

Amputation - Rehabilitation of the Adult with Lower Limb Amputation in Acute Care

Site Applicability

All Vancouver Coastal Health and Providence Health Care Acute sites

Practice Level

Occupational Therapy (OT), Physiotherapy (PT) - Basic Skill

Policy Statements

All people with lower limb amputations will receive rehabilitation care based on best practice recommendations.

Need to Know

The purpose of rehabilitation assessment and intervention is to support the patient to achieve their goals related to mobility, self-care, work, school, leisure, home and community activities; to reduce the incidence of complications; and to maximize safety, function, and quality of life.

Rehabilitation of the adult with a lower limb amputation requires the expertise of a coordinated interdisciplinary health care team throughout the continuum of care from prevention to surgery to recovery. An occupational therapist should assess and treat all patients with lower limb amputations and functional issues. A physiotherapist should assess and treat all patients with lower limb amputations and mobility issues. The best rehabilitation outcomes are achieved by a specialist interdisciplinary team in partnership with patients or families.¹

OTs and PTs shall have the following basic knowledge¹:

- *an understanding of the pathology leading to amputation*
- *an understanding of the effect of level of amputation, preexisting medical conditions and social environment on rehabilitation potential*

Background

Prevalence

The most common causes of lower limb amputations across VCH and PHC (2016) were:

- Diabetes Mellitus (62%)
- Peripheral Vascular Disease (PVD) (20%)
- Medical complications including infections (13%)
- Trauma (3%)
- Congenital or correction of deformity (2%)
- Tumors (0.4%)

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The most prevalent amputations are toe and transmetatarsal amputations, primarily due to diabetes and peripheral vascular disease, followed by transtibial (BKA) amputations.

Prosthetics Candidacy

In order to be a prosthetic candidate, a person with a lower limb amputation needs to be motivated, cognitively aware and possess adequate physical condition to tolerate the rehab process. However, each patient's individual physical, affective and cognitive condition as well as supports available should be considered.

Reasons why a patient may **not** be a prosthetic candidate include:

- Patient decision to not be fitted
- Poor cognition or inability to learn
- Poor physical condition (e.g. range of motion, strength, balance, endurance and/or hip or knee flexion contractures 20 degrees or more)
- Residual limb would not tolerate a prosthesis
- Medical fragility or the presence of a co-morbidity that would limit ability to use prosthesis
- Poor prognosis

Premorbid functional status and the level of the amputation affect function after an amputation. The higher the level of the amputation, the slower the patient's gait speed will be and the more energy will be required to ambulate^{2,3}. Therefore, a person who was poorly functioning prior to having an above knee amputation may require a longer stay in rehab or may not return to their pre-morbid functional status.

Practice Guideline

Process

Referral or Consult

As per unit specific procedures. Referrals or consults may be initiated by the physician, members of the interdisciplinary team or the OT/PT themselves.

Consent

Informed consent will be obtained for all assessments and interventions as per VCH-PHC and regulatory requirements.

Assessment and Intervention

| | PreOp | Acute Phase (Post op Day 1 to 2) | Acute Phase (Post op day 3 onwards) |
|---------------------|--|--|---|
| Assessment | <ul style="list-style-type: none"> As much of the Post op Day 1 to 2 assessment as the patient can tolerate | <ul style="list-style-type: none"> Patient and family goals and expectations Doctors' orders and medical status Need for review or clarification of previously provided education Home environment Previous ADL/IADL function and mobility Current ADL function and mobility Physical status Cognitive screen Emotional screen Self-management capability | <ul style="list-style-type: none"> Any Post op Day 1 to 2 assessment not yet done Ongoing review of patient and family goals and expectations Need for review or clarification of previously provided education Assessment of the residual limb and contralateral limb Monitor emotional status Assess body image disturbance Need for home adaptations or equipment Explore funding options for equipment |
| Intervention | <ul style="list-style-type: none"> Education: <ul style="list-style-type: none"> Introduce role of PT/OT What to expect post-op Provide Education booklet Life after Leg Amputation Mobility training and aids | <ul style="list-style-type: none"> Education: <ul style="list-style-type: none"> Care of the residual limb Care of the contralateral limb Pain management Positioning for contracture prevention Falls prevention, safety Pain control Exercises for ROM, strength and balance Mobility training Wheelchair provision and training Address cognitive and emotional factors ADL training Self-Management strategies Discharge planning | <ul style="list-style-type: none"> Continue with acute Post op Day 1 to 2 interventions Physical conditioning including ROM, strength, balance and endurance Mobility Training and Practice Discharge Planning (continue) Residual limb shaping or edema control as determined by surgeon or physiatrist |

