

# Design and methods of a cluster randomised controlled trial addressed to investigate the effects of a school-based intervention on pediatric obesity and other associated outcomes among disadvantaged communities

<b>Submission date</b> 14/03/2025	<b>Recruitment status</b> Recruiting	<input type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
<b>Registration date</b> 19/03/2025	<b>Overall study status</b> Ongoing	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 13/03/2026	<b>Condition category</b> Nutritional, Metabolic, Endocrine	<input type="checkbox"/> Individual participant data <input checked="" type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Paediatric obesity, a multi-factorial issue, significantly impacts children's biopsychosocial and economic status, particularly those from lower socio-economic backgrounds, thereby exacerbating social health inequalities in Spain.

Obesity preventive interventions should be multilevel, multicomponent, led by a multidisciplinary team, integrated, equitable, person-centred, sensitive to social inequalities, and grounded in a strong psychosocial theoretical basis.

The SEISMO study aims to evaluate the effectiveness of a Multicomponent, Comprehensive, and Multilevel (MCM) school-based intervention, with follow-up for children until adulthood.

### Who can participate?

The SEÍSMO study is a school-based intervention aimed at obesity prevention, involving two stages: innovation and development (I+D) and a multicomponent, comprehensive, multilevel intervention (MCM). The SEÍSMO I+D stage includes children aged 6-12 years and the SEÍSMO MCM stage will recruit children aged 3–12 years.

### What does the study involve?

The SEISMO school-based intervention aims to improve healthy lifestyles, resilience, academic performance, and reduce obesity among children. It has two stages:

**SEÍSMO I+D Stage (2020-2024):** This stage involved creating and testing various modules like physical education, family involvement, healthy spaces, water promotion, and healthy eating in schools.

**SEÍSMO MCM Stage (2024-2034):** This stage will implement the tested modules over 6 years, focusing on promoting healthy habits, engaging the educational community, and improving

school policies and environments.

The intervention uses a metaphor called the Healthy Galaxy to motivate children and families to adopt healthy lifestyles.

What are the possible benefits and risks of participating?

Potential benefits are associated with improved participant lifestyle, adoption of health-promoting schools to facilitate lifestyle, improved academic performance, individual resilience, and reduced incidence of paediatric obesity following the MCM SEÍSMO intervention. There is a risk from weight-based assessment that evidence suggests may exacerbate obesity numbers, so we aim to incorporate the variable of weight bias internationalization to study and minimise weight stigma through the intervention and incorporate other variables of interest into the assessment protocol to robustly assess the evolution of obesity away from weight-centrism.

Where is the study run from?

SEÍSMO I+D stage addressed 120 Spanish schools prioritizing these are located in disadvantaged communities.

SEÍSMO MCM stage will address 56 Catalan (Spain) schools located in disadvantaged communities.

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

The I+D stage baseline was conducted in 2021-2024 and the SEÍSMO MCM enrolled all the schools in three waves (2024-2025, 2025-2026, and 2026-2027). In both stages, it will be followed up at 18 years old. The final assessment of the last participant who reaches the age of 18 years old will be in December 2041.

Who is funding the study?

The SEÍSMO study is financially supported by Barça Foundation, BNP Paribas Cardif, Aigües de Barcelona & Agbar, Ajuntament de Barcelona, Agència de Salut Pública de Barcelona (ASPB), Ajuntament de Pineda de Mar, Ajuntament de Balaguer, Ajuntament de Lleida, and Grupo IFA.

Who is the main contact?

PhD Santiago Felipe Gómez Santos, [sgomez@gasolfoundation.org](mailto:sgomez@gasolfoundation.org)

## Contact information

### Type(s)

Public, Principal investigator

### Contact name

Dr Santiago Felipe Gómez Santos

### ORCID ID

<https://orcid.org/0000-0003-3352-2510>

### Contact details

Jaume I Street 26-28 Local first floor

Sant Boi de Llobregat, Barcelona

Spain

08830

+34 (0)938346600

[sgomez@gasolfoundation.org](mailto:sgomez@gasolfoundation.org)

**Type(s)**

Scientific

**Contact name**

Mr Genís Según Mercader

**ORCID ID**

<https://orcid.org/0000-0003-3035-1744>

**Contact details**

Jaume I Street 26-28 Local first floor

Sant Boi de Llobregat, Barcelona

Spain

08830

+34 (0)938346600

[gsegun@gasolfoundation.org](mailto:gsegun@gasolfoundation.org)

**Additional identifiers****Clinical Trials Information System (CTIS)**

Nil known

**Protocol serial number**

C.I. PIC-255-20

**Study information****Scientific Title**

A cluster randomised controlled trial of a School-based Educational Intervention to Stimulate Motivation towards pediatric Obesity prevention among children 3 to 12 years old: the SEÍSMO study

**Acronym**

SEÍSMO

**Study objectives**

It is hypothesised that multi-component, comprehensive, multi-level school-based interventions with collaborative approaches that empower the target community towards becoming healthy-promoting schools will have a greater impact on psychological resilience, psychosocial determinants, weight stigma, healthy lifestyles, quality of life, incidence of obesity, academic performance, and weight status (body mass index z-score [zBMI] and waist-to-height ratio [WHtR]).

