

# Flex Therapist CEUs

## Lower-Limb Amputation - Spinal, Pelvic and Hip Movement Asymmetries

1. The loss of lower-limb musculature leads to compensatory movements in which of the following segments during walking?

- A. Hip
  - B. Pelvis
  - C. Trunk
  - D. All of the above
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2. While movement asymmetries are a form of adaptation following lower-limb amputation, the potential exists that some of the lumbopelvic and lower-limb movement asymmetries could be 'maladaptive,' potentially predisposing this population to musculoskeletal disorders such as low back pain and osteoarthritis.

- A. True
  - B. False
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3. Lumbopelvic and trunk asymmetries are more pronounced during which phase in persons with TFA?

- A. Stance phase
  - B. Loading response phase
  - C. Single-leg support phase
  - D. Initial contact phase
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4. Increased pelvic obliquity may potentially be a compensatory strategy as a result of decreased or absent knee flexion of the amputated limb in persons with TFA and TTA.

- A. True
  - B. False
- 

5. Participants with TFA compensate for the limited hip motion by:

- A. Increasing anterior pelvic tilt and decreasing lumbar extension.
  - B. Increasing anterior pelvic tilt and increasing lumbar extension.
  - C. Decreasing anterior pelvic tilt and decreasing lumbar extension.
  - D. Decreasing anterior pelvic tilt and increasing lumbar extension.
-

**6. Increasing lumbar extension has been postulated to alter the mechanical loading of facet joint, thereby contributing to degenerative changes in the lumbar spine.**

- A. True**
  - B. False**
- 

**7. During terminal stance of the amputated limb there is limited pelvic transverse rotation of the amputated limb as compared with the intact limb. This compensatory strategy appears to prepare the amputated limb for:**

- A. Swing phase**
  - B. Stance phase**
  - C. Support phase**
  - D. Contact phase**
- 

**8. Increasing hip extension during stance phase of the amputated limb is reasoned as a protective strategy to minimize the loading of the amputated limb and as a compensation of weak knee extensor muscles.**

- A. True**
  - B. False**
- 

**9. Studies have shown decreased knee muscle strength in the amputated limb, as compared with the intact limb, in persons with:**

- A. TFA**
  - B. TTA**
  - C. Both TFA and TTA**
  - D. Neither TFA nor TTA**
- 

**10. In those with TTA, decreased hip flexion and limited hip extension of the amputated limb is reported during early and late stance phase of stair climbing and ramp walking, suggesting that the amputated limb adopts an extended posture.**

- A. True**
  - B. False**
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**11. Persons with TTA are found to compensate in which of the following ways to facilitate anterior progression during stair climbing and ramp walking?**

- A. Increased loading on the intact leg.**
- B. Increased hip extension on the amputated side.**
- C. Anterior trunk lean.**

**D. All of the above.**

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**12. Improper prosthetic alignment has been shown to significantly:**

- A. Increase the hip muscle activity during walking in persons with TTA.**
  - B. Increase the hip muscle activity during walking in persons with TFA.**
  - C. Decrease the hip muscle activity during walking in persons with TTA.**
  - D. Decrease the hip muscle activity during walking in persons with TFA.**
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