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# TB Update for Civil Surgeons

April 15, 2010

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Robert Belknap, MD

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# Topics

1. Discuss overseas screening and the importance of civil surgeons in TB elimination
  2. Review the new I-693 Technical Instructions for TB screening
  3. Who, when and how to refer patients to Public Health for TB follow-up
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# Objectives

After this course, you will be able to:

1. Describe the role of the civil surgeon in TB elimination
  2. Complete the I-693 correctly
  3. Explain when and how to refer patients to the Denver Metro TB Clinic
  4. Describe when and how to treat latent TB
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# TB Evaluation – Step 1

## ■ Initial Exam

- ❑ Detailed hx of prior TB or exposure
  - ❑ Review prior hospitalizations
  - ❑ Obtain PMHx of serious illnesses
  - ❑ Review previous CXRs and lab results
  - ❑ Review of symptoms
  - ❑ General Physical – lung exam and LN
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# 25 yr old female

- Born in Mexico
  - Had BCG vaccination as a child
  - Immigrated to U.S. 5 years ago
  - She comes to you for her change of status paperwork
  - She is 16 weeks pregnant and asymptomatic
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# 25 yr old female

- Should you do a TST?
  - What cutoff would you use? Does the BCG history matter?
  - What about an Interferon- $\gamma$  Release Assay?
  - If she tests positive, does she need a chest x-ray?
    - If yes, when would you get it (immediately or post-partum)?
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# TB Evaluation – Step 2

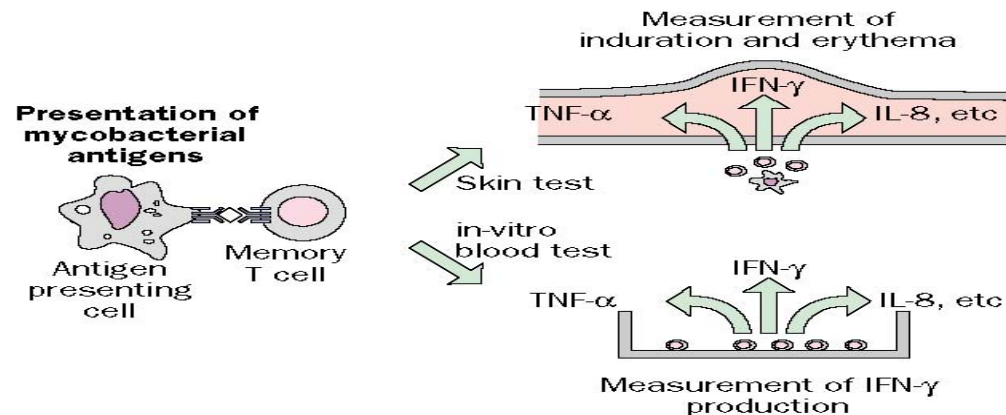
- Mantoux Tuberculin Skin Test (TST) or
- Interferon-gamma Release Assays (IGRAs)

All applicants  $\geq 2$  y/o regardless of pregnancy or prior BCG and those  $< 2$  if a known contact to TB **unless**

1. Written documentation of (+) TST or IGRA
  2. Report of a severe blistering reaction to a TST
-

# Interferon-gamma Release Assays

- Blood tests for detecting TB infection
- Require only 1 visit to get a result
- Less subject to reader bias and error
- More specific with less cross-reaction with non-tuberculous mycobacterium and BCG than the TST





# 2 Commercially Available IGRAs

The screenshot shows the Cellestis website header with the logo on the left and the tagline "MEASURING THE OTHER SIDE OF IMMUNITY" on the right. Below the header is a navigation menu with links: HOME, ABOUT CELLESTIS, LATEST NEWS, INVESTOR CENTRE, RESEARCH AND DEVELOPMENT, QUANTIFERON® PRODUCTS, QUANTIFERON® TECHNOLOGY, QUANTIFERON® PUBLICATIONS, and CONTACT US. The main content area features a banner for "QuantiFERON® - TB Gold" with the slogan "One blood test, One clear answer". The banner includes an image of a person in a lab coat performing a test and another image of a smiling healthcare professional.

Oxford Immunotec - Products



Products & Services

**T-SPOT.TB**

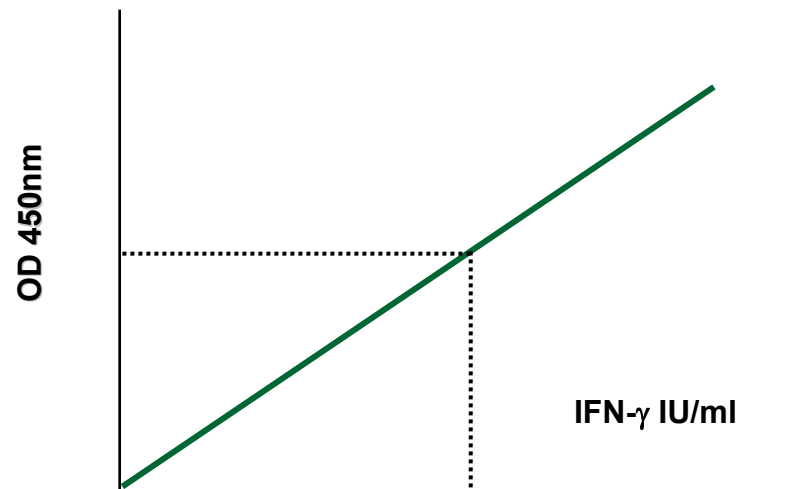
A 21st Century Solution for Latent TB Detection

# QuantiFERON-TB (Cellestis)

- Measures IFN- $\gamma$  in stimulated whole blood
- Antigen – nil = IU/mL
- Result  $\geq 0.35$  is considered positive

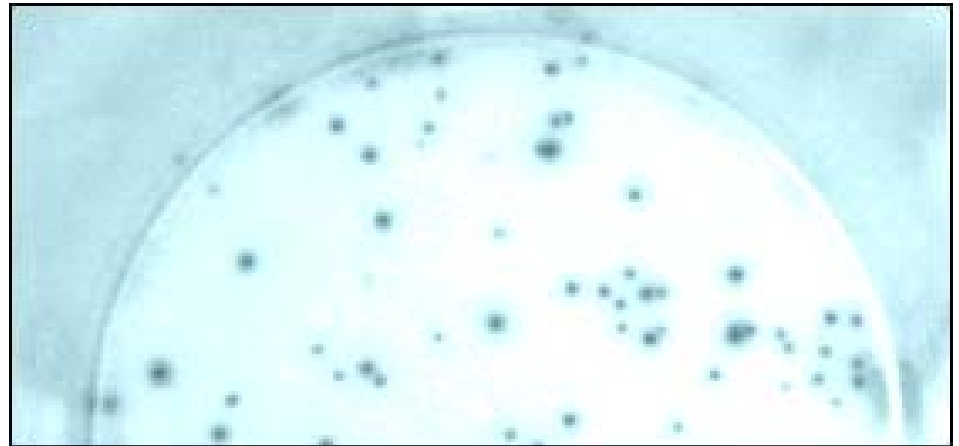


Standard Curve



# T-SPOT.TB (Oxford Immunotec)

- Uses isolated peripheral blood mononuclear cells (PBMCs)
- Measures number of cells producing interferon-  $\gamma$
- Nil, Antigen, and Mitogen
  - $\leq 4$  = Negative
  - 5-7 = Borderline
  - $\geq 8$  = Positive



