<thead>
<tr>
<th>Drug</th>
<th>Isoniazid (INH) - preferred regimen for most cases</th>
<th>Rifampin – alternative when there are INH contraindications, intolerance or resistance, or a regimen of longer duration is not feasible</th>
<th>Pyridoxine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dose</td>
<td><strong>Children</strong>&lt;br&gt;10-15 mg/kg (maximum 300 mg) daily&lt;br&gt;Adults&lt;br&gt;5 mg/kg (maximum 300 mg) daily&lt;br&gt;PLUS: Pyridoxine, if indicated</td>
<td><strong>Children</strong>&lt;br&gt;10-20 mg/kg (maximum 600 mg) daily&lt;br&gt;<strong>Adults</strong>&lt;br&gt;10 mg/kg (maximum 600 mg) daily</td>
<td>25 mg daily when prescribing INH if there is poor nutrition, chronic alcohol use, other substance abuse, diabetes, renal failure, HIV infection, seizure disorder, pregnant or breastfeeding woman, breastfeeding child, and any disorder that might predispose to neuropathy. When in doubt, it should be prescribed</td>
</tr>
<tr>
<td>Duration</td>
<td><strong>HIV negative</strong>&lt;br&gt;• 9 months&lt;br&gt;• criteria for completion is 270 doses within 12 months&lt;br&gt;• may be given for 6 months, with reduced effectiveness, if 9 months duration is not feasible</td>
<td><strong>HIV negative</strong>&lt;br&gt;• 4 months for children and adults&lt;br&gt;• criteria for completion is 120 doses within 6 months&lt;br&gt;<strong>HIV positive</strong>&lt;br&gt;• 4 months&lt;br&gt;• ensure compatibility with the patient’s antiretroviral regimen</td>
<td></td>
</tr>
<tr>
<td>Drug</td>
<td>Isoniazid (INH) - preferred regimen for most cases</td>
<td>Rifampin – alternative when there are INH contraindications, intolerance or resistance, or a regimen of longer duration is not feasible</td>
<td>Pyridoxine</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td><strong>Effectiveness</strong></td>
<td>• 93% after 12 months of ≥ 80% doses taken</td>
<td>100% protection over 27 months after 6 months of daily treatment; a multinational study is underway to determine effectiveness of 4 months treatment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 69% after 6 months of ≥ 80% doses taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Side Effects</strong></td>
<td>• CNS: peripheral neuropathy due to pyridoxine deficiency, headache</td>
<td>• CNS: headache, drowsiness, fatigue, ataxia, dizziness, inability to concentrate, mental confusion, visual disturbances</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Dermatologic: allergic reactions (discontinue drug if severe; treat others symptomatically); mild hair loss</td>
<td>• Dermatologic: pruritus, urticaria, skin rash occasionally</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Gastrointestinal: nausea, vomiting, epigastric distress, diarrhea with liquid formulation</td>
<td>• Gastrointestinal: sore mouth/tongue, epigastric distress, anorexia, nausea, vomiting, cramps, diarrhea</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Hematologic (rare): thrombocytopenia, leucopenia, anemia</td>
<td>• Hematologic: thrombocytopenia, eosinophilia, hemolytic anemia, purpura, transient leucopenia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Hepatic: asymptomatic elevation of liver enzymes, hepatitis with or without jaundice</td>
<td>• Hepatic: transient elevation of bilirubin and alkaline phosphatase, jaundice, severe cholestatic hepatitis (rare)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Hypersensitivity (rare): fever, rash, Stevens-Johnson syndrome; usually occurs in first 3 to 7 weeks</td>
<td>• Hypersensitivity reactions in 0.07-0.3% of patients: flu-like syndrome, usually associated with high dose intermittent therapy, erratic therapy or resumption of treatment after termination of a course of long-term use</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• General: fatigue, drowsiness</td>
<td>• General: fatigue, drowsiness</td>
<td></td>
</tr>
<tr>
<td><strong>Contraindications</strong></td>
<td>• INH single drug therapy is contraindicated in TB disease (requires multi-drug treatment)</td>
<td>• Severe hypersensitivity reaction to rifamycins, including rifampin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• History of significant adverse reaction to drug (including INH-associated hepatic injury)</td>
<td>• Jaundice associated with reduced bilirubin excretion</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Premature and newborn infants in whom the liver is not yet fully functional</td>
<td>Nausea, headache, somnolence</td>
</tr>
<tr>
<td>Drug</td>
<td>Isoniazid (INH) - preferred regimen for most cases</td>
<td>Rifampin – alternative when there are INH contraindications, intolerance or resistance, or a regimen of longer duration is not feasible</td>
<td>Pyridoxine</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
</tbody>
</table>
| Precautions | • Acute liver disease; HBsAg positivity is not a contraindication unless associated with chronic active hepatitis. | • Urine, stool, saliva, sweat and tears will turn reddish orange. Inform patients to prevent unnecessary anxiety  
• Soft contact lenses may become permanently stained  
• Inducer of cytochrome P450 isoenzymes, thus accelerating the rate of metabolism of numerous drugs; check *Compendium of Pharmaceuticals and Specialties* (CPS) for drug interactions with oral contraceptives (efficacy may decrease; alternative or additional contraceptive measures should be used), anti-retrovirals, methadone, hypoglycemic, anticoagulants and other drugs  
• Caution against alcohol and acetaminophen consumption which can increase the risk of hepatotoxicity | |
| Monitoring | • Educate patients regarding the symptoms of hepatotoxicity and to report symptoms such as unexplained anorexia, nausea, vomiting, fatigue or weakness >3 days duration, abdominal discomfort, dark urine, scleral icterus, rash, fever, and/or numbness or tingling of the hands or feet  
• Instruct patients that if they have the above symptoms and cannot reach a health care provider, it is important to contact their physician promptly | Same as for INH | |
<table>
<thead>
<tr>
<th>Drug</th>
<th>Isoniazid (INH) - preferred regimen for most cases</th>
<th>Rifampin – alternative when there are INH contraindications, intolerance or resistance, or a regimen of longer duration is not feasible</th>
<th>Pyridoxine</th>
</tr>
</thead>
</table>
|          | provider immediately, to stop INH on their own until advised to resume  
• Perform baseline AST or ALT level before starting therapy and at least monthly in: those with abnormal baseline liver function test, chronic liver disease, use of other potentially hepatotoxic drugs, regular alcohol use, HIV infection, pregnancy and for 3 months postpartum; some experts also monitor anyone aged 35 years or older  
• Withhold INH if AST or ALT level exceeds 5 times the upper limit of normal without symptoms or when the level exceeds 3 times the upper limit in the presence of symptoms  
• Resume therapy when liver function tests return to normal, if appropriate |                                                                                                                |            |

If you would like further information or have questions about TB screening and contact management, you can contact Ottawa Public Health at 613-580-6744, ext. 24224. Forms pertaining to TB screening and contact management can be sent to:

Ottawa Public Health  
Communicable Diseases Control Program  
100 Constellation Drive, Ottawa, ON K2G 6J8  
OR by fax to 613-580-9640

**Together we can...Stop Tuberculosis!**