

BOSTON UNIVERSITY LATE-LIFE FUNCTION AND DISABILITY INSTRUMENT

[MANUAL OF PROCEDURES]

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Disclaimer: The LLFDI-CAT computer program is available free-of-charge. This manual provides support for users; however, we are not able to provide individual support for users. Boston University is not responsible for the use of the LLFDI-CAT or interpretation of LLFDI-CAT scores.

SECTION 1: INTRODUCTION

1.1 Background - LLFDI-CAT

The Late-Life Function & Disability Instrument - Computer Adaptive Test (LLFDI-CAT) is a patient-reported measure of 'activity limitation' and 'participation restriction' designed for community-dwelling older adults. (McDonough, 2012) The LLFDI-CAT is an improved and expanded version of the original Late-Life Function & Disability Instrument (LLFDI), which is a traditional, fixed-form measure developed in 2002. (Haley, Jette et al. 2002; Jette, Haley et al. 2002; Sayers, Jette et al. 2004) The conceptual framework of the World Health Organization's (WHO) International Classification of Functioning, Disability, and Health (ICF) has been applied to operationally define distinct domains of activity limitations and participation restrictions, and develop content for the LLFDI-CAT. (World Health Organization 2001) The ICF describes activity limitation as "limitation in the execution of a task or action by an individual", and participation restriction as "restriction in involvement in life situations." The LLFDI-CAT has been designed to serve as a comprehensive, precise, and efficient measure of activity limitations and participation restrictions, which can be responsive to meaningful change in each of its two domains.

Using traditional measurement methods, designing a single, comprehensive, and precise measure of Activity Limitation and Participation Restriction that has minimal floor and ceiling effects across a range of patients and settings is impractical due to the large number of items required to cover the full spectrum of functional ability. Thus, the LLFDI-CAT employs Item Response Theory (IRT) and Computer-Adaptive Testing (CAT) methods, two highly promising, contemporary measurement approaches that overcome the limitations of traditional, fixed-form measures. CAT instruments offer the dual advantage of significantly reduced administration time while maintaining good measurement breadth and precision. (Hays, Morales et al. 2000; Hambleton 2005; Haley, Siebens et al. 2006; Jette 2006; Cella, Yount et al. 2007)

A CAT instrument requires a comprehensive item bank that includes a range of items representing the construct of interest from low to high levels of ability. Using a computer algorithm, a CAT is programmed to first present an item of mid-difficulty from the item pool, and subsequently tailor administration to the respondent by selecting items of appropriate difficulty based on prior responses. Rather than initiating the test with a mid-difficulty item, CATs can also

be programmed to present an initial item based on respondent information such as age, diagnosis, or condition severity. (Jette 2006). A CAT instrument is programmed to stop once a specified score precision and/or predetermined number of items administered is reached. As each subsequent item is selected based on the respondent's estimated ability and item difficulty level, a CAT administers the optimal subset of items to each subject, avoiding inappropriately easy or difficult items. (Hays, Morales et al. 2000; Jette and Haley 2005; Jette 2006) By posing the most informative questions, CATs can provide precise score estimates with fewer items compared with traditional, fixed-form tests. A unique advantage of CATs is that test length can be easily adapted to the meet needs of the specific application; a shorter test can be selected to reduce respondent burden when high precision is not required, and more items can be administered when high precision is required. (Bjorner, Chang et al. 2007)

Original LLFDI Instrument

The original LLFDI was designed as a traditional, fixed-form measure of function and disability based on the Nagi disablement framework, (Nagi SZ 1976) and drew from categories included in the ICF. The LLFDI has been widely adopted for assessment of function and disability in community-dwelling older adults, and has also been used in different patient and respondent populations and translated to different languages. (Denkinger, Igl et al. 2009; Karp, Skidmore et al. 2009; Lapier and Mizner 2009; Hand, Richardson et al. 2010; Abizanda, Lopez-Jimenez et al. 2011) To optimize its comprehensiveness, the LLFDI was designed to include 64 items, making administration time a concern with its use. Additionally, while the LLFDI provided very good discrimination among persons with moderate levels of functional ability, it provided relatively lower discrimination among persons with lower and higher levels of ability, due to practical restrictions precluding inclusion of a range of items assessing extremes of ability.

The LLFDI-CAT has been specifically designed to overcome limitations of the original LLFDI and provide a more comprehensive, precise, and sensitive measure of activity limitations and participation restrictions. Based on an expanded item bank of 141 Activity Limitation items and 55 Participation Restriction items, the LLFDI-CAT is designed to provide good discrimination and score precision across a broad continuum of functional ability, from low to high, while significantly reducing administration time and response burden. The psychometric advantages of precision along with reduced response burden are difficult to achieve with traditional, fixed-form tests. Finally, the LLFDI-CAT has been based on the ICF framework and terminology, to be

consistent with the WHO's objective of achieving a common international language across measures of function and disability. (World Health Organization 2001)

The LLFDI-CAT item bank retains 48 of 64 items in the original LLFDI. Sixteen items from the original LLFDI that measured 'frequency' of participation were not included in the LLFDI-CAT item bank. Based on our conceptual definition of participation restriction as well as focus group feedback, 'frequency' of participation was considered a less useful indicator of participation restriction due to anticipated variation in individuals' desired and actual levels of participation frequency despite potentially equivalent ability levels, and difficulty establishing set norms for frequency of participation.

1.2 LLFDI-CAT Domains

The LLFDI-CAT consists of the domains of Activity Limitation and Participation Restriction, with two sub-domains within each. The Activity Limitations sub-domains include a scale that measures 'Basic Mobility & Handling' and a scale that assesses 'Daily Activities'. The Participation Restrictions sub-domains include a scale that assesses 'Social Roles' and one that assesses 'Instrumental Roles'. Items within each domain are administered and scored independently to obtain domain and sub-domain scores, along with their standard error estimates.

Activity Limitation Domain

The Activity Limitation item bank consists of 141 items, with 52 items in the Basic Mobility & Handling sub-domain and 89 items in the Daily Activities sub-domain. The Basic Mobility & Handling sub-domain includes items such as standing, lifting, carrying, reaching, walking, and climbing stairs. The Daily Activities sub-domain includes items such as self-care, grooming, and household chores, as well as gender-specific self-care and grooming items.

Response Options:

Questions in the Activity Limitation domain ask "How much difficulty do you currently have *doing a particular activity?*" or "How much help from another person do you currently need *doing a particular activity?*" Each question has 5 response options including 'none at all, a little, a lot, unable to do, and does not apply.' Respondents are instructed that currently means "how you

‘typically’ or ‘usually’ perform the activity at this point in your life”, and “does not apply” means that “you do not do the activity for reasons other than your physical or mental health.”

Examples of items in the Basic Mobility & Handling sub-domain:

How much difficulty do you currently have...

- standing for at least one minute?
- getting into a kneeling position, (for example, when getting something out of a low kitchen cabinet, or when gardening)?
- walking up steep unpaved inclines (for example, steep gravel driveway)?
- using an escalator?
- going up and down 3 flights of stairs inside, using a handrail?

How much help from another person do you currently need...

- moving from a bed to a chair (including a wheelchair)?
- getting into a tub?
- managing toileting aftercare, including wiping yourself and putting clothes back on?
- climbing a full flight of stairs with a railing?

Persons who indicate use of a walking aid at the start of the test are administered walking aid-specific items.

Examples of walking aid-specific items in the Basic Mobility & Handling sub-domain:

How much difficulty do you currently have...

- walking around one floor of your home, taking into consideration doors, furniture, and a variety of floor coverings with your walking aid?
- sitting down on a low, soft couch with your walking aid?
- getting into a truck, shuttle van, or sport utility vehicle with your walking aid?

Persons who indicate wheelchair use at the start of the test are administered wheelchair-specific items.

Examples of wheelchair-specific items in the Basic Mobility and Handling sub-domain:

How much difficulty do you currently have...

- managing wheelchair armrests?
- transferring between a wheelchair and other seating surfaces, such as a chair or bed?

- pushing your wheelchair 50 yards?
- getting into a taxi/car (sedan) from a wheelchair?

Examples of items in the Daily Activities sub-domain: How much difficulty do you currently have...

- doing zippers, snaps or hooks on pants?
- making a bed, including spreading and tucking in bed sheets?
- using a washer and dryer, including loading clothes, and setting the dials?
- cleaning the floor using a broom and dustpan?
- looking up a phone number or address in the phone book or in your own address book?

Participation Restriction Domain

The Participation Restriction item bank consists of 55 items, with 27 items in the Social Roles sub-domain and 28 items in the Instrumental Roles sub-domain. The Social Roles sub-domain assesses interpersonal relationships, social engagement, community participation, and recreational participation, while the Instrumental Roles sub-domain assesses the ability to fulfill personal, social, financial, and occupational responsibilities.

Response Options:

Questions in the Participation Restriction domain ask “Because of your physical or mental health, to what extent do you feel limited in *doing a particular activity?*” Each question has 5 response options including ‘not at all, a little, a lot, completely, and does not apply.’

Examples of items in the Social Roles sub-domain:

Because of your physical or mental health, to what extent do you feel limited in...

- traveling by bus, train, or ferry?
- going on the sorts of trips and holidays you want to go on?
- working on a hobby or project?
- having a close friendship?
- inviting people into your home for a meal or entertainment?

Examples of items in the Instrumental Roles sub-domain:

Because of your physical or mental health, to what extent do you feel limited in...

- taking care of your own health? This may include managing daily medications, following a special diet, scheduling doctor's appointments.
- caring for a sick or disabled adult?
- getting housework done by yourself when you want it done?
- taking your car in for regular maintenance?
- filing your taxes?

1.3 Stopping Rule and Administration Time

For each domain, the LLFDI-CAT is programmed to stop when a standard error of 3.0 is attained for the domain score (0.3 on the logit scale), or a maximum of 10 items has been administered. In a validation study of independent 10-item Activity Limitation and Participation Restriction CATs in 102 subjects, each CAT had an average administration time of 3.56 minutes, with no loss of score precision when compared with scores derived from the 48 items of the original LLFDI. Mean time to complete the two 10-item CATs was 7 minutes, 12 seconds (McDonough, 2012).

1.4 LLFDI-CAT Development and Initial Psychometric Evaluation

Development of the LLFDI-CAT involved four stages: 1.) item bank development, 2.) item bank calibration, 3.) LLFDI-CAT development from the calibrated item bank, and 4.) LLFDI-CAT field testing and validation. In addition to the 48 items from the original LLFDI, new items were developed for the item bank based on an extensive literature review and the results of focus groups conducted with older adults and geriatric clinicians to identify relevant content areas. Cognitive testing of the item bank was conducted to confirm clarity and meaning of items.

Item bank calibration refers to application of IRT statistical procedures to item scores to develop a linear hierarchy of item difficulty along the functional scale of interest. Item bank calibration involved a large-scale calibration study in 520 community-dwelling adults aged 60 years or over, in which trained interviewers administered the entire item bank to each subject, in-person or via telephone. Confirmatory factor analysis confirmed a bi-factor structure, as hypothesized, and revealed 2 sub-factors within each factor. Thus, confirmatory factor analysis

resulted in the domains of Activity Limitation and Participation Restriction, with two sub- domains within each domain. A bi-factor multi-dimensional IRT model was then used to calibrate items and determine item difficulty.