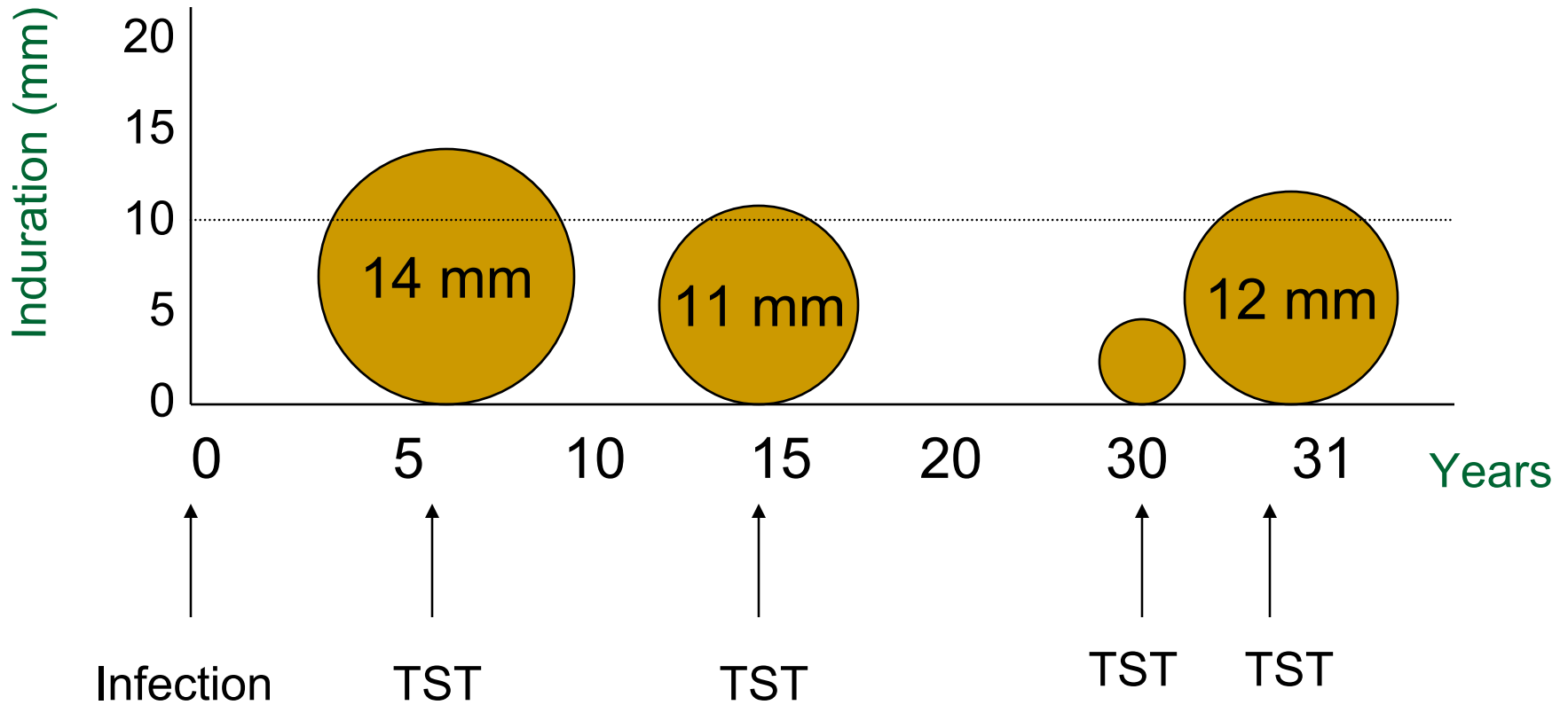
Each spot in the microtiter plate well corresponds to an individual T cell that has released interferon gamma due to challenge by TB antigens.

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# What about BCG ?

- A history of BCG is not a contraindication for a TST
  - A Positive TST reaction in a BCG vaccinated person usually indicates infection with TB
  - Do not alter your interpretation of the TST because of a history of BCG vaccination
  - The IGRAs appear to be more accurate in BCG vaccinated persons and should be considered where available
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# Two-step testing and boosting



# Tuberculin Skin Test

## Criteria for a Positive Reaction

### ≥5 mm

HIV infection  
Contact to  
active TB case  
Abnormal CXR  
Immunosuppression

### ≥10 mm

Recent immigrants  
Injection drug users  
Children  
High-risk medical  
conditions  
Residents and employees  
of jails/nursing homes, hospitals

### ≥15 mm

No risk

Note: Skin test conversion is an increase of ≥10 mm within a 2-year period

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# What if the patient comes back late?

If the patient returns after 72 hours

- ❑ Read the test
  - ❑ If the reaction is large enough to be considered positive, record the result and proceed with the evaluation (ie CXR)
  - ❑ If there is a small reaction or no reaction, the test should be repeated
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## 25 yr old female

- Should you do a TST? **Yes**
  - What cutoff would you use? **10mm**
  - What about an Interferon- $\gamma$  Release Assay?  
**Could Consider if Available**
  
  - Her TST is 26 mm, 16 weeks pregnant
  - Does she need a CXR? When?
-



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# TB Evaluation – Step 3 (1)

- DO a CXR if the TST is  $\geq 5\text{mm}$  or (+) IGRA
  - NOTE: applicants with symptoms of active TB should get a CXR regardless of the TST or IGRA
- If the CXR is abnormal
  - Infiltrate, cavity, nodule, pleural effusion, adenopathy, miliary pattern, fibrotic scar, volume loss

REFER to the TB CLinic

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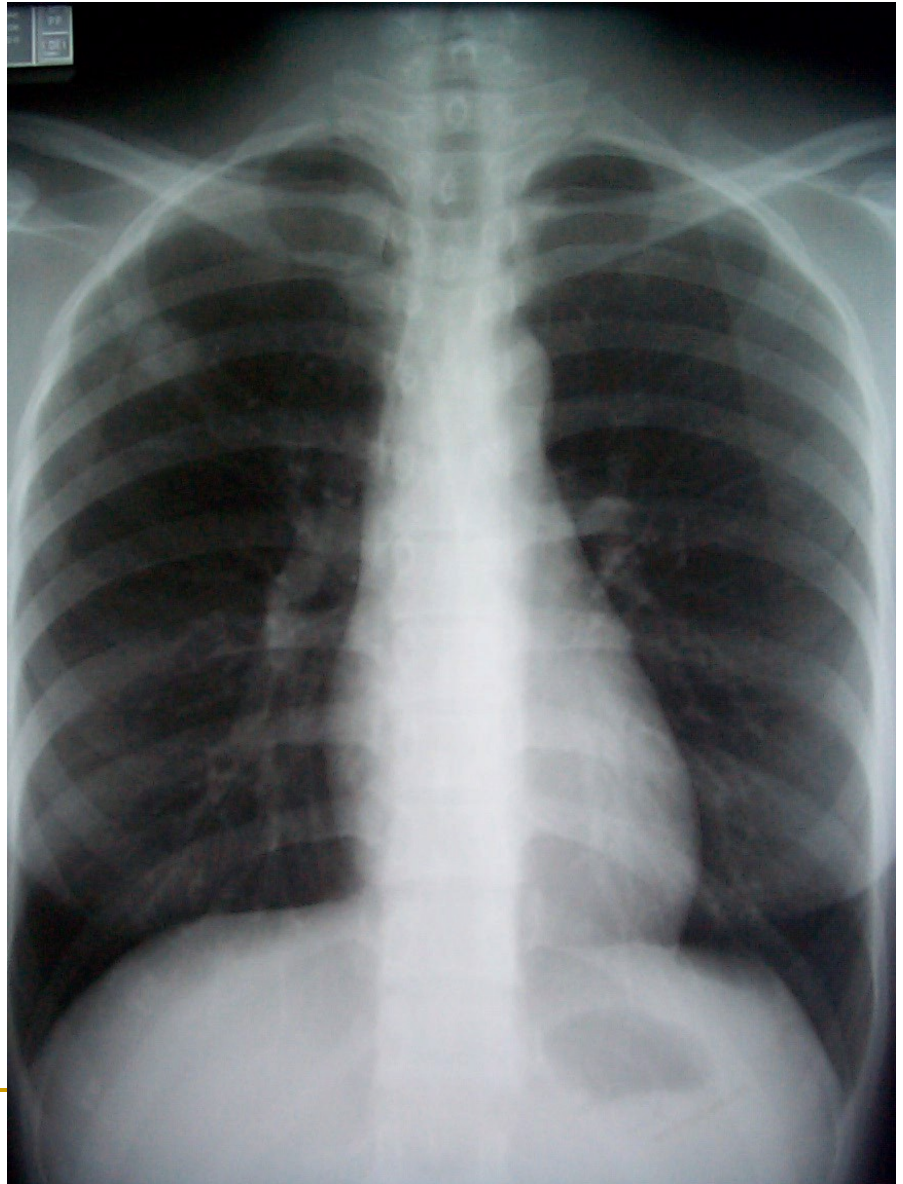
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# TB Evaluation – Step 3 (2)

