

# THE BUSHFIRE FIGHTING TEST: Quantifying a safe standard of fitness and health in CFA volunteers.

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## Background

Physical fitness is not routinely evaluated or enforced in the majority of Australia's volunteer bushfire fighting populations. Other fire fighting agencies, however, do employ operational readiness tests for their personnel. Bushfire suppression tasks may combine elements of aerobic fitness, muscular strength, muscular endurance and a multitude of fire fighting specific skills. It is unlikely, therefore, that conventional laboratory based fitness testing will translate directly into bushfire fighting skill.

## Aims

- 1) Create a reliable bushfire fighting test that can replicate the demands of operational bushfire suppression.
- 2) Correlate the bushfire fighting test against laboratory based aerobic fitness and other fire fighting tests of operational readiness
- 3) Investigate if the bushfire fighting test can detect changes in fire fighting skill of CFA recruit fire fighters over a 16 week intensive training period.
- 4) Investigate if the bushfire fighting test can detect fatigue caused by prolonged bouts of simulated fire fighting.

## Methods

- 1) Test creation
  - Matching exercise intensity with operational bushfire suppression
  - Reliability over repeated tests in multiple subjects
- 2) Correlation with other fire fighting operational readiness tests
  - Treadmill  $VO_2$ max test      - CFA Challenge aptitude test
  - USFS pack test                - Multi-stage shuttle run
- 3) Does the bushfire fighting test detect changes in:
  - Firefighting skills obtained during CFA recruit training.
  - Aerobic fitness in the general public.
- 4) Does the bushfire fighting test detect fatigue after fire suppression



## Outcomes

The operational readiness and risk of overexertion injury during bushfire suppression in Australian bushfire fighters is largely unknown. It is likely our studies will provide bushfire agencies with a bushfire specific fitness test to indicate operational readiness in volunteers and may lead to reduction in overexertion related injury and increased fire ground productivity during bushfire suppression.