**Ethics approval required**

Ethics approval required

**Ethics approval(s)**

approved 22/10/2020, CEIm Fundació Sant Joan de Déu (Edifici Docent Sant Joan de Déu - c. Santa Rosa, 39-57, 3ª planta, Esplugues de Llobregat, Barcelona, 08950, Spain; +34 (0)93 600 97 51; info@fsjd.org), ref: C.I. PIC-255-20

## **Study design**

School-based cluster randomized controlled trial

## **Primary study design**

Interventional

## **Study type(s)**

Efficacy, Prevention, Quality of life

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

Pediatric obesity

## **Interventions**

Current interventions as of 13/03/2026:

The SEISMO school-based intervention was conceptualized to positively impact healthy lifestyles, psychological resilience, weight stigma, academic performance, quality of life, the incidence of obesity, zBMI and WHtR.

The creation of the SEÍSMO intervention methodology has been organized in two stages: 1) SEISMO innovation and development (I+D) stage from 2020 to 2024; 2) SEÍSMO multicomponent, comprehensive, and multilevel (MCM) stage expected from 2024 to 2041.

### **1. 1. The SEÍSMO first-stage intervention (I+D)**

The original intervention was implemented over four editions (1st – 2020/2021; 2nd – 2021/2022; 3rd – 2022/2023; 4th – 2023/2024) lasting 12 months each. The periods between each academic year were dedicated to creating new intervention modules that have progressively been incorporated into the method and piloted to the entire educational community: children, teaching staff, parents and/or legal guardians, non-teaching staff, and school managers. The 1st edition served to pilot the physical education module. The 2nd edition also included the family module. In the 3rd edition the healthy spaces module was added to the physical education and family modules. Finally, during the 4th edition, the intervention method was rounded out with the additional incorporation of the water promotion module and the healthy eating and sustainable school's canteen module.

### **2. The SEÍSMO second-stage intervention (MCM)**

All the original intervention modules are currently integrated into the SEÍSMO second-stage intervention. The new intervention will run in each school for a minimum of six consecutive academic years, and will be implemented by school staff and coordinated by the multidisciplinary Gasol Foundation team that will promote the implementation of 50 specific action groups structured in three pillars:

A) Competencies pillar: to promote healthy habits as a comprehensive part of primary school's curricular project that is aligned with the most updated Spanish educational law.

It includes eight specific actions organized in: i) five types of activities directly addressed to children and their families, and ii) three types of resources to reinforce these activities.

B) Educational community pillar: to engage the entire educational community towards adopting the health-promoting schools' approach.

It includes 20 specific actions organized in three action types: i) the activities and resources to consolidate a motor group, ii) the formation and training plan addressed at the entire teaching staff to ensure awareness and skills towards the promotion of a healthy lifestyle, and iii) the communication plan to engage and inform the entire educational community about the achievements in the creation of a health-promoting school.

C) Policy, environment, and cultural pillar: to lead and innovate the healthy governance of schools by enhancing and strengthening school policies, environment, and culture.

It includes 22 specific actions organized into three types: i) the activities and resources to complete a comprehensive diagnosis, ii) the activities and resources to co-create, prioritize, and define the long-term health-promoting school action plan, and iii) the resources to implement and evaluate this action plan.

The main goal is to establish school governance mechanisms to transform them into health-promoting schools. This transformation involves developing a school-based action plan to promote healthy lifestyles and psychological resilience through an equity-orientated approach. It seeks to address multiple intersecting inequality axes, such as gender, socioeconomic status, migration status, and physical condition, which contribute to unequal exposure to health risks and weight stigma. The plan incorporates school-level strategies and protocols aimed at reducing weight bias and mitigating social pressures related to body weight, thereby addressing weight stigma as both a social determinant of health and a barrier to effective obesity prevention.

The full intervention will be progressively offered to the intervention schools. A total range of 1326 - 2178 actions and 289.75 - 363.75 implementation hours will be promoted. Specifically, 9 specific groups of actions are directly addressed to children and 41 are indirect.

All the activities and resources addressed for children are adapted according to the child's developmental stage and the curricular standards in three age ranges: i) initial grades (6-7 years); ii) medium grades: 8-9 years; and iii) upper grades: 10-12 years.

The four theoretical bases of SEÍSMO MCM intervention are: i) the I-Change model; ii) the Healthy Galaxy metaphor; iii) the Resiliency Theory, operationalized by the Search Institute through the 40 developmental assets, and iv) the motivation interviewing tool.

The Healthy Galaxy is a pedagogical metaphor for the determinants of pediatric obesity. It is based on a fantastic recent story of humanity, where healthy lifestyles decided to take off from planet Earth towards the Healthy Galaxy to create four planets: sleep duration, healthy eating, psychological well-being, and physical activity. This story motivates children and their families to become astronauts and visit each planet. The goal is discovering and reaching the Healthy Galaxy balance to return the healthy lifestyles to Earth. Back on Earth, they will have another mission: to spread everything they have learned. This metaphor guides all interventions and serves as a motivation and gamification strategy to involve the entire educational community.

The intervention will be coordinated by the multidisciplinary GF team and led by school managers and teaching staff. The main initial responsibility of the GF team is to motivate the engagement of the entire educational community to then facilitate and guide the transition towards becoming health-promoting schools.

Control group schools' implication

The following actions will be conducted by each control school: a) an evaluation plan; b) an annual health-related event; c) a comprehensive school diagnosis during the 1st academic year; d) a total of three follow-up meetings are planned for the 1st and 2nd academic years, and four

for the subsequent academic years to ensure adherence and define the actions that will be progressively implemented after the baseline; e) a set of national and regional public resources, including training, guidelines, advisory services, health-related materials, and other initiatives, will be promoted equally in the intervention and control group.

