

BEATS Study

Built Environment and Active Transport to School



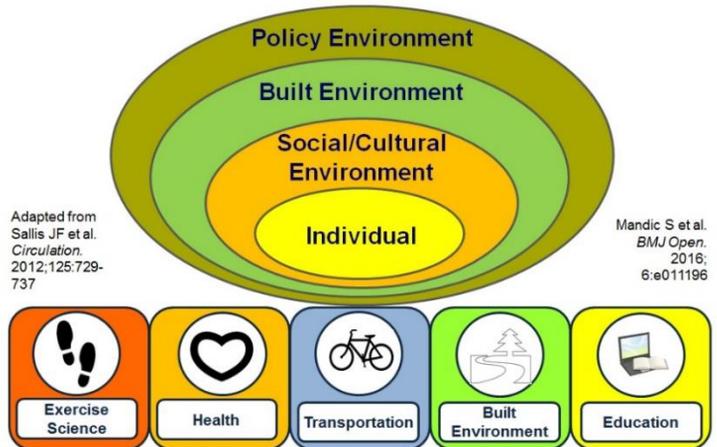
BEATS Study Update 2017

Overview

The BEATS Study is based on contemporary ecological models for active transport (walking or cycling) that identify individual, social, environmental, and policy influences on behaviour. The study is designed to advance scientific knowledge and provide service to the government, local community and schools.

The BEATS Study spans the fields of exercise science, health, transportation, environment and education. The study is founded on a multidisciplinary approach and multi-sector collaborations between secondary schools, city council, community, and academia.

BEATS Study Framework



Progress to date

Completed data collection (2014-2017):

- Surveyed 1780 students from all 12 Dunedin secondary schools
- Surveyed over 350 parents of secondary school students
- Conducted 18 focus groups with students, parents and teachers
- Conducted 12 interviews with school principals



Active Living Laboratory

otago.ac.nz/active-living

Comprehensive dissemination of findings

BEATS Study Research Outputs to Date



The links to publications are available on the BEATS Study website: www.otago.ac.nz/beats/publications

One dozen research articles reporting findings from the BEATS Study are currently in preparation.

Funding



Research publications and findings to date

BEATS Study Protocol Article

This article describes research methodology for the entire BEATS Study.

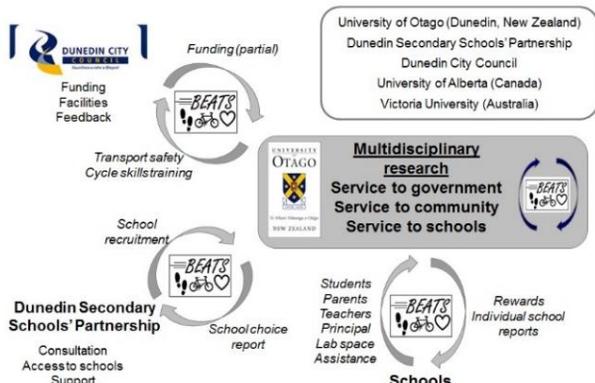
Sandra Mandic, John Williams, Antoni Moore, Debbie Hopkins, Charlotte Flaherty, Gordon Wilson, Enrique García Bengoechea, John C Spence. *Built Environment and Active Transport to School (BEATS) Study: Protocol for a cross-sectional study. BMJ Open. 2016;6:e011196. [Full article](#)*



BEATS Study Planning and Implementation

This article provides “a look behind the scenes” from vision to implementation of the BEATS Study: study design, the establishment of research and community collaborations, planning and preparation for data collection, study implementation and knowledge dissemination.

Sandra Mandic, Ashley Mountfort, Debbie Hopkins, Charlotte Flaherty, John Williams, Emily Brook, Gordon Wilson, Antoni Moore. *Built Environment and Active Transport to School (BEATS) Study: Multidisciplinary and multi-sector collaboration for physical activity promotion. Retos, 2015. 28: p. 197-202. [Full article](#)*

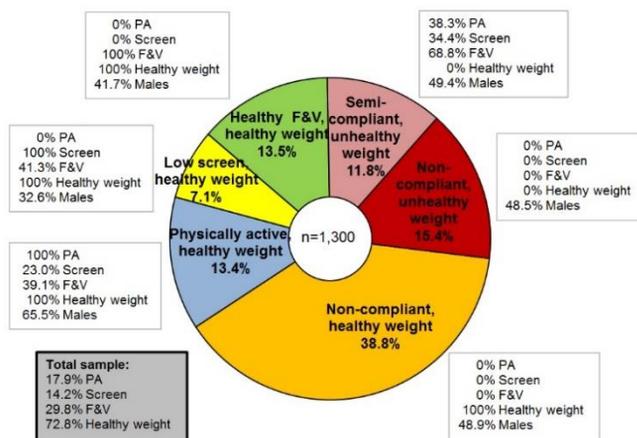


Reprinted from Mandic S et al. Retos, 2015;28:197-202 (with permission from the Retos journal).

