Cardiothoracic Service

# What you need to know about your thoracic surgery

Te Whatu Ora
Health New Zealand

## This booklet has been designed to give you information about your thoracic surgery and what to expect during your stay at Wellington Hospital

We encourage you and your family to read this booklet so that you will have an idea of what to expect during your stay with us.

If you have any questions, please contact the cardiac liaison nurse on **(04) 918 6177**

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## What to bring

- This booklet
- Your medications
- Eyeglasses, hearing aids, dentures
- Mobility aids such as frame, stick, prosthesis
- Health passport or advance care plan (if you have one)
- No more than three sets of nightwear
- Dressing gown and slippers (optional)
- Underwear
- Personal toiletries – toothbrush and toothpaste, shampoo, razor, deodorant, hair brush/comb
- A set of loose comfortable clothing to go home in
- Contact details for your next of kin
- Your GP's name and practice details

## Valuables

Please **do not** bring large amounts of money, jewellery, or other valuables to the hospital. The hospital is unable to take responsibility for these items.

You may wish to bring money for a TV card. This costs $6.00/day. Alternatively, there is also a patient lounge with a TV.

Please remove jewellery such as rings or bracelets, as these may get stuck/become too tight which could end up cutting off circulation with post-operative swelling. Taonga, such as pounamu may remain. Please let us know so that we can make a plan with you.

## About Lung Cancer:

Your surgery may be for either suspected or confirmed lung cancer. This booklet aims to describe what to expect generally, though covers other types of surgeries as well and does not provide you with all of the information needed about your journey with cancer.


The Cancer Society's **Understanding Lung Cancer** book covers all aspects of the lung cancer journey, from diagnosis, what to expect, and different treatment options. This book is available for free on their website **cancer.org.nz**.

It is also available on the ward if you would like a copy.

We understand that this can be a stressful and uncertain time for you, and you may have a lot of questions or support needed to help process all of this.

If you or your whānau would like to speak to someone from The Cancer Society, staff on the ward can make a referral for you, or you could call them on **0800 226 237**.

The Wellington office is also located across the road from the hospital on Riddiford Street - opposite the emergency/afterhours entry. Their services are free and involve counselling, support and resources for you and your whānau, advice from a nurse, accommodation, library, and a volunteer driving service.

# Maximising your health before your operation is very important

Doing things like quitting smoking, getting some exercise, eating a well-balanced diet, and managing other health issues such as diabetes will all have a really positive impact on your health and wellbeing from here on. This will not only help to reduce risks or complications from your surgery itself, but can also help you recover faster.

## Smoking and vaping

If you smoke cigarettes/tobacco or use vaping products containing nicotine, quitting is one of the best things you can do for your health. Smoking carries a higher risk of serious complications during and after surgery.

For the greatest benefit, you should try to aim to quit smoking/vaping at least 8 weeks prior to surgery. Quitting completely is the best way to reduce harm from smoking. Cutting down may make a difference, but will not significantly reduce the risks of lung or wound complications.

**Where to get help:**

- Quitline **0800 778 778**
- Takiri Mai Te Ata Regional Stop Smoking Service (Hutt Valley, Wellington, Porirua, Kāpiti Coast) **0800 926257**

These services are free and available Monday-Friday. Your local pharmacy may also supply nicotine patches, lozenges and gum for free/very low cost and without a prescription - depending on where you live. The ward can also provide nicotine replacement therapy and assistance with referrals whilst you are an inpatient.

### Why is quiting smoking so important?

Below is an explanation of risks or complications smoking could have in relation to your heart surgery.

### Reduced oxygen supply to your heart and body

The nicotine in cigarette smoke causes narrowing of your blood vessels (vasoconstriction) and increases your heart rate and blood pressure every time you smoke. Carbon monoxide in cigarette smoke reduces the oxygen levels in your blood.

**If you smoke, you can have up to 10 times more carbon monoxide in your blood than non-smokers.**

This makes it harder for your heart and body to get the oxygen it needs. High levels of carbon monoxide can also disturb the rhythm of your heart.

**The combined effects of carbon monoxide and nicotine can be dangerous.**

It may result in you needing to be given extra oxygen to prevent damage to vital organs, such as your brain. If you have heart disease – where your supply of blood and oxygen is already reduced – it is very important that you stop smoking at least 24 hours prior to surgery.

