

***Disability Assessment***

---

***For Dementia (DAD)***

---

**Isabelle Gélinas and Louise Gauthier**

Copyright © 1994 by L. Gauthier & I. Gélinas

---

## *User's Guide*

---

### **Introduction**

The *Disability Assessment for dementia (DAD) Scale* was developed to fulfill the need for a disability measure designed specifically for community-dwelling individuals with dementia of the Alzheimer type (DAT). Such an instrument is essential to help clinicians and caregivers make decisions regarding the choice of suitable interventions and to monitor disease progression. In addition, as a research tool, it can be used to describe the functional characteristics of populations with DAT, the course of the disease and also as an outcome variable in intervention studies and clinical trials.

### **Objectives of the DAD**

The objectives of the DAD Scale are to quantitatively measure functional abilities in activities of daily living (ADL) in individuals with cognitive impairments such as dementia and to help delineate areas of cognitive deficits which may impair performance in ADL. Basic and instrumental activities of daily living are examined in relation to executive skills to permit identification of the problematic areas. The primary aim is to have a standardized, valid, reliable and sensitive measure of functional disability in DAT and other dementias. Another objective is to obtain a French and English instrument which is short and easy to administer.

### **Target population**

The DAD Scale is intended specifically for the assessment of disability in community residing individuals with cognitive deficits such as DAT and other dementias. This tool has not been designed to meet the specific needs of populations with physical disabilities (neuro-muscular deficits). In cases where an individual will present both cognitive and physical deficits which may impair function in ADL, this tool should not be used exclusively but rather in conjunction with another assessment of ADL designed for physical disabilities.

---

## **Components of the DAD**

This measure of functional disability is based on the model of health proposed by the World Health Organization (WHO). According to this model, functional disability refers to any restriction in the ability to perform an activity, a task or a behavior of every day life such as basic self-care or instrumental activities.

Functional disability is measured with the DAD Scale through the assessment of basic, instrumental and leisure activities.

The DAD Scale includes:

**.Basic activities of daily living** (activities that are important for self-care) which are dressing, hygiene, continence and eating.

**.Instrumental activities of daily living** (activities that are important for maintenance in a specific environment) which are meal preparation, telephoning, housework, taking care of finance and correspondence, going on an outing, taking medications and ability to stay safely at home.

**.Leisure activities** (activities that are beyond self maintenance and are for the purpose of recreation) which are assessed in terms of the interest that is shown towards these activities.

Since the objective of the DAD is also to understand the cognitive dimensions of disabilities in ADL, the activities of daily living have been subdivided and are assessed according to executive functions which have showed regression patterns in dementias. These are initiation, planning and organization, and effective performance.

**.Initiation** consists of the ability to decide and/or start an action. This requires spontaneity on the part of the individual and must be accomplished at an appropriate moment and place.

**.Planning and organization** consist of the ability to identify the different components of a task, to be able to structure them in an appropriate sequence, to elaborate a strategy for action and to be able to prepare the required material prior to the action. They also include the ability to monitor actions during the activity and thus involve problem solving and decision making abilities to make appropriate corrections when needed.

**.Effective performance** consists of the ability to complete an action. The quality of the performance with regards to whether the task is done in a safe and acceptable manner is also an important component.

For example: a person can be able to plan and complete the action but cannot initiate it.

---

## Administration of the DAD

### .Administration guidelines

The DAD is administered through an interview with the caregiver.

There is no specific expertise required for administering this assessment. Health professionals such as occupational therapists and nurses have the necessary qualifications.

This instrument can be administered in any setting and does not require any material for administration other than the questionnaire and a pencil. It is preferable to do it in a quiet environment alone with the caregiver.

Administration of the DAD is not time consuming; it takes approximately 15 minutes.

The DAD is a measure of the actual performance in ADL of the individual as observed over a period of 2 weeks previous to the time of the interview.

In addition, the instrument assesses what the individual is doing and not what he/she is or might be capable of doing.

These activities are evaluated as performed without any assistance or reminder being provided from caregivers. These informations must be kept in mind when administering the instrument so that questions are formulated and clarified in this sense.

Questions should be asked as stated in the questionnaire and if clarifications are needed they should be given in a language that is understandable by the caregivers.

