

Virtual coaching to support a healthy and meaningful life of older adults and employees in their retirement process

Call: AAL-JP call 2018

Grant Agreement Number: aal-2018-5-92-CP



AgeWell

Deliverable

D4.1 Field study design

Deliverable type:	Report
WP number and title:	WP4: Study design and evaluation
Dissemination level:	Confidential
Due date:	Month 5 – 30 June 2019
Lead beneficiary:	INRCA
Lead author(s):	Sara Santini (INRCA), Vera Stara (INRCA), Elske Stolte (GD)
Reviewers:	Johannes Kropf (AIT), Cornelia Schneider (FHWN)

Document history

Version	Date	Author/Editor	Description
0.1	06.02.2020	INRCA's team	Initial version
0.2	14.03.2020	INRCA's team	Version shared with partners
0.3	16.3.2020	Johannes Kropf	Added information about hard- and software used
0.4	18.03.2020	Elske Stolte	Additional information about informed consent
0.5	20.03.2020	INRCA's team	Added expected outcomes
0.6	30.03.2020	Elske Stolte	Reviewed and commented
0.7	03.04.2020	Sara Santini	Finalisation of version 0
1	20.04.2020	Sara Santini	Finalisation of inclusion criteria, addition of screening tool questions and Conclusion section. Addition of details on the timing for data collection and addition of the par. 2.4.5 The role of the human coach (i.e. integration of the separate document on the HC into this one). Updating of the Summary
1.1	05.05.2020	Cornelia Schneider	Review and feedback
2	06.05.2020	Flavia Galassi Sara Santini	Editing revision accepted
2.1	11.5.2020	Johannes Kropf	Review and feedback
2.2	12.05.2020	Sara Santini	Acceptance of the revisions and reply to the last comments from Johannes.
2.3	15.5.2020	Johannes Kropf	Final formatting

Table of Contents

1	Executive Summary	5
1.1	Methodological approach	5
1.2	Document structure	5
2	AgeWell technology and the field study concept	6
2.1	the AgeWell digital coach: hardware and software components	6
2.2	the study methodology	7
2.2.1	Objectives	7
2.2.2	Subjects	7
2.2.3	Study Design.....	9
2.2.4	The role of a human coach: promoter and facilitator.....	11
2.2.5	Statistical Analysis	14
3	The field study outcomes	16
4	The ethical approach	17
4.1.1	Ethical Approval	18
4.1.2	Recruitment strategy, procedure and Informed consent	18
4.1.3	Privacy and Data Protection.....	19
5	Risks management	20
6	Safety issues	22
7	Conclusions	23
8	References	24
9	Annex 1 Informed consent	25
10	Annex 2 Guidelines for the interviewer.....	27
11	Annex 3 Data collection tool.....	29
	BASELINE DATA COLLECTION TOOL (T0).....	29
	TOPIC-GUIDE INTERVIEW.....	29

QUESTIONNAIRE.....	30
MID-TERM DATA COLLECTION TOOL (T1).....	37
QUESTIONNAIRE.....	37
POST INTERVENTION DATA COLLECTION TOOL (T2).....	48
QUESTIONNAIRE.....	48

This deliverable contains original unpublished work or work to which the author holds all rights except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

1 EXECUTIVE SUMMARY

This document is aimed at providing the evaluation study protocol in order to test the efficacy of the AgeWell coaching system. It is part of the research trial of WP4 “Study Design and Evaluation” and reported within the Task 4.1 “Detailed Evaluation Study Design”.

1.1 METHODOLOGICAL APPROACH

This document is used in order to streamline the studies in Italy and the Netherlands. It is also used as a basis for the application for the national ethics committee approval in Italy and The Netherlands. Some of former documents will be included into this deliverable including the measurement instruments (Annex 11, page 27).

1.2 DOCUMENT STRUCTURE

D4.1 “Field study design” describes the evaluation framework that partners involved in WP 4 “Study Design and Evaluation” will use in order to evaluate the AgeWell coaching system.

The document describes in detail the methodology and the aim of the field trials. This document also describes potential risks that may arise during the study and the plans set to overcome them.

2 AGEWELL TECHNOLOGY AND THE FIELD STUDY CONCEPT

2.1 THE AGEWELL DIGITAL COACH: HARDWARE AND SOFTWARE COMPONENTS

Within the field study, the AgeWell system based on a mobile application (Android App) on a Smart Phone will be tested. For the study, the participants will be equipped with appropriate devices (Android SmartPhones with Android version 6 upwards). If the private SmartPhones of the user is fulfilling the requirements, it could be possible that the user can use his own phone, if wished.

The software used for the trials consists of an avatar-based frontend, running on a smart phone, and a server component providing the content and collecting the data. The communication between the frontend and the backend is established over the internet using secure communication channels. The backend server is running within the facilities of the partner AIT to ensure privacy and security. No personal related data is stored in the cloud or at third parties.

The data which is collected by the system follows the minimalization principle and consists of:

Table 1: Description of data collected from the user

Data description	Purpose
Given Name	for proper user interaction using the avatar
User id	Internal id for identifying the user
Age	Demographic data for the study
Location (city)	Demographic data for the study, personalization of services
<p>General google account (used only for the project trials and not connected to personal accounts of the participants)</p> <p>The user's personal account could be used on it's own wish.</p>	<p>For logging into the system. The accounts will be provided by the consortium and used only for the study and will be filled with generic data</p>
<p>Log of app usage based on Flurry Logging. Flurry Logging logs how the user is using the app (number of time of uasge, button clicks etc.). No additional data not related to the app will be logged</p>	<p>for analyzing the usage of the application within the study protocol and for technical reasons</p>
<p>Answers on questionnaires (text only)</p>	<p>For the study protocol and for personalization of the content</p>

Emotion detected via the app (4 motions: sad, happy, angry, neutral)	Only the detected emotional level, , no facial images will be stored. The category will be used for personalization of the user interaction
Single questions on performance of dedicated exercises (e.g. physical exercises performed.)	For personalization of the content, reminders etc.

2.2 THE STUDY METHODOLOGY

2.2.1 Objectives

The general aim of this study is testing the AgeWell digital coach prototype by assessing its usability, learnability and acceptance. Moreover, the study will also analyse to what extent it can influence individuals' self-efficacy and well-being by motivating older adults to practice a healthy life style. The monitoring of the effects of the AgeWell usage may throw light on the capability of a digital coach for helping retirees to maintain (up to improve) social relationships and activities that could be put at risk by the withdrawal from their workplace.

The study evaluations will be set up in two different sites: Italy and The Netherland. This multi-site design will allow evaluating the AgeWell system in different social and cultural contexts. Overall, the multinational approach proposed will ensure wide acceptability of the developed technology and prepare the possibility of Europe-wide deployment after project life.

2.2.2 Subjects

Overall, 100 subjects that match the inclusion criteria shown in table 2 will be enrolled in the study. Precisely, 50 (25 older employees and 25 retirees) participants will be recruited in Italy and 50 (25 older employees and 25 retirees) in The Netherland.

Table 2 Eligibility Criteria

	Inclusion Criteria	Exclusion Criteria
Older employees in good health condition	<ul style="list-style-type: none"> - Interested in the project and agreement on the written informed consent - => 55 years - Max. ca. 3 years before retirement - Work continuity during the 6 months of validation - The participants feel physically and cognitively able to take part in the trial (self-assessed) 	<ul style="list-style-type: none"> - No agreement on the written informed consent - < 55 years - More than 3 years before retirement - Work discontinuity during the 6 months of validation - Middle to severe constraints in mobility or cognition (self-assessed)
Retired older people	<ul style="list-style-type: none"> - Interested in the project and agreement on the written informed consent - > 55 years - Max. for 3 years in retirement - The participants feel physically and cognitively able to take part in trial (self-assessed) 	<ul style="list-style-type: none"> - No agreement on the written informed consent - < 55 years - More than 3 years in retirement - Middle to severe constraints in mobility or cognition - Care dependency (self-assessed) - Intention to relocate during the 6 months of validation

The potential participants will be screened (e.g. by phone) in order to check the inclusion criteria. The person responsible for the recruitment will contact individuals and explain the project aims, methods, procedures and times. He/she will be provided with a screening tool that will include questions according to the typology of participants to the trial, i.e. older employees and retirees (see Table 3).

Table 3 Questions of the screening tool

Older workers	Retirees
How old are you?	How old are you?
When do you retire?	When did you retire?
Have you been working for the last six months?	Are you doing any kind or paid work? Are you willing to start any kind of paid work in the six months of the AgeWell trial?
What do you think about your health? Do you feel cognitively and physically able to take part in the AgeWell trial?	What do you think about your health? Do you feel cognitively and physically able to take part in the AgeWell trial?
Are you interested in participating to the AgeWell trial as it has just been described?	Are you interested in participating to the AgeWell trial as it has just been described?
Are you willing to sign the informed consent?	Are you willing to sign the informed consent?

2.2.3 Study Design

The field trial will run for 5 months in each site and it will be split in two waves:

1. The first wave of the trial is carried out with 50 people (mixed older workers and retirees) divided into two groups of 25 persons, for 5 weeks every sub-group. In this phase participants are trained to the use of the digital coach by an instructor who can be considered as a **human coach**. The role of the human coach is described in 2.2.4.
2. In the second wave of the trial, lasting another 5 weeks, participants will continue using the AgeWell coach autonomously, i.e. without the help of the human coach.

The whole study will be managed by skilled personnel and researchers that will guarantee both the supervision of the tests by specialized staff and the detailed measurement of the first interaction between users and the first system prototype.

