

Development and Validation of Task-specific Fitness Tests and Standards

Phase 1:

Understanding the tasks at hand

Establishing a Project Management Team to help guide and validate the research process (subject matter expert, chain of command, exercise specialists, Personnel Selection officer, legal advisors)

Literature reviews & job familiarization on related tasks or jobs

Job/physical demand analysis: site visits, interviews, job shadowing, review of operational manuals and video, physical measurements (weight of equipment, height of lifts, distances traveled) and questionnaires to incumbents.

Identification of most physically demanding, essential and most commonly performed tasks



Phase 2:

Measuring and validating the information

Validation of all tasks (those to be included or excluded) with a panel of Subject Matter Experts

Identification of tasks to be included in a work sample for physiological analysis

Physiological characterization of most physically demanding tasks (by measuring % HR_{max}, % VO_{2max}, loads, speeds/paces, environmental stressors...)



Phase 3:

Development of test and setting minimal standards

Development of a preliminary test battery with significant contribution from the incumbents and subject matter experts

Validation of test items through consultation with a representative subset of personnel

Validation of physiological measures (e.g., compare VO₂ and heart rate during actual tasks vs during task simulation battery)

Finalize test battery with continued involvement from the incumbents

Establish minimal performance standards

Establish test-retest reliability (if the performance on the test is the same from one day to the next)

Assess adverse impact of minimal performance standard. Measure the effects on subgroups based on age, gender, disabilities, etc.

** Note that these steps represent the typical research and development process. Given the variety of trades and tasks in the CF, items can be removed or added from the process depending on the circumstances.*