	<p>Policies and Procedures</p> <p>Title: AMPUTATION: RESIDUAL LIMB BANDAGING/SHRINKER APPLICATION AND POSITIONING</p> <p>I.D. Number: 1116</p>
<p>Authorization</p> <p>[x] Former SktnHR Nursing Practice Committee</p>	<p>Source: Nursing</p> <p>Date Revised: June, 2018</p> <p>Date Revised: January 2015</p> <p>Date Effective: January, 2006</p> <p>Scope: Former SktnHR & Affiliates</p>

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For the purpose of this policy, client will be used when referring to clients, patients, and residents.

1. PURPOSE

- 1.1 To provide safe bandaging technique and shrinker (compression sock) application.
- 1.2 To ensure swelling is controlled and residual limb is shaped for prosthetic wear.

Note: *Bandaging and shrinkers also decrease pain, phantom pains, improve wound healing and desensitize the residual limb.*

2. POLICY

- 2.1 Registered Nurses, Graduate Nurses, Registered Psychiatric Nurses, Graduate Psychiatric Nurses, Licensed Practical Nurses and Graduate Licensed Practical Nurses will:
 - Bandage residual limb
 - Apply residual limb shrinker
 - Reinforce correct positioning and care of residual limb
- 2.2 Residual limb bandaging or shrinker application is commenced as ordered by the practitioner. It usually starts after the dressing is reduced and drains are removed (3 – 4 days post-op) and continues indefinitely unless plan of care changes.

Note: *Bandages or shrinker are to be worn day and night to control edema and help shape the residual limb.*

2.3 Bandage/shrinker should be removed for residual limb care and inspection:

- at least every 12hrs
- when bandage/shrinker becomes loose or wrinkled
- when bandage/shrinker causes discomfort and/or pain
- for tub bath or shower

Note: *If bandaging is ordered, when able, the client should be educated on wrapping technique and is encouraged to remove bandage q2-4h to inspect skin, massage residual limb and practice wrapping bandage.*

Note: *Refer to Below-Knee or Above-Knee Amputation Manual provided by Physiotherapy for residual limb care at home.*

2.4 A reminder sheet for positioning of residual limb (see Appendix A & B) is to be hung near the client's bed to remind all health care providers and client of proper positioning and posture at all times.

Note: *Correct positioning is necessary to maintain joint movement. If the client is not able to straighten their knee and hip this decreases their chances of being a prosthesis candidate.*

2.5 Bandaging Technique:

2.5.1 Diagonal (figure eight) turns will be used when bandaging.

2.5.2 Circular turns can restrict the circulation.

2.5.3 There should be no wrinkles in the bandage as these can produce blisters.

2.5.4 The entire limb should be contained with no windows (areas not covered by a bandage) and the bandage should extend above the joint (above the knee for trans-tibial and above the hip for trans-femoral amputation). See Appendix C for bandaging diagrams.

2.6 Application of Shrinker:

2.6.1 Initially, application may take two people; eventually client should be able to do this on their own.

2.6.2 There should be no wrinkles, creases, or gaps in the shrinker as these can produce skin breakdown (see Appendix D).

3. **PROCEDURE**

3.1 Bandaging Supplies:

- Above-Knee Amputation: 2-3 lengths of 4 – 6 “ elastic bandage
- Below-Knee Amputation: 2-3 lengths of 3 – 4 “ elastic bandage
- Above and Below Elbow Amputation: 2-3 lengths of 3-4” elastic bandage.

Note: *Bandages are easier to work with if the lengths are sewn together, Occupational Therapy may be able to assist with this. If not sewn together, use tape to connect bandages (DO NOT use metal clips), ensure bandages overlap smoothly.*

3.2 Principles of bandaging the residual limb. See diagrams in Appendix C.

3.2.1 Provide skin and wound care if needed prior to bandaging.

Note: *Physiotherapy/Occupational Therapy will be consulted for all amputations following surgery. Below-Knee and Above-Knee Amputation Manuals are available through Physiotherapy/Occupational Therapy.*

3.2.2 Use firm tension (~2/3 the limit of elasticity) over the end of the residual limb and decrease gradually as the bandage is wrapped up the limb utilizing 'figure eight' bandaging technique.

Note: *Initially the wrap may have minimal tension. Tension should be increased as the wound heals and client comfort improves.*

3.2.3 Ensure even pressure gradient from one side to the other as you move proximally.

3.2.4 Overlap diagonal turns by ½ bandage width during the wrapping process.

3.2.5 *The bandage covering the residual limb must be free of wrinkles with no windows (areas not covered by the bandage) present.*

Note: *Rewrap if the client complains of increased pain, this indicates the wrap is probably too tight impairing circulation and/or placing pressure on peripheral nerves.*

Note: *All of the tissue below the remaining joint must be contained in the bandage. For example see Appendix C, all of the adductor tissue must be contained in the case of a trans-femoral amputation.*

3.2.6 Promote a conical shape by bringing in the edges of the residual limb.

3.2.7 Anchor the bandage above the proximal joint to prevent it from sliding off the stump. See diagrams in Appendix C.

Note: *This is more important if the client is standing or ambulating frequently.*

Note: *Never use Safety Pins to secure the bandage. Tape should be applied only to the bandage (not the skin). 4" strips of tape should be used to prevent encircling the residual limb and compromising circulation.*

3.2.8 Change and wash elastic bandages or shrinker at least every two days and as needed. Hand wash in warm water with a mild soap; lay flat to dry. An extra bandage or shrinker shall be available to facilitate washing.

