

## **PREVENTION OF DEEP VEIN THROMBOSIS BY INTERMITTENT PNEUMATIC COMPRESSION DEVICES (IPC)**

Deep vein thrombosis (DVT) or blood clots in the leg can occur in all ages but their likelihood of occurring can be reduced by simple actions that you can take yourself, or by following the preventative actions advised by the nurses and doctors.

### **Deep vein thrombosis explained**

When you have had an operation it is normal for the blood to become thicker and stickier. This is a natural response that ensures that wounds do not bleed excessively. But this makes it easier for a clot to form in the deep veins of the leg sometimes resulting in a DVT. DVT is a potentially serious complication because a fragment can break off and become lodged in the lung and affect breathing. Sometimes the fragment is large enough to cause death. In the longer term, the clot damages the vein and can lead to leg ulcers that may be difficult to treat.

### **What cause deep vein thrombosis?**

The circumstances in which a clot is most likely to occur are when:

- Blood is stickier than it needs to be and clots faster to prevent the wound from bleeding
- The blood is moving slowly through the veins because of inactivity and bed rest
- The vein has some kind of blemish such as a varicose vein or scar from a previous injury

The risk of deep vein thrombosis can be greatly minimised by:

- Ensuring blood is only sticky enough to prevent wounds bleeding
- Keeping the blood moving in the vein and preventing stagnation
- Being aware of any damage to the vein

### **Who is at risk?**

Anyone can develop a DVT although the time you are most at risk is after surgery or injury. Being overweight, a smoker, and over 40 years of age also increases the risk. People whose veins have been damaged during pregnancy, at childbirth, or through injury or surgery are also more susceptible to developing a DVT.

You should tell your nurse or doctor if any of the following applies to you:

- Taking the contraceptive pill or hormone replacement
- Pregnant
- Previous DVT or clotting abnormalities in your family

Certain medical conditions such as heart failure, stroke and heart attack also increase your risk and the nurse or doctor will ask you questions about these and may take blood samples. You will then be advised on what to do.

## How can deep vein thrombosis be prevented?

One effective method of preventing a thrombosis is Intermittent Pneumatic Compression (IPC). IPC consists of a garment which is fitted to your calf or foot and inflated by a pump. As the garment inflates with air, it compresses the veins and pushes the blood back to the heart. The garment deflates again after a few seconds. This action copies the squeezing action on the veins by the calf or foot muscle when you walk. IPC is a safe, natural and effective alternative to drug therapies or may sometimes be used in combination with drugs if you are at particularly high risk.

IPC also helps to break down some of the proteins in your blood that can cause blood clots. This means it works in two ways to prevent a DVT.

This leaflet discusses the way that one manufacturer's systems work.

## How will IPC feel?

The garments are made of a comfortable, breathable fabric which fit snugly around your legs or feet. Once the pump is turned on you will feel a gentle squeezing of one limb for a short period of time, followed by a rest period and then the other limb will be squeezed. The compression will continue to alternate from limb to limb. You may only be required to use one garment. Notify your nurse or doctor immediately if the garments feel too loose, too tight, or you experience any pain, numbness or tingling.

## Calf Garments

A garment, which has an inflatable section at the back, is wrapped around each calf. Your doctor or nurse connects the garments to the pump that has a pre-set pressure and cycle for inflating and deflating. The pump inflates them once a minute on each leg. Garments come in various sizes and are fitted according to the size of your leg. Some garments are designed for the calf and thigh area together.

## Foot Garments

A garment is wrapped around each foot with an inflatable section that gently squeezes the sole and sides of the foot. The garments, when inflated, gently squeeze the foot around the sides and base. This opens up the blood vessels in the foot to allow the blood to flow more freely. The heel strap can be adjusted for comfort. The garments come in two sizes depending on your shoe size, and can be applied to either foot (there is no left or right). Your doctor or nurse connects the garments to the pump that is pre-set. The pump inflates each foot garment every 30 seconds, and remains inflated for 3 seconds. Calf, thigh and foot garments can be worn in any combination as per the patient photographed below. IPC should be applied just before surgery and needs to be maintained until you are walking properly again, usually after about 3 days. It is essential to keep the device working at all times, including while you sleep, to keep the blood moving. IPC is commonly used in the vast majority of surgical procedures.

