

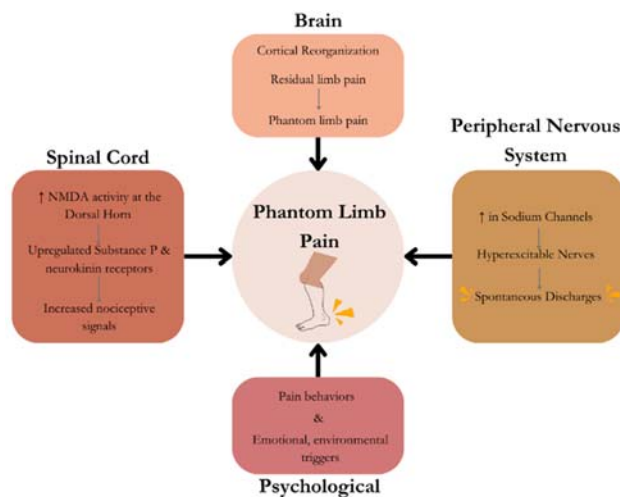
## AAP BRS Podcast: P&O-Complications after Amputation

### Residual Limb Pain (aka Stump Pain): (Prevalence: 75%)

- Pain in the part of the limb that remains after amputation
- Common causes: Bone/soft tissue pathology
- **Neuroma**: Pain resulting from exposed nerve endings following amputation
  - Treatment: Steroid injections, neuropathic pain medications, targeted muscle re-innervation (TMR), regenerative peripheral nerve interfaces (RPNI), and nerve caps

### Phantom Limb Pain: (Prevalence: 85%; Chronic 5%)

- Pain in the area of the now absent limb - often burning shocking, or crushing in character
- Differs from phantom limb sensation (patient feels the amputated limb is present, but not painful)
- Spontaneous resolution is unlikely if pain lasts >6 months
- Theories of etiology:



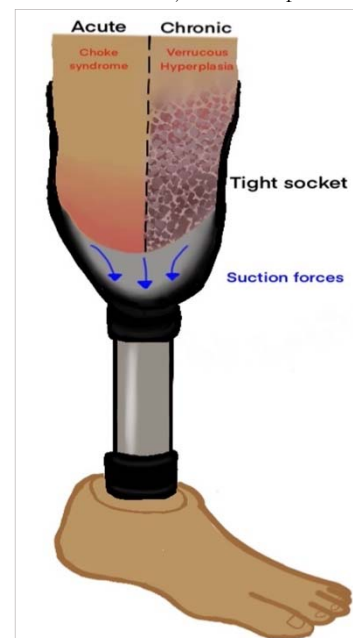
- Treatment
  - **Physical Interventions**: ultrasound, vibration, and acupuncture- utilize the gate control mechanism.
  - **Medical Interventions**: Antidepressant (SSRI and TCA)- strong evidence, anticonvulsants-mixed evidence
  - **Psychological Interventions**: biofeedback, cognitive therapy, support groups, and guided motor imagery
  - **Physical Therapy**: mirror therapy, phantom exercises, or augmented/virtual reality
  - **Procedures**: nerve blocks & injections-low success
  - **Surgical**: TMR & RPNI

### Bone

- **Exostoses/Bone Spurs**
  - Caused when periosteum is stripped, during trauma or surgery
  - Socket use → pressure on the skin → pain
  - Treatment: socket modification or surgery
- “Chopsticking”
  - In BKA when the fibula is hypermobile and/or longer when compared to the tibia
- Pediatric Complications
  - **Terminal Overgrowth**: Bone overgrowth at the end of the residual limb
  - **Hypertrophic Ossification**: Bone forms in the soft tissue

### Soft Tissue/ Skin

- **Infection**:
  - Folliculitis, boils, abscess, epidermoid cysts
  - Fungal: (Tinea corporis & Tinea cruris)
  - Prevention: Good hygiene, sweat management
- **Hyperhidrosis**:
  - Causes: skin breakdown, irritation, and fungal infection
  - Treatments: Antiperspirants, Botox Injections
- **Allergic Dermatitis**
  - Irritation from products and prosthetic parts
- **Choke Syndrome**
  - A tight prosthetic inlet impedes venous return
    - Fluid collection → edema, weeping, blistering
  - Chronic: thickened & hyperpigmented skin
    - Progresses to verrucous hyperplasia- skin overgrowth → warty appearance
  - Treatment: socket adjustment/replacement



- **Iatrogenic Pain**
  - Non-ideal surgical cut/suturing → pressure on skin → pain

### Biomechanics

- **Muscle Contracture**
  - Limits mobility and use of prosthetics
  - Prevention is key- includes stretching and joint exercises as soon as possible after surgery
  - Treatment: manual stretching, heat, ultrasound, splinting and casting
    - Can be painful
- **Poor Prosthetic Fit**
  - Can result in skin breakdown, pain and altered gait

### Comorbidities

- Vascular disease, claudication, or diabetic neuropathy may complicate care