

PRE-PARTICIPATION PHYSICAL

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Primary Care Sports Medicine



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DISCLOSURES

- I have no financial relationships or conflicts relevant to this discussion



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OBJECTIVES

- Discuss general information and purpose of the PPE
- Review the next steps after an athlete checks “yes” or has a pertinent medical history
- Review guidelines for vitals
- Review physical exam maneuvers and findings



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PRE-PARTICIPATION PHYSICAL

- Goal of the PPE is to “determining general physical and psychological health; evaluating for life-threatening or disabling conditions, including risk of sudden cardiac arrest and other conditions that may predispose the athlete to illness or injury; and serving as an entry point into the health care system for those without a medical home or primary care physician” per the AAFP



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FREQUENCY AND TIMING

- Frequency is determined by each individual state
- American Heart Association recommends yearly cardiac pre-screening as of 2021 – both history and physical exam
- At minimum – Texas requires yearly medical history and physical exam is prior to junior high, and prior to first and third years of high school
 - Can vary within the state to be more frequent, some districts prefer more frequent and/or annual exams
- Recommended to be done at least 6 weeks before season, often schools have large events in April/May for the upcoming year



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EXAM COMPONENTS

- History
- Vitals
- Physical Exam
- Clearance



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HISTORY

- Athlete and parent to complete history portion of form prior to physical
- Each section focuses on different part of medical history
 - We will review different areas of history with snapshots from the PPE form



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HISTORY - CARDIAC QUESTIONS

<p>3. Have you ever had prior testing for the heart ordered by a physician? <input type="checkbox"/> <input type="checkbox"/></p> <p>Have you ever passed out during or after exercise? <input type="checkbox"/> <input type="checkbox"/></p> <p>Have you ever had chest pain during or after exercise? <input type="checkbox"/> <input type="checkbox"/></p> <p>Do you get tired more quickly than your friends do during exercise? <input type="checkbox"/> <input type="checkbox"/></p> <p>Have you ever had racing of your heart or skipped heartbeats? <input type="checkbox"/> <input type="checkbox"/></p> <p>Have you had high blood pressure or high cholesterol? <input type="checkbox"/> <input type="checkbox"/></p> <p>Have you ever been told you have a heart murmur? <input type="checkbox"/> <input type="checkbox"/></p> <p>Has any family member or relative died of heart problems or of sudden unexplained death before age 50? <input type="checkbox"/> <input type="checkbox"/></p> <p>Has any family member been diagnosed with enlarged heart, (dilated cardiomyopathy), hypertrophic cardiomyopathy, long QT syndrome or other ion channelopathy (Brugada syndrome, etc), Marfan's syndrome, or abnormal heart rhythm? <input type="checkbox"/> <input type="checkbox"/></p> <p>Have you had a severe viral infection (for example, myocarditis or mononucleosis) within the last month? <input type="checkbox"/> <input type="checkbox"/></p> <p>Has a physician ever denied or restricted your participation in activities for any heart problems? <input type="checkbox"/> <input type="checkbox"/></p>	<p>Dizziness/passing out during or after exercise can be indicative of hypertrophic cardiomyopathy, arrhythmias, or other cardiac concerns</p> <p>Questions are assessing for risk of sudden cardiac death - most common cause is hypertrophic cardiomyopathy</p>
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HISTORY - CONCUSSIONS

- Discusses how many concussions, and when was last concussion
- No limit to how many concussions until can no longer participate
- If athlete still having symptoms → hold from play

4. Have you ever had a head injury or concussion?
Have you ever been knocked out, become unconscious, or lost your memory?
If yes, how many times? _____
When was your last concussion? _____
How severe was each one? (Explain below)
Have you ever had a seizure? _____

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HISTORY – SKIN CONDITIONS

- Herpetic Lesions
 - Lesion must have DRY crust
 - Needs to have been on anti-virals for minimum of 5 days (120 hours) before participating
- Tinea Infections (ring worm – body or scalp)
 - Oral treatments x 14 days for scalp or topical treatment x 72h for skin



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SKIN CONDITIONS, CONT

- Bacterial infections – cellulitis, MRSA, impetigo, etc
 - No new lesions x 48h
 - Completed at least 72h antibiotics
 - No moist, draining lesions



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HISTORY - SICKLE CELL TRAIT/SICKLE CELL DISEASE

- Sickle Cell Trait
 - Not a contraindication to athletics
 - Important for coach, athletic trainer, medical team to be aware
 - Need to counsel athlete and parent on importance of acclimatizing slowly to heat, hydration, monitoring for symptoms, etc.
- Sickle Cell Disease
 - Can likely do light-moderate aerobic activity
 - Recommend clearance from patient's hematologist



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HISTORY - RELATIVE ENERGY DEFICIENCY IN SPORTS (RED-S)

- Previously known as female triad
- Symptoms are varied but common include low to no menstrual cycle/irregular cycle, low energy intake (+/- eating disorder) and low BMD
- Menstrual irregularities can be related to eating disorders, mood disorders
 - Useful screening tool to open discussion to nutrition, mental health, etc.