#### Previous interventions:

The SEISMO school-based intervention was conceptualized to positively impact healthy lifestyles, psychological resilience, weight stigma, academic performance, quality of life, the incidence of obesity, zBMI and WHtR.

The creation of the SEÍSMO intervention methodology has been organized in two stages: 1) SEISMO innovation and development (I+D) stage from 2020 to 2024; 2) SEÍSMO multicomponent, comprehensive, and multilevel (MCM) stage expected from 2024 to 2034.

#### 1. The SEISMO I+D

The I+D intervention were carried out along four editions (1st – 2020/2021; 2nd – 2021/2022; 3rd – 2022/2023; 4th – 2023/2024) of 12 months each. The periods between each academic year were dedicated to creating new intervention modules that progressively have been incorporated into the methodology and piloted for reaching the entire educational community: children, teaching staff, parents or caregivers, non-teaching staff, and school managers. The 1st edition served to pilot the physical education module. The 2nd edition included also the family module. During the 3rd edition, the healthy spaces module was additionally added to the intervention methodology, which finally was rounded with the incorporation of the water promotion module, and the healthy eating and sustainable schools' canteens module, during the 4th edition.

#### 2. The SEÍSMO MCM intervention

The SEÍSMO MCM intervention was conceptualized using the SHE pillars approach for the promotion of the children's healthy lifestyles, equity, resilience, and quality of life. All the original intervention modules piloted on the SEÍSMO I+D have been integrated into the SEÍSMO MCM. The new intervention is structured for a minimum of 6 consecutive academic years, and it will be coordinated by the multidisciplinary GF team that will promote the implementation of 50 specific groups of actions structured in three pillars:

A) Competencies pillar: to promote healthy habits as a comprehensive part of primary school's curricular project that is aligned with the most updated Spanish educational law.

It includes eight specific actions organized in: i) five types of activities directly addressed to children and their families, and ii) three types of resources to reinforce these activities.

B) Educational community pillar: to engage the entire educational community towards adopting the health-promoting schools' approach.

It includes 20 specific actions organized in three action types: i) the activities and resources to consolidate a motor group, ii) the formation and training plan addressed at the entire teaching staff to ensure awareness and skills towards the promotion of a healthy lifestyle, and iii) the communication plan to engage and inform the entire educational community about the achievements in the creation of a health-promoting school.

C) Policy, environment, and cultural pillar: to lead and innovate the healthy governance of schools by enhancing and strengthening school policies, environment, and culture.

It includes 22 specific actions organized into three types: i) the activities and resources to complete a comprehensive diagnosis, ii) the activities and resources to co-create, prioritize, and define the long-term health-promoting school action plan, and iii) the resources to implement and evaluate this action plan.

The full intervention will be progressively offered to the intervention schools. A total range of 1326 - 2178 actions and 289.75 - 363.75 implementation hours will be promoted. Specifically, nine specific groups of actions are directly addressed to children and 41 are indirect.

All the activities and resources addressed for children are adapted according to the child's developmental stage and the curricular standards in three age ranges: i) initial grades (6-7 years); ii) medium grades: 8-9 years; and iii) upper grades: 10-12 years.

The four theoretical bases of SEÍSMO MCM intervention are: i) the IChange model; ii) the Healthy Galaxy metaphor; iii) the Resiliency Theory, operationalized by the Search Institute through the 40 developmental assets, and iv) the motivation interviewing tool.

The Healthy Galaxy is a pedagogical metaphor for the determinants of pediatric obesity. It is based on a fantastic recent story of humanity, where healthy lifestyles decided to take off from planet Earth towards the Healthy Galaxy to create four planets: sleep duration, healthy eating, psychological well-being, and physical activity. This story motivates children and their families to become astronauts and visit each planet. The goal is discovering and reaching the Healthy Galaxy balance to return the healthy lifestyles to Earth. Back on Earth, they will have another mission: to spread everything they have learned. This metaphor guides all interventions and serves as a motivation and gamification strategy to involve the entire educational community.

The intervention will be coordinated by the multidisciplinary GF team and led by school managers and teaching staff. The main initial responsibility of the GF team is to motivate the engagement of the entire educational community to then facilitate and guide the transition towards becoming health-promoting schools.

#### Control group schools' implication

The following actions will be conducted by each control school: a) an evaluation plan; b) an annual health-related event; c) a comprehensive school diagnosis during the 1st academic year; d) a total of three follow-up meetings are planned for the 1st and 2nd academic years, and four for the subsequent academic years to ensure adherence and define the actions that will be progressively implemented after the baseline; e) a set of national and regional public resources, including training, guidelines, advisory services, health-related materials, and other initiatives, will be promoted equally in the intervention and control group.

#### **Intervention Type**

Behavioural

#### **Primary outcome(s)**

Weight status measured using Body Mass Index (BMI) and Waist Height to Ratio (WHtR) at baseline, 12, 24, 36 and 48 months, and at the 18-year-old age group.