**Blood clots**

Chemicals in cigarette smoke cause changes in your blood, making it thicker, stickier, and more likely to clot. Blood clots can go on to cause a heart attack, stroke, or other serious medical problems.

**Immune system**

Smoking increases your risk of infection.

**Healing of bones, skin, and wounds**

Smoking can slow down and interfere with the healing of bones, skin, and other body tissues. Smokers are more likely to suffer from wound infections, longer healing times, and problems with scarring, compared to other people who have stopped smoking.

## Diabetes

If you have been diagnosed with diabetes, or are 'pre-diabetic', it is important to make diet and lifestyle changes to manage this.

Going forward for surgery, if you have diabetes, you have an increased risk of complications. These include high/low blood sugar, poor wound healing, infection, and electrolyte imbalances.

We will ensure that care is made to make things as safe as possible throughout your stay.

Nurses will check blood sugar levels pre-meals, and may also need to do checks in-between. You may find that this is more frequent than at home and this is because stress, major surgery, and changes to your usual diet can all impact your body's control of blood sugars (high or low).

Your GP will check your HbA1c levels – This is the amount of glucose that has built up in your blood over a 3-month period.

**A result of 40 mmol or lower is normal for people without diabetes.**

**A result between 41-49 indicates you have pre-diabetes, which means you are at much greater risk of getting type 2 diabetes and heart disease.**

Making lifestyle changes recommended in this booklet will contribute to lowering your risk if you are pre-diabetic.

## Discharge from hospital - plan early

Work with your family/whānau to discuss plans for your return home following surgery.

You will need someone at home with you for the first 1 to 2 weeks. This person will need to be able to help you with things around the house such as cleaning and preparing meals and taking you to appointments. Ask your spouse/partner, children, friends or neighbors whether they can help you when you get home.

- Plan to lower your activity for a while. If you are a primary caregiver who takes care of another person, you will not be able to take care of someone whilst you are in hospital or during your early recovery period. Make plans for someone to take over for you before you go to the hospital.
- Organise your house so you don't need to do this right when you get home
- Make some meals beforehand and freeze them ahead of time
- If you have any pets, make plans for someone to look after them whilst you are in hospital.
- Make an appointment to see your GP one week after surgery.

## Work

Depending on the type of work you do, you will need to take approximately 6 to 8 weeks off while you are recovering.

If your job is physically demanding, you may need to arrange light duties, sick leave, or a benefit.

## Driving

You may be clear to drive once discharged; your medical team will advise you.

Factors which may affect your ability to drive safely include medications and physical aspects such as pain or your wound.

If you have been discharged with, or are still using opiates for pain relief such as tramadol or morphine/ Sevredol then you should avoid driving as this will affect your reaction time, judgement and overall safety.

Pain and your surgical wounds may also make aspects of driving difficult such as steering, changing gears, etc. These factors may also prevent you from being able to make an emergency stop if needed.

## Your hospital stay

**Length of stay**

Following thoracic surgery, you will usually be in hospital for 3 to 7 days.

Occasionally, things will happen that mean your stay with us is either longer or shorter than anticipated. Your care will be modified to fit in with this.

The doctors and nurses will keep you updated with your progress. Each day, you will be seen by the Cardiothoracic ward round in the morning and the plan for the day/progress you have made will be discussed here. Please ask staff on the ward if you have questions at any stage.

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## Theatre lists/postponements

There are usually between 2 to 4 operations performed each day. Several factors influence whether these go ahead on the day.

You will be told the night before your surgery whether you are first (7am) or second (11.30am to 1pm) on the list.

Unfortunately there is always the possibility of a last minute postponement or change to your scheduled surgery. This may be due to shortage of beds or staff in ICU or theatres, or the need to perform emergency surgery on other patients.

We are aware that this is a stressful time for you.

Should there be a delay, we will do everything we can to ensure you have your surgery as soon as possible.

## The night before surgery

**Where will I go?**

The main ward for the Cardiothoracic service is **ward 6 South**. This is located in the **orange lifts**, on **level 6**.

You may also stay in the in the Transit Lounge. This is located on level 2, and is accessible via near the ED entrance off Riddiford Street.

As we are a regional hospital, from time to time, you may be placed in another ward due to a limited supply of beds.

If elective (coming in from home), you will usually be asked to arrive at the hospital the day before surgery at 1pm. From there you will be asked to report to the ward or Transit Lounge and will be directed from there. You may have appointments booked for a chest X-ray or blood tests and the ward clerk will direct you to these. Otherwise, we will get you settled in to your room/bed space.

