Direct Assessment of Functional Status – Extended Version

PROTOCOL

Developed by Joan McDowd[1], Hafia Gregory[1], and Ah-reum Han[1] in collaboration with Graham McDougall[2]
Spring 2010

[1]Landon Center on Aging, University of Kansas Medical Center

[2]University of Texas at Austin School of Nursing

BACKGROUND AND OVERVIEW

The Direct Assessment of Functional Status (DAFS) was developed by Loewenstein et al. (1989) as a performance-based measure of functional capacity in people with Alzheimer's disease. They describe the test in that and subsequent papers, but the test itself is not published and to our knowledge no formal protocol is available.

McDougall and colleagues (McDougall et al, 2010) obtained permission from Loewenstein to modify the test for use with community-dwelling older adults and developed their own protocol, calling the new test the DAFS-Extended Version.

The protocol described in this document is based on the DAFS-Extended Version developed by McDougall et al. (2010). This protocol can assure consistency in instructions and materials across studies and laboratories. We have included here instructions for the administrator, instructions for the participant, and photographs of the materials we used.

The DAFS-Extended Version has four main sections:

Communication

Financial

Shopping

Medications

The test items and scoring templates are described in this document. Some items are location-specific (e.g., names from local phone book that the subject has to look up) and others will be the same anywhere (e.g., U.S. currency). Some materials we obtained via the internet, and have included links to those resources.

Green text is spoken by the tester to the participant.

Blue text is pre-recorded speech we prepared for the automated prescription refill task.

Loewenstein, D.A., Amigo, E., Duara, R., Gutterman, A., Hurwitz, D., Berkowitz, N., Wilkie, F., Weinberg, G., Black, G., Gittleman, B., & Eisdorfer, C. (1989). A new scale for the assessment of functional status in Alzheimer's Disease and related disorders. *The Journal of Gerontology, 4*, 114-121.

McDougall, GJ, Becker H, Vaughan, PW, Acee, TW, & Delville, DL. (2010). The revised direct assessment of functional status for independent older adults. *Gerontologist, 50*, 363-370.]

I. **Communication** (10 points)

> **MATERIALS**
> 1. Telephone: Innovage Products brand LCD Touch Panel Phone with 12-Digit Calculator
> 2. Residential/business phone book
> 3. #10 Standard white business envelopes, pen, letter-sized paper, page with address on it
> 4. Postage stamps
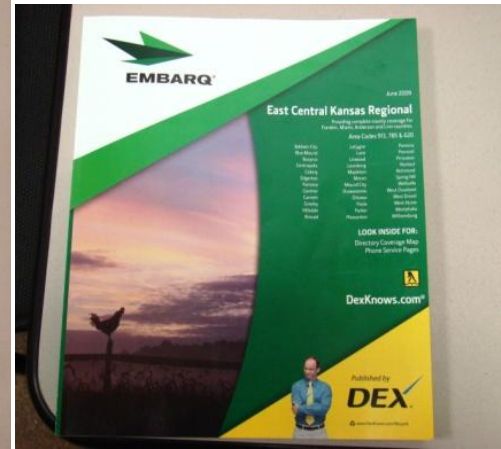
Name and address for envelope task:

Mr. Matthew Arthur
2147 NE Laurel Place
Portland, OR 97232

a. <u>Using the Telephone</u>
   To begin, we'll do some tasks using the telephone. You will use this telephone to dial numbers according to the task I give you.

 1. <u>Dial the operator</u> - Using the telephone, please dial the operator like you would normally do.

  Correct (1 point) _____ **Incorrect** (0 points) _____

 2. <u>Dial number from book</u> – Next, I will ask you to look up a number in the phone book and dial it. Please look up the name (give name from chart) and dial their number.

Name	Number	Page number in book
Carolyn Clark	913-856-8349	19
Leslie Hayes	785-242-7667	45
David Milner	620-852-3451	73
Bret Oswald	913-856-5246	80
Jill Valentine	913-757-2471	110

  Name given _____

  Correct (1 point) _____ **Incorrect** (0 points) _____

 3. <u>Dial number presented orally</u> – Now I am going to say a telephone number out loud. Please use the telephone to dial the numbers that I say to you. You'll have to remember it as I say it to you. Ready? Say 913-236-8314

  Correct (1 point) _____ **Incorrect** (0 points) _____

 4. <u>Dial a number written down</u> – Next I am going to show you a telephone number written on a sheet of paper. Please use the telephone to dial the number that I show to you. Show the participant the page with the number.

