Parental Perceptions Favour Walking Compared to Cycling to Dunedin Secondary Schools:

Preliminary Findings from the BEATS Study

Sandra Mandic, Debbie Hopkins, Enrique García Bengoechea, John Williams, Charlotte Flaherty, Antoni Moore, John C. Spence.

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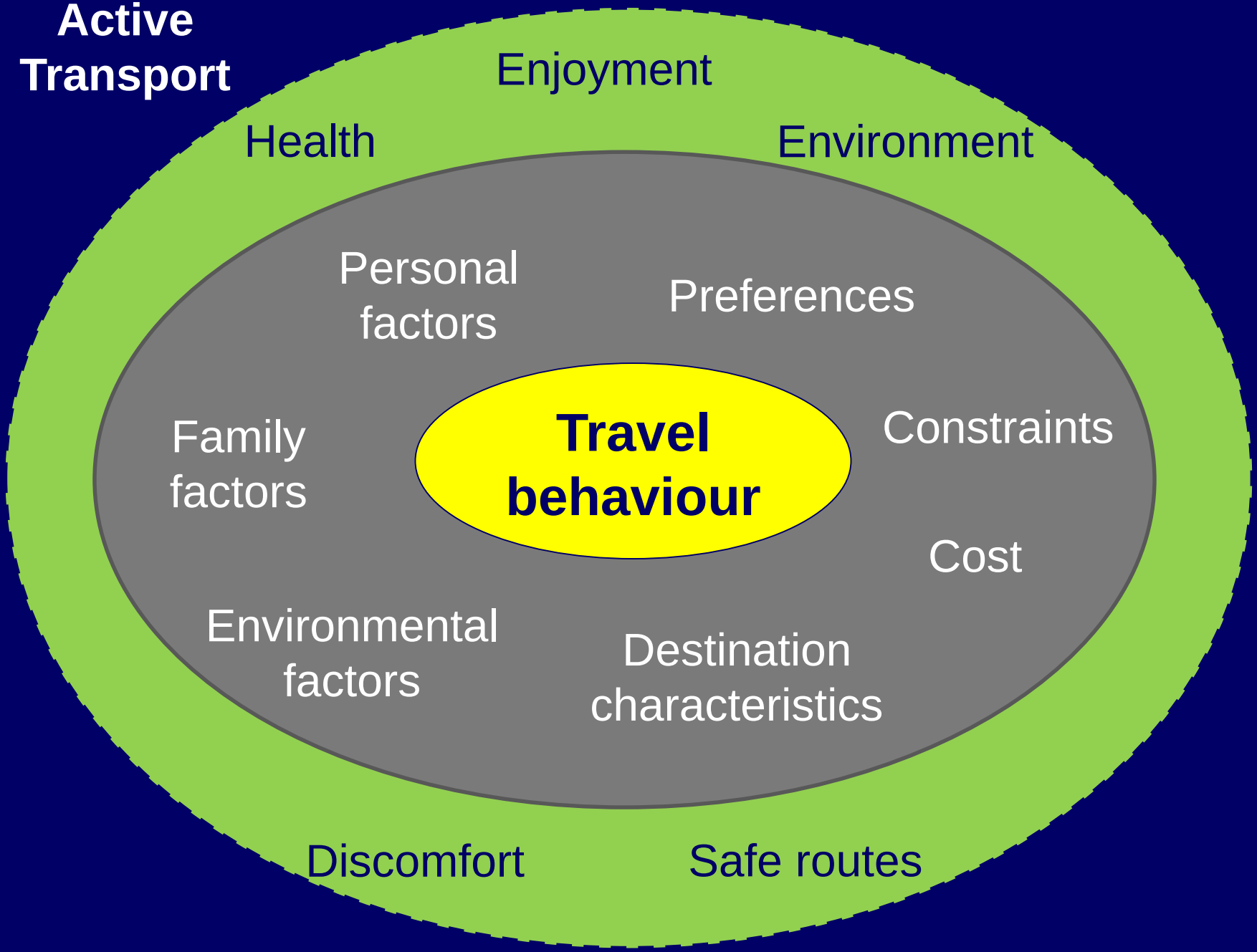

Active Transport
Enjoyment
Health
Environment
Personal factors
Preferences
Family factors
Travel behaviour
Constraints
Cost
Environmental factors
Destination characteristics
Discomfort
Safe routes