The study follows a mixed-methods design in which qualitative and quantitative data will be collected. In order to determine the effects of the AgeWell digital coaching on the 10 weeks-term, three measurements (T0, T1 and T2) will be conducted using standardized tests and open questions domain (see Figure 2). Thus, three face-to-face sessions will be scheduled with participants: one just before the beginning of the study; one after 5 weeks of use and one at the end after 10 weeks of use.

In line with the study design, three data collection tools have been drafted, one for every evaluation, i.e. before the programme of testing the digital coach starts (T0), at mid-term (T1) and after the conclusion of the programme (T2).

The first wave data collection sheet includes a short demographic section; a list of open questions for introducing the participants to the trial and a questionnaire. The topic-guide interview can help to breaking ice and to draw a profile of the interviewees. The topic-guide was designed in two versions: one for the older workers and one for retired people.

The questionnaire is made of three sections including the scales listed below:

- A) Health and Wellbeing
 - SF-12. The SF-12v2™ Health Survey [1], a widely used instrument, is a 12-item subset of the SF-36v2™. It is a brief, reliable measure of overall health status. It is useful in large population health surveys and has been used extensively as a screening tool.
 - WHO-5 ITEMS. The World Health Organisation – Five Well-Being Index [2,3] is a short self-reported measure of current mental wellbeing.
 - PERCEIVED STRESS SCALE –PSS [4,5] is the most widely used psychological instrument for measuring the perception of stress. It is a measure of the degree to which situations in one’s life are appraised as stressful.
 - Short version of SELF-EFFICACY SCALE [6]. The six-item short form of the GSE scale is a reliable and valid instrument to assess the general self-efficacy.
- B) Social life
 - LUBBEN SCALE [7,8]. This 6 items-scale is a self-report measure of social engagement including family and friends.
 - Social engagement: ad hoc questions
- C) Experience with the technology in general: ad hoc questions

The second and third wave data collection tool include just the questionnaire. The latter includes sections A) and B) but differs from the first wave for section C) that explores the experience with the human coach through ad hoc questions and with the digital coach using the following scales:

- QUEBEC USER EVALUATION OF SATISFACTION WITH ASSISTIVE TECHNOLOGY (QUEST 2.0) Quebec User Evaluation of Satisfaction with Assistive Technology [9]. This is a 12-item outcome measure that assesses user satisfaction with two components, Device and Services.
- USER EXPERIENCE QUESTIONNAIRE-UEQ [10]. The User Experience Questionnaire allows a fast and immediate measurement of user experience containing 6 scales with 26 items.
- SYSTEM USABILITY SCALE (SUS). The System Usability Scale [11] is a simple, ten-item attitude Likert scale giving a global view of subjective assessments of usability.

The second wave questionnaire finishes with some open questions on users’ feelings towards the AgeWell digital coach.

At the third wave, the questionnaire is followed by two closed questions on privacy and stigmatisation (i.e. the risk of being labelled just for the usage of a technology, for example being labelled as “older” because one’s using the digital coach for well-being) and four “Wrap up” open questions for collecting suggestions for improving the AgeWell digital coach.

The dimensions explored and monitored by the evaluation study and the measures utilised for the evaluation are summarised in the table below (Tab 4).

Table 4 Evaluation study dimensions and measures according to the monitoring waves

Main domains	Measure	Baseline (T0)	Mid-term (T1)	Post (T2)
Demographic	-Ad hoc questions	X		
Work/Retirement condition	-Ice-breaking questions -Ad hoc open-ended questions	X		X
Health condition and wellbeing	-SF-12 -WHO-5 items -Perceived stress scale -Self-efficacy scale	X	X	X
Social dimension	-Lubben Social Network Scale -Social engagement questions	X	X	X
Experience with technology and AgeWell digital coach	-Short Usability Scale (SUS) - User Experience Questionnaire (UEQ) - Acceptance Questionnaire (QUEST)	-Ad hoc open questions on the usage of technology	X	X

Each instrument will be verbally administered in a face-to-face session by a trained interviewer who filled the response on a paper version of the protocol.

This document showing the AgeWell field study design was finalized during the COVID-19 pandemic. The latter impacted people, especially older adults, very hardly in economic, social, psychological and social realms, when even it did not hit their health condition. The effects of the pandemic will influence world population for a long time by imposing social distance and the re-design of habits and service usage. In order to monitor the impact of the COVID-19 pandemic on the individuals who will be included in the AgeWell sample and to the possible role of the digital coach in helping people overcome the difficulties faced during the social distance regime, a set of questions was added to the research protocol (page 62), to ask at the data collection baseline which will be in Autumn 2020.

2.2.4 The role of a human coach: promoter and facilitator

The human coach is a facilitator that will (i) constantly offer motivation, (ii) confidence, (iii) technical competence and support, (iv) knowledge, and understanding to value and take responsibility for the engagement of users during the first wave.

This role has been established to guarantee the correct use and acceptance of the AgeWell virtual coaching avoiding any risks of poor self-efficacy, lack of digital skills, stress and discomfort during the use.

In this sense, the human coach is a *promoter of the technology* that guides strengths-based perspective focusing on positive opportunities of technology to improve health and well-being,

creating a support channel to assist in the learning of new technology. The human coach is not a substitute of the virtual coach but only the facilitator that trains the users to become independent users of the system after the first wave (cf. Figure 1).

Figure 1 Summary of differences between human and virtual coach



The frequency of the meetings with the Human Coach will be decided later. It could be once a week face-to-face plus availability in agreed days and time; or video tutorials; etc...

Selection and training of coaches

Coaches need to have experience with supporting older people with health issues. Preferably with transitioning around retirement. In the Netherlands skilled coaches will be hired who are used to train people to prepare for retirement. The human coach can also be a researcher so that he/she is directly involved in the training, establish a trust and confidence relationships with users and is so able to make users comfortable during the interview and interpret the findings properly. Coaches will receive a training session in the use of the app and the content of the app and get to use the app themselves for a few days.

Timing for human coaching

Human coaching will be provided in the first 5 weeks of the trial starting with a face-to-face session to introduce the AgeWell system and assist in setting personal goals and tasks. After 5 weeks another face-to-face session is provided. In between people can ask content related questions to their coach probably by e-mail, by phone or another communication technology: the national teams are flexible in order to be close and useful to the participants as much as possible. Technical questions can be directly reported to the technical helpdesk through the app. The helpdesk is managed by the national teams.

Face-to-face sessions

Small group sessions with AgeWell participants are organized according to the needs at national level.

In the first session of about 1,5 hours participants;

- Are explained what the content and goal of the app is
- Are shown step by step how the app works
- Get help in establishing what their personal goals should be
- Are guided through the goal setting procedure to select goals and plan tasks for themselves
- Get instructions on how and where to ask questions during the use of AgeWell

In the second session (probably about an hour);

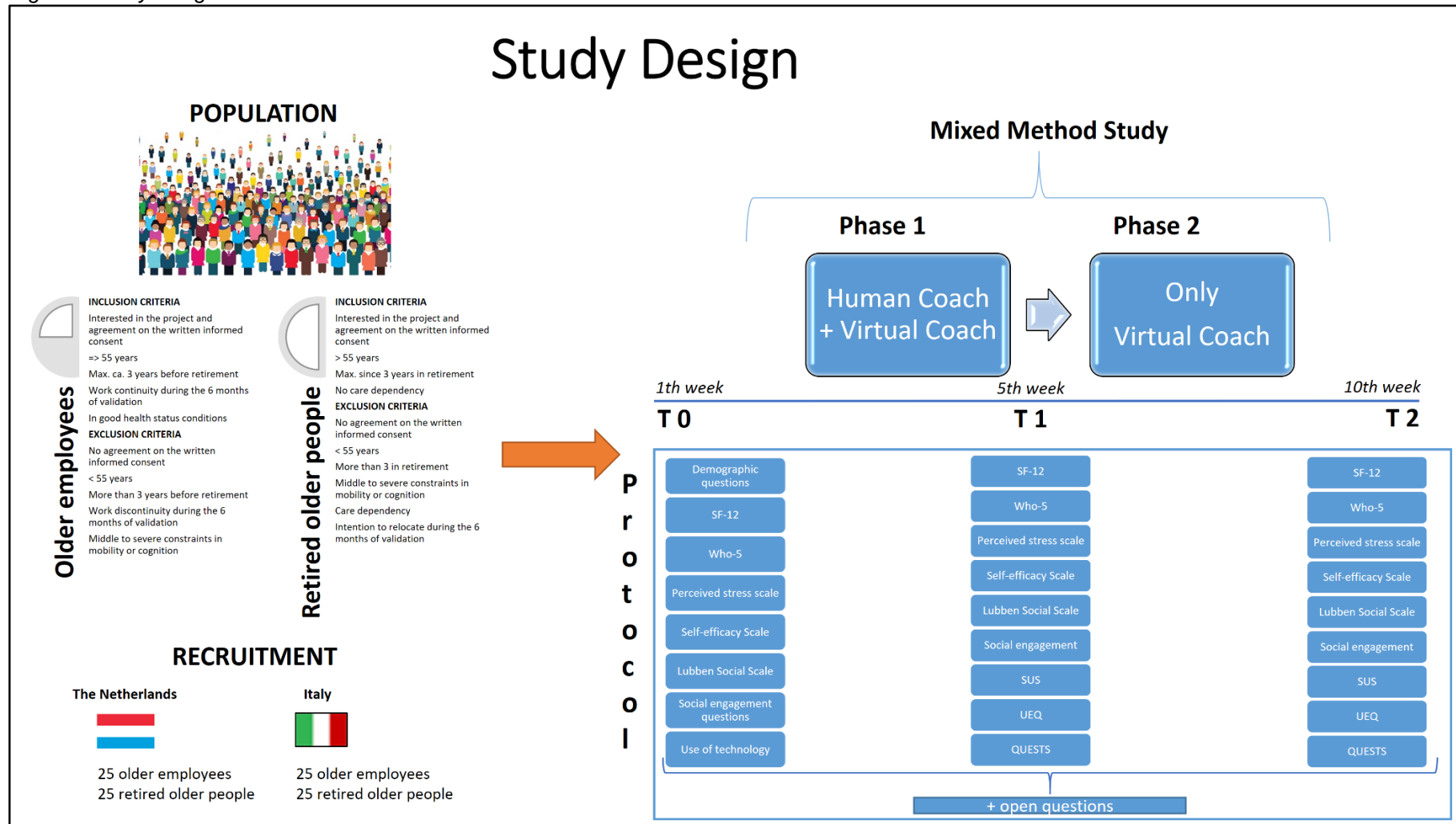
- Experiences around the use of the app and the influence on daily life are discussed
- Goals are re-assessed and if needed adjusted
- Tasks are again scheduled if needed

