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

Justin R. Abbatemarco MS  
USF MCOM- LVHN Campus, justin.abbatemarco@lvhn.org

Martin E. Matsumura MD  
Lehigh Valley Health Network, Martin_E.Matsumura@lvhn.org

Courtney Bennett DO  
Lehigh Valley Health Network, Courtney_E.Bennett@lvhn.org

Adrian Bell  
Lehigh Valley Health Network, Adrian_C.Bell@lvhn.org

Laura M. Dunne MD  
Lehigh Valley Health Network, laura_m.dunne@lvhn.org

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### Introduction

- The explosive growth in endurance sports has given rise to a parallel increase in the number of older athletes competing in these events. Despite this increase in endurance sports, there are no uniform guidelines for pre-participation evaluation (PPE) in athletes >5 years of running experience.
- Furthermore, little is known regarding the use of existing guidelines in decision making among physicians.

### Methods

- **The MASTERS Athlete Study** is a longitudinal, internet-based survey of training and health aspects of runners >5 years of running experience to determine who would be “screened in” for further evaluation and testing.
- **Screening guidelines applied:**
  1. **AHA/ACSM Pre-Participation Questionnaire (AAPQ)**
     - Recommends a pre-participation physician visit for all individuals who have prior cardiovascular conditions, symptoms or 2 or more risk factors.
  2. **AHA Pre-Participation Guidelines for Masters Athletes (AHA Masters)**
     - Recommends pre-participation ECG for all individuals ≥40 y/o who are planning high-Intervention training/competition.
     - Recommends pre-participation stress testing for men ≥40 y/o and women ≥50 y/o who have 1 risk factor.
     - All individuals ≥56 y/o

- **Application of AAPQ and AHA Masters 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 guideline).
- **Overall, there was low healthcare provider concordance with these guidelines**
- **Athlete age was a strong independent factor associated with PPE and testing**
- **This study does not address the effectiveness of AAPQ and AHA Masters 2001 Guidelines to identify older runners who warrant further evaluation and testing in an accurate and effective manner and further longitudinal follow-up will be required to address this question.**

### Results

- **Table 1. Participant Demographics and Running Habits**
  - Of 5850 total survey respondents, 1457 reported <5 years running experience (%).
  - Table 2. Completion of PPE and Testing Stratified by AAPQ Screening Results
  - Table 2. Completion of Pre-Participation ECG and Stress Testing Stratified by AHA Masters 2001 Guideline Screening Results

- **Figure 1. Screening yield of AAPQ for recommendation of PPE by healthcare provider**
- **Figure 2. Screening yield of AHA Masters 2001 Guidelines for recommendation of PPE stress testing**
- **Figure 3. Forest plot illustrating independent predictors of PPE based on AAPQ 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 age, gender and plan to complete a marathon/ distance event were independent predictors of stress testing.

### Conclusions

- Application of AAPQ 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 guideline).
- **Overall, there was low healthcare provider concordance with these guidelines**
- **Athlete age was a strong independent factor associated with PPE and testing,**
- **Planning to complete a marathon or endurance event was also a strong predictor of pre-participation stress testing**
- **This study does not address the effectiveness of AAPQ and AHA Masters 2001 Guidelines to identify older runners who warrant further evaluation and testing in an accurate and effective manner and further longitudinal follow-up will be required to address this question.**

### References

1. Running USA. Running USA’s annual marathon report. 2013.

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