

# Flex Therapist CEUs

## AFO - Ankle Foot Orthoses: Analysis & Application of Various Types

**1. The primary goal of an AFO is best reflected in which of the following:**

- A. To restore normal function and subsequently prevent further progression of abnormal biomechanical processes
  - B. To absorb shock during loading response
  - C. To accommodate spasticity in the plantarflexor muscles
  - D. To restrict abnormal motion of the metatarsal heads
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**2. The secondary goal of AFOs is:**

- A. To prevent worsening contracture in the hamstring muscles
  - B. To restrict painful movement, gain compensation for lost motion, accommodate deformities, and improve gait quality and efficiency
  - C. To allow proper heel-off during pre-swing phase
  - D. To assist the dorsiflexion muscles during loading response
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**3. Robert has been attending inpatient physical therapy for post-stroke rehabilitation. Which of the following functional deficits would most likely indicate the need for an AFO?**

- A. Poor sit-to-stand ability
  - B. Excessive postural sway while brushing his teeth
  - C. Poor interlimb coordination and high energy expenditure
  - D. Right-sided neglect during meal times
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**4. Which of the following objectives would not be considered a primary goal of an AFO for a patient with weak dorsiflexor muscles?**

- A. To encourage foot drop during swing phase
  - B. To provide assistance during terminal stance
  - C. To position the foot during loading response
  - D. To decrease extensor thrust during midstance
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**5. Which of the following examples best describes a situation when a prefabricated AFO may be preferred over a custom AFO?**

- A. The patient does not have any remaining insurance visits for therapy
- B. The patient requires immediate availability

- C. The patient has mild peripheral neuropathy in both lower extremities
  - D. The patient has a low out-of-pocket cost to meet his/her insurance deductible
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**6. In children with Cerebral Palsy, an AFO may be appropriate in order to:**

- A. Allow the tibia to advance through stance phase
  - B. Decrease extensor thrust and intrinsic foot muscle spasticity
  - C. Discourage excessive hip flexion compensation during swing phase
  - D. To control the alignment of the foot that affects the swing phase of the gait cycle
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**7. Which body structure impairment may indicate a need for an AFO in individuals with Charcot Marie Tooth?**

- A. Plantarflexion tone
  - B. Slowed gait speed
  - C. Paralysis of lower extremity muscles, especially in the calf
  - D. Poor walking endurance
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**8. Following stroke, AFOs may be beneficial for individuals who exhibit:**

- A. Rigidity in the dorsiflexion muscles
  - B. Hemiplegic gait patterns
  - C. Lower motor neuron paralysis
  - D. Impaired kinesthesia
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**9. The acronym SPAM stands for:**

- A. Stabilize, Protect, Assist, or Manage
  - B. Stabilize, Prevent, Activate, Manage
  - C. Smart, Prescription, Assist, Mobilize
  - D. Smart, Protect, Activate, Mobilize
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**10. Patient-specific factors that should be taken into consideration when selecting an orthotic design include all of the following EXCEPT:**

- A. The number of joints in a limb that require orthotic control
  - B. Muscle strength and available range of motion at the involved and adjacent joints
  - C. The presence of abnormal muscle tone or involuntary muscle contractions
  - D. The size/weight of the AFO
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**11. The design of the AFO is critical to ensuring that the device maximizes the patient's function and participation in meaningful activities. Which of the following design characteristics best reflects this aim of AFO design to participate in meaningful activities?**

- A. The AFO should exert force in close proximity to the joint that is causing the problem.
  - B. The AFO should minimize energy expenditure during rehabilitation sessions.
  - C. The AFO should enhance the patient's ability to climb stairs by not restricting dorsiflexion.
  - D. The AFO should prevent the progression of structural deformities in the ankle joint.
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**12. When recommending an appropriate AFO to an orthotist on behalf of a patient, it is important to include which of the following measurements:**

- A. Passive foot range of motion
  - B. Lower limb and ankle girth
  - C. Patient's diagnosis and body weight
  - D. All of the above
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**13. A hinged AFO with a plantarflexion stop may be indicated for a patient with:**

- A. Rigidity
  - B. Dorsiflexion weakness
  - C. Spasticity
  - D. Plantarflexion weakness
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**14. Which of the following statements best reflects the significance of the ground reaction force vector during stance phase?**