- You do not need to refer the applicant if the only x-ray findings are
    - Pleural capping
    - Diaphragmatic tenting
    - Blunting of the costophrenic angle in adults
    - Solitary calcified nodule (granuloma) or calcified lymph node
-

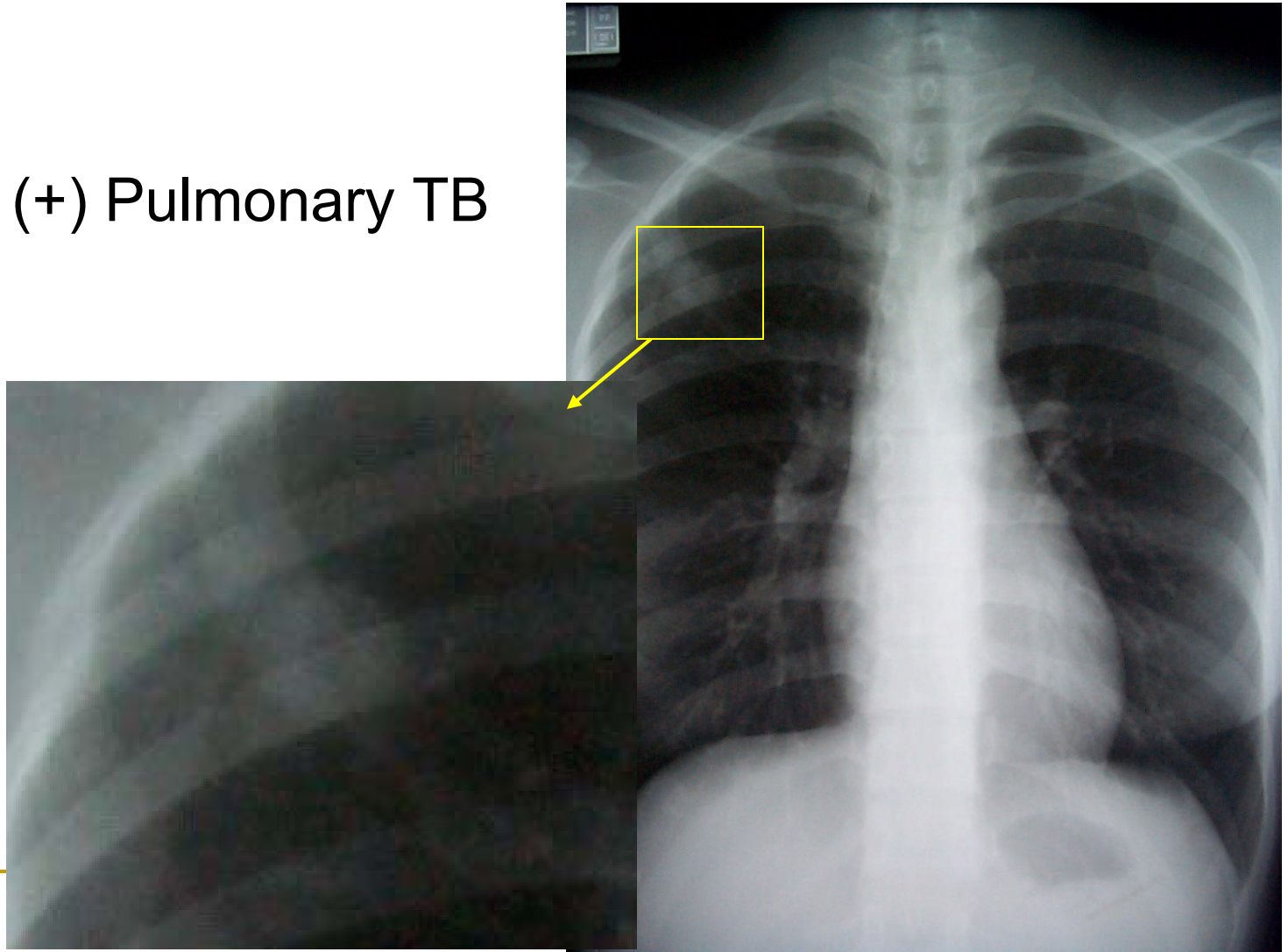
# 30 y/o female

- from SE Asia
- Applying for permanent resident status
- Reported no symptoms
- TST 15 mm



30 y/o female

Culture (+) Pulmonary TB



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# Timing of CXR for Pregnant Applicants

## 1. Symptomatic Patient

→ CXR immediately

\* **REGARDLESS** of the TST or IGRAs; 25% of pts with active TB have a (-) TST and/or IGRAs

