EMERGENCY PHYSICIANS AND NURSE PRACTITIONERS ARE ESSENTIAL IN ACUTE CONCUSSION DIAGNOSIS

1. **Start with a comprehensive examination**

2. **Assess for red flags, identify risk factors, and determine need for CT scan**
   - Canadian CT Head Rule

3. **Provide patients with education and assurance about symptoms and recovery**
   - Concussion Do's and Don'ts

KEY MESSAGES FOR YOUR PATIENTS

- **Get physical and mental rest after your injury, then gradually return to normal activities**

- **Book a follow-up appointment with your primary care provider within 1-2 weeks**

For more information on the clinical practice guidelines and the supporting evidence, visit:

- www.braininjuryguidelines.org
- www.concussionsontario.org

**REFERENCES**
CONCUSSION
RISK FACTORS

Risk Factors for Advanced Imaging
Adapted from Stiegl et al. The Canadian CT Head Rule for Patients with Minor Head Injury. Lancet 2001;357:1391-96

RED FLAGS
- Glasgow Coma Score < 15 at 2-hours post-injury
- Suspected skull fracture (open or depressed)
- Any sign of basal skull fracture
- >2 vomiting episodes
- ≥ 65 years-old
- Retrograde amnesia to the event ≥ 30 min
- Dangerous mechanism (e.g., car accident, fall)

Risk Factors for Prolonged Concussion Recovery
Synthesized from the Concussion Recovery Pattern and Pathway (concussionsontario.org) and Table 1.1 Risk Factors Influencing Recovery Post mTBI (braininjuryguidelines.org)

MEDICAL FACTORS
- History of traumatic brain injury, neurological, sleep, or psychiatric problems
- Signs of vestibulo-ocular abnormalities or cognitive difficulties
- Reduced balance or dizziness
- Memory problems post-injury
- Nausea post-injury

CONTEXTUAL FACTORS
- Student, female, or old age
- Injured in motor vehicle collision
- Low education or socio-economic status
- High levels of symptom reporting
- Secondary gain issues (e.g., litigation)

If 1+ risk factors are identified:
☑ Encourage immediate follow-up with primary care provider
☑ Provide information and assurance about symptoms and recovery

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www.braininjuryguidelines.org
www.concussionsontario.org

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Concussion Symptom Checklist

Age: ________

Gender: Male □  Female □  Other □__________

Did you lose consciousness? Yes □  No □

How did you get your suspected concussion? ________________________________________________
______________________________________________________________________________________

Date/time of injury: ________________________________________________________________________

How many diagnosed concussions have you had in the past? __________

When was the most recent concussion before this injury? ________________________________________

Have you ever been (check all that apply)?

diagnosed / treated for a headache disorder or migraines □
diagnosed with a learning disability/dyslexia □
diagnosed with ADD/ADHD □
diagnosed with depression or anxiety □

List all current medications, if any:
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________

Please rate the severity of your symptoms from 0 (no symptoms) to 6 (severe symptoms) in each one of the boxes below:

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>no symptoms</td>
<td>mild symptoms</td>
<td>moderate symptoms</td>
<td>severe symptoms</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Physical

Headache

“Pressure in head”

Neck pain

Nausea or vomiting

Dizziness

Visual problems

Balance problems

Sensitivity to light

Sensitivity to noise

Fatigue or low energy

Difficulty remembering

2. Cognitive

Difficulty concentrating or remember

Feeling mentally foggy

Confusion

Feeling slowed down

3. Emotional

More emotional

Irritability

Sadness

Nervous or anxious

4. Sleep

Drowsiness

Changes in sleep patterns

5. Exertion

Symptoms get worse with mental activity

Symptoms get worse with physical activity

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Synthesized from the:
## Concussion Do’s and Don’ts: The first few days of recovery

### The Do’s

<table>
<thead>
<tr>
<th>Do</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="doc.png" alt="Doctor and Nurse Practitioner" /></td>
<td>See a medical doctor or nurse practitioner for help</td>
</tr>
<tr>
<td><img src="bed.png" alt="Bed" /></td>
<td>Rest 24-48 hours physically AND mentally</td>
</tr>
<tr>
<td><img src="activity-gauge.png" alt="Activity Gauge" /></td>
<td>Take it slowly returning to daily activities and sport</td>
</tr>
<tr>
<td><img src="battery.png" alt="Battery" /></td>
<td>Conserve your energy</td>
</tr>
<tr>
<td><img src="bed-food.png" alt="Bed and Food" /></td>
<td>Take care of basic needs</td>
</tr>
<tr>
<td><img src="stress-ball.png" alt="Stress Ball" /></td>
<td>Manage stress</td>
</tr>
</tbody>
</table>

### The Don’ts

<table>
<thead>
<tr>
<th>Don’t</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="alarm-clock.png" alt="Alarm Clock" /></td>
<td>Don’t be woken up every hour</td>
</tr>
<tr>
<td><img src="dark-lamp.png" alt="Dark Lamp" /></td>
<td>Don’t be put in a dark room to avoid all activity</td>
</tr>
<tr>
<td><img src="basketball.png" alt="Basketball" /></td>
<td>Don’t do activities with risk of falls or reinjury, play sports, do heavy chores or activities that could lead to another concussion or cause symptoms to worsen</td>
</tr>
<tr>
<td><img src="electronics.png" alt="Electronics" /></td>
<td>Reduce the use of electronic devices</td>
</tr>
<tr>
<td><img src="driver.png" alt="Driver" /></td>
<td>Don’t drive, ride a bike or work with machinery or ladders</td>
</tr>
<tr>
<td><img src="medicine.png" alt="Medicine" /></td>
<td>Don’t use non-prescription drugs, including alcohol</td>
</tr>
</tbody>
</table>

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CONCUSSION RECOVERY TIMELINE

Follow-up with primary care provider
Majority recover within a few weeks with education about symptom management. Some symptoms may continue.

Further follow-up required
Additional assessment(s) may be needed if symptoms do not resolve.

Prolonged/persistent symptoms need interdisciplinary care
Typically patients with risk factors for prolonged symptoms are identified at the initial medical assessment.

For more information and resources, visit our websites:
www.braininjuryguidelines.org  www.concussionsontario.org