| | PreOp | Acute Phase (Post op Day 1 to 2) | Acute Phase (Post op day 3 onwards) |
|--|--|--|---|
| Referrals/Team Members to be involved | <p>Referral to Peer Visitor Program</p> <p>Referral to Physiatry if input needed on level of amputation and effect on function</p> | <ul style="list-style-type: none"> Referral to Peer Visitor Program Referral to psychological support if appropriate | <ul style="list-style-type: none"> Consult Physiatry Referral to Peer Visitor Program if not already done List of Prosthetists given after Consult with Physiatry. For GFS inpatient referrals, Vancouver Orthopedic Group (VPO) is the contracted prosthetic vendor on site Referral to psychological support if appropriate |
| Outcome Measures to Consider | | <ul style="list-style-type: none"> Range of Motion Manual Muscle testing Pain Visual Analog Scale (VAS) | <ul style="list-style-type: none"> Patient Health Questionnaire (PHQ9) Cognitive Screens Girth Measurements Sensation Testing Standardized ADL assessment <p><i>Once ambulating you may consider:</i></p> <ul style="list-style-type: none"> Timed Up and Go (TUG) Berg Balance Scale Gait speed Socket Comfort Score (SCS) 2 Minute Walk Test Berg Balance L-test Activity Balance Confidence (ABC16) AMP Pro or NoPro Wheelchair skills test for wheelchair users. 6 Minute Walk Test HR or BP or Borg Scale |

Transitions in Care

During care transitions, patients and families must be given the information that they need to make decisions and support their own care and prepare for transitions. This may include written information or instructions, action plans, goals, and contact information for the team.

Documentation tools and communication strategies should be used to standardize information transfer at care transitions for the healthcare team. Information relevant to the care of the patient should be shared at care transitions and documented and communicated effectively⁴.

Expected Patient and Resident Outcomes

Expected Outcomes after Acute phase:

- Patients and families will receive and understand essential lower limb amputation education and materials
- Patients will be linked with appropriate community resources and supports
- Complications will be prevented or detected early and appropriate strategies implemented
- A care plan will be agreed upon by the patient and team
- A care plan will be initiated to maximize mobility and function and prepare for rehab if appropriate

Patient and Resident Education

Provide patient and family education and resources regarding rehabilitation after lower limb amputations including: pain management, Activities of Daily Living (ADL) and Mobility training, care of the residual and contralateral limbs, etc

VCH (see Site Specific Practices):

- [Bandaging Instructions for Below Knee Amputees \(See Appendix C\)](#)

VCH-PHC:

- [Life after Leg Amputation](#)
- [Mirror Therapy Instructions Lower Limb](#)
- [Outpatient Amputee Program, GFStrong Rehab Centre](#)

Other:

- [Peer Visitor Brochure](#)
- [How to Choose a Prosthetist](#)
- [Amputee Coalition of BC](#)
- [POABC list of prosthetists](#)
- [Amputee Education and Support Group GFStrong](#)

Evaluation

All individuals with a lower limb amputation will have a care plan initiated to maximize mobility and function and prepare for rehabilitation if appropriate.

Site Specific and Surgeon Specific Practices

Residual limb shaping and edema control practices may vary depending on surgeon's preferences.

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Documentation

Assessments and/or evaluations will be documented on approved forms or documents in site specific formats as per regulatory guidelines and VCH/PHC policy.