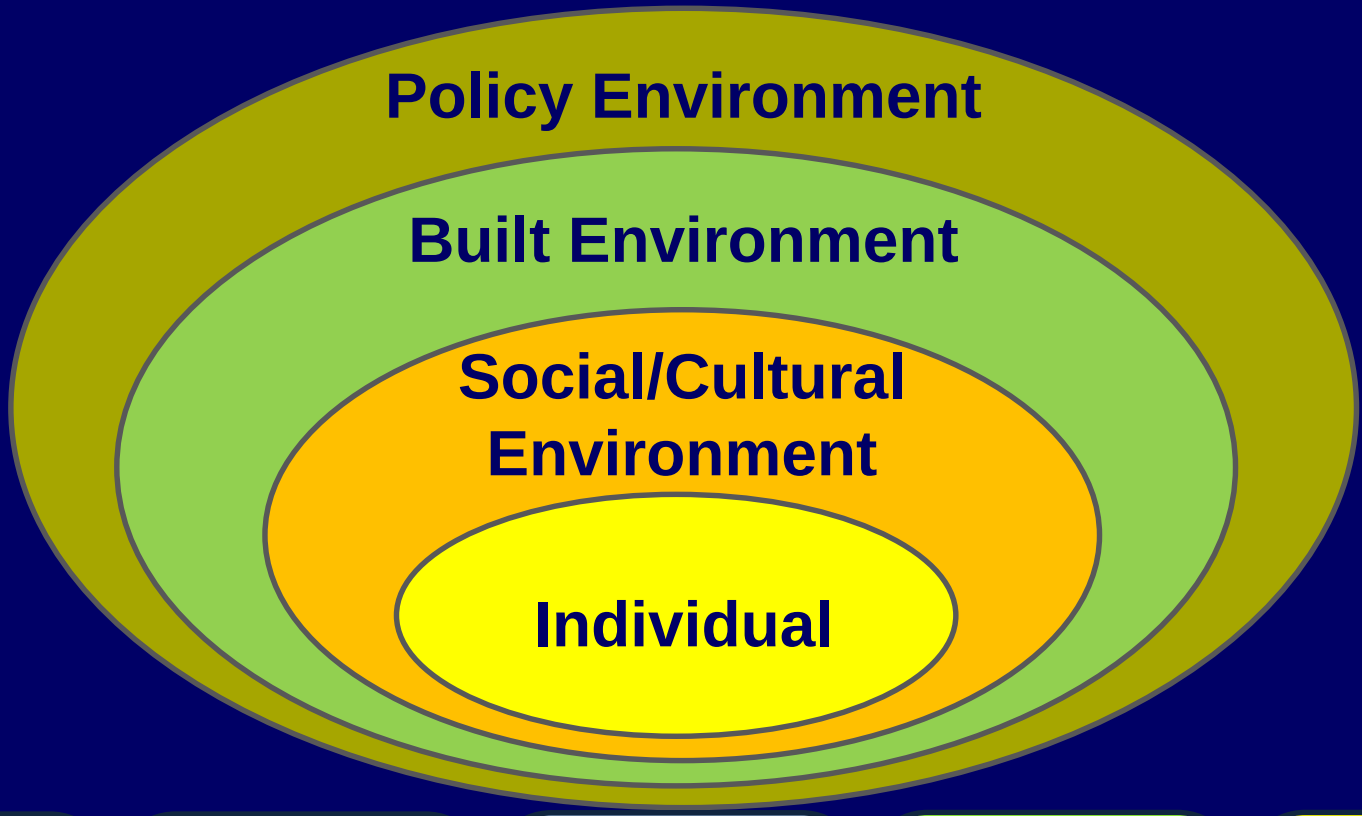
- **The BEATS Study investigates:**
  - **transport to school habits,**
  - **the neighbourhood environment and**
  - **physical activity habits**

  in Dunedin adolescents.

The BEATS Study Poster (271 KB)

Mandic S et al. BMJ Open. 2016; 6:e011196

BEATS Study Framework: Ecological Model for Active Transport



Adapted from Sallis JF et al. *Circulation*. 2012;125:729-737

Mandic S et al. BMJ Open. 2016; 6:e011196

BEATS Study Research Methodology

Adolescents & Parents

Survey

Maps; GIS Analysis

Anthropometry

Physical Activity

School bag weight

Adolescents

Focus groups

Adolescents, Parents, Teachers

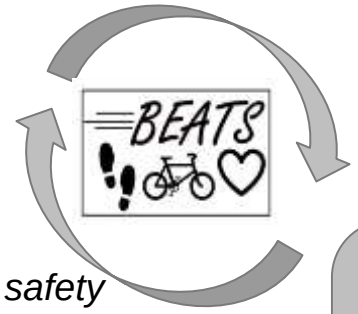
Interviews

School Principals

Mandic S et al. BMJ Open. 2016; 6:e011196

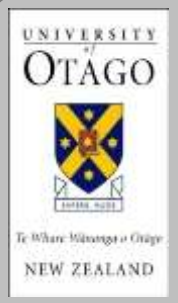
Funding
Facilities
Feedback

Funding (partial)



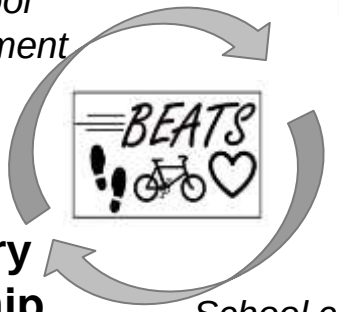
Transport safety
Cycle skills training

University of Otago (Dunedin, New Zealand)
Dunedin Secondary Schools' Partnership
Dunedin City Council
University of Alberta (Canada)
McGill University (Canada)



Multidisciplinary research
Service to government
Service to community
Service to schools

