

**Be SMART: Safe to Test, Safe to Train**



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## **Before SMART Testing:**

- Pre-test Screening:
  - i.e., Does exercise require medical supervision? If yes, then medical clearance is required.
- Pre-test vital sign assessment as per ACSM/AHA guidelines
  - if measured above or below levels determined safe for testing then no testing performed and recommend medical follow-up
- Pre-test resting lactate level
  - if lactate is above a defined resting level AND unable to reduce lactate levels during the initial stages of the exercise test then testing will cease and a walking program will be provided

## **During SMART Testing:**

- Sub-maximal effort testing protocols, not a maximal effort test like a VO2max test
  - Reduced risk for overstress/overstrain beyond given ability
- Currently, all testing is performed on an upright or recumbent cycle so there is minimal risk for fall-related injury as is possible with treadmill-based protocols.
- Initial testing protocols are sensitive to a participant's current level of fitness whether low, moderate, or high.
  - Protocol selection criteria align to most appropriate starting point and stage progression
- Testing protocols may adapt after the first two stages of the test with potential for progression, regression, or maintenance of the current testing protocol compared to lactate clearance behavior.
  - If lactate accumulates early, then the protocol may adapt to reduce the intensity of stage progressions.
  - If lactate clearing early, then the protocol may adapt to increase the intensity of stage progressions.
- Testing ceases when a defined level of lactate is observed or before this level is reached if a participant chooses to discontinue testing.

## **After SMART Testing and During Training:**

- One and two-minute Heart Rate Recovery Rates are monitored immediately after a SMART Test to observe stress recovery efficiency
  - if demonstrates a slow recovery in the first minute after testing, less than 15 beats per minute, then interval programs limited in intensity until demonstrate recovery capacity during next test

- Exercise programs are based on observed physiology (heart rates and lactate thresholds) avoiding over/under programming of intensity as common with other heart rate formulas or estimates.
- Does not allow for cardiac drift during steady state or intervals.
- Heart Rate Recovery Rate is monitored between each interval performed (e.g., MIIT, HIIT) to adjust and adapt for appropriate exercise-related stress.
  - Modifies training intensity based on real time, exercise-related stress responses.