2.2.5 Statistical Analysis

In the case of quantitative data, frequencies, percentages, and medians will be calculated. Chi-square tests will be employed to detect the associations between the categorical variables. Further, data will be analysed with t-tests, the Mann-Whitney U test and the Kruskal-Wallis test and analyses of variance.

Otherwise, analysis of contents will be performed for qualitative data.

Figure 2 Study design framework



3 THE FIELD STUDY OUTCOMES

According to the general objectives of this study (see 2.1.2 Objectives), primary and secondary outcomes are described in Figure 3.

Primary outcomes are:

Usability is intended as „the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use“. This outcome will be measure through the **SUS scale** [11].

Learnability as one component of usability is the degree to which the interface is intuitive and the user can immediately grasp how to interact with the system. This outcome will be measure through the **SUS scale** [11].

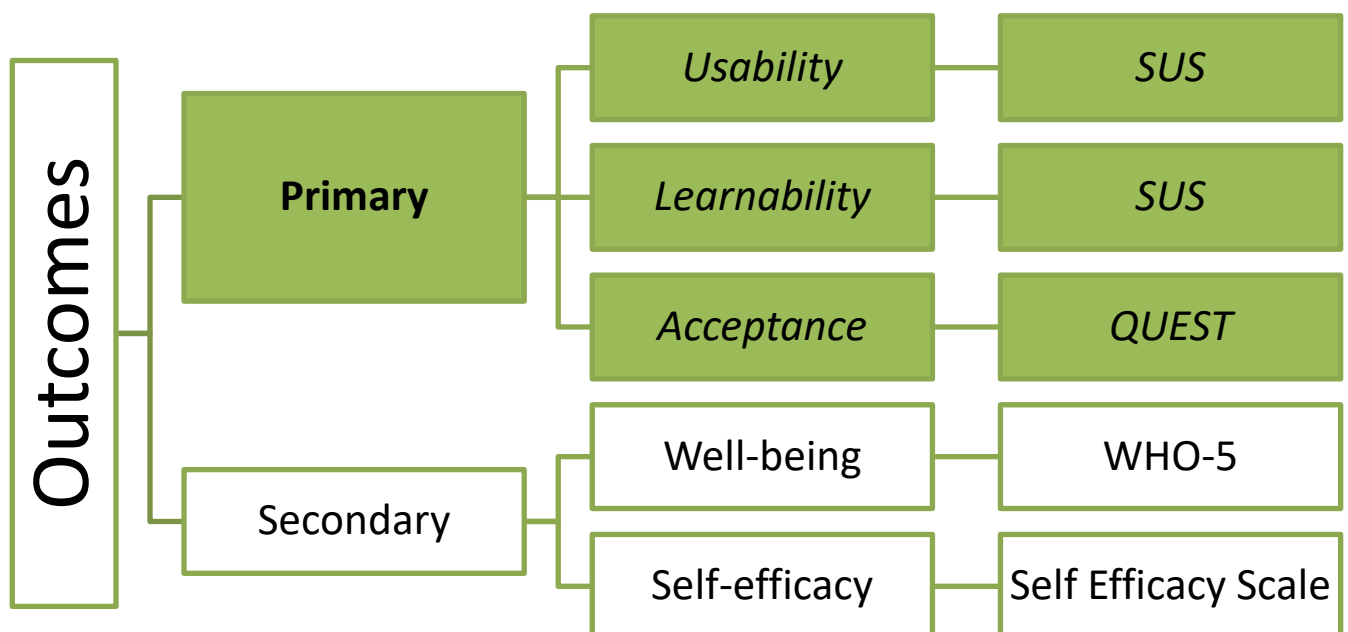
Acceptance is the degree to which users come to accept and use a **technology**. This outcome will be measure through the **QUEST questionnaire** [9].

Secondary outcomes are:

Well-being as „a state of complete physical, mental and social well- being and not merely the absence of disease“. This outcome will be measure through the **WHO-5 scale** [2,3].

Self-efficacy as the set of beliefs we hold about our ability to complete a particular task. This outcome will be measure through the short version of the **Self Efficacy Scale** [6].

Figure 3 Primary and secondary outcomes and the measure used to evaluate



4 THE ETHICAL APPROACH

All ethical issues that this project may be exposed to, will be handled by the partners in their home countries with the local ethical committees. In particular, the work will be subject to the following ethic-related directives, regulations and international conventions and declarations:

- The Charter of Fundamental Rights of the EU (2000/c 364/01),
- REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)¹,
- The reform of the data protection rules that was launched on January 2012 is not in force yet, but we will consider it and apply once it will be in force,
- Directive 2001/20/EC of 4 April 2001 on clinical good practice,
- Directive 98/44/EC of the European Parliament and of the Council of 6 July 1998 on the legal protection of biotechnological inventions,
- Opinions of the European Group on Ethics in Science and New technologies including in particular:
 - Opinion of the European group on ethics in science and new technologies to the European commission, number 7, 21st of May, 1996
 - Opinions of the European Group on Ethics in Science and New technologies (as from 1998)
- Helsinki Declaration in its latest version.

Ethics approval will be submitted and approved by the IRB (Institutional review board) for technical approval and to the Ethical Committee according to the European Community act 2001/20/CE subsequently implemented and integrated by the ethical committees and regulatory organizations in the two sites during the life of the project.

National specific differences on this topic determined slight shifts of time but all the sites obtained the formal approval (see Table 5).

¹

REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016, source: http://ec.europa.eu/justice/data-protection/reform/files/regulation_oj_en.pdf

Table 5 The process of ethical approval

Pilot Site	Time needed to get approval
Italy	3 months
The Netherlands	2 months

4.1.1 Ethical Approval

Research ethics requires that all research involving human participants, personal data, or human tissue should be reviewed, and research ethics approval obtained, before data gathering commences. Each partner involved in the trial evaluations will apply for ethical approval from Local Ethical Committees completing the appropriate application form and submits it to their Ethics Administrator.

4.1.2 Recruitment strategy, procedure and Informed consent

Participants will be recruited in Italy and the Netherlands following the same strategy applied for the focus-group during the WP2 and described in D2.1 paragraph 3.4. In a nutshell, in **Italy** older employees and retired older people meeting the inclusion criteria were recruited mainly via the INRCA Human Resources office and also via trade unions and word of mouth. Researchers phoned people and asked them some screening questions for checking their inclusion characteristics. Then they explained the study purpose and methods and proposed them to take part in it. Individuals who accepted to participate were provided with and asked to sign a written informed consent to data treatment in accordance with the GDPR 2018 and the national legislation on privacy and data protection.

In the **Netherlands**, older employees and retired older people meeting the inclusion criteria were recruited mainly via the organisation Stavoor and their network partners (organisations who have older employees who want to prepare for retirement). In addition, the partners of Gouden Dagen consisting of mostly care organisations were asked to inform workers in the age of retirement. Gouden Dagen also used their own communication channels to inform people of the AgeWell trial. Researchers phoned people and asked them some screening questions for checking their inclusion characteristics. Then they explained the study purpose and methods and proposed them to take part in it. Individuals who accepted to participate were provided with and asked to sign a written informed consent to data treatment in accordance with the GDPR 2018 and the national legislation on privacy and data protection.

Potential participants will be expected to express their interest to the staff after they have received the recruitment material, including an information letter about the details of the study. Then personal or group meetings will be arranged towards clarifying any misunderstanding that may occur. Then, those who will already decide to participate will be asked to sign the consent letter and will be informed of the following actions. On the other hand, those who will not reached to a decision yet, it will be asked to return the signed consent in the future or to inform the staff for their negative decision.

The specifications that an informed consent should fulfil are the following:

- Ensure that the potential participants are given ample opportunity to understand the nature, purpose and the anticipated consequences.
- Keep adequate records of when, how and from who consent was obtained.
- Consent for use of images, video and sound recordings containing personal data;
- Remain alert to the possibility that potential participants may lack legal capacity for informed consent.
- Avoid intentional deception of clients.
- Support the self-determination of clients; while at the same time remain alert to potential limits placed upon self-determination by personal characteristics or by externally imposed circumstances.
- Ensure from the first contact that clients are aware of their right to withdraw at any time from the receipt of research participation.
- Comply with requests by clients who are withdrawing from research participation that any data by which they might be personally identified, including recordings, be destroyed.

