



Field Trial (5.2) Effects of motivational and self-regulation components on physical activity and diet

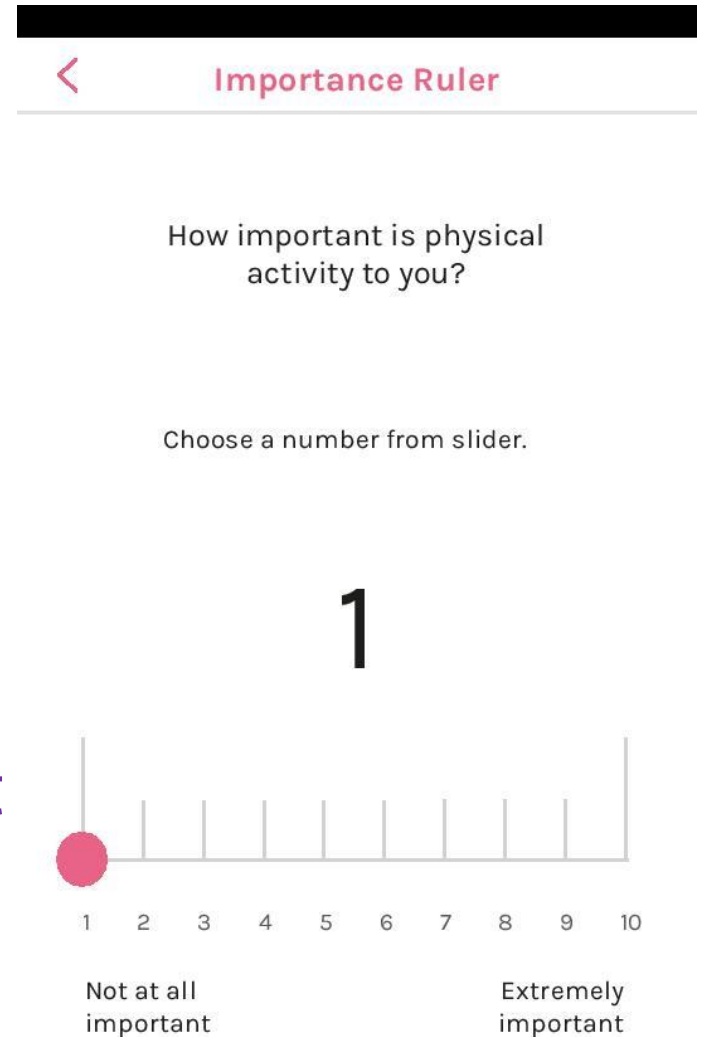
PRECIOUS Meeting, 23 September 2016
London, UK

From theoretical concept to practical application

Importance ruler

- "Why did you choose 7 and not 5?"
- helping the user to think about reasons that make PA important

→ Change talk



Research questions in Trial 5.2

1. Does *motivational interview (MI) components* increase
a) motivation b) use of other components c) Physical Activity (PA)
2. Does use and *feedback of Firstbeat reports* increase a)
motivation b) use of other components c) PA

