Basic Elements of Sports Physicals

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What is the cost effectiveness of the sports physical as it relates to youth sports?
What is the cost effectiveness of the sports physical as it relates to youth sports?

1. Over 1 million physician hours are consumed annually in examining more than 6 million youth athletes.

2. Risser et al studied 763 athletes and uncovered only 16 with significant problems... only two were disqualified and one was treated prior to participation.... the cost was $4,537 per problem.

3. Studies show that preparticipation disqualified only 0.3% to 1.3% of athletes and only 3.2% to 13.5% required consultation.

So, why do we do yearly sports physicals??
So, Why do we do yearly sports physicals?

1. **It is the law** in at least 35 states that yearly sports physicals be performed.

2. For most school districts, the presence of yearly sports physicals meets **legal and insurance requirements**.
What are the objectives of the preparticipation physical exam (PPE)?
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<table>
<thead>
<tr>
<th><strong>Primary objectives</strong></th>
<th><strong>Secondary objectives</strong></th>
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<tbody>
<tr>
<td>• detect conditions that may limit participation</td>
<td>• determine general health</td>
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<tr>
<td>• detect conditions that may predispose to injury</td>
<td>• assess maturity</td>
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<tr>
<td>• meet legal and insurance requirements</td>
<td>• assess fitness level and performance</td>
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“The overall goal in performing a pre-participation exam (PPE) is to promote the health and safety of the athlete in training and competition. The purpose of the PPE is to facilitate and encourage safe participation, **NOT** to exclude athletes from participation.”
What is the ideal timing of the PPE?
What is the ideal timing of the PPE?

- The timing of the PPE must allow sufficient time for adequate rehabilitation / treatment of injuries or further investigation of new findings.
- The exam should not take place so far in advance of a season or school year that development of new finding may be masked or create a significant factor.
- **Suggested time frame is 4-6 weeks before a season begins.**
What organ system should the PPE history focus on?
What organ system should the PPE history focus on?

- The history or a simple questionnaire should focus on:
  - cardiovascular system
  - neurological system
  - musculoskeletal system
What are the most important questions for the cardiovascular review of systems?
What are the most important questions for the cardiovascular review of systems?

- Certain symptoms can identify at-risk individuals... these include:
  - syncope or near-syncope with exercise
  - chest pain with exercise
  - easy fatigability
  - history of palpitations ("racing heart")
  - heart murmur
  - hypertension
  - family history of sudden cardiac death before age 50
What questions adequately cover the neurological review of systems?
What questions adequately cover the neurological review of systems?

- The areas to be focused on should include:
  - history of head injuries or concussions
  - brachial plexus injuries - stingers or burners
  - transient period of inability to move an extremity (paresis) secondary to trauma
  - transient periods of change of sensation in extremities (paresthesias) secondary to trauma
What questions are most important to the review of the musculoskeletal system?
What questions are most important to the review of the musculoskeletal system?

Inquire about:

- previous orthopedic surgery
- fractures
- dislocations
- subluxations
- sprains
- strains
- tendonitis
- use of braces, sleeves, or padding
What forms should I utilize to document the sports pre-participation examination?
This is our State of Florida School Entry Health Exam... this does not ask any of the questions pertinent to sports qualification.
This is an appropriate PPE exam form (from Duval County Florida)

It asks the appropriate questions that will assist you in determining eligibility according to the health history... please note that any “yes” answers are to be detailed on the back of this page.

For those in Florida, the state athletic form can be obtained at: http://www.fhsaa.org/forms/pdf/ELO2_physical.pdf
The second page of this form provides appropriate documentation of your examination.

Explanation of “yes” answers should be documented by the parent here.

<table>
<thead>
<tr>
<th>MEDICAL EXAMINATION</th>
<th>NORMAL</th>
<th>ABNORMAL</th>
<th>INITIALS</th>
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</thead>
<tbody>
<tr>
<td>Appearance</td>
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<tr>
<td>Eyes/Ears/Nose/Throat</td>
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<tr>
<td>Lymph Nodes</td>
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<td>Heart</td>
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<td>Appearance</td>
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<td>Pulses</td>
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<td>Lungs</td>
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<td>Abdomen</td>
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<td>Genitilia (males only)</td>
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<td>Skin</td>
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<td>MUSCULOSKELETAL</td>
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<td>Neck</td>
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<td>Back</td>
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<td>Shoulder/Arm</td>
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<td>Elbow/Forearm</td>
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<td>Wrist/Hand</td>
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<td>Hip/Thigh</td>
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<td>Knee</td>
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<td>Leg/Ankle</td>
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<tr>
<td>Foot</td>
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<tr>
<td>Neurological</td>
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</table>

☐ Cleared

Physician’s Signature: ____________________________ Date: __________

☐ Not cleared for: (sport)

Reason: ____________________________

Recommendation: ____________________________ Date: __________

Physician’s Signature: ____________________________ Print or Type Name: ____________________________

DIAGNOSIS

☐ May Participate with NO RESTRICTIONS
☐ May Participate, but WITH SPECIFIC LIMITATIONS
☐ May NOT Participate

LIMITATIONS

Physician’s Signature: ____________________________ Print or Type Name: ____________________________ Date: __________

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What is the importance of Tanner Staging in the sports physical?
What is the importance of Tanner Staging in the sports physical?

• Actually, there are no studies to validate that Tanner stages are significant in competitive sports.

• There is only the theory that youth of similar body builds can compete equally... there are no studies to confirm this.
If the physical exam or the history is worrisome for a significant cardiac abnormality, what are the appropriate next step(s) in the evaluation?
If the physical exam or the history is worrisome for a significant cardiac abnormality, what are the appropriate next step(s) in the evaluation?

Do not overstep the limits of your expertise... **consider referral to a cardiologist**

Appropriate workup may include:

- chest x-ray
- stress testing
- EKG
- stress echocardiography
- echocardiogram
- cardiac catheterization
- Holter monitoring
What is the purpose of the abdominal examination?
What is the purpose of the abdominal examination?

- To rule out hepatic or splenic enlargement as might occur in infectious mononucleosis
  - enlarged organs carries an increased risk of rupture
  - presence of enlargement requires deferred clearance for sports that are strenuous
Are genitourinary exams necessary?
Are genitourinary exams necessary?

- The male genitourinary exam may
  - detect undescended testicles
  - detect previously undiagnosed testicular masses particularly varicoceles
  - detect inguinal hernias
- Routine pelvic exams in females are indicated only if there is significant menstrual irregularity or if a HEADSS inventory (if done) indicates a medical reason to have a pelvic exam performed
HEADSS
Motivational Interviewing of Adolescents

H = Home
E = Education
E = Employment
A = Activities
D = Drugs
S = Suicide/depression
S = Sexuality
S = Safety
Why is the skin exam important in the PPE?
Why is the skin exam important in the PPE?

• The skin exam is important for contact or collision sports because of the risk of contagious diseases:
  • impetigo
  • herpes
  • scabies
  • lice
  • MRSA
What are the routine lab tests required for the PPE?
What are the routine lab tests required for the PPE?

- There are no routine tests:
  - urinalysis is not cost effective
  - hemoglobin and hematocrit are of questionable value and should be ordered only as clinically indicated
  - routine cardiac testing, too, is of questionable value, but some communities do have cardiologists participate in their PPE to make that determination