Using the calibrated item bank, separate 10-item CATs for each domain were developed and tested in a sample of 102 community-dwelling adults, aged 60 years or over. Correlations of 10-item CATs with full item banks were very strong (Activity Limitation: $r=0.90$; Participation Restriction: $r=0.95$), and test-retest reliability estimates were high (Activity Limitation: $r=0.85$; Participation Restriction: $r=0.80$). The LLFDI-CATs for both domains showed moderate to strong correlations with the Physical Component Summary Score of the Veteran's Rand-36 (Activity Limitation: $r=0.73$; Participation Restriction: $r=0.58$), and weak correlations with the Mental Component Summary Score (Activity Limitation: $r=0.01$; Participation Restriction: $r=0.07$), supporting their validity. Each CAT, on average, took 3.56 minutes to administer. No floor or ceiling effects were noted on the 10-item CATs in either domain. Thus, the LLFDI-CAT demonstrated strong reliability, validity, accuracy, and precision in initial testing. (McDonough, 2012)

SECTION 2: LLFDI-CAT SOFTWARE

2.1 Hardware and Software Requirements

There are two versions of LLFDI CAT:

- **iPad version – available for purchase from the iTunes store.**

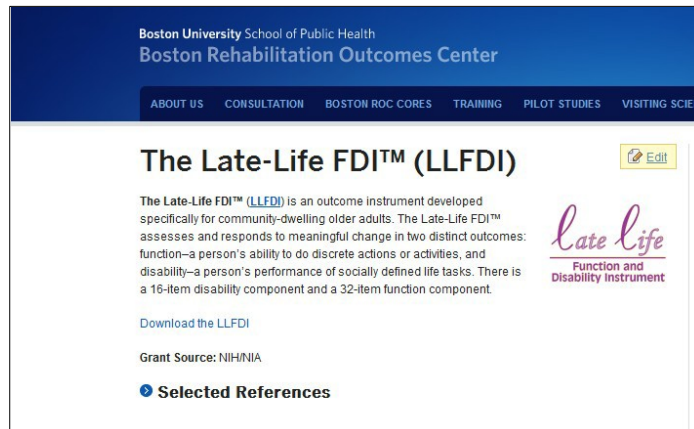
The LLFDI-CAT is available as an application that can be administered using an iPad. The LLFDI-CAT application version requires iOS 5.0 or later. To purchase the LLFDI-CAT application, go to the iTunes store website [<http://itunes.apple.com/us/app/latelife-cat-for-ipad/id496103142?mt=8>] or search for “latelife” on the Apple iPad ‘App Store’ website. When you purchase the LLFDI-CAT, you will receive an activation code that provides access for 365 days.

- **PC version – available for free download.**

PC software and hardware requirements: Microsoft Windows XP, 512 MB of RAM and 10 GB of available hard drive space, Microsoft Office 2003. Microsoft Access is not needed to run the LLFDI-CAT program, but is needed to view data elements. See detailed download instructions below.

2.2 Downloading and Installing LLFDI-CAT – PC Version

The LLFDI-CAT is available for download at <http://www.bu.edu/bostonroc/instruments/llfdi/>



Click on download the
LLFDI.

You will be directed to a screen where you will be asked to register with your contact information.

Download the LLFDI [Edit](#)

LLFDI Order Form

The LLFDI software is available to download for free. Please fill out the following information and you will receive an email with download instructions.

Name *

First Last

Position *

Institution *

Email *

I would like to consult with a Boston ROC researcher regarding the LLFDI *

☐ Yes

☐ No

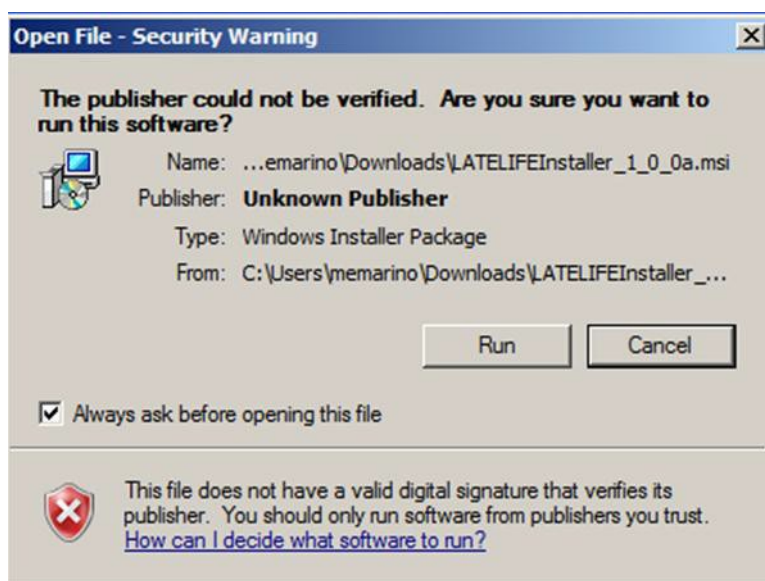
I would like to receive the Boston ROC Newsletter via email *

☐ Yes

☐ No

Submit

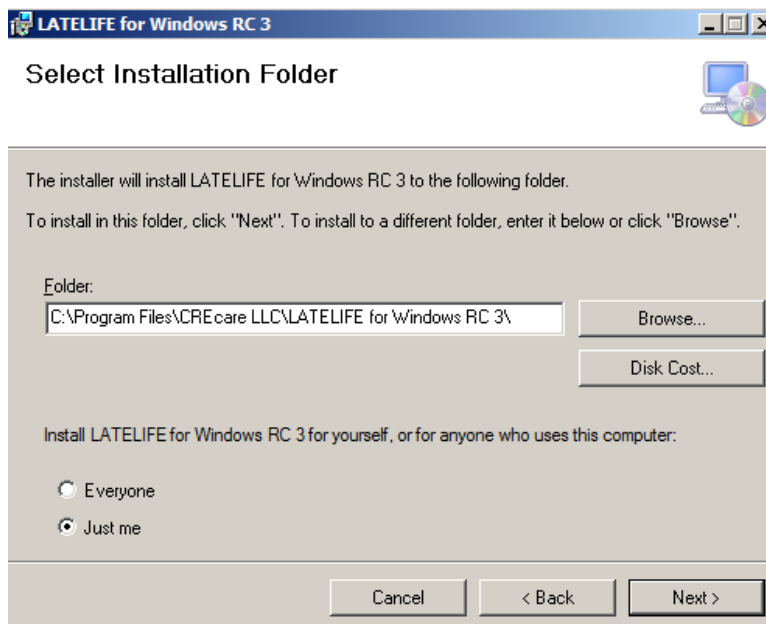
After you register, you will receive an email with a link that will enable you to download the LLFDI-CAT program. Install the LLFDI-CAT software on your computer by using the set-up program. Follow steps 1-5 outlined below.



1. Click on 'run.'



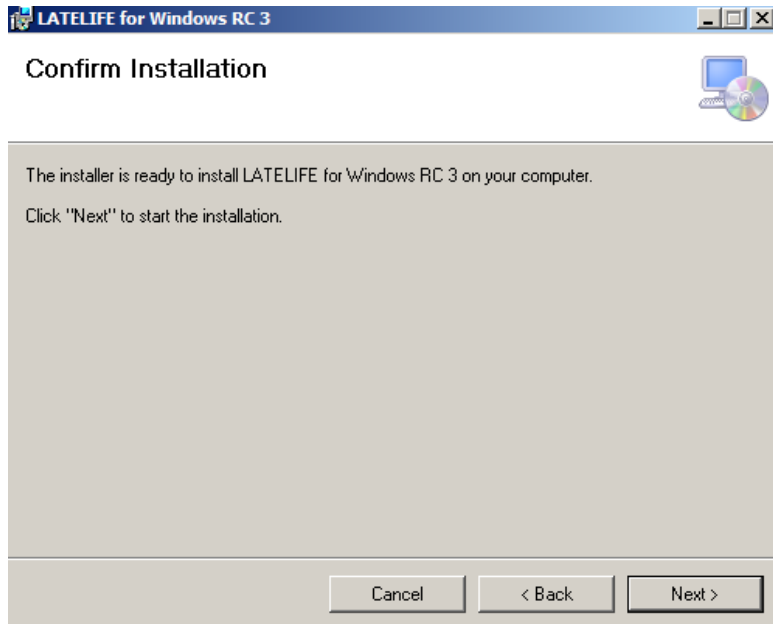
2. Click on '**next.**'



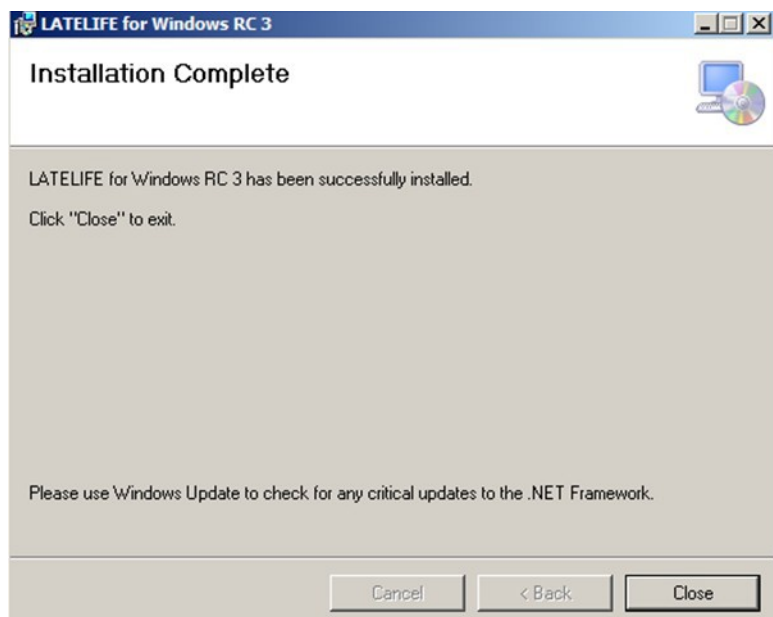
3. Select the folder where you wish to save the program.

Choose whether you wish to allow program access to everyone who uses the computer, or just the current user.

