PreParticipation Sports Examinations
UW General Pediatrics Outpatient Clinical Guidelines - Updated Sept 2015

Guidelines Reviewed:


**Topic owners:**
Sheryl Morelli, MD sheryl.morelli@seattlechildrens.org
Cathy Pew, MD – cpew@uw.edu

**Objective:** To reduce the risk of death, disability or injury to adolescents from participation in sports by detecting and treating health conditions.

**Specific primary objectives:**
Screen for life-threatening or disabling conditions that preclude sports participation.
Screen for conditions that predispose to injury or illness

**Specific secondary objectives:**
Facilitate an entry into routine health care for adolescents
Screen for risk-taking behaviors and mental health disorders among adolescents
Potential measurable outcomes:
- Adolescents who have had a preparticipation exam
- Adolescents whose PPE included appropriate history, family history and complete examination
- Immunization status of adolescents who have had PPE’s
- Other adolescent health goals, e.g., mental health and behavioral health screens, lipid screening, etc.

SUMMARY:

BRIEF summary of recommendations:
- Conduct comprehensive preparticipation visits in the adolescent’s medical home at least every two years. Comprehensive visits for adolescents should be offered annually.
- Screen all children 11 and older coming for a well child exam as if they were going to participate in sports either at school or recreationally, with the personal and family questions in the PPE and the specific exam components in the PPE.
- Identify those adolescents who need additional management or referrals in order to participate in sports without injury.
- Identify adolescents who need more frequent follow up than every two years, such as those with a chronic condition, (e.g., obesity, hypertension, or asthma) or those in whom a new problem has been identified.
- Include all the recommended questions to screen for risk factors in personal history and family history at the first visit. Review and update the history at subsequent visits.
- Include a complete physical examination with the specific components recommended to detect silent heart disease, traumatic brain injury and musculoskeletal problems at every visit.
- Include screens for risk-taking behaviors, safety, depression and anxiety at least once during adolescence.

Inclusion criteria:
Children ages 11-18 presenting for preventive health visits and/or sports physicals

Exclusion criteria:
Children younger than 11 or with acute illness at the time of the visit

Preparation for visit:
Offer information about the visit ahead of time, including that there will be a complete physical exam and separate history-taking for parents and patients, recommend appropriate clothing such as shorts and tank top, ahead of the visit.
When possible, ensure private exam and counseling rooms and a process to obtain laboratory studies confidentially.
Assessment:

1. Evidence-based **medical history** and **family history**. (see PPE suggested questionnaire, attached)

   Essential components:
   a. General medical questions, e.g., previous sports restrictions, known medical conditions, hospitalizations or surgeries. Specific conditions that warrant further evaluation:
      i. Diabetes*
      ii. Asthma*
      iii. Anemia*
      iv. Infection
   b. Heart health questions*. Some experts and groups advocate screenings, such as electrocardiogram or echocardiogram, on all competitive athletes regardless of history. For now, in the US, the consensus is that a thorough history and family history combined with further evaluation for any positive answers should identify the great majority of young people with asymptomatic heart disease who are at risk of sudden death during strenuous exercise. ANY new, previously unevaluated positive answers should lead to further testing. A cardiology consult should be considered for a positive history or family history even with a normal physical exam. Any cardiac finding on physical exam should also trigger further testing regardless of a negative history and family history. Cardiology consultation can range from cardiology reading of an ECG or a telephone consult to an in-person visit.
      Heart History must include:
      i. Chest pain, discomfort, tightness or pressure with exercise
      ii. Unexplained syncope or near syncope
      iii. Dyspnea, fatigue or palpitations with exercise
      iv. Known heart murmur
      v. Known hypertension
      vi. Previous restriction for cardiac reason
      vii. Previous extra cardiac testing such as ECG, Echocardiogram
   c. Heart health family history*. ANY positive answers should be trigger further evaluation. Consider a cardiology consult and/or an ECG with cardiology read.
      Heart health family history must include:
      i. Premature death of a relative ≤ 50, including sudden, unexplained or accidental deaths and SIDS
      ii. Family member < 50 with disability due to heart disease
      iii. Family members with cardiac conditions known to be familial, such as hypertrophic cardiomyopathy, arrhythmogenic right ventricular cardiomyopathy, Marfan syndrome, channelopathies, long QT syndrome, short QT syndrome, or heart problem, pacemaker or implanted defibrillator
   d. Central nervous system questions. Positive answers should trigger a more thorough neurological history and exam.
      **Must include:**
      i. Previous concussions
      ii. Confusion, headache, memory problems*
iii. Headaches with exercise*
iv. Seizure history
v. Numbness, tingling or weakness after being hit or falling*
vi. Unable to move arms or legs after being hit or falling*

e. Bone and joint questions. Positive answers should trigger a more thorough bone and joint exam.
   **Must include:**
   i. Injuries that have caused a sports restriction in the past
   ii. Fractures, either traumatic or overuse
   iii. Known anomalies
   iv. Pain, swelling or stiffness*
   v. Known arthritis or connective tissue diseases*

f. Pulmonary questions. Positive answers should lead to further history, consideration of further testing or referral.
   i. Known asthma
   ii. Cough, wheeze, inhaler use*
   iii. Difficulty breathing when exercising*

g. Gastrointestinal/genitourinary questions. History of possible hernia leads to further exam and surgery; symptomatic hernias should be repaired prior to participation
   i. Groin pain, swelling

h. Skin infections. Active infections can be transmitted via contact or shared equipment and should lead to partial restriction.