In N of 1 study design

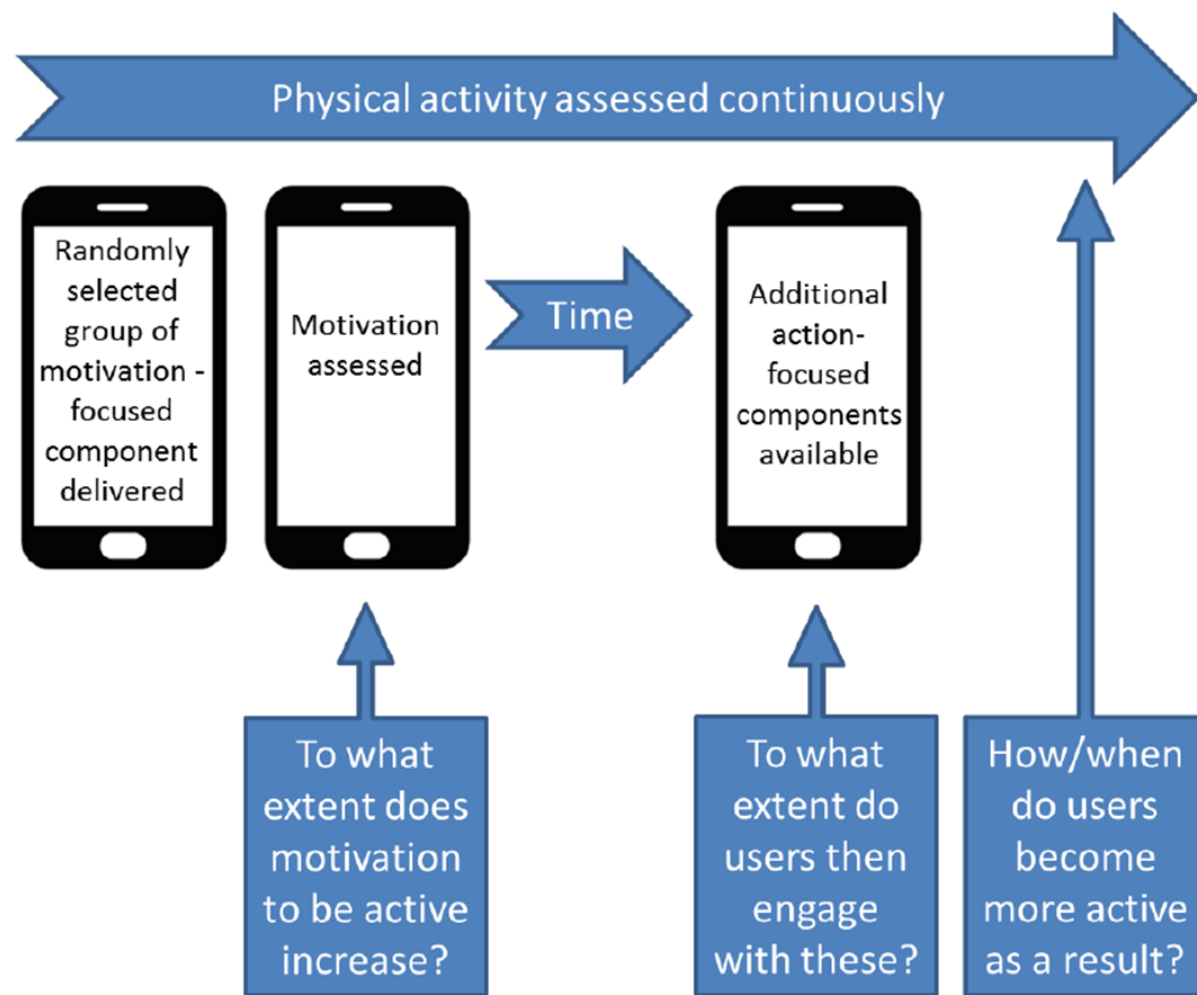


Interventions and PRECIOUS components in Trial

Intervention	Precious features on/off
Self-regulation (always on)	“Mountain climber” on = Goal setting, action planning, self-monitoring
Self-regulation + Motivational interviewing	“Mountain climber” + the Precious MI turned on Importance ruler, what do I want, Time Machine
Self-regulation + Biofeedback	“Mountain climber” + Firstbeat report
Self-regulation + Motivational interviewing + Biofeedback	“Mountain climber” + Precious MI service + Firstbeat



