Supplemental materials

Supplemental Figure 1: MyCoach design
Participant

Perform activities

SmarText

Smart agent process data three times per day

Smart: what is the current state?

Smart: what is the desired state?

Smart: formulating text

Data

Real time sensor data
Health file
Preferences
Knowledge bank
Progress data
Change in behavior

Text coaching 3/day

Wearable capture behavior
Supplemental Figure 3: CONSORT Flow Diagram for PATH Trial

Assessed for eligibility Screening (n=90)

Excluded (n=45):
- Not meeting inclusion criteria (n=40)
- Declined to participate (n=5)

Randomization (n=45)

Allocated to SmarText (n=14):
- Received intervention (n=14)

Allocated to Control (n=15):
- Received intervention (n=14)
- Did not receive materials (safety concerns during baseline following a surgery) (n=1)

Allocated to MyCoach (n=16):
- Received intervention (n=14)
- Did not receive intervention (safety concerns during baseline following a recurring clinical illness) (n=2)

Lost to follow-up (n=0)

Analyzed (n=14)

Analysis
Supplemental Table 1: Summary comparison of each arm in the trial

|   | Control                                                                 | SmartText                                      | MyCoach                                      |
|---|-------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------|
| 1 | Approach                                                                | Print and electronic educational materials    | Autonomous text messages                      | On demand coaching via voice assist          |
|   |                                                                         | about the benefit of physical activities for  |                                               |                                              |
|   |                                                                         | cancer survivors                               |                                               |                                              |
| 2 | Contents                                                                | NCI educational materials                     | Behavioral coaching contents developed by     | Behavioral coaching contents developed by   |
|   |                                                                         |                                               | the study team                                | the study team                              |
| 3 | Coaching messages/responses                                             | NCI recommendation on physical activities     | Autonomous formulation by the goal-based     | On demand formulation by unsupervised goal-|
|   |                                                                         |                                               | agent                                        | based agent                                 |
| 4 | Frequency                                                               | One time                                       | Three times per day                           | On demand based on user’s intent            |
| 5 | Data collection                                                         | Sensor                                         | Sensor                                       | Sensor                                      |
| 6 | Recommended target for physical activities                             | 10,000 steps per day                          | 10,000 steps per day                         | 10,000 steps per day                        |

Supplemental List: Additional data collected during the trial

- total number and duration of activity bouts (defined as 3 minutes or more of uninterrupted activity); 2) fragmentation indices (counting transitions between active/inactive periods) and variability indices (counting the magnitude of transitions between different levels of physical activity)
- daily diurnal patterns of activity that model patterns in minute-by-minute profiles
- heart rate and sleep data were captures. Subjected to additional user’s permission to share.