

## DEPARTMENT OF RESPIRATORY & SLEEP MEDICINE

Dr Ben Kwan

Dr Con Archis

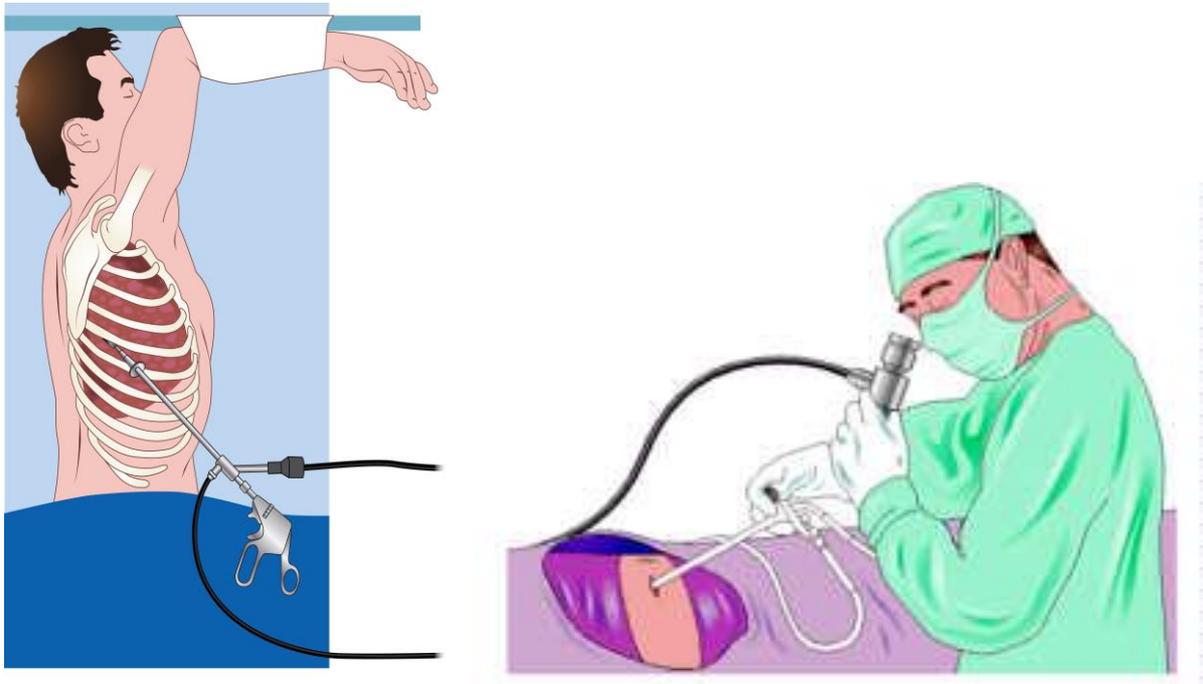
Dr Chin Goh

### PATIENT INFORMATION SHEET AND CONSENT FORM

#### MEDICAL THORACOSCOPY

Your Respiratory Specialist has recommended you to undergo a Medical Thoracoscopy (also called pleuroscopy). A Medical Thoracoscopy is an examination of the inside of your chest cavity. The pleura (linings of the lung and the chest wall cavity), diaphragm (the large breathing muscle that separates the chest from the abdomen), and the outside edge of the lung will be seen. This involves placing a thin tube-like instrument called a thoracoscope through a hole (approximately 1-2cm) between two ribs under real-time ultrasound guidance and into the pleural space.

The tube has a mini-camera at its tip, and is able to carry pictures back to a video screen or camera.



#### 1) Why do I need a medical thoracoscopy?

Most thoracoscopies are performed in patients with an abnormal collection of fluid in the chest cavity. The aim is to identify the reason that fluid (pleural effusion) has built up around the lung by taking biopsies and samples of the fluid. It also allows removal of the fluid from around the lung. Sometimes sterile talc can also be sprayed into the space to try to prevent the fluid from returning.

#### 2) Are there any alternatives?

Chest x-rays or CT scans can give some information. If there is a particular area of abnormality, it may be possible to perform a biopsy of the lining of the lung using ultrasound or CT scan to guide the needle. Another alternative is to have a surgical biopsy under general anaesthetic.

---

If biopsies are not required, fluid can be removed by:

- A small drain placed for long periods (a tunneled indwelling pleural catheter – TIPC): This is done as a day-only procedure and you would normally go home the same day. The drain stays in place and can be used as required (with support of community nurses typically) to remove fluid more frequently from the chest, or
- A needle (therapeutic aspiration): a day only procedure to remove fluid from your chest by passing a small tube temporarily between the ribs, or
- A small bore chest drain (sterile plastic tube) can be placed between the ribs (using local anaesthetic) to drain the fluid – this usually involves an inpatient stay of several days.