Figure 3. Plan of Phase II n-of-1 trial



N of 1 Study design

	All	Test	Test	Test	14 periods x 3 days starting with "washout day"									
Name	0	0a	0b	0c	1	2	3	4	5	6	7	8	9	10
Mountain Climber self-regulation components (Always On)	On	On	On	On	On	On	On	On	On	On	On	On	On	On
MI components	On	-	-	-	Off	On	-	-	-	Off	On	-	-	-
MI Components - Set A (What do I want, Choose Favorite PAs)	On	On	Off	Off	Off	-	On	Off	Off	Off	-	On	Off	Off
MI Components - Set B (Importance Ruler, What's Next (stage of change))	On	Off	On	Off	Off	-	Off	On	Off	Off	-	Off	On	Off
MI Components - Set C (Time Machine, Confidence Ruler)	On	Off	Off	On	Off	-	Off	Off	On	Off	-	Off	Off	On
Firstbeat Feedback Tile	On	Off	On	Off	Off	Off	Off	Off	Off	On	On	On	On	On



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 611366

Measures

- **Main outcome:** Objective physical activity data from the phone accelerometer and the activity bracelet.
- **Service usage data:** timestamped data about the use of each service feature.
- **Daily questionnaires** to assess fluctuation in psychological features such as intention, motivation, and self-efficacy.



Biofeedback + objective PA

Firstbeat Bodyguard heart rate variability sensors



Xiaomi Mifit wristbands



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Recruitment

- 12 adults, aged 18-64,
- Android users (5.0 or newer)
- Aiming to increase PA
- Newspaper advertiment in Helsinki METRO newspaper
- *If first trial is feasible, 2nd trial notifications within PRECIOUS*

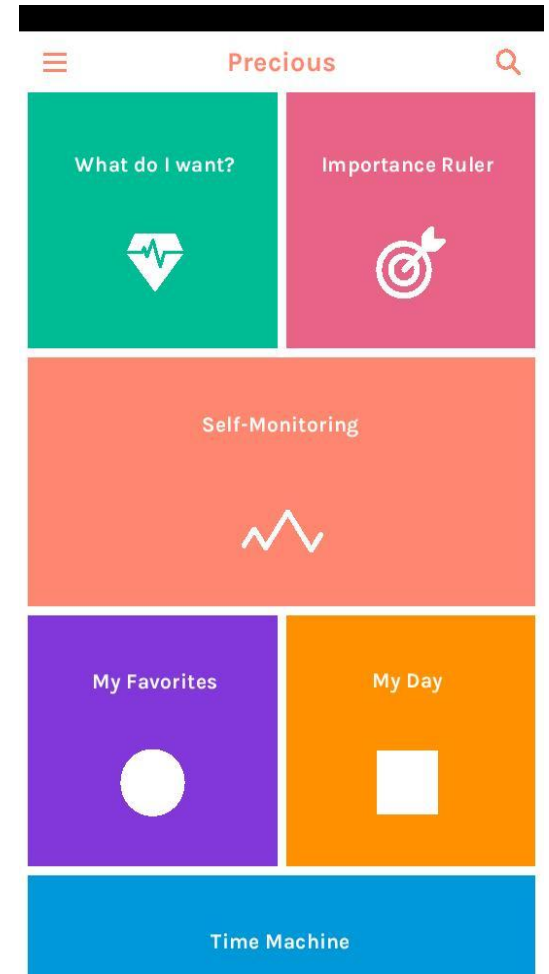




Thank you!

Any questions?

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Original “plan” 2013

- The field study is following N-of-1 randomization
- 12 subjects are randomized to three self-monitoring conditions
 - 1) by self-report diary PA and HE (active control)
 - 2) by PRECIOUS feedback PA + HE, (Sleep /Stress blinded)
 - 3) by PRECIOUS + sleep/stress.
- The findings of the study will answer
 - how applicable PRECIOUS is in real life environment outside of laboratory.
 - does PRECIOUS system increase PA and HE compared to self-report diary.
 - does additional feedback from sleep and cardio-physiological stress measures increase PA and HE.