**Questions should be given as follows: "During the past two weeks, did Mr/Ms.. X, without help or reminder,... undertake to wash himself/herself or to take a bath or a shower?"**

It is essential to use the exact wording in order to respect content validity. Elements in brackets should be read. The choice of answer (Yes, No, N/A) should be specified at the beginning of the interview and should be repeated throughout.

There is no strict order to follow for the administration of the items. For example one may prefer to start the interview with instrumental ADL instead of basic ADL.

---

### Scoring guidelines

Each item can be scored: 1 point = YES, 0 point = NO or non applicable = N/A.

A YES indicates that the person has performed the activity without help or reminder in the last two weeks even if it was only performed once.

A NO signifies that the person did not perform the activity without help or reminder. Therefore if a person has performed the activity with some assistance from the caregiver, verbal or physical, he/she is scored as a NO. Comments, however, could be added to this item to guide intervention planning if desired.

If the item assessed is N/A because, for example, the individual never did it before the occurrence of DAT or did not have the opportunity to do it in the past two weeks, it is scored as N/A so that he/she is not penalized.

A total score is obtained by adding the rating for each question and converting this total score out of 100. The items rated as N/A are not considered for the total score.

For example:

A score of 33 on 40 (maximum score) converted out of 100 = 83%

A score of 33 on 38 (max. score with 2 N/A) converted out of 100 = 87%

This will result in a final score, a percentage which provides an appreciation of global function in ADL. Higher scores represent less disability in ADL while lower scores indicate more dysfunction.

Information on the respondent and his/her relationship to the person assessed is also gathered in the initial part of the questionnaire. In addition, information on any sensory-motor disturbance, which could influence performance in ADL, is recorded enabling this to be taken into account when interpreting the results.

---

## ***Psychometric Properties***

---

These properties were tested on individuals diagnosed of “probable” Alzheimer’s disease according to the NINCDS-ADRDA criteria (McKahn et al., 1984; Tierney et al., 1988) and their caregivers. The details of this study are described in the Gélinas et al. (1999) article.

**.Validity:** .**Content validity** was established by a panel of experts and caregivers.

.**Criterion-related (concurrent) validity** has been established with *the Rapid Disability Rating Scale-2* ( $r = -.85$ ,  $n = 59$ ) and known-groups procedure. Results of the known-groups procedure indicated that severity of dementia, according to the GDS level, had an effect on DAD scores ( $F$  ratio = 21.24,  $p \leq .05$ ),  $n = 57$ .

.**Construct validity** has been established with the *MMSE* ( $r = .54$ ),  $n = 55$ .

**.Reliability:** .**Test-retest reliability:** ICC = .96 ( $n = 45$ )

.**Interrater reliability:** ICC = .95 ( $n = 31$ )

.**Internal consistency:** Cronbach’s alpha = .96 ( $n = 59$ )

**.Estimates of responsiveness:** S. Gauthier (unpublished data, 1994) has obtained preliminary estimates of the responsiveness of the DAD scale over a one year period . More recently, it has showed therapeutic sensitivity in pharmacological studies with metrifonate (Gélinas, Gauthier, Cyrus et al., *Neurology* 50 (suppl 4), 1998).

In addition, the scale was found not to have gender bias. Scores are not influenced by either age or education. The DAD is practical, short and easy to administer. It is available in both French and English. The DAD has also been translated in several languages (german, spanish, japanese,...) and is used in pharmacological studies at an international level.

### **For Information Please Contact:**

Isabelle Gélinas  
School of Physical and Occupational Therapy  
McGill University  
3654 Promenade Sir-William-Osler  
Montreal, Quebec, Canada  
H3G 1Y5  
Tel.: (514) 398-4514  
Fax: (514) 398-6360  
Courriel: isabelle.gelinas@mcgill.ca

---

## *Bibliography*

Feldman, H., Sauter, A., Donald, A., Gélinas, I., Gauthier, S., Torfs, K., Parys, W., Mehnert, A. The Disability Assessment for Dementia Scale: A 12-Month Study of Functional Ability in Mild to Moderate Severity Alzheimer's Disease. Alzheimer's Disease and Associated Disorders 15(2): 89-95, 2001.

Gauthier, L., Gauthier, S., Gélinas, I., McIntyre, M., Wood-Dauphinee, S. Functional assessment in Alzheimer's disease. Abstract of the 16th Annual meeting of the Canadian College of Neuropsychopharmacology and the British Association of Psychopharmacology, June, Montreal, Canada, S4.5, 1993.