i. Specific disorders. Known, chronic or active conditions may lead to participation with restrictions. Examples include:
   i. Diabetes
   ii. HIV or hepatitis
   iii. Allergies or anaphylaxis
   iv. Absent kidney, eye, testicle
   v. Heat illness
   vi. Recent mono
   vii. Recent surgery
   viii. Sickle cell trait or disease
   ix. Eye injury
   x. Immunization status

j. Gynecologic questions. Amenorrhea should raise concerns about an eating disorder or pregnancy, and be evaluated prior to participation.
   i. Menstrual history

k. Behavioral health. Screening with a confidential, standardized screen or a HEADSS assessment is recommended but not required. Ideally, a HEADSS assessment should be done annually on all adolescents, and any concerning answers should be followed up with further history and screening. Topics should include all of the following, or different areas at successive visits over the adolescent period.
   i. Safety: seat belts, helmets, guns, housing and intra-family safety
   ii. Mental health
   iii. Sexual behaviors
   iv. Drugs, alcohol, tobacco
2. **Physical examination** (see PPE suggested exam form)

Essential components:

   a. Height, weight, BMI, pulse, sitting brachial blood pressure in both arms*, vision screen, hearing screen
   b. Marfan’s stigmata*: (kyphoscoliosis, high arched palate, pectus excavatum, arachnodactyly, arm span> height, hyperlaxity of joints, myopia, heart murmur)
   c. HEENT: vision and hearing review, pupils equal
   d. Neck: thyroid and lymph node exam
   e. Heart*:
      i. Murmurs standing, supine and with Valsalva
      ii. Point of maximal impulse
      iii. Simultaneous radial and femoral pulses
   f. Lungs:
      i. Wheeze
      ii. Prolonged expiratory phase
      iii. Cough with forced expiration
   g. Abdomen:
      i. Spleen and liver size*
      ii. Other masses* (enlarged kidney or uterus, other)
   h. Genitourinary:
      i. Testicular exam (males)
      ii. Inguinal hernia*
   i. Skin:
      i. Evidence of infection
   j. Neurologic
      i. Mental status*. If any history of head injury, consider neuropsychological testing, such as SCAT2 or 3.
      ii. Strength, reflexes
      iii. Spurling’s test for cervical nerve compression*
   k. Musculoskeletal, Stability and range of motion of:
      i. Neck
      ii. Back
      iii. Shoulders/arms
      iv. Elbows/forearms
      v. Wrists/hands/fingers
      vi. Hips/thighs
      vii. Knees
      viii. Legs/ankles
      ix. Feet/toes
      x. Functional maneuvers: squat, duck walk, hop on one foot

*Positive or abnormal findings should lead to further evaluation by imaging, labs, consultation or other testing prior to clearance for sports. See the AAP monograph for specific details.
3. **Further evaluation** as indicated by positive findings in either the history and physical exam, such as ECG, spirometry, lipids, CBC, urinalysis, cognitive assessment, specialty referrals

**Recommendations**
Based on the findings, athletes can be:

1. **CLEARED** for full participation in all sports
2. **CLEARED** for certain sports that have lower impact (e.g., enlarged spleen, atlantoaxial instability)
3. **CLEARED** for certain sports that have lower intensity, (e.g, cardiac abnormality)
4. **CLEARED** with precautions for monitoring (e.g., seizure disorder, obesity, sickle trait)
5. **CLEARED** but follow up visit required within an interval of less than two years
6. **NOT CLEARED**, status to be reconsidered after completion of further evaluation, treatment, or rehabilitation
7. **NOT CLEARED** for any sport (rare)

Even with full clearance, annual update of the history and evaluation of any positive answers is recommended.

4. **Supplemental history form for athletes with known disabilities.** In addition to the history and exam questions for all athletes, children with known special health or cognitive impairments need tailored evaluations of their ability to function in their particular sport and with the level of support they will be receiving. See the suggested PPE supplemental history form.

**Attachments**
- PPE History form
- PPE Physical Examination Form
- PPE The Athlete with Special Needs: Supplemental History Form
- HEADSS
- PHQ-9
- GAD-7
- SCAT3
Preparticipation Physical Evaluation

Date of Exam ____________________________

Name ____________________________ Date of birth ____________________________

Sex ______ Age ______ Grade ______ School ______ Sport(s) ______

Medicines and Allergies: Please list all of the prescription and over-the-counter medicines and supplements (herbal and nutritional) that you are currently taking.

Do you have any allergies? □ Yes □ No If yes, please identify specific allergy below.
□ Medicines □ Pollens □ Food □ Stinging Insects

Explain "Yes" answers below. Circle questions you don’t know the answers to.

GENERAL QUESTIONS

1. Has a doctor ever denied or restricted your participation in sports for any reason?
2. Do you have any ongoing medical conditions? If so, please identify below: Asthma □ Arthritis □ Diabetes □ Infections □ Other:
3. Have you ever spent the night in the hospital?
4. Have you ever had surgery?