Click on '**next.**'



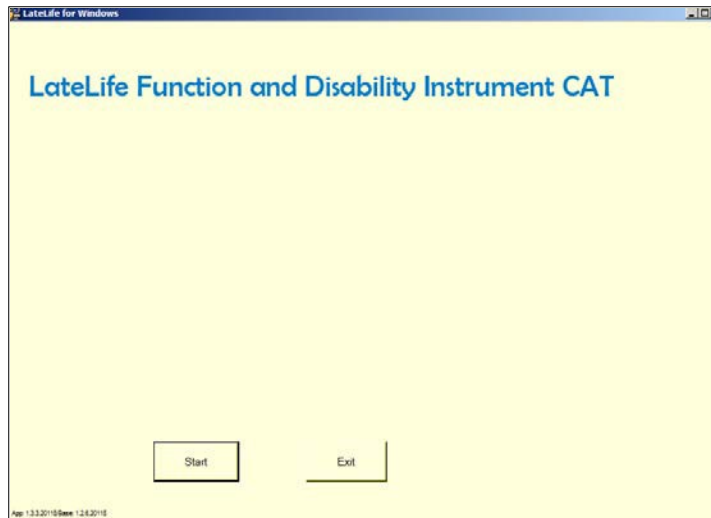
4. Click on 'next.'



5. Click on 'close.'

Next, look for LLFDI in your downloaded programs. Click to open the program.

SECTION 3: ADMINISTERING THE LLFDI-CAT



Open the LLFDI-CAT software and click Start.

3.1 Patient Identification Number and Demographic Information

Enter Patient ID number

A screenshot of the LLFDI-CAT software window. The window has a yellow background and a blue title bar. In the top right corner, it says "LLFDI-CAT". On the left, there is a label "Patient ID:" followed by a text input field containing "999". Below this, there is a small instruction: "Enter a new ID to conduct a new assessment, or an existing ID to see reports, export data, or conduct a new assessment." At the bottom, there is a "Next" button.

a.) NEW PATIENT

COMPLETE THE FIRST OR BASELINE ASSESSMENT: Enter a unique ID number for each new patient.

b.) RETURNING PATIENTS

VIEW REPORTS AND/OR CONDUCT FOLLOW UP ASSESSMENT: When you enter the Subject ID number for a patient enrolled in the system, the program will pull up patient reports. You can also conduct a follow-up interview.

Visit: 0 Patient ID: 999 LLFDI-CAT

Age: 70

Gender: ☐ Male ☒ Female

Which sentence best describes your walking situation?

☒ I do not use a walking aid or wheelchair.

☐ I use a walking aid but never a wheelchair.

☐ I use a walking aid sometimes and a wheelchair sometimes.

☐ I use a wheelchair and never walk.

Next

Patient Demographic Information

NEW PATIENT: If the subject ID is not in the system, the program will recognize that this is a new patient and the following fields will need to be completed: age, gender, and walking situation. Click in the free text box next to age and enter the patient's age. Click on the appropriate circle to select the patient's gender and best description of walking situation.

RETURNING PATIENT: If the respondent has completed an initial assessment, the system will automatically store the respondent's gender and it will not be re-entered. Demographic information that may have changed (age, walking status) will be re-entered for every assessment. The system will administer domains selected during the first visit.

NOTE: For the question regarding walking situation, walking aids include walkers, canes, crutches, braces, or other assistive devices.

Once you have completed to the demographic questions, click 'Next'.

Selecting Scales

Visit: 0 Patient ID: 999 LLFDI-CAT

Select the scales you want to test:

☒ Activity Limitation Scale

☒ Participation Restriction Scale

Next

For the initial assessment, select the scale or scales you want to administer (Activity Limitation and/or Participation Restriction) by clicking on the box next to the appropriate domain(s). You may select either or both scales. The scale(s) selected for the initial assessment will be automatically selected for follow-up visits. Once you have selected the scale(s), click

'Next'.

3.2 LLFDI-CAT Administration Instructions

Each scale begins with a set of instructions for patients or respondents. Please read these instructions to the patient or respondent.

Instructions for the Activity Limitation Scale:

During the interview, you will be asked about how much difficulty you are currently having in doing different daily life activities, and how limited you feel in different social, family and community activities because of your health. This interview is looking for your opinions; there are no right or wrong answers. If you are unsure about your answer, choose the answer that best fits your situation.

For this first set of questions you will be asked about the amount of difficulty you currently have in doing a range of activities, or the amount of help you need in doing an activity. 'Currently' means how you 'typically' or 'usually' perform the activity at this point in your life. The response choices you will have include: None at all; A little; A lot; Unable to do; and Does not apply. 'Does not apply' means that you do not do this activity for reasons other than your physical or mental health.

Instructions for the Participation Restriction Scale:

In the next set of questions, you will be asked to what extent you feel limited in participating in social, family and community activities due to your physical or mental health. Physical health means any symptom or condition that affects your physical health, for example, shortness of breath, pain, stiffness, being overweight, or having health problems. Mental health means symptoms or conditions that affect your emotions, well-being or ability to think clearly, for example, anxiety, depression, confusion, or limitations in memory.

The response choices for this group of questions will be: Not at all; A little; A lot; Completely; and Does not apply. 'Does not apply' means that you do not do the activity for reasons other than your physical or mental health.

General Clarifications and Probes:

Below are some examples of situations in which the patient or respondent may need further direction to respond to a question. Examples of clarifications and probes that may be used in these situations are provided.

Situation 1: The patient or respondent appears to have and/or report significant limitation in a certain area, but endorses the 'Does not apply' response option instead of 'Unable to do' (Activity Limitations Scale) or 'Completely' (Participation Restriction Scale).

Approach: Ask the patient or respondent "Do you not do (state the activity) because of your health or age?" If the patient or respondent responds yes, then the interviewer may select the response option 'Unable to do' for the Activity Limitations Scale, or 'Completely' for the Participation Restrictions Scale.

Situation 2: The patient or respondent is unsure which response option to select.

Approach: Ask the patient or respondent to select the response option that comes closest to, or most appropriately reflects, his/her situation.

Situation 3: The patient or respondent asks "with help or without help?"

Approach: I would like to know how much difficulty you currently have, and 'currently' means how you typically or usually perform the activity at this point in your life.

Situation 4: The respondent says "I am not sure what this question means", appears unsure of the meaning of a question, or the interviewer is not confident of the subject's response to a question.

Approach: Repeat the question.

Situation 5: The respondent appears unsure of the meaning of a specific part of the question, or asks what it means. For instance, the respondent may say "What does heavy housework mean?"

Approach: Reflect the question back to the respondent. For instance, respond, "I want you to consider what you think of as heavy housework."

Situation 6: The respondent wants to know what the word 'limited' means.

Approach: Being 'limited' means you do the activity less well than you would like to.

Situation 7: For stair items, a patient responds that they have a ramp at home and do not need to use stairs.

Approach: Direct the subject to answer the question based on their performance on stairs outside the home on an average day.

Situation 8: The respondent asks “What is meant by work?”

Approach: Work means the tasks and responsibilities you regularly take care of at home, in the workplace, or in the community. This includes paid work such as teaching at a school or running a cash register at a store. It also includes unpaid work such as homemaking, taking care of family members and regular unpaid community or volunteer activities.

Situation 9: The respondent asks “What is meant by job?”

Approach: Job means a task or responsibility you regularly take care of at home, in the workplace, or in the community. This includes paid work such as teaching at a school or running a cash register at a store. It also includes unpaid work such as homemaking, taking care of family members and regular unpaid community or volunteer activities.

Additional Clarifications:

- ‘Visiting friends and relatives’ refers to going out of the home to visit friends and relatives.
- ‘Organized social activities’ refers to social activities such as a bridge club.
- ‘Flight of stairs’ refers to 10-13 stairs.
- ‘Cleaning the floor using a broom and dustpan’ refers to cleaning with a typical dustpan, not a long handle one

3.3 Initial Subject Entry

Once you have read the instructions that are displayed in the program to the patient or respondent, click ‘Next’ to proceed to the questions.

Please read each question to the patient or respondent and enter the response given by clicking on the appropriate circle. Click ‘Next’ to proceed to the next question.

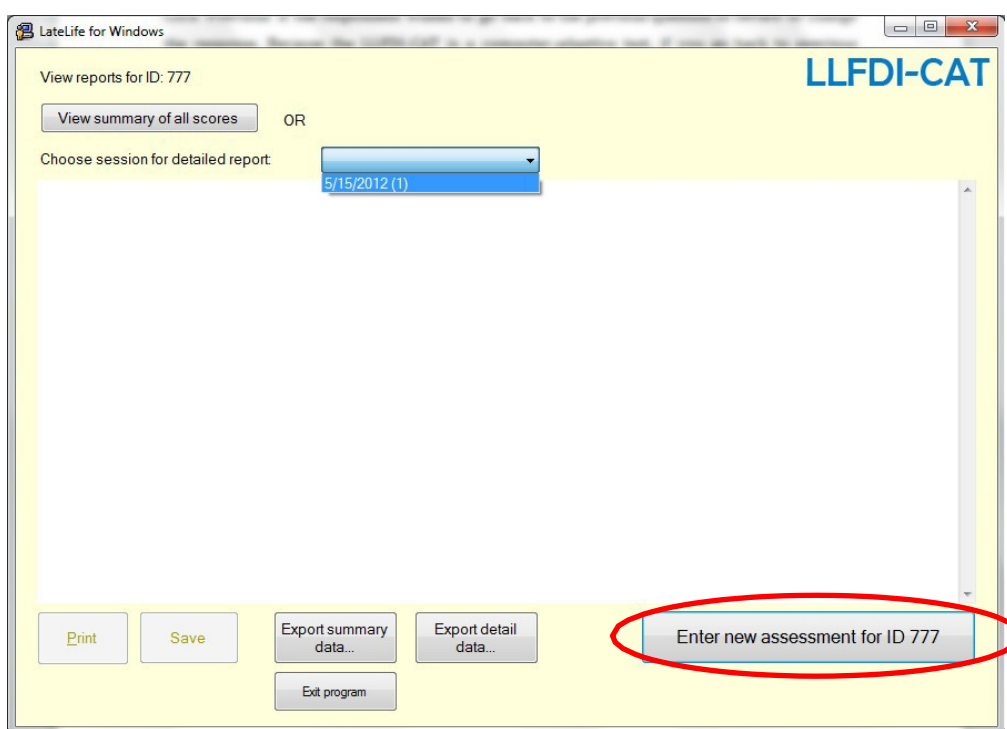
Click ‘Previous’ if the respondent wishes to go back to the previous question to review or change the response. Because the LLFDI-CAT is a computer-adaptive test, if you go back to previous question(s), you will have to re-administer succeeding questions and re-enter patient responses.

3.4 Follow-up Assessment Entry

Open the LLFDI-CAT program and click 'Start'. Enter the Patient ID number that was used in the initial evaluation and click 'Next'.