There are however no alternative tests which can give information about the diagnosis and treat the fluid at the same time other than an operation under general anaesthetic.

There are information leaflets available for each of the above procedures and your doctor will be happy to discuss which of them may be a possible suitable alternative for you.

### **3) What will happen if I decide not to have a medical thoracoscopy?**

The alternatives are described above. If you decide to have none of these procedures, your doctor may not be able to diagnose your lung condition or to provide you with the correct treatment for your condition. If you decide not to have this test, you should discuss this decision carefully with your doctor.

### **4) What do I need to do to prepare for the medical thoracoscopy?**

You should not eat anything for 6 hours before the test. Clear fluids (not containing milk) can be drunk up until 2 hours before the test.

If you are on warfarin, clopidogrel, aspirin or other blood thinning medications you will need to stop this before the test 7 days before the procedure. This is to minimise the risks of bleeding following taking the biopsy.

If you have been on warfarin, you will need a blood test (INR) on the day of the biopsy to check your blood is clotting.

If you are taking warfarin following a heart valve procedure, you will probably require injections to ensure your blood is thinned sufficiently. Please discuss this with your doctor.

If you are diabetic, please discuss your diabetes medicines with your doctor.

Take all other medications (including tablets or inhalers) at the usual time of day on the day of the test. These can be taken with a sip of water until 1 hour before the procedure.

### **5) How is sedation achieved?**

About 1 hour before the procedure you will usually have some pain-killing medication. You will usually be given some sedation through an intravenous (IV) drip and more pain relief during the procedure. The sedative will help you to relax, and may make you feel sleepy. The sedative may also help you to forget any unpleasant sensations felt during the test.

You will also have a local anaesthetic injection around the area where the camera is to be inserted to make it numb. The anaesthetic starts to work after 2-3 minutes. You will not require a general anaesthetic.

Procedural sedation involves the use of short-acting analgesic and sedative medications. This is not a general anaesthetic. Serious complications rarely occur and no deaths had been reported in multiple studies. Significant respiratory compromise, the most concerning potential complication, develops in less than 1% of cases.

Adverse outcomes may include:

- Respiratory depression (which is often short-lived, and resolves with patient stimulation or supplemental oxygen),
- Cardiovascular instability including low blood pressure or heart rate (usually transient without intervention needed),
- Vomiting (about 5% and may need medication) and aspiration,
- Emergence reactions and inadequate sedation preventing completion of the procedure.

## 6) What happens during a medical thoracoscopy?

You will be taken into the procedural room and will lie on a bed, on your side, with your hand above your head.

You might be given some extra oxygen. A mask will be placed over your nose and mouth. A plastic probe will be placed on your finger to monitor your pulse and oxygen levels. A cuff will be placed on your arm to monitor your blood pressure.

The doctor will confirm the best site for the thoracoscope using an ultrasound scanner. This involves the use of a small probe with jelly on your skin surface and you will see pictures on a TV monitor

The staff will wear hats, gloves, masks and gowns to reduce the chance of introducing infection. Your skin will be cleaned with a sterile solution, and you will be covered in clean drapes. After appropriate sedation and local anaesthesia is given, a small incision will be made in the skin and chest wall muscles through which the thoracoscope can be placed. This causes the lung to slowly deflate to allow room for the thoracoscope. You may feel some pulling around the skin, but you should not feel pain.

The thoracoscopist will drain any excess fluid from your chest cavity, then look inside with the thoracoscope. Several biopsies may be taken at this point to ensure collection of adequate specimens, which may be a little uncomfortable. The whole procedure takes around 45 to 60 minutes.