HEART HEALTH QUESTIONS ABOUT YOU

5. Have you ever passed out or nearly passed out DURING or AFTER exercise?
6. Have you ever had discomfort, pain, lightness, or pressure in your chest during exercise?
7. Does your heart ever race or skip beats (irregular beats) during exercise?
8. Has a doctor ever told you that you have any heart problems? If so, check all that apply:
   □ High blood pressure □ A heart murmur
   □ High cholesterol □ A heart infection
   □ Kawasaki disease □ Other:
9. Has a doctor ever ordered a test for your heart? (Example: ECG/EKG, echocardiogram)
10. Do you get lightheaded or feel more short of breath than expected during exercise?
11. Have you ever had an unexplained seizure?
12. Do you get more tired or short of breath more quickly than your friends during exercise?

HEART HEALTH QUESTIONS ABOUT YOUR FAMILY

13. Has any family member or relative died of heart problems or had an unexpected or unexplained sudden death before age 50 (including drowning, unexplained car accident, or sudden infant death syndrome)?
14. Does anyone in your family have hypertrophic cardiomyopathy, Marfan syndrome, arrhythmogenic right ventricular cardiomyopathy, long QT syndrome, short QT syndrome, Brugada syndrome, or catecholaminergic polymorphic ventricular tachycardia?
15. Does anyone in your family have a heart problem, pacemaker, or implanted cardioverter?
16. Has anyone in your family had unexplained fainting, unexplained seizures, or near drowning?

BONE AND JOINT QUESTIONS

17. Have you ever had an injury to a bone, muscle, ligament, or tendon that caused you to miss a practice or a game?
18. Have you ever had any broken or fractured bones or dislocated joints?
19. Have you received an injury that required a cast, crutches, or a sling?
20. Have you ever had a stress fracture?
21. Have you ever been told that you have or have you had an x-ray for neck instability or atlantoaxial instability? (Owen syndrome or odontoid)
22. Do you regularly use a brace, cast, or other assistive device?
23. Do you have a bone, muscle, or joint injury that prevents you from:
   □ Running □ Playing sports □ Playing basketball
24. Do you have any of your joints become painful, swollen, feel warm, or feel other symptoms?
25. Do you have any history of juvenile arthritis or connective tissue disease?

MEDICAL QUESTIONS

26. Do you cough, wheeze, or have difficulty breathing during or after exercise?
27. Have you ever used an inhaler or taken asthma medications?
28. Is there anyone in your family who has asthma?
29. Were you born without or are you missing a kidney, an eye, a testicle (male), your spleen, or any other organ?
30. Do you have groin pain or a painful bulge in the groin area?
31. Have you had infectious mononucleosis (mononucleosis) within the last year?
32. Do you have a rash, pressure sores, or other skin problems?
33. Have you had a herpes or MRSA skin infection?
34. Have you ever had a head injury or concussion?
35. Have you ever had a hit or blow to the head that caused confusion, prolonged headache, or memory problems?
36. Do you have a history of seizure disorder?
37. Do you have headaches with exertion?
38. Have you ever had numbness, tingling, or weakness in your arms or legs after being hit or falling?
39. Have you ever been unable to move your arms or legs after being hit or falling?
40. Have you ever become ill while exercising in the heat?
41. Do you get frequent muscle cramps when exercising?
42. Do you or someone in your family have sickle cell trait or disease?
43. Do you have any problems with your eyes or vision?
44. Have you had any eye injuries?
45. Do you wear glasses or contact lenses?
46. Do you wear protective eyewear, such as goggles or a face shield?
47. Do you worry about your weight?
48. Are you trying to or have you ever been recommended to gain or lose weight?
49. Are you on a special diet or do you avoid certain types of food?
50. Have you ever had an eating disorder?
51. Do you have any concerns that you would like to discuss with a doctor?

FEMALES ONLY

52. Have you ever had a menstrual period?
53. How old were you when you had your first menstrual period?
54. How many periods have you had in the last 12 months?

Explain "yes" answers here

I hereby state that, to the best of my knowledge, my answers to the above questions are complete and correct.

Signature of athlete ____________________________ Date ____________________________

Signature of parent/guardian ____________________________ Date ____________________________

# Preparticipation Physical Evaluation

**PHYSICAL EXAMINATION FORM**

### PHYSICIAN REMINDERS
1. Consider additional questions on more sensitive issues
   - Do you feel anxious or under a lot of pressure?
   - Do you ever feel sad, hopeless, depressed, or anxious?
   - Do you feel safe at your home or workplace?
   - Have you ever tried cigarettes, chewing tobacco, snuff, or dip?
   - During the past 30 days, did you use chewing tobacco, snuff, or dip?
   - Do you use alcohol or use any other drugs?
   - Have you ever taken anabolic steroids or used any other performance enhancer?
   - Have you ever taken any supplements to help you gain or lose weight or improve your performance?
   - Do you wear a seat belt, use a helmet, and use condoms?
2. Consider motivating questions on cardiovascular symptoms (questions 5–14).