Clustering of (Un)Healthy Behaviors in Adolescents from Dunedin, New Zealand

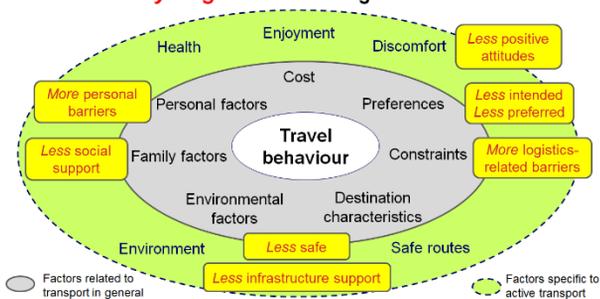
The findings from the BEATS Study show that few Dunedin adolescents met recommended health behaviour guidelines, yet two-thirds had a healthy weight. This study identified six clusters based on health behaviours and weight status. Clusters had distinct sociodemographic and lifestyle characteristics. These findings suggest that future public health strategies for adolescents should be comprehensive and consider socioeconomic structural factors.

Sandra Mandic, Enrique García Bengoechea, Kirsten J Coppel, John C Spence. Clustering of (un)healthy behaviors in adolescents from Dunedin, New Zealand. *American Journal of Health Behavior. 2017;41(3):266-275 DOI: <https://doi.org/10.5993/AJHB.41.3.6> [Full article](#)*



Reprinted from Mandic S et al. Am J Health Behav, 2017;41(3):266-275 (with permission from the American Journal of Health Behavior).

Cycling versus Walking to School



Reprinted from Mandic S et al. J Transp Health, 2017; 4:294-304 (with permission from Elsevier).

Adolescents Perceptions of Walking versus Cycling to School

The findings from the BEATS Study show that low rates of cycling to school in New Zealand adolescents may be context-specific. This article shows that compared to walking, cycling to school among Dunedin adolescents was less common and perceived as less safe. Cycling also received less social and infrastructure support. Therefore, more supportive physical and social environments are required for promoting cycling to school among Dunedin adolescents.

Sandra Mandic, Debbie Hopkins, Enrique García Bengoechea, Charlotte Flaherty, John Williams, Leiana Sloane, Antoni Moore, John C Spence. Adolescents' perceptions of cycling versus walking to school: Understanding the New Zealand context. *Journal of Transportation and Health. 2017;4:294-304 DOI: 10.1016/j.jth.2016.10.007 [Full article](#)*

Perceptions of Cycling among High School Students and Their Parents

This article presents findings from BEATS Study focus groups with adolescents and parents. Key findings relate to perceived safety, implicit messages, and social norms. A complex range of factors contributed to perceived safety of cycling, including features and perceptions of the built environment, traffic safety, previous cycling experiences and adolescents' cycling skills and on-road experiences. Overcoming concerns through behavioural and cultural interventions coupled with up-skilling and infrastructure changes may present a pathway to increasing rates of cycling.

Debbie Hopkins, Sandra Mandic. Perceptions of cycling among high school students and their parents. *International Journal of Sustainable Transportation*. 2017;11(5):342-356 DOI: 10.1080/15568318.2016.1253803 [Full article](#)

Perceptions of Cycling to School (From Student and Parental Focus Groups)

- Perceived safety:
 - A complex range of factors including:
 - Features and perceptions of the built environment
 - Traffic safety (including behaviours of other road users)
 - Previous cycling experiences (including accidents)
 - Adolescents' cycling skills and on-road experiences
- Implicit messages
- Social norms



Attitudes Towards Cycle Skills Training in New Zealand Adolescents

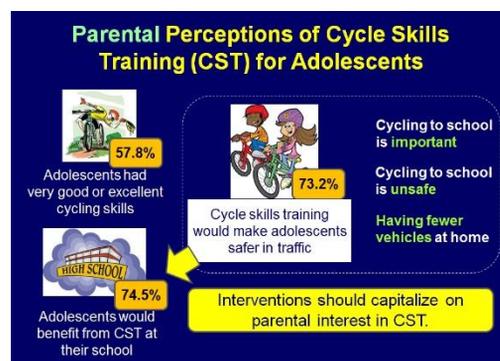
Little is known about adolescents' attitudes towards cycle skills training. The BEATS Study results showed that over a third of adolescents perceived that cycle skills training could make them safer in traffic. Enjoyment, usefulness and desire to cycle were associated with a positive attitude. Parental cycling behaviour and school's encouragement were also important. Schools may be an appropriate setting for provision of cycle skills training to adolescents.