You will see a screen with several options:

- 1.) View summary of all scores
- 2.) Choose session for detailed report
- 3.) Export summary data
- 4.) Export detailed data
- 5.) Enter new assessment for this subject
- 6.) Exit program



Follow-up Assessments:

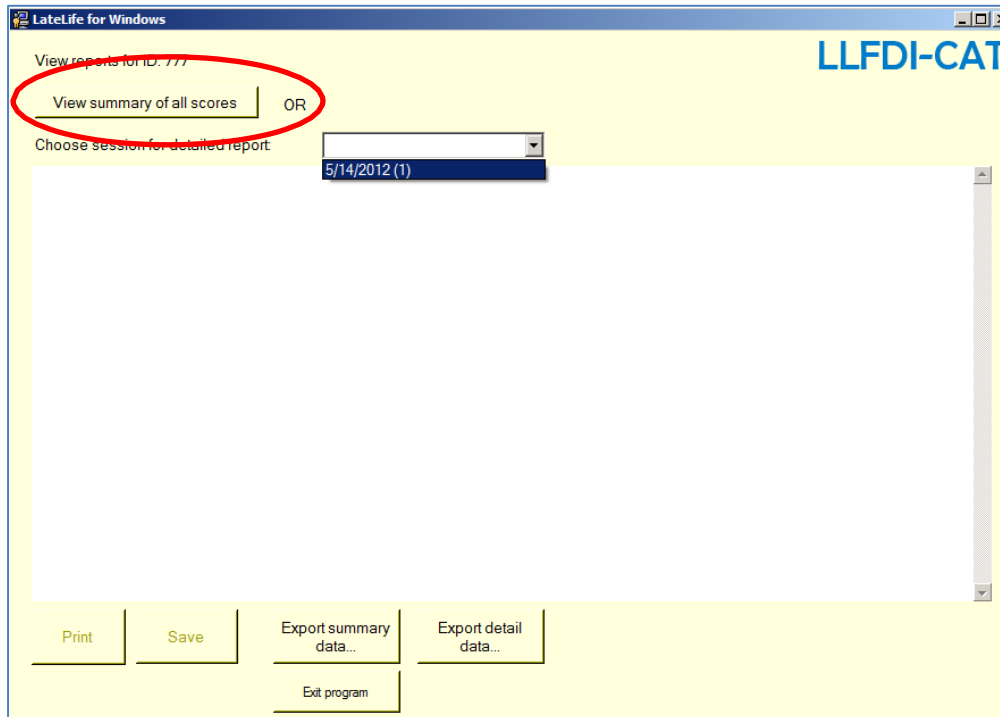
To conduct a follow-up assessment, click on 'Enter new assessment for ID ...'. You will need to re-enter the patient's age and walking situation, as these variables may have changed since the previous administration. Once you have re-entered the age and walking situation, click 'Next'.

The program will automatically select the domain(s) assessed during the initial assessment.

Procedures for viewing the summary of scores and detailed reports along with the process for exporting summary and detail data are explained in the next section.

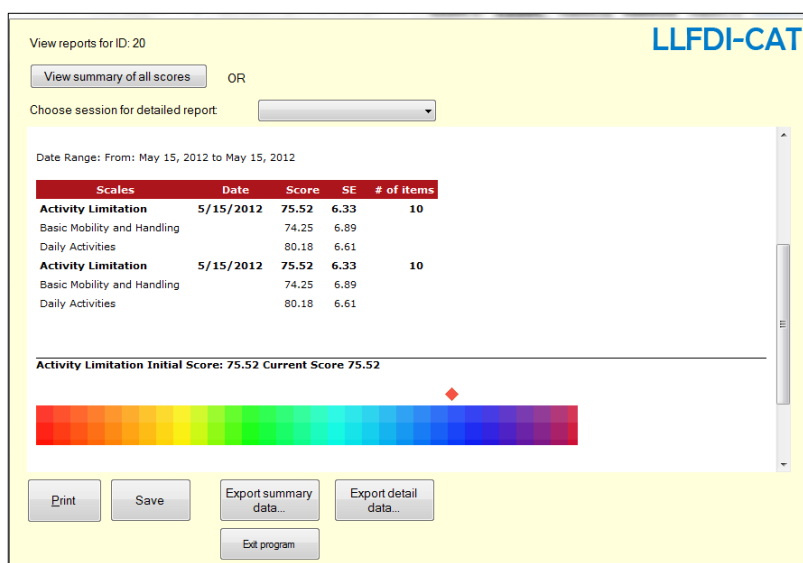
SECTION 4: LLFDI-CAT: REPORTS & INTERPRETING SCORES

4.1 View and Print Reports



When you complete an assessment, or enter the patient ID for a follow-up assessment, you will see a screen that allows access to view reports. You have several options:

1.) View summary of all scores.



When you click on this option, all scores for the individual will be displayed. You can compare baseline and follow-up scores. Click on 'print' to print a report to discuss with patient and/or include in the patient record. You can also save the report electronically.

2.) Choose a session for a detailed report.

View reports for ID: 20

View summary of all scores OR

Choose session for detailed report: 5/15/2012 (1)

LateLife: LLFDI-CAT

LLFDI-CAT Assessment Report

Identification Number: 20
Age: 31
Gender: FEMALE

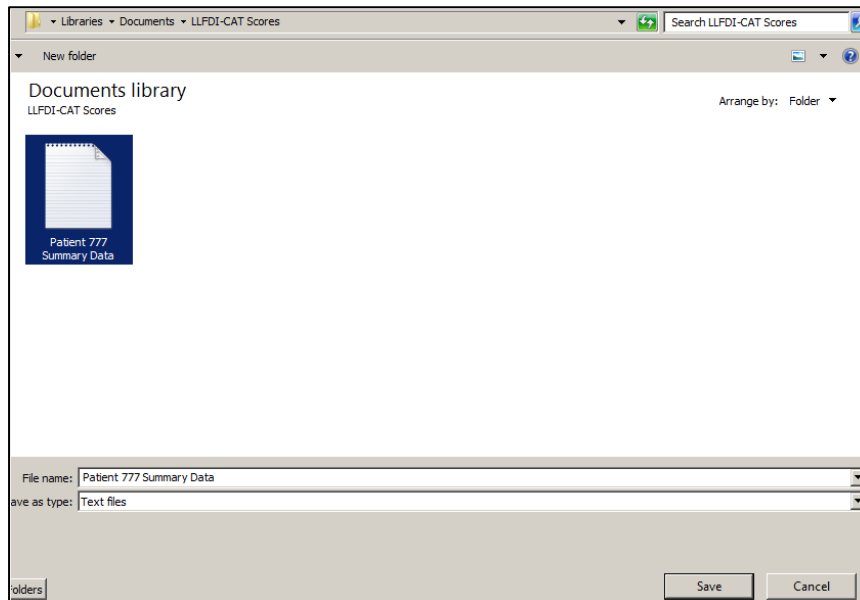
Detailed report for session on May 15, 2012

Scales	Date	Score	SE	# of items
Activity Limitation	5/15/2012	75.52	6.33	10
Basic Mobility and Handling		74.25	6.89	
Daily Activities		80.18	6.61	

Print Save Export summary data... Export detail data... Exit program

Use this option if you want to view and/or print scores from one specific session. Click on the drop-down menu arrow to select the date for a specific session.

4.2 Exporting Data from the LLFDI-CAT- PC Version



You can export summary data (scores for each domain) for the cases collected on a single computer. First, click on 'export summary data.' Then, click on the document icon. This will open a text file that you can name and save in the folder you select.

Below is a list of the LLFDI-CAT Data Fields for the Summary Data Export.

Subject ID (generated by user)

Age

Gender

Walking Status:

- 1 = walks with no assistive device or WC
- 4 = walks with assistive device no WC
- 5 = sometimes walking aid/sometimes WC
- 4 = use a WC never walk

Assmnt No: number of the assessment (1 = initial, 2 + = follow up)