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

Current secondary outcomes as of 13/03/2026:

1. Hours of sleep measured using the Sleep-Habits Survey for Adolescents (SHSA) questionnaire at baseline, 12, 24, 36, and 48 months, and at the 18-year-old age group
2. Screen time measured using the Screen-Time-based Sedentary Behaviour Questionnaire (SSBQ) at baseline, 12, 24, 36, and 48 months, and at the 18-year-old age group
3. Diet quality measured using the KIDMED index questionnaire at baseline, 12, 24, 36, and 48 months, and at the 18-year-old age group
4. Physical activity measured using the Physical Activity Unified-7 item Screener (PAU-7S)

- questionnaire at baseline, 12, 24, 36, and 48 months, and at the 18-year-old age group
5. Physical fitness measured using the International Fitness Scale (IFIS) self-rating questionnaire at baseline, 12, 24, 36, and 48 months, and at the 18-year-old age group
  6. Quality of life measured using the EUROQOL questionnaire (EQ-5D-5L) at baseline, 12, 24, 36, 48 months, and at the 18-year-old age group
  7. Academic performance measured using the school curricular ratings at baseline, 12, 24, 36, and 48 months. At the age of 18 years the academic level will be self-reported
  8. Psychosocial determinants measured with an ad hoc questionnaire based on the ASE model through a Likert scale at baseline, 12, and 24 months
  9. Psychological resilience measured with the Developmental Asset Profile (DAP) questionnaire at baseline, 12, 24 months, and at the 18-year-old age group
  10. Weight stigma measured with the Weight Bias Internalization Scale (WBIS-M) questionnaire at baseline, 12, 24 months, and at the 18-year-old age group
  11. Socioeconomic status measured using a self-reported questionnaire about sociodemographic characteristics, academic level, labour market status, and home address at baseline
  12. Perinatal information, including child's birth weight, pregnancy duration, and breastfeeding duration, reported by the parents/legal guardians using a self-reported questionnaire about the child's living situation and perinatal data at baseline
  13. Adverse childhood experiences (ACE) measured using the PEARLS screening tool for children, reported by the parents/legal guardians at baseline

Previous secondary outcomes:

1. Hours of sleep measured using the Sleep-Habits Survey for Adolescents (SHSA) questionnaire at baseline, 12, 24, 36, and 48 months, and at the 18-year-old age group
2. Screen time measured using the Screen-Time-based Sedentary Behaviour Questionnaire (SSBQ) at baseline, 12, 24, 36, and 48 months, and at the 18-year-old age group
3. Diet quality measured using the KIDMED index questionnaire at baseline, 12, 24, 36, and 48 months, and at the 18-year-old age group
4. Physical activity measured using the Physical Activity Unified-7 item Screener (PAU-7S) questionnaire at baseline, 12, 24, 36, and 48 months, and at the 18-year-old age group
5. Physical fitness measured using the International Fitness Scale (IFIS) self-rating questionnaire at baseline, 12, 24, 36, and 48 months, and at the 18-year-old age group
6. Quality of life measured using the EUROQOL questionnaire (EQ-5D-5L) at baseline, 12, 24, 36, 48 months, and at the 18-year-old age group
7. Academic performance measured using the school curricular ratings at baseline, 12, 24, 36, and 48 months. At the age of 18 years the academic level will be self-reported
8. Psychosocial determinants measured with an ad hoc questionnaire based on the ASE model through a Likert scale at baseline, 12, and 24 months
9. Psychological resilience measured with the Developmental Asset Profile (DAP) questionnaire at baseline, 12, 24 months, and at the 18-year-old age group
10. Weight stigma measured with the Weight Bias Internalization Scale (WBIS-M) questionnaire at baseline, 12, 24 months, and at the 18-year-old age group
11. Socioeconomic status measured using a self-reported questionnaire about sociodemographic characteristics, academic level, labour market status, and home address at baseline

**Completion date**

31/12/2041

**Eligibility**

## **Key inclusion criteria**

Current inclusion criteria as of 13/03/2026:

1. Children aged 3–12 years and their families who will be enrolled in a participating school located in a census section with an average income per person under the mean in Spain (14.804€)
2. Informed consent signed by parents/legal guardians

Previous inclusion criteria:

1. Children aged 3–12 years and their families who will be enrolled in a participating school located in a census section with an average income per person under the mean in Spain (14.787€)
2. Informed consent signed by parents/legal guardians

## **Participant type(s)**

Population

## **Healthy volunteers allowed**

No

## **Age group**

Mixed

## **Lower age limit**

3 years

## **Upper age limit**

18 years

## **Sex**

All

## **Total final enrolment**

0

## **Key exclusion criteria**

Children or parents/legal guardians with a psychological or physical limitation that make it impossible to participate in some or all the evaluation procedures. Each case will be considered individually, and the GF team offer different evaluation options to include all the children and families.

