

Concussion: Recognition and *Response*

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Agenda

- Concussion 101
 - What *is it* really?
 - Signs and symptoms
 - Tools available to assist in recognition and response
- League's active role in concussion safety
 - Prevention
 - Virginia state law
 - Appropriate use of baseline testing
- Current management strategies
 - Summary of current research

While concussions aren't good....

SPORTS AND ACTIVITIES ARE!



We cannot prevent all concussions, but WE CAN....

- 1) Prevent more serious injuries from occurring
 - Quick, accurate recognition
 - NO return to play too soon
- 2) Take action steps to prevent prolonged recovery
 - Learn to manage the injury
 - Support the athlete academically, socially, emotionally, and physically



What is a Concussion?

A concussion is an injury to the brain

- Caused by a direct blow to the head, face, neck or elsewhere on the body
- Causes the head and brain to move rapidly back and forth.

A concussion results in the onset of impaired brain function, which leads to clinical signs and symptoms

(physical, cognitive, emotional, sleep)





Effects of Concussive Forces

Typically, concussion impacts the “software” of the brain

- Changes occur in the neurometabolic/ neurochemical processes
- Not able to be seen on CT/MRI
 - *CT/MRI are used to detect brain bleeds/swelling (not concussion)*

Does not typically change the “hardware” or structure

Concussion Signs and Symptoms

Symptoms occur or worsen when the body/brain's energy system is too low for the particular activity the child is doing (computer, math homework, TV, running, etc). It is **IMPORTANT** to rest when symptoms start to worsen, but it is also okay for the child to do activities that do not significantly worsen his/her symptoms (short TV shows, walking for exercise, etc).

Danger Signs



Emergency Department

- Uneven pupils
- Unable to wake up
- Worsening headache
- Repeated vomiting
- Slurred speech
- Seizures
- Unable to recognize people
- Disoriented, increasing confusion
- Unusual behavior
- Loss of consciousness



Signs You May See (Acutely)

- Appears dazed or stunned
- Confused about events
- Answers questions more slowly
- Repeats questions
- Difficulty recalling events prior to/after the impact
- Shows behavior or personality changes

Thinking/Remembering:

- Difficulty thinking clearly
- Difficulty concentrating or remembering
- Feeling more slowed down
- Feeling sluggish, hazy, foggy, or groggy

Physical:

- Headache or “pressure” in head
- Nausea or vomiting
- Balance problems or dizziness
- Fatigue or feeling tired
- Blurry or double vision
- Sensitivity to light or noise
- Numbness or tingling
- Does not “feel right”

Emotional:

- Irritable
- Sad
- More emotional than usual
- Nervous

Sleep*:

- Drowsy
- Sleeps *less* than usual
- Sleeps *more* than usual
- Has trouble falling asleep

**Only ask about sleep symptoms if the injury occurred on a prior day.*

SYMPTOMS REPORTED BY THE STUDENT

To recognize concussion think about: "1 + 2"

1

**Blow/ Force
to Head/ Body**



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To recognize concussion think about: "1 + 2"

2

Change in Function/ Behavior/ Performance

Post-Concussion Signs & Symptoms

<u>Physical</u>	<u>Cognitive</u>	<u>Emotional</u>	<u>Sleep</u>
Headache	Concentrate	Irritability	More
Fatigue	Memory	Emotional	Less
Balance/ Dizziness	Speed of Thinking	control Sadness	Cannot



1

+

2

**Blow/ Force
to Head/ Body**

**Change in Function/
Behavior/
Performance**

=

**“I Suspect there may be a
concussion!”**



Remove
athlete from
play



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Have all of those signs and symptoms memorized?

....there *may* be a random “pop quiz” in a few months when your star athlete suddenly collides with another player and is a little slow standing up.



So how are you *really* going to remember all of this in the middle of a game?

