

# Flex Therapist CEUs

## Prevention and Awareness for Knee and Hamstring Injuries

**2018 International Olympic Committee consensus statement on prevention, diagnosis and management of paediatric anterior cruciate ligament (ACL) injuries**

**1. Adult patients with ACL injury may develop symptoms and signs of osteoarthritis within \_\_\_\_\_ of the index injury.**

- A. 5 years**
  - B. 10 years**
  - C. 15 years**
  - D. 20 years**
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**2. All of the following are the most important considerations when making treatment decisions, except for:**

- A. Surgical techniques**
  - B. Skeletal age assessment**
  - C. Risks associated with ACL reconstruction**
  - D. Management of associated injuries**
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**3. There is compelling evidence that ACL injury prevention programs work in skeletally mature patients and reduce:**

- A. The number of athletes who sustain a primary ACL injury.**
  - B. The number of new ACL injuries among athletes who return to sport after primary ACL injuries.**
  - C. ACL injury prevention programs reduce the number of athletes who sustain a primary ACL injury and reduce the number of new ACL injuries among athletes who return to sport after primary ACL injuries.**
  - D. ACL injury prevention programs do not reduce the number of athletes who sustain a primary ACL injury nor the number of new ACL injuries among athletes who return to sport after a primary ACL injury.**
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**4. The effects of a well-designed injury prevention program are strongly influenced by how frequently athletes perform the training.**

- A. True**
  - B. False**
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**5. No isolated question, test, or image can accurately identify an ACL injury, ever time.**

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

**6. The positive predictive values of clinical examination and MRI for ACL tear and meniscal pathology are higher than the negative predictive values.**

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

**7. Which of the following is a goal of treatment for the child with ACL injury?**

- A. To restore a stable, well-functioning knee that enables a healthy, active lifestyle across the lifespan.**
  - B. To reduce the impact of existing or the risk of further meniscal or chondral pathology, degenerative joint changes and the need for future surgical intervention.**
  - C. To minimize the risk of growth arrest and femur and tibia deformity.**
  - D. All of the above are treatment goals for the child with ACL injury.**
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**8. The principles of rehabilitation are the same, irrespective of whether the child has had an ACL reconstruction or has elected for non-surgical treatment.**

- A. True**
  - B. False**
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**9. Exercises and functional goals for a child:**

- A. Must be modified from adult-oriented rehabilitation protocols.**
  - B. Must be copied from adult-oriented rehabilitation protocols.**
  - C. Exercises and functional goals for a child may be modified and/or copied from adult-oriented rehabilitation protocols.**
  - D. Children required completely different exercises and functional goals and those for adults cannot be modified or copied.**
- 

**10. Given the vast information available through the internet, a good basis for a**

rehabilitation program can be established by the layman for the child with ACL injury.

- A. True
  - B. False
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11. Which of the following is the 'primary' focus of ACL rehabilitation in children?

- A. Return to full range of motion
  - B. Dynamic, multi-joint neuromuscular control
  - C. Absolute avoidance of surgery
  - D. All of the above are the primary focus of ACL rehabilitation
- 

12. All of the following are recommended functional tests and return to sport criteria for the child and adolescent with ACL injury who choose ACL reconstruction, except for:

- A. Full active extension and at least 120 degrees active knee flexion
  - B. Little to no effusion
  - C. Ability to hold terminal knee extension during single leg standing
  - D. For adolescents, 80% limb symmetry on muscle strength tests
- 

13. Rehabilitation programs should be designed to allow the child to participate in his or her team training sessions to maintain the social benefits of staying within the team.

- A. True
  - B. False
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14. Parents or guardians should be active participants in the daily rehabilitation.

- A. True
  - B. False
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15. Throughout all four phases of rehabilitation for the child with an ACL injury, the child should be guarded from cutting and pivoting activities during sport, free play, and physical education classes in school.

- A. True
  - B. False
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16. Non-surgical treatment should last for at least:

- A. 30 days
- B. 2 months
- C. 3 to 6 months

**D. 9 months**

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**17. Postoperative rehabilitation should last for a minimum of \_\_\_\_\_ before return to full participation in preferred physical activities.**

- A. 30 days**
  - B. 2 months**
  - C. 3 to 6 months**
  - D. 9 months**
- 

**18. Data from international registries suggest that young athletes are at high risk for a second ACL injury following an ACL reconstruction, and the risk is highest in the first 6 postoperative months, and the child athlete should, therefore, be advised not to return to pivoting sport until after this timeframe.**

- A. True**
  - B. False**
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**19. Which of the following have the larger measurement errors in the prepubescent population and should, therefore, be used with caution?**

- A. Isokinetic strength tests**
  - B. Leg symmetry index measures**
  - C. Balance tests**
  - D. Side-cutting tests**
- 

**20. Many clinicians involved in non-surgical treatment of skeletally immature children recommend the child wear a protective brace during strenuous physical activities.**

- A. True**
  - B. False**
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**21. Which of the following is an advantage of vertical transphyseal?**

- A. Anatomical graft position covering the ACL footprint.**
  - B. Appropriate placement of ACL footprint.**
  - C. Minimizes physeal volume affected.**
  - D. No drilling through the physis.**
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**22. Drilling a more vertical tunnel rather than an oblique tunnel increases the amount of physis removed and increases the risk for growth disturbance.**

