

Dear Health Practitioner:

Enclosed is the revised Nevada Interscholastic Activities Association (NIAA) packet for High School Pre-participation Physical Evaluation (PPE's). You will notice that the form we are using incorporates recommendations from the Second PPE Task Force 1997 (supported by the AAFP, AAP, AMSSM, AOSM and AOASM) and separately from the AHA. We anticipate that this form will be reviewed every few years and we will keep you apprised of any changes. Also, for young athletes with known cardiovascular abnormalities, we recommend following the guidelines of the 26th Bethesda Conference. We recommend you reference the Task Force monograph, the AHA recommendations or the 26th Bethesda Conference before performing high school athletic physicals in Nevada.

While many of you have been performing these evaluations for years, we would like to bring your attention to a few points. As discussed in the introduction to the monograph, there are multiple reasons for performing PPE's; the foremost reasons are to prevent injury and sudden cardiac death.

It is estimated that between one and two deaths (predominantly cardiovascular in etiology) per 200,000 high school athletes occur per year. The prevalence of cardiovascular disease capable of causing sudden cardiac death in these athletes is around 1/20,000. The most common cause of cardiac death in this population is hypertrophic cardiomyopathy (HCM).

Since the vast majority of PPE's will be completely normal, and, conversely, most students with abnormalities on history or physical exam do NOT have significant cardiac pathology, extreme diligence is required when performing these exams so that the few students with serious conditions are not missed.

ANSWERS ON THE HISTORY FORM THAT WOULD SUGGEST A NEED FOR A CARDIOLOGY CONSULTATION INCLUDE:

- Excessive systolic murmur greater than II/VI.
- Any diastolic murmur.
- A murmur that increases in intensity from supine to standing (suggests HCM).
- Stigmata of Marfan's syndrome. (Attachment 7).

A second goal of the PPE is to detect chronic illness or old injuries that may hamper the athlete's performance (such as Exercise Induced Asthma) or lead to injury ("the most common cause of injury is re-injury").

The final goal of the PPE is to provide our young athletes with a chance to talk to a physician about health issues. While this exam does not replace ongoing care by a personal physician, it may be the only contact these students have. Therefore, a brief discussion of health issues such as breast and testicular cancer screening, alcohol and tobacco use, automobile safety, etc., may be appropriate during the PPE.

Thank you for your willingness to help ensure a safer future for Nevada's young athletes.

Published by the NIAA Sports Medicine Advisory Committee

Approved: February 2000

References:

26th Bethesda Conference: Recommendations for Determining Eligibility for Competition in Athletes with Cardiovascular Abnormalities. JACC. 1994;24(4):849-99.

Corrado D, Basso C, Schiavon M and Thiene G. Screening for Hypertrophic Cardiomyopathy in Young Adults. NEJM. 1998;339(6):364-9.

Epstein SE, Maron BJ. Sudden death and the competitive athlete: Perspectives on pre-participation screening studies. J Am Coll Cardiol 7:220-230, 1986.

Maron BJ, Thompson PD, Puffer JC, et al. Cardiovascular participation screening in competitive athletes. Circ. 94:850-856, 1996.

Glover DW, Maron BJ. Profile of preparticipation cardiovascular screening in high school athletes. JAMA. 279:1817-1819. 1998.

Pelliccia A and Maron BJ. Preparticipation Cardiovascular Evaluation of the Competitive Athlete: Perspectives from the 30-Year Italian Experience. Am J Cardiol. 7(41)15/95:827-9.

Preparticipation Physical Evaluation. 2nd ed. AAFP, AAP, AMSSM, AOSM, AOASM. McGraw-Hill. 1992.

Smith J and Laskowski ER. The Preparticipation Physical Examination: Mayo Clinic Experience with 2,739 Examinations. Mayo Clin Proc. 1998;73:419-29.

Liberthson R. Sudden Death from Cardiac Causes in Children and Young Adults Current Concepts. 1996;334(16):1039-44.

VanCamp SP, Bloor CM; Mueller OF, Cantu RC, Olson HG. Nontraumatic sports death in high school and college athletes. Med Sci sports Exerc. 27:641-647, 1995.

Fuller C.M., McNulty C.M., Spring DA., et al. Preparticipation Screening of 5,615 High School Athletes for Risk of Sudden Cardiac Death, MSSE. 29:1131-1138, 1997.