Clear explanations were given to the participants about the contents of the document:

- Summary of the objectives of the AgeWell project
- Information on the rights and responsibilities of the participants as well as the nature of the tasks/activities he will have to undertake
- Signature of the informed consent form

In Annex1, a sample of the informed consent form (in English) can be seen.

4.1.3 Privacy and Data Protection

The collected data related to end users will be treated in accordance with the data protection standards. During the whole process of data collecting and information analysis, end users will be aware of the information needed from them. Data will be de-identified (pseudonymized) and a study number will be always used to identify them without revealing their real names or any other personal information, both within the partnership and in dissemination activities. Pictures will be taken only with the subject's consent and subjects will be asked for their written consent for those pictures to be shown in any publicity material.

A common database will be created to collect all the data in a comparable way.

All data concerning participants' performance will be recorded and stored in the remote database hosted by INRCA. INRCA will respect the legal and ethical European (Under Directive 95/46/EC of the European Parliament) and national requirements.

5 RISKS MANAGEMENT

Pilot project risks have the potential to affect project goals and pilot goals.

The project partners have defined risk as any event which is likely to adversely affect the ability of the project to achieve the defined objectives (see Table 6). Pre-defined procedures will be taken into account in order to minimise the possible occurrence of adverse events in the construction and deployment of the project.

Table 6 Risk Management

	Risk	Level	Impact	Contingency plan
End-users enrolment	Drop-outs and the failure to attend the study.	Medium	Medium	A reserve list of potential users that meet the inclusion criteria will be constructed in each site.
Acceptance	The new technological solution does not match to the user's expectations in terms of comfort.	Low	Medium	The previous knowledge and experience of the partners will be used during the pilot evaluations to avoid any problem in respect to the end users. Moreover, during the pilot the participant will be specifically asked about the systems and any feedback provided will be delivered to the technical team for implementation.
Functionality	The system is unable to collect data.	Low	High	During the functional trials, the functionality of the system will be validated long before the system is used with potential users, this to ensure that the system is stable in terms of data collection, data processing and data analysis and presentation.
Feasibility	The participants are unable to use the system alone and unable to operate the system.	Medium	Medium	The participants will require assistance in the beginning and detailed explanation to be able to operate the system alone. Study personnel will explain the operation to the subjects; Participants will also receive a written manual and a video of how to use the system. This video will be placed on their smartphone so that they can view it any time. In addition, during the pilot trials, a researcher will contact the participants by phone or visit them at home once a week to see if they are using the system and if there are no problems.

Usability	<p>The participation of the users is low as participants do not regard the system to be useful for them.</p>	Low	Medium	<p>The validation sites have experience in conducting this kind of activities and they have direct links with end-users and stakeholders.</p> <p>Devoted dissemination campaigns and publicity will be carried out before the start of the validation phase, to ensure a wide participation. Moreover, experts in gerontology, psychology and geriatrics will be involved to motivate the participants and avoid drop-outs.</p>
	<p>The participants do not think they will require such a system and therefore do not intend to use it.</p>	Low	Medium	<p>The system was designed based on user needs as are expressed in the literature and based on WP2 "System requirements and user involvement ". Therefore, we do not expect such a scenario. In the case it will occur, the teams will explain the usefulness of the system to the participants and show the many ways it can help in improving daily life.</p>

6 SAFETY ISSUES

Field trials

The AgeWell solution used for the field trials will consist only of a mobile application running on a smart phone. No custom hardware without any technical certification will be used and there are no safety issues using the system.

The system recommends the user to perform certain physical or mental activities. The activities are not harmful and very generic. None of the task is motivating the user to perform any risky activity.

Pre-Trials

In addition to the system used for the field trials, in the pre-trials a social robot will be used to introduce the AgeWell project and the system to participants. The robot is always supervised by a member of the project team and the participants are not left alone with the robot. Hence, the risk that the system is harmful for the participants, e.g. due to a collision or stumbling over it is very low.

7 CONCLUSIONS

This document reported the evaluation study protocol in order to test the efficacy of the AgeWell coaching system.

After the description of the AgeWell field study concept, the technical characteristics of the AgeWell virtual coach have been shown. Then, the sample of the trial has been described and inclusion /exclusion criteria have been detailed. The evaluation study dimensions and measures were described. The Informed Consent, the full questionnaire and the Guidelines for interviewers were integrated in this document as annexes.

This document will be the basis for delivering the documents that the pilot site organizations, Gouden Dagen in the Netherland and INRCA in Italy, will submit to the responsible bodies to get ethics approval in the respective countries.

Finally, the deliverable 4.1 results in being a practical tool that paves the way for the trial implementation.

8 REFERENCES

- [1] Ware, Jr, J. E., Kosinski, M., & Keller, S. D. (1996). A 12-Item Short-Form Health Survey: construction of scales and preliminary tests of reliability and validity. *Medical care*, 220-233.
- [2] Topp, C.W., Østergaard, S.D., Søndergaard, S., & Bech P. (2015). The WHO-5 Well-Being Index: A Systematic Review of the Literature. *Psychotherapy and Psychosomatics*, 84, 167-176.
- [3] WHO (1998). *Wellbeing Measures in Primary Health Care/The Depcare Project*. WHO Regional Office for Europe: Copenhagen.
- [4] Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24,386-396.
- [5] Cohen, S. and Williamson, G. Perceived Stress in a Probability Sample of the United States. Spacapan, S. and Oskamp, S. (Eds.) *The Social Psychology of Health*. Newbury Park, CA: Sage, 1988.
- [6] Herrmann, C., Wachter, R., Edelmann, F., Pieske, B., & Grande, G. (2013). A short form of the General Self-Efficacy Scale (GSE-6): Development, psychometric properties and validity in an intercultural non-clinical sample and a sample of patients at risk for heart failure *Psychosoc Med*. doi: 10.3205/psm000091.
- [7] Lubben, J. (1988). Assessing social networks among elderly populations. *Family & Community Health: The Journal of Health Promotion & Maintenance*, 11,42-52.
- [8] Lubben, J., Blozik, E., Gillmann, G., Iliffe, S., von Renteln Kruse, W., Beck, J.C., & Stuck, A.E. (2006). Performance of an abbreviated version of the Lubben Social Network Scale among three European Community-dwelling older adult populations. *Gerontologist*, 46(4), 503–513.
- [9] Demers, L., Weiss-Lambrou, R., & Ska B. (2002). The Quebec User Evaluation of Satisfaction with Assistive Technology (QUEST 2.0): An overview and recent progress. *Technology and Disability*; 14 101-105, IOS Press.
- [10] Laugwitz, B., Schrepp, M. & Held, T. (2008). Construction and evaluation of a user experience questionnaire. In: Holzinger, A. (Ed.): *USAB 2008, LNCS 5298*, pp. 63-76.
- [11] Brooke J. (1996) SUS: a "quick and dirty" usability scale. In P. W. Jordan, B. Thomas, B. A. Weerdmeester, & A. L. McClelland. *Usability Evaluation in Industry*. London: Taylor and Francis.

9 ANNEX 1 INFORMED CONSENT

INFORMED CONSENT		
Project title: AgeWell		
Principal Investigators:		
<p>Background: AgeWell project aims to develop a digital coach for older employees supporting them through their transformation to retirement and support companies to keep their employees for longer time motivated to share their knowledge and experience after the retirement.</p> <p>The system is composed by a smartphone and an APP. The AgeWell project requires a study for testing the efficacy of the system and the impact on health and wellbeing of participants. During this phase, 50 voluntary participants will be recruited in Italy and the Netherlands. Participants will be introduced to the correct use of AgeWell and then they will be invited to use the system for an agreed period. During this period researchers will interview the volunteers three times. The interview will last approximately 45 minutes and researchers may take note, record the conversation or tape/videotape the interaction between the system and the users. Privacy and confidentiality will be always guarantee during the pilot study.</p>		
Participant Declaration:		
I have read or have had the information about the project and I understand the contents.	Yes	No
I have been given an opportunity to ask questions and am satisfied with answers. I have had enough time to decide whether or not to participate.	Yes	No
I consent to take part in the study.	Yes	No
I understand that participation is voluntary and that I can withdraw at any time. Without having to provide any reason.	Yes	No
I understand that withdrawal will not affect my access to services or legal rights.	Yes	No
I consent to possible anonymous publication of results.	Yes	No
I consent to the use of pictures, and sound recordings containing personal data for research purposes.	Yes	No

<p>- I know that for study monitoring purposes some individuals could have access to all my data. Those people are listed in this information letter. I consent to that access by these persons.</p>	Yes	No
<p>I give my permission to: Use the data obtained from you in other future studies without the need for additional consent.</p>	Yes	No
<p>Researcher Declaration:</p>		
<p>I have explained the study to the participant</p>	Yes	No
<p>I have answered questions put to me by the participant about the research</p>	Yes	No
<p>I believe that the participant understands and is freely giving consent</p>	Yes	No
<p>I guarantee the protection of natural persons with regard to the processing of personal data and on the free movement of such data according to the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016.</p>	Yes	No
<p>Participant's Statement:</p> <p>I have read, or had read to me, this consent form. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction. I freely and voluntarily agree to be part of this research study, though without prejudice to my legal and ethical rights. I understand I may withdraw from the study at any time. I have received a copy of this consent form.</p> <p>Participant's Name:</p> <p>Contact Details:</p> <p>Participant Signature:</p> <p>Date:</p> <p>The form needs to be signed by the consenter and dated.</p>		
<p>Researcher's Statement: I have explained the nature and purpose of this research study, the procedures to be undertaken and any risks that may be involved. I have offered to answer any questions and fully answered such questions. I believe that the participant understands my explanation and has freely given informed consent.</p> <p>Signature:</p> <p>Date:</p>		

10 ANNEX 2 GUIDELINES FOR THE INTERVIEWER

Start the talk introducing yourself (your name, your professional profile), let the interviewee know that you are pleased of meeting him/her; thank him/her again for taking part into the project; explain the aims of the AgeWell project.