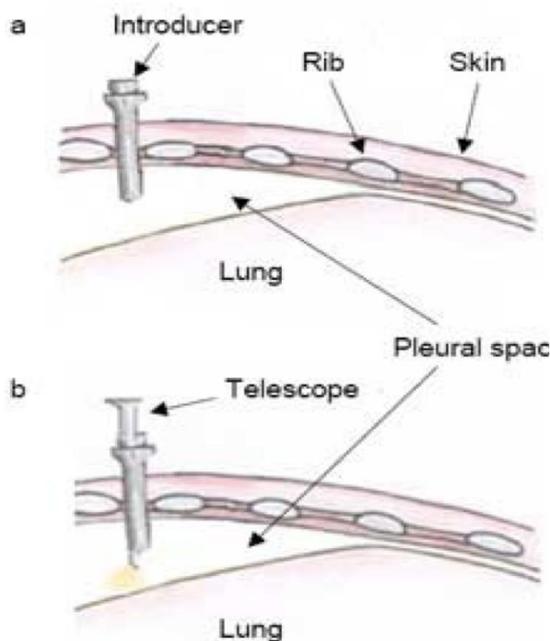
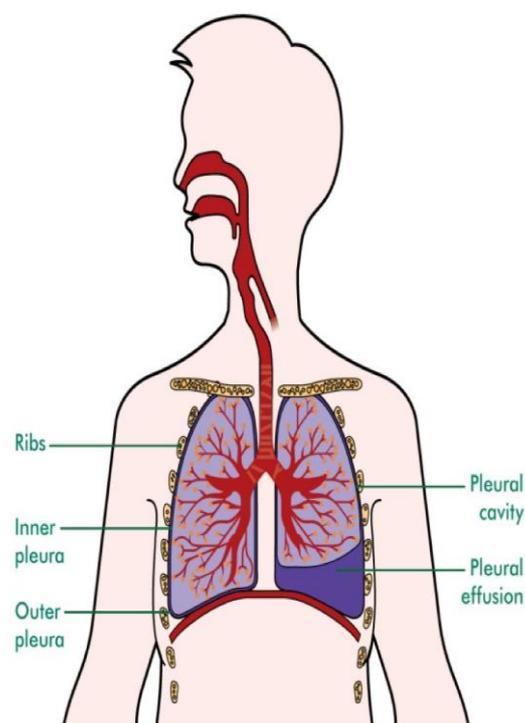


Figure 1

- An introducer is placed into the pleural space
- A telescope is then placed through the introducer



---

Sterile talc may be sprayed into the chest cavity (pleurodesis) to help reduce the chance of fluid returning in the future. Fluid does not return in two thirds of cases after having the talc spray. A small bore chest drain will then be placed through the incision into the chest cavity. The tube will be connected to a sealed collecting container. This will remain in place until the lung has fully re-inflated. This usually takes 2-3 days, but can be longer in some cases.

Alternatively, a TIPC intended for long term placement may be placed through the incision and a short tunnel will be made under your skin for the catheter to pass through. This keeps it more secure. The tube is usually connected to a sealed collecting container for 24 hours and then sealed with a one way valve and covered by a dressing so that you can continue with your usual daily activities. Fluid can then be repeatedly drained using pre-evacuated bottles administered by a community nurse.

## 7) How are samples taken?

Pleural fluid will be sucked out through the thoracoscope which removes a small amount of cells for examination.

A pair of forceps on the end of a wire can be passed down into the pleural cavity through the thoracoscope. These can be used to take very small pieces of tissue for analysis in the laboratory.

## 8) What are the risks?

Medical thoracoscopy is a very safe procedure but complications can occur. These complications can be serious and can even cause death (risk of death is less than 1 in 2,000 without pleurodesis, less than 1 in 500 with pleurodesis).

Other more common minor risks include:

**Chest pain** – the nerves between the ribs may be bruised after the procedure, which can cause some persistent pain. This may be controlled with paracetamol.

**Bleeding** – can occur from the site where the hole is made or from the biopsy site (less than 1%). Any bleeding usually stops on its own.

**Infection** – the risk of infection of the skin around the insertion site or pleural fluid is around 1% and may require antibiotics or drainage of any infected fluid (requiring you to stay in hospital). If you have fevers or feel unwell after the procedure you should let the doctor know.

**Fever** – if talc has been used, some people experience a high temperature for the first 1-2 days (< 10%). This usually settles down on its own.

**Reduced oxygen** – your oxygen level will be continuously monitored during the procedure through a sensor clip placed on your finger. The level of oxygen in the blood may fall during the procedure for several reasons. This drop is usually mild, and the level usually returns to normal without treatment. If the oxygen level remains the doctor will give extra oxygen or stop the test to allow for recovery.

**Air leak** – air can leak into the tissues under the skin (surgical emphysema). This occurs in less than 6% of cases. It is not serious and usually settles within a few days without any treatment.

**Lung leak** - Air can escape into the space around the lung (pneumothorax) or the chest drain can come out of place, meaning it has to be repositioned. If this occurs it is usually a small leak and does not cause any problems. The drain in your chest will treat this.

In the very rare event the lung does not re-inflate (“Trapped Lung”), or there is a persistent air-leak from the lung into the chest cavity, you may go home with a TIPC as a result. In the majority of such cases, this is not due to the procedure itself but more to the underlying cause which has resulted in the build-up of fluid.

---

## 9) What will happen on the day?

Please come to the reception desk at the Preadmission Clinic on level 3, Sutherland Hospital at the time you have been given. You should not have anything to eat for 6 hours before your appointment time and nothing to drink for up to 2 hours before.