Date: Date assessment was completed

Domain

Activity = Functional Limitation

Participation = Participation Restriction

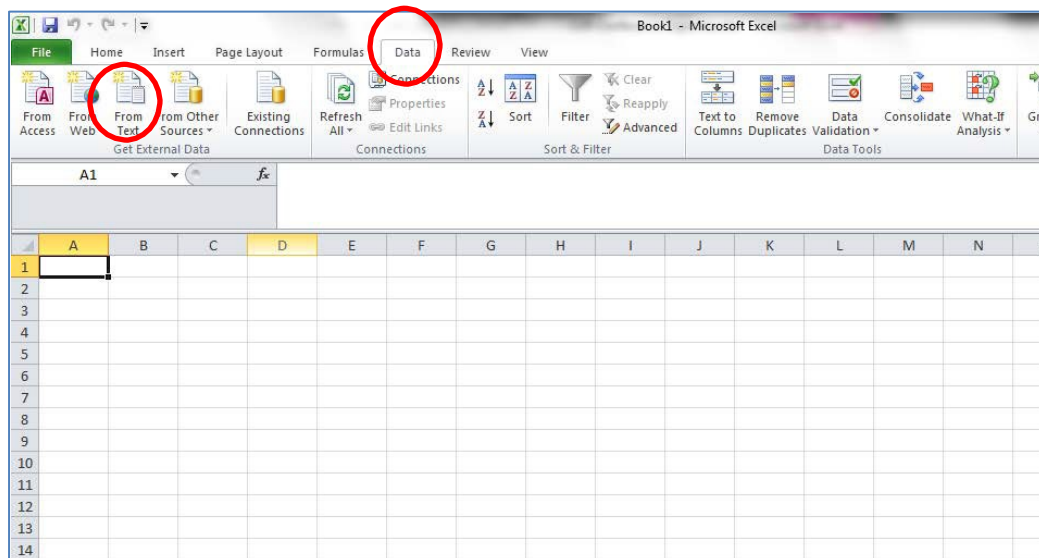
TScore = CAT Summary Score

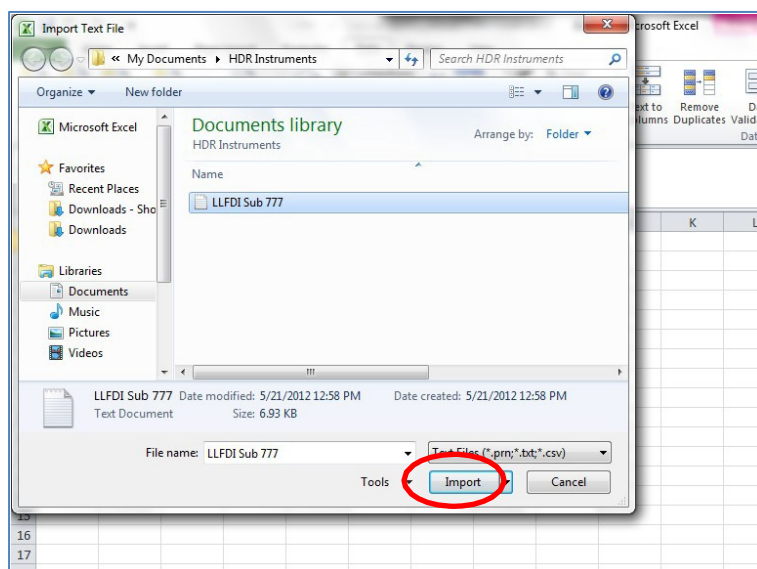
SE = Standard Error

ItmCnt = Number of items completed

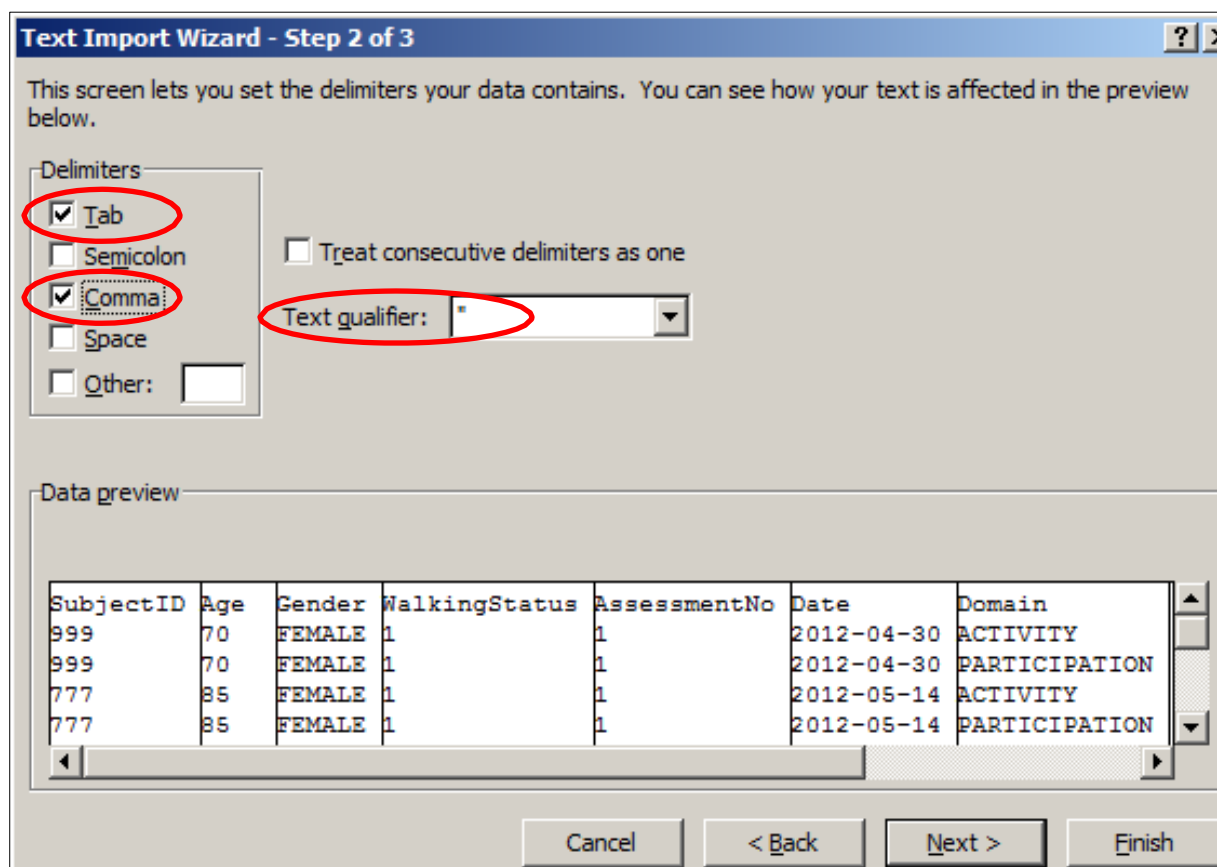
Assmnt Time = Time to complete the CAT

Open up a blank Excel worksheet. Click on the 'Data' tab and 'From Text' – then locate the text file that you exported from the LLFDI and click on 'Import.'





The next step is to describe how the text file is coded. The 'Delimiters' are 'Tab' and 'Commas' and the 'Text Qualifier' is *. Click on next to import the text fields into an Excel spreadsheet.



Text Import Wizard - Step 3 of 3

This screen lets you select each column and set the Data Format.

Column data format

☐ General
☐ Text
☒ Date: **YMD**
☐ Do not import column (skip)

'General' converts numeric values to numbers, date values to dates, and all remaining values to text.

Advanced...

Data preview

General	General	YMD	General	General	General	General	General
ingStatus	AssessmentNo	Date	Domain	TScore	SE	ItemCnt	Assess
1	1	2012-04-30	ACTIVITY	46.41	2.96	7	34
1	1	2012-04-30	PARTICIPATION	42.82	2.78	8	33
1	1	2012-05-14	ACTIVITY	47.91	2.93	7	31
1	1	2012-05-14	PARTICIPATION	44.02	2.99	9	29

Cancel < Back Next > Finish

You will see a preview of the data fields and when you click on 'finish' the data will be in an Excel spreadsheet.

File

Home

Insert

Page Layout

Formulas

Data

Review

View

Acrobat

Paste

Cut

Copy

Format Painter

Clipboard

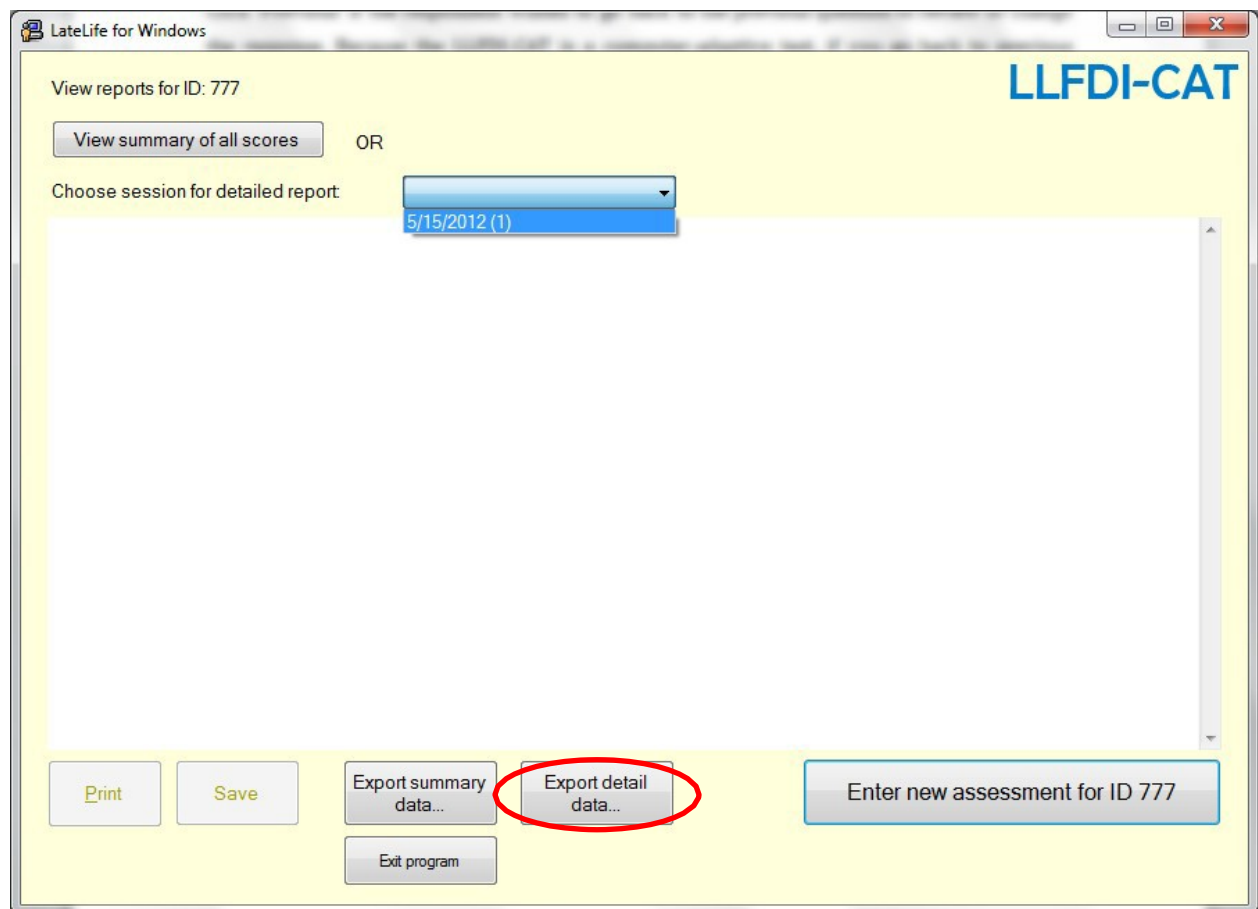
Calibri

11

A

A

1.) Export detailed data.



You can also export detailed data that includes each response to individual LLDFI questions. The process for exporting detailed data is the same as the process used to export summary data (see previous section).

The Detailed Data includes the following data fields:

SessionID = Number assigned to each session

SessionDate = Date of assessment

Age = Patient age

Walk = Patient's walking status

SubjectID = ID number given to the individual

Gender = Male or Female

Visits = Number of assessments completed

DomainName = Activity limitation or Participation restriction

ItemID = Number of each item

QuestionText = Exact text used for each question

Choice = Individual's response to the item

EntryTime = Time that response was entered

Logit1 = General Factor Logit Score for each item

Activity Limitation Domain (combined bi-factor model – basic mobility and handling)

Participation Restriction Domain (combined bi-factor model – social role participation and instrumental role participation)

Logit2 = Basic Mobility Logit Score for each item

Logit3 = Handling Logit Score fo

SE1 = Standard Error for General Factor

SE2 = Standard Error for Factor 1

SE3 = Standard Error for Factor2

ResponseCategory = response selected

ScaledScore = score that is adjusted as each item in the CAT is administered

ScaledSE = standard error that is adjusted as each item in the CAT is administered

