DISCUSSION: Certainly, cardiovascular and musculoskeletal health are necessary for all individuals. In particular, support for safe exercise is critical for CHD patients. From our findings, patients and their sphere seem to have a favorable view of exercise and physician encouragement could be improved.
CONCLUSIONS: It would be prudent for educational efforts to become an intentional focus for physicians who are in an authoritative position in patient-care interactions.

1455 Board #263 May 31 9:00 AM - 10:30 AM

Submaximal Oxygen Uptake Efficiency Slope as a Predictor of $\dot{V}O_2$max in Men with Cardiovascular Disease

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(No relevant relationships reported)

PURPOSE: Although $\dot{V}O_2$max is considered the gold standard measure of cardiorespiratory fitness, it can be difficult to attain in patients with cardiovascular disease (CVD). The submaximal oxygen uptake efficiency slope (OUES) integrates cardiovascular, musculoskeletal and respiratory function during incremental exercise into a single index and has been proposed as an alternative and effort independent measure of cardiopulmonary reserve (Baba et al., 1996). The purpose of this study was to examine the relation between $\dot{V}O_2$ peak and both submaximal absolute OUES and relative OUES (OUES/kg).
METHODS: A total of 42 men ((mean ± SD) age, 59.9 ± 8.7 yr; $\dot{V}O_2$peak, 1.9 ± 0.5 L/min and 22.3 ± 6.1 mL/kg/min) were recruited during induction to a community based exercise referral program following completion of a phase 2 cardiac rehabilitation. Participants performed a graded exercise test on a cycle ergometer with breath-by-breath open circuit spirometry and a 12- lead ECG. Absolute OUES and OUES/kg were calculated by plotting $\dot{V}O_2$ in mL/min on the x-axis, and the log transformed VE on the y-axis ($\dot{V}O_2$ = a log $_{10}$ VE + b). Exercise data up to the ventilatory anaerobic threshold (VAT) was included in the analysis.
RESULTS: The %$\dot{V}O_2$ max corresponding to the VAT was 56.0 ± 10.3. Absolute OUES and OUES/kg were 2114 ± 515 and 24.5 ± 5.48, respectively. There was a significant positive correlation between $\dot{V}O_2$max (L/min) and OUES (r= 0.78; p<0.001) and between $\dot{V}O_2$max (mL/kg/min) and OUES/kg (r= 0.80; p<0.001).
CONCLUSION: Determination of $\dot{V}O_2$max is not often feasible in individuals with CVD where maximal exercise testing is contraindicated or when performance may be impaired by pain, dyspnea or angina. The findings from the present study indicate that the OUES and OUES/kg are significantly related to absolute and relative $\dot{V}O_2$max, respectively and may be used as a valid submaximal effort independent measure of CRF.
Baba, R. (1996). Oxygen Uptake Efficiency Slope : A New Index of Cardiorespiratory ., Functional Reserve Derived From the Relation Between Oxygen Uptake and Minute Ventilation During Incremental Exercise. *Measurement*, (6).

1456 Board #264 May 31 9:00 AM - 10:30 AM

Unstable Surface Training Is More Effective For Improving Stability Than Walking Training In Stroke Survivors

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(No relevant relationships reported)

BACKGROUND: Falls are of great concern in the post-stroke population. Balance and gait deficits are major risk factors but may be improved through rehabilitation. However, little research has been done comparing the efficacy of different types of rehabilitation training programs.
PURPOSE: The purpose of this study was to determine if unstable surface training is more effective than conventional walking training for improving stability among stroke survivors.
METHODS: Twenty male chronic stroke patients were randomly assigned into two groups, the unstable surface training group (UST; n=10, 53.9 ± 8.3 yrs) and conventional walking training group (CON; n=10, 58.3 ± 12.1 yrs). Participants trained 3 d/wk for 60 min/d for 12 weeks with BOSU half ball (UST) or treadmill (CON). Stability was evaluated using the Biodex balance system. Anterior/Posterior (Sagittal Plane), Medial/Lateral (frontal plane), and overall scores were analyses using ANCOVA. Zones and quadrants were reported with individual data.
RESULTS: The UST group showed a significant improvement in Anterior/Posterior (1.63 ± 0.42 vs 1.15 ± 0.56, F(1, 17) = 12.62, p=.002), Medial/Lateral (1.3 ± 0.80 vs 0.64 ± 0.30, F(1, 17) = 31.38, p<.001), and overall (2.26 ± 0.81 vs 1.41 ± 0.66, F(1, 17) = 21.25, p<.001) scores whereas the CON group showed no significant improvements.
CONCLUSION: The unstable surface training of 12-week was effective in significantly improving stability in chronic stroke survivors.

1457 Board #265 May 31 9:00 AM - 10:30 AM

The Role of Ethnicity in Developing Cardiovascular Disease in At-Risk Populations

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(No relevant relationships reported)

In the U.S., cardiovascular disease (CVD) is responsible for 1 in 4 deaths. There are known predictors (e.g., obesity, hypertension, and dyslipidemia) that increase the odds of developing CVD; however, risk is not proportionate among all ethnicities. While Hispanic Americans often display markers of elevated risk, they have longer life expectancies than their non-Hispanic counterparts. Further exploration of this phenomenon is necessary to elucidate how risk engenders disease in different ethnic groups.
PURPOSE: To evaluate CVD risk factors and the incidence of adverse cardiovascular events among at-risk Hispanic and non-Hispanic adults.
METHODS: We enrolled 10 Hispanic and 41 non-Hispanic men and women with Type 2 diabetes in a 10-week exercise program. Prior to initiating exercise, we documented demographic data, collected a health history, conducted 7 tests of physical functioning, and measured cardiometabolic variables, including body mass index (BMI), body fat percent (BF%), blood pressure, heart rate, and HBA1C. We repeated all assessments following the intervention. Differences between ethnic groups in baseline values and exercise responses were evaluated with independent- samples t-tests and chi-squared tests.
RESULTS: Hispanic subjects had fewer diagnoses of hypertension (p=0.002) and no history of heart attack, compared to 25% incidence among non-Hispanics (p=0.077). Hispanic subjects were 8.1 years younger (p=0.032), 40% of them smoked (compared to 0%; p<0.001), and they had better body compositions as measured by BMI (p=0.038), BF% (p=0.021), and categorical obesity (p=0.030). Physical functioning was slightly better among Hispanic subjects as measured by the minute walk (p=0.010) and functional reach (p=0.029). Participants who completed the exercise program experienced improvement in all assessments but grip strength; there were no differences in improvement between ethnic groups.
CONCLUSION: We found exercise to benefit Hispanic and non-Hispanic subjects similarly. Hispanic adults with diabetes had a lower incidence of heart attacks. This may be attributable to observed anthropometric differences; however, if nutritional or behavior customs confercardio- protective effects in this population, it is important for future researchers to identify those variables.

1458 Board #266 May 31 9:00 AM - 10:30 AM

Sex Influences Changes Over Time In Exercise Ventilatory Dynamics In Patients With Cystic Fibrosis

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(No relevant relationships reported)

Exercise capacity (VO_2 peak), an independent predictor of mortality, declines at a substantial rate in patients with cystic fibrosis (CF). Despite a similar rate of decline in VO_2 peak between sexes, female patients with CF experience greater mortality compared with their male counterparts. Ventilatory dynamics (VD) during exercise provide important prognostic information in several clinical populations; however, changes over time in exercise VD in CF are not well understood. Moreover, little is known about the influence that sex may have on changes over time in exercise VD in patients with CF.