

William Thornton

From: "Joe Kerwin" <medinaut@pdq.net>
To: "William E. Thornton, M.D." <jwthornt@msn.com>
Sent: Wednesday, March 05, 2008 6:08 PM
Subject: Comments on Treadmill testin

Bill

Of course, I concur with your evaluation of the JSC decision to eliminate the Exercise Tolerance Test (ETT) from the LSAH annual physical. Here are some additional comments:

I went to the web site referred to in the letter we got from Wyle, and downloaded the referenced statement from the U.S. Preventive Services Task Force (USPSTF), ³Screening for Coronary Heart Disease.²

1) The LSAH is not primarily about screening for coronary heart disease; it's a research program aimed at longitudinal study of the health and fitness of astronauts and the evaluation of their selection process, emphasis on fitness, and their exposure to weightlessness during space flight. The USPSTF report, however, seems solely based on the effectiveness of the ETT as a screening device for coronary heart disease.

2) Their recommendation against the use of the ETT in asymptomatic subjects seems to be based on the small yield of true positives in this population, and the potential risk to subjects, not from the test itself, but from false-positive tests leading to ³unnecessary diagnostic testing, over-treatment and labeling.² The risk of an adverse event during testing is not mentioned in the report. In fact, the test is recommended for symptomatic individuals. So, the risk of incidents during the test itself is not a consideration, only the risk of follow-on testing.

3) Their bottom line is that ³there is not enough evidence to determine the balance of benefits and harms of initial screening with ETT.² This recommendation is basically one of cost-effectiveness of the test in a general population.

Exercise tolerance, physical conditioning and musculoskeletal status are extremely important factors in human response to space flight. Not to test for them calls the whole premise of the LSAH into question.

The argument has been made that changes in strength and endurance will not persist very long after space flight, and thus need not be measured in retirees. But that's only an assumption, and only a long-duration follow-up can prove or disprove it. The fitness of astronauts during and after their careers is probably related; measuring the latter can help justify or modify standards and tests for admission into the astronaut corps. And data of

value to the general population may result.

This is the premise of the LSAH. The LSAH may not have enough value to justify its cost (thought the Institute of Medicine thinks it does.) But if it is justified, there is no rationale for not including exercise stress testing as a part of it. Such testing might be refined or expanded. It should not be deleted.

You may include my remarks with yours, or ask me to send them separately, or have me committed to an institution. Let me know which!

Joe