Females Only I choose not to provide written information on Question 19 but will discuss with a medical professional:

19. When was your first menstrual period? _____
When was your most recent menstrual period? _____
How much time do you usually have from the start of one period to the start of another? _____
How many periods have you had in the last year? _____
What was the longest time between periods in the last year? _____



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HISTORY - PAIRED ORGANS

- Questions regarding paired organs
 - Are you missing a testicle?
 - Are you missing any paired organs?
 - E.g. eye, kidney, ovaries, etc.
- If missing a kidney → Need recent lab work indicating normal kidney function
- Extremely important to counsel athlete AND parent, risk is damage to the remaining organ and losing function of that organ system



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VITALS

- Vision guidelines
 - Considered functionally one eyed if a single eye (corrected) is < 20/40
 - Eye protection is mandatory if functionally single eyed
 - Recommended patient wear sports goggles in addition to helmets, face shields, etc.
 - Helmet/face guard can be removed during the game when on the sidelines so goggles provide additional protection
 - Cannot clear an athlete if unable to wear eye protection
 - E.g. not allowed in wrestling, boxing, MMA



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VITALS, CONT

- BP guidelines
 - Can be difficult due to different ages
 - If elevated → repeat
 - Assess for caffeine, rushing to physical, etc
 - Ensure good cuff fit
 - If persistent elevated, needs to see their PCP

For Children Aged 1-<13 y	For Children Aged ≥13 y
Normal BP: <90th percentile	Normal BP: <120/<80 mm Hg
Elevated BP: ≥90th percentile to <95th percentile or 120/80 mm Hg to <95th percentile (whichever is lower)	Elevated BP: 120/<80 to 129/<80 mm Hg
Stage 1 HTN: ≥95th percentile to <95th percentile + 12 mmHg, or 130/80 to 139/89 mm Hg (whichever is lower)	Stage 1 HTN: 130/80 to 139/89 mm Hg
Stage 2 HTN: ≥95th percentile + 12 mm Hg, or ≥140/90 mm Hg (whichever is lower)	Stage 2 HTN: ≥140/90 mm Hg



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PHYSICAL

- Cardiac exam in supine and standing
 - Change in position can allow for murmurs and dysrhythmias to be auscultated
- Murmurs are common in kids
 - Any new murmur should be evaluated
 - Concerning signs for a murmur: Diastolic murmur, louder with Valsalva, systolic murmur equal or higher than 3/6



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PHYSICAL

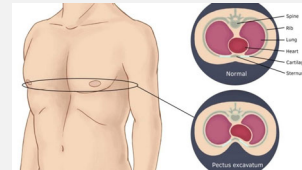
- Respiratory
 - Cannot clear an athlete with active wheezing
 - Assess for accessory muscle use with inspiration
- GU not indicated anymore unless concern present



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PHYSICAL

- Marfan's Stigmata
 - Pectus excavatum – concave chest wall
 - Arachnodactyly – elongated, slender fingers
 - Positive wrist sign - Can encircle wrist with overlap of thumb and 5th digit
 - Joint hypermobility
 - Can examine a variety of ways. Examples include asking if patient is “double jointed”, or asked patient to try and touch thumb to wrist
 - If positive physical exam findings – needs cardiac evaluation



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PHYSICAL

- MSK
 - Every provider has a different variation on the physical exam, and can make sports specific
 - Range of motion for each joint
 - “Duck walk” to assess hip and knee flexion
 - Adam’s forward bend test to assess for scoliosis



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DO WE NEED SCREENING ECGS AS PART OF OUR PPE?

- Currently under debate
- No formal recommendation from AMSSM at this time
- AHA recommends no pre-screening ECGs, instead to perform a thorough history, family history and physical exam. Then an ECG can be performed if indicated



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WHEN SHOULD YOU NOT CLEAR AN ATHLETE?

- Common reasons include (but aren't limited to):
 - Concern for undiagnosed cardiac conditions
 - Active and/or uncontrolled cardiac conditions (undergoing work up, active myocarditis, etc.)
 - Uncontrolled asthma
 - Uncontrolled blood pressure with repeats taken
 - Poor eye sight with inability to wear eye protection (sport specific)
 - Frequent stingers (>3/season) or persistent stinger symptoms without work up yet performed
 - You are uncomfortable with components of athletes history and/or exam



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CLEARANCE

CLEARANCE

Cleared

Cleared after completing evaluation/rehabilitation for: _____

Not cleared for: _____ Reason: _____

Recommendations: _____

The following information must be filled in and signed by either a Physician, a Physician Assistant licensed by a State Board of Physician Assistant Examiners, a Registered Nurse recognized as an Advanced Practice Nurse by the Board of Nurse Examiners, or a Doctor of Chiropractic. Examination forms signed by any other health care practitioner, will not be accepted.

Name (print/type) _____ Date of Examination: _____

Address: _____

Phone Number: _____

Signature: _____



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REFERENCES

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