Hence, explain that you first will ask some information and open questions that will be similar to a chat and that you need to record the conversation in order not to forget important information. Ensure that all information will be treated in the full respect of privacy according to national and European law on data treatment and management. Give the **Informed Consent** on the treatment of data to read and sign in (see Annex).

Please, fill in the section for the interviewer's notes: you can do it at the beginning or at the end of the interview.

Notes for interviewer

Country	Italy <input type="checkbox"/> 0
	Netherlands <input type="checkbox"/> 1
Interviewer name	
Interviewee code	
Gender of the interviewee	Male <input type="checkbox"/> 0
	Female <input type="checkbox"/> 1
Age of the interviewee	
Worker or retiree	Older worker <input type="checkbox"/> 0
	Retired <input type="checkbox"/> 1
Place of the interview	
Date of the interview	
Start time	
End time	

TURN ON THE RECORDER!

Now you can start the interview by using the BASELINE DATA COLLECTION TOOL.

This tool starts with a few demographic questions, followed by open-ended questions that have to be recorded. **The topic-guide is different for older workers and retirees. Please, pay attention.**

At the end of the open questions, you can **TURN OFF** the recorder and continue administering the questionnaire. The PERCEIVED STRESS SCALE, the WELLBEING SCALE and the SELF-EFFICACY SCALE can be showed to the interviewees so they can read all the options and the compilation of the matrix can be easily and faster.

The questionnaire is made of three sections:

- A) Health and Wellbeing
- B) Social life
- C) Experience with the AgeWell coach

At the baseline the section C) includes just open questions. Hence, **remember to switch on the recorder.**

At mid-term and final evaluation section C) of the questionnaire is made of quantitative scales, so you can ask questions without recording interviewees' answers.

Nevertheless, at every wave the questionnaire finishes with few open ended questions that have to be recorded.

11 ANNEX 3 DATA COLLECTION TOOL

BASELINE DATA COLLECTION TOOL (T0)

TOPIC-GUIDE INTERVIEW

FOR THE INTERVIEWER: [TURN ON THE RECORDER]

A) IF THE INTERVIEWEE IS AN OLDER WORKER ASK THE FOLLOWING QUESTIONS:

1. Could you tell me about your work, please.
2. What do you like most of your work? And why?
3. What do you like less? And why?
4. How much is your work important for your identity?
5. What will you miss most when you will be retired?
6. Which are your feelings about retirement (e.g. hopes, fears, etc)?
7. How much time is left before retirement?

B) IF THE INTERVIEWEE IS RETIREE ASK THE FOLLOWING QUESTIONS:

1. When did you get retired? Do you remember the exact date?
2. Do you miss things from your working life? If so, what?
3. Which were your expectations related to the life after retirement?
4. Is your real life matching these expectations now?
5. Did you have any plan for the life after retirement when you were still working?
6. Which of your plans have you realised so far?
7. Did you have any specific goal?
8. Have you already started planning actions for reaching this/these goal/s?
9. Have you achieved some of these goals so far?
10. Have you had any kind of retirement coaching so far?

FOR THE INTERVIEWER: **TURN OFF THE RECORDER** and prepare the interviewee to the questionnaire below.

INTERVIEWER: *“Thank you for talking with me. Now I will ask you some personal questions concerning your health and wellbeing, your social life and your experience with the technology”*

QUESTIONNAIRE

A) HEALTH AND WELLBEING

[SF-12 -ACUTE FORM]

INTERVIEWER: *«This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. Please answer carefully every question. Some questions may look like others, but each one is different »*

FOR THE INTERVIEWER: Pay attention to ask all questions, otherwise the test is not valid and the total score cannot be calculated.)

1. In general, would you say your health is:

Excellent	Very good	Good	Fair	Poor
<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

2. The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

	Yes, limited a lot	Yes, limited a little	No, not limited at all
a. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
b. Climbing several flights of stairs	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

3. During the past week, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

- | | Yes | No |
|---|----------------------------|----------------------------|
| a. Accomplished less than you would like | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| b. Were limited in the kind of work or other activities | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |

4. During the past week, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

- | | Yes | No |
|---|----------------------------|----------------------------|
| a. Accomplished less than you would like | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| b. Did work or other activities less carefully than usual | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |

5. During the past week, how much did pain interfere with your normal work (including both work outside the home and housework)?

- | Not at all | A little bit | Moderately | Quite a bit | Extremely |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

INTERVIEWER: «The following questions are about how you feel and how things have been with you during the past week. For each question, please give the one answer that comes closest to the way you have been feeling»

6. How much of the time during the past week...

- | | All of the time | Most of the time | A good bit of the time | Some of the time | A little of the time | None of the time |
|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| a. Have you felt calm and peaceful? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| b. Did you have a lot of energy? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| c. Have you felt downhearted and blue? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |

7. During the past week, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?

- | All of the time | Most of the time | A good bit of the time | Some of the time | A little of the time |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

8. Do you take any medicine?

No 0

Yes 1

9. If yes, please tell me the condition for which you are taking medicines.

FOR THE INTERVIEWER: Show the matrix below to the interviewee and tick with him/her the options that better represent him/here thinking.

10. Please respond for each item by marking one box per row regarding how you felt in the last two weeks [WHO-5 ITEMS]

		All of the time	Most of the time	More than half the time	Less than half the time	Some of the time	At no time
a	I have felt cheerful in good spirit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		5	4	3	2	1	0
b	I have felt calm and relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		5	4	3	2	1	0
c	I have felt active and vigorous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		5	4	3	2	1	0
d	I woke up feeling fresh and rested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		5	4	3	2	1	0

e	My daily life has been filled with things that interest me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		5	4	3	2	1	0

FOR THE INTERVIEWER: Show the matrix below, i.e. the **PERCEIVED STRESS SCALE**, to the interviewee and leave her/him the time for answering by ticking the preferred options.

11. The questions in this scale ask you about your feelings and thoughts **during the last month**. In each case, you will be asked to indicate by circling how often you felt or thought a certain way [**PERCEIVED STRESS SCALE**].

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

- a. In the last month, how often have you been upset because of something that happened unexpectedly?..... 0 1 2
3 4
- b. In the last month, how often have you felt that you were unable to control the important things in your life? 0 1 2
3 4
- c. In the last month, how often have you felt nervous and “stressed”?..... 0 1 2
3 4
- d. In the last month, how often have you felt confident about your ability to handle your personal problems? 0 1 2
3 4
- e. In the last month, how often have you felt that things were going your way?..... 0 1 2
3 4
- f. In the last month, how often have you found that you could not cope with all the things that you had to do? 0 1 2
3 4
- g. In the last month, how often have you been able to control irritations in your life?..... 0 1 2
3 4

- h. In the last month, how often have you felt that you were on top of things?.....
 0 1 2 3 4
- i. In the last month, how often have you been angered because of things that were outside of your control?..... 0 1 2
 3 4
- j. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? 0 1 2
 3 4

FOR THE INTERVIEWER: Show the matrix below, i.e. the **SELF-EFFICACY SCALE**, to the interviewee and tick with him/her the options that better represent him/hers thinking.

12. On a scale from 1 to 5, where 1 is strongly agree and 5 is strongly disagree, to what extent do you agree or disagree with the following statements:

	5 Strongly disagree	4 Disagree	3 Neither agree nor disagree	2 Agree	1 Strongly agree
a. If you don't let yourself get too worried, everything tends to work out in the end.					
b. If someone is meant to get a serious disease, it doesn't matter what kinds of food they eat, they will get that disease anyway.					
c. My health is a matter of luck.					
d. How long I live is a matter of luck.					
e. Everything that can go wrong for me does.					
f. I often feel helpless in dealing with the problems of life.					

B) SOCIAL LIFE AND ENGAGEMENT

INTERVIEWER: *Now, I would be interested to better know your social relationships both inside and outside the family network [LUBBEN SOCIAL NETWORK SCALE – 6 (LSNS-6) ²]*

13. Considering the people to whom you are related by birth, marriage, adoption, etc., and all of your friends including those who live in your neighborhood	None	One	Two	Three or four	Five to eight	Nine or more
a. How many relatives do you see or hear from at least once a month?	[0]	[1]	[2]	[3]	[4]	[5]
b. How many relatives do you feel at ease with that you can talk about private matters?	[0]	[1]	[2]	[3]	[4]	[5]
c. How many relatives do you feel close to such that you could call on them for help?	[0]	[1]	[2]	[3]	[4]	[5]
d. How many of your friends do you see or hear from at least once a month?	[0]	[1]	[2]	[3]	[4]	[5]
e. How many friends do you feel at ease with that you can talk about private matters?	[0]	[1]	[2]	[3]	[4]	[5]
f. How many friends do you feel close to such that you could call on them for help?	[0]	[1]	[2]	[3]	[4]	[5]

14. In the last four weeks have you taken free activities for voluntary associations, the Church, political parties or anything else?

