

DIGESTIVE WELLNESS FOUNDATION

Section 8 charitable company | CIN U86900MR2026NPL475001

NSCOPS-2026

Nashik School Childhood Obesity and body composition Prevalence Study

Protocol Summary

QUICK FACTS

Study type	Cross-sectional, school-based, observational research study
Population	Approximately 2,400 children aged 11 to 15 years
Setting	Ten schools across Nashik city, sampled to represent the city's socioeconomic and educational diversity
Primary Investigator	Dr. Sandeep Sabnis, Director, Department of Minimally Invasive and Digestive Surgery, Ashoka Medcover Hospital, Nashik
Co-Principal Investigator	Dr. Ravi Sonawane, MD, Head of Department of Paediatrics, MVP's Vasant Rao Pawar Medical College, Nashik
Institutional sponsor	MVP's Vasant Rao Pawar Medical College, Nashik (Institutional Ethics Committee oversight)
Funding entity	Digestive Wellness Foundation (DWF), with corporate and community partners
Planned data collection	June through August 2026

1. WHY THIS STUDY

Childhood and adolescent obesity has been documented as a rising clinical and public health concern in India for over two decades. The published prevalence data, however, comes almost entirely from metropolitan cities — Mumbai, Delhi, Chennai, Bengaluru, Hyderabad, Pune, Kolkata. There is no published prevalence data on adolescent obesity and body composition from any Tier II Indian city, including Nashik.

This is a real evidence gap. The dietary, lifestyle, and screen-time changes driving paediatric obesity in metropolitan India are equally present in Tier II cities, but the population, school systems, and family environments are substantively different. Clinical guidelines, school health policy, and public-health interventions designed using metropolitan data may not generalise. NSCOPS-2026 is designed to produce the first systematic prevalence and body composition data from a Tier II Indian city, beginning with Nashik.

The study also addresses a parallel concern. BMI alone is an inadequate measure of metabolic risk in adolescents, particularly in South Asian populations where the phenotype of normal BMI with elevated body fat percentage — sometimes called Thin Outside Fat Inside (TOFI) — is well documented. NSCOPS-2026 therefore measures both anthropometric variables (height, weight, BMI, waist circumference) and direct body composition (body fat percentage, visceral fat, skeletal muscle mass) using bioelectrical impedance.

2. STUDY POPULATION AND SETTING

Approximately 2,400 students aged 11 to 15 years, drawn from ten schools selected to represent the educational and socioeconomic diversity of Nashik city. The school sample is structured across:

Geographical zones: at least one participating school from each of Nashik's principal civic zones (East, West, Cidco, Panchavati, Old Nashik / Central).

Educational categories: a mix of state government schools, government-aided schools, and private unaided schools.

Medium of instruction: schools delivering instruction in Marathi, Hindi, and English.

Socioeconomic representation: a deliberate spread from schools primarily serving lower-income families to schools serving higher-income families.

Schools are not named in this public summary while the study is under formal IEC review. Once the Institutional Ethics Committee at MVP's Vasant Rao Pawar Medical College has approved the protocol and final school MOUs are signed, the participating school list will be made publicly available.

3. WHAT WILL BE MEASURED

Each participating child is assessed on a single school-day visit by the study team:

Anthropometric measurements

Height, weight, body mass index (BMI), waist circumference, and waist-to-height ratio.

Cardiovascular measurement

Blood pressure (systolic and diastolic), measured using age- and arm-circumference-appropriate cuffs.

Body composition

Body fat percentage, visceral fat level, skeletal muscle mass, and segmental analysis (separate readings for trunk, arms, legs), measured using a calibrated InBody 380 multi-frequency bioelectrical impedance analyser. To preserve universal body composition assessment for all 2,400 participants — including on heavy-volume school visits — a second InBody 380 is rented for the four to five highest-throughput measurement days.

Lifestyle questionnaire

A short, validated, bilingual (Marathi and English) self-administered questionnaire covering food habits, physical activity, screen time, sleep duration, and a brief indicator of family history of metabolic disease. Questionnaire translation has been reviewed for cultural and linguistic appropriateness in the Nashik context.

4. PRIMARY AND SECONDARY OUTCOMES

Primary outcome

Prevalence of overweight and obesity among Nashik adolescents aged 11 to 15 years, defined using the Indian Academy of Paediatrics (IAP) age- and sex-specific BMI cut-offs.

Secondary outcomes

Prevalence of the TOFI phenotype, defined as BMI below the 85th percentile combined with body fat percentage at or above 30 per cent in boys and 35 per cent in girls.

Prevalence of central adiposity using a waist-to-height ratio cut-off of 0.5.

Prevalence of elevated blood pressure using age- and sex-specific cut-offs from the Indian paediatric reference data.

Variation in the above prevalences across school socioeconomic strata, sex, and age band.

Associations between lifestyle questionnaire findings (screen time, physical activity, sleep duration) and the body composition outcomes.

5. WHAT PARTICIPATING FAMILIES RECEIVE

NSCOPS-2026 is structured so that every participating child receives direct, individual benefit independent of any aggregate study findings.

Personal Child Health Report

Each participating child receives a personalised Child Health Report containing their individual measurements, body composition analysis, and three personalised health recommendations expressed in plain language for the family. The report is delivered in soft copy via WhatsApp within 24 hours of measurement and as a physical laminated card via the school within 72 hours.