### EXAMINATION

<table>
<thead>
<tr>
<th>Height</th>
<th>Weight</th>
<th>□ Male</th>
<th>□ Female</th>
<th>BP</th>
<th>/</th>
<th>/</th>
<th>Pulse</th>
<th>□ Valin R 20/</th>
<th>□ L 20/</th>
<th>□ Corrected</th>
<th>□ Y</th>
<th>□ N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### MEDICAL

#### NORMAL

<table>
<thead>
<tr>
<th>Appearance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Martin spinae, high arches, pectus excavatum, enrochon (arm span &gt; height), hypertelorism, myopia, MVD (<em>cardiac insufficiency</em>)</td>
<td></td>
</tr>
<tr>
<td>Eyes/ears/nose/throat</td>
<td></td>
</tr>
<tr>
<td>Pupils equal</td>
<td></td>
</tr>
<tr>
<td>Hearing</td>
<td></td>
</tr>
<tr>
<td>Lymph nodes</td>
<td></td>
</tr>
<tr>
<td>Heart*</td>
<td></td>
</tr>
<tr>
<td>Murmurs (assessing standing, supine, +/- valsalva)</td>
<td></td>
</tr>
<tr>
<td>Location of point of maximal impulse (PMI)</td>
<td></td>
</tr>
<tr>
<td>Pulses</td>
<td></td>
</tr>
<tr>
<td>Simultaneous femoral and radial pulses</td>
<td></td>
</tr>
<tr>
<td>Abdomen</td>
<td></td>
</tr>
<tr>
<td>Genitourinary (male only)†</td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td></td>
</tr>
<tr>
<td>*Nail lesions suggestive of MRSA, lines corporis</td>
<td></td>
</tr>
<tr>
<td>Neurologic*</td>
<td></td>
</tr>
</tbody>
</table>

### MUSCULOSKELETAL

<table>
<thead>
<tr>
<th>Neck</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Shoulder/arm</td>
<td>Elbow/forearm</td>
</tr>
<tr>
<td>Wrist/hand/fingers</td>
<td>Hand/foot</td>
</tr>
<tr>
<td>Hips</td>
<td>Knee</td>
</tr>
<tr>
<td>Leg/ankle</td>
<td>Foot/feet</td>
</tr>
<tr>
<td>Functional</td>
<td>Quick walk, single leg hop</td>
</tr>
</tbody>
</table>

*Consider ECG, echocardiogram, and referral to cardiology for abnormal cardiac history or exam.

†Consider GI exam if private setting. Having third-party present is recommended.

*Consider cognitive evaluation or baseline neurocognitive testing if history of significant concussion.

☐ Cleared for all sports without restriction

☐ Cleared for all sports without restriction with recommendations for further evaluation or treatment for ________________________

☐ Not cleared

☐ Pending further evaluation

☐ For any sports

☐ For certain sports ________________________

Reason ________________________

Recommendations ________________________

I have examined the above-named student and completed the preparticipation physical evaluation. The athlete does not present apparent clinical contraindications to practice and participate in the sport(s) as outlined above. A copy of the physical exam is on record in my office and can be made available to the school at the request of the parents. If conditions arise after the athlete has been cleared for participation, the physician may rescind the clearance until the problem is resolved and the potential consequences are completely explained to the athlete (and parents/guardians).

Name of physician (print/type) ________________________

Date ________________________

Address ________________________

Signature of physician ________________________

Phone ________________________

©2010 American Academy of Family Physicians, American Academy of Pediatrics, American College of Sports Medicine, American Medical Society for Sports Medicine, American Orthopaedic Academy for Sports Medicine, and American Osteopathic Academy of Sports Medicine. Permission is granted to reprint for noncommercial, educational purpose with acknowledgment.
Preparticipation Physical Evaluation

THE ATHLETE WITH SPECIAL NEEDS: SUPPLEMENTAL HISTORY FORM

Date of Exam __________________________ Date of birth __________________________
Name __________________________ Gender __________________________
Sex __________________________ Age __________________________ Grade __________________________
School __________________________ Sport(s) __________________________

1. Type of disability
2. Date of disability
3. Classification if applicable
4. Causes of disability (birth, disease, accident/trauma, other)
5. List the sports you are interested in playing

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Do you regularly use a brace, assistive device, or prosthesis?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Do you use any special brace or assistive device for sports?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Do you have any rash, pressure sores, or any other skin problems?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Do you have a hearing loss? Do you use a hearing aid?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Do you have a visual impairment?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Do you use any special devices for bowel or bladder function?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Do you have burning or discomfort when urinating?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Have you had autonomic dysreflexia?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Have you ever been diagnosed with a heat-related (hyperthermia) or cold-related (hypothermia) illness?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Do you have muscle spasticity?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Do you have frequent seizures that cannot be controlled by medication?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Explain “yes” answers here

Please indicate if you have ever had any of the following.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlantoaxial instability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X-ray evaluation for atlantoaxial instability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dislocated joints (more than one)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy bleeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enlarged spleen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osteopenia or osteoporosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty controlling bowel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty controlling bladder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numbness or tingling in arms or hands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numbness or tingling in legs or feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weakness in arms or hands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weakness in legs or feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recent change in coordination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recent change in ability to walk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spina bifida</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latex allergy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Explain “yes” answers here

I hereby state that, to the best of my knowledge, my answers to the above questions are complete and correct.

Signature of athlete __________________________ Signature of parent/guardian __________________________ Date __________________________

HEADSS

for Adolescents (HEADSS)

Keywords: Adolescents

Background: This is an interview instrument for finding out about issues in adolescents’ lives. It was developed by Cohen and colleagues (Cohen et al., 1991)


Copyright: Publisher: Elsevier

Assessment:

Home

- Who lives with the young person? Where?
  - Do they have their own room?
  - What are relationships like at home?
  - What do parents and relatives do for a living?
  - Ever institutionalized? Incarcerated?
  - Recent moves? Running away?
  - New people in home environment?