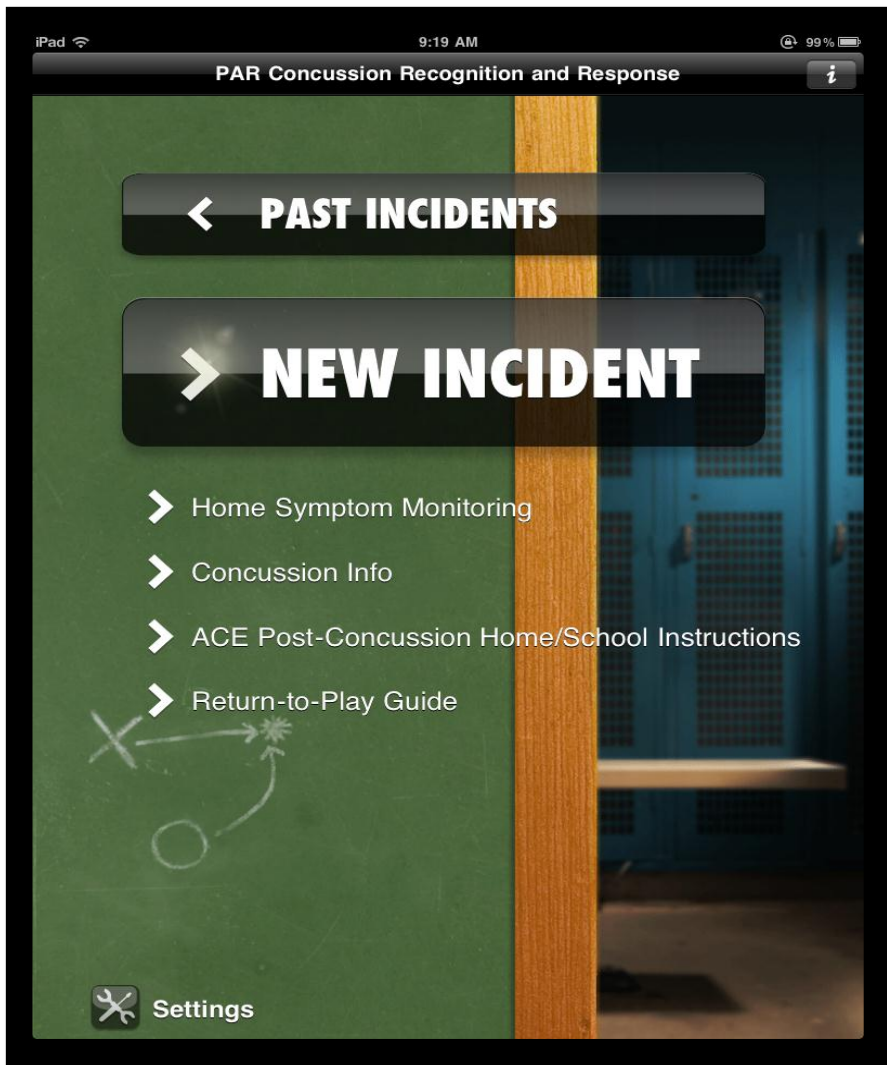


Concussion
RECOGNITION & RESPONSE™
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