Related Documents

[Vancouver Acute Amputation or Lower Limb \(Nursing\) \(D-00-07-30243\)](#)

References

1. British PT Clinical guidelines for the pre and post operative physiotherapy management of adults with lower limb amputations <http://bacpar.csp.org.uk/>
2. RL Waters, J Perry, D Antonelli and H Hislop Energy cost of walking of amputees: the influence of level of amputation J Bone Joint Surg Am. 1976;58:42-46.
3. Mobility rates one year after prosthetic provision for unilateral transtibial and transfemoral amputees worsens with increasing age at amputation and higher level of amputation”Davies B and Datta D. Mobility outcome following unilateral lower limb amputation. Prosthet Orthot Int. 2003 Dec;27(3): 186 to 90)
4. Accreditation Canada ROPs Transitions http://www.gov.pe.ca/photos/original/src_rophandbook.pdf
5. British OT Evidence Based Guidelines for people that have had lower limb amputations and Quick reference guide http://www.nhslcg.scot.nhs.uk/wp-content/uploads/2016/06/Quick_reference_Guide_OT_lower_limb_amputation.pdf
6. Clinical Practice Guidelines Fraser Health: Amputation – Lower Limb: Adult – Rehabilitation Management http://fhpulse/clinical_resources/clinical_policy_office/Lists/CDST%20Library/DispForm.aspx?ID=1109
7. VGH Physiotherapy Guidelines for Management of the Vascular Amputee
8. Draft Amputee Patient Pathway – updated
9. Orthotics and Prosthetics in Rehabilitation, 3rd Edition By Michelle M. Lusardi, PhD, PT, Millee Jorge and Caroline C. Nielsen, PhD
10. [PHC Patient/Resident and Family Centered care](#)

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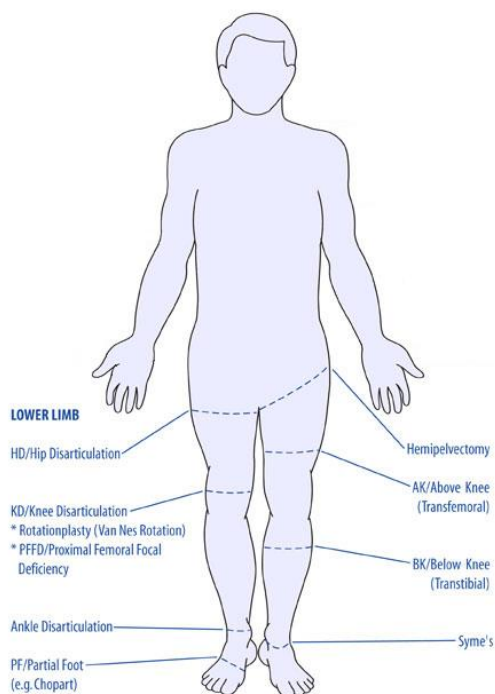
Appendices:

- [Appendix A: Definitions](#)
- [Appendix B: Detailed Assessment and Intervention](#)
- [Appendix C: Residual Limb Shaping and Edema Management](#)
- [Appendix D: Exercise Program](#)
- [Appendix E: Pain Management](#)
- [Appendix F: Rehabilitation Referrals](#)

Appendix A: Definitions

Lower limb amputation levels:

- **Toe:** Removal of any part of the toe from tip to base
- **Partial Foot:** Amputation of any part of the foot. Includes transphalangeal, metatarsal ray resection, transtatarsal, Lisfranc and Chopart amputations.
- **Symes or Ankle Disarticulation:** calcaneus and talus are surgically separated from the lower leg and the foot is removed. The tibia and fibula may have malleoli trimmed.
- **Transtibial (TT) or Below Knee (BK):** amputation of the lower limb between the ankle and the knee.
- **Knee Disarticulation or through Knee:** the tibia is surgically separated from the femur and the lower part of the limb is entirely removed. The femur remains completely intact.
- **Transfemoral (TF) or Above Knee (AK):** amputation of the lower limb between the knee and the hip
- **Hip Disarticulation:** Femur is surgically separated from the acetabulum and the entire lower limb is removed. The pelvis remains completely intact.
- **Hemipelvectomy or Transpelvic:** removal of the entire lower limb plus a portion of the pelvis.