No 0

Yes 1

15. If yes, with which regularity? [SOCIAL ENGAGEMENT SCALE]

² LSNS-6 total score is an equally weighted sum of these six items. Scores range from 0 to 30

Participation to	Once in four weeks	Once every two weeks	Once a week	More than once a week
a) Associations	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b) Church	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c) Political party	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d) Other [Please, specify: _____ _____]	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

C) EXPERIENCE WITH THE TECHNOLOGY

INTERVIEWER: “We are very close to the conclusion of our interview. From here on, we will focus on your relationship with the technology. First I would like to ask the following questions”.

16. Which device do you use daily?

17. Which are your feelings towards smartphone, tablet and laptop?

18. Do you feel confident in using;

19. A PC or laptop (Yes, somewhat confident, no)

20. A touch screen (Yes, somewhat confident, no)

21. Apps on a mobile device (Yes, somewhat confident, no)

22. Do you feel confident that you will be able to learn to use the AgeWell digital coach, which is an app on a mobile device?

INTERVIEWER: “Thank you very much for spending your time answering this questionnaire. We will meet on [remind the date of the next meeting] and I will show you the AgeWell coach and how to use it”.

MID-TERM DATA COLLECTION TOOL (T1)

QUESTIONNAIRE

INTERVIEWER: *“Thank you for being part of the trial. In the last three months you have learned to use the AgeWell digital coach. Before asking you a few questions about the digital coach, I am interested in knowing how you are. Hence, I am going to ask you the same questions I asked three months ago to check if there was any change in your health, wellbeing and social life. Before we go on...”*

0. Has anything new or unexpected happened in your life in the past three months that could affect your wellbeing, health and social life?

FOR THE INTERVIEWER: Take note of the answer **HERE:**

Thank you, so let's go ahead.

A) HEALTH AND WELLBEING

[SF-12 -ACUTE FORM]

INTERVIEWER: *«This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. Please answer carefully every question. Some questions may look like others, but each one is different »*

FOR THE INTERVIEWER: Pay attention to ask all questions, otherwise the test is not valid and the total score cannot be calculated.)

1. In general, would you say your health is:

Excellent	Very good	Good	Fair	Poor
<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

2. The following questions are about activities you might do during a typical day. **Does your health now limit you in these activities? If so, how much?**

- | | Yes, limited a lot | Yes, limited a little | No, not limited at all |
|--|----------------------------|----------------------------|----------------------------|
| a. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| b. Climbing several flights of stairs | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |

3. During the past week, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

- | | Yes | No |
|---|----------------------------|----------------------------|
| a. Accomplished less than you would like | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| b. Were limited in the kind of work or other activities | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |

4. During the past week, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

- | | Yes | No |
|---|----------------------------|----------------------------|
| a. Accomplished less than you would like | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| b. Did work or other activities less carefully than usual | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |

5. During the past week, how much did pain interfere with your normal work (including both work outside the home and housework)?

- | Not at all | A little bit | Moderately | Quite a bit | Extremely |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

INTERVIEWER: «The following questions are about how you feel and how things have been with you during the past week. For each question, please give the one answer that comes closest to the way you have been feeling»

6. How much of the time during the past week...

- | | All of the time | Most of the time | A good bit of the time | Some of the time | A little of the time | None of the time |
|-------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| a. Have you felt calm and peaceful? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| b. Did you have a lot of energy? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |

c. Have you felt downhearted and blue?

1 2 3 4 5 6

7. During the past week, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?

All of the time Most of the time A good bit of the time Some of the time A little of the time

1 2 3 4 5

8. Do you take any medicine?

No 0

Yes 1

9. If yes, please tell me the condition for which you are taking medicines.

FOR THE INTERVIEWER: Show the matrix below to the interviewee and tick with him/her the options that better represent him/here thinking.

10. Please respond for each item by marking one box per row regarding how you felt in the last two weeks [WHO-5 ITEMS]

		All of the time	Most of the time	More than half the time	Less than half the time	Some of the time	At no time
a	I have felt cheerful in good spirit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		5	4	3	2	1	0
b	I have felt calm and relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		5	4	3	2	1	0
c		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	I have felt active and vigorous	5	4	3	2	1	0
d	I woke up feeling fresh and rested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		5	4	3	2	1	0
e	My daily life has been filled with things that interest me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		5	4	3	2	1	0

FOR THE INTERVIEWER: Show the matrix below, i.e. the **PERCEIVED STRESS SCALE**, to the interviewee and leave her/him the time for answering by ticking the preferred options.

11. The questions in this scale ask you about your feelings and thoughts **during the last month**. In each case, you will be asked to indicate by circling how often you felt or thought a certain way [**PERCEIVED STRESS SCALE**].

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

- a. In the last month, how often have you been upset because of something that happened unexpectedly?..... 0 1 2
3 4
- b. In the last month, how often have you felt that you were unable to control the important things in your life? 0 1 2
3 4
- c. In the last month, how often have you felt nervous and “stressed”?
.....
..... 0 1 2 3 4
- d. In the last month, how often have you felt confident about your ability to handle your personal problems? 0 1 2
3 4
- e. In the last month, how often have you felt that things

- were going your way?..... 0 1 2
3 4
- f. In the last month, how often have you found that you could not cope with all the things that you had to do? 0 1 2
3 4
- g. In the last month, how often have you been able to control irritations in your life?..... 0 1 2
3 4
- h. In the last month, how often have you felt that you were on top of things?
.....
..... 0 1 2 3 4
- i. In the last month, how often have you been angered because of things that were outside of your control?..... 0 1 2
3 4
- j. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? 0 1 2
3 4

FOR THE INTERVIEWER: Show the matrix below, i.e. the **SELF-EFFICACY SCALE**, to the interviewee and tick with him/her the options that better represent him/here thinking.

12. On a scale from 1 to 5, where 1 is strongly agree and 5 is strongly disagree, to what extent do you agree or disagree with the following statements:

	5 Strongly disagree	4 Disagree	3 Neither agree nor disagree	2 Agree	1 Strongly agree
a. If you don't let yourself get too worried, everything tends to work out in the end.					
b. If someone is meant to get a serious disease, it doesn't matter what kinds of food they eat, they will get that disease anyway.					

c. My health is a matter of luck.					
d. How long I live is a matter of luck.					
e. Everything that can go wrong for me does.					
f. I often feel helpless in dealing with the problems of life.					

D) SOCIAL LIFE AND ENGAGEMENT

INTERVIEWER: *Now, I would be interested to better know your social relationships both inside and outside the family network [LUBBEN SOCIAL NETWORK SCALE – 6 (LSNS-6) ³]*

13. Considering the people to whom you are related by birth, marriage, adoption, etc., and all of your friends including those who live in your neighborhood	None	One	Two	Three or four	Five to eight	Nine or more
a. How many relatives do you see or hear from at least once a month?	[0]	[1]	[2]	[3]	[4]	[5]
b. How many relatives do you feel at ease with that you can talk about private matters?	[0]	[1]	[2]	[3]	[4]	[5]
c. How many relatives do you feel close to such that you could call on them for help?	[0]	[1]	[2]	[3]	[4]	[5]
d. How many of your friends do you see or hear from at least once a month?	[0]	[1]	[2]	[3]	[4]	[5]
e. How many friends do you feel at ease with that you can talk about private matters?	[0]	[1]	[2]	[3]	[4]	[5]

³ LSNS-6 total score is an equally weighted sum of these six items. Scores range from 0 to 30

f. How many friends do you feel close to such that you could call on them for help?	[0]	[1]	[2]	[3]	[4]	[5]
---	-----	-----	-----	-----	-----	-----

14. In the last four weeks have you taken free activities for voluntary associations, the Church, political parties or anything else?

No 0

Yes 1

15. If yes, with which regularity? [SOCIAL ENGAGEMENT SCALE]

Participation to	Once in four weeks	Once every two weeks	Once a week	More than once a week
a) Associations	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b) Church	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c) Political party	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d) Other [Please, specify: _____ _____]	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

B) EXPERIENCE WITH THE TECHNOLOGY

INTERVIEWER: “Now I am going to ask you some questions on the device. The purpose of this test is to evaluate how satisfied you are with your DIGITAL COACH.

For each item, rate your satisfaction with your assistive device you experienced by using the following scale of 1 to 5”. **[QUEBEC USER EVALUATION OF SATISFACTION WITH ASSISTIVE TECHNOLOGY (QUEST 2.0)]**

1 = not satisfied at all 2 = not very satisfied 3 = more or less satisfied 4 = quite satisfied 5 = very satisfied

16. How satisfied are you with the digital coach 1 2 3 4 5

a. the dimensions (size, height, length, width) of your assistive device?

b. the weight of your assistive device?

c. the ease in adjusting (fixing, fastening) the parts of your assistive device?

d. how safe and secure your assistive device is?

e. the durability (endurance, resistance to wear) of your assistive device?

f. how easy it is to use your assistive device?

g. how comfortable your assistive device is?

h. how effective your assistive device is (the degree to which your device meets your needs)?