School recruitment



Dunedin Secondary Schools' Partnership

Consultation
Access to schools
Support

School choice report

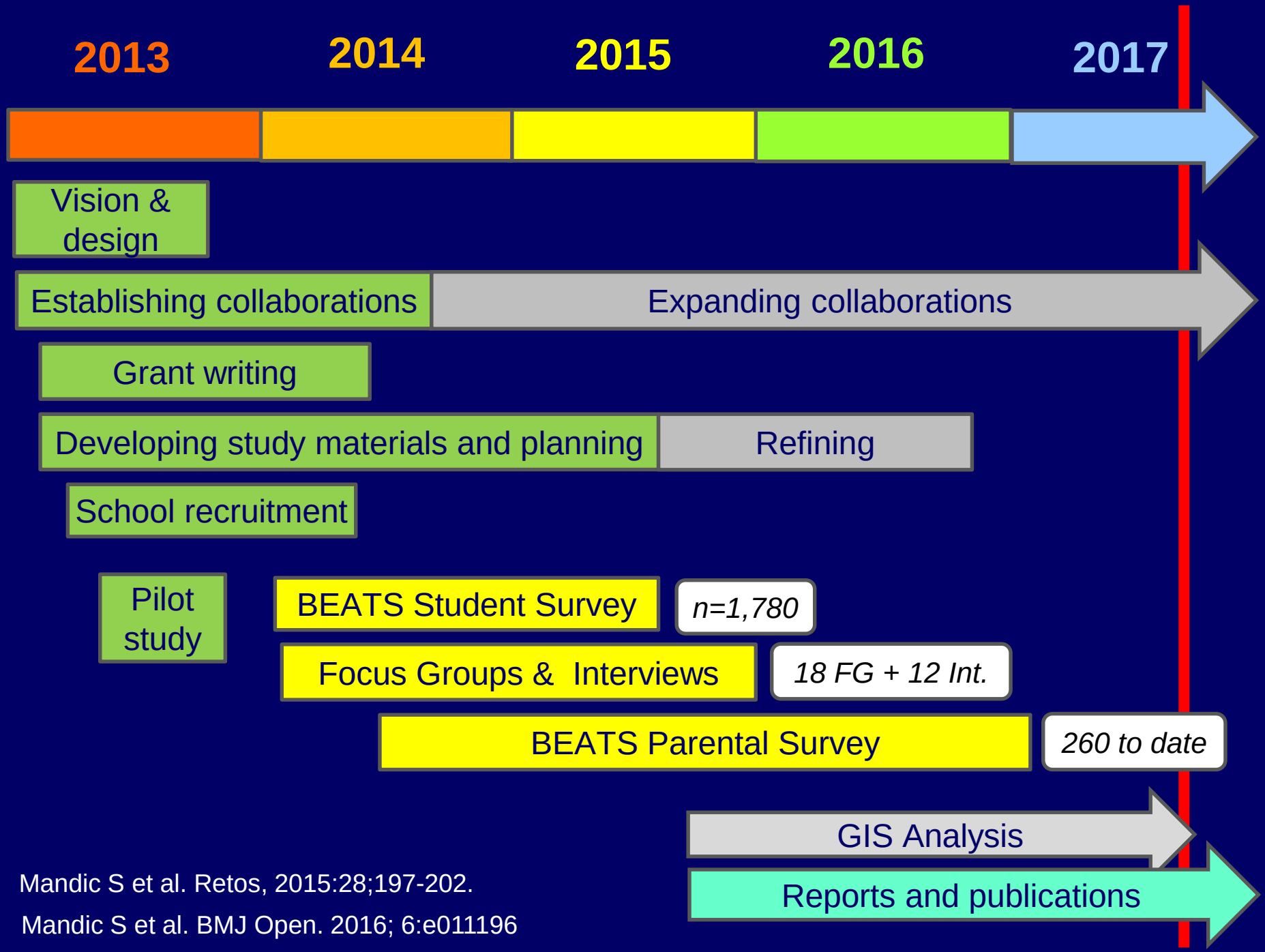
Students
Parents
Teachers
Principal
Lab space
Assistance

Schools

Rewards
Individual school reports

Mandic S et al. BMJ Open. 2016; 6:e011196
Mandic S et al. Retos, 2015:28;197-202.

BEATS Study School Recruitment: 100% (12 schools in Dunedin)



Mandic S et al. Retos, 2015:28;197-202.

Mandic S et al. BMJ Open. 2016; 6:e011196

Still Recruiting for the BEATS Parental Survey

BEATS Study
Built Environment and Active Transport to School

"How do your teens get to school?"

Parents needed for research

As a parent/guardian of a secondary school student, we invite you to complete a 15 to 20 minute online survey.

Enter into a draw to win an iPad or $250 grocery / petrol vouchers.

Sign up and complete survey online: http://goo.gl/aubw4u

For more information contact:
BEATS Study Coordinator | Tel 479 9112
Email beats@otago.ac.nz | Web otago.ac.nz/beats

This project has been reviewed and approved by the University of Otago Human Ethics Committee. Reference 13/203.

STILL RECRUITING

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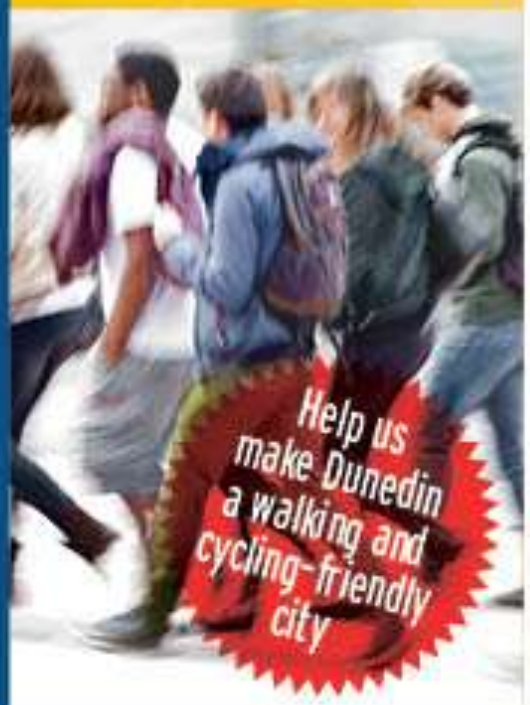
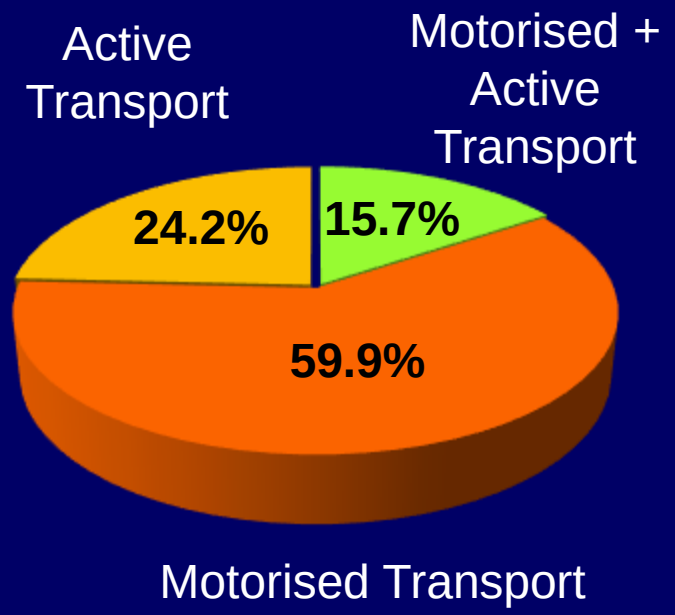


Transport to School Habits in Dunedin Adolescents

Mode	Most of the time / All of the time
Driven by others	48.7%
Walk	**30.4%**
School bus	13.3%
Public bus	6.7%
Driving myself	5.1%
Other	2.1%
Bike *(n=22)*	**1.5%**



76.3% had a bicycle at home
69.2% had 2+ vehicles at home
Distance to school: 6.2±7.4 km