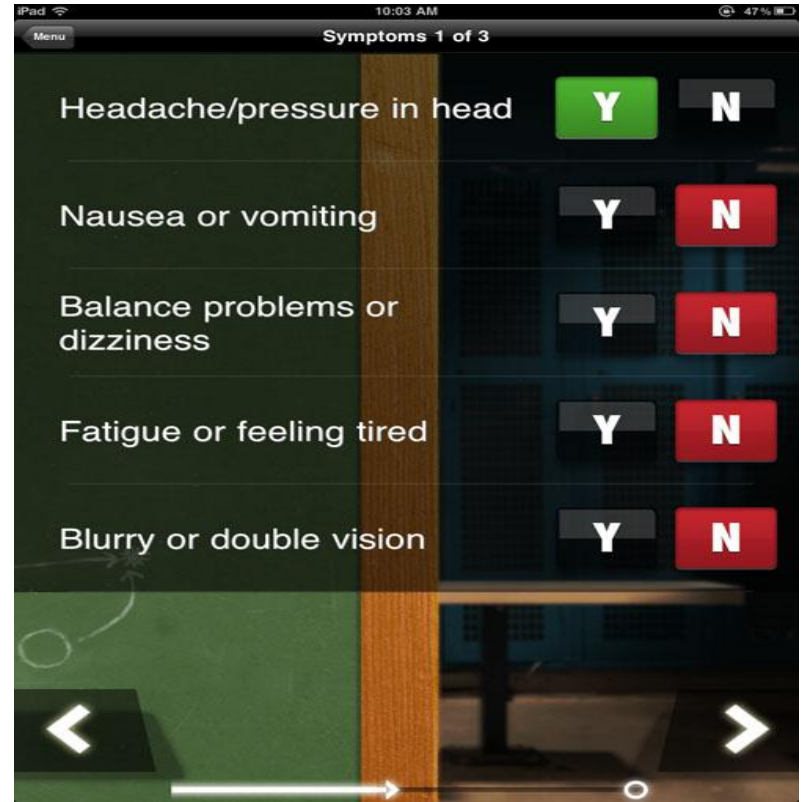
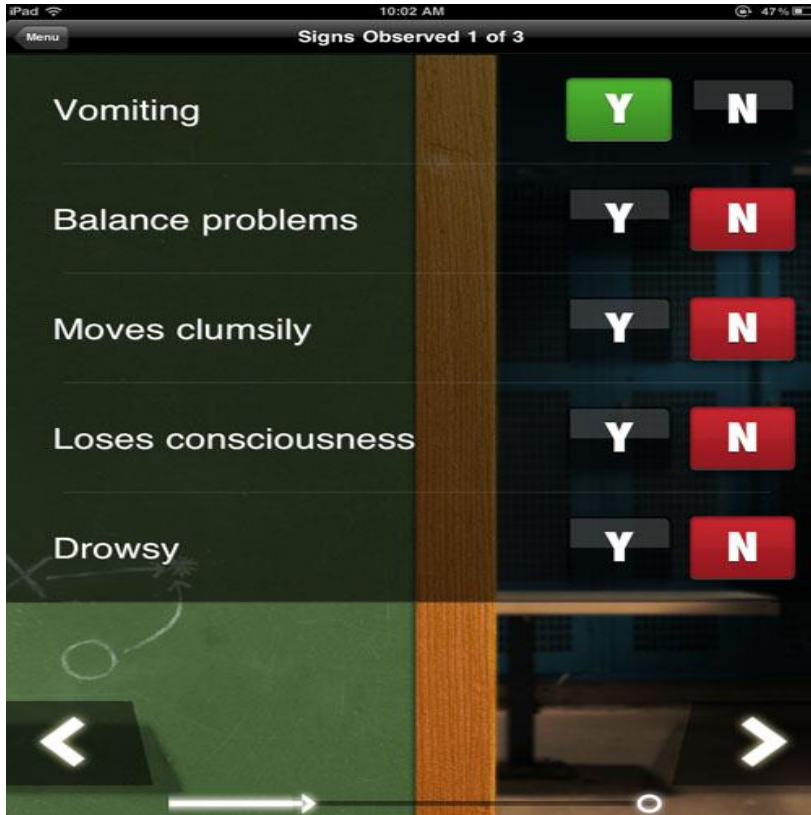
TAP TO CONTINUE