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Phantom Limb Pain: perceived painful or noxious sensation in the missing part of the limb after amputation.

Phantom Sensation: any sensation in the missing limb that is not painful i.e. pins and needles, numbness, itchiness.

Prosthesis: an artificial substitute or replacement of a part of the body.

Residual Limb: portion of the leg that remains after the amputation.

Residual Limb Pain: pain in the residual limb, which can be caused by the incision site, scar tissue, pressure from the prosthesis, muscle cramping, etc.

Appendix B: Detailed Assessment and Intervention

Acute Phase Assessment

Assessment in the acute phase requires reviewing information from the health record, speaking with members of the interdisciplinary team, speaking with the patient and performing an objective examination of the patient. The assessment should be documented on a standard form or electronic health document.

Patient and Family Goals and Expectations

Patient and family preferences as well as options for services should be discussed in order to develop a comprehensive and individualized care plan to identify and address patient and family goals and expectations. This must be documented in the patient record.

Medical Status

- Date and type of surgery
- Doctors' orders: weight bearing orders and activity orders. (Will usually be *activity as tolerated* but might require bedrest postop)
- Medical comorbidities: note all conditions but focus on those that may affect the patient's rehabilitation e.g. cardiac, pulmonary or neurological disease, musculoskeletal disorders, wounds, diabetes, peripheral vascular disease, presence of infection
- Medication review with focus on pain medication (type and timing of pain meds)
- Previous rehabilitation assessment and intervention, if any
- Identification of modifiable health risk factors that can affect wound healing and function e.g. smoking, body weight, substance use, diabetes management, hypertension management

Home Environment

- Physical layout including falls hazards, internal and external stairs, wheelchair accessibility, bathroom accessibility
- Social supports
- Community supports

Previous ADL or Instrumental ADL (IADL) Function and Mobility

- Previous ADLs or IADLs : functional status including assistance required and equipment used
- Previous mobility including bed mobility, transfers, ambulation, wheelchair mobility, stairs

Current ADL or IADL Function and Mobility

- Ability to complete basic ADLs and need for adaptive equipment in hospital and upon discharge
- Current mobility including bed mobility, sitting balance, transfers, standing ability with aid, hopping in parallel bars or with gait aid if appropriate (see intervention)
- Need for seating or positioning devices and gait aids during hospital admission and for discharge
- Falls risk assessment:

VCH: [Falls and Injury Prevention Guideline in Acute Care \(D-00-07-30033\)](#)

PHC: [Falls Injury Prevention \(B-00-07-10011\)](#)

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Physical Status of Lower Limbs

- Gross strength assessment of major muscle groups of upper and lower extremities, especially hip extensors, abductors, adductors, abdominal and back muscles, knee extensors, rotator cuff and elbow extensors
- Range of Motion (ROM): especially hip and knee extension on residual limb
- Assessment of residual limb
 - Type of dressing and compressive device
 - Edema or residual limb volume and shape: use a consistent bony landmark as reference point and a tape measure to measure circumference of limb
 - Skin integrity assessment to look for signs of pressure injury or infection
- Assessment of contralateral limb
 - Sensation testing: light touch, pain, proprioception, protective sensation (use monofilament)
 - Condition of skin including color, dorsalis pedis pulse
 - Presence of deformity i.e. clawed or hammer toes, Charcot foot
 - Footwear including type and wear pattern
- Pain:
 - Use a patient reported outcome measure to assess:
 - Residual limb pain
 - Phantom limb pain
 - Phantom sensation

Cognitive Status

- Assess ability to learn as well as carry over, memory, safety awareness, insight, problem solving and capacity to be involved in their care
- [Cognitive Evaluation and Intervention Guideline for the Adult Population](#)

Emotional Status

- Listen to client's experience of the amputation.
- Consider the presence of anxiety, depression, post-traumatic stress disorder, grief, and concerns with body image, self-esteem, and sexual function.
- Assess for client's strengths, coping strategies, and social support system.
- Assess interest and readiness with accessing psychological support services.