Subsidised paediatric consultation

Children with measurements suggestive of significant metabolic concern are offered subsidised paediatric consultation at concessional, below-market rates. Primary consultation pathway is through the Department of Paediatrics at MVP's Vasantrao Pawar Medical College; secondary pathway through Ashoka Medicover Hospital.

School-level reports

Each participating school receives an aggregate, anonymised school-level report comparing the school's findings to the city-wide picture. School reports are made available for the school's internal health planning and are not published individually in any public communication.

6. ETHICAL CONSIDERATIONS

The study protocol is currently under formal review at the Institutional Ethics Committee (IEC) of MVP's Vasantrao Pawar Medical College, Nashik. Data collection will not commence until full IEC approval is granted. Following IEC approval, the study will be registered with the Clinical Trials Registry of India (CTRI) before the first participant is enrolled.

Consent and assent are taken in three layers: written informed consent from a parent or legal guardian; written assent from the participating child; and an explicit school-level memorandum of understanding with the school's principal. Consent and assent forms are bilingual (Marathi and English). Children may decline to participate or withdraw at any point with no consequence to their school standing.

Privacy and data protection have been designed in: each participant is assigned a study identifier at the point of measurement; identifiable information is held separately under restricted access by the Principal Investigator's team; and all publications and aggregate reports use anonymised data only. Individual measurement data is not shared with the school, with employers, with insurance entities, or with any third party.

7. METHODOLOGICAL DISCIPLINE AND QUALITY CONTROL

Several measures are built into the study design to ensure data quality:

Calibration: the InBody 380 device is calibrated against reference standards daily, with a tolerance of plus or minus one per cent. Calibration logs are maintained for the duration of data collection.

Inter-observer agreement: measurement personnel are trained in a standardised one-day exercise prior to school visits, with intraclass correlation coefficients calculated and documented.

Standardised school-day protocol: each school visit follows a fixed protocol covering set-up, consent verification, measurement sequence, data entry, and AV-supported group dietary education for participating children.

Data infrastructure: a custom QR-code-based data reconciliation system links anthropometric data, body composition data, questionnaire data, and the personalised Child Health Report generation pipeline. The data system has been built to allow reproducible re-analysis and has been documented in a separate methods companion paper planned for submission to a peer-reviewed journal.

8. TIMELINE

Phase	Activity
April–May 2026	IEC review process; CTIRI registration preparation; team training and standardisation; school MOUs
Late May 2026	Anticipated IEC approval window; CTIRI registration
Early June 2026	Pilot week at one participating school
Mid-June – July 2026	Phase 1 data collection (Schools 2 to 6)
August 2026	Phase 2 data collection (Schools 7 to 10)
September 2026	Data analysis; clinical follow-up for flagged children; School Report Cards prepared
October 2026	Manuscript preparation; methods companion paper finalised
November 2026	Findings presented at Obesity 360 CME, 21–22 November, Nashik; manuscript submission to peer-reviewed journal

9. INDICATIVE BUDGET

The total estimated study budget is approximately Rs. 4,56,500 to Rs. 4,66,500, inclusive of Rs. 40,000 to Rs. 50,000 for the rental of a second body composition machine on heavy-volume measurement days. The per-participant cost works out to approximately Rs. 192 for a complete

assessment, personalised Child Health Report, and contribution to the aggregate analytical output. The Foundation contributes in kind through the time of the Principal Investigator's team and Crescent Clinic infrastructure; sponsoring partners contribute the cash component.

Sponsorship is welcome from CSR partners, healthcare-aligned corporates, and philanthropic donors. Sponsorship may be partial (one or more components) or full. All sponsorship is acknowledged in the published manuscript, in the School Report Cards, and on the DWF Annual Report.

10. PLANNED OUTPUTS

Personal Child Health Reports for approximately 2,400 children

Ten anonymised, school-level aggregate reports

One peer-reviewed primary manuscript reporting prevalence and body composition findings

One peer-reviewed methods companion paper documenting the digital data infrastructure

Findings presented at Obesity 360 CME, Nashik, 21 to 22 November 2026, and at relevant national paediatric and obesity meetings in 2027

Data and methods made available to support the design of NSCOPS-2027, a planned longitudinal follow-up study of the same cohort

11. INVESTIGATOR TEAM

Principal Investigator: Dr. Sandeep Sabnis, Director, Department of MIS and Digestive Surgery, Ashoka Medicover Hospital, Nashik. MMC Reg. 2004/02/0882.

Co-Principal Investigator: Dr. Ravi Sonawane, MD (Paediatrics), Head of Department of Paediatrics, MVP's Vasantrao Pawar Medical College, Nashik.

Study Coordinator: Dr. Hemant Bagul, Ashoka Medicover Hospital, Nashik.

Co-Investigator (parent and family education sessions): Dr. Shraddha Sabnis, Consultant Obstetrician and Gynaecologist, Ashoka Medicover Hospital, Nashik.

Consultant Dietician and Biostatistician: to be named on IEC submission.

Tools and Technical Infrastructure: Ms. Arya Sabnis (Student Research Associate, no clinical role; engineering and digital infrastructure work).

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This Protocol Summary is a public-facing derivative of the formal NSCOPS-2026 Protocol Synopsis (v2.6) submitted to the Institutional Ethics Committee at MVP's Vasant Rao Pawar Medical College, Nashik. The full protocol is available to institutional partners and regulatory reviewers on request.