## 2. Asymptomatic Patient, TST or IGRAs (+)

→ CXR any time after the first trimester

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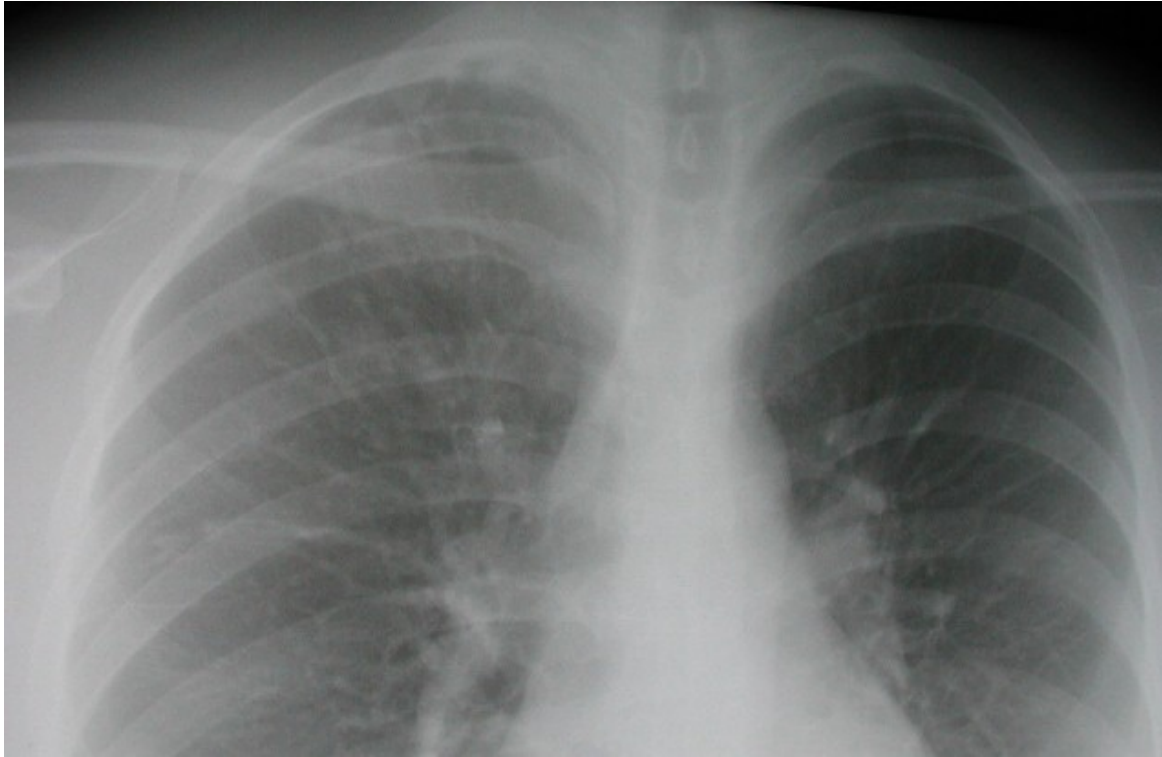
# Risk of CXR for Pregnant Women

- Estimated fetal radiation from a PA and Lat CXR with proper shielding = 0.00007 rad
- Accepted maximum cumulative fetal dose during pregnancy = 5 rad
- Conclusion: would need > 71,000 CXR to reach this dose

Toppenberg, Am Family Physician 1999; 59(7): 1813-1818

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# 25 yr old female

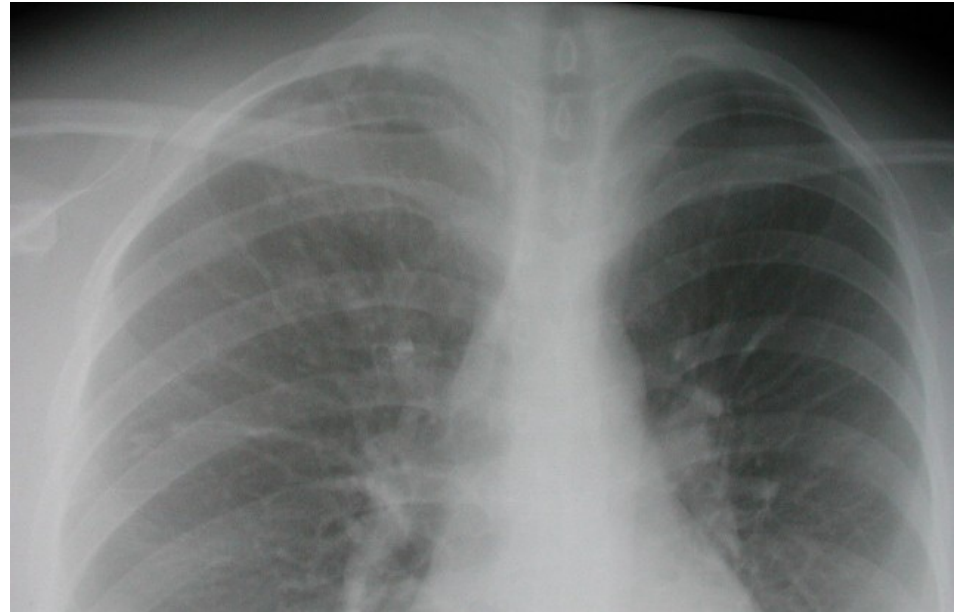


Radiology reading: Fibrotic opacity in the right upper lobe with pleural thickening consistent with scarring from old TB

# 25 yr old female

Now What?

1. Offer INH
2. Refer to pulmonary
3. Recommend a CT
4. Collect sputa for AFB





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# Tuberculosis Technical Instructions: Effective May 1, 2008 (1)

## Major Changes:

1. Sputum cultures and drug susceptibility testing required for applicants with abnormal CXRs suggestive of TB
  2. Class A – smear or culture positive TB must complete a full course of treatment before medical clearance can be given
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# Tuberculosis Technical Instructions: Effective May 1, 2008 (2)

3. A CXR is required for all applicants with a TST  $\geq$  5mm, including pregnant women
    - “if she wishes, the applicant may defer until after delivery, but the civil surgeon cannot sign the medical exam”
    - Can't defer if symptomatic
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# Tuberculosis Technical Instructions: Effective May 1, 2008 (3)

4. A CXR is required for applicants with a TST < 5mm if they have:
    1. Signs or symptoms of active dz
    2. Immunosuppression (eg HIV, prednisone  $\geq$  15mg/d x 1month, history of transplant)
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# Changes in TB Classification (1)

- Class A
    - 1991: Abnl CXR & + smear
    - 2007: Active TB (+ smear or culture)
  - Class B1-Pulmonary
    - 1991: Active TB, not infectious (- smear)
    - 2007: Abnl CXR, neg Cx
  - Class B1-Extrapulmonary
    - 1991: Active TB, not infectious
    - 2007: Extrapulmonary TB (w/o pulmonary)
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# Changes in TB Classification (2)

- Class B2 – Pulmonary TB, inactive
    - 1991: TB, not clinically active (no sputum required)
    - 2007:
      1. Abnl CXR but not suspicious for active TB (ie no sputum needed) or
      2. Treatment completed for active TB
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# Changes in TB Classification (3)

## **NEW**

- Class B – Latent TB
    - (+) TST / IGRA, no symptoms, and a normal CXR
  
  - Class B – Other Condition (non-TB)
    - Examples: cardiomegaly, scoliosis in a child
-

START HERE - Type or print in CAPITAL letters (Use black ink)

**Part 1. Information About You** (The person requesting a medical examination or vaccinations must complete this part)

Family Name (Last Name) Given Name (First Name) Full Middle Name  
Home Address: Street Number and Name Apt. Number Gender:  Male  Female  
City State Zip Code Phone # (Include Area Code) no dashes or ()  
Date of Birth (mm/dd/yyyy) Place of Birth (City/Town/Village) Country of Birth A-Number (if any) U.S. Social Security # (if any)

**Applicant's Certification**

I certify under penalty of perjury under United States law that I am the person who is identified in Part 1 of this Form I-693, Report of Medical Examination and Vaccination Record, and that the information in Part 1 of this form is true to the best of my knowledge. I understand the purpose of this medical exam, and I authorize the required tests and procedures to be completed. If it is determined that I willfully misrepresented a material fact or provided false/alter information or documents with regard to my medical exam, I understand that any immigration benefit I derived from this medical exam may be revoked, that I may be removed from the United States, and that I may be subject to civil or criminal penalties.