  Correct (1 point) _____ **Incorrect** (0 points) _____

b. Preparing a Letter for Mailing

Next, we will do a letter mailing task. I will give you a sheet of paper, an envelope and some stamps. Please prepare this letter and envelope to be mailed as you would normally. Address the envelope using this address (Show subject mailing address stimulus) and include your return address. Give the participant the paper, envelope, pen, and stamps.

	Correct (1 point)	**Incorrect** (0 points)
Fold letter in half		
Put in envelope		
Seal envelope		
Stamp envelope		
Address (exact copy of stimulus)		
Return Address (in upper left-hand corner)		

COMMUNICATION TOTAL _____

II. **Pre-shopping Instructions**

Now we will prepare to do a grocery shopping task. In about 10 minutes, I will show you a grocery shelf where you will be asked to pick out 6 grocery items from a list you have memorized.
Here are the items you will need to pick out: Read the list slowly, about 1 word every 2 seconds. 1. Orange juice 2. Soup 3. Cereal 4. Tuna fish 5. Rice 6. Jelly

Please repeat those items to me. Have the participant repeat the list until they can recall all 6 items.

Current time: _____   # repetitions required: _____
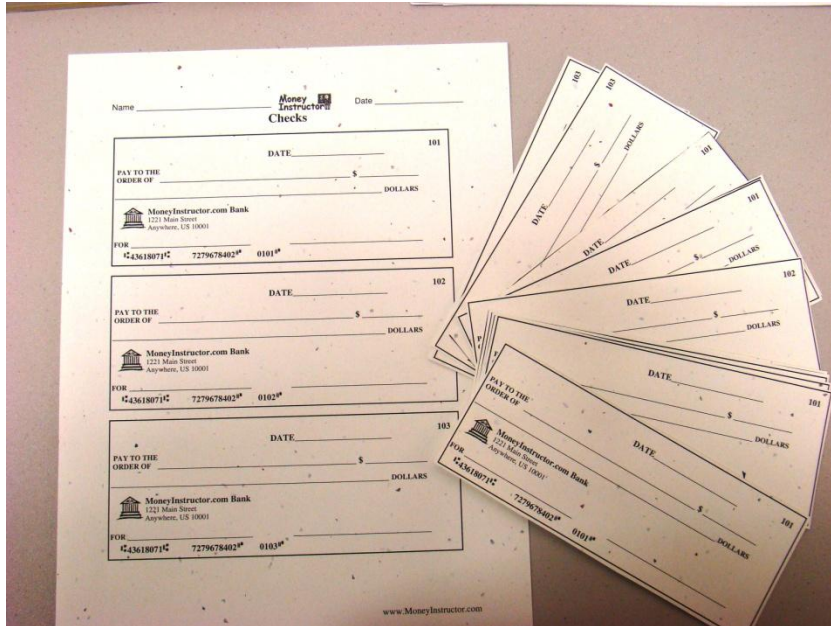
GO TO THE GROCERY STORE AFTER 10 MINUTES HAVE ELAPSED

III.   Financial

MATERIALS
1. Money (bills and coins): One ten dollar bill; one five dollar bill; three one dollar bills, 3 quarters, 2 dimes; 1 nickel, 3 pennies
2. Blanks checks: Check template downloaded from: http://www.moneyinstructor.com/docs/pdf/checkspage.pdf
3. Check Register forms: Register template downloaded from: http://office.microsoft.com/en-us/templates/tc010186511033.aspx

---

a. Counting currency

Next, we are going to do some financial tasks. During the first task, I will place some money in front of you and ask you to show me different amounts.

Please show me:	Correct (1 point)	Incorrect (0 points)
Place all coins in front of the subject:		
Show me 1 dollar and 2 cents (in coins)		
Place dollars and coins in front of subject:		
Show me 6 dollars and 73 cents		
Place collars and coins in front of subject:		
Show me 12 dollars and 17 cents		

b. Writing a check

Now I will ask you to write a check. Please write a check to yourself for $400 . Include all of the information that you normally would when writing a check.

	Correct (1 point)	Incorrect (0 points)
Signature		
Pay to the order of		
Written amount		
Numeric amount		
Date (location – date does not have to be correct)		

c. Balancing a checkbook

Now I will ask you to do a checkbook balance task.

Using the check register form, please calculate the balance remaining for these 4 transactions: Give the participant the check register and a pencil and have them do the 4 subtractions.

