

## **Steps and Rationale for Diagnosis of Silicosis / Asbestosis Victims**

1. History of occupation is most important. Length of service is vital as it makes a huge impact. Symptoms like breathlessness, chest pain etc are connected with hours worked, numbers of hours worked in a week, number of off days and are related to the occupation. The symptoms would be similar to their colleagues and may be more people are suffering in the group.
2. Hazardous Substance – Check for total exposure like number of years of exposure.
3. History of medicines is very important. The workers should be asked to bring old medical records and prescriptions. In case medicines are available, they should be brought.
4. History of suffering from Tuberculosis is important. Proof of treatment should be noted.
5. Height, weight, sex is important to check the Lung Function test and calculate the disability percentage
6. Investigations – plain chest x-ray in 200mA or more power X-ray machine. The x-ray should be in centre, deep inspiration centralised and both the diaphragms should be clear
7. Sputum test is required to check for TB existing along with other lung diseases. In suspected cases the test is usually done thrice
8. Blood test for Suspected cases like complete blood count and ESR
9. Then lung function test is done. FVC and FEV1 are the important values for Asbestosis and Silicosis
10. SPO2 (Saturation of oxygen in the blood) done by pulse oxymetry. For a normal person after a brisk walk, the reading will remain same or increase. But for Asbestos or Silicosis victim, this value will decrease as there is a barrier in the lungs

No other test or diagnosis is required for determining Asbestos or Silicosis victim.

### **Step 1 – History of occupation**

Sample Questions to note:

1. Length of service
2. Symptoms like breathlessness, chest pain etc
3. Number of hours worked in a week, number of off days
4. The symptoms would be similar to their colleagues and may be more people are suffering in the group.
5. Hazardous substances used
6. History and use of medicines. Proof of treatment
7. History of TB.

### **Step 2: Investigations**

1. Check height, weight and sex of the worker (used during Lung Function Test)
2. Sputum test is required to check for TB existing along with other lung diseases
3. Blood test for Suspected cases like complete blood count and ESR
4. Then lung function test is done. FVC and FEV1 are the important values for Asbestosis and Silicosis
5. SPO2 (Saturation of oxygen in the blood) done by pulse oxymetry.

### **Step 3: Clinical Examination**

1. Plain chest x-ray in 200mA or more power X-ray machine. The x-ray should be in centre, deep inspiration centralised and both the diaphragms should be clear
2. Examination by the physician

## How to Calculate Disability percentage<sup>1</sup>

1. There are 4 classes of disability
  - a. Class 1: 0% - 24%
  - b. Class 2: 25% - 49%
  - c. Class 3: 50% - 74%
  - d. Class 4: 75% - 100%
2. Disability is based on FVC (Forced vital capacity) and FEV1 (Forced expiratory volume in 1 second) values
3. Observe the FVC and FEV1 values through the machine
4. According to height, weight and sex (a table is available containing values for ethnic Indian Origin people for a normal person. This table has been made by Dr S R Kamath after studying many values among Indian Population). These observed and predicted values are compared with each other.
  - a.  $(\text{Observed FVC} / \text{Predicted FVC}) * 100$  gives value A
  - b.  $(\text{Observed FEV1} / \text{predicted FEV1}) * 100$  gives value B
5. Determining class of Disability
  - a. If A or B > 80% then the person is in Class 1 disability
  - b. If A or B between 60% and 80% then the person is in Class 2 disability
  - c. If A or B between 50% and 60% then the person is in Class 3 disability
  - d. If A or B is less than 50% then class of disability is 4
6. Depending upon symptoms, medication and other investigations the percentage disability within a class is determined. This value can depend upon perception of doctors and can vary.

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<sup>1</sup> Reference – Murlidhar V, Murlidhar V, Kanhare V. Evaluation of Impairments and Disabilities, Mumbai: Bhalani Publishing House, Mumbai; 2005, ISBN:8185578729