Valtioneuvoston

Ulkomaankauppa- ja kehitysministeriö
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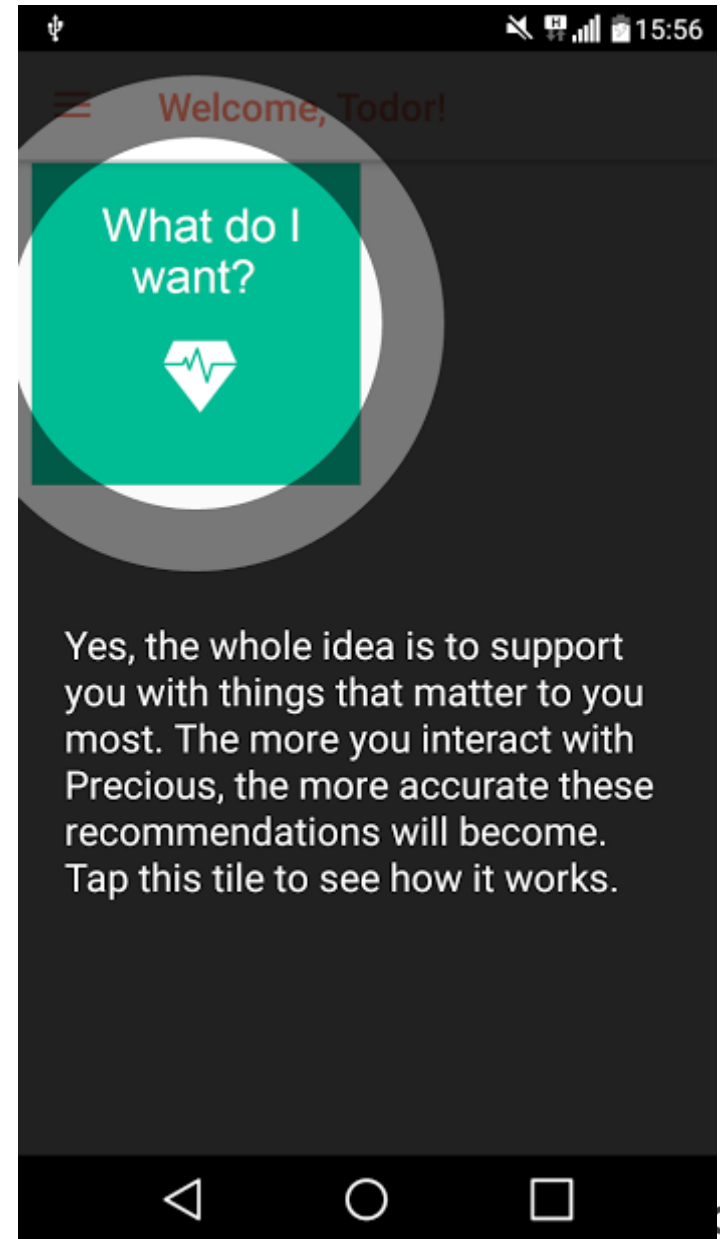
Logic model



