

# Smart CHANGE

Empowering Youth with AI for healthier lives

## Putting Health Tools into practice:

Designing feasibility studies  
at an international scale

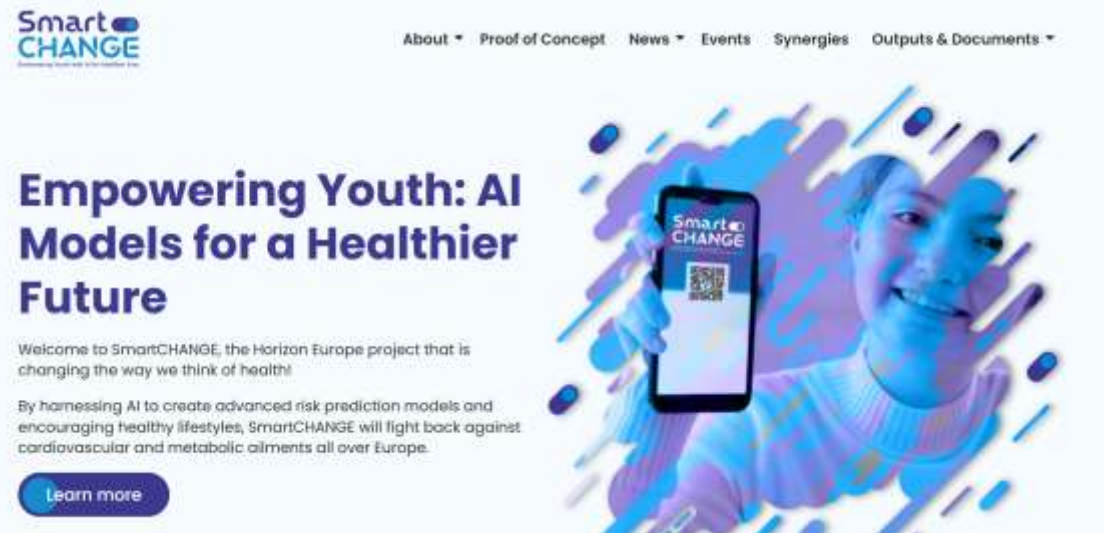


# Agenda

Time - CET	Topic	Speaker(s)
11:00-11:10	Welcome & Webinar Overview	Diego Dylan Domenici   <a href="#">TRUST-IT</a>
11:10-11:25	SmartCHANGE applications (mApp and WebApp)	Harm op den Akker   <a href="#">ConnectedCare</a> Valentina Di Giacomo   <a href="#">Engineering</a>
11:25-12:20	<b>Study Snapshots:</b> Ljubljana Jyväskylä Amsterdam Porto Taipei	Gregor Jurak   <a href="#">ULJ</a> Tuija Tammelin & Heikki Laaksonen   <a href="#">JAMK</a> Claudia Dictus & Mariëtte Hoogsteder   <a href="#">VUMC</a> José Carlos Ribeiro   <a href="#">UPORTO</a> Sherali Bomrah   <a href="#">TMU</a>
12:20-12:30	Q&A Session	Previous speakers
12:30	Closing	Diego Dylan Domenici   <a href="#">TRUST-IT</a>

# Housekeeping

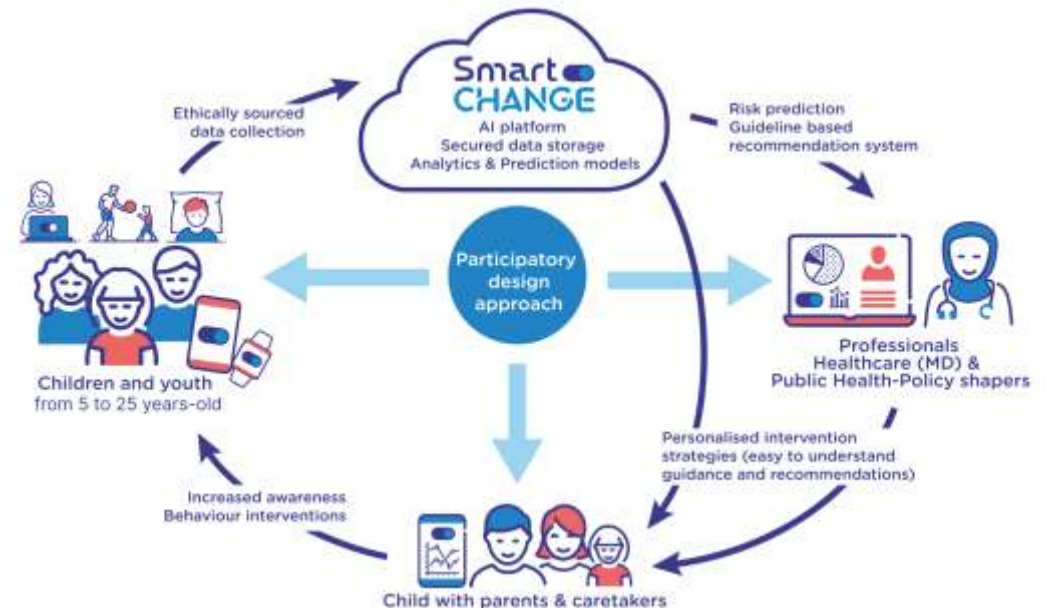
- 🔘 Feel free to say hi and write any questions in the chat!
- 🔘 This webinar is recorded. The recording will be posted on YouTube and shared, alongside the slides, on our website and social media
- 🔘 To stay informed on this and more updates, you can find our upcoming events and our social media channels on our website [smart-change.eu](https://smart-change.eu)





# About the project

- SmartCHANGE is a 4-year long H.E. RIA project (May 2023-May 2027)
- Research topic is “Trustworthy AI tools to predict the risk of chronic NCDs and/or their progression”, together with a cluster of other projects
- SmartCHANGE is developing a “health ecosystem” through the interaction between two applications (one for families of children/youth, one for HCPs)
- Currently, the project is deploying a multi-pilot site testing of the system, pairing it alongside a variety of different health infrastructures in different national and social contexts. These are the 5 Feasibility Studies.





SPEAKER

## Harm op den Akker

connectedcare

WEBINAR 11 November- 11:00-12:30 CET

Putting Health Tools into practice:  
**Designing feasibility studies  
at an international scale**



# HappyPlant!

Presented by: Harm op den Akker (ConnectedCare)

Designed by: Lotte van der Jagt (CCARE), the  
SmartChange Consortium, and many many stakeholders...







The Goal:

Stimulating and engaging  
families, children and  
adolescents throughout their  
personalized journey towards  
a healthy lifestyle.

What is important for this app:



Personalized and  
clear goals



Gamified  
experience



Changing content  
over time

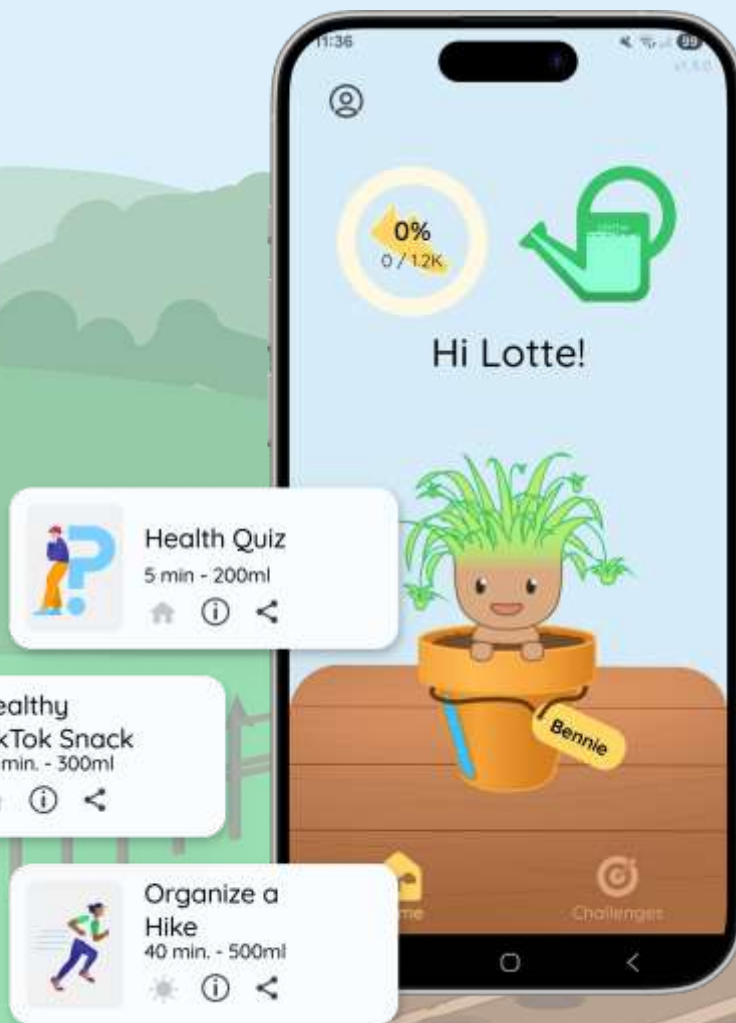


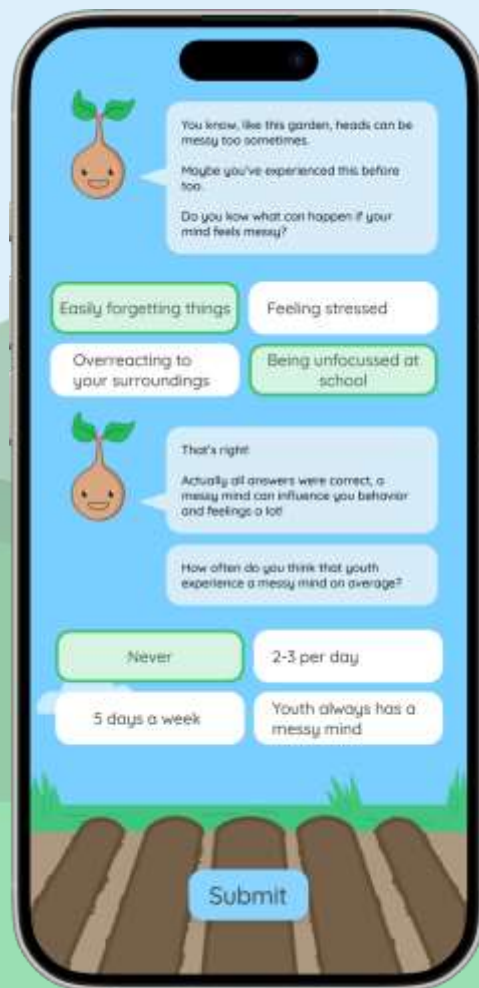
Holistic approach  
with autonomy

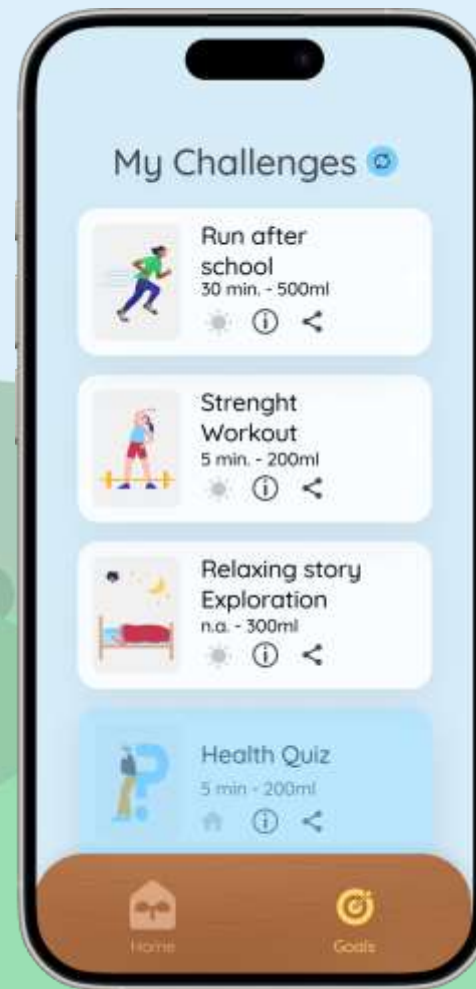
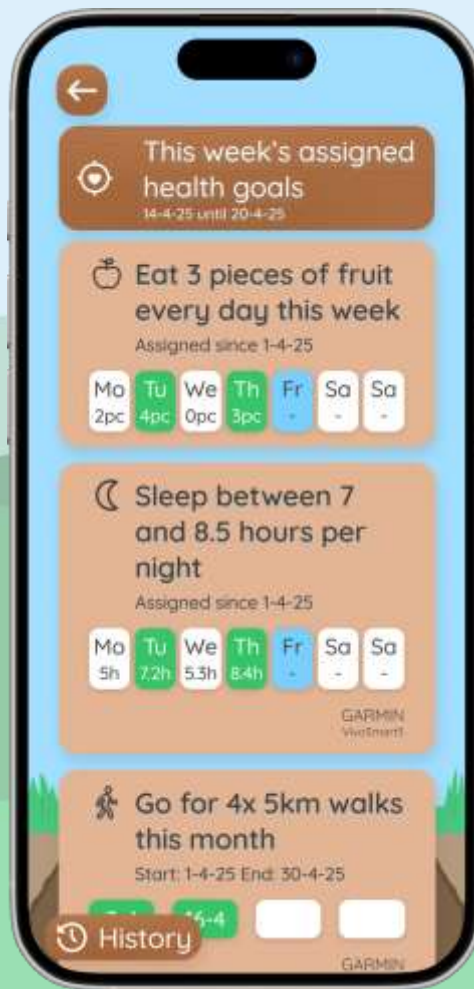


Educational  
component

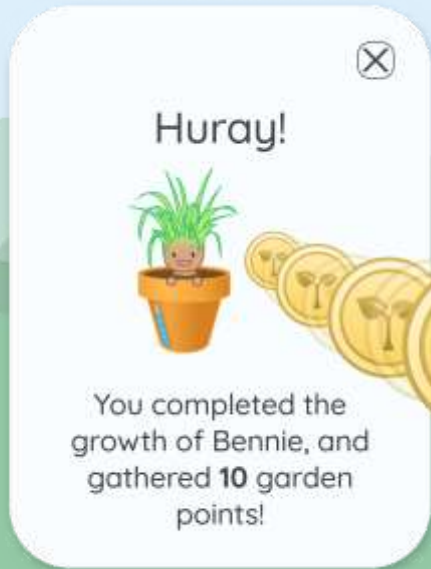














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SPEAKER

Valentina  
Di Giacomo



WEBINAR 11 November- 11:00-12:30 CET

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# Smart CHANGE

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## Webapp for Healthcare Professionals