Note: *Using a mild unscented soap minimizes the risk of irritation. Harsh soaps/detergents can cause contact dermatitis.*

3.3 Principles of Shrinker Application:

- 3.3.1 When advised by the Physician, Physiotherapy will measure and order two shrinkers for the client.
- 3.3.2 Client should be in a seated position. Have the client and one other person hold the shrinker at opposite sides, close to the seam.

Note: *The seam should be in line with the incision.*

- 3.3.3 Stretch the shrinker out as much as possible and place on limb.
- 3.3.4 Slide the shrinker up as high as it will go.

Note: *Shrinker should fit snug. There should be no wrinkles, creases, or gaps.*

Note: *If the client is complaining of increased pain while wearing shrinker, it should be removed and physiotherapist should be notified.*

3.4 Principles of residual limb positioning:

- 3.4.1 Prevent contractures – avoid long periods in one position, keep joints at maximum extension as much as possible. See Appendix A & B.
- 3.4.2 Encourage ROM and muscle strengthening exercises.

Note: *Positioning and Exercises can be found in Below and Above-Knee Amputation Manuals provided by Physiotherapy/Occupational Therapy.*

3.5 Continuing Residual Limb Care (after incision line is healed):

- 3.5.1 Wash and dry limb thoroughly every 12 hours, remove all soap residues. Do not soak residual limb as this may increase edema. Inspect residual limb regularly.
- 3.5.2 Gradually condition residual limb for prosthesis by encouraging client to push residual limb against firm surfaces, massage healed incision to soften scarring, reduce tenderness and improve circulation.

Note: *Residual limb care and Conditioning limb for prosthetic wear can be found in Below and Above-Knee Amputation Manuals provided by Physiotherapy/Occupational Therapy.*

4. REFERENCES

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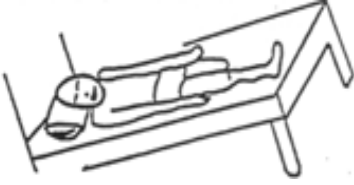


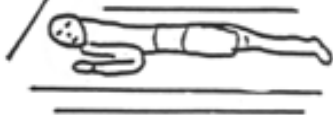





Perry, A., Potter, P., Ostendorf, W. (2014) Clinical Nursing & Techniques, Eighth Edition, Elsevier: Mosby, pp 969-972.

Zucker-Levin, A. PhD, MSPT, MBA, GCS Emeritus. Personal communication, (June 4, 2018). School of Rehabilitation Science, College of Medicine, University of Saskatchewan.

Appendix A

Positioning for Above-Knee Amputation

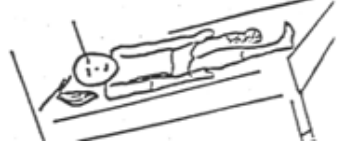
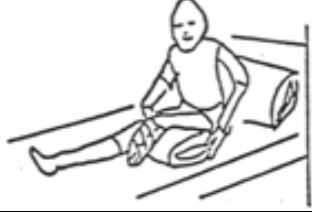
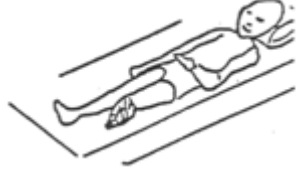

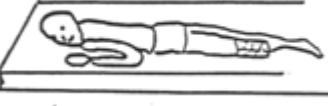


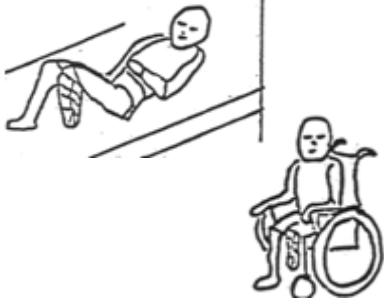


REMINDER SHEET to be hung over the client's bed to remind ALL health care workers and the client of PROPER positioning and posture at ALL times.

DO...		DO NOT...	
<p>RAISE FOOT OF BED TO ELEVATE</p> 		<p>PLACE PILLOW UNDER RESIDUAL LIMB</p> 	
<p>KEEP LEGS TOGETHER</p> 	<p>PLACE PILLOW BETWEEN THIGHS</p> 	<p>SIT OR LIE WITH HEAD OF BED UP FOR LONG PERIODS</p> 	
<p>LIE ON YOUR STOMACH, BED FLAT</p> 	<p>MOVE RESIDUAL LIMB FORWARD AND BACK AS IF FOOT THERE, AND REST WITH IT DOWN</p> 	<p>WALK OR REST WITH RESIDUAL LIMB UP</p> 	