	Correct (1 point)	Incorrect (0 points)
$500.00-$350.00=**$150.00**		
$323.00-$23.50=**$299.50**		
$21.75-$3.92= **$17.83**		
$673.16-$79.23=**$593.93**		

d. Making change for a purchase (in shopping section)

FINANCIAL TOTAL (including making change task) _____

IV.   Shopping Skills

MATERIALS: the 6 grocery items from the list, plus 30 distractor items, arranged on a shelf.

V.   Shopping Skills (10 minutes after items were given; note current time: _____)

> We will now start the grocery shopping task that I told you about earlier. I will take you to the grocery shelf and you will pick out the 6 items that I asked you to remember a few minutes ago.

a. Shopping Recall

> Before we do that, can you tell me what the 6 items were please?

	Correct (1 point)	**Incorrect** (0 points)
Orange juice		
Soup		
Cereal		
Tuna Fish		
Rice		
Jelly		

> Ok now we will go to the grocery shelf to see if you can find the six items.

b. Shopping recognition (Subject is taken to the grocery shelves and asked to pick out the items)

	Correct (1 point)	**Incorrect** (0 points)
Orange juice		
Soup		
Cereal		
Tuna Fish		
Rice		
Jelly		

SHOPPING TOTAL _____

c. Making change for a purchase

> For this next task, I will ask you to make change for a purchase. I will place some money in front of you, please make change for a $2.49 purchase from $5.00.
> Place money on the table…

	Correct (1 point)	**Incorrect** (0 points)
$5.00-$2.49= **$2.51**		

add points to Financial Total

I. Medication Skills

MATERIALS

1. Telephone: Innovage Products brand LCD Touch Panel Phone
2. Prescription pill bottles (10)
3. Labels for pill bottles
4. Small beads to serve as pills; ten different colors
5. Pill Organizer : CVS Pharmacy brand 4-A-Day Weekly Pill Planner with "Morning", "Noon", "Evening" and "Bedtime" compartment labels

---

THE UNIVERSITY OF KANSAS MEDICAL CENTER PHARMACY
3901 Rainbow Boulevard, Kansas City, KS 66160
Pharmacy: (913) 588-2361

Rx # 73426157   FRANK JONES, MD
BYRD, EARLE E   01/01/2010

TAKE 1 PILL TWICE A DAY

LOPRESSOR
REFILLS: 3
QTY: 60 TABLET

Caution: Federal law prohibits transfer of this drug to any
person other than patient for whom prescribed.

THE UNIVERSITY OF KANSAS MEDICAL CENTER PHARMACY
3901 Rainbow Boulevard, Kansas City, KS 66160
Pharmacy: (913) 588-2361

Rx # 73426157   FRANK JONES, MD
BYRD, EARLE E   01/01/2010

TAKE 1 PILL AT BEDTIME FOR
SLEEP

AMBIEN
REFILLS: 0
QTY: 30 TABLET

Caution: Federal law prohibits transfer of this drug to any
person other than patient for whom prescribed.

THE UNIVERSITY OF KANSAS MEDICAL CENTER PHARMACY
3901 Rainbow Boulevard, Kansas City, KS 66160
Pharmacy: (913) 588-2361

Rx # 73426157   FRANK JONES, MD
BYRD, EARLE E   01/01/2010

TAKE 2 TABLETS EVERY
EVENING WITH DINNER

LIPITOR
REFILLS: 6
QTY: 60 TABLET

Caution: Federal law prohibits transfer of this drug to any
person other than patient for whom prescribed.

THE UNIVERSITY OF KANSAS MEDICAL CENTER PHARMACY
3901 Rainbow Boulevard, Kansas City, KS 66160
Pharmacy: (913) 588-2361

Rx # 73426157   FRANK JONES, MD
BYRD, EARLE E   01/01/2010

TAKE 2 TABLETS IN AM AND 1
TABLET IN PM

ISORDIL
REFILLS: 4
QTY: 90 TABLET

Caution: Federal law prohibits transfer of this drug to any
person other than patient for whom prescribed.

THE UNIVERSITY OF KANSAS MEDICAL CENTER PHARMACY
3901 Rainbow Boulevard, Kansas City, KS 66160
Pharmacy: (913) 588-2361

Rx # 73426157   FRANK JONES, MD
BYRD, EARLE E   01/01/2010

TAKE 1 TABLET TWICE A DAY
BEFORE 3:00 PM

LASIX
REFILLS: 4
QTY: 30 TABLET

Caution: Federal law prohibits transfer of this drug to any
person other than patient for whom prescribed.