Signature - Do not sign or date this form until instructed to do so by the civil surgeon Date (mm/dd/yyyy)

**Part 2. Medical Examination** (The civil surgeon completes this part)

**1. Examination**

Date of First Examination Date(s) of Follow-up Examination(s) if Required:  
Date of Exam Date of Exam Date of Exam

Summary of Overall Findings:  
 No Class A or Class B Condition  Class A Conditions (see 2 through 5 below)  Class B Conditions (see 2 through 6 below)

**2. Communicable Diseases of Public Health Significance**

**A. Tuberculosis (TB):** An initial screening test, either a Tuberculin Skin Test (TST) or an Interferon Gamma Release Assay (IGRA) is required for all applicants 2 years of age and older; for children under 2 years of age, see *Technical Instructions* at <http://edc.gov/ncidod/dq/civil.htm>. The civil surgeon should perform one type of initial screening test only, followed by further evaluation, if needed (chest X-ray).

**1. Tuberculin Skin Test (TST):**

Not administered (TST exception applies)

Date TST Applied Date TST Read Size of Reaction (mm)

Result:  Negative (4mm or less of induration)  Positive (≥ 5mm; chest X-ray required)

**2. Interferon Gamma Release Assay (IGRA)** (for acceptable IGRAs consult the Technical Instructions and any updates posted on CDC's Web site at <http://www.cdc.gov/ncidod/dq/civil.htm>):

Not administered (IGRA exception applies) Name of Test Date Blood Sample Drawn

■ The instructions allow either a TST or IGRA, not both

■ If an exception applies:

Prior documented (+) TST or IGRA

Report of a blistering reaction to a TST

mark "Not Administered"

**Part 2. Communicable Diseases of Public Health Significance (Cont'd)**

IU/ml:

Result:  Negative (including indeterminate, or borderline/ equivocal) (no chest X-ray required)

Positive (chest X-ray required)

**Initial Screening Test Result and Chest X-Ray Determination:**

Chest X-ray not required (medically cleared for TB for USCIS)

Chest X-ray required due to TB signs or symptoms, or due to immunosuppression (e.g. HIV)

Chest X-ray required due to initial screening test results

Chest X-ray required due to TST or IGRA exception (The civil surgeon must clearly specify the TST or IGRA exception in the "Remarks" field below.)

**4. Chest X-Ray:** Required based on TST or IGRA result, or if specific TST or IGRA exceptions apply, or for an applicant with TB signs or symptoms or immunosuppression (e.g., HIV). Attach a copy of X-ray report.

Date Chest X-Ray Taken

Date Chest X-Ray Read

Results

Normal

Abnormal (Describe results in remarks.)

**TB Classification/Findings (check only if chest x-ray was performed):**

No Class A or Class B TB

Class B1 Pulmonary TB

Class B2 Pulmonary TB

Class B, Other Chest Condition (non-TB)

Class A Pulmonary TB Disease

Class B1 Extra Pulmonary TB

Class B, Latent TB Infection

**Remarks:** (Include any signs or symptoms of TB, additional tests, and therapy given, with stop and start dates and any changes.)

If an exception applies, Check the box on page 2 and list the reason for the exception in the Remarks



**Part 2. Communicable Diseases of Public Health Significance (Cont'd)**

IU/ml:

Result:  Negative (including indeterminate, or borderline/ equivocal) (no chest X-ray required)

Positive (chest X-ray required)

**Initial Screening Test Result and Chest X-Ray Determination:**

Chest X-ray not required (medically cleared for TB for USCIS)

Chest X-ray required due to TB signs or symptoms, or due to immunosuppression (e.g. HIV)

Chest X-ray required due to initial screening test results

Chest X-ray required due to TST or IGRA exception (The civil surgeon must clearly specify the TST or IGRA exception in the "Remarks" field below.)

**4. Chest X-Ray:** Required based on TST or IGRA result, or if specific TST or IGRA exceptions apply, or for an applicant with TB signs or symptoms or immunosuppression (e.g., HIV). Attach a copy of X-ray report.

Date Chest X-Ray Taken

Date Chest X-Ray Read

Results

Normal

Abnormal (Describe results in remarks.)

**TB Classification/Findings (check only if chest x-ray was performed):**

No Class A or Class B TB

Class B1 Pulmonary TB

Class B2 Pulmonary TB

Class B, Other Chest Condition (non-TB)

Class A Pulmonary TB Disease

Class B1 Extra Pulmonary TB

Class B, Latent TB Infection

**Remarks:** (Include any signs or symptoms of TB, additional tests, and therapy given, with stop and start dates and any changes.)

- Only applicable to QFT
- Represents the Antigen minus nil results
- Labs may report only the calculated result or each result for Nil, Antigen and Mitogen

**Part 2. Communicable Diseases of Public Health Significance (Cont'd)**

IU/ml:

Result:  Negative (including indeterminate, or borderline/ equivocal) (no chest X-ray required)

Positive (chest X-ray required)

**Initial Screening Test Result and Chest X-Ray Determination:**

Chest X-ray not required (medically cleared for TB for USCIS)

Chest X-ray required due to TB signs or symptoms, or due to immunosuppression (e.g. HIV)

Chest X-ray required due to initial screening test results

Chest X-ray required due to TST or IGRA exception (The civil surgeon must clearly specify the TST or IGRA exception in the "Remarks" field below.)

**4. Chest X-Ray:** Required based on TST or IGRA result, or if specific TST or IGRA exceptions apply, or for an applicant with TB signs or symptoms or immunosuppression (e.g., HIV). Attach a copy of X-ray report.

Date Chest X-Ray Taken

Date Chest X-Ray Read

Results

Normal

Abnormal (Describe results in remarks.)

**TB Classification/Findings (check only if chest x-ray was performed):**

No Class A or Class B TB

Class B1 Pulmonary TB

Class B2 Pulmonary TB

Class B, Other Chest Condition (non-TB)

Class A Pulmonary TB Disease

Class B1 Extra Pulmonary TB

Class B, Latent TB Infection

**Remarks:** (Include any signs or symptoms of TB, additional tests, and therapy given, with stop and start dates and any changes.)

- NOTE: an indeterminate or borderline result is treated as a negative
- Indeterminate results don't actually provide useful info about LTBI

**Initial Screening Test Result and Chest X-Ray Determination:**

Chest X-ray not required (medically cleared for TB for USCIS)

Chest X-ray required due to initial screening test results

Chest X-ray required due to TB signs or symptoms, or due to immunosuppression (e.g. HIV)

Chest X-ray required due to TST or IGRA exception (The civil surgeon must clearly specify the TST or IGRA exception in the "Remarks" field below.)

**4. Chest X-Ray:** Required based on TST or IGRA result, or if specific TST or IGRA exceptions apply, or for an applicant with TB signs or symptoms or immunosuppression (e.g., HIV). Attach a copy of X-ray report.

Date Chest X-Ray Taken

Date Chest X-Ray Read

Results

Normal

Abnormal (Describe results in remarks.)

**TB Classification/Findings (check only if chest x-ray was performed):**

No Class A or Class B TB

Class B1 Pulmonary TB

Class B2 Pulmonary TB

Class B, Other Chest Condition (non-TB)

Class A Pulmonary TB Disease

Class B1 Extra Pulmonary TB

Class B, Latent TB Infection

**Remarks:** (Include any signs or symptoms of TB, additional tests, and therapy given, with stop and start dates and any changes.)

- You do not need to refer the applicant if the only x-ray findings are:
  - ❑ Pleural capping
  - ❑ Diaphragmatic tenting
  - ❑ Blunting of the costophrenic angle in adults
  - ❑ Solitary calcified nodule (granuloma) or calcified lymph node

# 36 y/o male (1)

- From Philippines, in the U.S. for 15 years
- TST is 6mm
- CXR is normal

What classification is this?