Appendix B

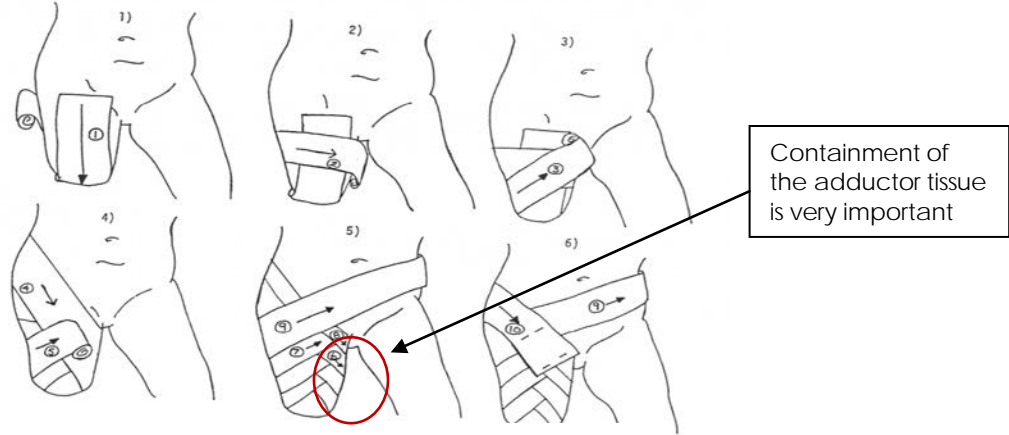
Positioning for Below-Knee Amputation

REMINDER SHEET to be hung over the client's bed to remind ALL health care workers and the client of PROPER positioning and posture at ALL times.

DO...		DO NOT...	
RAISE FOOT OF BED TO ELEVATE		PLACE PILLOW UNDER KNEE	
KEEP LEGS TOGETHER		HANG RESIDUAL LIMB OVER EDGE OF BED	
LIE ON STOMACH, BED FLAT		SIT OR LIE WITH HEAD OF BED UP FOR LONG PERIODS	
PLACE BOARD UNDER RESIDUAL LIMB		LIE OR SIT WITH KNEES BENT	
MOVE RESIDUAL LIMB FORWARD AND BACK AS IF FOOT THERE, AND REST WITH RESIDUAL LIMB BACK		WALK OR REST WITH STUMP FORWARD	

Bandaging Diagrams

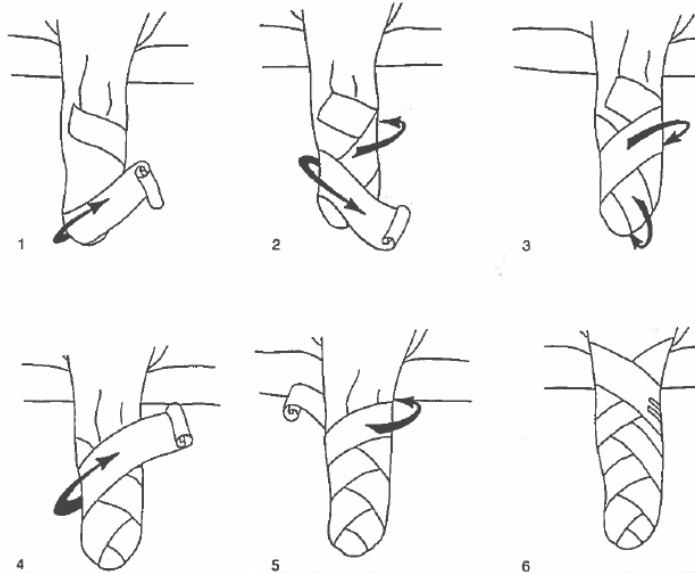
A: Above-Knee Amputation (or as posted at bedside by Physiotherapist)



Source: Physiotherapy Department, Royal University Hospital
Saskatoon, Saskatchewan S7N 0W8

B: Below-Knee Amputation

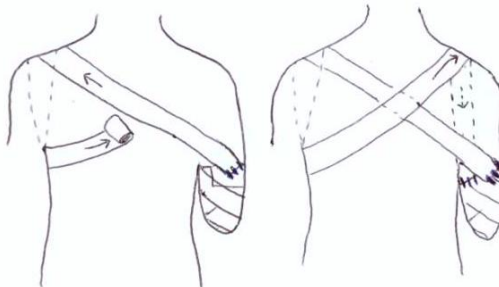
- Same technique as the above-knee amputation. Secure bandage by wrapping around the distal thigh above the knee joint.



Source: Lusardi MM & Nielsen CC. (2007). Orthotics and Prosthetics in Rehabilitation, Second Edition, ISBN 0-7506-7479-2; page 624.

C: Above-Elbow Amputation

- Same technique as the above-knee amputation. Secure bandage by wrapping across back, around shoulders and secure to the arm tensor.



Appendix D

Shrinker Application



Source: Physiotherapy Department, Royal University Hospital
Saskatoon, Saskatchewan S7N 0W8

Correct Shrinker Application



Incorrect Shrinker Application



Source: Zucker-Levin, A. (2018) Correct and Incorrect Shrinker Application, School of
Rehabilitation Science, College of Medicine, University of Saskatchewan.