

MARFAN SCREENING ON PPE

Answers to frequently asked questions

There is no intent that Echocardiograms and/or Ophthalmologic slit lamp exams are indicated, practical, or cost effective as a screening tool.

Level one screening would simply be to look at the history component and the athlete. If the athlete is not unusually tall, there is no family history of Marfan's, there is no family history of significant cardiac events before the age of 50, and the athlete has answered "no" to the American Heart Association encouraged questions, the likelihood of Marfan's is nearly zero and the screen is done.

Any athlete that is exceptionally tall and/or has a family history of this inheritable connective tissue disorder should be screened for Marfan features. The most common features observable in the PPE would be a wing span (distance from tip of the middle finger on one hand to the tip of the middle finger of the other hand with arms extended fully to the side) greater than height. Arachnodactyly (finger to palm ratio greater than 1:1), loose joints (hyperextensible joints such as the thumb folding back on the arm and the knees bowing backwards [genu recurvatum], protruding chest wall (pectus carinatum) or sunken in chest wall (pectus excavatum); and curvature of the spine laterally, and front to back (kyphoscoliosis) are extremely common manifestations of Marfan Syndrome. Extreme flat feet (pes planus), purple stretch marks on the trunk (striae), and hernia may also be identified on the PPE. Less common would be spontaneous collapse of the lung (pneumothorax) resulting in a history of shortness of breath and chest pain. Most of these features would be observed as part of the regular exam. Only measurement of wing span, or fingers might require an extra few seconds beyond the normal physical examination.

If any of these features are present, before clearing the athlete for participation, the physician should consider the need for an Echocardiogram and Ophthalmologic examination. Referral to a cardiologist for evaluation of abnormalities of the aorta (dilatation with weakened media) and the heart valves (mitral valve prolapse and/or bicuspid leaflets) and to an ophthalmologist to evaluate for dislocated lenses (ectopic lentis) would be appropriate.

Another option is to follow the screening method below as it appears in the Oregon State PPE. The Marfan Foundation presented an award for service to the Oregon State Association for this specific screening guideline.

All men over 6' and women over 5'10" in height should be screened with echocardiogram and slit lamp exam when any two of the following are found:

- Family history of Marfan Syndrome (this finding alone should prompt further investigation)
- Cardiac murmur or mid-systolic click
- Kyphoscoliosis
- Anterior thoracic deformity
- Arm span greater than height
- Reduced Upper to lower body ratio more from 0.93 normal to 0.85 range
- Myopia
- Ectopic lens

We also suggest for those interested in information specifically on the cardiac evaluation for Marfan's screening the following link to a Fairfax County prepared video:

<http://www.fcps.edu/supt/activities/atp/PPE/Cardiacexam.htm>

We hope this is helpful and appreciate the effort of all physicians and other medical providers who provide medical examinations for our athletes in the Commonwealth. Any questions or comments may be directed to the VHSL Sports Medicine Committee by contacting Dr. Vito Perriello MD, through the VHSL office.