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Reducing foot problems through offloading

Module 6: Providing a total contact cast shoe


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Module 5 – Training outline



	Estimated time to deliver
A: Introduction	10 min
B: Total contact cast shoe	3 hours

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A: Introduction





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Offloading to reduce pressure

- Pressure on the wound can be reduced by:
 - Taking pressure away from the wound
 - And redistributing it (pressure) to other parts of the foot/limb.
- This module introduces the Total Contact Cast Shoe (TCS).





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Steps in providing an offloading device



The steps in providing any offloading device are the same:

1. Referral and appointment
2. Assessment
3. Prescription
4. Funding and ordering (this may include requesting devices or material from stock)
5. Preparation
6. Fitting
7. Client instruction
8. Follow up – for a TCS follow up will be at least weekly.

Step 2 – assessment is described in module 2.

The following slides will describe steps 3, 5, 6, 7 and 8 for provision of total contact cast shoe.



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B: Total contact cast shoe (TCS)





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How does a TCS 'offload' a wound?



- The total contact cast shoe works by:
 - Protecting the foot
 - Taking pressure away from the wound and re-distributing it through the rest of the foot.
- The total contact cast is usually used with a post op shoe to make walking easier.





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Materials and tools needed for TCS

- Semi rigid figreglass casting tape
- Rigid Figreglass casting tape (to reinforce sole if needed)
- Low- medium density EVA or similar foam
- Rubber gloves and protective sheets (particularly if using fibreglass casting tape)
- Micropore tape
- Softban (casting cotton wool) for wrapping the leg and to put between the toes
- Stockinette
- Velcro straps
- Cast shoe or EVA/soling
- Cast scissors (for removal)
- Heat Gun
- Texta or pen.





Advantages and disadvantages of TCS

Advantages	Disadvantages
Protects the foot.	Needs a supply of materials.
It is made for each individual person so the correct pressure can be applied on the foot.	It must be applied correctly or it could cause wounds.
It can be used for a longer time compared to TCC (Total Contact Cast).	Personnel need training and practice to be confident in the procedure.
It can be removed and reapplied easily for regular foot and wound checks.	Reliant on client compliance.

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When should a TCS be used?

- TCSs can be used as an offloading technique for superficial or deep wounds on the bottom of the foot that are:
 - Related to nerve damage (neuropathic plantar wounds)
 - Not infected and have good blood supply.





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When should a TCS not be used?



- TCSs should not be used:
 - For wounds that are deeper than they are wide
 - For wounds that are infected
 - For wounds that have poor bloody supply (ischaemia)
 - For wounds that are University of Texas classification stage B, C or D
 - With people who:
 - Are unable or unlikely to return regularly for follow up
 - Have severe swelling
 - Are likely to get the cast wet
 - Have poor balance.





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Prescription

- After the TCS is made, it will need something on the bottom of the cast to protect it.
- Whether a cast shoe will be used or a sole built into the TCS is used will depend on:
 - Whether there is access to a cast shoe or materials for a built in sole
 - Whether the person will reliably use the cast shoe
 - Whether there is access to materials for a built in sole
 - Which method will last longer in the person's environment.





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Fitting a TCS

- The TCS can take some time to apply so make sure the person is comfortable.
- It is easier to have the person sitting in a chair or on a treatment bed.
- If on a treatment bed:
 - Put a rolled up towel under the thigh to lift the leg off the bed, without changing the shape of the leg below the knee.
- It is also helpful to have an assistant to hold the leg while you do the casting and to assist with checking the angles of the cast.





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Fitting a TCS (continued)

- Before starting the casting process, make sure the wound has been debrided if required and has a minimal dressing (no circumferential bandages) on it.
- Make sure you and your assistant are wearing gloves to protect your skin from the plaster and fibreglass.





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Fitting a TCS (continued)

- Throughout the casting process remember the position of the foot and ankle. Use your assistant to help maintain this position during the casting process.
 - Neutral inversion and eversion
 - Do not extend the toes too much.





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Fitting a TCS (continued)

- Place cotton wool between the toes to prevent them from rubbing together.
- Apply cotton stockinette (approx. 7.5cm width) to the foot to just above the ankle.





