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AUSTRALIA

UOW: Reflections on DST engagement: A team approach

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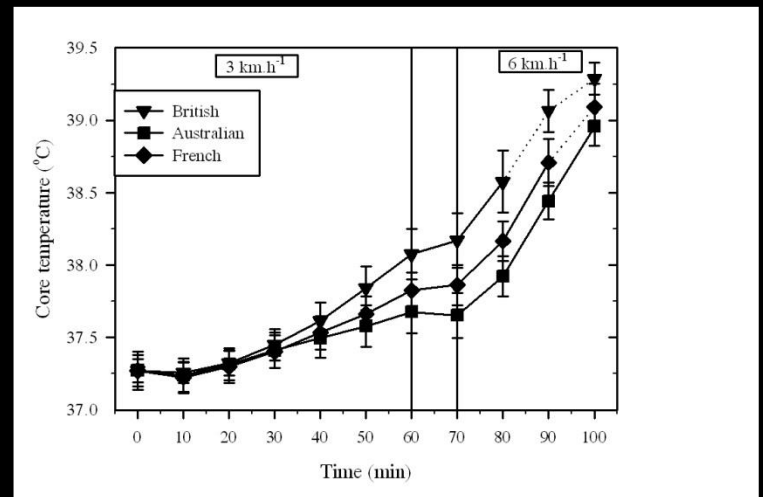
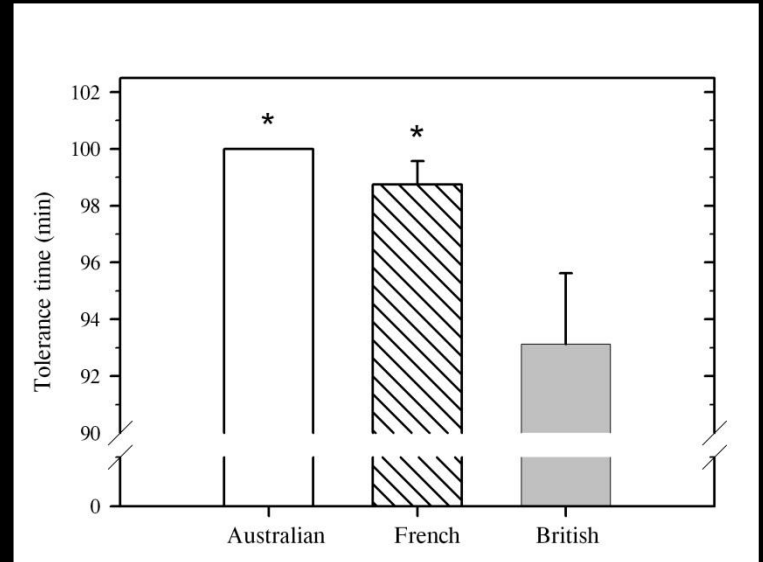
Human performance themes of engagement with DST

- Thermal
- Physical employment standards
- Carrying load
- Training adaptation and injury