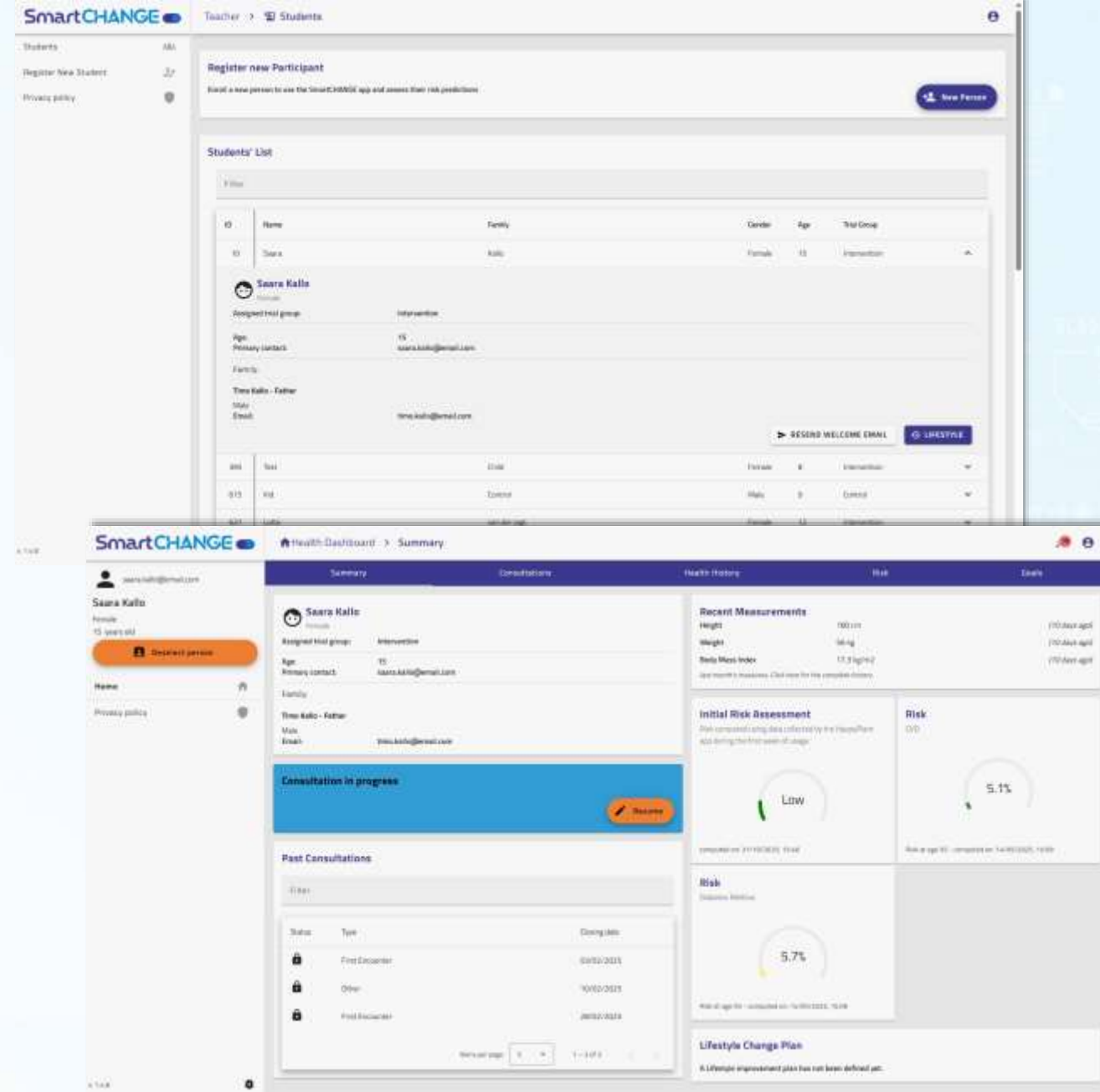
*Valentina Di Giacomo*





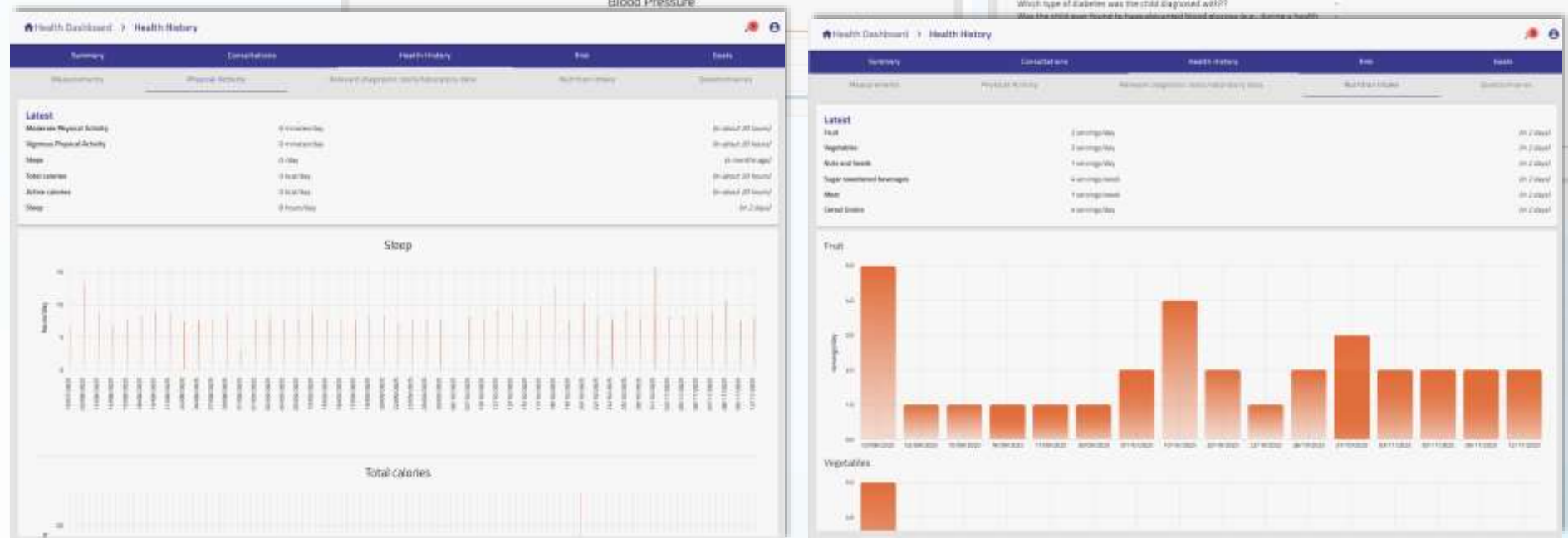
# Objectives of the Web App

- Provide HCPs with an **intuitive dashboard** for preventive follow-up of young users.
- Enable data-driven insights through **risk prediction models** based on lifestyle and wellbeing indicators.
- Support **personalised recommendations** and early detection of potential health risks. Foster communication and engagement between HCPs and young users.




# Data Integration 🌱

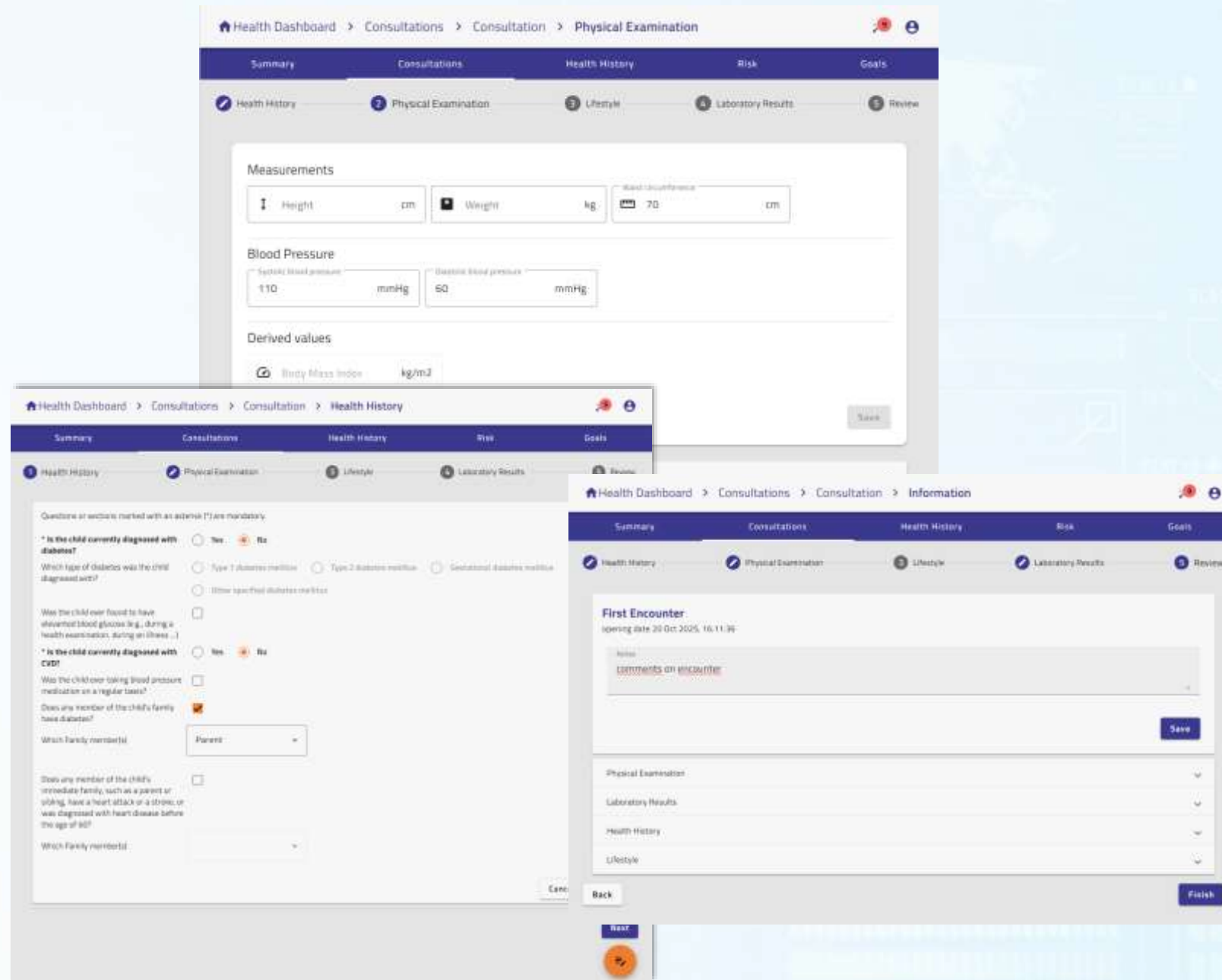
Collects and aggregates data from the HappyPlant app and other potential sources.





# Guided consultations

-  Provides **step-by-step guidance** for preventive consultations — from data review to discussion and action planning — supporting consistency and efficiency in daily practice.



The image displays three overlapping screenshots of the SmartChange Health Dashboard, illustrating the guided consultation process.

**Top Screenshot: Physical Examination**

- Navigation: Health Dashboard > Consultations > Consultation > Physical Examination
- Tabs: Summary, Consultations, Health History, Risk, Goals
- Progress: 1 Health History, 2 Physical Examination (active), 3 Lifestyle, 4 Laboratory Results, 5 Review
- Measurements: Height (cm), Weight (kg), Waist Circumference (cm)
- Blood Pressure: Systolic blood pressure (mmHg), Diastolic blood pressure (mmHg)
- Derived values: Body Mass Index (kg/m<sup>2</sup>)
- Buttons: Save

**Bottom Left Screenshot: Health History**

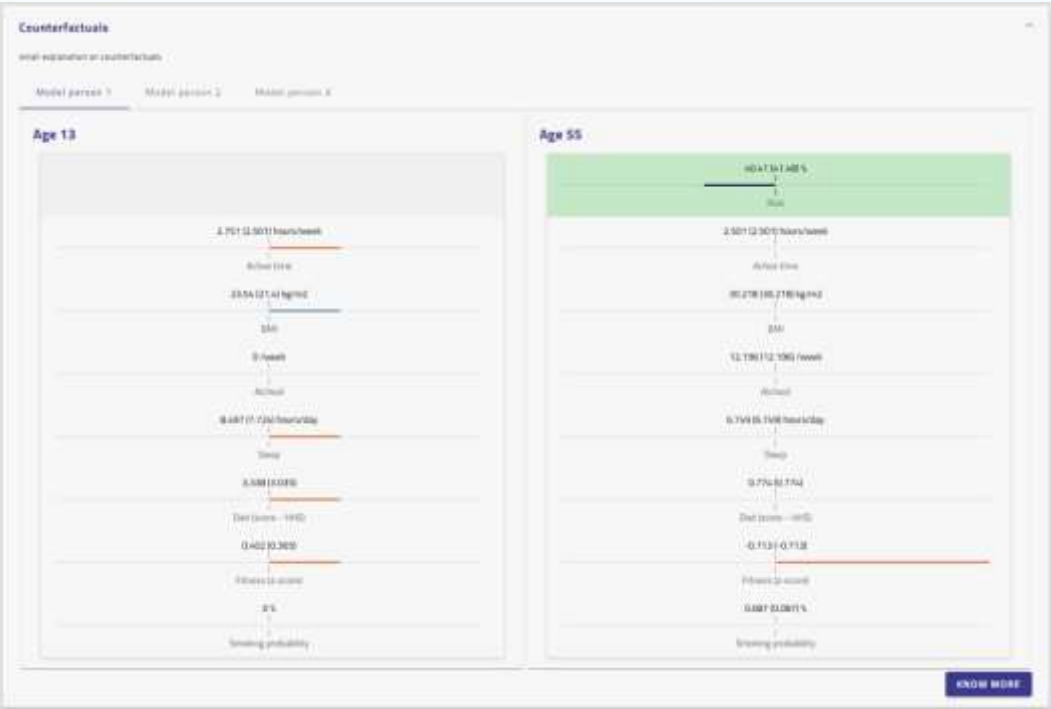
- Navigation: Health Dashboard > Consultations > Consultation > Health History
- Tabs: Summary, Consultations, Health History (active), Risk, Goals
- Progress: 1 Health History (active), 2 Physical Examination, 3 Lifestyle, 4 Laboratory Results, 5 Review
- Questions or sections marked with an asterisk (\*) are mandatory.
- \* Is the child currently diagnosed with diabetes? (Yes/No/It's not clear)
- Which type of diabetes was the child diagnosed with? (Type 1 diabetes mellitus, Type 2 diabetes mellitus, Gestational diabetes mellitus, Other specified diabetes mellitus)
- Was the child ever found to have elevated blood glucose (e.g., during a health examination, during an illness...)? (Yes/No/It's not clear)
- \* Is the child currently diagnosed with CVD? (Yes/No/It's not clear)
- Was the child ever taking blood pressure medication on a regular basis? (Yes/No/It's not clear)
- Does any member of the child's family have diabetes? (Yes/No/It's not clear)
- Which family member(s)? (Parent, dropdown)
- Does any member of the child's immediate family, such as a parent or sibling, have a heart attack or a stroke or was diagnosed with heart disease before the age of 60? (Yes/No/It's not clear)
- Which family member(s)? (dropdown)
- Buttons: Save, Next

**Bottom Right Screenshot: Information**


- Navigation: Health Dashboard > Consultations > Consultation > Information
- Tabs: Summary, Consultations, Health History, Risk, Goals
- Progress: 1 Health History, 2 Physical Examination, 3 Lifestyle, 4 Laboratory Results, 5 Information (active), 6 Review
- First Encounter: Opening date 20 Oct 2025, 16:11:36
- Notes: (text area)
- Comments on encounter: (text area)
- Buttons: Save, Back, Finish
- Physical Examination, Laboratory Results, Health History, Lifestyle (dropdowns)

# Risk Prediction Integration 🔍

- 🔘 Identify emerging lifestyle risk patterns with clear explanations to support trust and understanding.