Acute Phase Intervention

Consults

- Refer to Psychiatry who will assess if patient is a prosthetic candidate and provide rehab recommendations
- Refer to [Peer Visitor Program](#)
- Refer for psychological support by social work, spiritual care or psychologist if there are emotional concerns

Education

Use educational strategies to ensure patient or family understanding e.g. teach back method, provide written educational material that the patient may refer back to.

- Care of the residual limb
 - Edema Control and Shaping
 - Desensitization
 - Skin inspection
- Contracture prevention:
 - No pillows under knees or hip when supine
 - No pillows between thighs of transfemoral patients
 - Do not raise “foot” of electric beds
 - Keep head of bed as flat as tolerated and promote lying flat frequently throughout the day
 - Chair positioning: use a firm seat base in the wheelchair and a padded amputee board for transtibial patients
 - Discourage prolonged sitting
 - Encourage prone lying for approximately 20 minutes/day
- Care of the contralateral limb (especially if diabetic)
 - Foot care i.e. daily inspections, proper footwear, foot care nurse or podiatrist to cut toenails
- Pain Management (See [Appendix E](#))
 - Scheduling interventions and exercise after taking pain medication
 - Exercise (see [Appendix E](#) for non pharmacological approaches to pain management)
 - Relaxation or visualization techniques
 - Desensitization techniques
 - Massage
 - Mirror therapy
 - Farabloc
- Falls prevention
 - Proper footwear
 - Leave wheelchair at bedside (including at night)
 - Engage wheel locks and move footrests, amputee board out of the way when transferring
 - Bed or chair alarm if required
- If the patient is a prosthetic candidate (as decided by the team, including physiatrist):
 - Provide list of prosthetists in British Columbia (www.poabc.ca) and tips on how to choose a prosthetist (www.amputees.ca)
 - Recommend interviewing three prosthetists
 - Liaise with prosthetist when shrinker is needed and approved by surgeon or physiatrist
 - Provide clear information on rehabilitation and prosthetic options as well as possible outcomes and realistic rehabilitation goals

Exercises

- Exercises for ROM, strength, balance, cardiovascular fitness and endurance
- Link to pictures of exercises (see [Appendix D](#))
- Consider use of upper body ergometry

ADLs

- ADL practice
- Adaptive equipment provision or prescription
- Referral to Rehabilitation Assistant(RA) for ADL practice

Wheelchair Provision and Training

- Wheelchair seating, including amputee board with cushion for transtibial amputees. Consider power wheelchair for patients with rheumatoid arthritis or shoulder issues
- Provide education regarding proper wheelchair safety and propulsion techniques
- Discuss potential need to purchase wheelchair for long-term use.

Mobility

- Mobility training may include: bed mobility, transfers, getting up from floor, stairs
- Referral to RA for exercises and transfer practice
- Types of transfers:
 - Ceiling or Mechanical lift: use amputee specific slings
 - Sliding board transfer
 - Lateral transfer
 - Low or stand pivot transfer
 - Car transfers as required
- Ambulation with gait aid: check on weight bearing orders for patients with transmetatarsal amputations (i.e. they are sometimes allowed to heel weight-bear)
- Hopping is not appropriate for everyone. Consider if they are diabetic or have vascular impairments affecting the condition of their non-amputated foot, general health, balance (falls risk), cognitive status and home accessibility
- Stairs: hopping with crutch and rail (if safe and appropriate) or “bum-up” the stairs

Cognitive

- Assess cognition and intervene as per guideline [BD-00-07-40018](#) - Cognition assessment and intervention guideline (PHC and VCH)

Emotional

- Connect to community services and supports.
- Consider providing education on how an amputation might affect mental health.
- Refer to Social Work, Pastoral Care, psychology, and other mental health services as appropriate.