Thermal





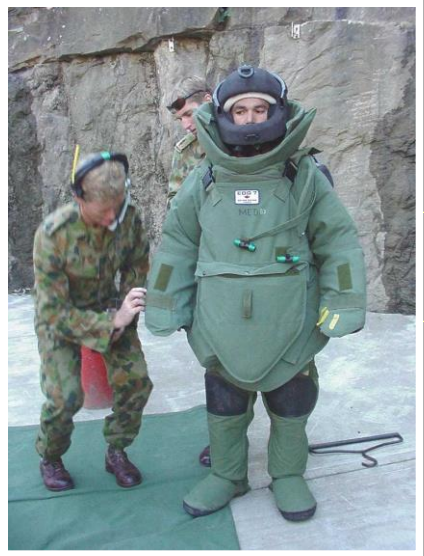
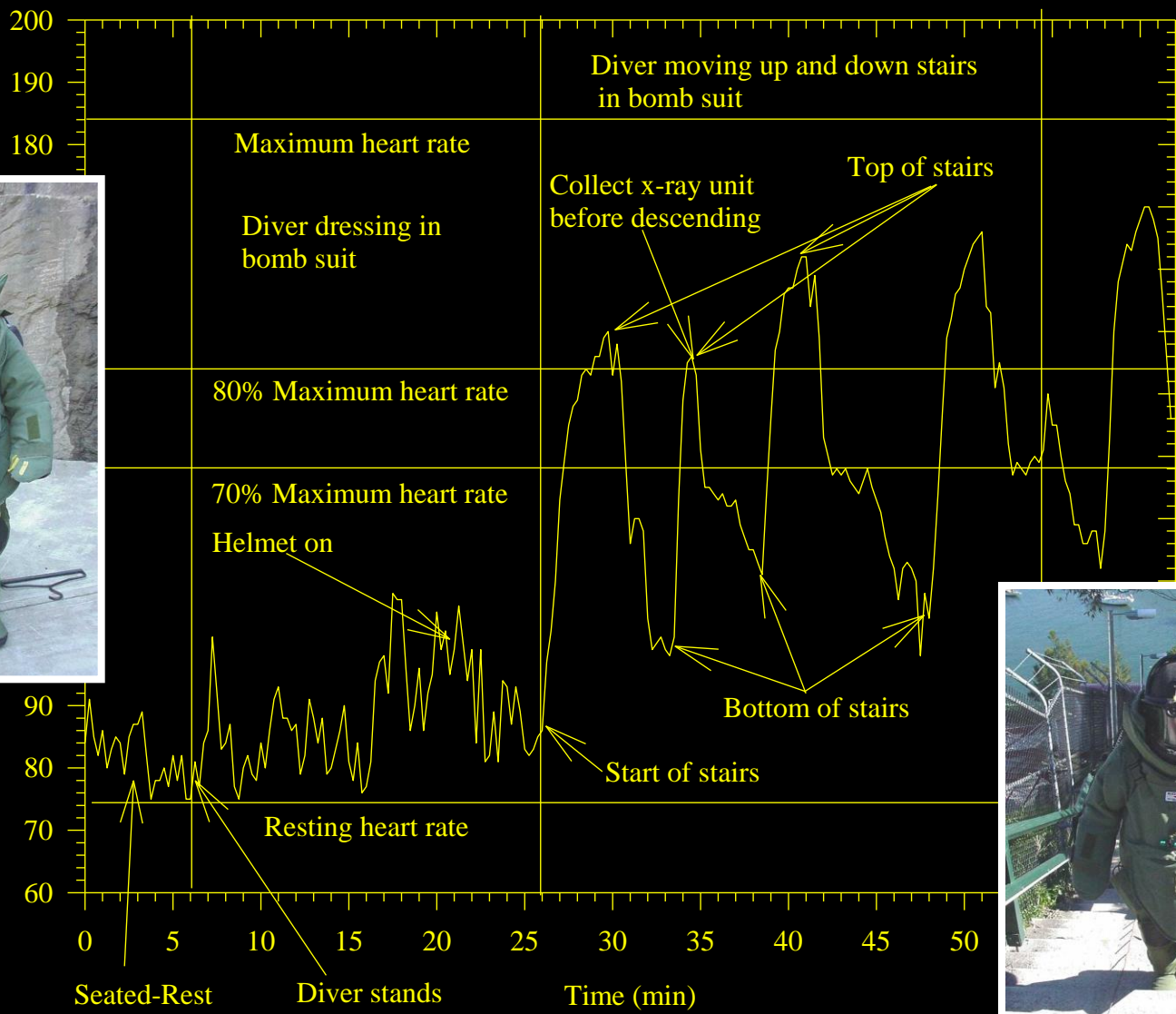


There is no benefit of wearing a torso undergarment whilst working hard in protective clothing in the heat.



Physical employment standards





ROYAL AUSTRALIAN NAVY MINIMUM PHYSICAL FITNESS STANDARDS

MALE

Component/Age	Age Less than 35	Age 35 to 44	Age 45 to 54	Age 55 and over
Flexed arm hang (seconds)	25	20	15	10
OR				
Push - ups (number)	25	20	6	6
Sit ups (number)	25	20	15	10
2.4 km run/walk (min/seconds)	13'00"	15'00"	17'00"	19'00"
5 km walk (min/seconds)	42'00"	44'00"	46'00"	48'00"
500 m swim (min/seconds)	12'30"	13'30"	14'30"	15'30"
Beep Test	7.4	6.10	6.4	5.9
Max VO2	37 per cent	36.4 per cent	34.3 per cent	32.9 per cent