# Preventive Guidance ?

 Supports practitioners in suggesting preventive actions aligned with behaviour change principles.

Health Dashboard > Goals > plan > Update Plan

Summary

Consultations

Health History

Risk

Goals

Guidelines

Focus: Physical Activity

Due date

Due date09/05/2026

Goals

Steps

daily goal

Steps must be at least 5000

REMOVE

Vigorous Physical Activity

daily goal

Vigorous Physical Activity must be at least 30 min

REMOVE

Add Goal

Health Dashboard > Goals > plan > New Plan

Summary

Consultations

Health History

Risk

Goals

Starts from: 10 years old

Guidelines

Discuss with a client about the goals and goal setting through the lenses of principles of behaviour change. Based on the principles of behaviour change, it is important to:

1. Enhance inner motivation
2. Support feelings of competence
3. Support autonomy
4. Promote positive emotions, self-image and behaviour
5. Strengthen social connections

Remember to support as much as possible the client's own motivation by asking questions instead of giving direct advice. By using this kind of approach, we can make more of the client's own thinking and willingness towards behaviour change. The following questions are examples that you can use flexibly when discussing with the client, linked to the principles of behaviour change. After the discussion, always remember to adjust your solution to the client's unique situation, learning needs and personal resources.

Enhance inner motivation

- What do you find important for you?
- What behaviour would you like to change now?
- Could change in your health behaviour or wellbeing help you to achieve something that is meaningful for you?

Support feelings of competence

- What are the actions that you already do to improve your health and wellbeing?
- Can you recognise actions that you already have done during the last weeks regarding your health and wellbeing?

Support autonomy

- What actions do you want to choose?
- When do you want to do these actions?

Promote positive emotions, self-image and behaviour

- What would be a small action that you can do today?
- What are your favourite actions regarding physical activity, eating or improving sleeping behaviour?
- What do you enjoy the most when you want to be active?

Strengthen social connections

- Who are important people to you?
- What would you like to do and with whom in order to enhance your health and wellbeing?

Select a focus for lifestyle improvement

Plan FocusPhysical Activity

Plan Defaults

Plan Focus

Physical Activity

Goals

Steps

daily goal

Steps must be at least 5000

Vigorous Physical Activity

daily goal

Vigorous Physical Activity must be at least 30 min

Moderate Physical Activity

daily goal

Moderate Physical Activity must be at least 60 min

Active calories

daily goal

Active calories must be at least 300 kcal

Frequency of exercise

weekly goal

Exercise sessions must be at least 3

Exercise duration must be at least 30 min

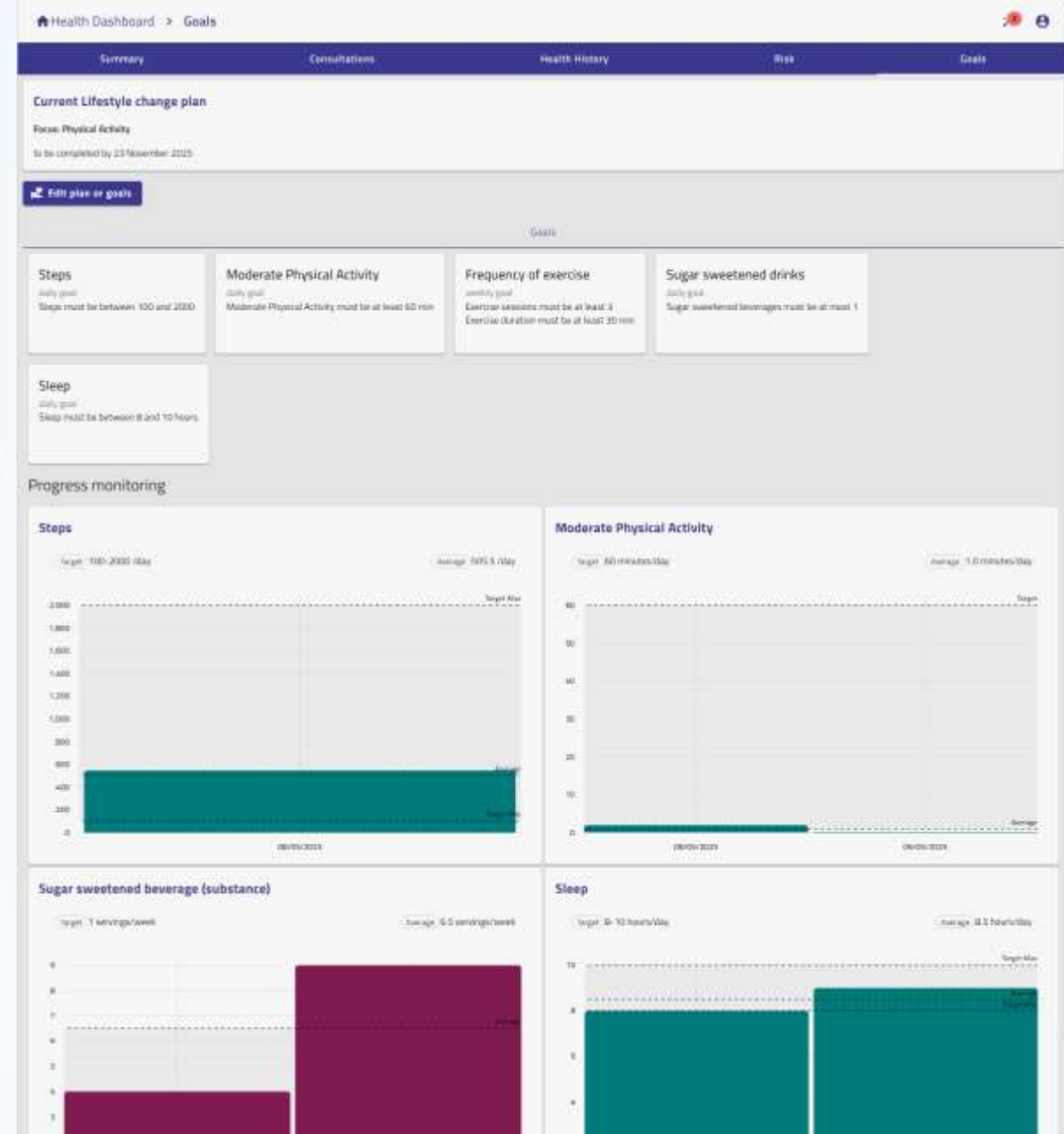
This is a default template that can be customized in the next step

Select and customize plan

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# Monitoring Over Time

- Visualisation wellbeing trends and progress toward preventive goals

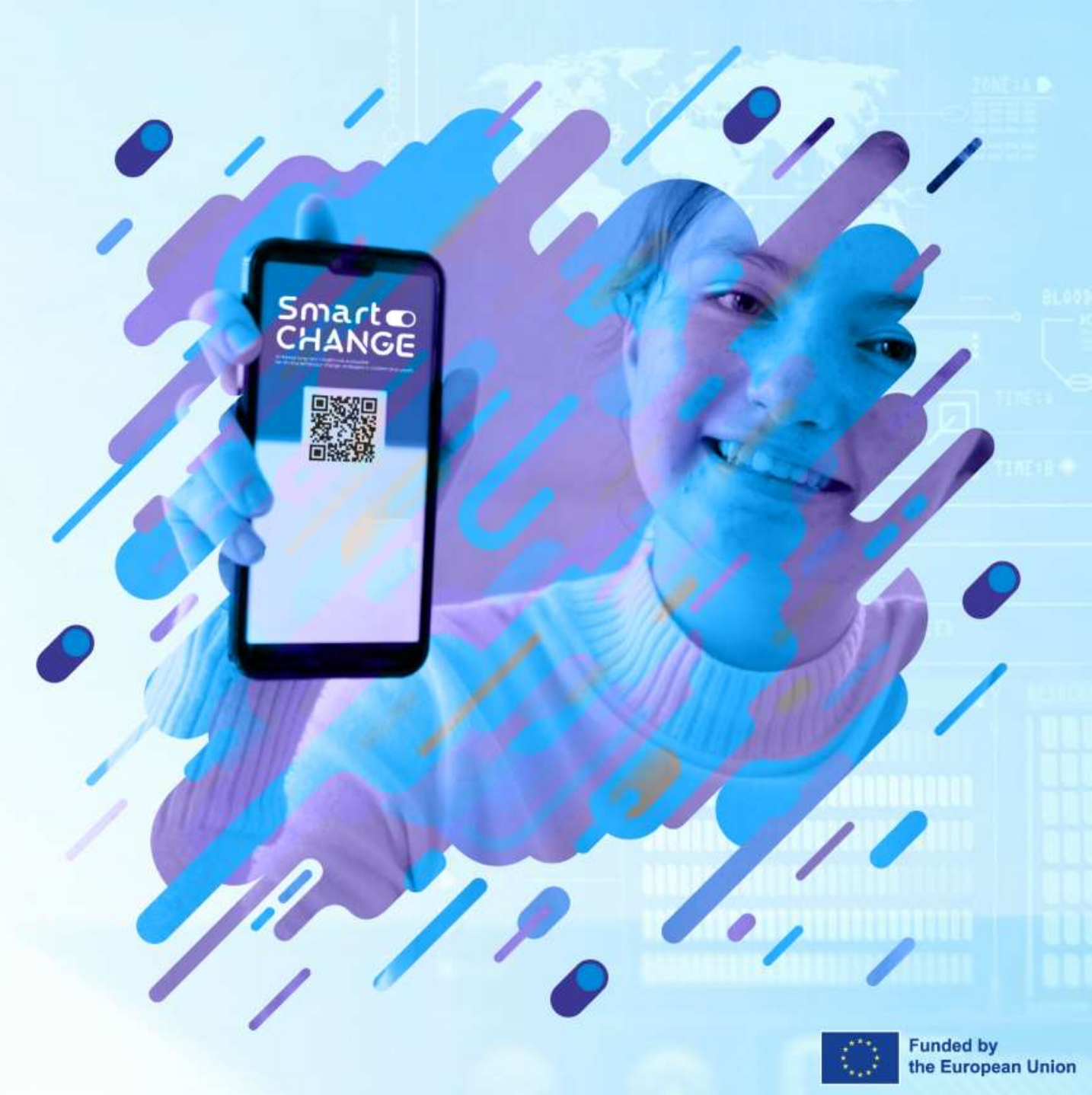




# Smart CHANGE

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Thank you



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SPEAKER

Gregor  
Jurak



UNIVERZA  
V LJUBLJANI

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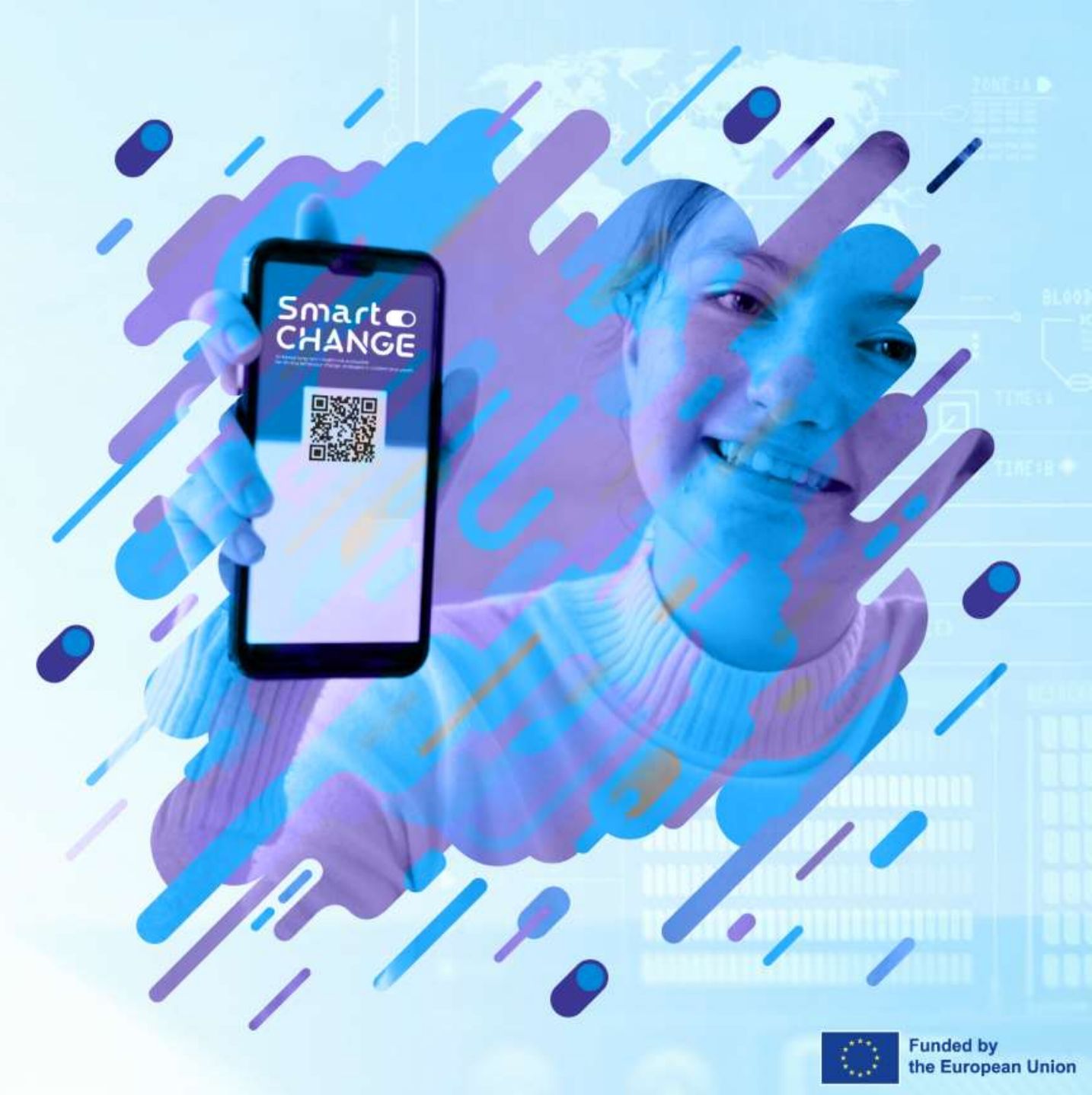
# Smart CHANGE

