

# Helping Sri Lankan adolescents build healthier habits: a school-based study to prevent obesity and non-communicable diseases

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<b>Registration date</b> 29/08/2025	<b>Overall study status</b> Stopped	<input type="checkbox"/> Protocol
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		<input type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data
		<input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Sri Lanka has made progress in reducing poverty and controlling infectious diseases. However, malnutrition, including both undernutrition and unhealthy eating habits, remains a serious public health issue. Most previous studies have focused on short-term changes in diet among younger children in wealthier countries, often looking only at things like fruit and vegetable intake. This study aims to take a broader approach by testing a school-based programme designed to help adolescents aged 11–14 years make long-term, healthier dietary choices. The goal is to help prevent obesity, type 2 diabetes, and heart disease later in life.

### Who can participate?

Adolescents aged 11–14 years who attend public schools in the Colombo and Gampaha districts of Sri Lanka were intended to be invited to take part. One class from each school would have been selected.

### What does the study involve?

The study was designed to include 244 schools, randomly assigned to one of three groups. All participants, including those in the control group, would receive pre-intervention education on healthier diets. Group A would receive a non-financial reward. Group B would receive both a non-financial reward and a “pre-commitment device” (a tool to help students stick to their goals). Group C would not receive any additional intervention beyond the educational component. Researchers planned to compare changes in diet and health across the groups over time, using statistical methods that account for differences like age, gender, and waist size.

### What are the possible benefits and risks of participating?

The study aimed to help students develop healthier eating habits, which could reduce their risk of chronic diseases in the future. There were no known risks from participating, and the study would have followed procedures to protect students' privacy and wellbeing.

Where is the study run from?

The study was planned to be conducted in public schools located in the Colombo and Gampaha districts of Sri Lanka's Western Province.

When is the study starting and how long is it expected to run for?

The study was cancelled before participant recruitment began due to feasibility challenges caused by the COVID-19 pandemic, civil unrest, and economic crisis in Sri Lanka. These events disrupted school operations and made it impossible to launch the study within the available funding period. We plan to carry out the study when we are able to secure funding and when conditions make it possible to do so. If launched, the study is expected to last for 1 year.

Who is funding the study?

There is currently no active funder for the study. However, the development of the study protocol was supported by a grant from the National Institute for Health Research (NIHR) (UK)

Who is the main contact?

Prof. Marisa Miraldo, [m.miraldo@imperial.ac.uk](mailto:m.miraldo@imperial.ac.uk)

## Contact information

### Type(s)

Principal investigator

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## Additional identifiers

### Clinical Trials Information System (CTIS)

Nil known

### ClinicalTrials.gov (NCT)

Nil known

### Protocol serial number

NIHR grant 132960

## Study information

### Scientific Title

Effectiveness of a school-based behavioural change intervention to prevent obesity and non-communicable diseases among adolescents in Sri Lanka: a cluster-randomised controlled trial protocol

### Study objectives

Evaluate the effectiveness of two school-based behavioural interventions in improving diet quality and diversity as the primary outcome and anthropometric measures (body mass index [BMI] and waist circumference) as secondary outcomes.

### Ethics approval required

Ethics approval required

### Ethics approval(s)

1. approved 25/09/2023, Imperial College Research Ethics Committee (Imperial College London, Room 221, Medical School Building, St Mary's Campus, London, W2 1PG, United Kingdom; +44 (0) 207 594 1862; researchethicscommittee@imperial.ac.uk), ref: 6696130

2. approved 04/04/2024, Ethics Review Committee (Faculty of Medicine, University of Kelaniya, PO Box 06, Thalagolla Road, Ragama, 11600, Sri Lanka; +94 (0)112961267; ercmed@kln.ac.lk), ref: P/12/01/2024

### Study design

Multi-school three-arm cluster-randomized controlled trial

### Primary study design

Interventional

### Study type(s)

Prevention

### Health condition(s) or problem(s) studied

Prevention of obesity and non-communicable diseases

## **Interventions**

A difference-in-differences (DiD) approach will be used to estimate the average treatment effect of two behavioral interventions on nutritional outcomes.

Treatment A: Participants receive non-financial rewards.