**4. Chest X-Ray:** Required based on TST or IGRA result, or if specific TST or IGRA exceptions apply, or for an applicant with TB signs or symptoms or immunosuppression (e.g., HIV). Attach a copy of X-ray report.

Date Chest X-Ray Taken

4/10/10

Date Chest X-Ray Read

4/11/10

Results

Normal

Abnormal (Describe results in remarks.)

**TB Classification/Findings (check only if chest x-ray was performed):**

No Class A or Class B TB

Class B1 Pulmonary TB

Class B2 Pulmonary TB

Class B, Other Chest Condition (non-TB)

Class A Pulmonary TB Disease

Class B1 Extra Pulmonary TB

Class B, Latent TB Infection

# 36 y/o male (2)

- Although a CXR is done for anyone with a TST  $\geq$  5mm, the TST needs to be 10mm to consider the person infected (ie. Class B, Latent TB Infection)

**4. Chest X-Ray:** Required based on TST or IGRA result, or if specific TST or IGRA exceptions apply, or for an applicant with TB signs or symptoms or immunosuppression (e.g., HIV). Attach a copy of X-ray report.

Date Chest X-Ray Taken

4/7/10

Date Chest X-Ray Read

4/8/10

Results



Normal



Abnormal (Describe results in remarks.)

**TB Classification/Findings (check only if chest x-ray was performed):**

- |  |  |   |  |
|--|--|---|--|
| <input checked="" type="checkbox"/> No Class A or Class B TB | <input type="checkbox"/> Class B1 Pulmonary TB       | <input type="checkbox"/> Class B2 Pulmonary TB        | <input type="checkbox"/> Class B, Other Chest Condition (non-TB) |
| <input type="checkbox"/> Class A Pulmonary TB Disease        | <input type="checkbox"/> Class B1 Extra Pulmonary TB | <input type="checkbox"/> Class B, Latent TB Infection |  |

# 42 y/o female from Vietnam (1)

- Cervical adenopathy
- Normal CXR
- (-) Quantiferon



What classification?

**4. Chest X-Ray:** Required based on TST or IGRA result, or if specific TST or IGRA exceptions apply, or for an applicant with TB signs or symptoms or immunosuppression (e.g., HIV). Attach a copy of X-ray report.

Date Chest X-F  
Taken

4/12/10

## Needs Further Work-up

: results in remarks.)

**TB Classification**

- |   |  |   |  |
|---|--|---|--|
| <input type="checkbox"/> No Class A or Class B TB     | <input type="checkbox"/> Class B1 Pulmonary TB       | <input type="checkbox"/> Class B2 Pulmonary TB        | <input type="checkbox"/> Class B, Other Chest Condition (non-TB) |
| <input type="checkbox"/> Class A Pulmonary TB Disease | <input type="checkbox"/> Class B1 Extra Pulmonary TB | <input type="checkbox"/> Class B, Latent TB Infection |  |

# 42 y/o female from Vietnam (2)

- Biopsy shows granulomas
- AFB smear negative

B1 extrapulmonary TB -  
refer to the health dept.



**4. Chest X-Ray:** Required based on TST or IGRA result, or if specific TST or IGRA exceptions apply, or for an applicant with TB signs or symptoms or immunosuppression (e.g., HIV). Attach a copy of X-ray report.

Date Chest X-Ray  
Taken

Date Chest X-Ray  
Read

Results

Normal

Abnormal (Describe results in remarks.)

**TB Classification/Findings (check only if chest x-ray was performed):**

No Class A or Class B TB

Class B1 Pulmonary TB

Class B2 Pulmonary TB

Class B, Other Chest  
Condition (non-TB)

Class A Pulmonary TB Disease

Class B1 Extra Pulmonary TB

Class B, Latent TB Infection

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# Referral to the Denver Metro TB Clinic

- During business hours, 8:00a-6:00p Mon-Fri
    - Call (303) 602-7240, option 3
    - Ask to speak with the charge nurse
  
  - After hours, page the ID physician on call
    - Call (303) 602-8710 and follow the instructions to reach the answering service
-



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# Helpful Information When Referring

- Demographics
    - Name, DOB, address, phone number
    - If available - place of employment, name and phone number of an alternate contact (family or friend)
  - Symptoms
    - Cough, hemoptysis, fever, weight loss, night sweats, lymphadenopathy etc.
  - Labs
    - HIV, CBC, LFTs, chemistries, AFB smear / culture
  - CXR report
  - TST or IGRA
-

**Part 2. Medical Examination (Continued)**

6. List other medical conditions, Class B other (e.g., hypertension, diabetes)

**Part 3. Referral to Health Department Other Doctor/Facility** *(To be completed by civil surgeon, if referral was required and made)*

Type or Print Name of Doctor or Health Department Receiving Required Referral	Date of Referral (mm/dd/yyyy)
<input type="text"/>	<input type="text"/>
Address: (Street Number and Name, City, State, and Zip Code)	Daytime Phone # (Include Area Code) no dashes or ( )
<input type="text"/>	<input type="text"/>
Remarks: (Include name of medical condition and reasons for referral.)	
<input type="text"/>	

**Part 4. To Be Completed by Physician Or Health Department Performing Referral Evaluation**

The applicant identified on this form was referred to me by the civil surgeon named in Part 5 of this form. I have provided appropriate evaluation/treatment, having made every reasonable effort to verify that the person whom I evaluated/treated is the person identified in Part 1.

Type or Print Full Name of Evaluating Physician or Health Department	Signature
<input type="text"/>	<input type="text"/>
Address: (Street Number and Name, City, State, and Zip Code)	Date (mm/dd/yyyy)
<input type="text"/>	<input type="text"/>
Name of Medical Practice or Health Department	Daytime Phone # (Include Area Code) no dashes or ( )
<input type="text"/>	<input type="text"/>
Remarks: (Attach a separate sheet of paper, if needed.)	
<input type="text"/>	

Part 3. by civil surgeon  
Denver Metro TB Clinic  
605 Bannock Street  
Denver, CO 80240  
(303) 602-7240

Part 4. by TB clinic  
Please send them with  
their current and prior  
CXR's and copies of  
any pertinent labs

# Active Pulmonary TB, Class A TB (1)

- Smear or culture positive TB
- Mark Class A on the I-693 but don't sign it until they have completed a full course of TB therapy (at least 6 months)

**4. Chest X-Ray:** Required based on TST or IGRA result, or if specific TST or IGRA exceptions apply, or for an applicant with TB signs or symptoms or immunosuppression (e.g., HIV). Attach a copy of X-ray report.

Date Chest X-Ray  
Taken

Date Chest X-Ray  
Read

Results

Normal

Abnormal (Describe results in remarks.)

**TB Classification/Findings (check only if chest x-ray was performed):**

No Class A or Class B TB

Class B1 Pulmonary TB

Class B2 Pulmonary TB

Class B, Other Chest  
Condition (non-TB)

Class A Pulmonary TB Disease

Class B1 Extra Pulmonary TB

Class B, Latent TB Infection

# Active Pulmonary TB, Class A TB (2)

## Reclassifying:

- Cross out the class A with a single stroke, initial and date the change
- Mark Class B2 Pulmonary TB

**4. Chest X-Ray:** Required based on TST or IGRA result, or if specific TST or IGRA exceptions apply, or for an applicant with TB signs or symptoms or immunosuppression (e.g., HIV). Attach a copy of X-ray report.

