

THE PREPARTICIPATION PHYSICAL EXAM – NATIONAL GUIDELINES AND LOCAL REQUIREMENTS

CASEY S. COOK, DO

MCKAY DEE FAMILY MEDICINE RESIDENCY

OBJECTIVES

- Explore the goals of the preparticipation physical exam.
- Brief review of the national consensus guidelines for recommended components of the evaluation.
- Explore local requirements for children/adolescents participating in athletic events and how these in some cases vary from national guidelines.
- Explore requirements of other preparticipation exams and how they differ from athletic preparticipation exams
- Contrast differences between national consensus guidelines and local requirements

GOALS OF THE PPE

- Maximize safe participation by children and adolescents
- Identify medical conditions with risks of life-threatening complications during participation.
- Identify conditions that require a treatment plan prior to and during participating.
- Identify and rehabilitate old musculoskeletal injuries.
- Identify and treat conditions that interfere with performance.
- Remove unnecessary restrictions on participation.

UNNECESSARY RESTRICTION

- Unnecessary restriction often imposed in the following circumstances:
 - patients are believed to have cardiac disease
 - appropriate restrictions are not given an end-point or date
 - concerns about complications that can be avoided with proper preventive therapy

Example: Obese patients inappropriately advised not to participate in sports until after losing weight due to concerns of potential heat injury.

This can be avoided with acclimatization in preparation for summer practices.

- **Inappropriate restrictions can prevent children from establishing healthy lifestyle habits at a young age.**

RECOMMENDED COMPONENTS

- Medical history
- Injury history
- Cardiovascular history
- ROS
 - MS symptoms
 - CV symptoms
 - Concussion symptoms
 - Respiratory symptoms
- MS physical Exam
- CV physical Exam
- Remaining targeted physical exam

MEDICAL HISTORY

- The medical history is the most sensitive and specific component of the PPE for detecting conditions that preclude participation in sports.
- Personal and family history and review of systems detect approximately 75 percent of conditions that restrict participation or require further evaluation.
- **Parents should review the family history with the athlete if they will not be present for the examination.**

INJURY HISTORY

- Inadequately rehabilitated injuries can predispose athlete to further/worse injury.
- Screening questions generally more sensitive for detecting injuries than the musculoskeletal exam.

CARDIOVASCULAR HISTORY

- The CV history is focused on identifying conditions that could lead to sudden death in the athlete.
- Important questions:
 - history of syncope, chest pain with exercise, palpitations or skipped beats.
 - Hx of heart conditions (HTN, HLD, Kawasaki disease, murmur, hx of heart infection)
 - Hx of EKG, Echocardiogram
 - Hx of lightheadedness, SOB
 - Hx of unexplained seizure
 - Hx of early fatigue (compared to peers)
 - Family hx of sudden/unexplained death before age 50.(MVA, drowning, SIDS etc)
 - Family hx of cardiac conditions (HCM, Marfan, arrhythmias, pacemaker, etc)
 - Family hx of unexplained seizures, fainting, etc.

REVIEW OF SYSTEMS

- MS symptoms
- CV symptoms
- Concussion symptoms
- Respiratory symptoms

MUSCULOSKELETAL EXAM

- All athletes should undergo a screening musculoskeletal examination during the PPE.
 - If there is a history of injury or abnormalities reported on screening questionnaire, the joint or region in question should be examined in detail.
 - In addition, consider examination of high-risk areas (ie, shoulder, knee, and ankle)
- **There is no evidence that this increases the sensitivity of the evaluation or predicts future injuries**

CARDIOVASCULAR EXAM

- Should include at minimum the following:
 - BP measurement, HR
 - Auscultation in supine and standing position
 - Femoral pulse assessment
 - Location of PMI
 - Recognition of the physical stigmata of Marfan syndrome

WHO SHOULD PERFORM THE EXAM?

- Guidelines recommend an examiner with appropriate training in evaluating the musculoskeletal system of children/adolescents.
- Athletic screening should be performed by a healthcare worker with the requisite training, medical skills, and background to reliably obtain a detailed cardiovascular history, perform a physical examination, and recognize heart disease.

WHO CAN PERFORM THE PPE IN UTAH?

- Physician (MD,DO)
- Physician's Assistant (PA)
- Registered Nurse Practitioner (NP)
- Chiropractor (DC)

EVALUATION FORM

- Single standardized evaluation form endorsed by the following:
 - American Academy of Family Physicians (AAFP)
 - American Academy of Pediatrics (AAP)
 - American College of Sports Medicine
 - American Medical Society for Sports Medicine
 - American Orthopedic Society for Sports Medicine
 - American Osteopathic Academy of Sports Medicine

The image shows a sample of a 'PREPARTICIPATION PHYSICAL EVALUATION HISTORY FORM'. The form includes sections for patient information (Name, DOB, Sex, Race, Ethnicity, Address, City, State, Zip, Phone, Fax, Email), a 'History' section with checkboxes for various medical conditions (e.g., Heart Disease, High Blood Pressure, Diabetes, Asthma, etc.), and a 'Physical Exam' section with checkboxes for various physical findings (e.g., Heart, Lungs, Abdomen, etc.). There are also fields for 'Date of Exam', 'Examiner', and 'Signature'. The form is titled 'PREPARTICIPATION PHYSICAL EVALUATION HISTORY FORM' and includes a small logo for the American Academy of Family Physicians.

HEENT
Appearance
• Marfan stigmata (torticollis, high-arched palate, pectus excavatum, arachnodactyly, arm span > height, hypotaxia, myopia, MVP, aortic insufficiency)
Eyes/ears/nose/throat
• Pupils equal
• Hearing
Lymph nodes
Heart
• Murmurs (auscultation standing supine +/- Valsalva)
• Location of point of maximal impulse (PMI)
Pulses
• Simultaneous femoral and radial pulses
Lungs
Abdomen
Genitourinary (males only)
Skin
• HSV lesions suggestive of MRSA linea corporis
Neurologic

MUSCULOSKELETAL
Neck
Back
Shoulder/arm
Elbow/forearm
Wrist/hand/fingers
Hip/thigh
Knee
Low ankle
Foot/ toes
Functional
• Duck-walk, single leg hop

LOCAL REQUIREMENTS

- Athletic director