- A. The ground reaction force vector passes posteriorly through the knee joint, creating an extension moment.
  - B. The ground reaction force vector passes anteriorly through the knee joint, creating an extension moment.
  - C. The ground reaction force vector passes posteriorly through the ankle joint, creating a flexion moment.
  - D. The ground reaction force vector passes anteriorly through the ankle joint, creating a flexion moment.
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**15. In children with Cerebral Palsy, an appropriate test and measure to quantify functional status and disease progression prior to prescribing an AFO is:**

- A. Gross Motor Function Measurement
  - B. Gait speed
  - C. Timed Up and Go
  - D. Functional Reach Test
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**16. Patients who require a high amount of ankle support would not be appropriate for this type of AFO:**

- A. Solid AFO
- B. Hinged AFO

- C. Hemispiral AFO
  - D. Posterior Calf Shell AFO
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**17. Exercises that target dorsiflexion include all of the following muscles EXCEPT:**

- A. Tibialis anterior
  - B. Tibialis posterior
  - C. Extensor digitorum longus
  - D. Extensor hallucis longus
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**18. Which of the following therapeutic exercises would be most appropriate to promote strength in the plantarflexion muscles?**

- A. Step-ups
  - B. Sidestepping
  - C. Dual task (motor/cognition)
  - D. Dissociation of lower leg movements
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**19. Functional gait activities to improve the patient's technique during loading response may include:**

- A. Backwards walking
  - B. Dual tasking (motor/motor)
  - C. Limb advancement with FES
  - D. Sit-to-stand practice without arms
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**20. Therapeutic activities to promote tibial advancement during stance phase may include:**

- A. Talocrural mobilizations with movement
  - B. Metatarsal abduction exercises
  - C. Soft tissue techniques to the plantarflexion muscles
  - D. Foot intrinsic muscle stretching
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**21. A patient with Multiple Sclerosis was prescribed a flexible posterior leaf spring AFO to compensate for weakness in the dorsiflexion muscles. FES applied to which distal nerve would most likely enhance his/her functional abilities during ambulation?**

- A. Tibial nerve
  - B. Sural nerve
  - C. Plantar nerve
  - D. Peroneal nerve
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**22. Which therapeutic exercise would be indicated to strengthen eccentric control of the plantarflexion muscles?**

- A. Static stance, eyes closed
  - B. Kicking a ball
  - C. Backwards walking
  - D. Sidestepping
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**23. The purpose of the wear schedule is to:**

- A. Gradually build up the patient's tolerance to the AFO
  - B. State exactly how the AFO should be donned and doffed each day
  - C. Provide caregivers with instructions for use and maintenance
  - D. All of the above
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**24. Your patient arrives at the clinic on day 4 of his wear schedule. He states that he is able to don and doff the AFO independently and proceeds to demonstrate. As he removes the AFO, you notice a large red blister at the side of the first metatarsal head. Which of the following is most likely to be the cause of the joint redness?**

- A. AFO is too tight
  - B. Wearing thick socks
  - C. 5 mm heel wedge
  - D. Pressure relief wedge
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**25. If a patient requires custom-made shoes to wear with an AFO, then he/she most likely has:**

- A. Upper motor neuron disease
  - B. Moderate dorsiflexor muscle weakness
  - C. Severe deformities or sensory impairments
  - D. Flexible deformity of the hindfoot
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**26. Which of the following steps should always be completed to ensure proper fit once the patient has received their AFO?**

- A. Measure shank-to-vertical angle
  - B. Measure the patient's hip extension during terminal stance
  - C. Measure bilateral step length
  - D. Measure the patient's ankle and calf girth
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**27. Which of the following examples is a common issue that may arise in a patient with an articulated AFO?**

- A. Tibial inclination is too high

- B. Shank-to-vertical angle is too low
  - C. Tibial inclination is too low
  - D. Shank-to-vertical angle is too high
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**28. Issues regarding the stiffness of the AFO can create problems for the wearer. Which of the following outcomes may result from the AFO being too flexible?**

- A. Patient may experience extensor thrust as a result of plantarflexion tone
  - B. Patient may exhibit excessive knee instability from weak quadriceps
  - C. Patient may experience poor hip extension due to misplaced ground reaction forces
  - D. Patient may exhibit a circumduction gait pattern to compensate for weak hip flexors
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**29. Skin redness should abate within \_\_\_\_\_ minutes of removing the AFO.**

- A. 10-20
  - B. 15-25
  - C. 20-30
  - D. 25-35
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**30. Patients should be taught to check their skin for signs of irritation or breakdown, especially in areas of high pressure. Which of the following is considered to be an area of high pressure?**

- A. Heel
  - B. 1st metatarsal head
  - C. 5th metatarsal
  - D. All of the above
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