

CENTRE FOR ACTIVE LIVING AND LEARNING

SCHOOL-BASED BURN 2 LEARN PROGRAM BOOSTS STUDENTS' HEALTH, WELLBEING, AND ACADEMIC OUTCOMES

Australian children and adolescents are amongst the least physically active globally. By the time students reach the senior school years (years 11 and 12), less than 10% get enough physical activity. The Burn 2 Learn program aims to address this issue by increasing the health and wellbeing of senior school students using a research-informed approach. At the core of this initiative is the application of high-intensity interval training (HIIT), which has been shown to not only boost students' fitness, but also their cognitive and mental health. This innovative program, informed by rigorous research, leverages the potency of short, yet vigorous workouts to optimise students' health, wellbeing and academic performance.

The Burn 2 Learn philosophy is grounded in the belief that every student has the potential to thrive when equipped with the right tools, support, and guidance. It's a program that aligns with challenges of the senior school years and the need for physical activity that can be incorporated into young people's busy lives.

IMPACT OF THE BURN 2 LEARN PROJECT:

- Improvements in students' cardiorespiratory fitness and muscular strength, as well as reductions in stress.
- Improvements in brain structure and function, as demonstrated using MRI.
- Immediate improvements in students' attention and alertness in the classroom.
- More than 330 teachers from 215 schools in NSW have completed professional development for the B2L program.



The Burn 2 Learn program was refined through collaborative discussions with the NSW Department of Education, teachers, and students, leading to two pilot studies. Utilising the insights gained from these initial consultations, the research team conducted a randomised control trial in 20 secondary schools, involving 670 students aged 15-19 years (funded by the National Health and Medical Research Council). Teachers randomised to the intervention group received a comprehensive package of training, materials, and support to integrate high-intensity activity breaks into their academic lessons, whilst the control group maintained their standard routine.

During the first stage of the project, spanning two school terms, teachers integrated two to three HIIT classroom activity breaks per week. Later in the project, students were encouraged to undertake these sessions outside of classroom hours, although teachers retained the option to continue facilitating Burn 2 Learn activities during lesson time.

The research team measured changes in students' cardiorespiratory fitness using the multi-stage fitness test at baseline and then again after 6-months. A range of secondary outcomes, including muscular strength, physical activity using accelerometers, cortisol concentrations, mental health, and cognitive function were also assessed. Changes in brain structure and function were assessed in a sub-sample of participants (n = 56 students) using magnetic resonance imaging (MRI). Finally, the research team conducted classroom observations to assess the acute effects of the program on students' attention and alertness during lessons.

"B2L was a great success at our school. Each student who participated enjoyed the sessions and were more alert and could concentrate more in class after the session. I would definitely run this program in the future again with Year 11 students"

B2L School Champion

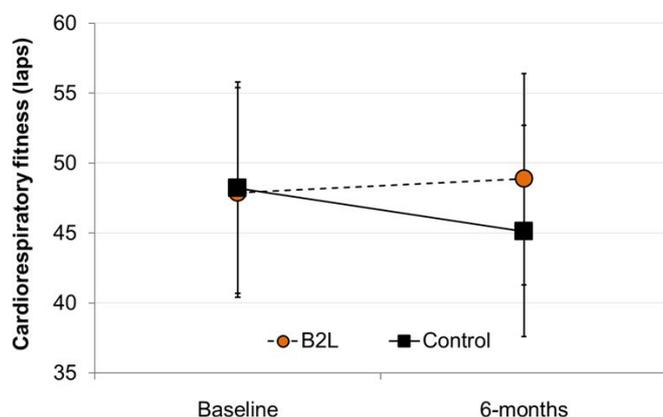


Figure 1: Improvements in students' cardiorespiratory fitness

References

Leahy, A. A., Mavilidi, M. M., Smith, J. J., Hillman, C. H., Eather, N., Barker, D., & Lubans, D. R. (2020). Review of high-intensity interval training for cognitive and mental health in youth. *Medicine and Science in Sports and Exercise*, 52(10), 2224-2234. <https://doi.org/10.1249/MSS.0000000000002359>

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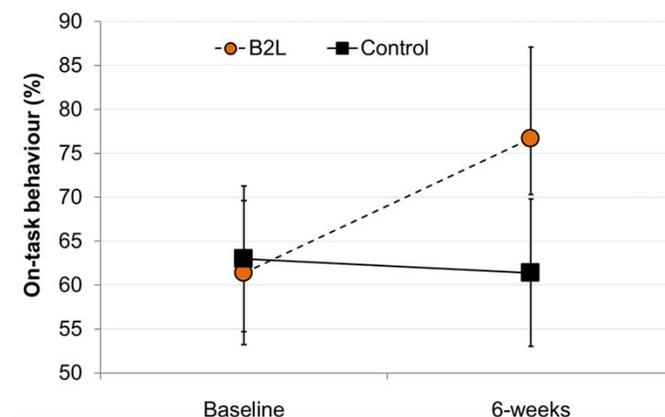


Figure 2: Improvements in students' classroom behaviour

Mavilidi, M. F., Mason, C., Leahy, A. A., Kennedy, S. G., Eather, N., Hillman, C. H., & Lubans, D. R. (2021). Effect of a time-efficient physical activity intervention on senior school students' on-task behaviour and subjective vitality: The 'Burn 2 Learn' cluster randomised controlled trial. *Educational Psychology Review*, 33(1), 299-323. <https://doi.org/10.1007/s10648-020-09537-x>

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