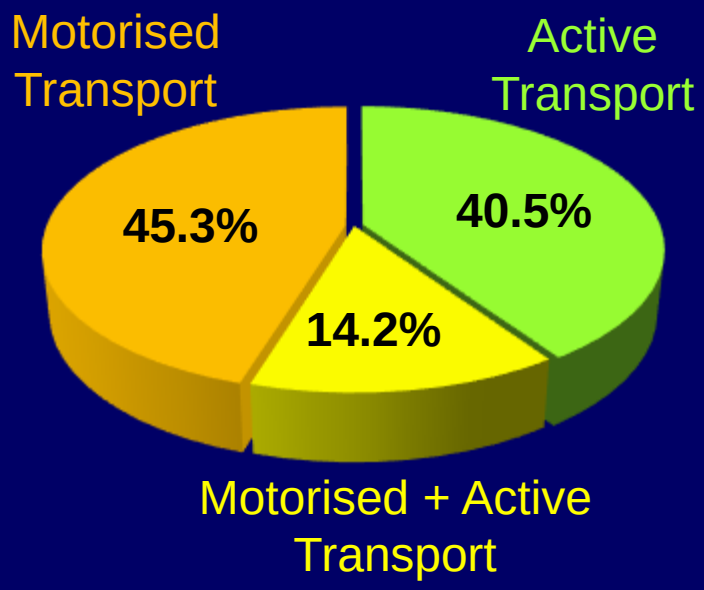
89.9% liked how they travel to school

n=1,476 (boarders excluded)

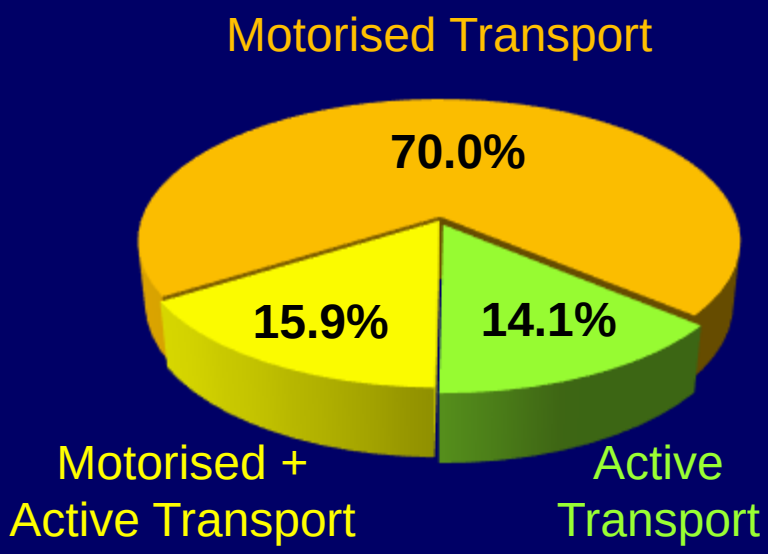
Who Makes a Decision How Dunedin Adolescents Travel to School?

	Response
Adolescents	43.4%
Parents	45.8%
School	3.4%
Other(s)	7.5%

Adolescents' decisions



Parental decisions



BEATS Student Survey
n=1,443 (boarders excluded)

Schools' Representation in the BEATS Parental Survey

113 parents

Living ≤4 km from child's school

Age: 47.6 ± 5.1 years
79.6% Females

77.9% NZ European
8.0% Māori
54.0% Employed full time
45.1% University education

BEATS Parental Survey

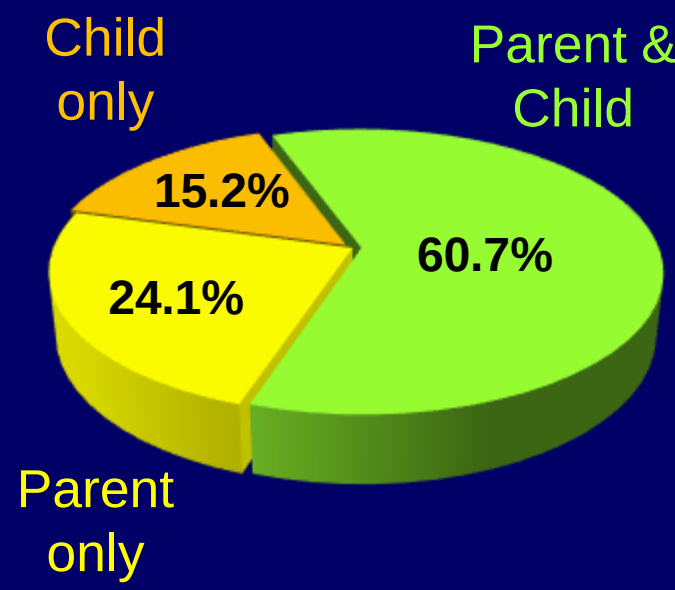
Adolescents' Characteristics (Living ≤4 km from school)

	From BEATS Parental Survey N=113*	*From BEATS Student Survey *N=764*
Age (years)	15.2 ± 1.5	*15.2 ± 1.4*
Male gender (%)	48.7%	*44.6%*
Distance to school (km)	2.1 ± 1.0	*1.9 ± 1.0*
Transport to school		
By car (driven by others) (%)	32.7%	*38.2%*
On foot (%)	50.4%	*50.8%*
By bike (%)	5.3%	*2.4%*

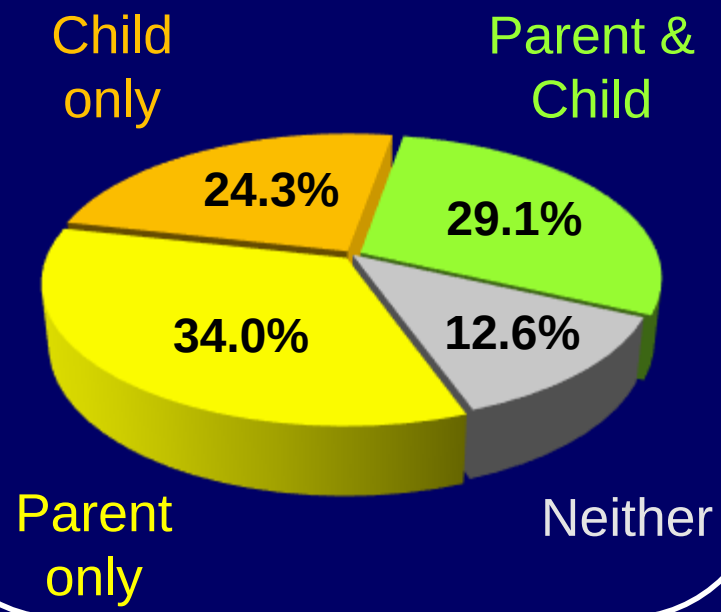
*From all 12 secondary schools in Dunedin

Travel to School Decisions: Parental Perspectives

Who decides how child travels to school?