Treatment B: Participants receive non-financial rewards plus a “pre-commitment device” (a tool to help students stick to their goals)

Control Group: Participants receive neither intervention.

All groups receive a pre-intervention nutritional education program.

Sample size: 2,442 participants per group (total: 7,326). Treatment duration: 6 weeks. Follow-up measurements: Week 7 (post-treatment), Month 6, Month 9, and Month 12. Baseline data: Collected immediately before the intervention begins.

Treatment is assigned at the class level, and the analysis will adjust for clustering at that level, as well as individual fixed effects and baseline covariates, including but not limited to age, gender, and waist circumference.

## **Intervention Type**

Behavioural

## **Primary outcome(s)**

1. Dietary quality measured using 24-hr dietary recall at Baseline + follow-up measurements: Week 7 (post-treatment), Month 6, Month 9, and Month 12
2. Dietary diversity measured using dietary diversity tool at Baseline and weekly between Weeks 1-9

## **Key secondary outcome(s)**

1. BMI calculated using weight and height measurements, which are measured as follows. Height will be measured in a standing position, barefoot, using a Shorr Board portable stadiometer, recorded to the nearest 0.1 cm. Weight will be measured using a digital scale, recorded to the nearest 0.1 kg; participants will wear light clothing and no shoes. Measured at baseline, Week 7 (post-treatment), Month 6, Month 9, and Month 12.
2. Waist circumference measured using an inelastic tape measure, recorded to the nearest 0.1 cm. Measured at baseline, Week 7 (post-treatment), Month 6, Month 9, and Month 12.
3. Urinary biomarkers. Global metabolite profiling, sodium, potassium and nitrogen profiles will be obtained through the urine samples. The samples will be used for whole spectra analysis using NMR spectroscopy. Measured at baseline, Week 7 (post-treatment), Month 6, Month 9, and Month 12.
4. Nutritional literacy measured using the Healthy Diet Knowledge Assessment questionnaire at baseline, Week 7 (post-treatment), Month 6, Month 9, and Month 12.

## **Completion date**

31/08/2025

## **Reason abandoned (if study stopped)**

The study was cancelled before participant recruitment began due to feasibility challenges caused by the COVID-19 pandemic, civil unrest, and economic crisis in Sri Lanka. These events

disrupted school operations and made it impossible to launch the study within the available funding period. We plan to carry out the study when we are able to secure funding and when conditions make it possible to do so. If launched, the study is expected to last for 1 year.

## Eligibility

### Key inclusion criteria

School inclusion criteria:

1. Public institutions within Colombo or Gampaha
2. Have classes with adolescents aged 11–14 years
3. Have children with South Asian ancestry

Class/participant inclusion criteria:

Aged 11-14 years

### Participant type(s)

Learner/student

### Healthy volunteers allowed

No

### Age group

Child

### Lower age limit

11 years

### Upper age limit

14 years

### Sex

All

### Key exclusion criteria

School exclusion criteria:

1. Located within a 3 km buffer zone of ongoing or planned community intervention sites, to prevent potential overlap of intervention impacts
2. Do not provide institutional consent

Participant exclusion criteria:

1. Have cancer or another serious illness expected to reduce life expectancy to less than 12 months
2. Have parents who are unable or unwilling to give consent
3. Are themselves unable or unwilling to give assent
4. Are unable to provide answers

### Date of first enrolment

01/01/2024

### Date of final enrolment

31/01/2024

## Locations

### Countries of recruitment

Sri Lanka

### Study participating centre

Full list to be uploaded at a later date

Sri Lanka

tbd

## Sponsor information

### Organisation

Imperial College London

### ROR

<https://ror.org/041kmwe10>

## Funder(s)

### Funder type

Other

### Funder Name

To be determined. Trial was cancelled due to feasibility challenges arising from the COVID-19 pandemic, civil unrest, and economic crisis in Sri Lanka. These circumstances led to school closures and logistical barriers that prevented us from initiating recruitment and intervention delivery within the current funding cycle. We are searching for a new funder.

## Results and Publications

### Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study will be available upon request from Marisa Miraldo (m.miraldo@imperial.ac.uk)

### IPD sharing plan summary

Available on request