Education and employment

- School/grade performance--any recent changes? Any dramatic past changes?
- Favorite subjects--worst subjects? (include grades)
- Any years repeated/classes failed
- Future education/employment plans?
- Any current or past employment?
- Relations with teachers, employers--school, work attendance?
- Suspension, termination, dropping out?

Activities

- On own, with peers (what do you do for fun?, where? when?)
- With family?
● Sports--regular exercise?

● Church attendance, clubs, projects?

● Hobbies--other activities?

● Reading for fun--what?

● TV--how much weekly--favorite shows?

● Favorite music?

● Does young person have car, use seat belts?

● History of arrests--acting out--crime?

**Drugs**

● Use by peers? Use by young person? (include tobacco, alcohol)

● Use by family members? (include tobacco, alcohol)

● Amounts, frequency, patterns of use/abuse, and car use while intoxicated?

● Source--how paid for?

**Sexuality**

● Orientation?

● Degree and types of sexual experience and acts?

● Number of partners?

● Masturbation? (normalize)

● History of pregnancy/abortion?

● Sexually transmitted diseases--knowledge and prevention? Contraception? Frequency of use?

● Comfort with sexual activity, enjoyment/pleasure obtained? History of sexual/physical abuse?

**Suicide/Depression**

● Sleep disorders (usually induction problems, also early/frequent waking or greatly increased sleep and complaints of increasing fatigue)

● Appetite/eating behavior changes

● Feelings of 'boredom'

● Emotional outbursts and highly impulsive behavior
- History of withdrawal/isolation
- Hopeless/helpless feelings
- History of past suicide attempts, depression, psychological counseling
- History of suicide attempts in family or peers
- History of recurrent serious 'accidents'
- Psychosomatic symptomology
- Suicidal ideation (including significant current and past losses)
- Decreased affect on interview, avoidance of eye contact--depression posturing
- Preoccupation with death (clothing, media, music, art).

References:

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems? (Use "✓" to indicate your answer)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Little interest or pleasure in doing things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Feeling down, depressed, or hopeless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Trouble falling or staying asleep, or sleeping too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Feeling tired or having little energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Poor appetite or overeating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Thoughts that you would be better off dead or of hurting yourself in some way</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

For office coding: 0 + 1 + 2 + 3 = Total Score: __________

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

<table>
<thead>
<tr>
<th>Difficulty Level</th>
<th>Not difficult at all</th>
<th>Somewhat difficult</th>
<th>Very difficult</th>
<th>Extremely difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

Developed by Drs. Robert L. Spitzer, Janet B. W. Williams, Kurt Kroenke and colleagues, with an educational grant from Pfizer Inc. No permission required to reproduce, translate, display or distribute.
### Generalized Anxiety Disorder 7-item (GAD-7) scale

<table>
<thead>
<tr>
<th>Over the last 2 weeks, how often have you been bothered by the following problems?</th>
<th>Not at all sure</th>
<th>Several days</th>
<th>Over half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Feeling nervous, anxious, or on edge</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Not being able to stop or control worrying</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Worrying too much about different things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Trouble relaxing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Being so restless that it’s hard to sit still</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Becoming easily annoyed or irritable</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Feeling afraid as if something awful might happen</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Add the score for each column

| | + | + | + |

Total Score (add your column scores) =

---

If you checked off any problems, how difficult have these made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all __________
Somewhat difficult __________
Very difficult __________
Extremely difficult __________

---

What is the SCAT3?

The SCAT3 is a standardized tool for evaluating injured athletes for concussion and can be used in athletes aged from 13 years and older. It supercedes the original SCAT and the SCAT-2 published in 2005 and 2009, respectively. For younger persons, ages 12 and under, please use the Child SCAT. The SCAT3 is designed for use by medical professionals. If you are not qualified, please use the Sport Concussion Recognition Tool. Preseason baseline testing with the SCAT3 can be helpful for interpreting post-injury test scores.

Specific instructions for use of the SCAT3 are provided on page 3. If you are not familiar with the SCAT3, please read through these instructions carefully. This tool may be freely copied in its current form for distribution to individuals, teams, groups and organizations. Any revision or any reproduction in a digital format requires approval by the Concussion in Sport Group.

Note: The diagnosis of a concussion is a clinical judgment, ideally made by a medical professional. The SCAT3 should not be used solely to make, or exclude, the diagnosis of concussion in the absence of clinical judgment. An athlete may have a concussion even if their SCAT3 is “normal.”

What is a concussion?

A concussion is a disturbance in brain function caused by a direct or indirect force to the head. It results in a variety of non-specific signs and/or symptoms (some examples listed below) and most often does not involve loss of consciousness. Concussion should be suspected in the presence of any one or more of the following:

- Symptoms (e.g., headache),
- Physical signs (e.g., vomiting),
- Impaired brain function (e.g., confusion)
- Abnormal behavior (e.g., change in personality)

SIDELINE ASSESSMENT

Indications for Emergency Management

Note: A hit to the head can sometimes be associated with a more serious brain injury. Any of the following warrants consideration of activating emergency procedures and urgent transportation to the nearest hospital:

- Glasgow Coma score less than 15
- Deteriorating mental status
- Potential spinal injury
- Progressive worsening of symptoms or new neurologic signs

Potential signs of concussion:

If any of the following signs are observed after a direct or indirect blow to the head, the athlete should stop participation, be evaluated by a medical professional and should not be permitted to return to sport the same day if a concussion is suspected:

Any loss of consciousness?