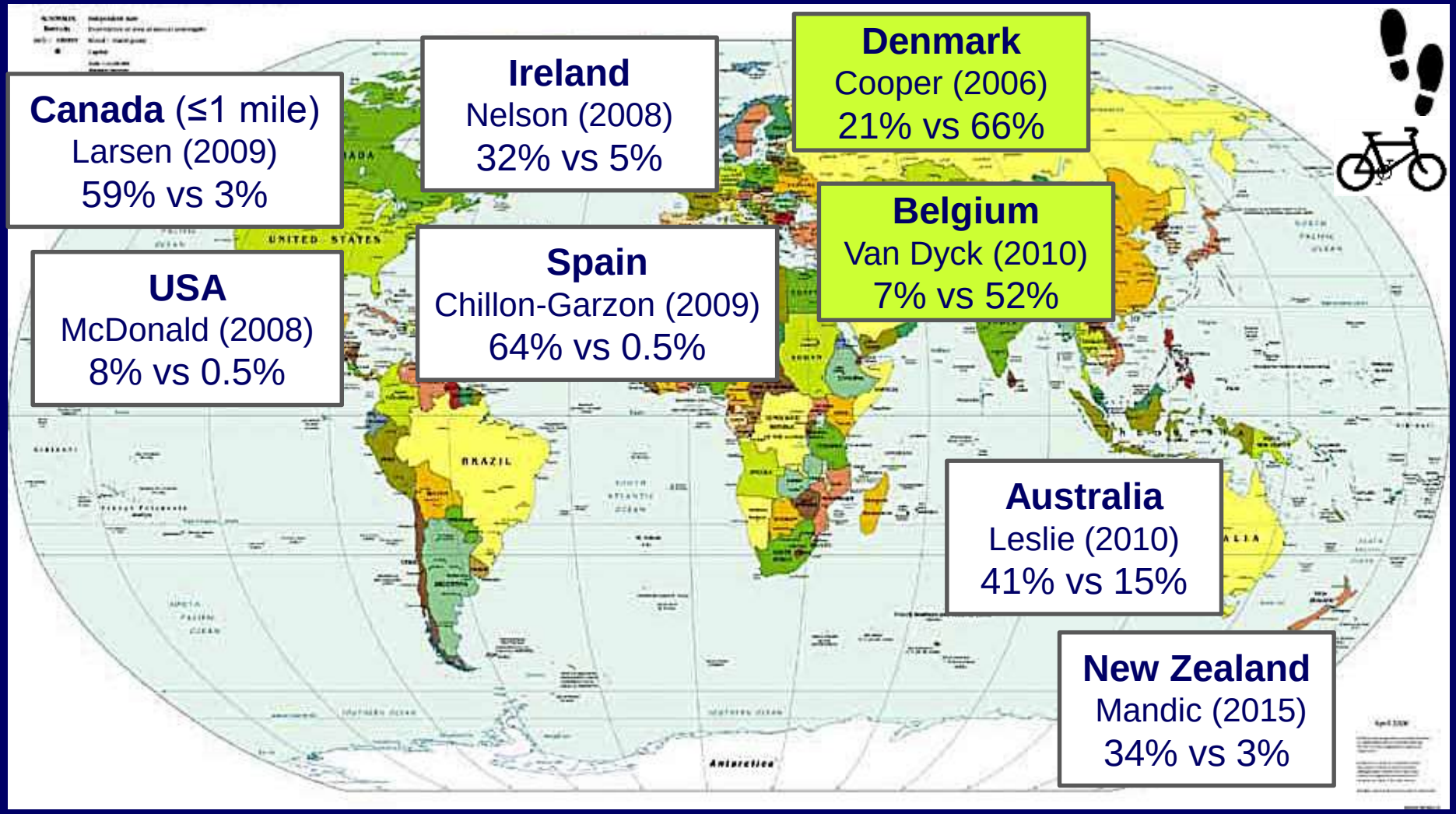


Who is responsible for deciding if a child walks or cycles to school?