Attachment 7

Suggested Screening Format for Marfan's Syndrome

Screen all men over 6 feet and all women over 5 feet 10 inches in height with echocardiogram and slit lamp examination when any two of the following are found:

1. Family History of Marfan's syndrome*
2. Cardiac murmur or mid-systolic click
3. Kyphoscoliosis
4. Anterior thoracic deformity
5. Arm span greater than height
6. Upper to lower body ration more than one standard deviation below the mean
7. Myopia
8. Ectopic lens

*This finding alone should prompt further investigation.

From Hara JH, Puffer JC. In Mellion MD: Sports Injuries & Athletic Problems. Philadelphia. Hanley & Belfus, Inc., 1998.

FORM E -- NIAA HEALTH QUESTIONNAIRE / INTERIM FORM

This evaluation should be completed only if you have a physical on file from last year.
This evaluation is only to determine readiness for sports participation. It should not be used as a substitute for regular health maintenance examinations. A positive response to any of the following questions requires a medical examination before activity can resume.

NAME: _____ AGE: _____ GRADE: _____ DATE: _____

ADDRESS: _____ PHONE: _____

SPORT(S): _____

DATE OF LAST COMPLETE SPORTS PHYSICAL (PPE): _____ WHERE: _____

SINCE YOUR LAST COMPLETE PREPARTICIPATION EXAM (PPE):

	<i>YES</i>	<i>NO</i>
1. Have you had a medical illness or injury that required you to visit a physician and miss FIVE or more consecutive days of school or sports?	_____	_____
2. Have you been hospitalized overnight	_____	_____
3. a. Have you passed out or been dizzy with exercise?	_____	_____
b. Have you had chest pain (or pressure) with exercise?	_____	_____
c. Have you had excessive unexplained shortness of breath or fatigue with exercise?	_____	_____
d. Has someone in your family died, or developed serious problems, due to heart disease who was younger than 50 years old?	_____	_____
e. Have you learned of anyone in your family who has any history of hypertropic cardiomyopathy, dilated cardiomyopathy long QT syndrome or Marfan's syndrome?	_____	_____
4. a. Have you had a head injury or concussion?	_____	_____
b. Have you been knocked out, become unconscious, or lost your memory?	_____	_____
c. Have you had a seizure?	_____	_____
d. Have you developed frequent or severe headaches?	_____	_____
e. Have you developed numbness or tingling in your arms, hands, legs, or feet?	_____	_____
5. Have you become sick from exercising in the heat?	_____	_____
6. Have you developed a cough, wheeze, or have trouble breathing during or after activity?	_____	_____
7. Have you started requiring any special protective or corrective equipment or devices that aren't usually used for your sport or position (for example, knee brace, special neck roll, foot orthotics, retainer on your teeth, hearing aid)?	_____	_____

- | | <i>YES</i> | <i>NO</i> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|
| 8. Have you had any problems with your eyes or vision, other than requiring glasses or contacts? | _____ | _____ |
| 9. Have you had any problems with sprains, dislocations, fractures, pain or swelling in the following muscles, tendons, bones, or joints that currently bother you? | _____ | _____ |

If yes, check appropriate item below.

- | | | |
|-----------------|-----------------|-----------------|
| _____ Head | _____ Elbow | _____ Hip |
| _____ Neck | _____ Forearm | _____ Thigh |
| _____ Back | _____ Wrist | _____ Knee |
| _____ Chest | _____ Hand | _____ Shin/Calf |
| _____ Shoulder | _____ Finger(s) | _____ Ankle |
| _____ Upper Arm | _____ Foot | _____ Toe(s) |

- | | | |
|-------------------------------------------------------------------------------------------------------------------|-------|-------|
| 10. Would you like to talk to a physician about your weight, about stress, anger, depression or any other issues? | _____ | _____ |
|-------------------------------------------------------------------------------------------------------------------|-------|-------|

FEMALES ONLY

- | | | |
|--------------------------------------------------------------------------------------------|-------|-------|
| 11. If you have been having periods for one year or longer, have they become less regular? | _____ | _____ |
|--------------------------------------------------------------------------------------------|-------|-------|

IF YOU ANSWERED YES TO ANY OF THE ABOVE QUESTIONS, PLEASE SEE YOUR FAMILY PHYSICIAN FOR A COMPLETE PHYSICAL.

12. Have you developed any new allergies (for example, to pollen, medicine, food, or stinging insects)? If so, please list:

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