Sandra Mandic, Charlotte Flaherty, Tessa Pocock, Alex Mintoft-Jones, Jillian Frater, Palma Chillón, Enrique García Bengoechea. Attitudes towards cycling skills training in New Zealand adolescents. *Transportation Research Part F: Traffic Psychology and Behaviour*. 2016;42:217-226 DOI: 10.1016/j.trf.2016.08.002 [Full article](#)

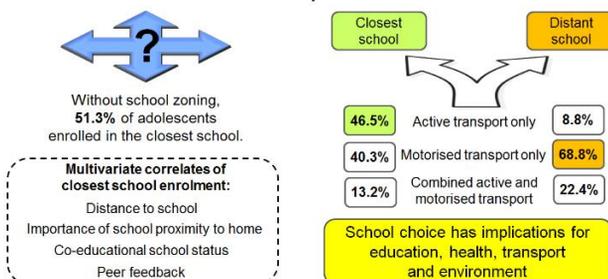
Parental Perceptions of Cycle Skills Training

This article presents findings from the BEATS Parental Survey. Parents perceived cycle skills training would make adolescents safer in traffic. Parental perceptions of cycling to school as important and unsafe and having fewer vehicles at home was also associated with favourable perceptions of cycling skills training. Parents thought adolescents would benefit from such training at their school. Therefore, interventions should capitalize on parental interest in cycle skills training.

Sandra Mandic, Charlotte Flaherty, Tessa Pocock, Chiew Ching Kek, Palma Chillón, Christina Ergler, Enrique García Bengoechea. Parental perceptions of cycle skills training for adolescents. *Journal of Transport & Health*. [in press; Epub 24 Mar 2017] DOI: <https://doi.org/10.1016/j.jth.2017.03.009> [Full article](#)



Implications of School Choice Decisions on Active Transport to School



Mandic S et al. *J Transp Health*, [in press] (with permission from Elsevier).

Implications of School Choice Decisions on Active Transport to School

This article shows that without school zoning, half of Dunedin adolescents enrolled in the closest school. Distance to school and importance of school's proximity influenced school choice. Co-educational school status and peer feedback were also important. Adolescents attending their closest school had five times higher rates of active transport. These findings suggest that school choice has implications for education, health, transport and environment.

Sandra Mandic, Susan Sandretto, Enrique García Bengoechea, Debbie Hopkins, Antoni Moore, Judy Rodda, Gordon Wilson. Enrolling in the closest school or not? Implications of school choice decisions for active transport to school. *Journal of Transport & Health*. [in press] [Epub: 30 May 2017] DOI: <https://doi.org/10.1016/j.jth.2017.05.006> [Full article](#)

Going Forward

The BEATS Research Team is currently planning and designing extensions of the BEATS Study.

BEATS-R (2018-2020)

The BEATS Rural Study (BEATS-R) will examine active transport to school in adolescents living **in rural Otago** using the published BEATS Study methodology and conceptual framework. This study will examine individual, social, environmental, and policy influences on rural adolescents' transport to school. BEATS-R will generate valuable rural-specific data to inform future interventions for built environment change, education campaigns, and policy development in rural areas.

BEATS-2 (2019-2021)

Collected BEATS Study data provide comprehensive baseline data on adolescents' and parental perceptions of active transport to school in Dunedin. During 2014-2017, several Dunedin neighbourhoods have been undergoing on-road and off-road cycling infrastructure construction, including neighbourhoods of several schools. BEATS-2 will use the original BEATS Study research methodology to examine the effects of the cycling infrastructure construction on active transport to school **in Dunedin** adolescents.

International Symposium in 2017



As a result of the BEATS Study work and collaborations, members of the BEATS Research Team have organized the International Symposium Active Living and Environment: Towards a Healthier and More Sustainable Future (Symposium website: www.otago.ac.nz/active-living-2017/).

The goal of this symposium is to facilitate and grow an international, multidisciplinary and multi-sector dialogue. Symposium themes include **Health, Transportation, Environment** and **Sustainability**.

This symposium has **18 invited speakers** (11 from New Zealand and 7 presenters from overseas including UK, Spain, Australia, Canada, & U.S.A.). The list of **invited speakers** is available online: www.otago.ac.nz/active-living-2017/programme-and-speakers/

Finalized Symposium Program is also available: www.otago.ac.nz/active-living-2017/otago644038.pdf
Registrations are now open: <https://secure-www.otago.ac.nz/conferences/active-living-2017/>

We invite you to join us!

BEATS Study Updates: Sign up for our newsletter

In 2016, we started a quarterly newsletter from the Active Living Laboratory to provide regular updates about our work and the BEATS Study publications. Previous issues of the newsletters are available on the laboratory website: www.otago.ac.nz/active-living/research/publications

Newsletter sign up is available online: www.goo.gl/jtqdAo

Acknowledgments

The BEATS Study is a collaboration between Dunedin Secondary Schools' Partnership, Dunedin City Council and University of Otago. We acknowledge great support and contribution of all members of our research team, advisory board, research personnel (research assistants, students and volunteers), and all participating schools, adolescents, parents, teachers and school principals.



The BEATS Research Team 2016/2017

www.otago.ac.nz/beats