## **Date of first enrolment**

01/12/2020

## **Date of final enrolment**

31/12/2026

## **Locations**

### **Countries of recruitment**

Spain

**Study participating centre**  
**Escola Pau Romeva**  
C/ del Pisuerga, 1  
Barcelona  
Spain  
08028

**Study participating centre**  
**Centre d'Estudis Montseny**  
C/ de Pallars, 410  
Barcelona  
Spain  
08019

**Study participating centre**  
**Col·legi Paideia**  
C/ del Montnegre, 36  
Barcelona  
Spain  
08029

**Study participating centre**  
**Escola el Turó**  
C/ de Peñalara, 19-55  
Barcelona  
Spain  
08031

**Study participating centre**  
**Escola Baloo**  
C/ Harmonia 37  
Barcelona  
Spain  
08035

**Study participating centre**  
**Escola Piaget**  
C/del Llobregós, 194

Barcelona  
Spain  
08032

**Study participating centre**  
**Escola Pare Poveda**  
Av. de Vallcarca, 220  
Barcelona  
Spain  
08023

**Study participating centre**  
**Escola Padre Damián**  
Av. de Vallvidrera, 10  
Barcelona  
Spain  
08017

**Study participating centre**  
**Escola Lluís Vives**  
C/ de Canalejas, 107  
Barcelona  
Spain  
08028

**Study participating centre**  
**Escola Ferran Sunyer**  
C/ de Viladomat, 2  
Barcelona  
Spain  
08015

**Study participating centre**  
**Escola Mercè Rodoreda**  
C/ del Vesuvi, 35  
Barcelona  
Spain  
08016

**Study participating centre**  
**Col·legi Amor de Dios**  
C/del Teide, 27  
Barcelona  
Spain  
08031

**Study participating centre**  
**Escola Ferrer i Guàrdia**  
C/ del Pedraforca, 3,  
Barcelona  
Spain  
08033

**Study participating centre**  
**Escola Ciutat Comtal**  
C/ Pujalt, 6,  
Barcelona  
Spain  
08033

**Study participating centre**  
**Escola Pia Sant Antoni**  
Rda. de Sant Pau, 72  
Barcelona  
Spain  
08001

**Study participating centre**  
**Escola La Pau**  
C/ d'Extremadura, 15  
Barcelona  
Spain  
08020

**Study participating centre**  
**Escola Alfonsa Cavin**  
Av. dels Rasos de Peguera, 57  
Barcelona  
Spain  
08033

**Study participating centre**

**Escola Prnceps**

C/ de l'Artesania, 38

Barcelona

Spain

08042

**Study participating centre**

**Escola Eduard Marquina**

C/Jaume Huguet, 22

Barcelona

Spain

08019

**Study participating centre**

**Escola Sant Lluís**

C/Arítjols, 12

Barcelona

Spain

08016

**Study participating centre**

**Escola Prim**

C/ Bernat Metge, 20

Barcelona

Spain

08019

**Study participating centre**

**Escola Cal Maiol**

C/Sagunt, 92

Barcelona

Spain

08014

**Study participating centre**

**Escola Tibidabo**

C/ de Joaquim Valls, 10

Barcelona  
Spain  
08016

**Study participating centre**

**Escola Sant Gervasi**

C/ Bòbiles, 37  
L'Hospitalet de Llobregat, Barcelona  
Spain  
08905

**Study participating centre**

**Escola Charlie Rivel**

C/ de Llançà, 20  
L'Hospitalet de Llobregat, Barcelona  
Spain  
08904

**Study participating centre**

**Escola Pep Ventura**

Plaça Guernica, s/n  
L'Hospitalet de Llobregat, Barcelona  
Spain  
08903

**Study participating centre**

**Col·legi Alegre**

C/ d'Andorra, 23, 25  
L'Hospitalet de Llobregat, Barcelona  
Spain  
08906

**Study participating centre**

**Escola Pau Casals**

C/ Almería, 1  
L'Hospitalet de Llobregat, Barcelona  
Spain  
08905

**Study participating centre**

**Escola Pau Vila**

C/ Menorca, 1  
L'Hospitalet de Llobregat, Barcelona  
Spain  
08905

**Study participating centre**

**Escola Josep Maria Folch i Torres**

Av. d'Isabel la Catòlica, 61  
L'Hospitalet de Llobregat, Barcelona  
Spain  
08906

**Study participating centre**

**Escola Sant Josep Obrer**

C/Covadonga, 2  
L'Hospitalet de Llobregat, Barcelona, España  
Spain  
08906

**Study participating centre**

**Escola Ernest Lluch**

Passatge Colom, 19  
L'Hospitalet de Llobregat, Barcelona  
Spain  
08904

**Study participating centre**

**Escola Utmar Hospitalet**

C/ Mina, 24  
L'Hospitalet de Llobregat, Barcelona  
Spain  
08906

**Study participating centre**

**Escola Lola Anglada:**

Av. d'Isabel la Catòlica, 41  
L'Hospitalet de Llobregat, Barcelona  
Spain  
08906

**Study participating centre**

**Escola Pablo Neruda**

C/ Cornellà, 37  
L'Hospitalet de Llobregat, Barcelona  
Spain  
08906

**Study participating centre**

**Escola Utmar Esplugues**

C/ del Molí, 48  
Esplugues de Llobregat, Barcelona  
Spain  
08950

**Study participating centre**

**Escola El Gornal**

Av. Carmen Amaya, 44  
L'Hospitalet de Llobregat, Barcelona  
Spain  
08902

**Study participating centre**

**Escola Sant Miquel**

C/ Lluís Domènech i Montaner, 1  
Cornellà de Llobregat, Barcelona  
Spain  
08940

**Study participating centre**

**Escola Alexandre Gali**

C/Cirerer, 1-7  
Cornellà de Llobregat, Barcelona  
Spain  
08940

**Study participating centre**

**Escola Jacint Verdaguer**

C/ Muralla, 8

Castelldefels, Barcelona  
Spain  
08860

**Study participating centre**  
**Escola Jacint Verdaguer**  
Av. de Salvador Allende, 14, 16  
Cornellà de Llobregat, Barcelona  
Spain  
08940