Date Chest X-Ray  
Taken

Date Chest X-Ray  
Read

Results

Normal

Abnormal (Describe results in remarks.)

**TB Classification/Findings (check only if chest x-ray was performed):**

No Class A or Class B TB

Class B1 Pulmonary TB

Class B2 Pulmonary TB

Class B, Other Chest  
Condition (non-TB)

~~Class A Pulmonary TB Disease~~

Class B1 Extra Pulmonary TB

Class B, Latent TB Infection

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# Active Pulmonary TB, Class A TB (3)

## Reclassifying:

- Indicate the following information in the Remarks section of the I-693 form (may attach a separate sheet of paper, if needed):
    - ❑ The TB drug regimen used (medication names, dosages, number of doses given).
    - ❑ The date treatment began (month/year).
    - ❑ The date treatment was completed (month/year).
    - ❑ The date and results of the most recent sputum culture tests (month/year).
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# Class B – Latent TB Infection (1)

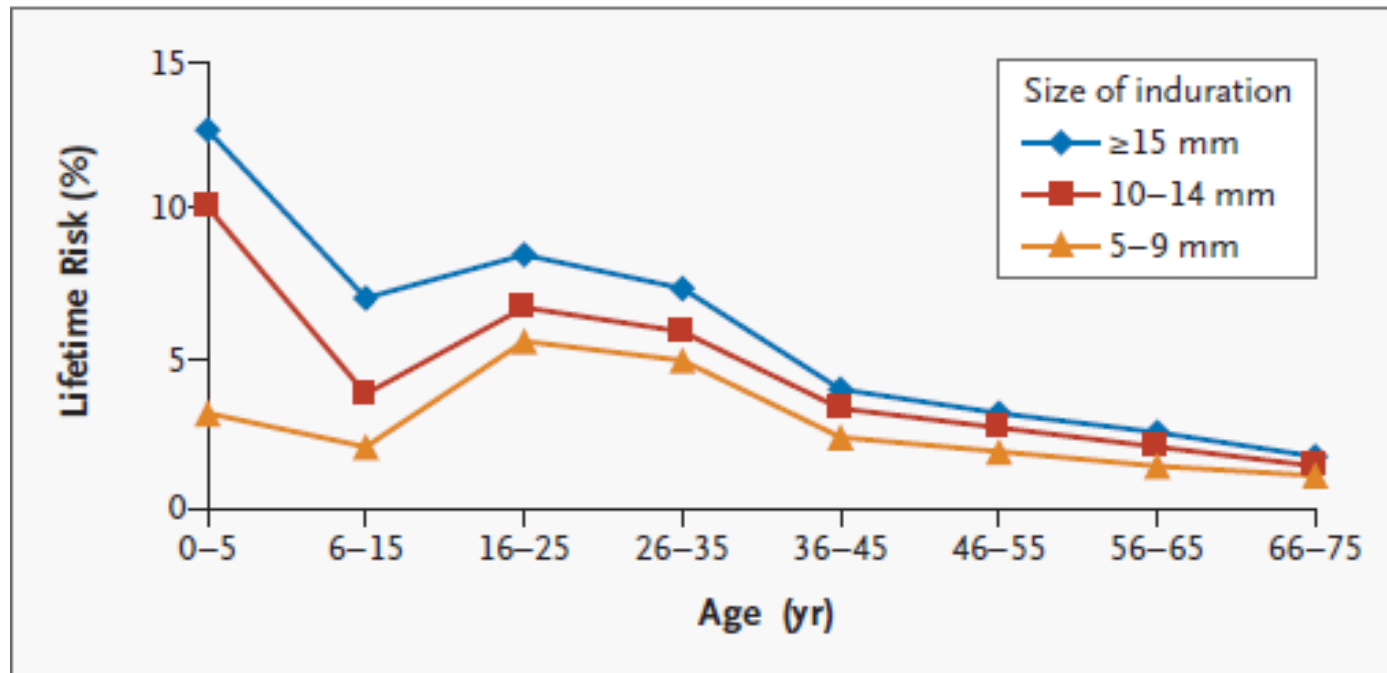
- Asymptomatic
  - Normal CXR or without findings that could represent active TB (eg. Isolated granuloma, or cardiomegaly)
  - Health Department evaluation is not required to complete the I-693
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## Class B – Latent TB Infection (2)

- CDC recommends referral for LTBI treatment but you should only refer applicants if they are interested in taking LTBI treatment
  - We recommend offering LTBI treatment to patients who are either:
    - $\leq 50$  y/o                      or
    - who have other medical illnesses that increase their risk of reactivation
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# Class B – Latent TB Infection (3)



**Figure 1.** Lifetime Risk of Active Tuberculosis among Persons with a Non-conversion Positive Tuberculin Skin Test.

Risks were calculated with the assumption of a decrease in risk of 10 percent per decade.



# Class B – Latent TB Infection (4)

**Table 3. Relative Risk of Reactivation Tuberculosis among Persons with Medical Conditions That Impair Immune Control of *M. tuberculosis*.\***

Condition	Study	Relative Risk (95% CI)
Advanced HIV infection	Pablos-Mendez et al. <sup>27</sup>	9.9 (8.7–11.3)†
	Moss et al. <sup>26</sup>	9.4 (3.5–25.1)
Old, healed tuberculosis	Ferebee, <sup>13</sup> Ferebee et al. <sup>20</sup>	5.2 (3.4–8.0)
Chronic renal failure	Pablos-Mendez et al. <sup>27</sup>	2.4 (2.1–2.8)†
Infliximab therapy	Keane et al. <sup>28</sup>	2.0 (0.7–5.5)†
Poorly controlled diabetes	Pablos-Mendez et al. <sup>27</sup>	1.7 (1.5–2.2)†
Silicosis	Cowie <sup>29</sup>	1.7 (1.3–2.1)†
	Corbett et al. <sup>30</sup>	1.3 (1.1–1.7)†
	Kleinschmidt and Churchyard <sup>31</sup>	1.2 (1.0–1.5)†
Underweight ( $\leq 10$ percent below normal)	Palmer et al., <sup>22</sup> Edwards et al. <sup>23</sup>	1.6 (1.1–2.2)
Gastrectomy	Thorn et al. <sup>32</sup>	1.4 (1.1–1.9)†
	Steiger et al. <sup>33</sup>	1.3 (1.2–1.4)†

Horsburgh, NEJM 2004 350; 20: 2060-7

**Part 5. Civil Surgeon's Certification** *(Do not sign form or have the applicant sign in Part 1 until all health follow-up requirements have been met.)*

I certify under penalty of perjury under United States law that: I am a civil surgeon in current status designated to examine applicants seeking certain immigration benefits in the United States; I have a currently valid and unrestricted license to practice medicine in the state where I am performing medical examinations; I performed this examination of the person identified in Part 1 of this Form I-693, after having made every reasonable effort to verify that person whom I examined is the person identified in Part 1; that I performed the examination in accordance with the Centers for Disease Control and Prevention's *Technical Instructions*, and all supplemental information or updates; and that all information provided by me on this form is true and correct to the best of my knowledge, and belief.