Book1 - Microsoft Excel												
File Home Insert Page Layout Formulas Data Review View												
From Access From Web From Text From Other Sources Get External Data Existing Connections Refresh All Edit Links Connections Sort & Filter Filter Reapply Clear Text to Columns Remove Duplicates Data Validation Consolidate What-If Analysis Group Ungroup Subtotal Show Detail Hide Detail Data Analysis												
A1												
	F	G	H	I	J	K	L	M	N	O	P	Q
1	Gender	Visits	DomainName	ItemID	QuestionText	Choice	EntryTime	Logit1	Logit2	Logit3	SE1	SE
2	FEMALE	2	ACTIVITY	56	climbing 3 to 5 steps without a handrail?	4	5/15/2012 21:08	0	0.589826615	0.742737777	1	0.
3	FEMALE	2	ACTIVITY	112	engaging in sexual activity with a partner?	4	5/15/2012 21:08	0.264904346	0.558680755	0.735045109	0.702726438	0.
4	FEMALE	2	ACTIVITY	64	going up a flight of stairs outside, without using a handrail?	4	5/15/2012 21:08	0.223611435	0.873173984	0.734040235	0.729018009	0.
5	FEMALE	2	ACTIVITY	141	hiking a couple of miles on uneven surfaces, including hills?	4	5/15/2012 21:08	0.17714792	1.255978923	0.751613125	0.764303299	0.
6	FEMALE	2	ACTIVITY	79	getting up from the floor (as if you were laying on the ground)?	4	5/15/2012 21:08	0.1409541	1.131685566	0.637714237	0.795141265	0.
7	FEMALE	2	ACTIVITY	27	lifting 50 pounds (for example, a large full suitcase) or more?	4	5/15/2012 21:08	0.100027963	0.990005142	0.606308507	0.839069593	0.
8	FEMALE	2	ACTIVITY	65	running 1/2 mile or more?	4	5/15/2012 21:08	0.079834742	1.782681552	0.675088331	0.864796884	0.
9	FEMALE	2	ACTIVITY	54	walking on a slippery surface outdoors?	4	5/15/2012 21:08	0.074109151	1.877493341	0.672326442	0.872455657	0.
10	FEMALE	2	ACTIVITY	109	fastening a necklace behind your neck?	4	5/15/2012 21:08	0.14110933	1.829072742	0.646287245	0.890496372	0.
11	FEMALE	2	ACTIVITY	1	unscrewing the lid off a previously unopened jar without using any devices?	4	5/15/2012 21:08	0.249087687	1.741102345	0.633306017	0.920499358	0.
12	FEMALE	2	ACTIVITY	56	climbing 3 to 5 steps without a handrail?	4	5/15/2012 21:16	0	0.589826615	0.742737777	1	0.
13	FEMALE	2	ACTIVITY	112	engaging in sexual activity with a partner?	4	5/15/2012 21:16	0.264904346	0.558680755	0.735045109	0.702726438	0.
14	FEMALE	2	ACTIVITY	64	going up a flight of stairs outside, without using a handrail?	4	5/15/2012 21:16	0.223611435	0.873173984	0.734040235	0.729018009	0.
15	FEMALE	2	ACTIVITY	141	hiking a couple of miles on uneven surfaces, including hills?	4	5/15/2012 21:16	0.17714792	1.255978923	0.751613125	0.764303299	0.
16	FEMALE	2	ACTIVITY	79	getting up from the floor (as if you were laying on the ground)?	4	5/15/2012 21:17	0.1409541	1.131685566	0.637714237	0.795141265	0.
17	FEMALE	2	ACTIVITY	27	lifting 50 pounds (for example, a large full suitcase) or more?	4	5/15/2012 21:17	0.100027963	0.990005142	0.606308507	0.839069593	0.
18	FEMALE	2	ACTIVITY	65	running 1/2 mile or more?	4	5/15/2012 21:17	0.079834742	1.782681552	0.675088331	0.864796884	0.
19	FEMALE	2	ACTIVITY	54	walking on a slippery surface outdoors?	4	5/15/2012 21:17	0.074109151	1.877493341	0.672326442	0.872455657	0.
20	FEMALE	2	ACTIVITY	109	fastening a necklace behind your neck?	4	5/15/2012 21:17	0.14110933	1.829072742	0.646287245	0.890496372	0.
21	FEMALE	2	ACTIVITY	1	unscrewing the lid off a previously unopened jar without using any devices?	4	5/15/2012 21:17	0.249087687	1.741102345	0.633306017	0.920499358	0.
22	FEMALE	1	ACTIVITY	56	climbing 3 to 5 steps without a handrail?	4	5/15/2012 21:29	0	0.589826615	0.742737777	1	0.
23	FEMALE	1	ACTIVITY	112	engaging in sexual activity with a partner?	4	5/15/2012 21:29	0.264904346	0.558680755	0.735045109	0.702726438	0.
24	FEMALE	1	ACTIVITY	64	going up a flight of stairs outside, without using a handrail?	4	5/15/2012 21:29	0.223611435	0.873173984	0.734040235	0.729018009	0.
25	FEMALE	1	ACTIVITY	141	hiking a couple of miles on uneven surfaces, including hills?	4	5/15/2012 21:29	0.17714792	1.255978923	0.751613125	0.764303299	0.
26	FEMALE	1	ACTIVITY	79	getting up from the floor (as if you were laying on the ground)?	4	5/15/2012 21:29	0.1409541	1.131685566	0.637714237	0.795141265	0.
27	FEMALE	1	ACTIVITY	27	lifting 50 pounds (for example, a large full suitcase) or more?	4	5/15/2012 21:29	0.100027963	0.990005142	0.606308507	0.839069593	0.
28	FEMALE	1	ACTIVITY	65	running 1/2 mile or more?	4	5/15/2012 21:29	0.079834742	1.782681552	0.675088331	0.864796884	0.
29	FEMALE	1	ACTIVITY	54	walking on a slippery surface outdoors?	4	5/15/2012 21:29	0.074109151	1.877493341	0.672326442	0.872455657	0.
30	FEMALE	1	ACTIVITY	109	fastening a necklace behind your neck?	4	5/15/2012 21:29	0.14110933	1.829072742	0.646287245	0.890496372	0.
31	FEMALE	1	ACTIVITY	1	unscrewing the lid off a previously unopened jar without using any devices?	4	5/15/2012 21:29	0.249087687	1.741102345	0.633306017	0.920499358	0.
32												

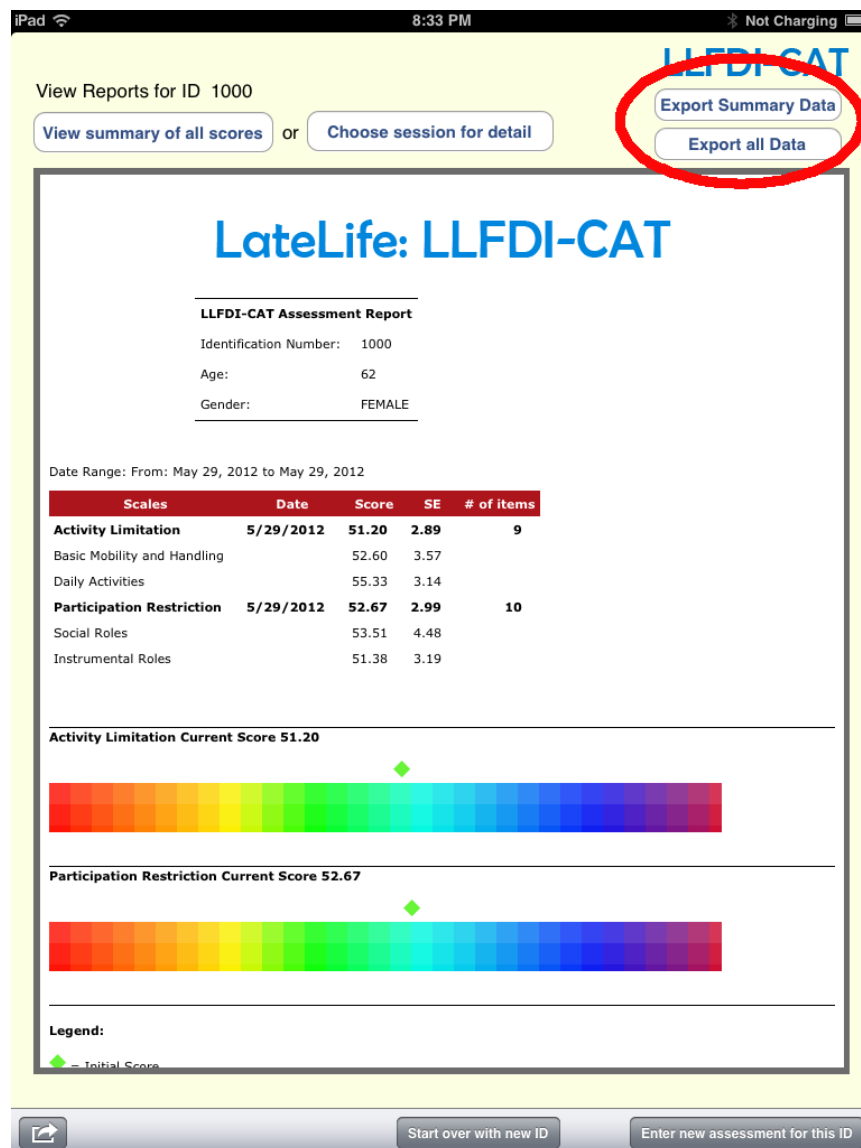
2.) Exit program.

When you have completed the LLFDI-CAT, click on Exit.

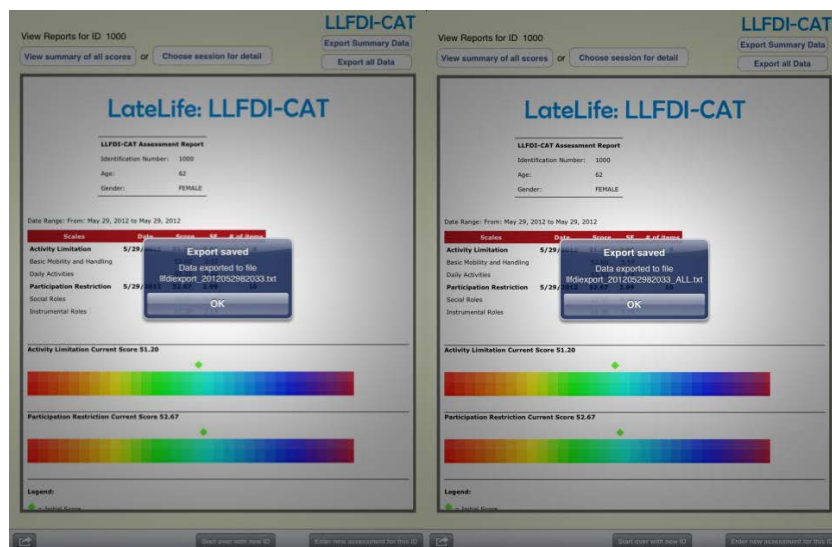
4.3 Exporting Data from the LLFDI-CAT- iPad Version

The Latelife application allows you to download data for analysis. It does so by writing files to the iPad that you can recover through iTunes.

To do so, you must start the Latelife application and enter an ID that has a completed assessment associated with it. This will bring you to the reports page. You can choose to save summary data, or detailed item-by-item data.



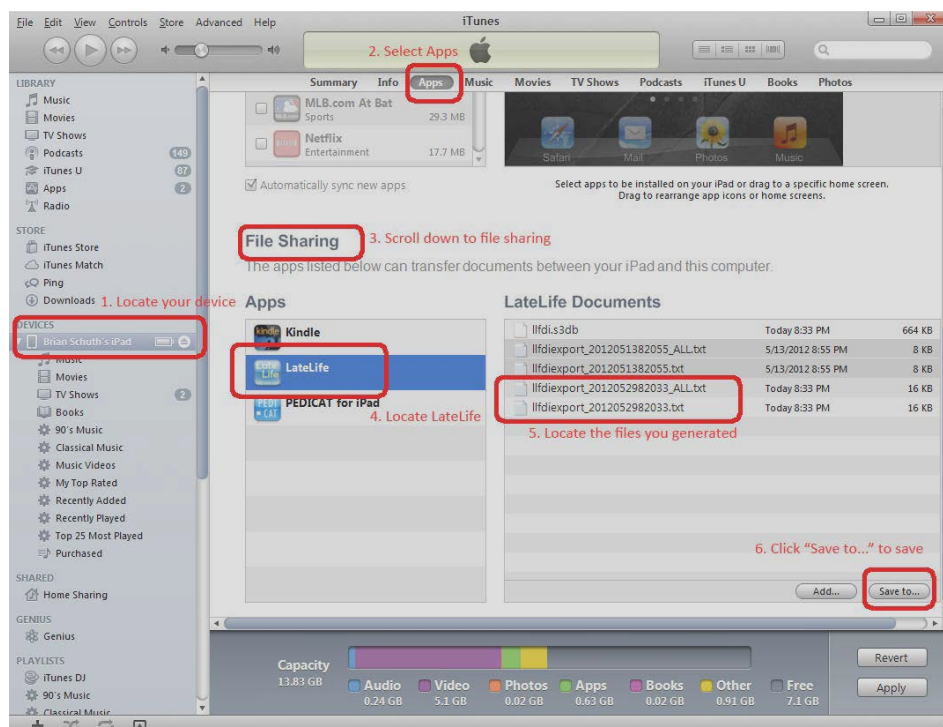
When you choose either of these items, you'll get a notice telling you the name of the file that has been written; if you've selected all data, the file name has "ALL" in its name:



After you have saved the files, you can see them by connecting your iPad to iTunes. You then need to do the following:

1. Locate your device in the “Devices” section of iTunes.
2. Click on “Apps” to see app-specific features.
3. Scroll down to see the “File Sharing” section.
4. Find the LateLife app in the File Sharing section.
5. Locate your generated documents.
6. Click “Save to...” to save your files to your hard drive.