Empowering Youth with AI for healthier lives

## Feasibility study in Slovenia

Gregor Jurak

Univerza v Ljubljani



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# Feasibility study in Slovenia



- 🔵 Experimental group: Sv. Ana in Renče
- 🔵 Control group: Žalec



# Health Care Professionals and Teachers

	Sv. Ana	Renče	Žalec
Paediatrician	●	●	
Kinesiologist	●		●
Nutritionist	●		
Psychologist	●		
Nurse	●	● ●	
Teacher	●	● ●	● ●



N=14

# Recruiting

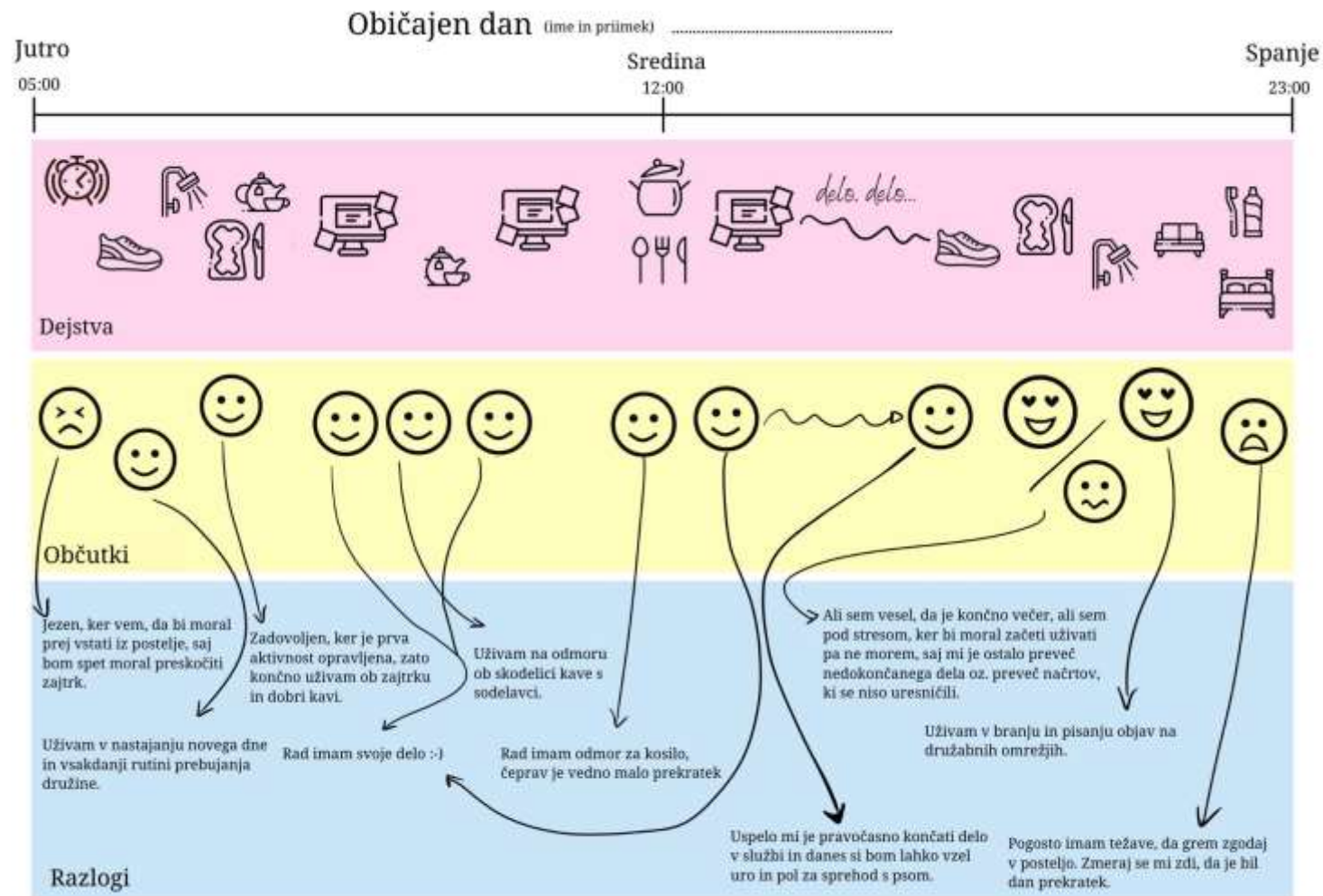


# Recruiting





# Usual day



Primer osebne časovnice, sestavljene izključno za potrebe projekta SmartCHANGE!



# CURRENT CLINIC ROUTINE

1.



"Mike, your weight is fine, and you seem healthy, no need to worry."

Current practice typically ignores lifestyle risk factors which leads to many high risk individuals staying under the radar. Objective data on behaviours are often overlooked.

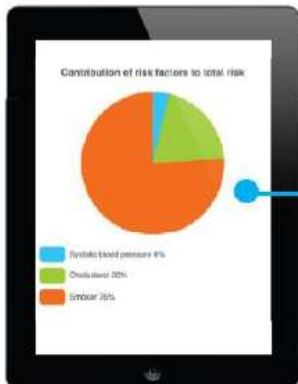
## UPON INTRODUCING SMARTCHANGE

1.



"I want to learn more about your lifestyle"

SmartCHANGE application identifies Mike as having high risk for future chronic disease, and helps the physician to choose optimal risk lowering strategies.



1. Prediction of future health risk improves detection of high-risk individuals

2. Risk factor prioritisation

3. Guidance in goal setting and optimised risk lowering strategies





2.

"What can we do?"

"Well, I will give you some advice right away, and if you download the SmartCHANGE Family app and encourage Mike to wear this fitness tracker for at least a month, we can have a more personalised strategy"...

*"SmartCHANGE app will help us keep in touch so I can support you along the way. Plus, you will be able to monitor Mike's progress continuously."*

3.

"How did you like wearing the fitness tracker, Mike? Let me now try something in my app... the model predicts your health will benefit the most from more exercise, and I trust this estimate. You have plenty of playgrounds around your home, how about playing some ball games at least 2 hours a week. Moreover, if you cut down on salty snacks and soda, the health risk will be further reduced."

4.

"Through SmartCHANGE, Mike's lifestyle has improved so much, and we are happy to see the risks are now much lower than before!"

# Monitoring of child lifestyle





# What is artificial intelligence?

## WHAT IS ARTIFICIAL INTELLIGENCE?

### Machine Learning

Using sample data to train computer programs to recognize patterns based on algorithms.



### Neural Networks

Computer systems designed to imitate the neurons in a brain.



### Natural Language Processing

The ability to understand speech, as well as understand and analyze documents.

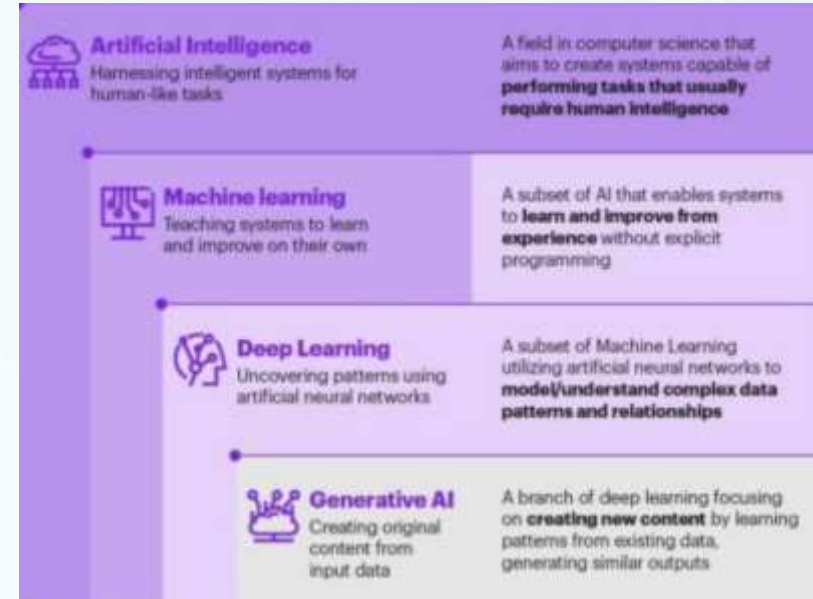


### Robotics

Machines that can assist people without actual human involvement.

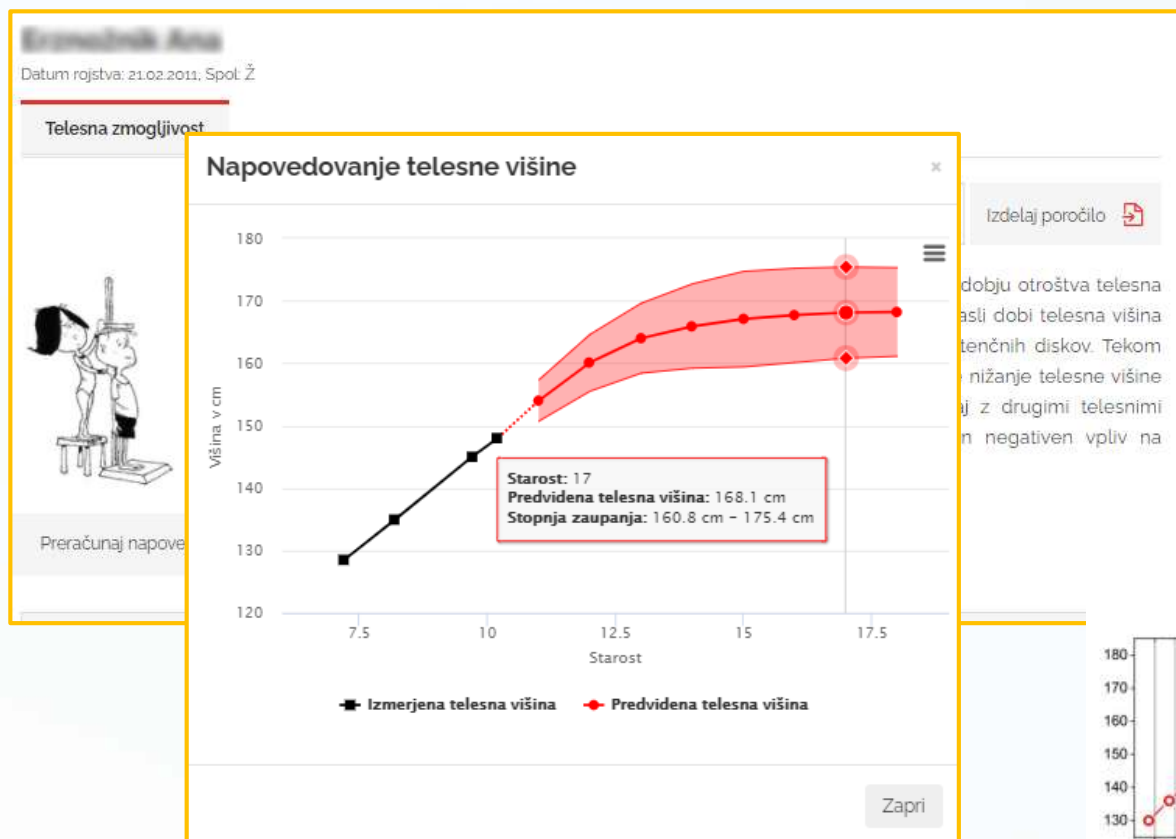


The Motley Fool





# Use of AI in My SLOfit



RESEARCH ARTICLE

## Adult height prediction using the growth curve comparison method

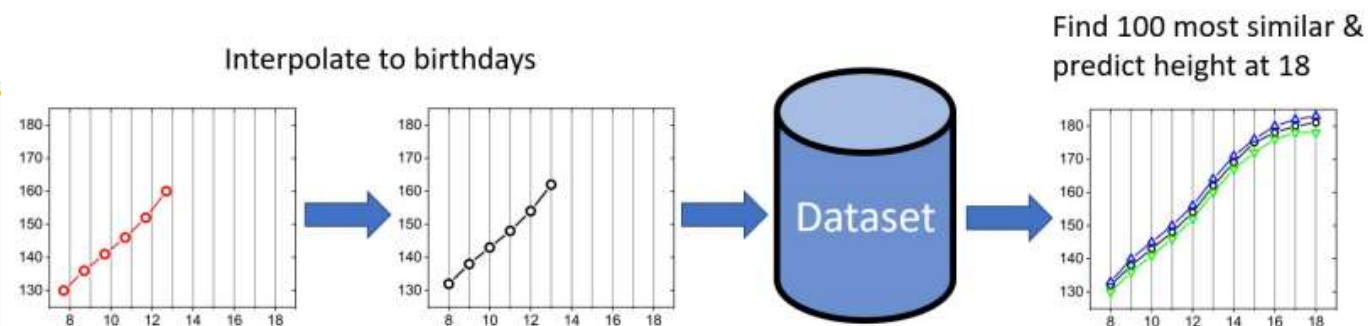
Miha Miakar<sup>1</sup>, Anton Gradišek<sup>1\*</sup>, Mitja Luštrek<sup>1</sup>, Gregor Jurak<sup>2</sup>, Maroje Sorič<sup>2,3</sup>, Bojan Leskošek<sup>2</sup>, Gregor Starc<sup>2\*</sup>

**1** Department of Intelligent Systems, Jožef Stefan Institute, Ljubljana, Slovenia, **2** Faculty of Sport, University of Ljubljana, Ljubljana, Slovenia, **3** Faculty of Kinesiology, University of Zagreb, Zagreb, Croatia

\* [anton.gradisek@ijs.si](mailto:anton.gradisek@ijs.si) (AG); [gregor.starc@fsp.uni-lj.si](mailto:gregor.starc@fsp.uni-lj.si) (GS)

