Top Ten Things To Know
Exercise Testing and Training Standards

1. Exercise testing (ET) has been identifying myocardial ischemia for over 6 decades, but over time additional purposes for its use have emerged, such as detecting coronary artery disease (CAD) in patients with chest pain syndromes, evaluating the anatomic and functional severity of CAD, and predicting CV events and all-cause death.

2. The authors review a comprehensive list of absolute and relative contraindications to ET and describe the delicate balance needed in weighing the risk of the test with the potential benefit of the information derived.

3. Subject preparation and detailed electrocardiographic recording methods are described along with ET protocols to assist clinicians in safely and accurately performing the test.

4. The patients' response to ET indicates functional capacity, a useful measure in developing an exercise plan or prescription. Recording the exercise response to various levels of intensity helps identify abnormal symptoms useful in evaluating which exercise programs are safe for each individual.

5. Proper protocol is needed for small patients and, in particular, pediatric patients require special consideration and accommodations for ET, including appropriate-sized or adjustable equipment such as cycle ergometers, blood pressure cuffs, mouthpieces, for example.

6. The goals of ET in children differ significantly from those for adults and although myocardial ischemia is rare in the pediatric setting, confounding baseline electrocardiographic abnormalities and exercise-induced ST changes unrelated to myocardial ischemia are common among pediatric cardiology patients.

7. ET in older adults (defined as people ≥65 years old with clinically significant conditions or physical limitations) requires consideration of age-associated changes in the response to aerobic exercise and age differences in the prevalence and severity of CAD and comorbid conditions.

8. The authors report on special considerations for ET in the following populations: adults with congenital heart disease, pulmonary hypertension, heart failure, cardiac transplant, for example.

9. Exercise training is critical for overall health benefit and can be tailored with regard to individual needs, conditions, and comorbidities to attain specific health outcomes such as improving blood pressure and lipids, maximizing fitness, improving exercise capacity, and quality of life in patients with impaired left ventricular systolic function and chronic heart failure.

10. Exercise training hinges on an individual's stage of readiness to change, and the five components of behavior change and self-regulation include the following:
   a. setting of realistic and simple goals,
   b. self-monitoring of personal behaviors linked to goal attainment,
   c. feedback about progress toward goals,
   d. self-evaluation of progress,
   e. behavior change leading to achieving toward goals.