



## GUIDE TO PLEURAL THICKENING

### What is Pleural Thickening?

- The **pleura** - two layered protective membrane surrounding the lung
- The **lungs** - a pair of organs in the chest that control breathing. They take in oxygen from the air that we breathe and remove carbon dioxide from the blood
- **Pleural thickening** - thickening and hardening of the pleura

Pleural thickening occurs in 2 forms:

- Diffuse pleural thickening extends over a large area and may **restrict expansion of the lungs**
- Pleural Plaques - localised areas of pleural thickening/calcification which **do not usually interfere with breathing**

### What causes Pleural Thickening?

Tiny asbestos **fibres** settle in the **lung tissues** and **irritate** the pleura causing **scarring and hardening**. The scarring is irreversible.

However, a number of other possible **causes exist** and **pleural thickening** is **less specific to asbestos exposure** than pleural plaques eg:

- Infections in the pleural space such as **tuberculosis** can cause thickening of the pleura
- **Inflammation of the pleura without infection** can cause thickening of the pleura eg same symptom of rheumatoid arthritis
- **Injury**. Pleural thickening can develop following injury to the **chest** region such as **bony fractures** to the **ribs**

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- Certain **medications** can cause thickening of the pleura, although drug induced pleural thickening is generally quite **uncommon**. However, a host of drugs that can cause thickening of the pleura do exist, eg Ergoline drugs including bromocriptine and methysergide, often used to treat symptoms such as cluster headaches, migraines and Parkinson's disease
- **Blood clot in the artery in the lung** (pulmonary embolism). A pulmonary embolism can interrupt blood supply to parts of the lungs causing the tissues to die (necrosis). Pleural Thickening can occur as part of the healing process
- **Radiation** eg radiotherapy treatment can effect and thicken the pleura of patient with lung cancer
- **Tumours**. Benign and malignant tumours may invade the pleura and this gives the appearance of pleural thickening. The pleura is a very thin membrane and is usually not visible on x-rays of the chest. Anything that increases the tissue thickness of the pleura will appear on x-rays as pleural 'thickening'. This can occur when there is fibrosis of the pleura as in asbestos related pleural thickening or when tumour tissue invades the pleura. Even simple inflammation of the tissue cells may cause infiltration of the pleura and result in the thickening of the membrane

## What are the symptoms of Pleural Thickening?

Occasionally reports state that extensive pleural plaques **can cause a tight feeling or even pain across the chest**. Research indicates that in some cases **lung function is restricted** due to the advanced nature of the pleural plaques/pleural thickening.

The lining of the lungs allows the lungs to expand and dilate smoothly during breathing. Where the pleura have extensive calcification or thickened, this process is often impaired and affects lung function.

Pleural plaques and pleural thickening in the absence of asbestosis or malignance are usually monitored, but not treated.

If victims of pleural plaques or pleural thickening start to notice other symptoms such as breathlessness, see your doctor immediately.

## Diagnosing Pleural Thickening?

The main method of **diagnosing pleural thickening** include **plain x-rays** or **CT scans** (computerised tomography scans). Normally, the pleura appear as a thin white lining around the lung. In pleural thickening there will be localized **increases in the thickness** of this whiteness **surrounding the lung**. This change in thickness will clearly show up on CT-scans.

## Treatment of Pleural Thickening?

- By definition, **pleural thickening** is regarded as **benign** and usually **no treatment** is offered
- Various **tests** are conducted during the **diagnosis** stage to determine whether the condition that is suffered is pleural thickening and thus benign, or in fact a malignant condition such as **malignant mesothelioma**

Diffuse bilateral pleural thickening may cause symptoms of breathlessness and a tight feeling across the chest.

In addition pleural thickening is occasionally accompanied by pleural effusion. If this is the case treatment of the pleural effusion involves drainage of the chest and the use of antibiotics or anti-inflammatory drugs.



## Recommendations

- If you **suffer from pleural thickening** you should attend your **doctor regularly** for monitoring, especially if you notice a change or increase in symptoms
- If you are a **smoker**, it is very important that you **stop smoking** immediately as smoking will increase the chance of the condition developing into lung cancer
- **Regular exercise** may help to retain lung function and general fitness levels

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