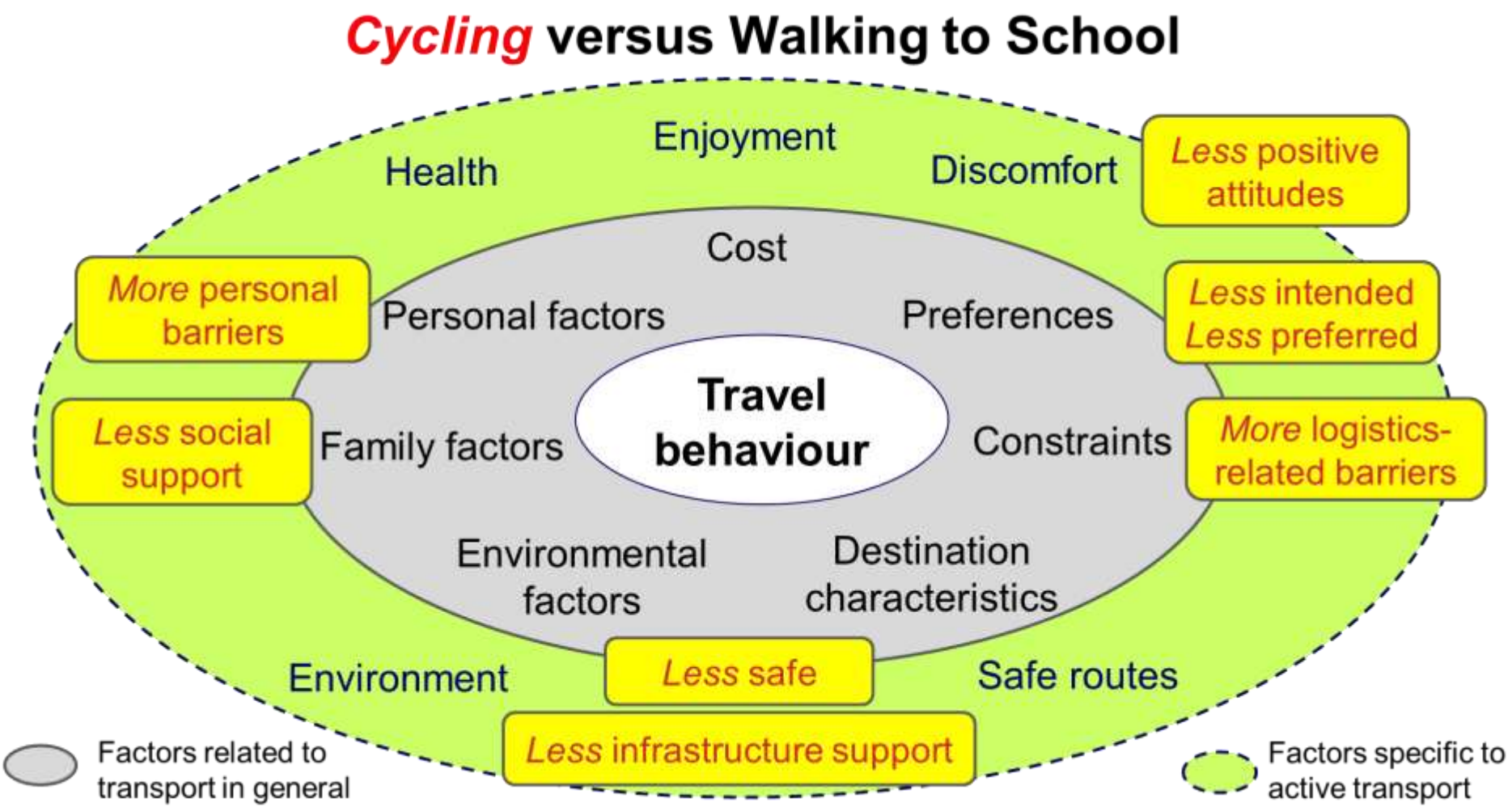


BEATS Parental Survey (n=113)
(living ≤4 km from school)

Walking versus Cycling to School in Adolescents



Adolescents' Perspective



BEATS Student Survey (n=764)
(adolescents living ≤4 km from school)

Mandic S et al. (2016)
Journal of Transportation and Health (in press)

Active Transport: Importance and Neighbourhood Environment

Importance

81.9%* Walking/Cycling **to work** is important 56.1%

90.1%* Walking/Cycling **to school** is important 55.7%

BEATS Parental Survey (n=113)
(living ≤4 km from school)

Neighbourhood Environment

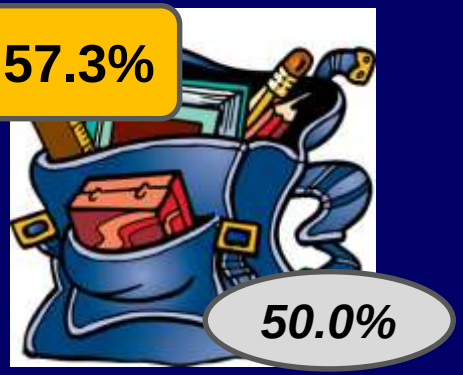
Parents walk or cycle to work

35.5%

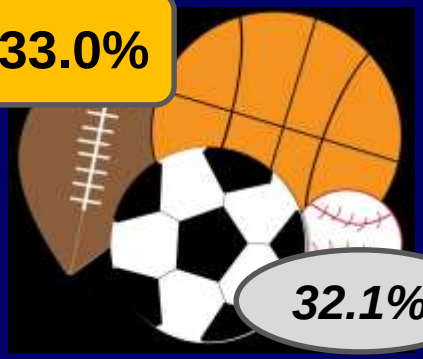
Teenagers walk or cycle to school

70.9%

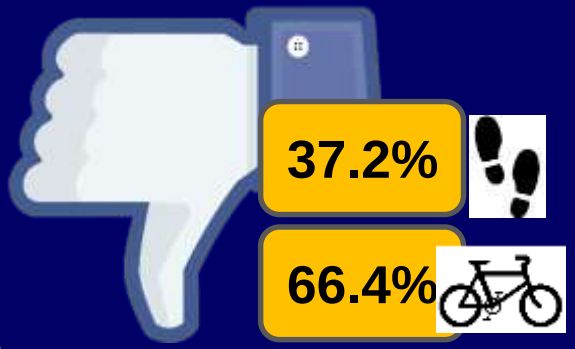
Personal Barriers to Active Transport: Parental Perspective