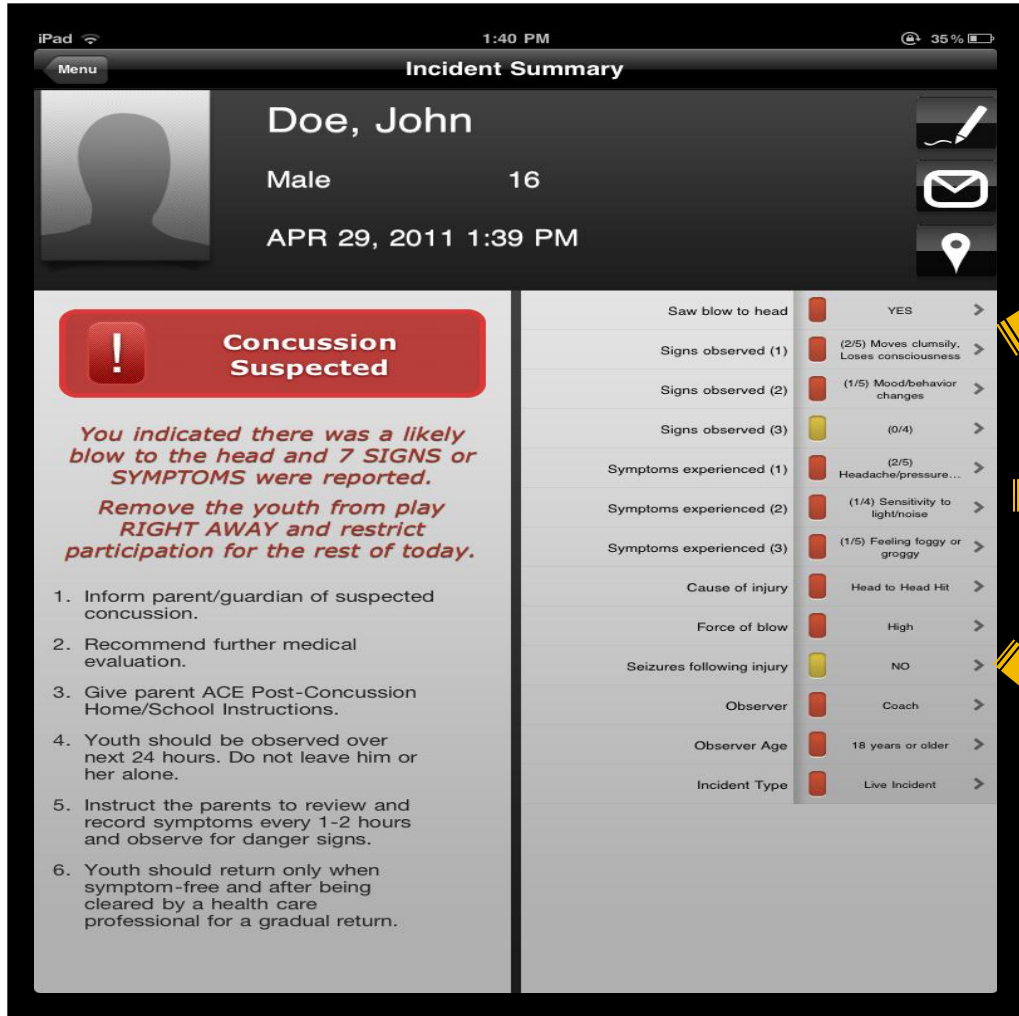
PAR Creating Connections.
Changing Lives.



Concussion Recognition and Response Phone/Tablet App *(free!)*

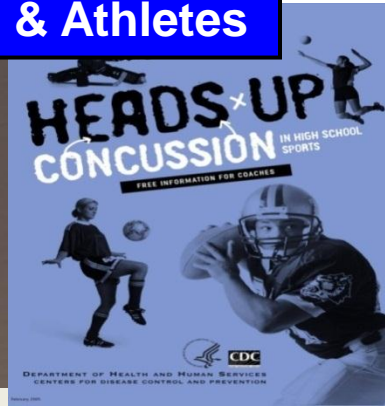
Tools: Concussion Recognition and Response App





Easily email important injury information to a parent or doctor.