FEMALE

Component/Age	Age Less than 35	Age 35 to 44	Age 45 to 54	Age 55 and over
Flexed arm hang (seconds)	25	20	15	10
OR				
Push - ups (number)	10	7	3	3
Sit ups (number)	25	20	15	10
2.4 km run/walk (min/seconds)	15'00"	17'00"	19'00"	21'00"
5 km walk (min/seconds)	43'00"	45'00"	47'00"	49'00"
500 m swim (min/seconds)	13'30"	14'30"	15'30"	16'30"
Beep Test	6.9	6.2	5.4	5.0
Max VO2	36 per cent	33.6 per cent	31 per cent	30 per cent





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Science could lead women to the front

By BRENDAN NICHOLSON
 DEFENCE CORRESPONDENT

The Federal Government has called in its scientific big guns to work out what front-line jobs women should be allowed to do in armed forces.

front-line units, and on submarines and ships in war zones. Mr Combat said the organisation was working on a development plan to allow a woman to do a job through a science-based approach. "We will be looking at the science of the job and the physical demands of the job," he said.

Brief DSTO



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Defence scientists may lead women to the front

By BRENDAN NICHOLSON

The Federal Government has called in its scientific big guns to work out what front-line jobs women should be doing in the armed forces.

The Minister for Defence, Gordon Brown, said the Defence Science and Technology Organisation was investigating the question of what roles women can fill in the defence force. "My own view is that all categories should be open to women," Mr Combat said. "The only exceptions should be where the physical demands cannot be determined on the basis of scientific analysis rather than assumptions about gender."

Many combat roles are already open to women, but they are not allowed to serve as front-line infantry, in hand-to-hand combat, in armoured or artillery units, or in areas that use nuclear weapons. But they serve in front-line roles flying helicopters and jets from the headquarters of the Bombers, in the front-line units, marines and ships. Mr Combat was very clear that the standard of physical fitness for women is the same as for men. "We are not looking for a lower standard of physical fitness for women," he said.

Studies may see women face combat

By EMMA SHAW

A NEW research centre at the University of Wollongong will help set physical benchmarks for soldiers and develop a set of recruitment criteria that actively ignores gender.

It means women, at present ineligible for 2 per cent of defence force roles, could potentially serve in all front-line combat units.

The university will receive \$1.6 million from the Army to establish a National Centre of Excellence in Physical Employment Standards, known as the Centre for Human and Applied Physiology.

Based in the School of Health Sciences, it will also have researchers working at the Defence Science and Technology Organisation. Defence Personnel Minister Greg Combat said it was important future recruits were appraised on performance alone, adding there was a belief women were less physically capable.

"Rather than do that on the basis of assertion and assumption, what the government is doing ... is developing a set of objective criteria in the form of physical employment standards that could be applied in the future," he said.



Funds: Researchers Herb Groeller (back left), Greg Peoples, Marc Brown and Nigel Taylor (front). Picture: KIRK GILMOUR



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Push for women on front line

Patrick Walker
 National secretary

WOMEN in all front-line Australian Defence Force units will be given a formal role in the front line. The Defence Minister, Greg Combet, said the government was committed to increasing the number of women in the front line.

city of jobs in the modern defence force. "A priority of the government is to improve the recruitment and retention of women in the defence force," Mr Combet said. "My vision is to see a significant increase in the number of women in the front line of our defence force."

studies, expected later next year. Women are now able to serve in 92 per cent of employment categories across the ADF, including flying first jets in the RAAF. In the army, women cannot join the special forces and some restrictions still apply to some combat soldier positions.

Defence scientists to work out suitable jobs for women

Defence Correspondent

The Government has called in its scientific big guns to work out what front-line jobs women should be doing in the armed forces.

where materials toxic to unborn children are used. They are also used in the front-line roles of helicopter and jet pilots, in the headquarters of front-line units, and on submarines. Mr Combet said the government was committed to increasing the number of women in the front line of our defence force.

A priority of the government is to improve the recruitment and retention of women in the defence force. Mr Combet said the government was committed to increasing the number of women in the front line of our defence force. "My vision is to see a significant increase in the number of women in the front line of our defence force."

