KAPDI ● De KOCK
PHYSIOTHERAPISTS
Rehab & Respiratory Special interest in Cardiopulmonary Care

PRE-OP INFORMATION FOR CABG / AVR / MVR SURGERIES
This is an Information Leaflet explaining what kind of Physiotherapy Management you will undergo Post Operatively and why it is necessary for your recovery.

Please bear in mind that this is a very basic guideline, and your management will depend on your overall progress and your Surgeon/Physician's management protocols.

What is Acute Cardiopulmonary Rehab?
Acute rehab starts in the hospital after a cardiac or respiratory event or surgery and uses respiratory care to prevent any further post event or operation respiratory complications. It focuses on optimizing lung function and functional movement (walking) to assist patients in their recovery. It may involve a variety of mechanical and manual techniques, deep breathing exercises, education and exercise therapy, all with the aim of facilitating airway clearance, increasing lung volumes and preventing post op or event related chest infections.

Day 0 (Operation day)

You will not be allowed to eat or drink for about 6 hours before an anaesthetic. In that time, you may be given medication to relax you.
At the scheduled time you will be taken up to theatre where your anaesthetist will put you to sleep. Due to the deep anesthesia you will require artificial ventilation via an Endotracheal tube which may be introduced via the nose or mouth.
You will not have any recollection of these procedures. You will be sedated the entire day of the op until the next morning (unless otherwise indicated by your surgeon).

The duration of your op will depend on the procedure and approach your Surgeon has chosen. It may be a mediansternotomy (breastbone incision), thoracotomy (lateral under the arm incision), mini-mediansternotomy (half of the breastbone) or mini thoracotomy (small incision under the clavicle) for Minimal Invasive Cardiac Surgery. A quadruple bypass is not more dangerous than a single bypass. All pre and post op protocols and management remain the same.

What to expect Post Operation

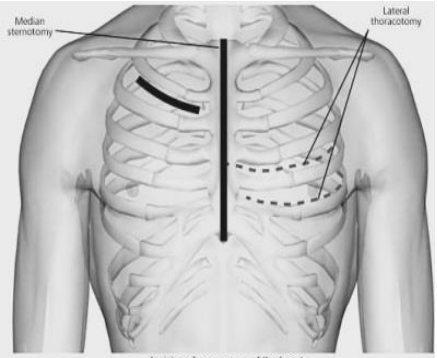
- Post operatively you will be brought into Surgical ICU, where a specialized nursing sister will take care of you.
- You will stay in this unit for 3-4 days and then another 3-4 days in the ward (unless otherwise indicated by your surgeon).
- Your immediate family and selected guests can visit. They, however, will not be able to rouse you in any way and you may not be aware that they are there.
- Besides the breathing tube, there will be an array of drips and drains (see ATTACHMENTS*). Please alert more sensitive loved ones so they are adequately prepared when visiting you.

Day 1 (when you wake up)

The sedative may be stopped in the early hours of the morning, and you may awake by 8/9am. You will still be very groggy during that time and barely aware of your surroundings.

The tube cannot be removed whilst you are sleeping, so for approximately an hour you will be aware of the breathing tube. During this time, you will not be able to talk (the tube runs between your vocal cords) or be allowed to eat or drink anything. Your specialized nurse will be at your side talking you through the whole process.
When all the required tests are done and your doctor has assessed you, they will remove the breathing tube.
It takes literally 3 seconds, and you will feel a need to cough something out as they are withdrawing the tube.
Once the tube is out, your nurse will replace it with an Oxygen face mask loosely covering the nose and mouth. You will be able to breathe spontaneously, talk and eat something light.

Due to the nature of the surgery and location of the incision, your lungs will have decreased volumes post operatively.
Smaller volumes mean less oxygen delivery to the body and therefore you will be required to wear a ventilation mask initially which offers a higher concentration of oxygen. This satisfies your body's needs, but your lung volumes remain reduced.
It is therefore imperative that we commence the chest physiotherapy asap.



Incisions for exposure of the heart

The physiotherapy will include deep breathing exercises via an IPPB bird machine which delivers a + pressure whilst you inhale through your mouth to slowly expand your lungs, thus improving lung volume and optimizing your work of breathing. You are in complete control of the initiation, length and depth of your breath with the aid of a gentle pressure by the machine to encourage further lung expansion.
Whilst breathing through the IPPB machine, the physiotherapist will administer manual vibrations on your chest walls to loosen secretions from the peripheral areas of the lung.
The physio will then teach you a supported coughing technique where you tuck your elbows closely into your sides and wrap your arms firmly around a folded towel over your wound site. This pressure ensures minimal movement at the wound site and allows you to cough effectively.