- Please bring with you any medication you take and your spectacles if you wear them.
- Please do not wear jewellery, nail varnish or make-up.
- Please let us know before you come for your procedure if you will need an interpreter.

When you arrive a member of staff will take your name and a few other details and let the bronchoscopy staff know that you have arrived.

A nurse will greet you and make you comfortable and take your blood pressure, temperature and pulse, and ask you questions about your medical history. The nurse or doctor will insert a small plastic tube into your hand or arm so that we can give you sedation and any other medication during the procedure.

Please let the nurse know if you are taking any medication which thins the blood, such as Heparin, Aspirin, or Warfarin. Please also tell us if you have any allergies or if you may be pregnant.

Please also let us know if you are diabetic.

## 10) What happens after the procedure?

Patients vary in their wake-up times. You will be taken to a recovery area until the sedation wears off. You will then be taken back to the respiratory ward.

You must take care not to pull on the chest drain tube or it may become dislodged. Do not hold the chest drain container above the level where the chest drain enters the skin.

You may have some soreness in your chest for the first few days. You will be prescribed regular painkillers to help this and will be able to ask for more should you need them.

On the next day, the hospital team may request a Chest X ray to assess whether the lung has expanded back fully and this may need to be repeated where expansion is not complete. You will usually stay in hospital for between 1 and 3 nights.

If you have had biopsies or other samples taken these will go to the laboratory for further examination. This can take 1–4 days or more depending on the specific test that is being done.

Once discharged, you will be given an appointment with your specialist to discuss the results

You will be given on written instruction when you leave the hospital. Please follow these carefully.

---

### **SUMMARY GUIDE**

You are scheduled to have a medical thoracoscopy, a procedure that your doctor performs to examine your pleural space and pleura and take samples.

- Do not eat for 6 hours or drink for 2 hours before the procedure.
- Review your medication schedule and smoking activity with your doctor.
- After the procedure, do not drink for ½ to 1 hour or until the numbness completely wears off.
- Do not drive home by yourself for 24 hours after the procedure; arrange for a family member or friend to take you home.
- Contact your doctor immediately if you have shortness of breath or chest pain, or you cough up more than a few tablespoons of blood at home.

**If you have any questions or concerns, please contact:**

**Respiratory Consultant or Registrar On-call via the Sutherland Hospital Switchboard  
on Telephone: 9540 7111**

#### **11) Patient Instruction after Medical Thoracoscopy**

The responsible adult escorting you home should also be aware of the following instructions.

The effect of the sedation can take some time to wear off and your memory loss may persist longer than the sedation. Your escort needs to know that you may not carry out instruction even though you appear to acknowledge them.

You can resume eating a normal diet after discharge unless the doctor today advises otherwise.

**SEDATION WILL AFFECT YOUR JUDGMENT FOR ABOUT 24 HOURS. DURING THIS TIME FOR YOUR OWN SAFETY AND IN SOME CASES LEGALLY:**

- DO NOT drive any type of car, bike or other vehicle and take extra care as a pedestrian
- DO NOT operate machinery
- DO NOT drink alcohol
- DO NOT use cooking appliances or handle dangerous items such as boiling water
- DO NOT make critical decisions or sign a legal document
- DO NOT do activities that require coordination or balance
- Ensure that you have a responsible adult to care for you until tomorrow
- Rest at home for the remainder of the day

Your doctor may prescribe you medication for pain or other indications:

- Take medication prescribed

---

**SEEK MEDICAL ADVICE FROM YOUR GP or HOSPITAL IF YOU NOTICE ANY OF THE FOLLOWING:**

- Have trouble swallowing, breathing, speaking
- Sharp pain in the throat or chest
- Begin coughing up more than a few tablespoons of blood
- Have a high temperature or fever >38°C
- Have redness, pain or swelling for more than 48 hours where you had the injection for sedation (hand or arm) or chest drain insertion site.
- Any symptoms that you think is related to today's procedure and is causing you serious concern

You will usually have a stitch where the chest drain has been in place. This typically needs to be removed after 5-7 days by your GP or community nurse.

You should avoid heavy lifting for about a week after the procedure. You should be able to go back to work between 1-5 days after your discharge from hospital, unless you are told otherwise. We recommend that you do not fly for one month after a thoracoscopy

Please ensure you have an arranged follow up with your respiratory specialist within 2 weeks of the procedure.

**If you have any questions or concerns, please contact:**

**Respiratory Consultant or Registrar On-call via the Sutherland Hospital Switchboard**

**on Telephone: 9540 7111**