

The Six Pillars™ Of Concussion Risk Management

Head injuries in contact and collision sports cannot be completely eliminated, but a comprehensive approach can help minimize risk:

1 Comprehensive concussion education

All stakeholders should learn about:

- Techniques to reduce risk of concussion and brain/neck/spine injury
- Signs and symptoms of concussion
- How to create climate in which athletes feel comfortable reporting concussion symptoms
- How to identify athletes with suspected concussion on the sports sideline
- How concussions are treated and managed, including return to learn
- Graduated, symptom-limited, exercise protocol leading to return to play
- Factors suggesting that retirement from contact and collision sports is best course

2 Risk Minimization

Risk can be reduced by:

- Requiring athletes to undergo annual physicals before every season (including taking of comprehensive concussion history)
- Equipping players with properly fitted and maintained helmets
- Training players how to use their heads, including teaching proper heading technique and how to tackle, block, and check without using helmets as initial point of contact
- Strictly enforcing rules against dangerous play (e.g. helmet-to-helmet contact, blind side hits)
- Enacting new rules to further reduce contact to head
- Encouraging players to maintain peak physical condition and strengthen neck muscles
- Taking steps to reduce total brain trauma through sensible, evidence-based limits on head contact during practices

3 Early Identification and Immediate Removal from Play

Identifying players with suspected concussion is one of the best ways to reduce the risk of more serious injury and a prolonged concussion recovery:

- Employ a certified athletic trainer to be on the sideline at every game and practice
- Increase reporting by athletes of concussion symptoms by creating a culture of concussion safety
- Screen players for suspected concussion using scientifically-validated assessment tools
- Ban players suspected of concussion from same-day return to play
- Refer all cases of suspected concussion for more formal evaluation and assessment by a qualified medical professional



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4 Common Sense Treatment

- Limit physical and mental activity and keep athlete home from school for first few days
- Allow gradual return to social activities and full school day (with accommodations where required)
- Reintroduce physical and mental activities as long as don't trigger symptoms or make them worse
- Discontinue any activity if provokes symptoms or makes them worse.
- See concussion specialist if symptoms persist for more than 7 to 10 days

5 Cautious Return to Play

Do not begin return-to-play protocol until athlete:

- reports being symptom free
- has returned to a full academic workload without accommodations
- is performing at or near pre-injury baseline on all post-concussion tests;
- has been cleared by doctor to begin protocol:

Five-step program:

1. Light aerobic exercise
 2. Sport-specific exercise
 3. Non-contact training drills
 4. Full-contact practice
 5. Return to competition
- Wait 24-hours between each step without symptoms returning before next step
 - If symptoms return, wait 24 hours and begin again at the previous step
 - More rest and/or extended period of non-contact exercise recommended for younger athletes

6 Retirement

- No magic number of concussions rules athlete out of contact/collision sports
- Factors to consider:
 - Number of concussions
 - Concussions occurring with less force
 - Slower recovery after each concussion
 - More and more problems with thinking, memory, concentration, executive function
 - Role sport plays in athlete's life and realistic prospects for college and pro career
- Decision should be made jointly among and between athlete, athlete's family, other people important to the athlete (e.g. coach), and concussion team