You will be seen by the cardiothoracic surgeon and registrars. They will go through the consent and discuss the plan with you.

The anesthetist will also visit you and discuss aspects such as having a general anesthesia (GA), and pain relief.

Your nurse will prepare you for surgery. This will involve gathering your documents, completing your theatre checklist, doing an ECG, shaving your skin and getting you set up for the following day.

**Cultural/pastoral Support is available for**

- Māori patients through the Whānau Care service
- Pacifica patients through the Pacific Health Unit
- Multi-faith chaplaincy, and an on-site prayer room

## Whānau Care Services

Assist by providing whakawhānaungatanga, manaaki and Manaakitanga; practical help and information for you and your whānau. Connection, bridging the gap between you, your whānau and the medical team. They are able to assist with cultural needs, acting as a patient advocate, helping patients and their whanau understand care/treatment, provide health information and education, and help with engaging in community and social support services.

**Getting in contact with Whānau Care Services:**

- Ask your health professional to make a referral
- Email **wcs@ccdhb.org.nz** or phone **04 806 0948**
- Your whānau can also make a referral on your behalf
- Visit the **Cultural Care Centre** on **Level 2** of Wellington Regional Hospital

## About your Surgery

Types of thoracic surgery performed here at Wellington Hospital are described below. Thoracic surgery is usually performed through key-hole surgery (Video-assisted Thorascopic Surgery – VATS), or through the side (thoracotomy) approach.

The type of lung surgery you have may involve just one of the procedures described below, or perhaps a combination of them. Your surgeon will discuss the surgery best suited to you.

### Thoracotomy approach

In this type of surgery, the surgeon makes an incision in the chest wall between your ribs

### VATS

This is commonly referred to as ‘key hole’ surgery. A small tube called a thoracoscope is inserted through a small incision through the ribs. At the end of the tube is a light and a small camera. This allows the surgeon to see the chest cavity without having to open up the chest. Lung tissue may be removed if required with specially designed instruments through one or two more small incisions.

### Mediastinoscopy

A small incision is made just above the breastbone and a mediastinoscope is moved into the mediastinum. Any abnormal lymph nodes or areas seen through the camera can be removed or biopsied and sent to the laboratory.

### Wedge Resection

This is where a small piece of lung – or wedge – is removed, rather than the whole lobe. This is typically performed for non-small cell lung cancer, but may also done for small cell lung cancers or neuroendocrine tumors in the lung. As a smaller part of the lung is removed, this may help retain lung function.

### Bullectomy

This is a procedure in which large areas of damaged air sacs known as bullae are removed. When the air sacs (alveoli) are damaged, they form into larger spaces known as bullae. Bullae are unable to absorb and transfer oxygen into the bloodstream. They may also worsen symptoms of breathlessness, and can cause air leaks which could cause lung collapse. Bullae often form as a result of chronic obstructive respiratory disease (COPD), but may also be due to other causes. This type of surgery is usually performed using the VATS approach.

### Lobectomy

A lobectomy is a procedure where an entire lobe is removed. This may be done for a variety of reasons which may include a lung cancer diagnosis, infection, COPD or benign tumors. The procedure may be done by either a VATS or thoracotomy approach depending on the diagnosis. In cancer, nearby lymph nodes may also be removed due to possible spread.

### Pneumonectomy

A pneumonectomy is a surgery to remove an entire lung. This is performed for a variety of reasons, most often for removal of widespread tumorous tissue.

### Pleurodesis

This is a procedure performed to ‘stick’ the lung to the lining of the chest (pleura). This may be done due to a recurrent pneumothorax (air leak into the chest cavity), or pleural effusion (build-up of excess fluid outside the lungs). This may be performed mechanically, or through a chemical irritant which will cause inflammation and subsequently cause adhesion of the lung to the chest wall.

### Pleurectomy

This is a procedure to remove part or all of the pleura – a membrane that lines the lungs and chest cavity. This may be done for various reasons, such as relieving symptoms of fluid build-up in the oleural cavity, to obtain biopsies to diagnose certain conditions or to treat for certain cancers such as Mesothelioma

### Cryo nerve block

This procedure involves freezing the nerves located in your chest underneath each rib. These nerves are one of the main sources of pain after thoracic/chest surgery.