- A. True**

**B. False**

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**23. Which of the following should be used for ACL reconstruction in pediatric patients with open physes?**

- A. Soft tissue grafts only**
  - B. Allografts only**
  - C. Either soft tissue grafts or allografts can be used**
  - D. Neither soft tissue grafts nor allografts can be used**
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**24. There is a rationale from animal models that the pediatric ACL graft may remodel faster than the adult ACL graft.**

- A. True**
  - B. False**
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**25. All of the following may happen as the child grows, except:**

- A. The graft may increase in length.**
  - B. The graft may increase in diameter.**
  - C. The bone tunnels may reduce in relative size.**
  - D. All of the above may happen as the child grows.**
- 

**26. The main goal with respect to skeletal age assessment is to:**

- A. Determine level of biological maturity**
  - B. Determine level of structural maturity**
  - C. Define remaining knee growth**
  - D. Diagnosis of disease presence**
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**27. Growth disturbances are a common and serious risk of ACL reconstruction.**

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

**28. Transphyseal techniques have a higher rate of:**

- A. Lower limb deformity**
  - B. Graft rupture**
  - C. Axis deviation**
  - D. Transphyseal techniques have a higher rate of all of the above**
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**29. Epiphyseal techniques may decrease the risk of rotational deformity and increase the risk of angular deformity.**

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

**30. Which of the following is associated with an increased risk for osteoarthritis?**

- A. Chondral lesions**
  - B. Disruption of joint capsule**
  - C. Meniscectomy**
  - D. Meniscal repair**
- 

**31. Knee stiffness is rare or less common in:**

- A. Children aged 13 years and younger**
  - B. Males**
  - C. Those having surgery with an iliotibial band or hamstring autograft**
  - D. All of the above**
- 

**32. Child-reported outcome assessment is typically valid in those greater than:**

- A. 8 years**
  - B. 10 years**
  - C. 12 years**
  - D. 14 years**
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### **The Effectiveness of Injury Prevention Programs to Modify Risk Factors for Non-Contact Anterior Cruciate Ligament and Hamstring Injuries in Uninjured Team Sports Athletes: A Systematic Review**

**33. Programs involving which of the following would be the most effective intervention to prevent ACL injuries?**

- A. Plyometric exercises**
  - B. Balance exercises**
  - C. Core exercises**
  - D. Programs involving strength, plyometric, balance, agility, core, and flexibility exercise would be the most effective intervention to prevent ACL injuries**
- 

**34. Interventions using mainly \_\_\_\_\_ would improve muscle strength, H/Q ratios and/or**

promote a shift of optimal knee flexion peak torque toward a more open angle position, without further biomechanics modifications.

- A. Strengthening exercises
  - B. Balance & proprioceptive exercises
  - C. Agility exercises
  - D. Flexibility exercises
- 

35. During stop-jump, all of the following were improved from a resistance-training program with no technical feedback, except for:

- A. Quadriceps strength
  - B. Hamstring strength
  - C. Biomechanical modification
  - D. All of the above were improved
- 

36. Further increases on the hamstring torque relationship were reported when \_\_\_\_\_ was combined with an eccentric and an unstable closed chain exercise.

- A. Eccentric Nordic curl
  - B. Dead lift
  - C. Plyometric
  - D. Sprints
- 

37. Which protocol involves greater knee extension components along with a relative lower emphasis on hamstring eccentric movements and therefore would be emphasizing quadriceps concentric over hamstring eccentric actions?

- A. Harmoknee
  - B. FIFA11+
  - C. Both Harmoknee and FIFA11+
  - D. Neither Harmoknee nor FIFA11+
- 

### **Effectiveness of Knee Injury and Anterior Cruciate Ligament Tear Prevention Programs: A Meta-Analysis**

38. Female athletes are less likely to injure their ACL compared to their male counterparts.

- A. True
  - B. False
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**39. This study's analysis found a significant association between ACL and knee injury prevention and which single training component?**

- A. Balance training**
  - B. Plyometric training**
  - C. Strength / resistance training**
  - D. No single training component was associated with injury prevention**
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**40. The results found in this study suggest that it may not be the individual program components that are important, but the timing of the intervention.**

- A. True**
  - B. False**
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**Anterior cruciate ligament injury: Identifying information sources and risk factor awareness among the general population**

**41. Long-term studies have reported that about 50% of patients develop osteoarthritis of the knee joint, 15 years after an ACL injury, irrespective of the treatment.**

- A. True**
  - B. False**
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**42. Almost 80% of the ACL injuries are contact in nature.**

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

**43. Injuries often occur when doing all of the following, except:**

- A. Landing from a jump**
  - B. Cutting**
  - C. Decelerating**
  - D. Accelerating**
- 

**44. Well-designed injury prevention programs, which focus on proper \_\_\_\_\_ techniques reduce the risk of ACL in athletes, particularly women.**

- A. Landing**
- B. Side-step cutting movement**
- C. Both landing and side-step cutting movement**



**D. Accelerating and decelerating**

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**45. The most important source of information on injury prevention programs among players was:**

- A. Their coaches**
  - B. Classroom session on health**
  - C. The newspaper**
  - D. The television**
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