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PRECIOUS

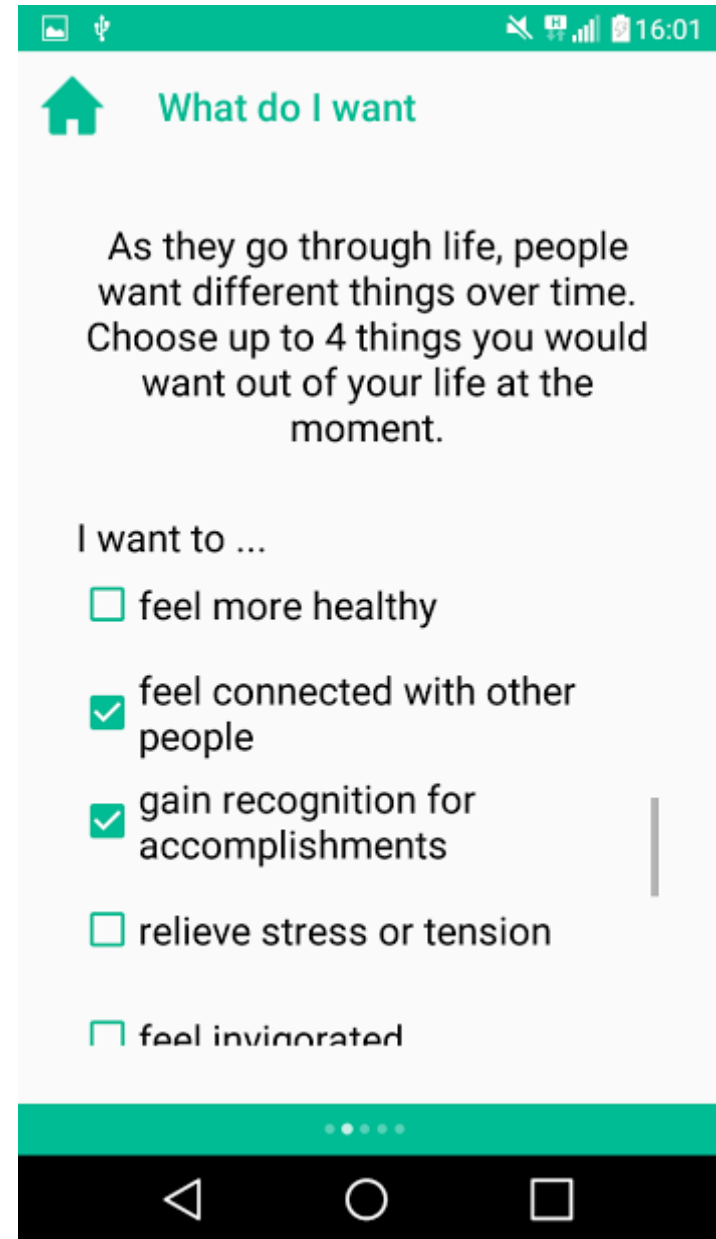
- Autonomy
 - Freedom to choose
- Relatedness
 - Empathetic and encouraging language, avoiding judgement
- Competence
 - Guiding user to set daily, achievable goals



MI in Precious: Outcome goals

Values exploration

- Recognising outcome goals that may guide the change
- Options from the Exercise Motivations Inventory



The screenshot shows a mobile app interface with a teal header bar. Below the header is a home icon and the title 'What do I want'. The main content area has a light gray background with the text: 'As they go through life, people want different things over time. Choose up to 4 things you would want out of your life at the moment.' Below this is a section titled 'I want to ...' followed by a list of five items, each with a checkbox: 'feel more healthy', 'feel connected with other people', 'gain recognition for accomplishments', 'relieve stress or tension', and 'feel invigorated'. The first three items are checked. At the bottom of the screen is a black navigation bar with three icons: a back arrow, a circle, and a square.

What do I want

As they go through life, people want different things over time. Choose up to 4 things you would want out of your life at the moment.

I want to ...

- ☐ feel more healthy
- ☒ feel connected with other people
- ☒ gain recognition for accomplishments
- ☐ relieve stress or tension
- ☐ feel invigorated



MI in Precious: Time machine

- Identifying past success
 - Building motivation and confidence
 - Developing sense of discrepancy
- Looking forward
 - Envisioning possible future
 - Building motivation
 - Developing sense of discrepancy



Importance ruler

- "Why did you choose 7 and not 5?"
- helping the user to think about reasons that make PA important

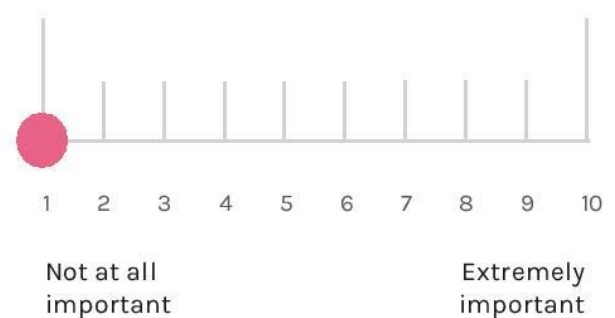
→ Change talk

< Importance Ruler

How important is physical activity to you?


Choose a number from slider.

1



1 2 3 4 5 6 7 8 9 10

Not at all important Extremely important



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