Self-Management

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- Self-Management is the process by which an individual adopts an active role in managing the symptoms, treatment, consequences and lifestyle changes inherent in living with a chronic condition. Self-Management principles include knowledge, problem solving, skill acquisition, and self-monitoring.
- Provide the patient with enough information about the prosthetic rehab process to allow informed decision making

Discharge Planning (Starts post-op day 1)

- Identification of discharge location:
 - Rehab:
 - A patient may be a rehab candidate even if not a prosthetic candidate. If patient is a rehab candidate refer for inpatient or outpatient rehab at GF Strong or Holy Family Hospital (see [Appendix F](#) for referral information)
 - Home:
 - Patients who are not prosthetic candidates may return home as wheelchair users or, if young and not at risk for falls, crutch users
 - Some patients, who are prosthetic candidates, may be discharged home to wait for residual limb to heal prior to having prosthetic training. Be sure to refer these patients to outpatient services for pre-prosthetic training
 - Private rehab
 - Facility: the patient is not a prosthetic candidate and is unable to manage at home
- Pre-discharge home assessment (i.e. to determine wheelchair accessibility)
- Equipment prescription: adaptive equipment, gait aids
- Provide information regarding amputee education and support groups
<https://vch.eduhealth.ca/PDFs/FB/FB.132.Am75.pdf>
- Community resources education

ICBC or WorkSafe (WSBC) patients

- Encourage timely claim initiation or reporting
- Request for RN advisor (WSBC) or Adjuster (ICBC) to assist with discharge planning
- Connect with private OT/Physio about equipment needs for discharge
- WSBC has an outpatient amputee program (Lifemark in Langley) which follows patients from acute discharge to return to work

SubAcute or Rehab Phase (Inpatient or Outpatient) Assessment

- Team assessment to determine if patient is a prosthetic candidate
- Assessment in the subacute phase should include assessments as described in the “acute” section not yet completed and/or more indepth assessment including:
 - Investigation of funding for equipment, home modifications and prosthesis
 - Residual limb assessment: skin condition, scar mobility, shape and volume of residual limb, detailed sensation testing of the residual and contralateral limbs
 - Aerobic capacity or cardiovascular status (outcome measures include resting heart rate (HR), blood pressure (BP), exercise HR, BP, BORG rate of perceived exertion).
- Home Environment: pre-discharge home assessment to assess ability to use wheelchair in home and need for installation of adaptive equipment and/or home modifications

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SubAcute or Rehab Phase (Inpatient or Outpatient) Intervention

- If the patient is a prosthetic candidate:
 - Provide list of prosthetist in BC (www.poabc.ca) and tips on how to choose a prosthetist (www.amputees.ca)
 - Recommend interviewing three prosthetists
 - Liaise with prosthetist when ready for shrinker
 - Amputee rehabilitation team and patient will decide what type of suspension system is appropriate for patient's lifestyle and limb
 - Provide **clear** information on rehabilitation and prosthetic options as well as possible outcomes and realistic rehabilitation goals
 - ADL and IADL retraining or rehab
- Consults
 - Liaise with prosthetist for shrinkers, prosthesis, adjustments to socket or prosthetic alignment
 - Refer for orthotics and proper footwear for contralateral limb as needed
 - Refer to Amputee Education and Support Groups
- Education
 - Continue with falls prevention, pain management, contracture prevention and foot care education
 - Residual limb care as per doctor's recommendations: shaping, edema management, desensitization, scar mobilization
- Exercise
 - Core stability, ROM, strength, balance, cardiovascular fitness and endurance
- Prosthetic Training
 - Education about prosthesis components
 - Donning or doffing prosthesis
 - Skin inspection
 - Sock management
 - Mobility: transfers, ambulation, stairs, slopes, uneven ground, balance (standing and walking), vertical transfers
 - ADLs or IADL practice with and without prosthesis
 - Incorporating prosthesis into functional activities
- Equipment prescription
 - Wheelchair (with amputee board, if transtibial amputation) and cushion for use when patient unable to use prosthesis (short term loan vs. longer term purchase may vary depending on age or individual)
 - Adaptive equipment e.g. bath bench, grab bars, etc.
 - Gait aids
- Continue as in acute intervention with pain management, cognitive and emotional status; consider the importance of body image during rehabilitation (referral to sexual health services at GFS as appropriate: http://www.vch.ca/Locations-Services/result?res_id=871)
- Discharge planning
 - Community integration e.g. driver rehabilitation, return to work, leisure activities
 - Overnight and weekend passes
 - Home modifications to permit wheelchair use in home

- Refer to outpatient rehabilitation if an inpatient
- Inform prosthetist of patient's discharge

Appendix C: Residual Limb Shaping and Edema Management

Limb shaping is essential for all patients who are prosthetic candidates. There are a number of factors that influence the approach to residual limb shaping and edema management, the most common being reason for amputation i.e. vascular amputation vs. trauma. Other factors that may impact the approach to residual limb shaping and edema management include the location of amputation, prognosis and prosthetic candidacy.