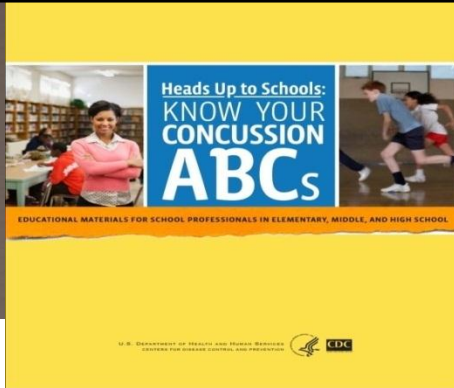
Parents & Coaches & Athletes



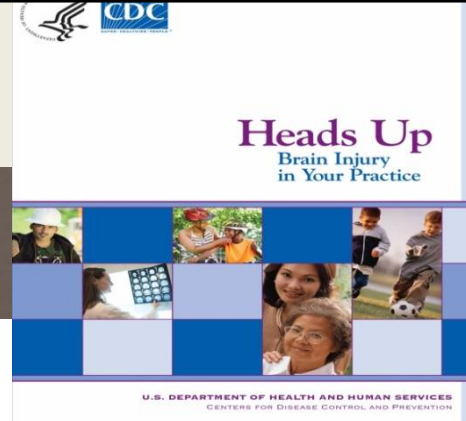
Coaches



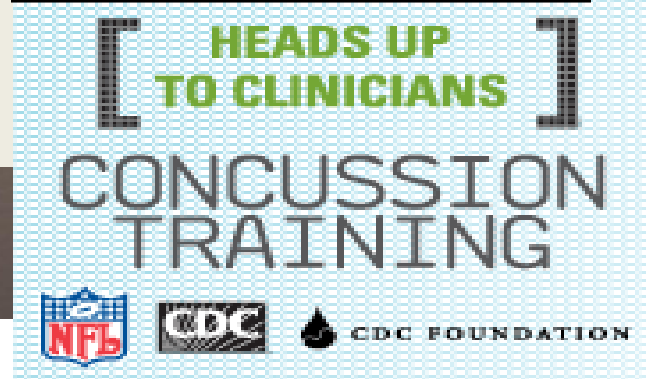
Schools



Healthcare Providers



Healthcare Providers



www.cdc.gov/concussion



Active Steps Towards Prevention....

Virginia State Law (*minimum standard*)

Now applies to **any non-interscholastic youth sports program utilizing public school property:**

- Must establish policies and procedures regarding the identification and handling of suspected concussions
- Must provide each student-athlete and the parent/guardian information on concussions, annually
- Remove athlete from play if concussion is *suspected*
- Athlete may not return to play:
 - The same day
 - Until written medical clearance is provided by a licensed healthcare provider

10 Questions a League (and Parents) Should Answer

1. Do you have a concussion policy?
2. Can a *trained* healthcare providers be identified?
3. Concussion education/training required?
4. What is the protocol for sideline recognition and response?
5. Do coaches have tools for concussion recognition and response?



10 Questions a League (and Parents) Should Answer

6. Protocol for informing parents if a concussion is suspected?

7. Policy specify when an athlete can return to play?

8. Does your league teach proper techniques?

9. Limitations on contact?

10. Does league accept feedback about safety from parents?



Baseline Testing

May Include

Balance Testing

Pre-Injury Symptoms (headaches)

Visual Tracking

Neurocognitive Evaluation

- *What it is:* Cognitive skill, the process used in performing skill, testing conditions including a variety of behavioral, motivational, emotional, social factors.
- *What it isn't:* Scores

- Typically provided pre-season
- Best used to help guide treatment and management of an already **diagnosed** concussion and aid return to play decisions
- Must be conducted by trained personnel in quiet setting with good supervision
- Does not diagnose concussion (no need to retest immediately and “low” scores do not always mean concussion)



Management of Concussion

....what we know....
....what we want to know



"Rest"

The concept of rest is viewed along a continuum

No activity/full rest



Full activity/no rest

In reality, **no** full cognitive rest (unless asleep or comatose)

Too much rest: likely **contributes** to maintenance of symptoms after only a few days (and light/moderate exercise may **help** recovery)

Therapeutic goal is ***not too little, not too much***

Management Takes a Team!