You may have some residual secretions in the lungs and throat. It is very important to expectorate these secretions regularly. Avoiding coughing can lead to an accumulation of secretions on the chest making breathing difficult and can also cause colonisation of bacteria in lungs, resulting in a lung infection or pneumonia. Not protecting your chest adequately whilst coughing can lead to wound healing issues and excessive pain.
IT IS THEREFORE IMPORTANT TO DO PROTECTIVE COUGHING REGULARLY.

PLEASE DO NOT REFUSE THE PAIN MEDICATION, discomfort around the chest area can cause inadequate inspiratory effort, and ineffective coughing which may result in poor lung expansion and function. The anaesthetic, pain meds and environment may cause disorientation, hallucinations and nausea. Please report these experiences. Although unsettling, it is perfectly normal and will resolve quickly.

PLEASE DO NOT STRETCH YOUR ARMS outside of the bed or above your head. This may cause stress and pain along the wound site.

The session may conclude with gentle bed exercises which include heel slides and ankle pumps.

A light diet of jelly, custard, soup or yoghurts will be allowed on the first day until your bowel is more active. Although you may feel very thirsty, there may be fluid restrictions in place.

***ATTACHMENTS TO EXPECT**

- CVP (central venous pressure): a line usually in your neck which measures your venous blood pressure and allows for transfusions of required medication
- Arterial Line: The line in the crook of your elbow or wrist measures your arterial blood pressure
- ICD (intercostal drains): 2-3 chest drains will be inserted in your chest cavity; these drains drain excess fluid from the operation site which would otherwise build up and impede lung expansion and cardiac function
- Urinary catheter: to collect and accurately measure your urine output
- Pacing leads/wires exiting your chest cavity that may be attached to a temporary pacemaker

Your non-invasive attachments will include:

- a blood pressure cuff around your arm or leg
- electrodes placed on your chest to monitor your heart and respiratory rate and rhythms
- a pulse oximeter will be placed on your ear, finger or toe to measure oxygen saturation at a tissue level

Day 2

Your Surgeon will assess you and may request for certain lines to be simplified or removed. If your chest drains are removed, you will be mobilized to the chair with assistance from the nursing staff and physiotherapist. It is recommended to sit out for a minimum of 2 hours if manageable. Sitting upright with your feet firmly on the floor encourages lung expansion. In addition to the breathing exercises, the physiotherapist may also request you to do some marching on the spot or knee extensions whilst sitting in the chair. You may be seen twice daily by the physiotherapist while you are in the ICU. At this stage the Oxygen mask may have been replaced with nasal cannula which rests on your upper lip and offers less oxygen support.

More solid foods are allowed on day 2. Due to the pain medication your bowel may be a little sluggish. If required, a commode or bed pan can be brought to the bedside. It only being day 2, unfortunately we cannot take you off the monitors for prolonged periods of time and therefore a visit to a private toilet will not be possible.

Due to the lights, alarms and high-strung environment of the ICU you may feel a little anxious or vulnerable. This is completely normal, please express your anxiety to your nurse, physio or doctor. Remember the operation itself is an insult to your body, and therefore you may feel a little worse for the wear. This is normal.

Day 3

We will continue with the above treatment plan and include another breathing exercise via incentive spirometry which you can do independently. If your surgeon wishes, more of your invasive lines may be removed. This allows for easier movement and if possible, we will attempt a first walk in the ICU.

Day 4 onwards to discharge from hospital

At your surgeon's discretion, you may be transferred to the ward where the physio will continue assessing you daily and treating you appropriately.
If you are found to be chesty, deep breathing exercises and manual techniques will be included in the session.
Initially you may be a little off balance and may require assistance with walking. Depending on your progress, there will be an increase in pace, distance and stair climbing will be introduced. When deemed fit, your physio will encourage you to walk with family, staff or independently (with supervision). At this point we will be discussing discharge and giving you home advice.
Feelings of anxiety, fear, unexplained sadness or just high-strung emotions are normal at this stage, please speak about them to your surgeon, family or staff.

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