

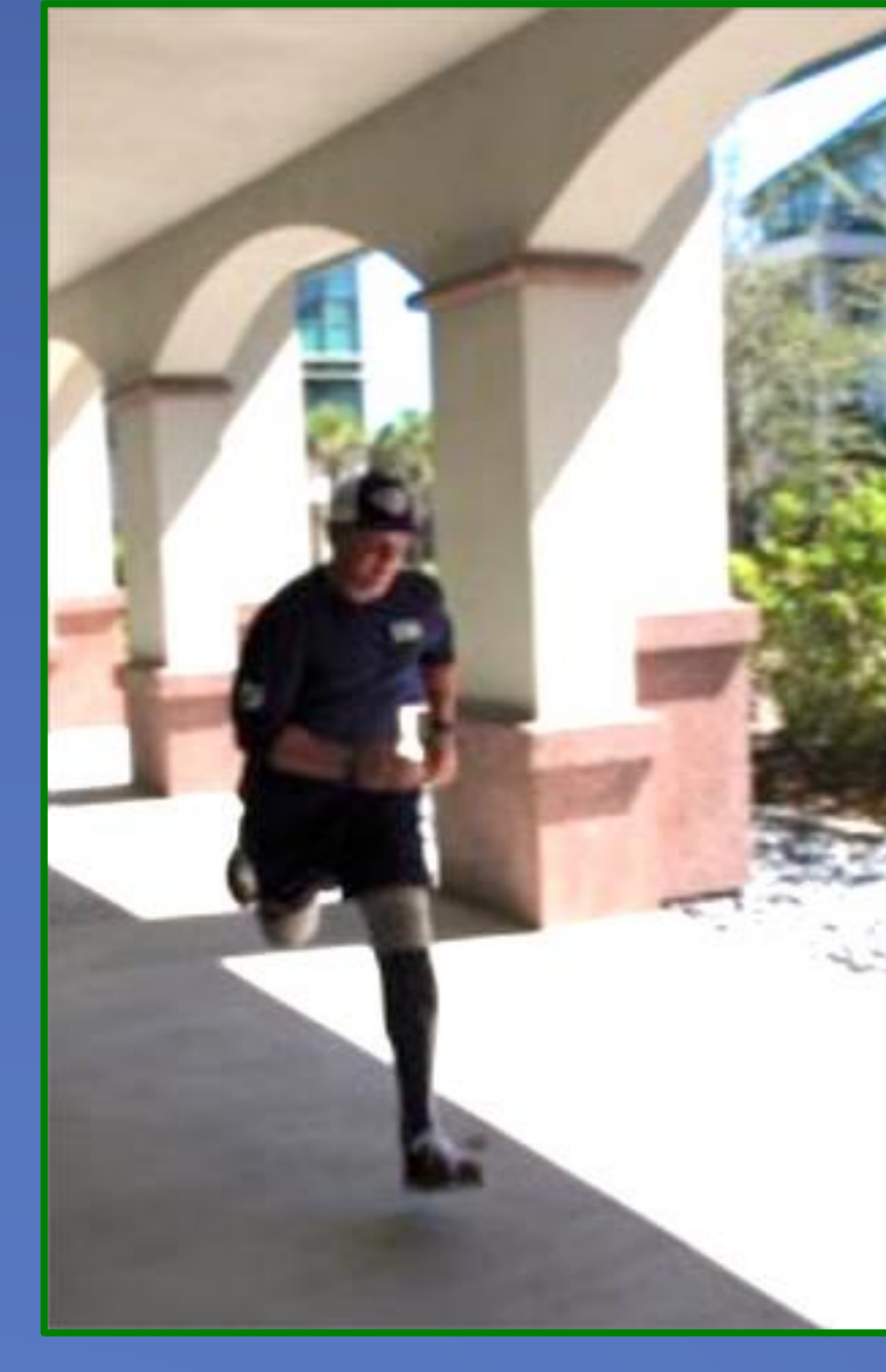
Continuum of Care and Recreational Physical Fitness for People with Lower Extremity Amputations

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Background:

- 1.7 million Americans are living with Amputations
- Lower Limb amputations are mainly caused by vascular disorders
- Diabetes is the number one cause
 - Expected to at least double if not triple by 2050
- Limb Loss many result in an *immediate* decrease in social interaction, physical activity, and financial well-being
- *Current research* promotes hopping/walking based activities following limb loss
- *Cardiovascular training* is vital due to increase energy demand following amputation
- *Proposed Theory*
 - Initially, limiting hopping training and promoting single leg balance/weight shifting, generalized strengthening especially core, and cardiovascular endurance
 - Slowly phasing in recreational activity when appropriate the patient will self-report a greater outlook and quality of life with decreased phantom limb pain



Nine Stages of Amputation Rehabilitation:

- **Preoperative:** Establishment of long term and short term goals
- **Amputation/Dressing:** Limb length is determined and closed of the wound bed
- **Acute Post-surgical:** Main objectives are to restore motion, pain management, and improve entire body strength
- **Pre-prosthetic:** Reshaping the residual limb along with stump shrinking
- **Prosthetic Prescription:** Comprehensive discussion with all personnel on the prosthetic prescription
- **Prosthetic training:** Increasing wear time and functional use
- **Community Integration:** Restarting family roles and responsibilities within the community
- **Vocational Rehabilitation:** Work-related activities and educational requirements
 - Research shows strong positive outcomes with daily recreational activity
- **Follow-up:** Includes lifelong emotional, medical, and functional support

Case Study 18 year old Female status post traumatic transfemoral amputation in November 2013

Presentation:

- Pronounced DOA, until EMS witnessed faint breathing & arrived to ED with a GCS of 3. She sustained multiple life threatening injuries in an MVA: severe right crush injury with extensive vascular insult resulting in right transfemoral amputation, left patella fracture, right humeral fracture, pelvic fracture, and a heart valve tear

Continuum of Care

- In-patient care (8 days) included limited cardiovascular training, focus on ambulation via 2-wheeled walker, generalized strengthening, wheelchair and transfer training. Outpatient PT (4 week outpatient stay) included lower extremity strengthening and more hop-to ambulation. Patient reported feeling, "**isolated and very depressed, even suicidal.**" She was followed by a prosthetist during her prosthetic fitting and fabrication phase who aided her in walking and continues to be followed by a prosthetist. Four months after receiving her prosthetic device she began her current regimen, working out 5 days a week, knee boards, paddleboards, and swims regularly. Since the addition of these activities patient reports, an **improved mood and self-confidence**

Conclusion:

- Physical Therapists are not always fortunate enough to be part of the nine stage rehabilitation protocol. Due to the many intrinsic and extrinsic benefits of implementing recreational activity with patients physical therapists can effectively target and make improvements on muscle strength/endurance, cardiovascular, and balance/proprioception. By incorporating recreational activity patients begin to feel socially engaged and self-reported increases in mood and self-confidence with their prosthetic device. **Recommendations** for future physical therapy policy regarding amputee care physical therapists should promote and highly encourage patients involvement in recreational activity to address patient's needs and neuromuscular deficits. According to a study by, Lundberg, Bennett, and Smith there is a positive trend in the improved quality of life and psychological health following a three week recreational activity participation.

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