Medical

- Frequent individualized treatment plans addressing the evolving physical, cognitive, emotional, and sleep-related symptoms
- Clearance for gradual return to play



Family

- Monitoring, enforcing treatment strategies, identifying what youth can/cannot do



School

- Academic accommodations (no tests, reduced work, rest breaks)



Athletics

- Minimal/Moderate, non-contact activity while recovering
- Supporting emotional/social well-being of youth
- Careful monitoring when returning to play



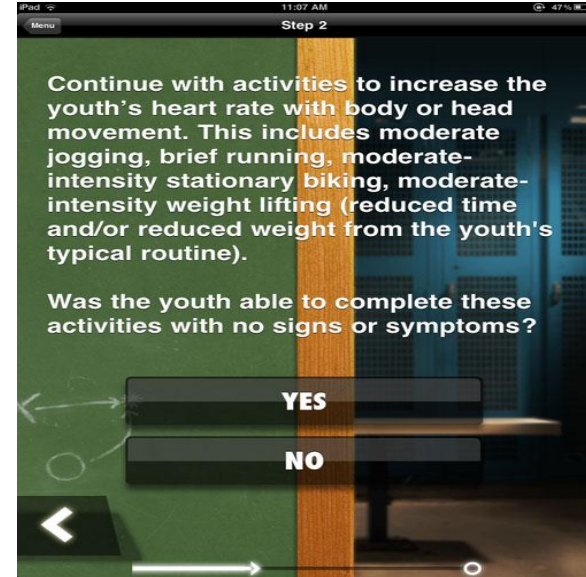
Recovery means:

- (1) No symptoms at rest/physical activity
- (2) Neurocognitive evaluation = baseline/normal



Gradual return to play:

- 5 steps gradually increasing activities, guided by symptoms
- No contact activities or games until symptom free (without medication) and tolerated prior non-contact activities



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Research


What we know...

- No “magic” number of concussions or symptoms and no one “magic” concussions symptom
- Less than 10% have loss of consciousness
- Most youth fully recover from this injury
- Prolonged recovery is typically due to a variety of concussion and non-concussion factors

Where we need more research....

- What products help prevent/lessen injury?
 - No helmet, head gear, or mouth guard will prevent concussions!
- Difference between boys/girls?
Adults/kids?
- Why do some youth take longer?
- Effects of repeated head injuries or “sub-concussive blows?”
 - Relationship between youth & repeated hits leading to long-term damage: Not established

Summary

- Concussion is “1 + 2” = (1) Hit to head/body (2) Change in functioning
“ I Suspect” a concussion  Remove from play (state law!)
- Use your tools to guide assessment (CDC materials, CRR app)
Inform parents and provide resources
- Support athlete during recovery
- Do not allow return to contact sports until athlete has:
Completed gradual return to play
Received written medical clearance

Thank you for
playing an active
role in keeping
our youth safe
and having fun!

A poster for the SCORE program. It features a young boy in a red hockey jersey holding a hockey stick. The text on the poster includes "SCORE" in large yellow letters, "Safe Concussion Outcome, Recovery & Education" in white and yellow, and "PLAY HARD. PLAY SAFE. PLAY SMART!" in red. A small Children's National logo is in the top right corner of the poster. The phone number "202-476-2429" is also visible.

SCORE
Safe Concussion Outcome,
Recovery & Education
Phone: 202-476-2429
**PLAY HARD.
PLAY SAFE.
PLAY SMART!**