**Study participating centre**  
**Escola Sant Antoni Maria Claret**  
C/Manuel Mariné, 11  
Cornellà de Llobregat, Barcelona  
Spain  
08940

**Study participating centre**  
**Escola Tanit**  
C/ Pirineus, 5  
Santa Coloma de Gramenet, Barcelona  
Spain  
08923

**Study participating centre**  
**Escola Beethoven**  
C/ Wagner, 16  
Sta Coloma de Gramenet, Barcelona  
Spain  
08923

**Study participating centre**  
**Escola Rosello Porcel**  
Rambla de Sant Sebastià, 92  
Sta Coloma de Gramenet, Barcelona  
Spain  
08922

**Study participating centre**

**Escola Les Neus**

Rambla del Fondo, 50  
Santa Coloma de Gramenet, Barcelona  
Spain  
08922

**Study participating centre**

**Escola FEDAC Santa Coloma**

C/Sant Ramon, 2  
Santa Coloma de Gramenet, Barcelona  
Spain  
08922

**Study participating centre**

**Escola Folch i Torres**

C/Wagner, 68-84  
Badalona, Barcelona  
Spain  
08917

**Study participating centre**

**Escola Baldomer Sola**

Av. del Marquès de Mont-Roig, 178  
Badalona, Barcelona  
Spain  
08918

**Study participating centre**

**Escola Mare de Deu Salut**

Passeig de la Salut, 36  
Badalona, Barcelona  
Spain  
08914

**Study participating centre**

**Escola Joan Llongueras**

C/ Sant Fermí, 3  
Badalona, Barcelona  
Spain  
08917

**Study participating centre**

**Escola Baldiri Reixac**

C/Juan Valera, 159

Badalona, Barcelona

Spain

08914

**Study participating centre**

**Escola Maria Ward**

C/Gravina, 1

Badalona, Barcelona

Spain

08913

**Study participating centre**

**Escola Santísima Trinidad**

C/ de Santiago, 57

Badalona, Barcelona

Spain

08918

**Study participating centre**

**Escola Arrels**

C/ Provença, 7

Badalona, Barcelona

Spain

08914

**Study participating centre**

**Escola Joan Coret**

Plaça Voluntaris Olímpics, 3

Badalona, Barcelona

Spain

08917

**Study participating centre**

**Escola Antoni Botey**

Av. del Doctor Bassols, 77

Badalona, Barcelona  
Spain  
08914

**Study participating centre**  
**Escola Ramiro de Maeztu**  
C/ Ramiro de Maeztu, s/n  
Badalona, Barcelona  
Spain  
08913

**Study participating centre**  
**Escola Les Ciències**  
C/ de la Ciència, 19  
Badalona, Barcelona  
Spain  
08917

**Study participating centre**  
**Escola Ginesta**  
C/ de la Circumval·lació, S/N  
Montcada i Reixac, Barcelona  
Spain  
08110

**Study participating centre**  
**Escola Amat Verdú**  
C/ Marcelino Menéndez y Pelayo  
Sant Boi de Llobregat, Barcelona  
Spain  
08830

**Study participating centre**  
**Escola Casablanca**  
Plaça dels Gegants, 2  
Sant Boi de Llobregat, Barcelona, España  
Spain  
08830

**Study participating centre**

**Escola Barrufet**

Plaza Agricultura, 6  
Sant Boi de Llobregat, Barcelona  
Spain  
08830

**Study participating centre**

**Escola Antoni Gaudí**

C/Pablo Picasso  
Sant Boi de Llobregat, Barcelona  
Spain  
08830

**Study participating centre**

**Escola Ciurana**

C/Manuel de Falla, 2  
Sant Boi de Llobregat, Barcelona  
Spain  
08830

**Study participating centre**

**Escola Angel Tobies**

Av. Riera de la Bisbal, 79  
El Vendrell, Tarragona  
Spain  
43700

**Study participating centre**

**Escola Gaspar Portolà**

C/Escoles, 0,  
Balaguer, Lleida  
Spain  
25600

**Study participating centre**

**Escola Montroig**

C/Marta Mata, 48  
Balaguer, Lleida  
Spain  
25600

**Study participating centre**

**Escola Pia Balaguer**

C/Barcelona, 73

Balaguer, Lleida

Spain

25600

**Study participating centre**

**Escola La Noguera**

C/Joan Miró, 2,

Balaguer, Lleida

Spain

25600

**Study participating centre**

**Escola Angel Guimerà**

C/Àngel Guimerà, s/n,

Balaguer, Lleida

Spain

25600

**Study participating centre**

**Escola Vedruna Balaguer**

C/ Pare Sanahüja, 39

Balaguer, Lleida

Spain

25600

**Study participating centre**

**Escola SAFA**

C/ Nicolás Longaron, 6

La Llagosta, Barcelona

Spain

08120

**Study participating centre**

**Escola Joan Maragall**

Passeig del Pintor Sert, 1-9,

La Llagosta, Barcelona  
Spain  
08120

**Study participating centre**

**Escola Les Planes**

C/de la Constitució, 2,  
La Llagosta, Barcelona  
Spain  
08120

**Study participating centre**

**Escola Gilpe**

Av. Primer de Maig, 6, 8,  
La Llagosta, Barcelona  
Spain  
08120

**Study participating centre**

**Institut Escola La Mina**

Rambla de la Mina 36,  
Sant Adrià de Besòs, Barcelona  
Spain  
08930

**Study participating centre**

**Escola Catalunya**

Plaça de Marie Curie, C. de Lleida, s/n,  
Sant Adrià de Besòs, Barcelona  
Spain  
08930