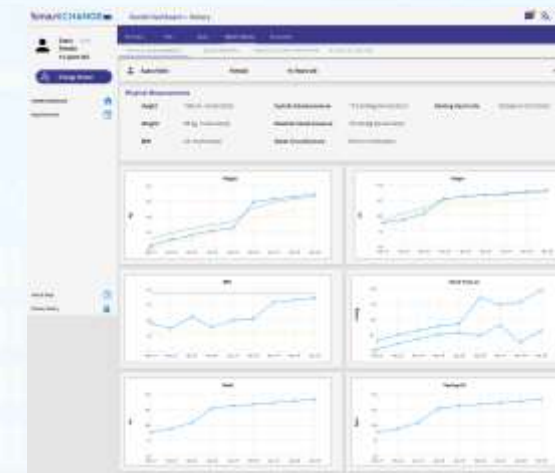
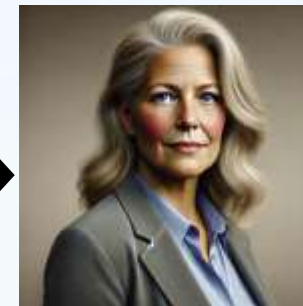
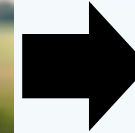
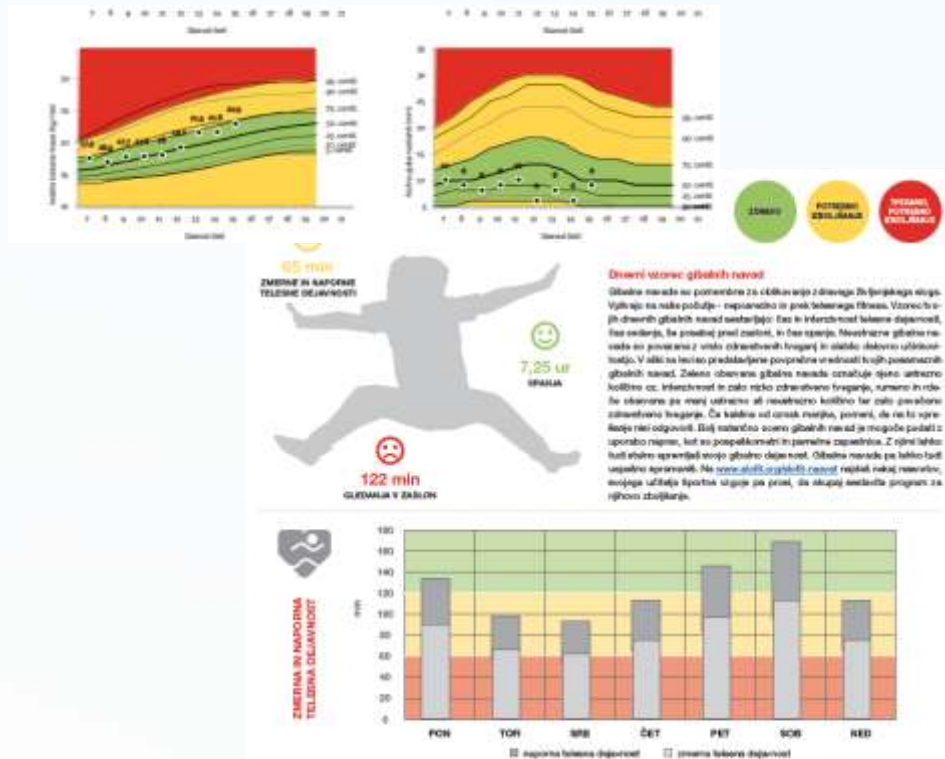
### Abstract

Understanding the growth pattern is important in view of child and adolescent development.



**Fig 1. A pipeline showing how a determination of height is made.** The input to the model is the time series of heights. We interpolate the values to reflect the heights at the student's birthday. This set is compared against the database and 100 most similar individuals are then selected, with heights up to the height at the age of 18. The height at the age of 18 for the chosen student is calculated as the sum of the average growths per year. See also Fig 4 for model prediction results.

# Use of AI in SmartCHANGE



- 🔵 Napovedovalni modeli na veliki množic podatkov
- 🔵 Sprememba katerega vedenja prinaša največje zdravstvene koristi

# My SLOfit

Dostop do rezultatov ŠVK in povratnih informacij, kjer je prikazana zdravstvena ogroženost glede na rezultate meritev:

- Koliko je posameznik **napredoval** v enem letu
- Kakšen je njegov telesni in gibalni razvoj v **primerjavi z vrstniki**
- V kakšno **skupino telesne pripravljenosti in zdravstvene ogroženosti** ga uvrščajo posamezni rezultati
- Trend rezultatov skozi več let
- Tiskanje poročila



- trajno hranjenje SLOfit podatkov
- možnost deljenja vpogleda v svoje SLOfit podatke



# Garmin Vivosmart 5 and HappyPlant app





# 10 steps to monitor child lifestyle with HappyPlant

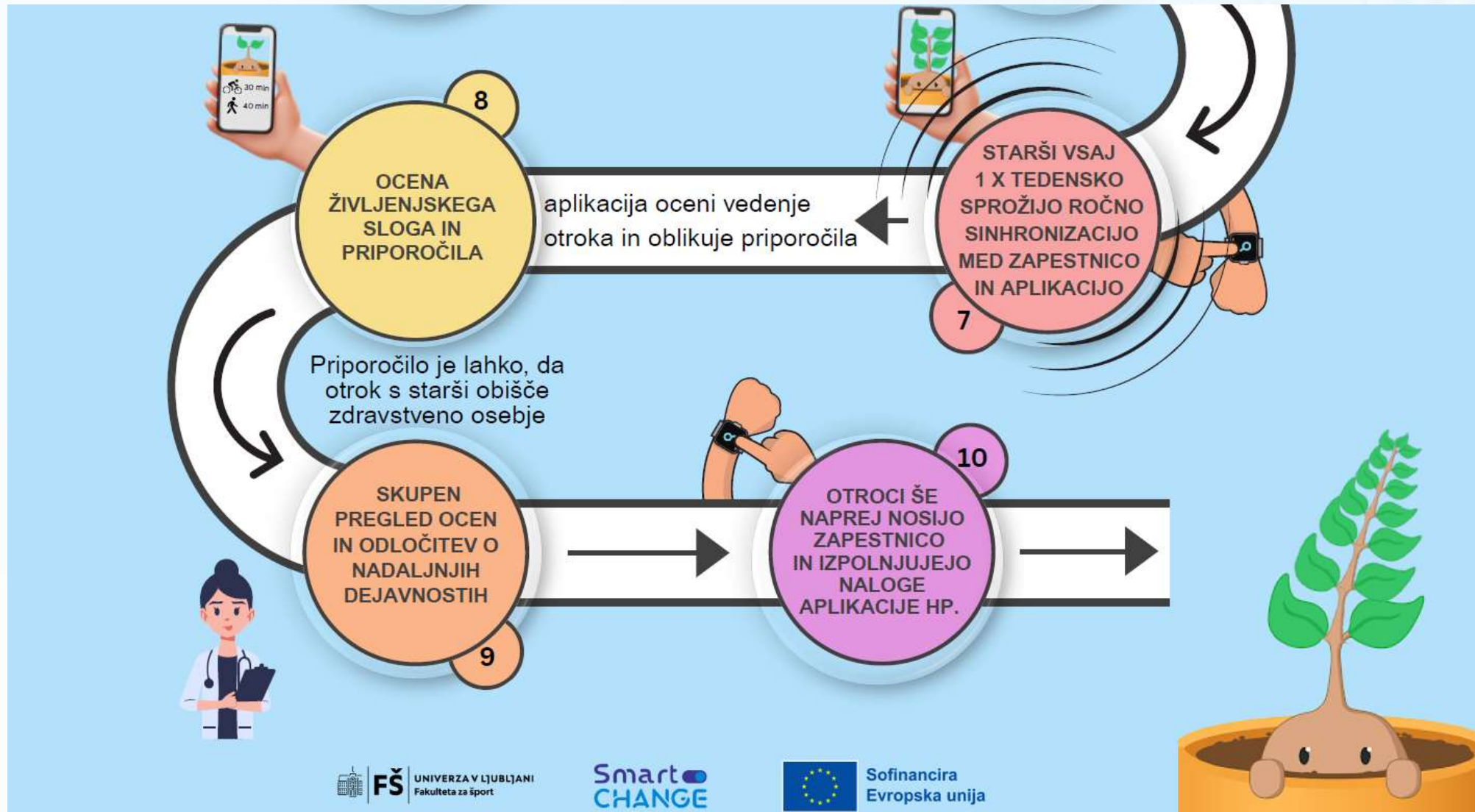
# 10

PREPROSTIH  
KORAKOV  
DO ZDRAVIH  
ODLOČITEV  
V DRUŽINI

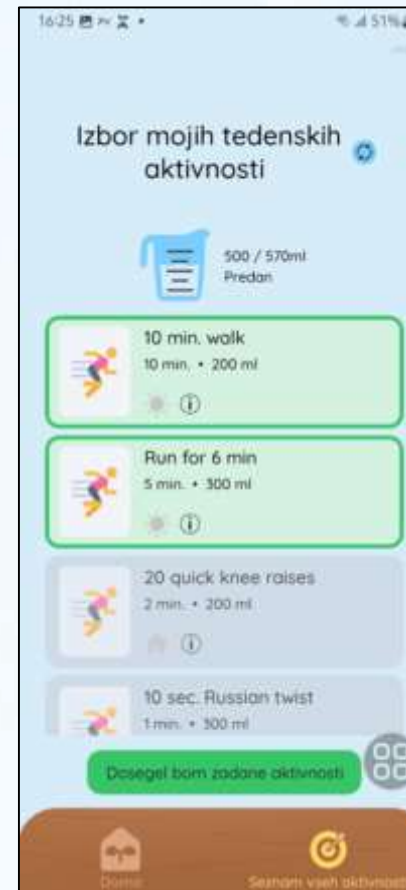
Z aplikacijo Happy Plant (HP) in pametno zapestnico boste z otrokom vsak dan spremljali pomembne podatke o njegovih gibalnih vzorcih, spalnih rutinah in življenjskih navadah. Prejeli pa boste konkretna, personalizirana priporočila in preproste, uporabne predloge, kako še izboljšati njegovo zdravje.



# 10 steps to monitor child lifestyle with HappyPlant



# HappyPlant





# Personal Data Protection Treatment

- Child's personal data that we collect during our study:
  - Sociodemographic data: name, surname, date of birth, gender, parents' names and emails (collected personally by the school's teacher)
  - Body height and mass (obtained with a questionnaire in HappyPlant mobile app. and with measurements taken at meetings with the healthcare team – data recorded in SmartChange web app.)
  - Physical activity, sleeping habits, sitting habits (automatically obtained by a wearable Garmin device)
  - Eating habits, mindfulness (obtained with questionnaires in HappyPlant app. on multiple occasions)
  - Physical fitness (imported data from external SLOfit app.)
  - Other sociodemographic data: parents' education, family's socioeconomic status (obtained with a questionnaire in HappyPlant app.)
- Pseudonymization:
  - replacement of personal identifiers (e.g., child's name and surname) with a fictitious number
- Data storage: a server located in Slovenia

# Access to collected personal data

- Teachers at the schools (access to data from Garmin device)
- Healthcare team (all data, including those calculated by AI)
- Authorized researcher at Faculty of Sport University of Ljubljana (all data, including those calculated by AI)

# Use of AI & Ethics

## • The use of AI:

- **Health risk assessment** is based on data collected from HappyPlant app. (and also Garmin device) during the first week of our study  
(the assessments are completed on server and then the notification is sent to HappyPlant app.)
- **Health risk prediction** models are based on data collected by Garmin device, HappyPlant app. and SmartChange web app.;  
(the assessment is performed on server while the visualization of models is available in SmartCHANGE web app.)
  - Further decisions for changing child's behaviour are made by the parents and healthcare team together.

- Consent of the Commission of the Republic of Slovenia for Medical Ethics,  
no. 0120-493/2024-2711-6



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SPEAKER

Tuija Tammelin

jamk University of Applied Sciences



SPEAKER

Heikki Laaksonen

jamk University of Applied Sciences

WEBINAR 11 November- 11:00-12:30 CET

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# Smart CHANGE

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## Feasibility study in Finnish schools

Tuija Tammelin & Heikki Laaksonen

Jamk University of Applied Sciences, Likes  
Jyväskylä, Finland

**Likes**  
by jamk



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# Feasibility study in Finland – in schools and school health care

- ❏ **Co-design** of the applications in Finland was done together with
  - ❏ Finnish adolescents at schools (HappyPlant mobile app)
  - ❏ Finnish school/health nurses (web app)



**Likes**  
by jamk



# Feasibility study in Finland in 2025-2026 – setting

- ❏ **Participants:** 8 school nurses and 120 pupils (aged 11 and 14 y) from 6 schools
- ❏ **Children and adolescents** use the mobile app (HappyPlant) and Garmin Vivosmart 5 activity trackers.
- ❏ **School nurses** use the web-based tool to monitor children's progress and provide support for behavior change.



**Likes**  
by jamk

# Feasibility study in Finland in 2025-2026 – methods

## Primary outcomes

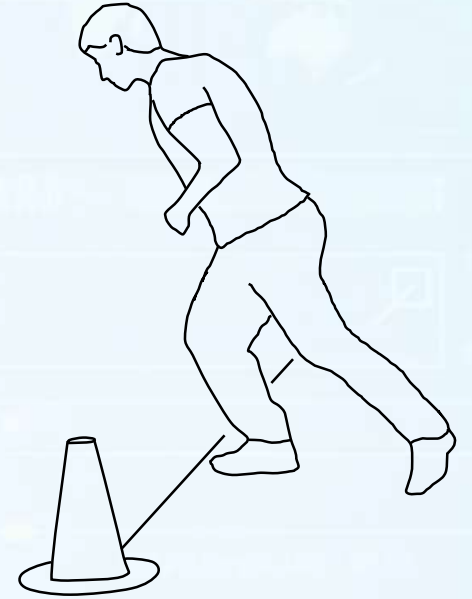
- Feasibility, usability, and explainability of the tools.
- Data will be collected through surveys and focus group interviews.

## Secondary outcomes

- Changes in a) calculated health risk, b) lifestyle behaviors and c) health outcomes (BMI, blood pressure, and resting heart rate) measured by school nurses.

# Why did we choose 11 & 14 year olds to participate in Finland?

- Move! a national monitoring and feedback system for all Finnish 5th and 8th grade pupils' to measure their fitness/ physical functional capacity
  - 20 m shuttle run, push-ups, curl-ups, 5-leap, throwing-catching, flexibility – during Physical Education lessons
- Main purpose is to encourage pupils to take responsibility for their own physical fitness, and to promote an active lifestyle.
- Move! results will be taken in expanded health checks conducted by school nurses (guardians involved)
- Potential use of SmartCHANGE applications in this context in future...





# Recruitment process

- ➊ Recruitment process involved multiple phases, to first recruit the school nurses before we could start recruitment of children and adolescents at the schools
- ➋ Children and adolescents were recruited
  - ➊ a) from events held in classroom and
  - ➋ b) directly by school nurses
- ➌ Collaboration with local welfare district to support school nurses' opportunity/willingness to join the study and improve children & adolescents' adherence to study visits during the school day.
- ➍ Children and adolescents received the HappyPlant application well during the recruitments, 11-year-olds were keener to participate than 14-year-olds.