A cryo nerve block helps to temporarily shut off the nerve. This leaves a sensation of numbness after surgery which helps with managing postoperative pain. There are many ways to help manage pain so if your surgeon thinks this is an appropriate treatment, they will discuss this with you.

## After your Operation

Following your surgery, you will be transferred to the Post Anesthetic Care Unit (PACU), otherwise known as ‘recovery’.

Nursing staff will look after you and monitor you closely to ensure you are safe and comfortable. You may have any of the following:

- In intravenous (IV) cannula – used to give you fluids, antibiotics and pain relief
- A cuff around your arm to measure your blood pressure
- A probe on your finger to measure your oxygen levels
- Chest drains – to collect blood or serous fluid and allow air to escape safely.
- An epidural – located near the top of your back, for pain relief and to ‘numb’ the area
- A paravertebral catheter – also located in your back. This is also used for pain relief and to ‘numb’ the area
- Urinary catheter – to help empty your bladder whilst you are unable to go to the toilet independently or avoid going into urinary retention (unable to pass urine)
- A PCA (Patient Controlled Analgesia) to allow you to push a button for pain relief
- An oxygen mask or nasal prongs – to give you oxygen if you need it.

When the nurses and anesthetist are happy that you are safe and ready to come back to the ward, one of the nurses from 6 South will come and pick you up to transit you back to the ward.

In some cases, patients may go to ICU following surgery. If this is the case, it will be discussed with you.

**The Step Down Unit (SDU)**

Once ready to leave PACU, you will be transferred to the SDU in Ward 6 South. This is a 6-bedded area where you will continue to be monitored closely. Our aim here is for you to be able to get you up and around as soon as possible, so that you can recover sooner.

Once you arrive, you can expect to continue to have close monitoring of your vital signs, especially in the first couple of hours after returning to the ward.

The nurses looking after you will also monitor your drains regularly, and will assess whether they are working properly and check for any air leaks. To do this they will ask you to do a deep breath and cough.

As well as this, nurses will also continue to monitor and manage your pain. You may need encouragement to press the PCA button, or need additional pain relief to keep you comfortable. If you have had an epidural, the block (to check the area of numbness) will be checked once a shift ( or as needed) to make sure this covers your surgical sites well to manage your pain.

You will be able to eat and drink once you get back to the ward.

Family are also able to come up and visit you. We ask that you only have 1 to 2 visitors at a time in the SDU.

**Rest is important**, so there is a break from visiting hours in the afternoon (1pm to 3pm). Each day you will gradually do more, from getting out of the bed, to mobilizing around the unit and then eventually around the ward. As you require less monitoring, you will be moved out of the SDU and back to one of the ward beds.

## Other things to note:

### Pain relief

Everyone experiences pain after surgery, although this is different for everyone.

It is very important for your recovery that you have regular pain relief to enable deep breathing, coughing, and mobilization. This enables you to recover faster from surgery. You will usually receive regular paracetamol tablets, as well as morphine or Fentanyl intravenously for your pain through the PCA.

If you have an epidural and/or PCA, you will be visited by our specialist pain team each day to ensure your pain is being managed effectively.

Once your drains are out, the PCA and epidural/ paravertebral can usually come down or be trailed off.

### Chest drains on suction

For some people, they may have their chest drains connected to a small amount of suction which is connected to a port in the wall. This allows the drain to remove air from the lung cavity, as well as help your lung re-expand.

Some people may have this on for longer than others – the duration will be determined by your surgeon based upon your individual circumstances.

Whilst connected on suction, you may have to remain on this all the time (referred to as ‘strict’ suction in the ward),

or you may be able to be disconnected for short periods (for activities such as going for a short walk, to the toilet, etc.). We will let you know if you are on strict suction or not and assist you with connections/disconnections.

**Epidurals**

Many patients will have an epidural inserted when they are in surgery to help minimise pain after surgery. This will be discussed with you and your anesthetist.

A small catheter/line is inserted into your back where pain relief and/or local anesthetic is infused to help numb the area and provide some pain relief.

As detailed above, the nurses will check your epidural block once a shift or as needed. Alongside this, they are also monitoring for side effects. These side effects include low blood pressure (hypotension), loss of bladder control, itchy skin, nausea and vomiting, or changes to your breathing. Some of these side effects can be anticipated (such as inserting a catheter to help empty your bladder), or can be managed effectively once identified.