**Study participating centre**

**Escola Cascavell**

C/d'Argentina, sn,  
Sant Adrià de Besòs, Barcelona  
Spain  
08930

**Study participating centre**  
**Escola Sant Jordi**  
C/Verdaguer, 15,  
Pineda de Mar, Barcelona  
Spain  
08397

**Study participating centre**  
**Escola Antoni Doltra**  
C/ Narcis Monturiol, 55,  
Pineda de Mar, Barcelona  
Spain  
08397

**Study participating centre**  
**Escola Jaume I**  
C/Lluís Vives, 5, 7,  
Pineda de Mar, Barcelona  
Spain  
08397

**Study participating centre**  
**Escola Montpalau**  
Av. Generalitat, s/n,  
Pineda de Mar, Barcelona  
Spain  
08397

**Study participating centre**  
**Escola Mediterrania**  
Plaza Pau Casals, 0 S N ( Urb Can Cornet )  
Pineda de Mar, Barcelona  
Spain  
08397

**Study participating centre**  
**Escola Pràctiques I**  
C/Ballester, 21  
Lleida  
Spain  
25002

**Study participating centre**  
**Escola Santa Maria de Gardeny**  
C/Rossinyol, 2  
Lleida  
Spain  
25003

**Study participating centre**  
**Escola Gassó i Vidal**  
C/Rocabruna, 1,  
Ripollet, Barcelona  
Spain  
08291

**Study participating centre**  
**Escola Francesc Escursell i Bartalot**  
Ctra. de l'Estació, 9  
Ripollet, Barcelona  
Spain  
08291

**Study participating centre**  
**Escola Miquel Martí i Pol**  
Av. dels Jocs Olímpics, 7,  
Viladecans, Barcelona  
Spain  
08840

**Study participating centre**  
**Escola Sant Josep**  
Travessera de Barcelona, 78, 82,  
Sant Vicenç dels Horts, Barcelona  
Spain  
08620

**Study participating centre**  
**Escola Mare de Déu del Carme**  
C/ del Dr. Robert, 5, 9,

El Prat de Llobregat, Barcelona  
Spain  
08820

**Study participating centre**

**Escola Auró**

C/ del Germà Joaquim, 128,  
Terrassa, Barcelona  
Spain  
08223

**Study participating centre**

**Escola Joan XXIII**

C/Joan XXIII, 27,  
Terrassa, Barcelona  
Spain  
08227

**Study participating centre**

**Escola Marcel·li Moragas**

C/ Joan I, 5,  
Gavà, Barcelona  
Spain  
08850

**Study participating centre**

**Escola Sant Andreu de la Barca**

C/Josep Tarradellas, 30-38  
Sant Andreu de la Barca  
Spain  
08740

**Study participating centre**

**Escola Pintor Sorolla**

Av. de Ronda, 116,  
Elda, Alicante  
Spain  
03600

**Study participating centre**  
**Escola Ballester Fandos**  
Avinguda de la Malva-Rosa, 57,  
Valencia  
Spain  
46011

**Study participating centre**  
**Escola San Juan de Ribera**  
C/ de la Noria, 19,  
Alfara del Patriarca, Valencia  
Spain  
46115

**Study participating centre**  
**Escola Gaspar Gil Polo**  
C/Miquel Paredes, s/n,  
Valencia  
Spain  
46018

**Study participating centre**  
**Escola Profesor Sanchis Guarner**  
C/Pere Patrici Mey, 44,  
València, Valencia  
Spain  
46019

**Study participating centre**  
**Escola Tomás de Villaroya**  
Av. del Doctor Tomás Sala, s/n,  
Valencia  
Spain  
46017

**Study participating centre**  
**Escola Santa Joaquina de Vedruna**  
C/de la Iutera, 40,  
Vinalesa, Valencia  
Spain  
46114

**Study participating centre**

**Escola San Blas**

Av. de les Cortes Valencianes, 34,

Albal, Valencia

Spain

46470

**Study participating centre**

**Escola Lluís Guàrdia**

C/del Doctor Nicasi Benlloch, 128,

València, Valencia

Spain

46015

**Study participating centre**

**Escola Ausias March**

C/Parque de Nazaret, 3

Valencia

Spain

46024

**Study participating centre**

**Colegio Luis Feito**

C/Luis Feito 19,

Madrid

Spain

28047

**Study participating centre**

**Colegio Nile**

C/de Castilla la Vieja, 18,

Fuenlabrada, Madrid

Spain

28941

**Study participating centre**

**Colegio La Dehesa de Humanes**

Av. de los Deportes, 8

Humanes de Madrid (España)  
Spain  
28970

**Study participating centre**  
**Colegio Manuel Azaña**  
Av. del Ejército, 5,  
Alcalá de Henares, Madrid  
Spain  
28802

**Study participating centre**  
**Colegio San José**  
C/Francisco Laguna, 21,  
Madrid  
Spain  
28053

**Study participating centre**  
**Colegio Salesianos Carabanchel**  
Rda. Don Bosco, 32  
Madrid  
Spain  
8044

**Study participating centre**  
**Colegio San José de Valdemoro**  
Pl. del Conde,sn.  
Valdemoro, Madrid  
Spain  
28340