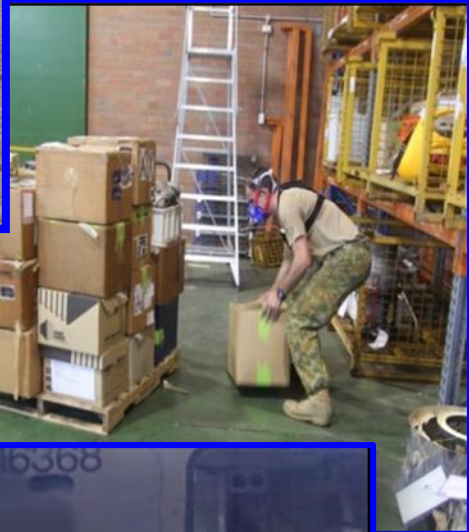


Female forces - women may be called to the front line of combat. Picture: ANDREW GIBBS FOR AAP

Brief DSTO

Brief DSTO





Carrying load



A fractionation of the physiological burden of the personal protective equipment worn by firefighters

Nigel A. S. Taylor · Michael C. Lewis ·
Sean R. Notley · Gregory E. Peoples



Maximal aerobic power (mL/kg/min)
No effects of load or chest wall restriction

Work tolerance
Severely reduced by load carriage





Maximal aerobic power (mL/kg/min)

Effects of mass are evident by 35kg mass

Work tolerance

Dose response ~ 5% reduction per 10kg

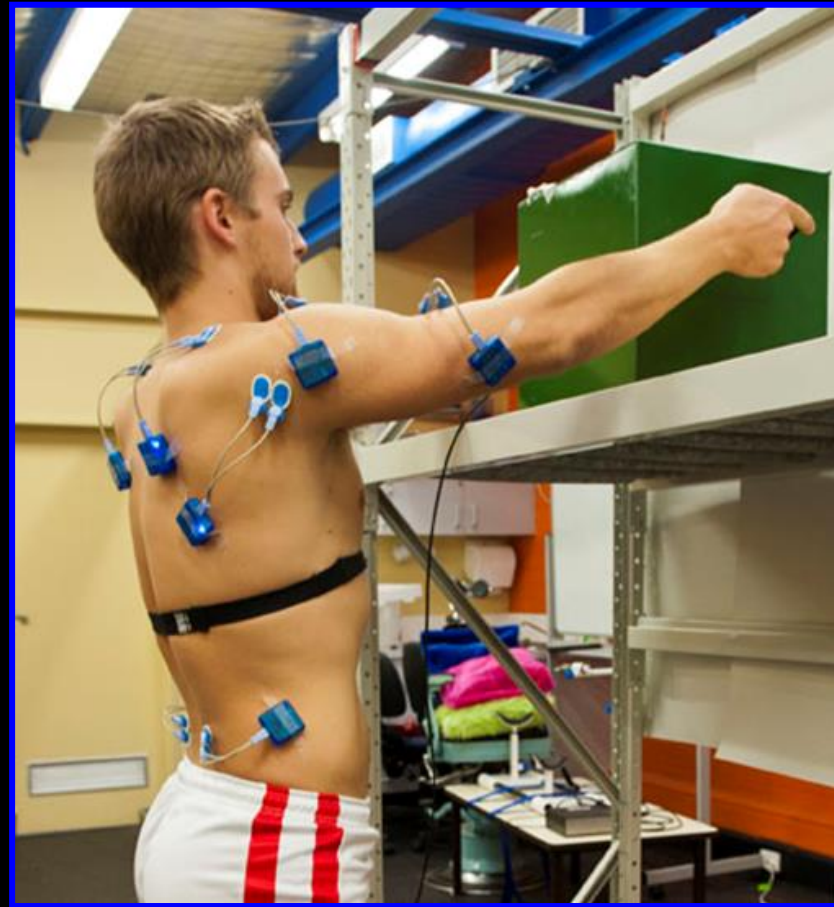
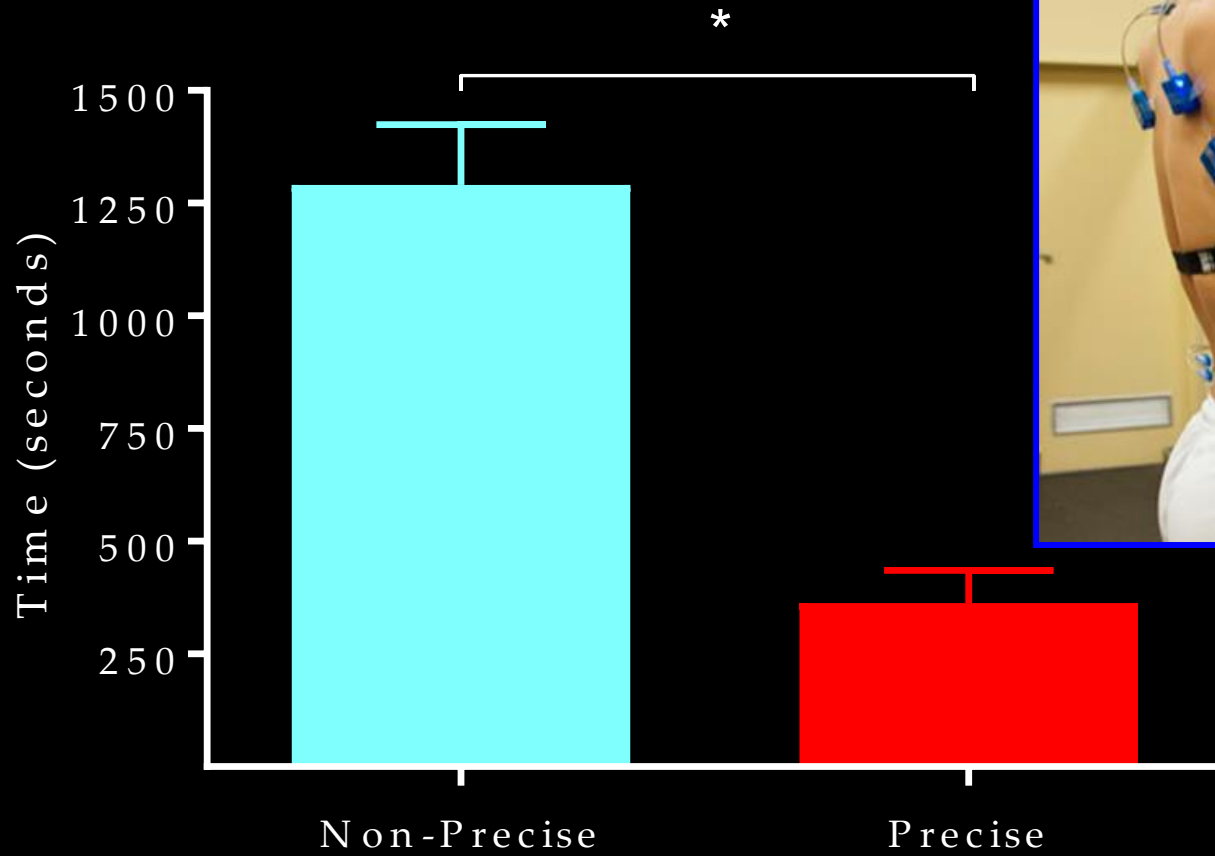
Lung volumes