THE UNIVERSITY OF KANSAS MEDICAL CENTER PHARMACY
3901 Rainbow Boulevard, Kansas City, KS 66160
Pharmacy: (913) 588-2361

Rx # 73426157   FRANK JONES, MD
BYRD, EARLE E   01/01/2010

TAKE 1 TABLET BEFORE LUNCH
AND DINNER

MARINOL
REFILLS: 5
QTY: 60 TABLET

Caution: Federal law prohibits transfer of this drug to any
person other than patient for whom prescribed.

THE UNIVERSITY OF KANSAS MEDICAL CENTER PHARMACY
3901 Rainbow Boulevard, Kansas City, KS 66160
Pharmacy: (913) 588-2361

Rx # 73426157   FRANK JONES, MD
BYRD, EARLE E   01/01/2010

TAKE 1 TABLET EVERY
MORNING FOR 3 MORE DAYS

LEVAQUIN
REFILLS: 0
QTY: 3 TABLET

Caution: Federal law prohibits transfer of this drug to any
person other than patient for whom prescribed.

THE UNIVERSITY OF KANSAS MEDICAL CENTER PHARMACY
3901 Rainbow Boulevard, Kansas City, KS 66160
Pharmacy: (913) 588-2361

Rx # 73426157   FRANK JONES, MD
BYRD, EARLE E   01/01/2010

TAKE 1 TABLET MONDAY,
WEDNESDAY, & FRIDAY
AND 2 TABLETS SUNDAY, TUESDAY,
THURSDAY, & SATURDAY

COUMADIN
REFILLS: 3
QTY: 330 TABLET

Caution: Federal law prohibits transfer of this drug to any
person other than patient for whom prescribed.

I.   <u>Medication Skills</u>

         Now we will move on to our medication skills tasks.

     a.   Identifying Medication

         The first medication task that we will do involves identifying medication. I will ask you some questions about this medication. Hand the subject the pill bottle.

Questions:	Correct (1 point)	Incorrect (0 points)
Is this a prescription or over-the-counter drug?		
What is the patient's name?		
What is the name of the medication?		
What is the prescribing doctor's name?		
What are the medication's instructions?		

     b.   Prescription Refill Task

         The next medication task that we will do has to do with refilling prescriptions over the phone, using an automated phone system. Before we do that, I will ask you some questions about your experience with automated phone systems.

         1.   Have you ever refilled a prescription over the phone using an automated phone system? Yes _____ No _____ Don't know _____
                (If no, skip item 2 and 3)

         2.   How often do you refill prescriptions using an automated phone system? _____

         3.   When is the last time you refilled a prescription using an automated phone system? _____

         Your goal for this activity is to refill this prescription.
         (Present participant with the medication bottle)

         4.   In order to refill the prescription you will need to know the prescription number. Can you find the prescription number on this bottle of medication and tell me what it is please?
         Correct _____ Incorrect _____
            (If incorrect, show the participant the prescription number)

         For the purposes of this activity, we want you to **pick up** the prescription **tomorrow at 10AM** from the pharmacy. Please take a moment now to remember that because I won't be able to tell you again during the activity. So please remember, **tomorrow at 10AM** is when you want to pick up your prescription from the pharmacy.

         You will also need to know your home phone number.

5. What is your home phone number? **(Write below. If participant does not have a phone number or cannot remember, leave blank and mark one of the options below.)**

Phone number: _____

No phone number_____ From memory _____ Can't remember_____

Because you can't actually order this prescription over the phone, I am going to have you listen to a pretend automated phone system on the computer. Like a real automated phone system, you will hear instructions and you will respond by pushing the numbers on this phone. After you make a response I will have to clear the phone to reset it, please try not to let this distract you. (Present the participant with the phone.)

The pretend automated phone system will continue to go until you press your response on the phone. Just like a real automated phone system, I will not be able to talk with you or answer any of your questions once we begin. If you get stuck, please do the best you can without my help. Let's do a practice run before we start so you can get used to the recorded voice and the phone.

Practice 1:

Please pick up the phone and do what the automated voice instructs you to do. Click on the Practice 1 segment on the computer to play the following:

Hello and welcome to the SeniorWise Pharmacy.

If you live in Kansas City, MO - press 1

If you live in Overland Park, KS – press 2

If you live somewhere else in the US – press 3

To repeat this message - press 8

> **(If they press 8, repeat this section on the computer.)**

To end this call, press 9.

Write down everything the participant presses on the phone:

_____
_____
_____

Practice 2:

Good, now we'll do a second task.

