Recognizing and Treating Mild Traumatic Brain Injury

Training for Health Care Professionals

APRIL 16, 2015

Objectives
At webcast conclusion, viewers will be able to:
- Identify symptoms of mild TBI (MTBI)
- Explain how practitioners can use TBI diagnostic tools such as the Acute Concussion Evaluation-“ACE” with their patients
- Identify resources to assist in recognizing and treating mild brain injury

Conflict of Interest & Disclosure Statements
The planners and presenters do not have any financial arrangements or affiliations with any commercial entities whose products, research or services may be discussed in this activity.

No commercial funding has been accepted for this activity.

Evaluations
Nursing Contact Hours, CME and CHES credits are available.

Please visit www.phlive.org to fill out your evaluation and complete the post-test.

Featured Speaker
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Medical Director
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Thank You to Our Sponsors

- University at Albany School of Public Health
- NYS Department of Health
  - Division of Long Term Care
  - Traumatic Brain Injury Grant Program of the Health Resources & Services Administration

Recognizing and Treating TBI

“Silent Epidemic”

Mild traumatic brain injury (MTBI) accounts for at least 75 percent of all traumatic brain injuries in the United States. However, it is clear that the consequences of MTBI are often not mild. -2003 CDC Report to Congress

Julie Gerberding, MD, MPH
CDC Director in 2003

Types of Brain Injury

- Acquired (ABI): occurs after birth, disrupts the normal function of the brain, includes traumatic brain injuries
- Traumatic (TBI): includes concussion

NYS Brain Injury Incidence

- Over 400 New Yorkers sustain TBI per day (based on hospital data)
- Per year, this incidence exceeds the seating capacity of Yankee Stadium 3 times over

NYS Incidence - All Brain Injuries

All acquired brain injury (stroke, hypoxia, TBIs, etc.) = 550 persons / day

NYS hospital-based data
Greatest Risk of TBI in New York
Young children
Youth / Young Adults thru age 22
Adults 65 or older

Leading Causes of TBI in NYS
Falls
Vehicular accidents
Assaults

Sports with Highest Concussion Rates

<table>
<thead>
<tr>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Football</td>
<td>Soccer</td>
</tr>
<tr>
<td>Ice Hockey</td>
<td>Lacrosse</td>
</tr>
<tr>
<td>Lacrosse</td>
<td>Basketball</td>
</tr>
<tr>
<td>Soccer</td>
<td>Softball</td>
</tr>
<tr>
<td>Wrestling</td>
<td>Field Hockey</td>
</tr>
</tbody>
</table>

Sports and Recreation’s Top 12

<table>
<thead>
<tr>
<th>Activities with highest # brain injuries treated in U.S. hospital EDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycling</td>
</tr>
<tr>
<td>Football</td>
</tr>
<tr>
<td>Baseball/Softball</td>
</tr>
<tr>
<td>Basketball</td>
</tr>
<tr>
<td>Water Sports</td>
</tr>
<tr>
<td>Recreational Vehicles</td>
</tr>
</tbody>
</table>

Spectrum of TBI

Mild TBI (MTBI)

Cognitive and behavioral effects
- Potentially long lasting
- May lead to chronic disability

Impacts likely if not properly diagnosed and treated
**Impact of MTBI Symptoms**

May affect one of more of:

- Physical
- Cognitive
- Emotions
- Sleep

Duration varies from days - weeks - months - longer

**Mechanics of Brain Injury**

The “Egg Toss”
- Coup
- Contrecoup
- Shearing/Rotation

Even a mild TBI can cause permanent damage

**Physiological Impacts of TBI**

Following a traumatic brain injury is a chain of events inside the brain...
- Biomechanical changes and damage
- Chemical changes

**Secondary Effects of MTBI**

Diffused injuries
- Focal injuries

**Challenge in Diagnosing MTBI**

- Symptoms can be subtle & similar to other medical conditions (PTSD, Depression, Headache Syndromes, etc.)
- Onset may occur long after initial injury
- Many may present days, weeks, or even months later
- A person may present with complaints of persistent troubling symptoms

**Timeframes for Impact Post Injury**

- **Acute**: Injury to 7 days post-injury
- **Sub-acute**: Eight to 89 days post-injury
- **Chronic**: Ninety (90) days post-injury & beyond

Physicians Offices & Clinics are Integral to Effective Diagnosis
Symptoms Affect...