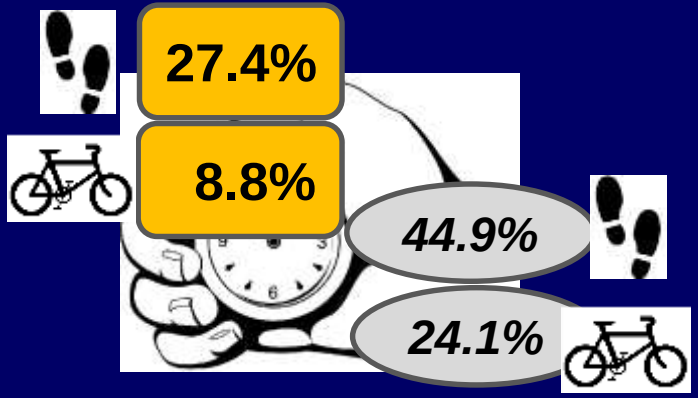
Too much stuff to carry



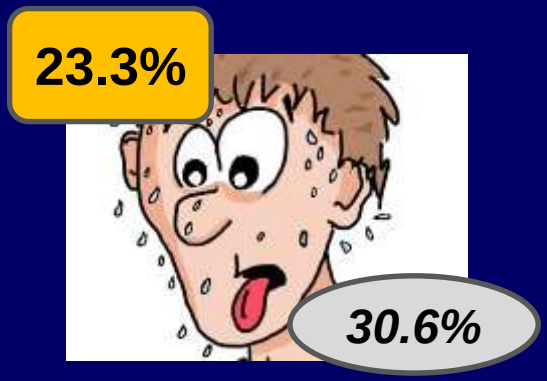
After school schedule



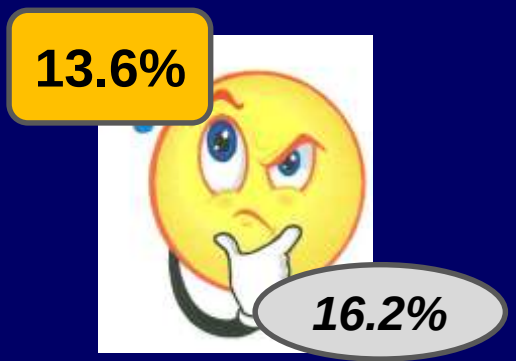
Child does not want/like to



Takes too much time



Sweating



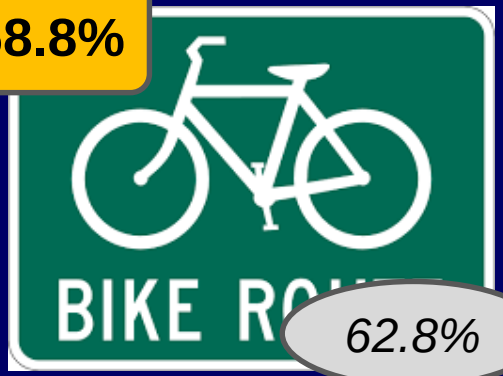
Need for planning

BEATS Student Survey (n=764)
(living ≤4 km from school)

BEATS Parental Survey (n=113)
(living ≤4 km from school)

Perceptions of Route to School for Walking or Cycling

68.8%



62.8%

No bike lanes

68.1%

35.6%

Too much traffic

65.5%

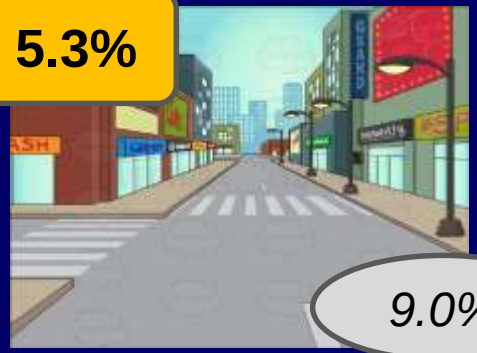
32.4%

Dangerous crossing(s)

60.8%

Too many cars stopping at school

5.3%



9.0%

No footpaths

BEATS Student Survey (n=764)
(living ≤4 km from school)

BEATS Parental Survey (n=113)
(living ≤4 km from school)

Perceptions of Route to School for Walking or Cycling

38.9%

32.9%

Too many hills

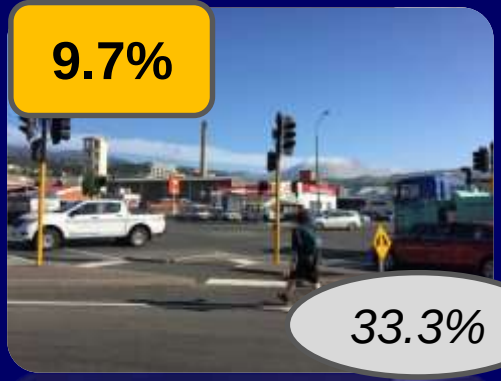
37.9%

55.9%

55.2%

Wet and cold weather

9.7%



33.3%

Boring route

41.6%

Convenience of being driven to school by someone on the way to something else

52.9%

BEATS Student Survey (n=764)
(living ≤4 km from school)

BEATS Parental Survey (n=113)
(living ≤4 km from school)

Walking vs Cycling to School: Social Support


73.8%*	Parental support	29.4%
15.0%*	Parents Discourage	57.8%

*p<0.05 walking vs cycling


38.8%*	Peer support	9.9%
7.1%*	No other teenagers walk/cycle to school	34.5%

Less parental, peer and school support for cycling


37.6%*	School support	15.9%

BEATS Parental Survey (n=113)
(living ≤4 km from school)

Safety and Environmental Barriers

9.6%*	It is not safe for my child to walk/cycle to school	53.9%
5.3%*	No footpaths / bike lanes along the way	68.8%
19.5%*	It is too far for my child to walk/cycle to school	9.7%

*p<0.05 walking vs cycling

Less infrastructure support and more safety concerns for cycling

BEATS Parental Survey (n=113)
(living ≤4 km from school)

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

Hopkins D and Mandic S. (2016) International Journal of Sustainable Transportation (in press)

The Route to School Would Be Better IF…

- Less traffic on the road: 76.5%
- More cycle paths: 62.7%
- Safer road crossings: 61.8%
- Slower traffic speed: 58.7%
- Fewer cars stopping/parking near school: 53.9%
- Improved cycle paths maintenance: 51.0%
- Improved footpaths maintenance: 46.0%

BEATS Parental Survey (n=113)
(living ≤4 km from school)

Independent Mobility: Parental Perspectives

How far is your child aloud to leave home on foot/with the bicycle when he/she is alone?