Gauthier, L., Gauthier, S., Gélinas, I., McIntyre, M., Wood-Dauphinee, S. Assessment of functioning and ADL. Abstract Book of the Sixth congress of the International Psychogeriatric Association, September, Berlin, Germany, p.9, 1993.

Gauthier, S., Bodick, N., Erzigkeit, E., Feldman, H., Geldmacher, J.H., Mohs, R., Orgogozo, J.M, Rogers, S. Activities of daily living as an outcome measure in clinical trials of dementia drugs. Position paper from the International Working Group on Harmonization of Dementia Drug Guidelines. Alzheimer Disease and Associated Disorders 11(Suppl. 3): 6-7, 1997.

Gauthier, S., Gélinas, I., Cyrus, P.A., Gulanski, B. Metrifonate enhances the ability of Alzheimer's disease patients to perform instrumental and basic activities of daily living. Abstract of the 1998 American Geriatrics Society Conference, Seattle, Washington, U.S.A., 1998.

Gauthier, S., Rockwood, K., Gélinas, I., Sykes, L., Teunisse, S., Orgozo, J.M., Erkinjuntti, T., Gleeson, M., Kittner, B., Pontecorvo, M., Feldman, H., Whitehouse, P. Outcome measures for the study of activities of daily living in the vascular dementia. Alzheimer Disease and Associated Disorders 13 (Suppl 3): S143-S147, 1999.

Gélinas, I. Development, content validation and testing of reliability of a disability assessment in dementia of the Alzheimer's type. Programme and Abstracts for the 5th Research Colloquium in Rehabilitation, May, Montréal, Canada, 1994.

Gélinas, I. Disability assessment in Dementia of the Alzheimer's type. Doctoral thesis, School of Physical and Occupational Therapy, McGill University, Montreal, 1995.

Gélinas, I., Auer, S. Functioning in Alzheimer's Disease. In Clinical diagnosis and management of Alzheimer's disease, S. Gauthier, Ed., London: Martin Dunitz Ltd, pp. 191-202, 1996.

Gélinas, I., Auer, S. Functioning in Alzheimer's Disease. In Clinical diagnosis and management of Alzheimer's disease (2nd Ed.), S. Gauthier, Ed., London: Martin Dunitz Ltd, pp 213-226. 1999.

---

Gélinas, I., Gauthier, L., McIntyre, M.C., Gauthier, S. Development of a functional measure for persons with Alzheimer disease: The Disability Assessment for Dementia. American Journal of Occupational Therapy, 53: 471-481, 1999.

Gélinas, I., Gauthier, L., Wood-Dauphinee, S., Gauthier, S., Bellavance, F., Wolfson, C. Assessment of functional disability in Alzheimer's disease. Revue Canadienne d'Ergothérapie 62:15, 1995.

Gélinas, I., Gauthier, S., Cyrus, P.A. Metrifonate enhances the ability of Alzheimer's disease patients to initiate, organize and execute instrumental and basic activities of daily living. Journal of Geriatrics, Psychiatry and Neurology, 13: 9-16, 2000.

Gélinas, I., Gauthier, S., Cyrus, P.A., Ruzicka, B.B., Gulanski, B. The efficacy of metrifonate in enhancing the ability of Alzheimer's disease patients to perform basic and instrumental activities of daily living. Neurology 50(Suppl4):A90-A91, 1998.

Gélinas, I., Liu, L., Miyazaki, M., Sato, T., Gauthier, S. Validity of a Japanese translation of the Disability Assessment for Dementia. Book of Abstracts of the 12th International Congress of the World Federation of Occupational Therapists, Montréal, Canada, p. B1.09, 1998.

McIntyre, M.C. Criterion-Related and Construct Validation of the Disability Assessment for Dementia Scale. Thesis submitted for a M.Sc. in Rehabilitation Science. School of Physical and Occupational Therapy, McGill University, 1994.

Morris, J.C., Cyrus, P.A., Orazem, J. et al. Metrifonate benefits cognitive, behavioral and global function in Alzheimer's disease patients. Neurology 50 (5): 1222-1230, 1998 .

Raskind, M., Cyrus, P.A., Ruzicka, B.B., Gulanski, B. The effects of metrifonate on the cognitive, behavioral and functional performance of Alzheimer's disease patients. J Clin Psychiatry 60 (5): 318-325, 1999.