Objectives

Sitting is a new smoking. Can psychologists explain changes in sitting behavior? What psychological processes are involved in an initiation of active breaks, reducing sedentary time by means of replacing it with physical activity? This proposal will provide novel responses to these questions by means of:

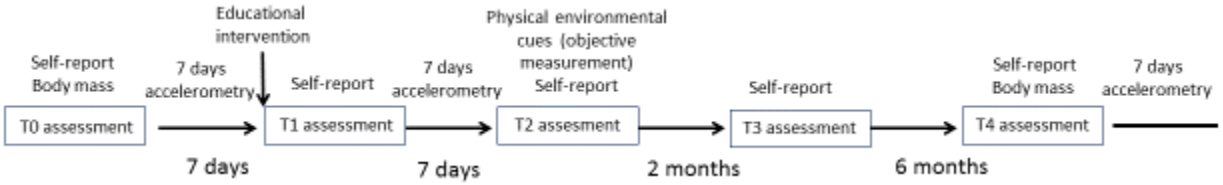
(1) proposing a theoretical model accounting for impulsive and reflective psychological processes which explain health behavior change. We will build upon earlier theoretical developments (health action process approach; HAPA; Schwarzer 2008; Schwarzer & Luszczynska, 2015) and extend the model by including impulsive processes: (a) habit, referring to effortless and automatic behavior and (b) presence of physical environmental cues (e.g. accessible and attractive built facilities for physical activity in the local community). In result, we will develop **the reflective + impulsive HAPA (R+ I HAPA);**

(2) testing if the proposed R+I HAPA explains changes in sedentary behavior among adolescents, adults and older adults, analyzing day-by-day changes over 14 day period, investigating short-term processes (across 2 months) and mid-term processes (across 8 months).

Methods

The design is presented in Figure 1. To achieve the goals, we will conduct a longitudinal observational study. At T0, participants (N = 600) will be naïve in respect to sedentary behavior (no knowledge about how and why change sedentary behavior, what active breaks may look like and why sedentary behavior should by broken into shorter periods). The sample will consist of adolescents (12-17 years old), adults (18-59 years old), and older adults (> 60 years old).

Figure 1. Study design



SB change will be measured with accelerometers, small electronic devices measuring human movement, worn on a belt over right hip (ActiGraph; model wGT3X-BT). We will evaluate such indicators of sedentary behavior as (1) time spent on sedentary behavior; (2) the length of sedentary bouts; (3) active breaks in sedentary time: substituting sedentary behavior with physically active breaks; the content, length, and intensity of active breaks; (4) the composition of waking time (the time spent on sedentary behavior in the context of light, moderate, and vigorous physical activity). Reflective R+I HAPA variables and habit will be assessed using instruments applied in previous research (Gardner, 2015; Maher & Cornoy, 2016; Schwarzer & Luszczynska, 2015). The indicator of physical environmental cues will be developed using ecological models and research (Sallis, Owen et al., 2015; Sallis, Spoon et al., 2015). Also, physical environmental cues will be measured objectively, sampling presence of newly build physical activity facilities in respective neighborhoods.

Expected impact

The proposed research is a response to a call for theoretical developments and a closer investigation of how reflective and impulsive systems may operate jointly to explain health outcomes (Sheeran et al., 2013). As sedentary behavior awareness is very limited in Poland (see Szczuka et al., 2016), enrolling naïve participants would allow for a thorough examination of the full circle of behavior change, from raising awareness and preintentional processes, to postintentional and maintenance processes, assumed in R+I HAPA.

Overall, this real-world study would result in a rich dataset accounting for approximately 3,000 self-report measurement points, 1,200 measurement points of body mass and fat tissue, and 12,600 days of accelerometry. No doubt, we will obtain novel and strong evidence for complex within- and between-individual, short- and medium-length term processes, in which R+I HAPA variables explain change in sedentary behavior.