If so, how long?

Balance or motor incoordination (jerks, slow/lazy movements, etc.)

Disorientation or confusion (ability to respond appropriately is questioned)?

Loss of memory?

If so, how long?

Before or after the injury?

Blank or vacant look?

Visible facial injury in combination with any of the above:

1 Glasgow coma scale (GCS)

<table>
<thead>
<tr>
<th>Best eye response (E)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No eye opening</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye opening to speech</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eyes opening spontaneously</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Best verbal response (V)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No verbal response</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incomprehensible sounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inappropriate words</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confused</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oriented</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Best motor response (M)

<table>
<thead>
<tr>
<th>No motor response</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension to pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abnormal flexion to pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexion/Withdrawal to pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Localizes to pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obey commands</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Glasgow Coma score (E + V + M)

GCS should be recorded for all athletes in case of subsequent deterioration.

Maddocks Score

1. "I am going to ask you a few questions, please listen carefully and give your best effort." Modified Maddocks questions (1 point for each correct answer)

<table>
<thead>
<tr>
<th>Question</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>What venue are we at today?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Which half is it now?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who scored last in this match?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What team did you play last week?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did your team win the last game?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Maddocks score

Maddocks score is validated for sideline diagnosis of concussion only and is not used for serial testing.

Notes: Mechanism of injury (“tell me what happened?”):

Any athlete with a suspected concussion should be REMOVED FROM PLAY, medically assessed, monitored for deterioration (i.e., should not be left alone) and should not drive a motor vehicle until cleared to do so by a medical professional. No athlete diagnosed with concussion should be returned to sports participation on the day of injury.
BACKGROUND

Name: ___________________________ Date: ___________________________
Examiner: ________________________
Sport/team/school: ___________________________ Date/time of injury: ___________________________
Age: ___________________________ Gender: ___________________________
Years of education completed: _______ Y/N
Dominant hand: _______ right ___________ left ___________ neither
How many concussions do you think you have had in the past? _______ Y/N
When was the most recent concussion? _______ Y/N
How long was your recovery from the most recent concussion? _______ Y/N
Have you ever been hospitalized or had medical imaging done for a head injury? _______ Y/N
Have you been diagnosed with headaches or migraines? _______ Y/N
Do you have a learning disability, dyslexia, ADD/ADHD? _______ Y/N
Have you ever been diagnosed with depression, anxiety, or other psychiatric disorder? _______ Y/N
Has anyone in your family ever been diagnosed with any of these problems? _______ Y/N
Are you on any medications? If yes, please list: _______ Y/N

SCAT3 to be done in resting state. Best done 10 or more minutes post-exercise.

SYMPTOM EVALUATION

How do you feel?

You should score yourself on the following symptoms, based on how you feel now:

<table>
<thead>
<tr>
<th>Symptom</th>
<th>None</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>&quot;Pressure in head&quot;</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Neck pain</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Nausea or vomiting</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Dizziness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Blurred vision</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Balance problems</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sensitivity to light</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sensitivity to noise</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Feeling slowed down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Feeling like &quot;in a fog&quot;</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>&quot;Don't feel right&quot;</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Difficulty concentrating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Difficulty remembering</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Fatigue or low energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Confusion</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Drowsiness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Trouble falling asleep</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>More emotional</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Irritability</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sadness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Nervous/Angry</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Total number of symptoms (Maximum possible 22)

Symptom severity score (Maximum possible 112)

Do the symptoms get worse with physical activity? _______ Y/N
Do the symptoms get worse with mental activity? _______ Y/N

Self rated: _______ Yes _______ No
Clinician interview: _______ Yes _______ No
Self rated and clinician monitored: _______ Yes _______ No
Self rated with parent input: _______ Yes _______ No

Overall rating: If you know the athlete well prior to the injury, how different is the athlete acting compared to his/her usual self?

<table>
<thead>
<tr>
<th>no different</th>
<th>very different</th>
<th>unsure</th>
<th>N/A</th>
</tr>
</thead>
</table>

Cognitive & Physical Evaluation

Cognitive assessment

Standardized Assessment of Concussion (SAC)*

Orientation (1 point for each correct answer)

What month is it? _______ Y/N
What is the date today? _______ Y/N
What is the day of the week? _______ Y/N
What year is it? _______ Y/N
What time is it right now? (within 1 hour) _______ Y/N

Orientation score _______ of 5

Immediate memory

List: _______ Tot 1 _______ Tot 2 _______ Tot 3
Alternative word list

<table>
<thead>
<tr>
<th>Elbow</th>
<th>0</th>
<th>1</th>
<th>0</th>
<th>0</th>
<th>candle</th>
<th>baby</th>
<th>finger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>paper</td>
<td>monkey</td>
<td>penny</td>
</tr>
<tr>
<td>Carpet</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>sugar</td>
<td>perfume</td>
<td>blanket</td>
</tr>
<tr>
<td>Seat</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>sandwich</td>
<td>sunset</td>
<td>lemon</td>
</tr>
<tr>
<td>Bubble</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>wagon</td>
<td>iron</td>
<td>inact</td>
</tr>
</tbody>
</table>

Total _______ Immediate memory score total _______ of 5

Concentration: Digits Backward

<table>
<thead>
<tr>
<th>List</th>
<th>Tot 1</th>
<th>Alternative digit list</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-9</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>3-8</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>6-2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>7-1</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Total of 4 _______ Concentration score _______ of 5

Concentration: Month in Reverse Order (1 pt. for entire sequence correct)

Dec-Nov-Oct-Sep-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan _______ 0 _______ Y/N

Neck Examination:

Range of motion: Tenderness: Upper and lower limb sensation: Strength: Findings:

Balance examination

Do one or both of the following tests:

Footwear (shoes, barefoot, brace, tape, etc.)