The image below shows all of these steps:



4.4 Understanding LLFDI-CAT Scores

The LLFDI-CAT summary report summarizes the patient's demographic information, date of test administration, domain and sub-domain scaled scores and standard errors, and number of items administered in each scale.

LLFDI-CAT scores are transformed to a scale with mean = 50 and standard deviation =10. Lower scores correspond to more limitation. The summary report also visually displays the patient's domain scores on a linear spectrum demonstrating both the initial test score and the most recent test score in case of multiple administrations.

SECTION 5: REFERENCES

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Appendix Item difficulty and fit statistics

Domain	Items	Parameters						
		Discrimination			Location			Difficulty
		a1	a2	a3	c1	c2	c3	
Participation Restriction	taking part in active recreation?	1.92	0.56	0	0.87	-0.7	-2.33	-0.72
	taking part in a regular fitness program? This may include walking for exercise, stationary biking, weight lifting, or exercise classes.	1.64	0	0.03	2.28	1.02	-0.46	0.95
	caring for a sick or disabled adult?	1.93	0	-0.33	2.49	1.14	-0.51	1.04
	driving yourself in a car?	1.74	-0.41	0	1.75	1.34	0.24	1.11
	going on the sort of trips and holidays you want to go on?	2.19	0.24	0	3.27	1.13	-0.69	1.24
	having a sexual relationship?	1.25	0.44	0	2.37	1.28	0.27	1.31
	working at a volunteer job outside your home?	2	0	0.16	2.7	1.46	0.25	1.47
	providing care or assistance to others? This may include providing personal care, transportation, and running errands for family members and friends.	3.07	0	-0.4	3.5	1.92	-0.51	1.64
	getting housework done by yourself when you want it done?	2.01	0	0.44	3.63	1.79	-0.36	1.69
	traveling out of town for at least an overnight stay?	2.19	0.19	0	3.15	1.59	0.32	1.69
	filing your taxes?	1.37	0	0.28	3.02	1.68	0.69	1.80
	traveling by bus, train or ferry?	1.96	-0.34	0	3.48	1.85	0.24	1.86
	completing forms for insurance or disability benefits?	1.19	0	0.27	3.41	2.07	0.17	1.88
	going to parks or other outdoor recreational areas?	2.1	0.09	0	3.53	2.07	0.22	1.94
	taking care of the inside of your home? This includes managing and taking responsibility for homemaking, laundry, housecleaning, and minor household repairs.	2.28	0	0.47	4.26	2.2	-0.13	2.11
	inviting people into your home for a meal or entertainment?	1.8	0.87	0	4.05	2.09	0.46	2.20
	going to a sport, social, or other club? (female)	2.09	0.93	0	4.05	2.27	0.38	2.23
	how much work you do (including work at home)?	2.25	0	1.74	6.09	2.58	-0.89	2.59
	baking or cooking something special for others?	2.32	0	0.02	4.03	2.87	0.95	2.62
	your ability to meet the needs of those who depend on you?	2.76	0	0.28	5.03	2.87	0.19	2.70
	doing things for fun outside your home?	2.06	0.82	0	4.97	2.7	0.64	2.77
	taking part in organized social activities?	2.1	0.96	0	4.7	2.95	0.75	2.80
	writing checks, paying, bills, balancing checkbook, keeping financial records?	1.37	0	0.66	4.48	2.7	1.25	2.81
	taking care of household business and finances? This may include managing and taking responsibility for your money, paying bills, dealing with a landlord or tenants, dealing with utility companies or governmental agencies.	1.53	0	0.55	4.57	2.79	1.14	2.83
	working on a hobby or project?	2	0.77	0	5.05	2.86	0.69	2.87

reading books, magazines or newspapers?	1.2	0.5	0	4.35	2.8	1.5	2.88
going to a sport, social, or other club? (male)	2.84	0.63	0	5.43	2.87	0.43	2.91
doing your job the way you want to? (≥ 75 years)	2.63	0	1.56	5.78	3.36	0	3.05
getting minor housework done by yourself?	2.29	0	0.5	5.08	3.34	0.8	3.07
doing the work you want to do?	3.16	0	2.58	7.56	2.73	-1.05	3.08
doing things for your grandchildren?	2.36	0	-0.01	5.25	3.4	0.67	3.11
doing your job the way you want to? (< 75 years)	2.27	0	1.52	6	3.31	0.12	3.14
taking your car in for regular maintenance?	2.73	0	-0.03	4.53	3.46	1.94	3.31
doing things for your spouse?	3.07	0.1	0	5.99	3.45	0.72	3.39
seeing people as often as you want?	2.45	1.21	0	6.68	3.31	0.38	3.46
doing things for your friends?	2.88	0	0.07	5.8	3.75	0.85	3.47
How much difficulty do you currently have keeping in touch with others with letters, phone, or email?	1	1.5	0	5.86	3.46	1.46	3.59
the amount of time you spend visiting friends?	2.85	1.57	0	6.23	3.65	0.93	3.60
doing your job as carefully and accurately as others with similar jobs?	2.32	0	1.27	5.96	3.94	0.95	3.62
the amount of time you spend doing work (include work at home)?	3.16	0	3.06	8.84	3.14	-1.02	3.65
playing cards or games such as bingo?	1.71	0.96	0	5.05	3.9	2.13	3.69
taking care of your own health? This may include managing daily medications, following a special diet, scheduling doctor's appointments.	1.51	0	0.72	5.93	3.63	1.61	3.72
visiting friends and family in their homes? (≥ 75 years)	2.72	0.78	0	6.01	3.71	1.75	3.82
taking care of local errands? This may include managing and taking responsibility for shopping for food and personal items, and going to the bank, library, or dry cleaner.	3.47	0	-0.2	6.09	4.3	1.92	4.10
going out with others to public places such as restaurants or movies?	2.84	0.93	0	6.3	3.86	2.16	4.11
preparing meals for yourself? This includes planning, cooking, serving and cleaning up.	2.83	0	0.33	5.94	4.33	2.19	4.15
getting along with other people you live with?	1.23	1.32	0	6.53	4.53	2	4.35
visiting friends and family in their homes? (< 75 years)	3.23	1.31	0	6.71	4.38	1.99	4.36
the amount of contact you have with family and friends?	2.38	1.65	0	7.41	4.15	1.53	4.36
preparing your own meals with help?	1.99	0	0.4	6.11	4.58	2.6	4.43
getting together with your neighbors?	2.53	1.01	0	7.27	4.37	1.71	4.45
doing the work that is really important to you (include work at home)?	3.71	0	2.92	9.28	4.17	-0.09	4.45
going outside the home, for example to shop or visit a doctor's office?	2.68	0	0.03	7.15	4.62	2.4	4.72
taking care of your own personal care needs? This includes bathing, dressing, and toileting.	2.09	0	0.55	6.95	4.53	2.74	4.74
voting in elections?	1.99	0.82	0	6.45	4.7	3.45	4.87
talking to people close to you?	1.71	2.11	0	8.77	5.11	3.06	5.65

	having a close friendship?	1.92	2.54	0	8.79	5.41	3.01	5.74
	maintaining a friendship?	2.36	3.15	0	10.3	7.13	3.93	7.12
Activity Limitation	running 1/2 mile or more?	1.59	0	1.71	-2.8	-4.6	-8.58	-5.33
	hiking a couple of miles on uneven surfaces, including hills?	2.79	0	2.75	-6.9	-4.3	-2.13	-4.43
	lifting 50 pounds (for example, a large full suitcase) or more?	1.93	0	0.6	-1.6	-3	-4.77	-3.13
	running a short distance, such as to catch a bus?	2.2	0	1.94	-1.3	-2.3	-4.37	-2.64
	taking a 1 mile, brisk walk without stopping to rest?	2.39	0	2.26	-0.9	-2.4	-4.17	-2.51
	going up a flight of stairs outside, without using a handrail?	3.38	0	3.18	0.06	-2	-5.04	-2.33
	lifting 25 pounds from the ground to a table? (for example, dog food or a large bag of fertilizer)? (female)	2.06	0	0.6	-0.3	-1.8	-4.29	-2.12
	carrying something in both arms while climbing a flight of stairs (for example, laundry basket)?	3.06	0	2.3	-0.2	-1.6	-4.34	-2.04
	standing for one hour?	2.2	0	0.9	-0.1	-2	-3.95	-2.00
	walking on a slippery surface outdoors?	1.74	0	1.4	0.87	-1.8	-4.84	-1.93
	walking up steep unpaved inclines (for example, steep gravel driveway)?	2.53	0	1.91	1.08	-1.7	-4.47	-1.71
	getting up from the floor (as if you were laying on the ground)?	2.62	0	0.86	1.18	-1.5	-4.09	-1.47
	going up and down 3 flights of stairs inside, using a handrail?	2.25	0	1.57	0.99	-1.1	-3.17	-1.08
	opening a stuck window? (female)	1.51	0	0.31	1.08	-0.8	-3.3	-1.02
	descending 3 to 5 steps without a handrail?	2.99	0	2.52	0.88	-0.5	-2.88	-0.84
	walking a mile, taking rests as necessary?	2.72	0	2.23	0.67	-0.7	-2.28	-0.75
	getting into a squatting position (for example, when gardening)?	2.31	0	0.62	1.18	-0.5	-2.69	-0.68
	climbing 3 to 5 steps without a handrail?	3.29	0	2.73	1.18	-0.4	-2.66	-0.62
	unscrewing the lid off a previously unopened jar without using any devices? (female)	1.09	0.59	0	1.78	-0.2	-2.99	-0.46
	unscrewing the lid off a previously unopened jar without using any devices? (male)	-0	-0.04	0	3.78	1.46	-0.59	1.55
	walking several blocks (several hundred yards or lengths of a football field)?	2.79	0	2.03	1.48	-0.5	-2.09	-0.36
	cutting your toenails?	1.5	0.41	0	0.87	-0.1	-1.58	-0.26
	standing for 20 minutes (for example, waiting in a line)?	2.61	0	0.8	1.86	0.03	-2.32	-0.14
	fastening a necklace behind your neck?	1.63	0.79	0	1.78	0.19	-1.98	0.00
	using a step stool to reach into a high cabinet?	2.67	0	1.04	1.38	0.38	-1.38	0.13
	unloading a car trunk or hatchback (for example, packages or equipment)?	2.83	0	0.67	1.74	0.57	-1.54	0.26
	lifting 25 pounds from the ground to a table? (for example, dog food or a large bag of fertilizer)? (male)	0.5	0	-0.43	1.8	0.36	-1.28	0.29
	walking on an uneven surface (for example, grass, dirt road or sidewalk)?	2.52	0	1.48	3.12	0.28	-2.53	0.29
	carrying 2 plastic grocery bags with handles at your side for 50 feet?	3.2	0	1.47	1.75	0.7	-1.37	0.36