**Hypotension:**

This is a common side effect associated with an epidural. You may be commenced on a medication called Phenylephrine which will help counteract this. This may be evident in PACU/upon return to the ward, or may arise when you get out of bed for the first time.

The nurses will take lots of care to make sure you are safe, and assist you out of bed slowly to ensure you don't feel too dizzy. This may also occur as a result of being dehydrated. Nurses will ensure that once you are post-op you are having enough fluids. You may need some intravenous fluids as well.

## Your progress in hospital

Each morning, the Cardiothoracic team will visit you on the ward rounds. They will assess your wellbeing and progress following surgery, as well as assess your drains, wounds and medications.

The plan for the day will be made from here.

## Drains

These will remain in until your surgeon is satisfied that they have done the job and are safe to be removed.

The nurses on the ward will remove these once OK.

You will have an x-ray before, and will usually have one after removal. Once removed, there will be stitches left behind as the wounds heal. These stitches can be removed 10 days following the removal by your GP or practice nurse.

**Discharge information**

Before you discharge, you will be given information from the nursing and medical staff. This information is covered in this book, in case you need to go back over things.

Your wounds will be checked, and clean dressings re-applied if needed.

Any IV lines/attachments should be removed before you leave the ward – please inform staff if this has not been done.

You will be given discharge paperwork, which will explain the treatment you had whilst in hospital. As well as this, you will be booked in for a follow-up appointment in a few weeks' time; you will get the appointment in the mail.

If you live outside of Wellington, follow-up is usually done closer to home.

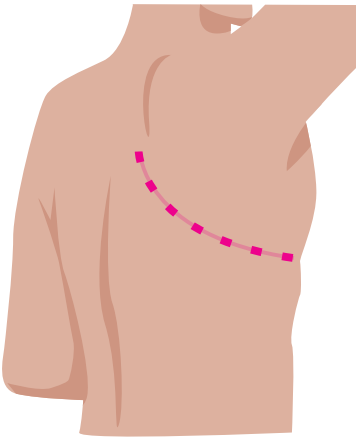
## Wound Care

After the chest tube dressing is removed, you may shower or wash the wounds daily with mild soap and water. Pat your wound dry.

**Avoid:**

- rubbing the wound site
- applying lotions, powders or antibacterial ointments
- soaking in a bath or swimming.

These will slow the healing of the wounds.



## Check your wounds daily for signs and symptoms of infection.

**These include:**

- increased redness
- pus-like ooze
- excess swelling
- fever
- increasing pain.

You may have a small amount of fluid that leaks from your wound or from your chest tube site. You will have dressings in place if necessary. If the wound leaks more then you need to see your doctor. Your wound may have staples or stitches in place.

When you return for your doctor's visit, they will remove the staples or stitches that are left and advise you about wound coverings.

## Pain

After a thoracotomy it is very common to have pain.

It is very important that you manage your pain well so that you can cough, take deep breaths, and walk, which helps prevent infections and improve healing and recovery.

### How to manage your pain at home

We will give you a prescription for pain relief medicine when you leave. Take pain relief regularly, even if you haven't got pain, for at least the first 4 weeks, and especially at night.

Gradually reduce the painkillers over 6 weeks, and stop paracetamol last.

**If the pain gets worse, see your doctor.**

### Other ways to manage pain

Warm showers (once your chest tube dressing is removed) will help loosen your muscles.

Heat packs near the wound site. Make sure to place a towel between you and the heat pack to prevent burns.

Splinting when you cough (hold a pillow firmly against the chest when you cough).

## Call your doctor if:

- You have pain or pressure in your chest, arms, or throat
- You are dizzy, lightheaded, have blurry vision, or feel faint
- You are confused or suddenly clumsy.

**For the first 4-6 weeks, AVOID DOING THESE THINGS on the side of your wound:**

- Lift, push, pull, or carry anything that weighs more than 6kgs e.g. pets, children, garbage, laundry, and groceries
- Unscrew tight lids or open heavy doors
- Reach behind you, since this may overstretch your wound - DO NOT lean back on your arm(s)
- Vacuum, garden, rake, or mow the lawn.

Discuss with your doctor about returning back to work and sports.

You will be able to drive after 4 weeks from the day of your surgery.

## Activity

Exercise is an important part of your recovery.
The right exercise will help to:

- Increase your endurance and body's efficiency
- Improve movement in your shoulders and back
- Maintain your mobility and muscle tone
- Strengthen bones and joints
- Control blood pressure
- Lose weight
- Sleep better and feel better.