<table>
<thead>
<tr>
<th>Thinking/Remembering</th>
<th>Physical Well-being</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty thinking clearly</td>
<td>Headache, neck pain</td>
</tr>
<tr>
<td>Feeling slowed down</td>
<td>Dizziness, lightheadedness</td>
</tr>
<tr>
<td>Confusion</td>
<td>Blurred or double vision</td>
</tr>
<tr>
<td>Distractibility</td>
<td>Sensitive to noise or light</td>
</tr>
<tr>
<td></td>
<td>Fatigue, lethargy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emotion/Mood</th>
<th>Sleep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irritability, agitation</td>
<td>Sleeping more than usual</td>
</tr>
<tr>
<td>Anger, explosiveness</td>
<td>Sleeping less than usual</td>
</tr>
<tr>
<td>Sadness, more emotional</td>
<td>Trouble falling asleep</td>
</tr>
</tbody>
</table>

Patients with a TBI

Issue

Sensitivity to bright light, noise or complex visual stimuli

Suggested Response

Promote a low lit, calm, quiet atmosphere

Patients with a TBI

Issue

Trouble thinking of specific words or expressing symptoms, functional problems

Suggested Response

Allow patients time to express themselves
Ask about specific symptoms and problems (e.g., are you having headaches, how many times you have been hit in the past?)

Patients with a TBI

Issue

Reading may be impaired and completing forms may be troublesome

Suggested Response

Allow extra time to read and complete forms or have someone read and complete form for patient
Provide written material in simple, large-print format when possible

Patients with a TBI

How to Use MTBI Information

Good News!

- Know the incidence
- Know the symptoms
- Know how and when patients might present
- Use available tools

A number of diagnostic tools are now available.

Acute Concussion Evaluation (ACE)

- Clinical Diagnostic Tool
- One-Page/Two-Sided
- Evidence-based
- For children & adults
- Free at: www.CDC.gov/tbi/headsup

Developed by Gerard Gioia, PhD & Micky Collins, PhD
Components of ACE

Six Sections
A. Injury Description
B. Symptom Checklist
C. Risk Factors for Protracted Recovery
D. Red Flags for Acute Recovery Management
E. Diagnosis
F. Follow-up Action Plan

ACE - SECTION A: Injury Description

ACE - Section B: Symptom Checklist

Since the injury, has the person experienced any of the symptoms in the categories below more than usual today or in the past day? Indicate 0 = No/ 1 = Yes

<table>
<thead>
<tr>
<th>Physical</th>
<th>Cognitive</th>
<th>Emotional</th>
<th>Sleep</th>
</tr>
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</table>

Symptom Score Total (0-22)

ACE Sections C-E: Recovery, Emergency Management and Diagnosis

D. RED FLAGS for acute emergent
- Headache that worsens
- Lethargy
- Seizures
- Focal neurologic signs
- Slurred speech

E. Diagnosis (ICD): Concussion

F. Follow-Up Action Plan
- No Follow-Up Needed
- Physician/Clinician Office Mon
- Referral: Neurological Testing
- Physician: Neurosurgery
- Emergency Department

Follow Up Patient/Family Action Plan

Provides instructions on returning to:
- Daily Activities
- School or Work
- Sports
- Gradual Return to Play Plan

Rx for Patients with MTBI
1. Rest
2. Limit physical activity and mental concentration
3. Drink lots of fluids (non-alcoholic) and eat plenty of carbs or protein
4. Allow gradual return to daily activities with symptom decrease
5. If symptoms worsen, lessen activity level
Students with MTBI (Concussion)

Students with MTBI:
- Often have a decrease in mental energy
- May have daily energy fluctuations
- Need accommodations in school during recovery

School Accommodations to Consider...
- Reduce schoolwork demands
- Provide rest periods in a calm and quiet place to address fatigue
- Allow student to change classes to avoid confusion of crowded, noisy halls

Addressing MTBI: It Takes a Team

Brain Injury Symptom Wallet Card

NYSDOH.ny.gov & search “TBI”

Centers for Disease Control and Prevention (CDC) Injury Prevention

New York State Resources
Thanks for Participating

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Thank you!