	On foot 	With a bicycle 
Not allowed	0%	**18.9%**
Up to 500 meters	0.9%	2.7%
500 meters to 1 kilometer	6.9%	6.3%
1 to 3 kilometers	25.5%	8.1%
4 to 5 kilometers	30.4%	17.1%
6 to 10 kilometers	13.7%	13.5%
More than 10 kilometers	23.5%	33.3%

67.5% Child **capable** to ride a bicycle to school

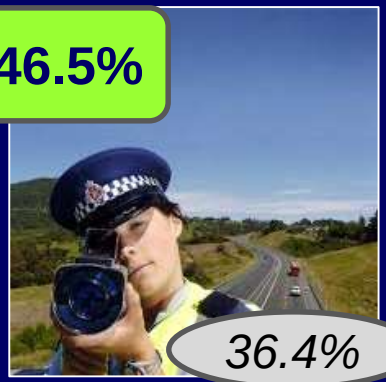
58.6% Child has **very good or excellent cycling skills**

BEATS Parental Survey (n=113) (living ≤4 km from school)

Enablers of Cycling to School

("My child would cycle to school IF...)

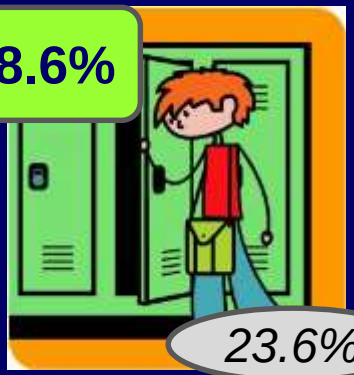
46.5%



36.4%

Slower traffic

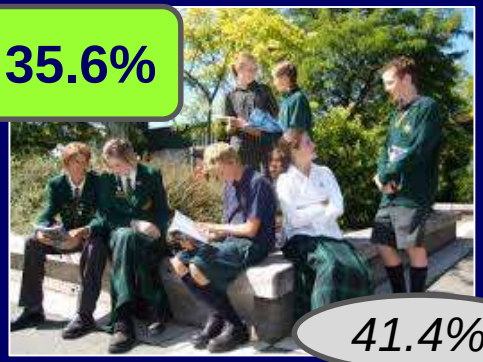
38.6%



23.6%

Locker at school

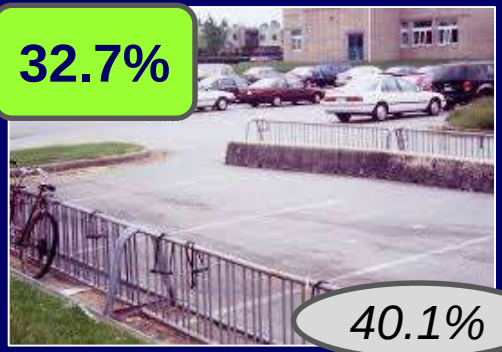
35.6%



41.4%

Cycle-friendly uniform

32.7%



40.1%

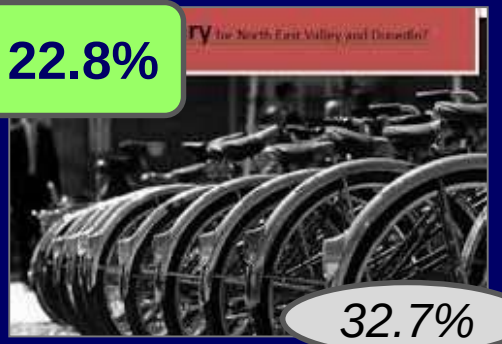
Safer bike storage at school

25.7%

26.2%

Bus bike racks free of charge

22.8%



32.7%

Bike ownership

BEATS Student Survey (n=764)
(living ≤4 km from school)

BEATS Parental Survey (n=113)
(living ≤4 km from school)

Summary: Parental Barriers to Active Transport to School

Convenience of trip chaining

Fewer barriers for walking compared to cycling

Future interventions should address parental barriers for active transport to school (especially for cycling).

BEATS Research Team

Principal Investigator:

Dr Sandy Mandic, School of Physical Education, Sport and Exercise Sciences

Associate Investigators:

Dr Tony Moore, School of Surveying, University of Otago
Dr John Williams, Department of Marketing, University of Otago
Prof John C Spence, University of Alberta, Edmonton, Canada
Dr Enrique García Bengoechea, McGill University, Montreal, Canada
Dr Debbie Hopkins, Oxford University, Oxford, UK
Ms Charlotte Flaherty, Safe and Sustainable Transport Coordinator, DCC

Advisory Board:

Dr Janet Stephenson, Centre for Sustainability: Agriculture, Food, Energy, Environment
Mr Gordon Wilson, Chair, Dunedin Secondary School Principals Association
Mr Andrew Lonie, Recreation Planning Officer, Dunedin City Council (2013-2015)
Ms Ruth Zeinert, Project Manager, Getting Dunedin Active, Dunedin (2013-2016)
Dr Tara Duncan, Department of Tourism, University of Otago
Dr Susan Sandretto, College of Education, University of Otago

Project Coordinators: **Leiana Sloane**, **Emily Brook** (2015); **Ashley Mountfort** (2014)

BEATS Research Students and Research Assistants (2013-2016)

Research Students

- Kek Chiew Ching (Master's)
- Leiana Sloane (Honours)
- Lauren Keaney (Honours)
- Tessa Pocock (Summer research)
- Alex Mintoft-Jones (Summer research)
- Ashley Mountfort (Summer research)

20+ volunteers

Technical and admin support:
Hamish Gould, Nigel Barrett, Kimberley Lamond

Research Assistants

- Judith Rodda, PhD
- Daniela Aldabe, PhD
- Alex Mintoft-Jones
- Tessa Pocock
- Emily Brook, BSc PGDip
- Candice Perring, BPhEd
- Daria Gibbons, BSc
- Hayley Horwood, MPhEd
- Claire Hodge, PGDip
- Angela Findlay, PhD student
- Chelsea Cunningham, BPhEd
- Madeep Kaur, PhD student
- Lizhou Liu, PhD student
- Priya Kannan, PhD student
- Arum Balasundaram, PhD student
- Kareem Diab, PhD
- Manal Aziz, PhD

Symposium themes

Register your interest online: goo.gl/aqulDj

For more information, visit the Active Living website:
otago.ac.nz/active-living/news

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Thank you!