Click on the Practice 2 segment on the computer to play the following:

Now, I need to know your zip code. Please key in your zip code on the phone.

Write down everything the participant presses on the phone:
_____

Begin Test

Do you have any questions before we start?

6. If no questions, play the pharmacy activity on the computer.

Pharmacy activity script: *[blue text is recorded speech]*

Click on the Item 06 segment on the computer to play the following:

Thank you for calling the SeniorWise Pharmacy

If you are a physician or medical office, press 1.

To refill a prescription, press 2.

To check on the status of a prescription order that was already placed, press 3.

For Pharmacy information, press 4.

To repeat this message, press 8.

To end this call, press 9.

Write down everything the participant presses on the phone: **(If they push 8, repeat this section on the computer)**

_____
_____
_____

7. Click on the Item 07 segment on the computer to play the following:
   Now, please key in the prescription number.
   Write down everything the participant presses on the phone:

   _____

8. Click on the <u>Item 08</u> segment on the computer to play the following:
   Please enter the last 4 digits of your home phone number.

   > Write down everything the participant presses on the phone:
   > _____

9. Click on the <u>Item 09</u> segment on the computer to play the following:
   If you want your prescription to be mailed to you, press 1.
   If you want to pick up your prescription from the pharmacy, press 2.
   To repeat this message, press 8.
   (If they push 8, repeat this section on computer)
   To end this call, press 9.

   > Write down everything the participant presses on the phone:
   > _____

   **If participant chooses 1, play the "Due to high volume…" message on the computer.

10. Click on the <u>Item 10</u> segment on the computer to play the following:
    If you would like to pick up your prescription today, press 1.
    If you would like to pick up your prescription tomorrow, press 2.
    To repeat this message, press 8.
    (If they push 8, repeat this section on computer)
    To end this call, press 9.

    > Write down everything the participant presses on the phone:
    > _____

11. Click on the <u>Item 11</u> segment on the computer to play the following:
    If you would like to pick up your prescription before noon, press 1.
    If you would like to pick up your prescription after noon, press 2.
    To repeat this message, press 8.
    (If they push 8, repeat this section on computer)
    To end this call, press 9.

Write down everything the participant presses on the phone:

_____

12. Click on the <u>Item 12</u> segment on the computer to play the following:

    Using the numbers on your phone, punch in the time you would like to pick up your prescription using a 4-digit number. For example, if you want to pick up your prescription at 8 AM, you would key in 0800.

    Write down everything the participant presses on the phone:

    _____

13. Click on the <u>Item 13</u> segment on the computer to play the following:

    Your prescription will be ready to be picked up tomorrow at 10 AM. Press 1 if this is correct, press 2 if this is incorrect.

    Write down everything the participant presses on the phone:

    _____

Scoring Prescription Refill Task	Correct (1 point)	Incorrect (0 points)
Refill prescription		
Prescription number		
Phone number		
Pick up prescription		
Pick up date		
Pick up time A		
Pick up time B		

c. Pillbox task

(Prepare the pillbox and the 10 medication bottles)

The last medication activity involves preparing a pillbox. Here is a one-week pill box and 10 different bottles of pills - the pills are actually beads. A pillbox is useful because it helps you sort your pills so that you remember when to take them. Please fill the box according to the labels on each of the bottles, as you would do if you were taking these medications.

	Bottle	Label
1	Aspirin	Take 1 pill everyday
2	Lopressor	Take 1 pill twice a day
3	Ambien	Take 1 pill at bedtime for sleep
4	Lipitor	Take 2 tablets every evening with dinner
5	Isordil	Take 2 tablets in AM and 1 tablet in the PM
6	Lasix	Take 1 tablet twice a day before 3 PM
7	Marinol	Take 1 tablet before lunch and dinner
8	Levaquin	Take 1 tablet every morning for 3 more days
9	Coumadin	Take 1 tablet Monday, Wednesday and Friday AND 2 tablets Sunday, Tuesday and Saturday
10	Tramadol	Take every 6 hours as needed for pain

Scoring Pillbox Task	Correct (1 point)	Incorrect (0 points)
Aspirin		
Lopressor		
Ambien		
Lipitor		
Isordil		
Lasix		
Marinol		
Levaquin		
Coumadin		
Tramadol		

MEDICATION TOTAL _____

COMMUNICATION TOTAL _____

FINANCIAL TOTAL _____

SHOPPING TOTAL _____

GRAND TOTAL _____

17