~ 20% reduction peaking at 35kg

Operational lung volumes

Reflective of chest restriction (pathology) and most evident >25 kg





Time to task failure



Training adaptation and injury



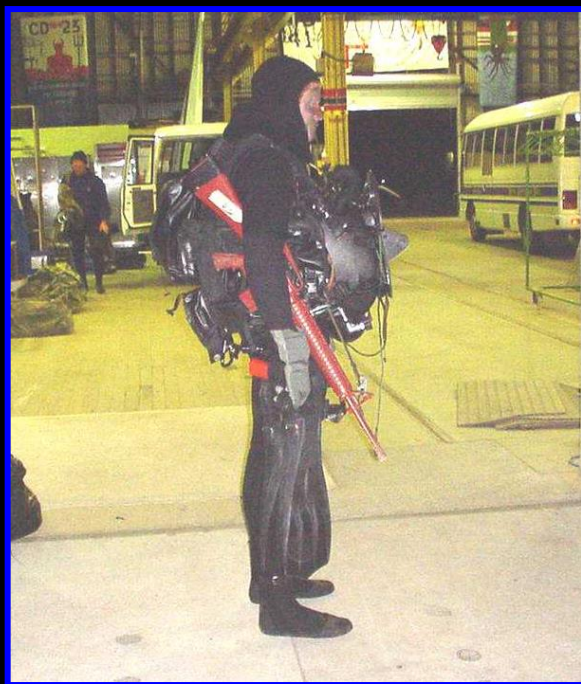


Table 3.10: Current AUSCDT One RAN PT

Day	Programme	Purpose	Function	Impact
Monday	45 min run	<i>esprit de corps</i> Running endurance	Low	High
Tuesday	Boxercise or wrestling	<i>esprit de corps</i> Hand-to-hand combat	Low	Low
Wednesday	Interval running	<i>esprit de corps</i> Sprint running speed	Low	High
Thursday	Swim/Fin	<i>esprit de corps</i> Finning endurance	High	Low
Friday	Touch Football	<i>esprit de corps</i> Mixed fitness	Low	High

- **Physical integration:**
 - Increased physical demands.
 - Longer dismount periods.
 - Greater mass.
 - Increased cognitive processing and multi-tasking.
 - Modified operational tactics.