**Study participating centre**  
**Colegio María Reina**  
Av. Orcasur, 42B,  
Madrid  
Spain  
28041

**Study participating centre**

**Colegio Alonso Cano**

C/Alonso Cano, 1  
Móstoles, Madrid  
Spain  
28933

**Study participating centre**

**Colegio Campohermoso**

C/Valdehondillo, 1  
Humanes de Madrid, Madrid  
Spain  
28970

**Study participating centre**

**Colegio Juan Ocaña**

Av. Iker Casillas, 25  
Móstoles, Madrid  
Spain  
28935

**Study participating centre**

**Colegio Pequeño Príncipe**

C/ de Aragón, 21  
Leganés, Madrid  
Spain  
28914

**Study participating centre**

**Colegio San Miguel**

C/Miralcampo  
Navalagamella, Madrid  
Spain  
28212

**Study participating centre**

**Colegio Carmen Cabezuelo**

C/ Cangas de Onís, 7  
Madrid  
Spain  
28037

**Study participating centre**  
**Colegio Santo Angel De La Guardia**  
C/Rodetas, 17  
Chapinería, Madrid  
Spain  
28694

**Study participating centre**  
**Colegio República del Uruguay**  
Av. de Ntra. Sra. de Valvanera, 120  
Madrid  
Spain  
28047

**Study participating centre**  
**Colegio Velazquez**  
Av. de Nuevo Versalles, 16  
Fuenlabrada, Madrid  
Spain  
28942

**Study participating centre**  
**Colegio Doctor Severo Ochoa**  
C/Ezcaray, 3  
Madrid.  
Spain  
28032

**Study participating centre**  
**Colegio Nuestra Señora De Montserrat**  
C/Trevélez, 5  
Madrid  
Spain  
28041

**Study participating centre**  
**Colegio Doctora de Alcalá**  
C/Pedro Sarmiento de Gamboa, 11

Alcalá de Henares, Madrid  
Spain  
28805

**Study participating centre**  
**Escola Joan Roca Guipúscoa**  
Rambla de Guipúscoa, 19  
Barcelona  
Spain  
08018

**Study participating centre**  
**Escola San Francisco**  
Carrer del Treball, 213  
Barcelona  
Spain  
08020

**Study participating centre**  
**Escola Sant Miquel del Cros**  
Av. del Mediterrani s/n  
Argentona  
Spain  
08310

**Study participating centre**  
**Escola Gran Capitá**  
Carrer Josep Maria Trias de Bes, 11  
Sant Joan Despí  
Spain  
08970

**Study participating centre**  
**Escolàpies Igualada**  
Carrer del Vidre, 1  
Igualada  
Spain  
08007

**Study participating centre**  
**Escola Els Convents**  
Av. Vicenç Ros i Batllell s/n  
Martorell  
Spain  
08760

**Study participating centre**  
**ZER ELS CEPS BERENGUER MONTOLIU**  
Carrer Major, 48  
Masslorenç  
Spain  
43718

**Study participating centre**  
**ZER ELS CEPS L'ESTEL**  
Carrer Muralla s/n  
Bonastre  
Spain  
43884

**Study participating centre**  
**Escola Muntanya del Drac**  
Carrer Pare Ignasi Puig  
Manresa  
Spain  
08241

**Study participating centre**  
**Fedac Sant Vicenç**  
Carrer del Dr. Trias, 76  
Sant Vicenç de Castellet  
Spain  
08295

**Study participating centre**  
**Escola Pare Enric d'Ossó**  
Av. d'Amèrica, 5-9  
L'Hospitalet de Llobregat  
Spain  
08907

**Study participating centre****Col·legi Martí**

c/ Doctor Ferran 81

Terrassa

Spain

08226

**Sponsor information****Organisation**

Gasol Foundation

**ROR**<https://ror.org/00jb67179>**Funder(s)****Funder type**

Industry

**Funder Name**

BNP Paribas Cardif

**Alternative Name(s)**

BNP Paribas

**Funding Body Type**

Private sector organisation

**Funding Body Subtype**

For-profit companies (industry)

**Location**

France

**Funder Name**

Barça Foundation

**Funder Name**

Aigües de Barcelona

**Funder Name**

Agbar

**Funder Name**

Agència de Salut Pública de Barcelona

**Alternative Name(s)**

Barcelona Public Health Agency, ASPB

**Funding Body Type**

Government organisation

**Funding Body Subtype**

National government

**Location**

Spain

**Funder Name**

Ajuntament de Barcelona

**Funder Name**

Ajuntament de Pineda de Mar

**Funder Name**

Ajuntament de Lleida

**Funder Name**

Ajuntament de Balaguer

**Funder Name**

Grupo IFA

# Results and Publications

## Individual participant data (IPD) sharing plan

Data sharing will be considered after request to [sgomez@gasolfoundation.org](mailto:sgomez@gasolfoundation.org) or to [gsegun@gasolfoundation.org](mailto:gsegun@gasolfoundation.org). SEISMO webpage: <https://gasolfoundation.org/es/seismo/>

## IPD sharing plan summary

Available on request

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Interim results article</a>		05/03/2026	09/03/2026	Yes	No
<a href="#">Participant information sheet</a>	version 6	01/11/2023	18/03/2025	No	Yes
<a href="#">Protocol file</a>	version 6	01/11/2023	18/03/2025	No	No
<a href="#">Study website</a>		11/11/2025	11/11/2025	No	Yes