1. Currently, ACL injury prevention methods are based on trained modifications in “at-risk” neuromuscular control profiles. What are the advantages and disadvantages of focusing solely on this ACL injury risk factor?

2. This article suggests that knee joint morphology is critical to the knee joint mechanical profile during high-impact landing maneuvers and hence the risk of noncontact ACL injury. Discuss how, if at all, you could use this information to improve current en-masse ACL injury risk screening and prevention methods.

3. It is proposed that the most effectively way to determine and ultimately counter ACL injuries is through the development of valid 3-D computational modeling methods. What, in your opinion, are the greatest advantages of utilizing such an approach to study the ACL injury problem? What do you consider to be the biggest hurdles in developing such models in the future?

4. The authors suggest that high-risk knee joint morphological-mechanical interactions may be “redirected” through targeted modifications in maturing knee joint structures. What specifically do they propose could be altered within an individual to achieve this goal as they progress through to maturation? Do you think modifying “at-risk” knee structures represents a plausible solution to reducing injury rates in adolescent males and females? Why, why not?

5. Explicit knee joint morphological parameters are proposed to increase ACL injury risk by causing hazardous increases in impact-induced knee joint loading. What training strategies could you utilize to try and counter these high-risk morphological contributions?

6. At what age or pubertal stage do you think would be the ideal time to implement an ACL injury prevention training program? Provide rationale for your answer.

7. The authors note that it is yet to be clearly established whether neuromuscular control strategies observed in females contribute directly to their risk of ACL injury or whether they represent an accommodative strategy for underlying high-risk morphological factors. What type of study could you design and/or what types of experimental techniques could you utilize to fill this knowledge gap?

8. In your opinion, do you think more research should be focused on understanding knee morphological contributions to ACL injury risk, especially considering many of these factors are nonmodifiable and that the ability to easily screen for such factors in the general population is limited?

9. Why, in your opinion, do you think that females tend to demonstrate more high-risk knee joint morphological profiles compared to males?