Modified Balance Error Scoring System (BESS) testing

Which foot was tested (i.e. which is the non-dominant foot) _______ Left _______ Right

Testing surface (hard floor, field, etc.)

Condition

Double leg stance: Errors _______ Y/N
Single leg stance (non-dominant foot): Errors _______ Y/N
Tandem stance (non-dominant foot abduct): Errors _______ Y/N

And/Or

Tandem gait* _______ Y/N
Time (two of four trials): seconds _______ Y/N

Coordination examination

Upper limb coordination

Which arm was tested: _______ Left _______ Right

Coordination score _______ of 4

SAC Delayed Recall* delayed recall score _______ of 5

---

*SCAT3 SPORT CONCUSSION ASSESSMENT TOOL 3 | PAGE 2 © 2013 Concussion in Sport Group
INSTRUCTIONS

Words in italics throughout the SCAT3 are the instructions given to the athlete by the tester.

Symptom Scale

"You should score yourself on the following symptoms, based on how you feel now."

To be completed by the athlete. In situations where the symptom scale is being completed after exercise, it should still be done in a resting state, at least 10 minutes post-exercise.

For total number of symptoms, maximum possible is 22.

For Symptom severity score, add all scores in table, maximum possible is 44 x 10 = 440.

SAC^2 Immediate Memory

"I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order."

Trials 2 & 3:

"I am going to repeat the same list again. Repeat back as many words as you can remember in any order, even if you said the word before."

Complete all 3 trials regardless of score on trial 1 & 2. Read the words at a rate of one per second.

Score 1 pt. for each correct response. Total score equals sum across all 3 trials. Do not inform the patient that delayed recall will be tested.

Concentration

Digits backward

"I am going to read you a string of numbers and when I am done, repeat them back to me backwards, in reverse order of how I read them to you. For example, if I say '7-5-9', you would say '9-5-7'." If correct, go to next string length. If incorrect, repeat trial. One point possible for each string length. Stop after incorrect on both trials. The digits should be read at the rate of one per second.

Months in reverse order

"Now tell me the months of the year in reverse order. Start with the last month and go backward. So you'll say December, November... Go ahead!" 1 pt. for entire sequence correct

Delayed Recall

The delayed recall should be performed after completion of the Balance and Coordination Examination.

"Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order."

Score 1 pt. for each correct response

Balance Examination

Modified Balance Error Scoring System (BESS) testing^2

This balance testing is based on a modified version of the Balance Error Scoring System (BESS)^2. A stopwatch or watch with a second hand is required for this testing.

"I am now going to test your balance. Please take your shoes off, roll up your pant legs above ankle if possible, and remove any ankle strap if applicable. This test will consist of three twenty-second tests with different standing postures."

(a) Double leg stance:

"The first stance is standing with your feet together with your hands on your hips and with your eyes closed. You should try to maintain stability in that position for 20 seconds. I will be counting the number of times you move out of this position. I will start timing when you are set and have closed your eyes."

(b) Single leg stance:

"If you were to kick a ball, which foot would you use? (This will be the dominant foot) Now stand on your non-dominant foot. The dominant leg should be held in approximately 30 degrees of hip flexion and 45 degrees of knee flexion. Again, you should try to maintain stability for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you stumble out of this position, open your eyes and return to the start position and continue balancing. I will start timing when you are set and have closed your eyes."

(c) Tandem stance:

"Now stand heel-to-toe with your non-dominant foot in back. Your weight should be evenly distributed across both feet. Again, you should try to maintain stability for 20 seconds with your hands on your hips and your eyes closed. I will be counting the number of times you move out of this position. If you stumble out of this position, open your eyes and return to the start position and continue balancing. I will start timing when you are set and have closed your eyes."

Balance testing – types of errors

1. Hands lift(d offillac crest
2. Opening eyes
3. Step, stumble, or fall
4. Moving hip into >30 degrees abduction
5. Lifting foot(over or heel)
6. Remaining out of test position > 5 sec

Each of the 20-second trials is scored by counting the errors, or deviations from the proper stance, accumulated by the athlete. The examiner will begin counting errors only after the individual has assumed the proper start position. The modified BESS is calculated by adding one error point for each error during the three 20-second tests. The maximum total number of errors for any single condition is 18. If a athlete commits multiple errors simultaneously, only one error is recorded but the athlete should quickly return to the testing position, and counting should resume once subject is set. Subjects that are unable to maintain the testing procedure for a minimum of five seconds at the start are assigned the highest possible score, ten, for that testing condition.

OPTION: For further assessment, the same three conditions can be performed on a surface of medium density foam (e.g., approximately 50 cm x 40 cm x 6 cm).