TOTAL _____ / 40

17. Below is the list of the same satisfaction items. Please select the three items that you consider to be the most important to you. Please put an X in the 3 boxes of your choice:

1. dimensions	<input type="checkbox"/>	5. durability	<input type="checkbox"/>
2. weight	<input type="checkbox"/>	6. easy to use	<input type="checkbox"/>
3. adjustments	<input type="checkbox"/>	7. comfort	<input type="checkbox"/>
4. safety	<input type="checkbox"/>	8. effectiveness	<input type="checkbox"/>

INTERVIEWER: “Now I will ask you some questions for the assessment of the digital coach. The questionnaire consists of pairs of contrasting attributes that may apply to the product. The circles between the attributes represent gradations between the opposites. You can express your agreement with the attributes by ticking the circle that most closely reflects your impression”. **[USER EXPERIENCE QUESTIONNAIRE (UEQ)]**

Example:

attractive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	unattractive
------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------

This response would mean that you rate the application as more attractive than unattractive.

INTERVIEWER: “Please decide spontaneously. Don’t think too long about your decision to make sure that you convey your original impression. Sometimes you may not be completely sure about your agreement with a particular attribute or you may find that the attribute does not apply completely to the particular product. Nevertheless, please tick a circle in every line. It is your personal opinion that counts. Please remember: there is no wrong or right answer!”

18. Please, assess the digital coach now by ticking one circle per line [USER EXPERIENCE QUESTIONNAIRE (UEQ)]

	1	2	3	4	5	6	7		
annoying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	enjoyable	1
not understandable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	understandable	2
creative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	dull	3
easy to learn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	difficult to learn	4
valuable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	inferior	5
boring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	exciting	6
not interesting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	interesting	7
unpredictable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	predictable	8
fast	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	slow	9
inventive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	conventional	10
obstructive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	supportive	11
good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	bad	12
complicated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	easy	13
unlikable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	pleasing	14
usual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	leading edge	15
unpleasant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	pleasant	16
secure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not secure	17
motivating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	demotivating	18
meets expectations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	does not meet expectations	19
inefficient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	efficient	20
clear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	confusing	21
impractical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	practical	22
organized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	cluttered	23
attractive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	unattractive	24
friendly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	unfriendly	25
conservative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	innovative	26

FOR THE INTERVIEWER: The **SYSTEM USABILITY SCALE (SUS)** is generally used after the respondent has had an opportunity to use the digital coach being evaluated, but before any debriefing or discussion takes place. Respondents should be asked to record their immediate response to each item, rather than thinking about items for a long time. All items should be checked. If a respondents feel that they cannot respond to a particular item, they should mark the centre point of the scale.

19. Please record your response to each item [SYSTEM USABILITY SCALE (SUS) © Digital Equipment Corporation, 1986.]

	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
a. I think I would like to use this system frequently	1	2	3	4	5
b. I found the system unnecessarily complex	1	2	3	4	5
c. I though the system was easy to use	1	2	3	4	5
d. I think that I would need the support of a technical person to be able to use this system	1	2	3	4	5
e. I found the various functions in this system were well integrated	1	2	3	4	5
f. I thought there was too much inconsistency in this system	1	2	3	4	5
g. I would imagine that most people would learn to use this system very quickly	1	2	3	4	5
h. I found the system very cumbersome to use	1	2	3	4	5
i. I felt very confident using the system	1	2	3	4	5
j. I needed to learn a lot of things before I could get going with this system	1	2	3	4	5

WRAP UP

THE INTERVIEWER: *“Thank you for answering the questionnaire. For wrapping up...”*

TURN ON THE RECORDER

- 20.** Which are your feelings toward the AgeWell digital coach that have not already been mentioned?
- 21.** Has the AgeWell digital coach been helpful? If so, in which dimension of your life (health, wellbeing, social life) do you think have improved most through AgeWell digital coach?
- 22.** Which aspects of the AgeWell coach need to be changed or improved or deleted?

INTERVIEWER: “Thank you very much for spending your time answering this questionnaire. In the next weeks you will use the AgeWell Coach autonomously. I will call in four weeks you for agreeing a day and time when we can meet for discussing about your experience with the AgeWell coach”.

TURN OFF THE RECORDER

POST INTERVENTION DATA COLLECTION TOOL (T2)

QUESTIONNAIRE

INTERVIEWER: *“Thank you for still being part of the trial. In the last three months you have learned to use the AgeWell digital coach autonomously. Before asking you a few questions about the digital coach, I am interested in knowing how you are. Hence, I am going to ask you the same questions I asked in the last two interviews to check if there was any change in your health, wellbeing and social life. Before we go on...”*

Turn on the recorder

0. Has anything new or unexpected happened in your life in the past three months that could affect your wellbeing, health and social life?

FOR THE INTERVIEWER: Take note of the answer HERE:

TURN THE RECORDER OFF

Thank you, so let's go ahead.

A) HEALTH AND WELLBEING

[SF-12 -ACUTE FORM]

INTERVIEWER: *«This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. Please answer carefully every question. Some questions may look like others, but each one is different »*

FOR THE INTERVIEWER: Pay attention to ask all questions, otherwise the test is not valid and the total score cannot be calculated.)

1. In general, would you say your health is:

Excellent	Very good	Good	Fair	Poor
-----------	-----------	------	------	------

5 4 3 2 1

2. The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

	Yes, limited a lot	Yes, limited a little	No, not limited at all
a. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
b. Climbing several flights of stairs	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

3. During the past week, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

	Yes	No
a. Accomplished less than you would like	<input type="checkbox"/> 1	<input type="checkbox"/> 0
b. Were limited in the kind of work or other activities	<input type="checkbox"/> 1	<input type="checkbox"/> 0

4. During the past week, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

	Yes	No
a. Accomplished less than you would like	<input type="checkbox"/> 1	<input type="checkbox"/> 0
b. Did work or other activities less carefully than usual	<input type="checkbox"/> 1	<input type="checkbox"/> 0

5. During the past week, how much did pain interfere with your normal work (including both work outside the home and housework)?

Not at all A little bit Moderately Quite a bit Extremely

1 2 3 4 5

INTERVIEWER: «The following questions are about how you feel and how things have been with you during the past week. For each question, please give the one answer that comes closest to the way you have been feeling»

6. How much of the time during the past week...

	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
a. Have you felt calm and peaceful?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6

b. Did you have a lot of energy?

1 2 3 4 5 6

c. Have you felt downhearted and blue?

1 2 3 4 5 6

7. During the past week, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?

All of the time Most of the time A good bit of the time Some of the time A little of the time

1 2 3 4 5

8. Do you take any medicine?

No 0

Yes 1

9. If yes, please tell me the condition for which you are taking medicines.

FOR THE INTERVIEWER: Show the matrix below to the interviewee and tick with him/her the options that better represent him/here thinking.

10. Please respond for each item by marking one box per row regarding how you felt in the last two weeks [WHO-5 ITEMS]

		All of the time	Most of the time	More than half the time	Less than half the time	Some of the time	At no time
a	I have felt cheerful in good spirit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		5	4	3	2	1	0
b	I have felt calm and relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		5	4	3	2	1	0

c	I have felt active and vigorous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		5	4	3	2	1	0
d	I woke up feeling fresh and rested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		5	4	3	2	1	0
e	My daily life has been filled with things that interest me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		5	4	3	2	1	0

FOR THE INTERVIEWER: Show the matrix below, i.e. the **PERCEIVED STRESS SCALE**, to the interviewee and leave her/him the time for answering by ticking the preferred options.

11. The questions in this scale ask you about your feelings and thoughts **during the last month**. In each case, you will be asked to indicate by circling how often you felt or thought a certain way [**PERCEIVED STRESS SCALE**].

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

- a. In the last month, how often have you been upset because of something that happened unexpectedly?..... 0
1 2 3 4
- b. In the last month, how often have you felt that you were unable to control the important things in your life? 0
1 2 3 4
- c. In the last month, how often have you felt nervous and “stressed”?
.....
..... 0 1 2 3 4
- d. In the last month, how often have you felt confident about

- your ability to handle your personal problems? 0
1 2 3 4
- e. In the last month, how often have you felt that things were going your way?..... 0
1 2 3 4
- f. In the last month, how often have you found that you could not cope with all the things that you had to do? 0
1 2 3 4
- g. In the last month, how often have you been able to control irritations in your life?..... 0
1 2 3 4
- h. In the last month, how often have you felt that you were on top of things?
.....
..... 0 1 2 3 4
- i. In the last month, how often have you been angered because of things that were outside of your control?..... 0
1 2 3 4
- j. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? 0
1 2 3 4

FOR THE INTERVIEWER: Show the matrix below, i.e. the **SELF-EFFICACY SCALE**, to the interviewee and tick with him/her the options that better represent him/hers thinking.

12. On a scale from 1 to 5, where 1 is strongly agree and 5 is strongly disagree, to what extent do you agree or disagree with the following statements:

	5 Strongly disagree	4 Disagree	3 Neither agree nor disagree	2 Agree	1 Strongly agree
a. If you don't let yourself get too worried, everything tends to work out in the end.					

b. If someone is meant to get a serious disease, it doesn't matter what kinds of food they eat, they will get that disease anyway.					
c. My health is a matter of luck.					
d. How long I live is a matter of luck.					
e. Everything that can go wrong for me does.					
f. I often feel helpless in dealing with the problems of life.					

