

## **Advancing Observational Gait Analysis: Unlock the Collaborative Power of the Functional Lower-limb Amputee Gait Assessment Tool**

**Workshop purpose:** After a patient is fitted with a prosthesis and begins walking, physical therapists conduct observational gait analysis (OGA) to assess their gait and identify deviations. Using an OGA-tool, which includes a list of prevalent gait deviations and their causes, can guide physical therapists' evaluation in determining the presence of gait deviations, provide insight into intervention, and measure change over time. However, current OGA-tools have several limitations, including but not limited to 1) a long list of gait deviations, which can be administratively taxing and time-consuming to review; 2) dated terminology; and 3) include only a few possible causes that physical therapists can address. The Functional Lower-limb Amputee Gait (FLAG Assessment) is a new OGA-tool developed specifically to address the shortcomings of current OGA-tools.

This workshop will present the FLAG Assessment. Workshop participants will be provided with two distinct opportunities for gait analysis – one through examining patient videos and the other through live presentations featuring patients walking. Moreover, participants will use the FLAG Assessment to select and assign targeted interventions to mitigate the identified gait deviations. This hands-on approach deepens understanding and equips participants with practical skills to use in the clinical setting.

**Appropriate audience:** Physical therapists and prosthetists working with people with limb loss.

**Learning objectives:** upon the completion of this workshop, attendees will be able to:

- 1) Describe the observed abnormal motion for each gait deviation in the FLAG Assessment.
- 2) Use the FLAG Assessment to identify gait deviations of people with lower limb loss.
- 3) Determine the potential causes of gait deviations included in the FLAG Assessment and differentiate between patient-related issues, body function impairments, and prosthetic-related issues.
- 4) Select the appropriate intervention to mitigate the patient's gait deviation.

**Session outline:**

- 11:20 The Functional Lower-limb Amputee Gait Assessment
- 12:30 Break
- 12:45 Interactive: “Name that gait deviation” with the FLAG Assessment
- 13:50 Lunch Break
- 14:45 FLAGging targeted interventions to improve gait
- 15:30 Participants break into groups, observe prosthetic users walk, and participate in an interactive assessment to generate discussion on OGA skills and targeted interventions
- 16:30 Break
- 16:45 Participants break into groups, observe prosthetic users walk, and participate in an interactive assessment to generate discussion on OGA skills and targeted interventions
- 17:45 Questions and discussion
- 18:00 Adjourn

**References:** (5-7 2015 and later)

- 1) Gailey R, Kristal A, Gaunaard I. Physical Therapy Management of Adult Lower-Limb Amputees. In: Atlas of Amputations and Limb Deficiencies: Surgical, Prosthetic, and Rehabilitation Principles. American Academy of Orthopaedic Surgeons. 5<sup>th</sup> edition, 2023.
- 2) Gailey R, Gaunaard I, Raya M, Kirk-Sanchez N, Prieto-Sanchez LM, Roach K. Effectiveness of an evidence-based amputee rehabilitation program: a pilot randomized controlled trial. *Physical therapy*. 2020 May 18;100(5):773-87.
- 3) Ignacio Gaunaard, Robert Gailey, Barbara Springer, et al. The Effectiveness of the DoD/VA Mobile Device Outcomes-Based Rehabilitation Program for High Functioning Service Members and Veterans with Lower Limb Amputation. *Military Medicine*. Volume 185, Issue Supplement\_1, January-February 2020, Pages 480–489.
- 4) Adams JM, Cerny K. Observational gait analysis: A visual guide. SLACK Incorporated; 2018.
- 5) Brinkmann JT, Stevens PM. Clinical considerations of observational gait analysis. In: Atlas of Amputations Limb Deficiencies. American Academy of Orthopedic Surgeons; 2016:81-97.

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