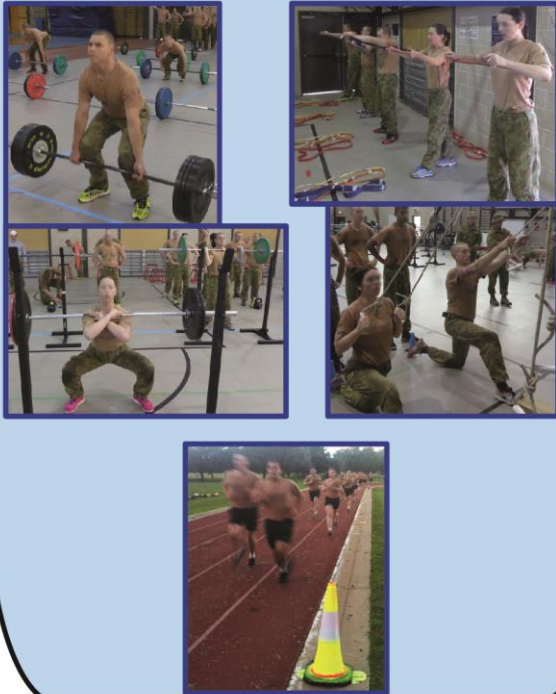


Australian Army Military Recruits

N=216

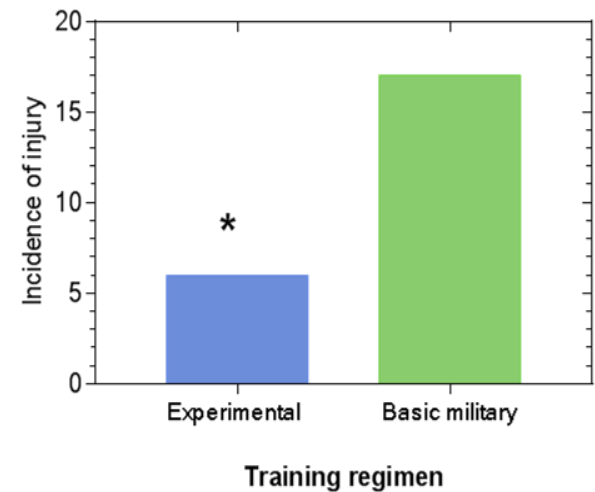
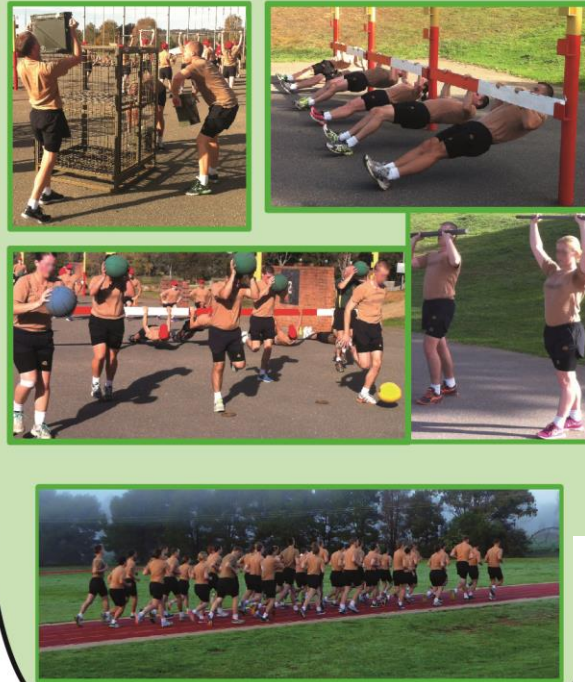
Experimental Training

N=118, 12 weeks, 41 sessions: 3100 min



Basic Military Training

N=98, 12 weeks, 41 sessions: 3100 min



Training adaptations and injury monitoring



Prospective Physical Performance and Resilience Study (P3R)

Post-graduate Projects:

- PhD 1 – Training Load & Physical Performance
- PhD 2 – Injury Monitoring & Prediction
- MSc – Physical Conditioning Intervention Study
 - Location: School of Infantry (SOI)

Broad Goals:

- Optimise physical conditioning of personnel
- Better understand impact of service on physical performance and injury
- Inform recruiting standards





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