Doppler Assessment

Capital & Coast District Health Board
ŪPOKO KI TE URU HAUORA

Patient Information

Community Health Service

You have been advised to have a Doppler assessment as you have either a non-healing wound or you have been experiencing some discomfort in your legs that needs investigating, such as swelling.

This information is to help you and your family understand:
1. Why you have a non-healing wound
2. What a Doppler assessment is
3. How it can help decide your treatment

What is a non-healing wound?

Any wound that takes longer than six weeks to heal is described by health care professionals as an ulcer. Usually it is a loss of skin below the knee on the leg and the breakdown can be due to any cause.

What causes a leg Ulcer?

Injury or trauma can cause a break in the skin, or it may break down on its own for no apparent reason. If the wound does not heal it is usually because of poor blood circulation, either venous or arterial or a combination of both.

What makes venous circulation decline?

Veins are blood vessels that carry blood low in oxygen content from the body back to the heart. The veins have valves in them which help push the blood along and stop the blood flowing back.

The calf muscle in the leg also helps with this pumping action. If the valves are damaged in some way or your mobility is poor this can lead to poor venous return.

People that have occupations that involve standing for long periods of time can damage the veins, as they become dilated due to the high blood pressures in the legs. Other symptoms could include lower leg swelling, particularly at the end of the day, you may have visible varicose veins, your legs may ache and often eczema and ulceration develop.

What makes arterial circulation decline?

Arteries carry oxygenated blood from the heart around the body. They carry blood to all parts of the body under high pressure and great speed.

Arteries (like any plumbing system) over time begin to clog up and are often unable to deliver the blood to where it is needed. This process begins when the arteries harden and is called arteriosclerosis. There are a number of factors that speed up this hardening e.g. inherited conditions, smoking, diabetes, hypertension (high blood pressure), high cholesterol levels, obesity, lack of exercise, being a man and the normal aging process.

The arteries become smaller and smaller as they spread out through the body. When the arterial blood circulation in the legs is reduced due to a narrowed or blocked blood vessel it is called peripheral vascular disease. Arterial disease and venous disease need different treatments.

What is a Doppler?

A Doppler is a small battery powered hand held device with a probe. It uses reflected sound waves to detect blood flow through a blood vessel. The nurse uses the Doppler to pick up the sound of a pulse and this helps the nurse to decide if the problems with your circulation are venous or arterial. This diagnosis is important as treatment options vary depending in which circulatory system is compromised.

How is the Assessment carried out?

The assessment can be done in your own home or in a clinic environment. You will be asked to lay flat (with one pillow) twenty minutes before to the

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assessment takes place. If you are unable to lie flat the assessment can still be done but the results may not be quite as accurate. The nurse will ask you about any relevant medical history and will assess the appearance of your legs / ulcers.

A blood pressure cuff is then put around your arm and a blob of clear jelly is put on the crook of your elbow. The jelly will help the doppler probe pick up the sound of your pulse. The blood pressure cuff is inflated (blown up) in the same way as having your blood pressure taken. You will be able to hear the sound of your pulse. This is then repeated on the other arm.

The blood pressure cuff is then placed on your lower leg, around the ankle. If you have an ulcer the dressing will be removed and protected with a plastic film. The clear jelly is then put on the areas where pulses are found in your foot. The doppler probe is used to hear these pulses. The blood pressure cuff is inflated. This assessment is repeated 2-3 times. There are four pulses in the foot and to get an accurate assessment the nurse needs to record at least two of them. This assessment is then repeated on the other leg.

Is this assessment painful?

Usually the Doppler assessment is not painful. If you have a large and painful ulcer you may have some discomfort when the blood pressure cuff is inflated.

How long will this assessment take?

You will need to rest for twenty minutes before to the assessment. The recording of your pressures will take between 45 minutes to 2 hours and 15 minutes depending on how easy it is to find your pulses. If you have an ulcer that needs dressing after the assessment this will also take extra time.

What happens after the assessment?

Once the nurse has obtained your pressures, the ankle brachial pressure index (ABPI) is calculated. This is the ratio of the blood pressure in your lower legs to the blood pressure in your arms. This calculation along with medical history and assessment of your limbs can help decide your treatment.

What is the treatment?

Your treatment will depend on the results. You may need some form of compression therapy e.g. support stockings or socks.

Compression therapy comes in many different forms which your nurse will discuss with you, or you may need a referral to a vascular consultant. The assessor who does the assessment will let you and your GP know the results.

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