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Fitting a TCS (continued)

- Heat EVA until it is easy to mould.
- Make sure EVA is not too hot.
- Mould EVA to the bottom of the foot.
- Trace around foot leaving room for the toes.
- Cut out EVA, bevel edges.





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Fitting a TCS (continued)

- Pad toes with 5- 6 layers of Softban.
- Hold in place with ONE layer of Softban around the heel.





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Fitting a TCS (continued)

- Apply second stockinette.
- Tape EVA to bottom of foot.





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Fitting a TCS (continued)

- Apply semi rigid (Delta Soft) cast tape.
- Make sure there are enough layers around heel, toes and under sole.
- Area at the top of the foot where it is to be cut should not be thick.
- Spray or wet hands and rub over cast molding the cast to the shape of the foot.





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Fitting a TCS (continued)

- Mark trim-lines under malleoli and low enough at the front and back of the ankle so the foot can dorsiflex and plantarflex.
- Cut slit down top of foot. Lateral to the midline to just before the level of the metatarsal heads.
- Cut through the top layer of stockinet to make removal easier.





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Fitting a TCS (continued)

- Remove shoe being careful not to put pressure on the wound.
- Remove all stockinet and Softban.
- Cut to trim-line marks.





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Fitting a TCS (continued)

- Check inside of the shoe for any sharp edges, bumps, or ridges, stones or other things that the patient might not notice.
- Remove problem area or cover with tape if adequate.
- If there is a sharp area causing a problem, please refer back to the Rehabilitation Department for the Orthotist to review.





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Fitting a TCS for wearing

- Place Softban or cotton wool between toes.
- Apply double layer of stockinet, avoiding wrinkles.
- The twist in the stockinet should be placed on **top** of the toes away from any wounds.
- The person should be taught this process and observed to ensure they are able to do it.





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Fitting a TCS for wearing continued..

- Fit the shoe.
- The shoe should be taped together with sports tape or a permanent Velcro strap might be added.
- Fit a canvas rocker or post op shoe.





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Education



- After fitting, and at every follow up appointment - spend time with the person to explain what they need to know to help heal the wound.
- Key points to cover:
 - Always use a cast shoe with the cast if it has been provided
 - Use crutches or a walking frame to assist walking if needed
 - Always wear a shoe on the other foot
 - Keep the cast dry, do not walk in water. Cover the cast with a sealed plastic bag while bathing.



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Education continued..

- Refer to medical services **immediately** if:
 - There is any pain
 - There is pins and needles/tingling or numbness in the foot
 - There is any swelling of the upper leg
 - They are feeling unwell (with fever, chills or sweating)
 - There is a strong smell coming from leg/foot
 - There is severe itching
 - The cast becomes soft or damaged
 - They feel any other concerns or worries about the cast and their foot.



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Follow up appointments

- The TCS will need to be reviewed weekly at first.
- During each follow up appointment:
 - Ask the person if they have had any problems or concerns
 - Check the condition of the cast shoe. Make sure it is not soft or damaged. If it is soft or damaged, find out why this has happened. You may need to ask if they have got the cast shoe wet or if they have been wearing the shoes provided for the cast.





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Follow up appointments (continued)



- During each follow up appointment:
 - Check the entire leg and foot for any signs of pressure or skin breakdown and if there is, identify the cause
 - Work with the diabetic nurse or medical staff to check the wound condition, re- trace and measure the wound, debride and dress as necessary
 - Check the other foot for signs of problems
 - If everything is ok and the plan is to continue with the TCS, reapply it.





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What to do if the wound becomes worse?

- Sometimes a wound may become worse between appointments.
- Refer to the Diabetes Center and Orthotics in the Rehabilitation department for review.





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What to do when the wound heals?

- After the wound heals, continue using the TCS for at least three more weeks and until a long term offloading method (such as a foot orthosis and footwear) is ready.
- Always think about the long term needs to stop the wound from happening again.
- A custom foot orthosis and appropriate footwear are essential to prevent the wound coming back.





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Test your knowledge:

- What are three disadvantages of using a TCS?
- Explain what you would do during follow up with a person using a TCS?





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Discuss



- What are some challenges to applying TCSs in your setting?
- Who would be the key personnel involved in providing this treatment?
- How could the treatment be incorporated into the current wound management pathways in your setting?



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