Application of Pre-Participation Screening Guidelines to Novice Masters Endurance Athletes

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Published In/Presented At
Results:

- Of 5850 total survey respondents, 1457 reported <5 years running experience

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Screen N (%)</th>
<th>Screen Out N (%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>44.5 (35-86)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>55.5</td>
<td></td>
<td></td>
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<tr>
<td>Risk Factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>167 (11.5)</td>
<td></td>
<td></td>
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<tr>
<td>Hypercholesterolemia</td>
<td>333 (22.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes History</td>
<td>27 (1.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History MI</td>
<td>6 (0.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History of cardiac dis.</td>
<td>34 (2.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family History of CVD</td>
<td>177 (11.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever smoked</td>
<td>578 (39.7)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We assessed athlete/physician concordance with these guidelines (i.e., were physicians “screen in” appropriately referred for further evaluation and were those that “screen out” appropriately cleared to begin training?) We determined independent factors that were associated with athlete/physician decisions for further PPE and testing

<table>
<thead>
<tr>
<th>Variable</th>
<th>Screen N (%)</th>
<th>Screen Out N (%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-participation stress test</td>
<td>316 (31.5)</td>
<td>335 (36.4)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Electrocardiogram</td>
<td>236 (24.7)</td>
<td>277 (30.1)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Stress Test</td>
<td>106 (10.1)</td>
<td>97 (10.5)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CAC/CCTM</td>
<td>62 (6.1)</td>
<td>70 (7.3)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Recommends pre-participation stress testing for men (>35 y/o who are planning high-level athletic training/competition) and every smoker

We determined the independent factors that were associated with patient/physician decisions for further PPE and testing

Conclusion:

- Application of AAP and AHA Masters Screening Guidelines yielded a substantial percentage of novice runners who were “screened in” for further cardiovascular evaluation and testing (more than 1/3 for each screening evaluation)
  - Overall, there was low healthcare provider concordance with these guidelines
  - PPE was not performed in a substantial percentage of athletes who were “screened in” for further testing
  - Concisely, a substantial percentage of athletes who were “screened out” received further evaluation that may have been unnecessary according to the guidelines

- There is a strong independent factor associated with PPE and testing

This study does not address the effectiveness of AAP and AHA Masters 2001 Guidelines to identify older runners who warrant further evaluation and testing in an accurate and cost-effective manner and further longitudinal follow-up will be required to address this question

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Financial Disclosures:

The authors of this study have no personal financial disclosures.

References:

4. Lehigh Valley Health Network, Allentown, Pennsylvania

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Figure 1. Screening yield of AAP for recommendation of PPE by healthcare provider

Odds ratio (95% CI) 1.356 (1.204, 1.526)

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Figure 2. Screening yield of AHA Masters 2001 Guidelines for recommendation of PPE stress testing

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Figure 3. Forest plot illustrating independent predictors for PPE based on AAP/AHA simulation. Only athlete age was an independent predictor of PPE

Figure 4. Forest plot illustrating independent predictors of stress testing based on AHA Masters 2001 Guidelines: Only athlete age and plan to complete a marathon/ distance event were independent predictors of stress testing.