carrying a large object, requiring two hands (for example, tray of food) while walking?	3	0	1.01	1.6	0.76	-1.27	0.36
fastening clothing behind your back?	2.13	0.74	0	2.18	0.76	-1.49	0.48
crossing the road at a 4-lane traffic light with curbs?	2.28	0	1.29	2.24	0.56	-1.21	0.53
opening a heavy, outside door?	2.29	0	0.29	2.86	0.81	-1.96	0.57
sitting down in a low, soft couch?	2.23	0	0.21	2.71	0.84	-1.01	0.85
stepping on and off a bus?	2.68	0	1.07	2.93	1.14	-1.51	0.85
using a computer?	0.75	0.74	0	1.92	1.01	-0.3	0.88
pounding a nail in straight with a hammer to hang a picture?	1.92	0	0.1	2.21	1.08	-0.6	0.90
opening a stuck window? (male)	0.58	0	-0.56	2.55	1.19	-1.01	0.91
going up and down a flight of stairs inside, using a handrail?	2.84	0	1.55	3.24	1	-1.31	0.98
ripping open a package of snack food (for example, cellophane wrapping on crackers) using only your hands?	1.33	0.62	0	3.59	1.29	-1.65	1.08
bending over from a standing position to pick up a piece of clothing from the floor?	2.61	0	0.29	3.08	1.23	-1.08	1.08
cleaning up spills on the floor (for example, with a rag)?	3.13	-0.5	0	3.49	1.2	-1.29	1.13
holding a screw and screwing it tight with a manual screwdriver?	1.77	0	0.08	2.44	1.47	-0.43	1.16
walking one block (about 100 yards or the length of one football field)?	2.64	0	1.76	2.76	1.5	-0.61	1.22
making a bed, including spreading and tucking in bed sheets?	2.28	-0.03	0	3.23	1.39	-0.79	1.28
lifting 5 pounds from the ground to a table (for example, a bag of flour or sugar)?	2.69	0	0.54	2.7	1.45	-0.32	1.28
cleaning the floor using a broom and dustpan?	3.21	-0.57	0	2.92	1.58	-0.49	1.34
walking backwards 3 steps?	2.24	0	0.82	2.54	1.64	-0.1	1.36
remembering a list of 4 or 5 errands without writing it down?	0.79	0.17	0	3.7	1.51	-1.01	1.40
reaching behind your back as if to put a belt through a belt loop?	2.88	0.74	0	3.21	1.75	-0.54	1.47
walking quickly indoors to answer the telephone?	3.18	0	1.53	3.46	1.95	-0.58	1.61
picking up a kitchen chair and moving it, in order to clean?	2.99	0	0.73	3.1	2.1	-0.28	1.64
reaching overhead while standing, as if to pull a light cord?	1.93	0	0.48	3.17	1.81	0.07	1.68
standing up from an armless straight chair (for example, a dining room chair)?	2.57	0	0.67	3.9	2.04	-0.74	1.73
biting and chewing on hard foods (for example, a firm apple or celery)?	1.05	0.59	0	2.95	1.92	0.38	1.75
How much help from another person do you currently need getting into a tub?	2.27	0	0.64	2.45	1.69	1.13	1.76
using an escalator?	2.6	0	1.41	2.81	2.17	0.48	1.82
standing, while leaning on the sink for 10 minutes?	2.26	0	0.4	3.66	2.03	-0.07	1.87
stepping up and down from a curb?	2.77	0	1.27	4.37	2.23	-0.79	1.94
turning over in bed (including adjusting bedclothes, sheets and blankets)?	2.31	0	0.03	4.36	2	-0.18	2.06
getting into and out of a car/taxi (sedan)?	2.64	0	0.54	5.16	2.12	-1	2.09

pouring from a large pitcher?	2.02	0.52	0	4.47	2.32	-0.21	2.19
tying shoes?	3.18	0.42	0	3.6	2.46	0.52	2.19
walking around inside a building (50 ft.) on the same level (for example, hospital hallway, around a doctor's office or supermarket)?	3.17	0	1.18	3.94	2.64	0.49	2.36
searching a crowded grocery shelf to find the brand of cereal you prefer?	1.21	0.27	0	4.14	2.68	0.28	2.37
putting on socks?	2.49	0.27	0	3.99	2.58	0.54	2.37
washing dishes, pots, and utensils by hand while standing at sink?	2.96	-0.19	0	4.01	2.71	0.47	2.40
How much help from another person do you currently need getting into a tub using a tub seat?	1.98	0	0.52	3.25	2.53	1.45	2.41
operating an ATM (automatic teller) to get cash or make deposits?	0.9	0.65	0	3.35	2.64	1.28	2.42
reaching behind you to get your seatbelt?	2.26	0	0.03	4.8	2.58	0.18	2.52
How much help from another person do you currently need climbing a full flight of stairs with a railing?	3.04	0	1.73	3.72	2.68	1.63	2.68
reaching into the back pocket of a pair of pants? (<75 years)	0.48	0	-0.48	4	2.64	1.42	2.69
looking up a phone number or address in the phone book or in your own address book?	1.07	0.39	0	4.24	2.81	1.06	2.70
putting on a (button down) shirt or a blouse? (< 75 years)	0	0.13	0	4.47	2.45	1.2	2.71
washing and rinsing your hair?	2.57	0.71	0	3.61	2.85	1.7	2.72
washing your lower body while giving yourself a sponge bath? (male)	-0.1	-0.25	0	4.08	2.68	1.43	2.73
sitting down in an armless straight chair (for example, a dining room chair)?	2.8	0	0.32	4.59	2.93	0.86	2.79
using a washer and dryer, including loading clothes, and setting the dials?	2.21	0.43	0	3.7	3.06	1.78	2.85
chopping or slicing vegetables (for example, onions or peppers)?	2.24	0.78	0	4.44	3.26	1.05	2.92
keeping track of time (for example, using a clock)?	1.08	0.33	0	4.1	1.75		2.93
styling your hair?	2.19	1.43	0	4.42	2.92	1.47	2.94
carrying a small object in one hand (for example, something fragile or a glass of water) while walking indoors?	2.98	0	0.88	4.16	3.52	1.24	2.97
cleaning kitchen surfaces thoroughly (for example, stove, sink, or counter tops)?	2.22	0.04	0	5.13	3	0.99	3.04
moving from lying on your back to sitting on the side of the bed?	2.82	0	0.01	6.45	3.04	-0.32	3.06
walking around one floor of your home, taking into consideration doors, furniture, and a variety of floor coverings.	2.73	0	0.71	4.37	3.64	1.29	3.10
using a microwave to heat up foods? (male)	1.28	0.78	0	4.16	3.73	1.55	3.15
standing for at least one minute?	2.83	0	0.64	4.7	3.86	1.47	3.34
holding a book while reading?	1.93	0	-0.32	5.03	3.79	1.33	3.38
trimming and filing your fingernails?	2.01	1.58	0	4.69	3.67	1.99	3.45
opening car doors?	2.88	0	-0.1	4.81	4.08	1.58	3.49
holding a full glass of water in one hand?	1.95	0	-0.21	5.04	3.8	1.75	3.53
zipping a jacket?	1.81	1.11	0	5.38	3.89	1.44	3.57

reaching into the back pocket of a pair of pants? (≥ 75 years)	2.58	0	-0.15	5.45	3.6	1.73	3.59
holding a plate full of food?	2.51	0.89	0	6.03	3.72	1.21	3.65
using common utensils for preparing meals (for example, can opener, potato peeler, or sharp knife)?	2.48	1.43	0	5.68	3.86	1.49	3.68
putting on a (button down) shirt or a blouse? (≥ 75 years)	2.02	0.93	0	6.05	3.79	1.62	3.82
How much help from another person do you currently need stepping into a shower?	3.05	0	1.07	5.27	3.68	2.55	3.83
doing zippers, snaps, or hooks on pants?	3.11	1.36	0	6.04	4.23	1.54	3.94
putting on long pants (including managing fasteners)?	3.06	0.48	0	6.64	3.88	1.36	3.96
putting on makeup accurately (for example, lipstick, foundation, eyeliner)?	1.63	0.74	0	6.09	4.19	1.75	4.01
putting on a coat or jacket?	3.05	1.02	0	7.9	4.7	1.56	4.72
putting on a pullover shirt?	2.55	1.23	0	7.66	4.61	1.92	4.73
washing your lower body while giving yourself a sponge bath? (female)	2.64	0.65	0	7.3	5.03	2.23	4.85
applying spreads to bread using a knife?	2.39	1.15	0	6.65	5.15	3.01	4.94
How much help from another person do you currently need moving from a bed to a chair (including a wheelchair)?	3.13	0	0.35	6.42	3.54		4.98
washing your upper body while giving yourself a sponge bath?	3	0.57	0	7.42	5.12	2.44	4.99
using a microwave to heat up foods? (female)	2.28	1.23	0	6.55	3.89		5.22
preparing the toothbrush and brushing teeth?	2.27	1.21	0	7.23	3.78		5.51
cutting your own food (such as meat, fruit, etc.)?	2.98	2.24	0	8.1	5.86	3.54	5.83
combing and parting hair?	3.24	1.64	0	7.97	6.51	3.42	5.97
using a spoon to eat a meal?	2.15	1.93	0	7.55	4.54		6.05
using a fork to eat a meal?	2.25	1.85	0	8.24	7.05	4.28	6.52
How much help from another person do you currently need managing toileting aftercare, including wiping yourself and putting clothes back on?	4.39	0	0.18	9.38	6.46	4.39	6.74

*Difficulty, or location parameters were estimated using a Multidimensional logistic Graded Response model (MGRM), which estimates both the discrimination parameters and the ordered location parameters for each item. The marginal maximum likelihood estimation was used to estimate the item parameters. For the bi-factor model in this study, there are three discrimination parameters for each item: one for the general factor (a1) and one for each of the two sub-factors (a2 and a3).

**Difficulty parameters were estimated by calculating the mean of the ordered location parameters (c1, c2 and C3) of an item