Tandem Gait^2

Participants are instructed to stand with their feet together behind a starting line (the test is best done with footwear removed). Then, they walk in a forward direction as quickly and as accurately as possible along a 30 m wide sports track. Their heel-to-toe gait pattern allows them to approximate their heel and toe on each step and when the test is complete, they receive a score based on their speed and accuracy. Each of 4 trials are done and the best time is retained. Athletes should complete the test in 14 seconds. Athletes fail the test if they slip off the line, have a separation between their heel and toe, or if they touch or grab the examiner or an object. In this case, the time is not recorded and the trial repeated, if appropriate.

Coordination Examination

Upper limb coordination

Finger-to-nose (FTN) task:

"I am going to test your coordination now. Please sit comfortably with your feet flat on the floor and your arms resting on your lap. I will hold out my hand and you will follow my finger tip with your index finger. I will hold out my hand and you will follow my finger tip with your index finger. Please follow my index finger tip with your index finger, moving the tip of your index finger up and down. I will perform the same task using your middle finger. I will perform the same task using your middle finger. Please follow my finger tip with your middle finger, moving the tip of your middle finger up and down. I will perform the same task using your ring finger. I will perform the same task using your ring finger. Please follow my finger tip with your ring finger, moving the tip of your ring finger up and down. I will perform the same task using your little finger. I will perform the same task using your little finger. Please follow my finger tip with your little finger, moving the tip of your little finger up and down." 5 points possible for each hand. Total 15 for all hands.

Scoring: 5 correct repetitions in <4 seconds = 1 point. Failure to perform five repetitions in 4 seconds = 0 points.

References & Footnotes

1. This tool has been developed by a group of international experts at the 4th International Consensus meeting on Concussion in Sport held in Zurich, Switzerland in November 2012. The full details of the conference outcomes and the authors of the tool are published in The British Journal of Sports Medicine, 2013, Volume 47, Issue 5. The outcome paper will also be simultaneously co-published in other leading biomedical journals with the copyright held by the Concussion in Sport Group, to allow unrestricted distribution, providing no alterations are made.


ATHLETE INFORMATION

Any athlete suspected of having a concussion should be removed from play, and then seek medical evaluation.

Signs to watch for
Problems could arise over the first 24–48 hours. The athlete should not be left alone and must go to a hospital at once if they:
- Have a headache that gets worse
- Are very drowsy or can’t be awakened
- Can’t recognize people or places
- Have repeated vomiting
- Behave unusually or seem confused; are very irritable
- Have seizures (tremors and legs jerk uncontrollably)
- Have weak or numb arms or legs
- Are unsteady on their feet; have slurred speech

Remember, it is better to be safe.
Consult your doctor after a suspected concussion.

Return to play
Athletes should not be returned to play the same day of injury.
When returning athletes to play, they should be medically cleared and then follow a stepwise supervised program, with stages of progression.

For example:

<table>
<thead>
<tr>
<th>Rehabilitation stage</th>
<th>Test used at each stage of rehabilitation</th>
<th>Outcome of each stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No activity</td>
<td>Physical and cognitive test</td>
<td>Recovery</td>
</tr>
<tr>
<td>Light aerobic exercise</td>
<td>Walking, swimming or stationary cycling</td>
<td>Increased heart rate</td>
</tr>
<tr>
<td></td>
<td>(keeping intensity, 50% maximum predicted heart rate)</td>
<td></td>
</tr>
<tr>
<td>Specific skills</td>
<td>Skating skills in ice hockey, running skills in soccer</td>
<td>Add movement</td>
</tr>
<tr>
<td></td>
<td>Progression to more complex training skills, progressing skills in handball and ice hockey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>May start program resistance training</td>
<td></td>
</tr>
<tr>
<td>Full contact practice</td>
<td>Following medical clearance participate in normal training activities</td>
<td></td>
</tr>
<tr>
<td>Return to play</td>
<td>Normal game play</td>
<td></td>
</tr>
</tbody>
</table>

There should be at least 24 hours (or longer) for each stage and if symptoms recur the athlete should rest until they resolve once again and then resume the program at the previous asymptomatic stage. Resistance training should only be added in later stages.

If the athlete is symptomatic for more than 10 days, then consultation by a medical practitioner who is expert in the management of concussion is recommended.

Medical clearance should be given before return to play.

CONCUSSION INJURY ADVICE
(To be given to the person monitoring the concussed athlete)

This patient has received an injury to the head. A careful medical examination has been carried out and no sign of any serious complications has been found. Recovery time is variable across individuals and the patient will need monitoring for a further period by a responsible adult. Your treating physician will provide guidance as to this timeframe.

If you notice any change in behaviour, vomiting, dizziness, worsening headache, double vision or excessive drowsiness, please contact your doctor or the nearest hospital emergency department immediately.

Other important points:
- Rest (physically and mentally) including training or playing sports until symptoms resolve and you are medically cleared
- No alcohol
- No prescription or non-prescription drugs without medical supervision. Specifically:
  - No sleeping tablets
  - Do not use aspirin, anti-inflammatory medication or sedating pain killers
  - Do not drive until medically cleared
  - Do not train or play sport until medically cleared

Clinic phone number

SCAT3 SPORT CONCUSSION ASSESSMENT TOOL | PAGE 4

© 2013 Concussion in Sport Group