## Next steps: Starting the feasibility study

- Starting events at each participating schools
- Deliver the Garmins for the participants and ensure everyone has Garmin and HappyPlant running correctly
- Provide instructions and information for participants and their parents
- Children and adolescents begin to use the Garmin and the HappyPlant application and attend the initial meeting with the school nurse

# Opportunities and local topics related to feasibility study

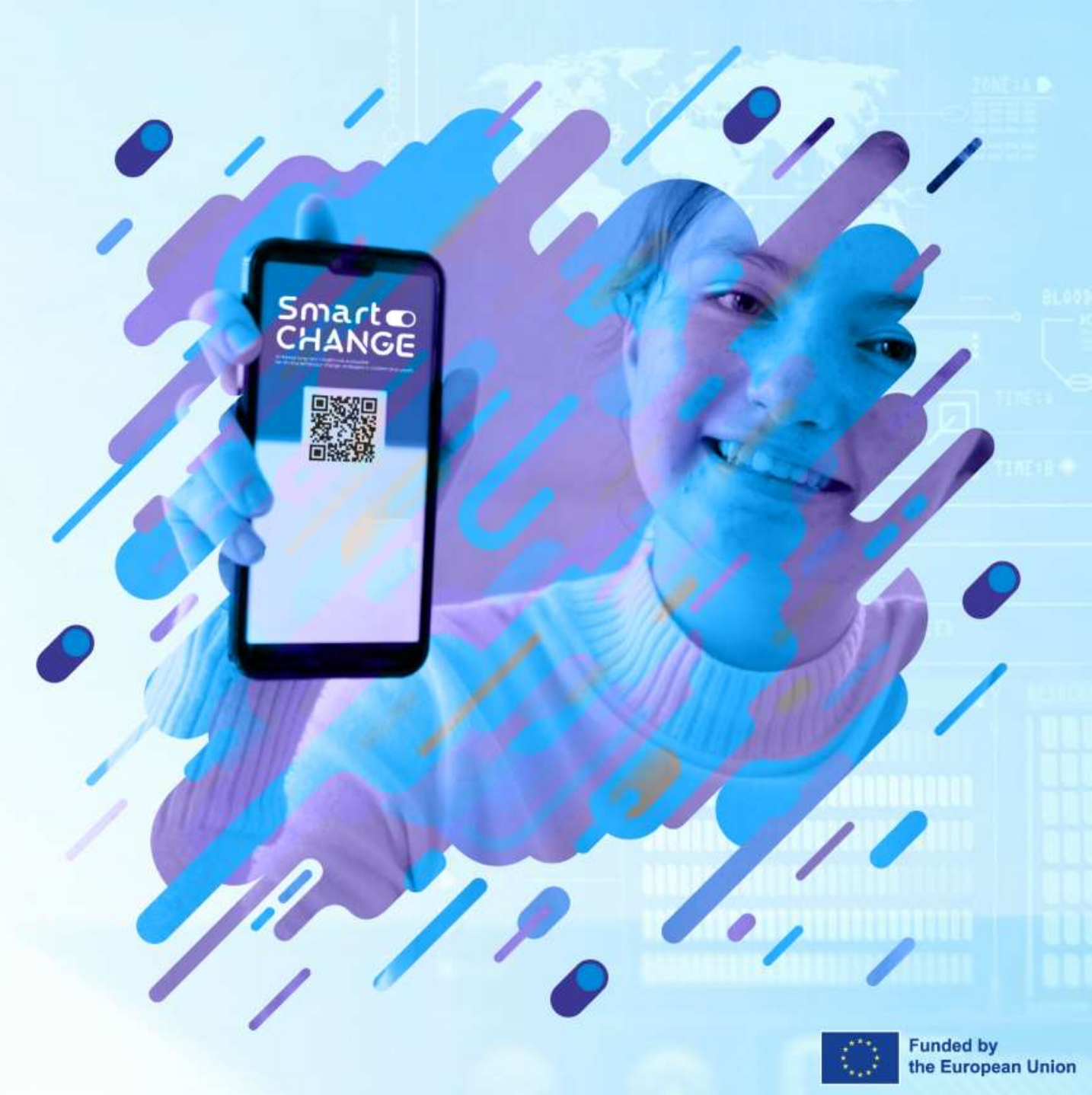
- ➊ Opportunity to assist school nurse in their work evaluating children health
  - ➋ Incorporating the device measured lifestyle data into the process
- ➌ Finnish legislation was changed recently to restrict mobile phone use in the schools for children and adolescents
  - ➍ Some schools also restrict the use of Smartwatches - Permission from schools to use activity trackers during school days was granted for the feasibility study
- ➎ New guidelines are in process from Finnish institute for Health and Welfare which addresses the 0-13 years old children digital device use
  - ➏ Recommends that younger than 11-year-olds should not have their own digital device



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Thank you!



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SPEAKER

Claudia Dictus



SPEAKER

Mariëtte Hoogsteder



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# Netherlan ds

Feasibility Study plan

**Claudia Dictus, Mariëtte  
Hoogsteder, Teatske Altenburg**



# Realist Ripple Effect Mapping (RREM) of the Happy Plant App

•1 Evaluation team  
formation and  
piloting



2 Recruitment and  
app use

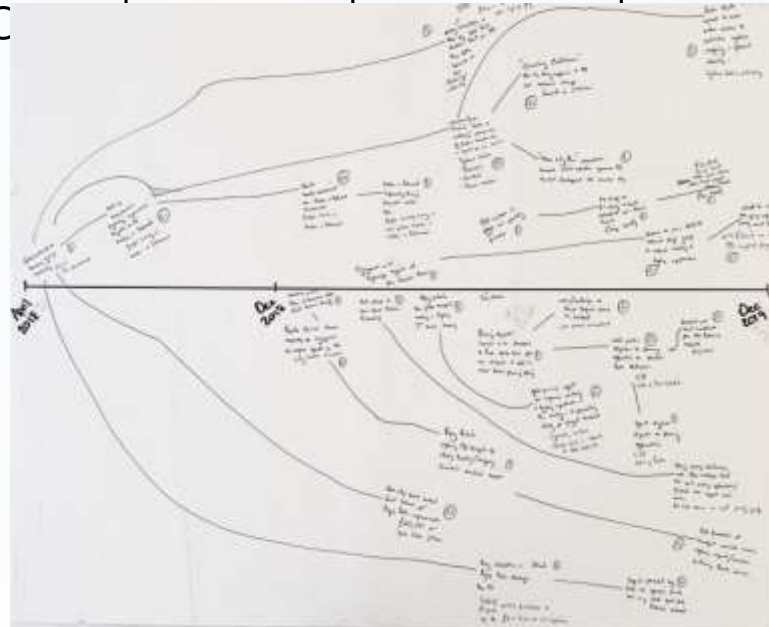


3 RREM workshops



# Phase 1 Evaluation team formation and piloting

- 6-10 adolescents who were involved in co-design (age 14-16)
- Pilot testing of the app
- Planning recruitment incentives for participants
- Learning through pilot testing to carry out RREM



## Phase 2 Recruitment and app use

- 20-50 adolescents aged 11-14 recruited with evaluation team
- App use for minimum of 2 weeks
  - Weekly evaluation of continued use

## Phase 3 RREM

- RREM workshops co-facilitated by evaluation team (visual mapping, detecting CMO's / context mechanisms outcomes)
- Final analysis of findings together with evaluation team



# Transdisciplinary research panel Evaluation HCP app

•1 Workshops and recruitment at existing events



•2 TD research panel formation



•3 Panel sessions



# Phase 1

- 🔵 Attending existing events for recruitment
  - 🔵 HELT
  - 🔵 Events of Academic Collaborative Center Youth and Health
  - 🔵 Physicians public health interns / residents
- 🔵 Contact youth healthcare centers through network
  - 🔵 Comparison SmartCHANGE to existing practice

## Phase 2

- 🔘 Contacting of additional stakeholders through targeted recruitment e.g.
  - 🔘 Parents; Family GPs; JGZ managers; School nurses; PE teachers; Municipality
- 🔘 Initial online meetings to plan panel sessions
  - 🔘 Location, Frequency, Duration, Incentives

## Phase 3

- 🔘 Panel sessions - subjects and output to be determined
- 🔘 Possible collaboration with Teen Evaluation Team





SPEAKER

José Carlos  
Ribeiro

U.PORTO

WEBINAR 11 November- 11:00-12:30 CET

Putting Health Tools into practice:  
**Designing feasibility studies  
at an international scale**



# Smart CHANGE

Empowering Youth with AI for healthier lives

## *SmartCHANGE Feasibility Study – Portugal Pilot Site*

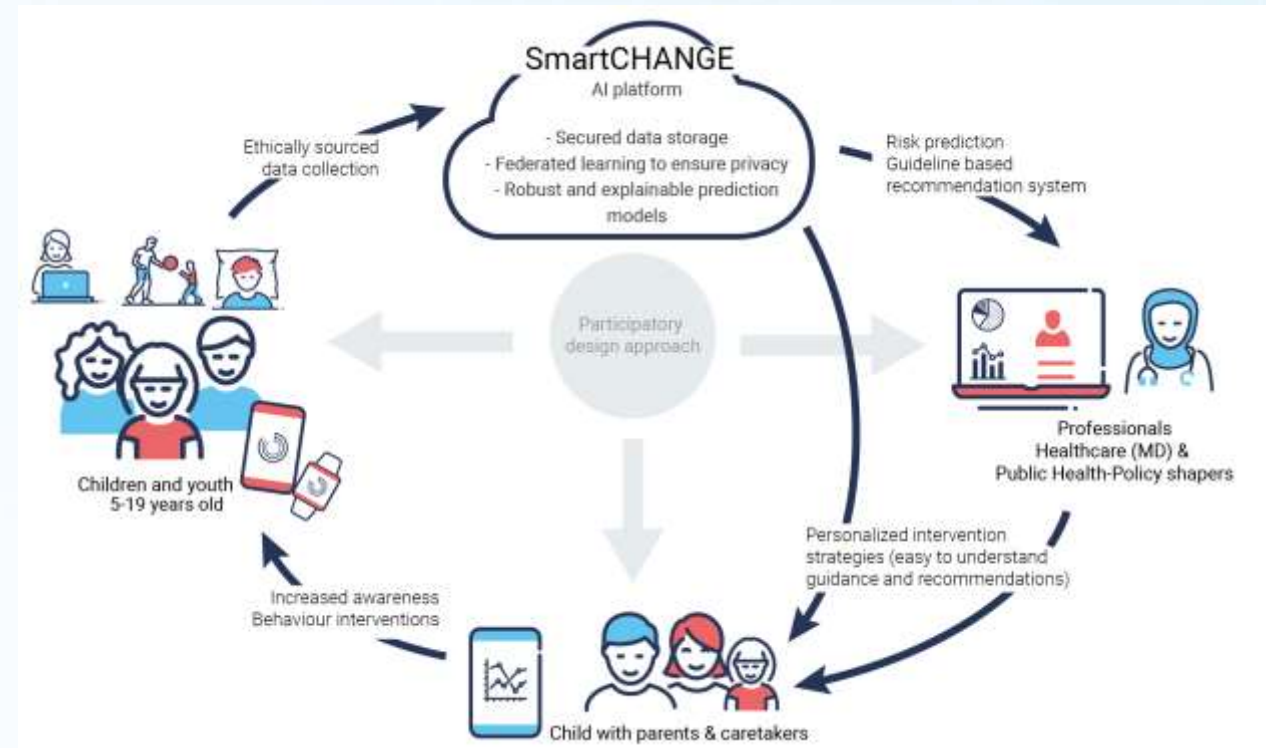
*José Carlos Ribeiro  
Faculty of Sport  
University of Porto*





# Objective of SmartCHANGE:

- “To provide healthcare professionals and citizens with AI-based tools for assessing long-term health risks and supporting healthy behaviour change in children and adolescents.”
- Two main tools:
  - Web app for healthcare professionals
  - Mobile app *HappyPlant* for citizens





# Purpose of the Feasibility Study

- 🔵 **Main goal:** test the feasibility, usability, and acceptability of SmartCHANGE tools in real-world settings.
- 🔵 **Why Portugal:** family-based healthcare context with paediatricians, early lifestyle intervention, and strong clinical infrastructure.
- 🔵 **Study design:** non-randomised trial with experimental and control groups.

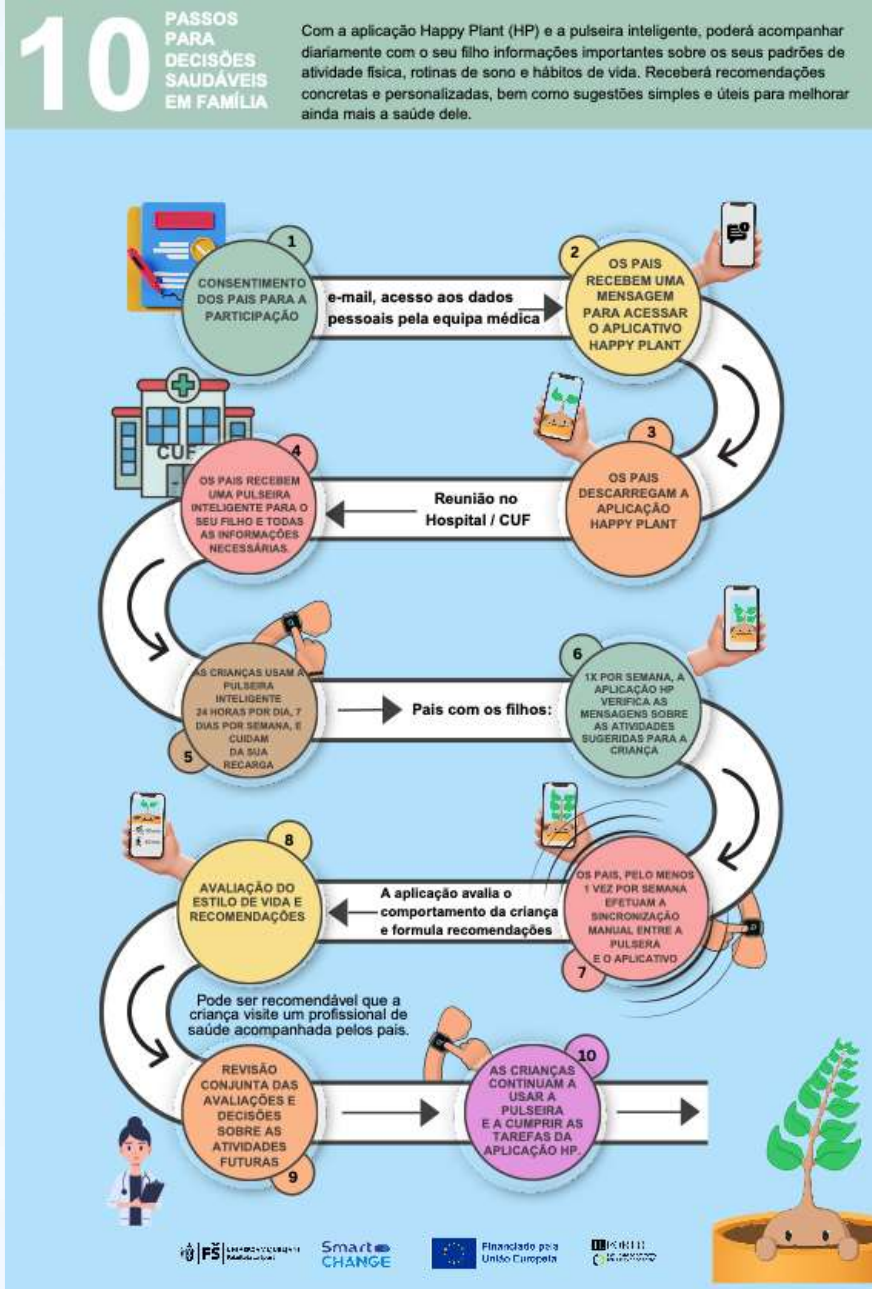
# Study Context in Portugal

- 🔵 **Target group:** families with at least one child aged **6–10 years**.
- 🔵 **Participants:** ~100 families (50 experimental, 50 control).
- 🔵 **Setting:** CUF Hospital.
- 🔵 **Recruitment:** via paediatric consultations and family doctors.