Type or Print Full Name <i>(First, Middle, Last)</i>	Signature
<input type="text"/>	<input type="text"/>
Address <i>(Street Number and Name, City, State, and Zip Code)</i>	Date <i>(mm/dd/yyyy)</i>
<input type="text"/>	<input type="text"/>
Name of Medical Practice or Health Department	
<input type="text"/>	
Daytime Phone # <i>(Include Area Code) no dashes or ( )</i>	E-Mail Address
<input type="text"/>	<input type="text"/>

**Part 6. Health Department Identifying Information** *(If completed by State or local health department on behalf of a refugee, place a stamp or seal where indicated.)*

Type or Print Name	<i>(Place State or local health department stamp/seal below.)</i>
<input type="text"/>	
Signature	
<input type="text"/>	
Date <i>(mm/dd/yyyy)</i>	Daytime Phone # <i>(Include Area Code) no dashes or ( )</i>
<input type="text"/>	<input type="text"/>

**Part 7. For USCIS Use Only** *(Not to be completed by the civil surgeon)*

212(g)(2)(B) Blanket Waiver for Vaccination Granted

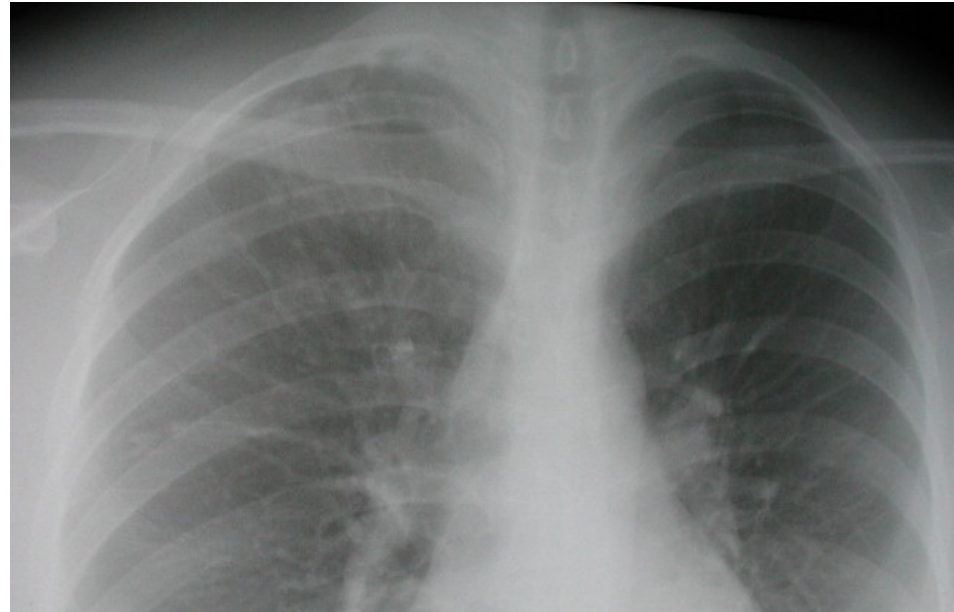
Remarks (if needed):

- Part 5 – fill out and sign only after the evaluation is complete
- Part 6 - is for Refugees who are evaluated at a health dept and will generally be blank

# 25 yr old female

Now What?

1. Offer INH
2. Refer to pulmonary
3. Recommend a CT
4. Collect sputa for AFB



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# 25 yr old female

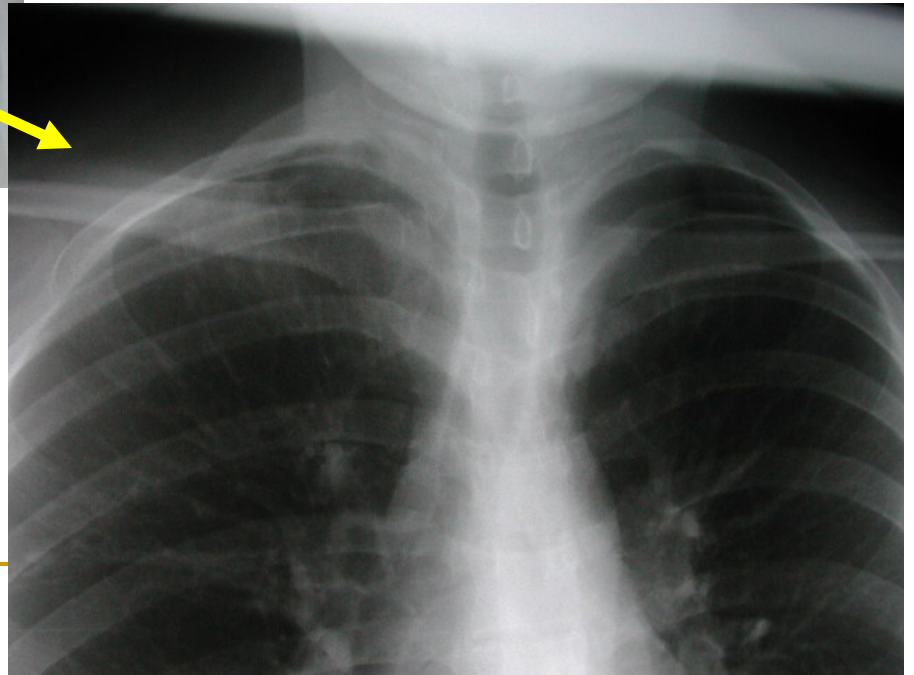
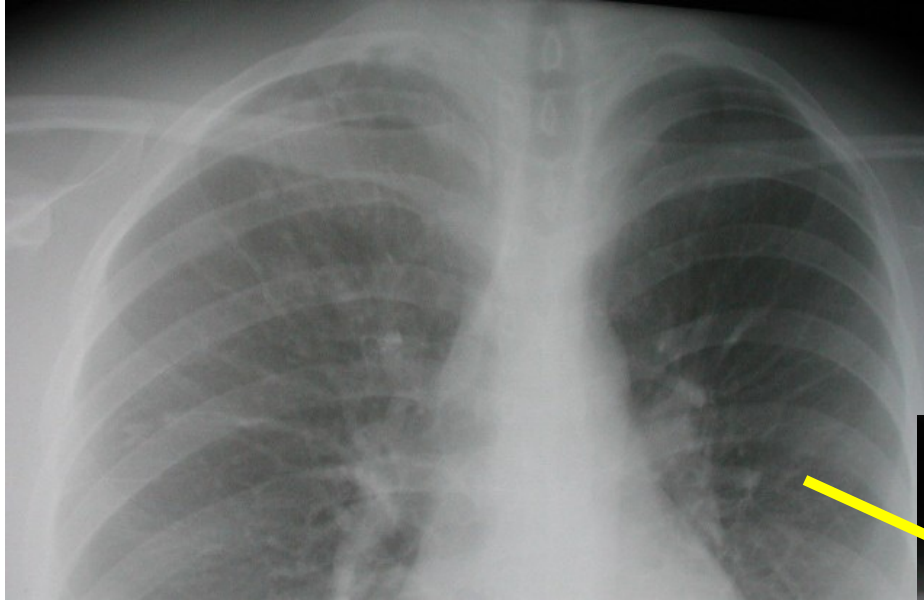
- No other PMHx
- HIV (-)
- Sputum AFB smear (-) x 3

Because she has an infant at home, she is started on I/R/Z/E

All 3 Sputa are Culture (+) for MTB

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25 yr old female



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# Referral to the Denver Metro TB Clinic

- During business hours, 8:00a-6:00p Mon-Fri
    - Call (303) 602-7240, option 3
    - Ask to speak with the charge nurse
  
  - After hours, page the ID physician on call
    - Call (303) 602-8710 and follow the instructions to reach the answering service
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