



C2S is a **start-up** aiming at designing a French mobile phone application for promoting daily Physical Activity (PA). Despite an explosion of mobile phone applications concerning PA, few have been based on theoretically derived constructs in order to promote individualized health behaviors and reduce sedentary behavior (Patrick & Canevallo, 2011; King et al. 2013).

2 Litterature Review and Design Process

Examples of studies		
Transtheoretical Model of Change	Self-Regulation Approach : goal setting, self-monitoring,	Social-cognitive Approach of Motivation
Callaghan, Khalil, Morres (2010)	King & al. (2013)	Pinto & al. (2002)
Behavior change was assessed thanks to a decisional balance instrument . The TTM is a modest predictor of change for exercise in young Chinese people. Self-efficacy and behavioural strategies of change appear to be the strongest predictors.	Behavioral changes were assessed across eight weeks in 68 participants using the CHAMPS physical activity questionnaire and the Australian sedentary behavior questionnaire. The results indicated that the three applications were sufficiently robust to significantly improve regular moderate-to-vigorous intensity physical.	The study aimed at identifying relationship between motivational change and self-reported behavior, according to a seven-Day Physical Activity Recall (7-Day PAR33). This interviewer-administered measure was used to assess the effect of a Computer-Based, Telephone-Counseling System on Physical Activity.
An interdisciplinary team of psychology scientists, health medical experts, and engineers collaborated during the design process. Considering that previous studies were based on various motivational theories, the design process took in account their results. Therefore, we noted that most of the studies did not use realistic measures for PA .		

3 Personalized Physical Activity Program Based on Self-Regulation Components

Self-Esteem Assessment
High Level

Performance Goals Performance Feedbacks

Components of the device

Health Perception ?	Knowledge about health and PA effects
Readiness to change ?	Transtheoretical Model Behavioral strategies
Self – Perception ?	Physical Self – Esteem Assessment
Daily Physical Activity ?	Podometer measure

Self-Esteem Assessment
Low Level

Mastery Goals Progress Feedbacks

An empirical study is actually conducted to assess the App's effects on daily PA

Participants - 100 participants in experimental group vs 100 participants in control group

Procedure

- First, the App is designed to evaluate daily PA per a week, physical self-perception, and to measure behavior change readiness. Informational tips or advices for health, or knowledge on PA effects were presented.
- Second, the App is programmed to provide specific feedbacks and behavioral strategies taken in account the users motivational profile during 6 weekly coaching sessions.
- Third data collection permits to report daily PA and provides personalized and quantified goal-setting (i.e. mastery-oriented vs. performance-oriented goals).
- Fourth when the coaching program is finished, PA and self-esteem are reported during the last week.

Expected outcomes : collected data on daily PA or behavior changes will be stored and should be useful for health institutions.