## Recruitment and Procedures

- ➡ Families invited during regular check-ups.
- ➡ Information brochures and consent forms will be distributed during a general meeting at the Faculty.
- ➡ Follow-up via phone/email if no reply within 15 days.
- ➡ Children wear **Garmin Vivosmart 5** for physical activity monitoring.





# The SmartCHANGE Tools

## Web App (for professionals):

- Shows risk profiles and key behavioural factors.
- AI-driven risk prediction (low/medium/high).
- Enables professionals to define and adjust goals.

## Mobile App (HappyPlant):

- Used by parents/children.
- Gamified plant growth linked to healthy goals.
- Focus on fun, achievable, family-oriented activities.



# Role of Healthcare Professionals

- 🔵 Professionals interpret AI-generated risks.
  - 🔵 Define intervention areas (e.g., physical activity, diet).
  - 🔵 Set SMART goals with families.
  - 🔵 Monitor progress and adjust objectives through the app.
- ⚠️ *The app does not autonomously prescribe interventions.*  
All behavioural goals must be validated by a healthcare professional.

# Outcomes

- 🔘 **Feasibility:** recruitment, adherence, technical functioning.
- 🔘 **Usability:** satisfaction and engagement (families + professionals).
- 🔘 **Explainability:** understanding and trust in AI predictions.
- 🔘 **Clinical:** changes in behaviour, BMI, activity levels, etc.



# Expected Impact

- ➊ Promote early health literacy and prevention.
- ➋ Strengthen collaboration between families and healthcare providers.
- ➌ Support clinical decision-making with explainable AI.
- ➍ Provide model for scalability to other EU countries.

# Ethical & Data Considerations

- Compliance with **GDPR** and local ethics committees.
- Informed consent from parents, assent from children.
- Anonymised or pseudonymised data stored securely in UPorto servers



# Smart CHANGE

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## Thank you

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CHANGE



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SPEAKER

Sherali  
Bomrah



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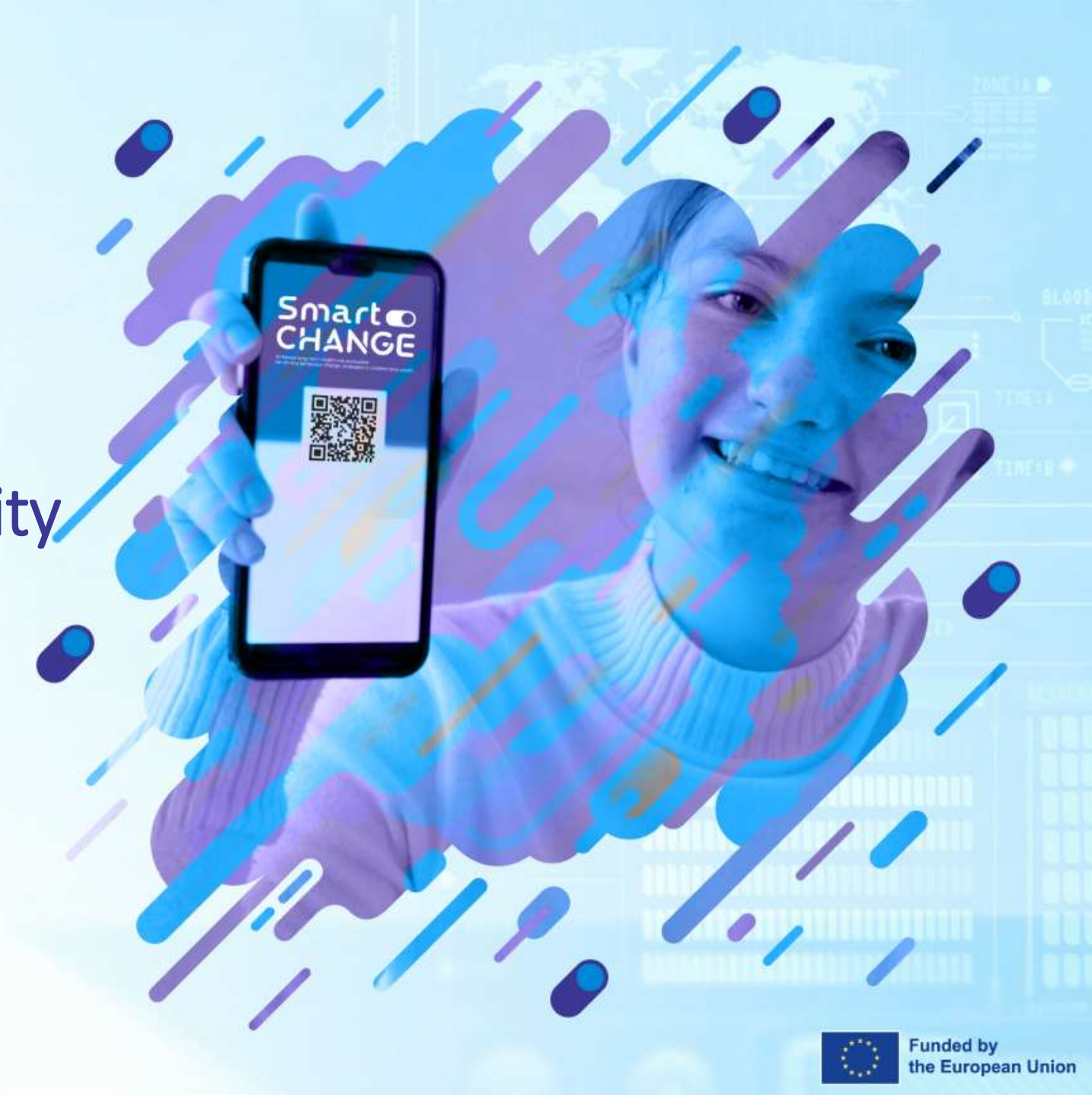


# Smart CHANGE

Empowering Youth with AI for healthier lives

## Putting Health Tools into practice: Designing feasibility studies at an international scale - Taiwan

Sherali Bomrah  
Taipei Medical University



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# OUTLINE



**Introduction**  
**Feasibility study objective**  
**Study design and Setting**  
**Recruitment and participation flow**  
**Intervention**  
**Study and Clinical Outcomes**  
**Progress so far**  
**Privacy Measures**  
**Anticipated Challenges**  
**Next Steps**





# INTRODUCTION

- Taiwan is one of the international feasibility sites in the SmartCHANGE, coordinated by **Taipei Medical University (TMU)** and its affiliated **teaching hospitals**.
- Our site represents an **Asian healthcare setting**, offering valuable insights into how SmartCHANGE can be implemented.



# Objectives of Taiwan site



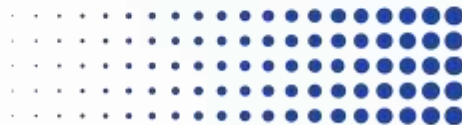
## Primary

To examine the feasibility of implementing the SmartCHANGE tool in Taiwan's hospital settings.



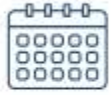
## Secondary

Evaluate user experiences of the SmartCHANGE web and mobile applications among adolescents, parents, and health-care professionals.





## STUDY DESIGN



### Feasibility period

Conducted over 6 months, covering preparation, recruitment, and two review phases.



### Health care practitioners Approach

Pediatricians meet family/adolescent for prescheduled screening encounter and invite them to join the study.



### Participants

100 children aged 10–14 years (50 intervention, 50 control)



### Hospital sites

Implement at two teaching hospitals under Taipei Medical University.