You may experience some increase in shortness of breath after your operation. This is especially common if you have had part of or your whole lung removed. This should improve over time as you continue to work on your fitness.

**It is important to begin with gentle activity**, such as a walking programme, as soon as possible.

Slowly work up to being able to exercise for at least 30 minutes total, every day.

| | | |
|---|---|---|
| Week 1 to 2 | 5 minutes - 3 times a day | 10 to 20% effort |
| Week 3 to 4 | 10 minutes - 3 times a day | 20 to 30% effort |
| Week 5 to 6 | 15 minutes - 3 times a day | 30 to 50% effort |
| Week 7 to 8 | 30 minutes - 3 times a day | 30 to 50% effort |

**Exercise tips**

- Warm up and cool down for 5 minutes before AND after you walk by doing gentle stretches, or by walking more slowly.
- Exercise at a moderate level of effort. You should be able to talk comfortably and exercise.
- Wear loose-fitting & comfortable clothes.
- Wait 1 hour after you eat to exercise.
- Walk on flat ground.
- It is OK to walk on a treadmill at a slow speed.

**It is important you listen to your body when exercising.**

**Slow down if:**

- Your body is working at more than a moderate level of effort - you are unable to hold a conversation and exercise
- You remain short of breath 10 minutes AFTER you stop exercising
- You cannot sleep, or you feel more tired than normal the day after you exercise
- You have arthritis and it flares up, or you feel pain in your joints, heels, or calf muscles
- You have increased swelling in your legs or feet.

**Avoid exercise if:**

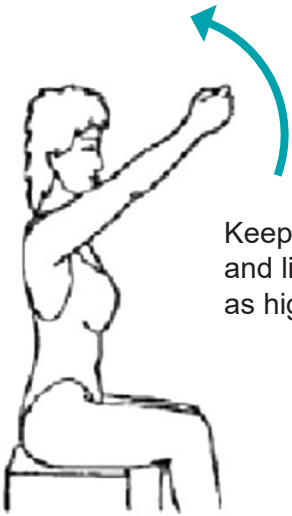
- You have a cold, flu, or fever
- You have diabetes and it is out of control
- You feel extreme emotional stress or you are much more tired than normal.

## Exercises following lung lurgery

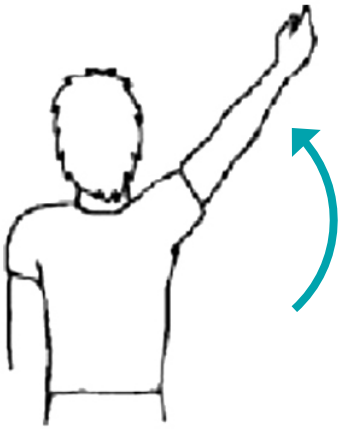
The goal is to restore full movement in your shoulders and back.

These exercises may be uncomfortable. **If they are painful to perform, ease back or stop until the pain settles.**

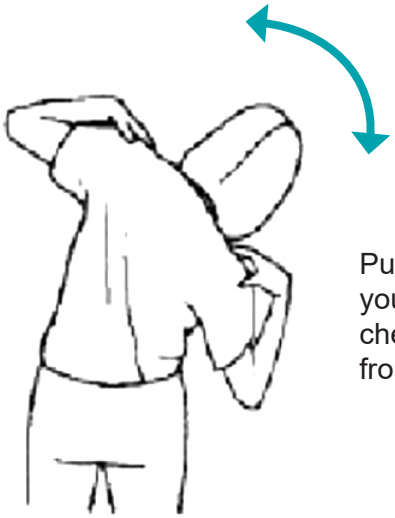
Repeat each exercise 10 times, 3 to 4 times a day.



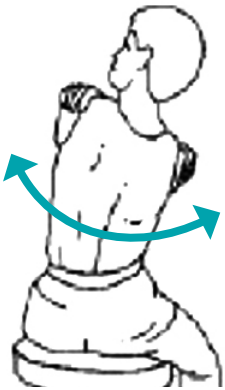
Keep your arm straight and lift it above your head as high as you can.



Lift your arm out to your side and up above your head



Put your hands behind your neck (or across your chest) and slowly bend from side to side



Cross your arms on your chest and slowly turn your body as if you are trying to look behind you one way then the other.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