Discuss with the surgeon to ensure proper procedures (timelines and compression materials) for residual limb shaping for your particular patient. The OT/PT should use compression therapy only in discussion with the surgeon and/or physiatrist.

Compression material options include casting, shrinker sock, tubigrip, tensor wrapping, compressigrip and Juzo. A primary drawback of tensor wrapping is that when poorly done, the residual limb will be difficult for prosthetic fitting. While a shrinker sock may eliminate variability due to poor quality wrapping materials and technique, a shrinker sock may cause pain when donning and doffing.

Note: introducing a prosthetist provided shrinker may take away the opportunity for the patient to interview and select a prosthetist in the future.

Appendix D: Exercise Program

[Life after a Leg Amputation](#)

[Below Knee Amputation Early Exercises](#)

[Above Knee Amputation Early Exercises](#)

[Lower Limb Amputation Intermediate Exercises](#)

[Lower Limb Amputation Advanced Exercises](#)

Appendix E: Pain Management

Treatment of pain (before or) after amputation requires an inter-disciplinary approach. Determining the etiology of pain will help guide the treatment. Often multiple approaches or combinations of treatments must be employed in order to find a successful strategy.

Types of Pain:

Vascular Pain

- Ulcers, gangrene, infected or diseased tissue, exercise induced claudication

Orthopedic or Musculoskeletal Pain

- Arthritis or other musculoskeletal conditions, including injuries suffered during a traumatic amputation

Surgical Pain

- Site of surgical wound, typically subsides as swelling goes down, tissues begin to heal and wound stabilizes

Residual Limb Pain

- Swelling, nerve damage, neuromas, adherent scar tissue, infection, bone spurs, inadequate shrinker fit.

Phantom Limb Pain

- Caused by mixed signals from brain or spinal cord.
- Common early post-op, can last seconds or minutes or hours or days, often diminishes in frequency and duration during first 6 months, but may last years for some individuals.

Phantom Limb Sensations

- Sensations felt in amputated limb. May include tingling, pins and needles, itching, temperature changes, pressure, abnormal positions. Not painful therefore not treated.

Pain Treatment may include:

Non Pharmacological Strategies:

Electrophysical

- TENS, Laser, Ultrasound

Physiotherapy

- Exercise, reduction of contractures, early mobilization, correction of gait, education, edema control

Occupational Therapy

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- Desensitization strategies, massage of the residual limb, mirror therapy, visual imagery, meditation, mindfulness, breathing exercises

Other Modalities

- Acupuncture
- Cognitive Behavioural Therapy
- Biofeedback
- Music Therapy
- Farabloc (electromagnetic shield)

Pharmacological Strategies:

- Nerve blocks, epidural blocks, spinal blocks
- Acetaminophen and NSAIDs
- Opioids
- Antidepressants
- Beta-blockers
- Muscle relaxants

See the following links for more information:

- [Australian Physiotherapists in Amputee Rehabilitation: Acute Care - Pain Management](#)
- [Ten Techniques to Treat Phantom Limb Pain, Amputee Coalition of America, In-Motion Magazine](#)

Appendix F: Rehabilitation Referrals

- [GFStrong Outpatient Rehabilitation Admission and Discharge Criteria](#)
- [GFStrong Outpatient Rehabilitation Referral Form](#)
- [Inpatient Rehabilitation Admission Guidelines](#)
- [GFStrong Inpatient Acute Rehabilitation Referral Form](#)
- [Holy Family Outpatient Rehabilitation Services Referral Form](#)