B) SOCIAL LIFE AND ENGAGEMENT

INTERVIEWER: *Now, I would be interested to better know your social relationships both inside and outside the family network [LUBBEN SOCIAL NETWORK SCALE – 6 (LSNS-6) ⁴*

13. Considering the people to whom you are related by birth, marriage, adoption, etc., and all of your friends including those who live in your neighborhood	None	One	Two	Three or four	Five thru eight	Nine or more
a. How many relatives do you see or hear from at least once a month?	[0]	[1]	[2]	[3]	[4]	[5]
b. How many relatives do you feel at ease with that you can talk about private matters?	[0]	[1]	[2]	[3]	[4]	[5]
c. How many relatives do you feel close to such that you could call on them for help?	[0]	[1]	[2]	[3]	[4]	[5]

⁴ LSNS-6 total score is an equally weighted sum of these six items. Scores range from 0 to 30

d. How many of your friends do you see or hear from at least once a month?	[0]	[1]	[2]	[3]	[4]	[5]
e. How many friends do you feel at ease with that you can talk about private matters?	[0]	[1]	[2]	[3]	[4]	[5]
f. How many friends do you feel close to such that you could call on them for help?	[0]	[1]	[2]	[3]	[4]	[5]

14. In the last four weeks have you taken free activities for voluntary associations, the Church, political parties or anything else?

No 0

Yes 1

15. If yes, with which regularity? [**SOCIAL ENGAGEMENT SCALE**]

Participation to	Once in four weeks	Once every two weeks	Once a week	More than once a week
a) Associations	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b) Church	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c) Political party	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d) Other [Please, specify: _____ _____]	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

C) EXPERIENCE WITH THE TECHNOLOGY

INTERVIEWER: “Now I am going to ask you some questions on the device. The purpose of this test is to evaluate how satisfied you are with your DIGITAL COACH.

For each item, rate your satisfaction with your assistive device you experienced by using the following scale of 1 to 5”. **[QUEBEC USER EVALUATION OF SATISFACTION WITH ASSISTIVE TECHNOLOGY (QUEST 2.0)]**

1 = not satisfied at all 2 = not very satisfied 3 = more or less satisfied 4 = quite satisfied 5 = very satisfied

- | 16. How satisfied are you with the digital coach | 1 | 2 | 3 | 4 | 5 |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a. the dimensions (size, height, length, width) of your assistive device? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. the weight of your assistive device? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. the ease in adjusting (fixing, fastening) the parts of your assistive device? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. how safe and secure your assistive device is? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. the durability (endurance, resistance to wear) of your assistive device? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. how easy it is to use your assistive device? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. how comfortable your assistive device is? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. how effective your assistive device is (the degree to which your device meets your needs)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

TOTAL _____ / 40

17. Below is the list of the same satisfaction items. Please select the three items that you consider to be the most important to you. Please put an X in the 3 boxes of your choice:

- | | | | |
|----------------|--------------------------|------------------|--------------------------|
| 1. dimensions | <input type="checkbox"/> | 5. durability | <input type="checkbox"/> |
| 2. weight | <input type="checkbox"/> | 6. easy to use | <input type="checkbox"/> |
| 3. adjustments | <input type="checkbox"/> | 7. comfort | <input type="checkbox"/> |
| 4. safety | <input type="checkbox"/> | 8. effectiveness | <input type="checkbox"/> |

INTERVIEWER: “Now I will ask you some questions for the assessment of the digital coach. The questionnaire consists of pairs of contrasting attributes that may apply to the product. The circles between the attributes represent gradations between the opposites. You can express your agreement with the attributes by ticking the circle that most closely reflects your impression”. **[USER EXPERIENCE QUESTIONNAIRE (UEQ)]**

Example:

attractive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	unattractive
------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------

This response would mean that you rate the application as more attractive than unattractive.

INTERVIEWER: “Please decide spontaneously. Don’t think too long about your decision to make sure that you convey your original impression. Sometimes you may not be completely sure about your agreement with a particular attribute or you may find that the attribute does not apply completely to the particular product. Nevertheless, please tick a circle in every line. It is your personal opinion that counts. Please remember: there is no wrong or right answer!”

18. Please, assess the digital coach now by ticking one circle per line **[USER EXPERIENCE QUESTIONNAIRE (UEQ)]**

	1	2	3	4	5	6	7		
annoying	?	?	?	?	?	?	?	enjoyable	1
not understandable	?	?	?	?	?	?	?	understandable	2
creative	?	?	?	?	?	?	?	dull	3
easy to learn	?	?	?	?	?	?	?	difficult to learn	4
valuable	?	?	?	?	?	?	?	inferior	5
boring	?	?	?	?	?	?	?	exciting	6
not interesting	?	?	?	?	?	?	?	interesting	7
unpredictable	?	?	?	?	?	?	?	predictable	8
fast	?	?	?	?	?	?	?	slow	9
inventive	?	?	?	?	?	?	?	conventional	10
obstructive	?	?	?	?	?	?	?	supportive	11
good	?	?	?	?	?	?	?	bad	12
complicated	?	?	?	?	?	?	?	easy	13
unlikable	?	?	?	?	?	?	?	pleasing	14

usual	?	?	?	?	?	?	?	leading edge	15
unpleasant	?	?	?	?	?	?	?	pleasant	16
secure	?	?	?	?	?	?	?	not secure	17
motivating	?	?	?	?	?	?	?	demotivating	18
meets expectations	?	?	?	?	?	?	?	does not meet expectations	19
inefficient	?	?	?	?	?	?	?	efficient	20
clear	?	?	?	?	?	?	?	confusing	21
impractical	?	?	?	?	?	?	?	practical	22
organized	?	?	?	?	?	?	?	cluttered	23
attractive	?	?	?	?	?	?	?	unattractive	24
friendly	?	?	?	?	?	?	?	unfriendly	25
conservative	?	?	?	?	?	?	?	innovative	26

FOR THE INTERVIEWER: The **SYSTEM USABILITY SCALE (SUS)** is generally used after the respondent has had an opportunity to use the digital coach being evaluated, but before any debriefing or discussion takes place. Respondents should be asked to record their immediate response to each item, rather than thinking about items for a long time. All items should be checked. If a respondents feel that they cannot respond to a particular item, they should mark the centre point of the scale.

19. Please record your response to each item [SYSTEM USABILITY SCALE (SUS) © Digital Equipment Corporation, 1986.]

	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
a. I think I would like to use this system frequently	1	2	3	4	5
b. I found the system unnecessarily complex	1	2	3	4	5
c. I though the system was easy to use	1	2	3	4	5
d. I think that I would need the support of a technical person to be able to use this system	1	2	3	4	5
e. I found the various functions in this system were well integrated	1	2	3	4	5

f. I thought there was too much inconsistency in this system	1	2	3	4	5
g. I would imagine that most people would learn to use this system very quickly	1	2	3	4	5
h. I found the system very cumbersome to use	1	2	3	4	5
i. I felt very confident using the system	1	2	3	4	5
j. I needed to learn a lot of things before I could get going with this system	1	2	3	4	5

D) PRIVACY AND STIGMATISATION

20. Has this technology violated your privacy?

No 0

Yes 1

I do not know 8

21. Did you feel a sense of stigma during usage?

No 0

Yes 1

I do not know 8

WRAP UP-STRUCTURED INTERVIEW

INTERVIEWER: *“Thank you for answering the questionnaire. For wrapping up...”* **[TURN ON THE RECORDER]**

- 22.** Have you changed your thoughts about retirement since last time? If so, how?
- 23.** Which are your feelings toward the AgeWell digital coach?
- 24.** Did the AgeWell system help you make plans for your life during retirement?
- 25.** Do you feel that using the AgeWell digital coach made you think differently about how to spend your time?
- 26.** Do you feel the AgeWell system supported you in achieving health goals?
- 27.** Do you feel the AgeWell system supported you in your social life?
- 28.** Do you feel the AgeWell system has improved your overall wellbeing?
- 29.** Has the AgeWell digital coach been helpful?
- 30.** If so, in which dimension of your life (health, wellbeing, social life) do you think have improved most through AgeWell digital coach?
- 31.** Which aspect of the AgeWell coach needs to be changed or improved or deleted?
- 32.** Is there anything else you would like to report or underline concerning this experience? E.g. one positive and one negative aspect.

INTERVIEWER: *“Thank you very much for spending your time answering this questionnaire and especially for have been continuing attending this trial. I wish you all the very best.”* **[TURN OFF THE RECORDER]**

SET OF QUESTIONS FOCUSED ON THE IMPACT OF COVID-19 AND THE USAGE OF TECHNOLOGY AND DIGITAL COACH TO ADD TO THE AGEWELL STUDY PROTOCOL

1. Have you been infected with the COVID-19 virus?

Yes 1

No 0

2. Has any of your relatives been infected with the COVID-19 virus?

Yes 1

No 0

3. If Yes, Who? Please, specify _____

4. What level of impact do you think the coronavirus poses to you and your family?

High impact 4

Moderate impact 3

Low impact 2

No impact 1

5. Does this impact affect the following area

Areas of impact	Totally disagree	Disagree	Don't know	Agree	Totally agree
Social life	1	2	3	4	5
Physical activity	1	2	3	4	5
Nutritional habits	1	2	3	4	5
Health status	1	2	3	4	5
Loneliness	1	2	3	4	5
Mood	1	2	3	4	5

6. During this unexpected pandemic, did you use technology to cope with those areas of impact?

Areas of impact	Totally disagree	Disagree	Don't know	Agree	Totally agree
Social life	1	2	3	4	5
Physical activity	1	2	3	4	5
Nutritional habits	1	2	3	4	5
Health status	1	2	3	4	5
Loneliness	1	2	3	4	5
Mood	1	2	3	4	5

7. Do you think that a virtual coach could help you in maintaining a good life style in cases like coronavirus spread?

- Yes 1
- No 0
- I don't know 8

8. If yes, do you think that a virtual coach could be a valuable tool to help people during such cases?

Totally disagree	Disagree	Don't know	Agree	Totally agree
1	2	3	4	5