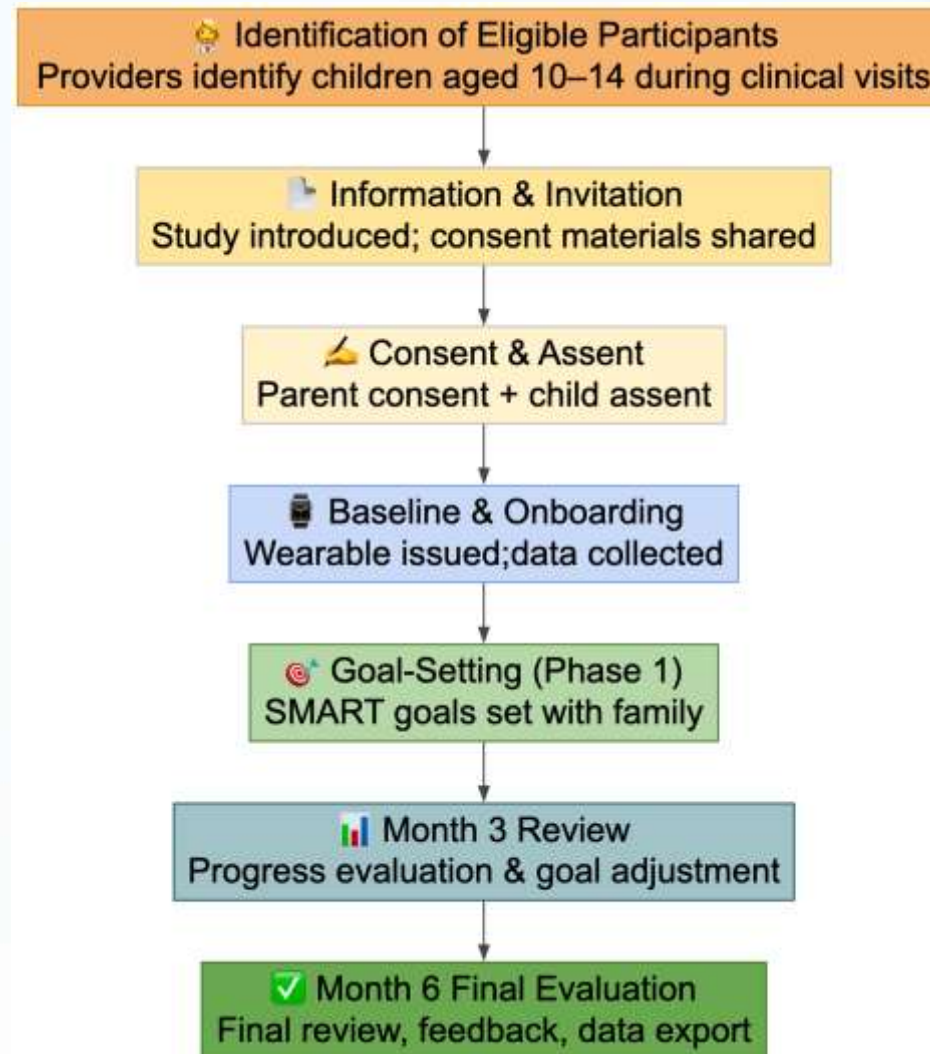


### Interventions

Happy plant app, SmartCHANGE web app and Garmin wearables

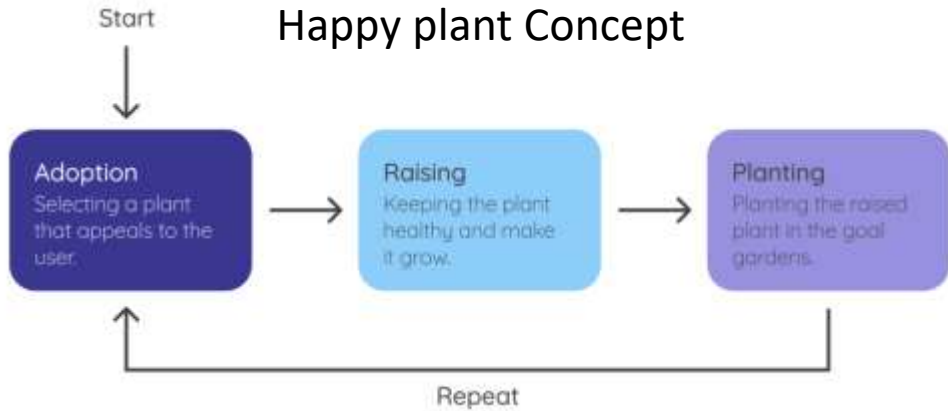


# RECRUITMENT AND PARTICIPATION FLOW



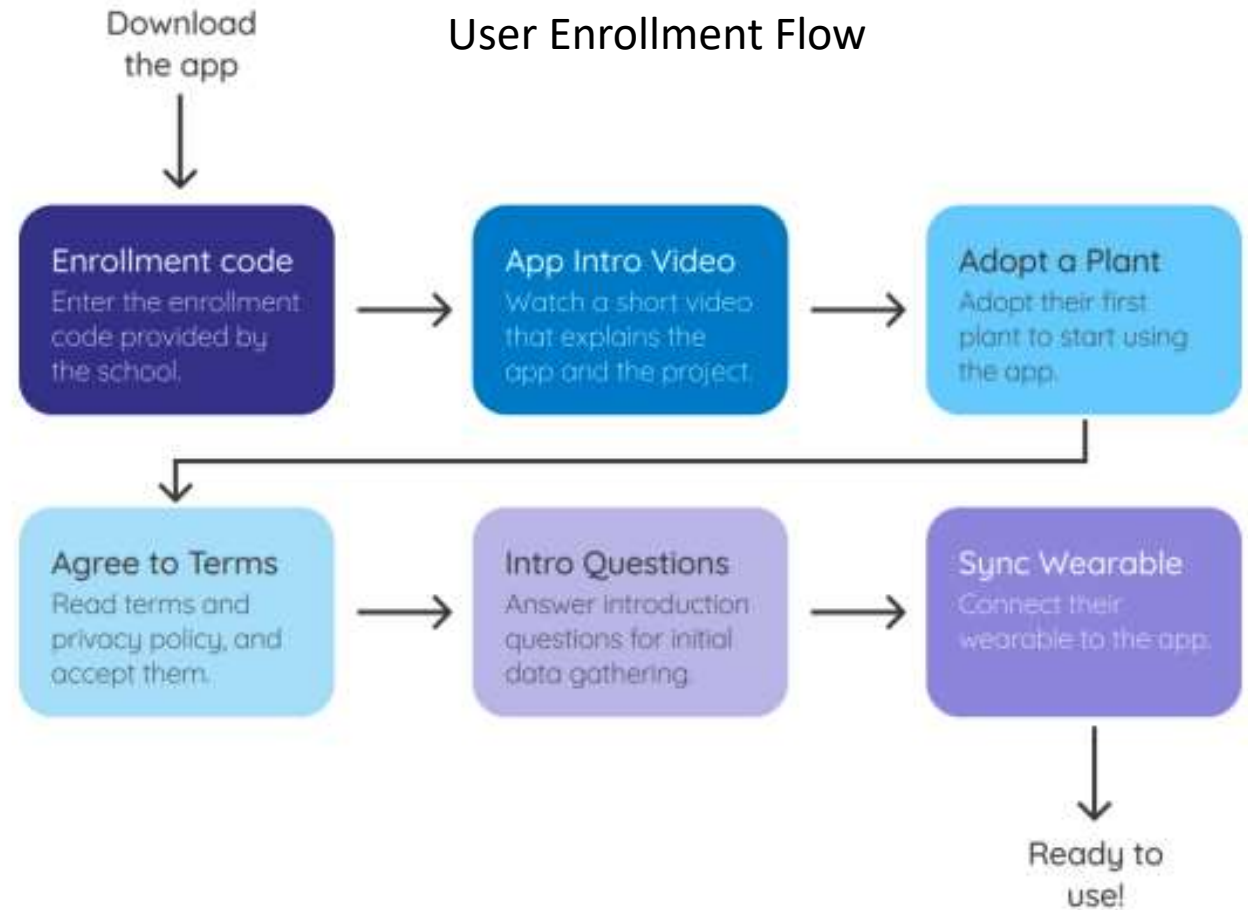
# INTERVENTION COMPONENTS

## Happy plant Concept



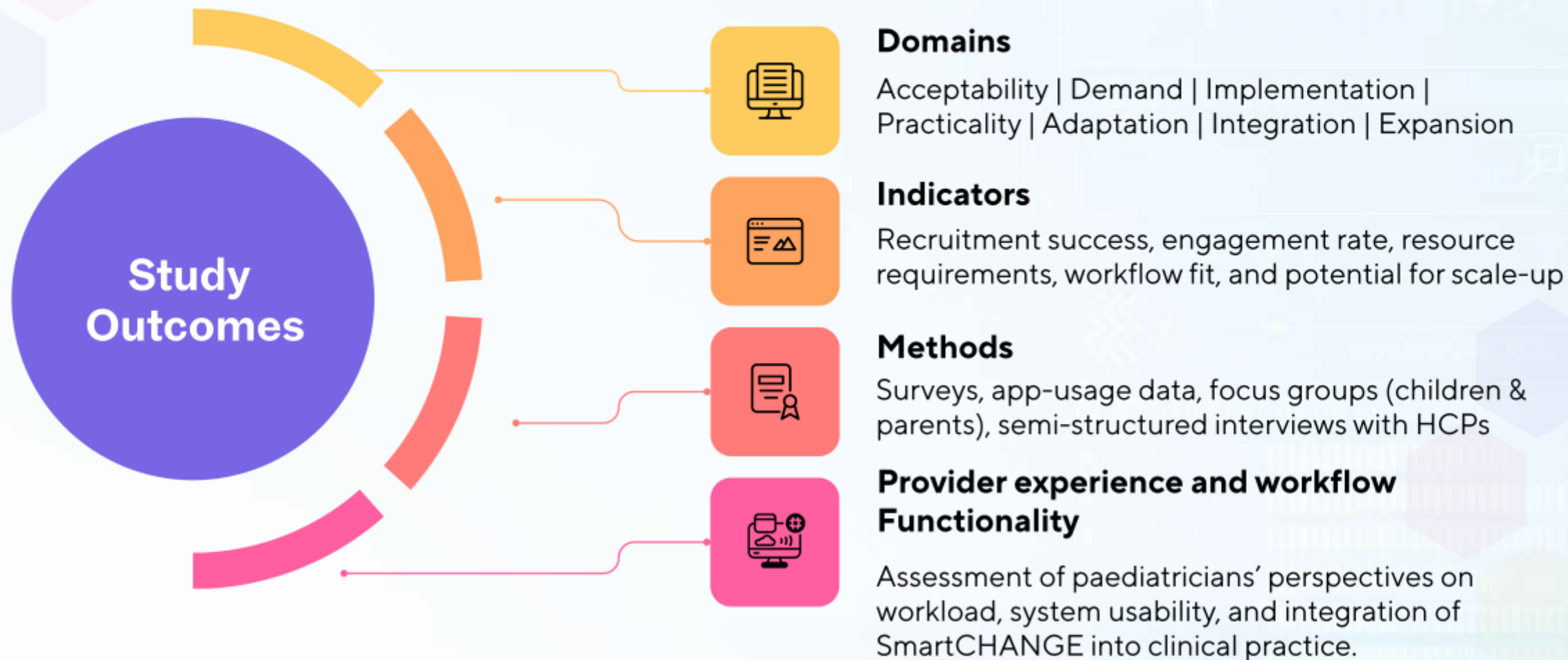
Garmin Vivosmart 5

## User Enrollment Flow



# Feasibility Outcomes

Assessing the practicality, acceptance, and scalability of SmartCHANGE in real-world healthcare workflows.





# Clinical Outcomes



## Aggregated Risk Reduction

Change in overall cardiovascular / metabolic health-risk score generated by the SmartCHANGE AI model.



## Behavioural and Lifestyle Changes

Improvement in physical activity, sleep quality, and reduction in screen time measured via wearables and app data.



## Physiological Indicators

Tracking changes in BMI percentile, waist-to-height ratio, and blood pressure between baseline, 3 months, and 6 months.

## Progress So FAR

- ✓ Local ethical clearance obtained for conducting the SmartCHANGE feasibility study
- ✓ Conducted multiple coordination meeting over last 6 to 8 months with pediatricians and nursing staff
- ✓ Server requirements finalized and system readiness confirmed for SmartCHANGE web platform
- ✓ Preliminary testing of app usability, data linkage, and wearable-device setup finished.



# Personal Data Protection and Privacy Measures

- 🔵 **Child's Personal Data Collected:** Sociodemographic data, Physical measurements data, Behavioural data and Lifestyle data.
- 🔵 **Data Pseudonymisation**
  - 🔵 Personal identifiers (e.g., name, contact details) will be replaced with coded study IDs.
- 🔵 **Data Storage & Security**
  - 🔵 All study data are securely stored on TMU's encrypted local server.



# ANTICIPATED CHALLENGES AND STRATEGIC ADAPTATIONS

## Health care Practitioners led implementation

### Anticipated Challenges

- Maintaining engagement and adherence over 6 months.
- Ensuring privacy and responsible app use in school environments.
- Aligning digital autonomy with parental oversight norms.

### Adaptations

- Gamified weekly missions and progress badges .
- Age-appropriate consent and parental communication materials.
- Youth-friendly content localization with input from adolescent focus groups

# Next steps

**01**

## **Recruitment launch**

Begin participant recruitment through paediatric clinics

**02**

## **Provider Training and system set up**

Conduct onboarding sessions for paediatricians and coordinators on SmartCHANGE web dashboard and HappyPlant! app.

**03**

## **Implementation phase**

Deploy wearables and begin participant monitoring. Conduct mid-term review at Month 3 and final evaluation at Month 6.

**04**

## **Data consolidation and Reporting**

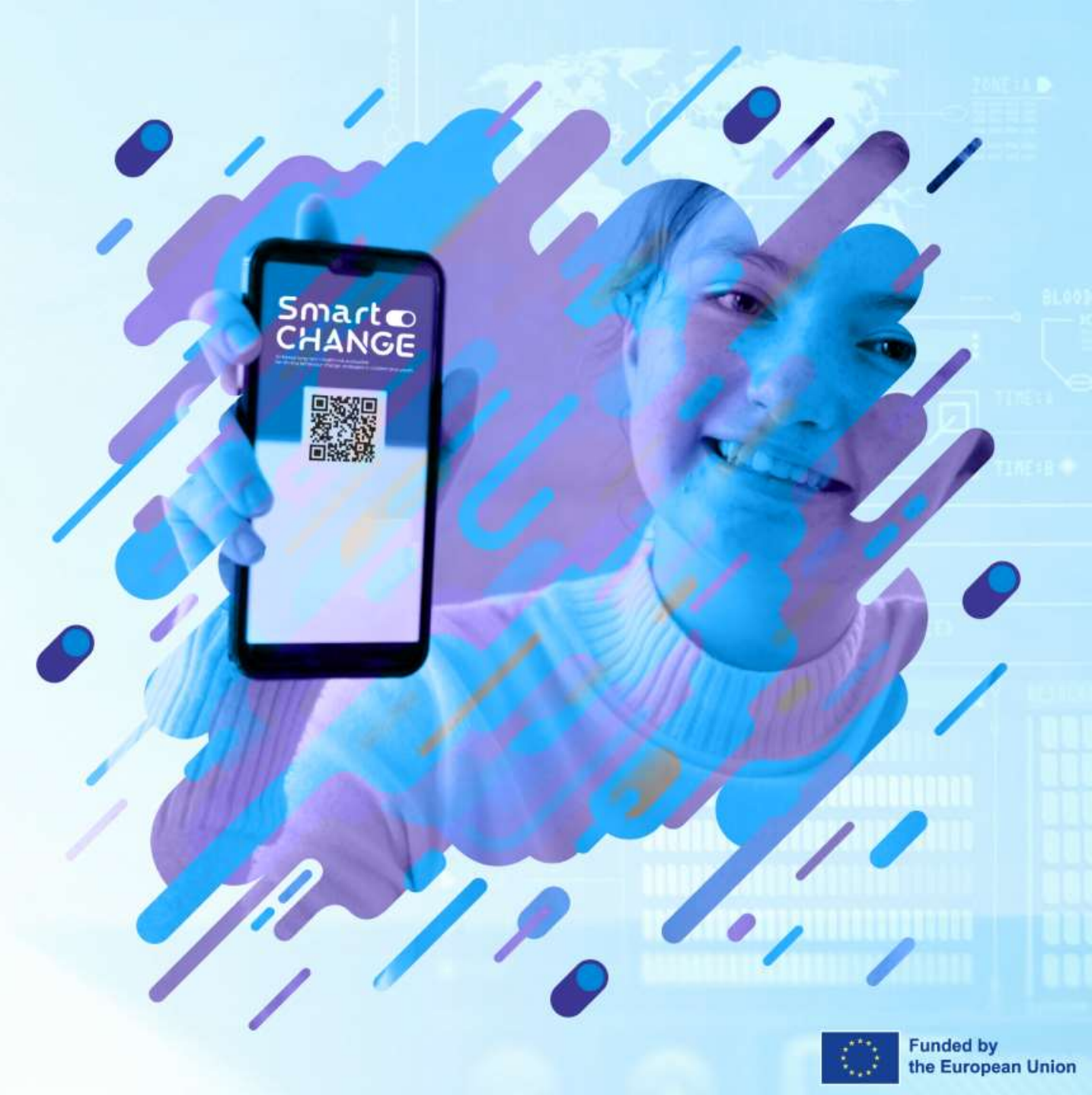
Aggregate feasibility, usability, and outcome data for analysis.



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## THANKS



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SPEAKER

Diego Dylan  
Domenici



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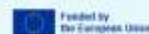
# Next steps

- Sign up for our newsletter at <https://smart-change.eu/newsletter> to receive major updates every few months

## Newsletter issues



- Follow us on whichever social media works best for you



[Privacy policy](#) | [Cookie preferences](#)

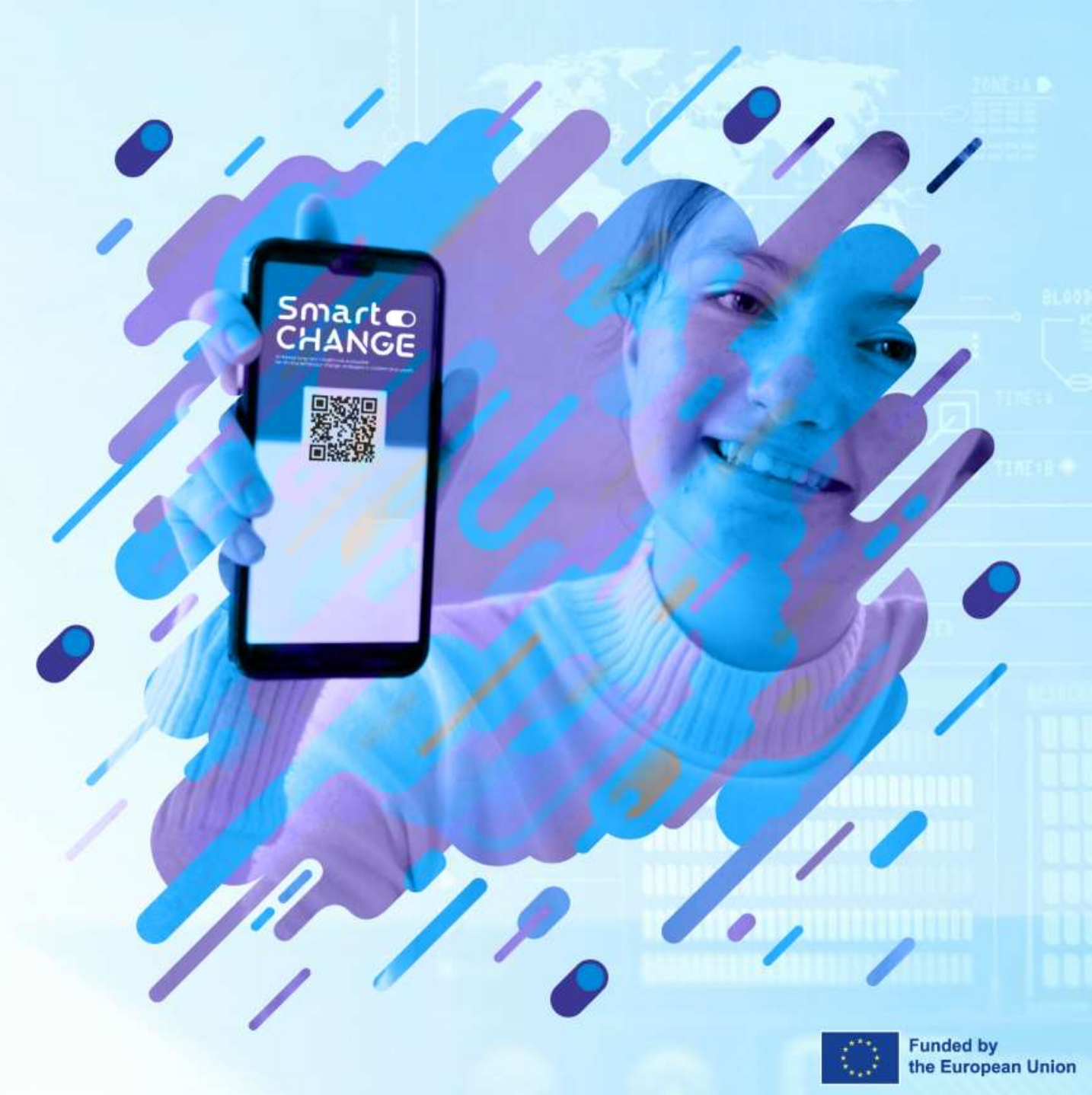
- and most importantly... Stay Healthy!



# Smart CHANGE

Empowering Youth with AI for healthier lives

## Thank you!



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