



Venerdì, 12 gennaio 2007

**Mini corso pratico sulla
valutazione multidimensionale
*(parte prima)***

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Comprehensive Geriatric Assessment

A multidimensional process designed to assess an elderly person's functional ability, physical health, cognitive and mental health, and socioenvironmental situation.

Comprehensive geriatric assessment differs from a standard medical evaluation by including nonmedical domains, by emphasizing functional ability and quality of life, and, often, by relying on interdisciplinary teams.

This assessment aids in the diagnosis of health-related problems, development of plans for treatment and follow-up, coordination of care, determination of the need for and the site of long-term care, and optimal use of health care resources.

Purposes of CGA

- **Improves diagnostic accuracy**
- **Optimizes medical treatment**
- **Improves medical outcomes (including functional status and quality of life)**
- **Optimizes living location**
- **Minimizes unnecessary service use**
- **Arrange long-term case management.**

CGA Measurable Dimensions

- **physical health**

- traditional history
- physical examination
- laboratory data
- problem list
- disease-specific severity indicators
- preventive health practices

- **functional status**

- Basic activities of daily living
- instrumental activities of daily living
- other functional scales (such as mobility)

- **psychological health**

- cognitive status
- affective status
- behavioural status

- **socioenvironment**

- social networks and supports
- environmental safety, adequacy, and needs

Geriatric assessment programs vary widely in purpose, comprehensiveness, staffing, organization, and structural and functional components.

Most attempt to target their services to high-risk elderly persons and to couple their assessment results with sustained individually tailored interventions (eg, rehabilitation, education, counseling, supportive services).

Effectiveness of a Geriatric Evaluation Unit. A randomized clinical trial.

L.Z. Rubenstein, K.R. Josephson, G.D. Wieland, P.A. English, J.A. Sayre, R.L. Kane.
N Engl J Med 311:1664-70, 1984

A randomized, controlled trial of a geriatric assessment unit in a community rehabilitation hospital.

W.B. Applegate, S.T. Miller, M.J. Graney, J.T. Elam, R. Burns, D.E. Akins.
N Engl J Med 322:1572-8, 1990

In questi due ormai storici studi randomizzati, furono arruolati pazienti ultra-65enni con disabilità di grado intermedio ad alto rischio di istituzionalizzazione. I pazienti del gruppo di intervento, superata la fase ospedaliera acuta, furono assegnati ad una struttura ospedaliera geriatrica intermedia di tipo riabilitativo e mostrarono una significativa *riduzione della mortalità, della disabilità e dell'istituzionalizzazione* rispetto al gruppo di controllo assegnato alla tradizionale assistenza ospedaliera.

- **Meta-analysis of 28 of controlled comprehensive geriatric assessment (CGA) studies (1979-1993) 4959 subjects**
- **GEMU: *hospital geriatric evaluation and management unit* (designated inpatient unit for CGA and rehabilitation)**
- **IGCS: *inpatient geriatrics consultation service* (CGA provided on a consultative basis to hospitalized patients in nondesignated unit)**
- **HAS: *home assessment service* (in-home CGA for community dwelling elderly persons)**
- **HHAS: *hospital home assessment service* (in-home CGA for patients recently discharged from hospital)**
- **OAS: *outpatient assessment service* (CGA provided in an outpatient setting)**

RESULTS

- **Mortality: GEMU programmes reduced mortality risk at 6 months by 35% and HAS programmes reduced mortality risk at 36 months by 14%**
- **Living at home: GEMU, HAS and HHAS programmes had a favourable effect on living location. IGCS and OAS programmes did not show a significant impact on living location**
- **Hospital admission: all CGA programmes taken together reduced hospital (re)admission risk during follow up by 12%**
- **Physical and cognitive function: the combined result of GEMU studies indicated a beneficial effect on 6-month and 12-month physical function. The combined ORs for improvement in cognitive function indicate a beneficial effect for GEMU and IGCS programmes, and no effect for HHAS and OAS programmes**



The NEW ENGLAND JOURNAL of MEDICINE

A Randomized Trial of Care in a Hospital Medical Unit Especially Designed to Improve the Functional Outcomes of Acutely Ill Older Patients

C. Seth Landefeld, M.D., Robert M. Palmer, M.D., Denise M. Kresevic, M.S.N., Richard H. Fortinsky, Ph.D., and Jerome Kowal, M.D. (1995; 332:1338-1344)

In 1989, my colleagues and I developed a complementary approach, with the primary goal of reducing the frequency of functional decline and enhancing functional recovery during hospitalization . We postulated several hospital-associated barriers to recovery and promoters of decline: negative expectations and depressed affect; depersonalization, isolation, and disorientation; immobility, starvation, and deconditioning; and the unintended consequences of drugs and procedures. Incorporating principles of CGA (comprehensive geriatric assessment**) and human systems improvement, we designed a new microsystem of care for older persons from hospital admission to their anticipated return home, with the goal of maintaining and promoting independence in ADL.**

The Acute Care for Elders-MU has substantially improved processes of hospital care; discharge outcomes; and patient, family, and provider satisfaction. The published trials provide evidence, however, that these benefits are difficult to maintain over time and place.

To extend the promise of Acute Care for Elders broadly to successful aging, it remains to be determined how it and similar interventions can be implemented systematically to achieve consistent beneficial effects.

To him who devotes his life to science, nothing can give more happiness than increasing the number of discoveries, but his cup of joy is full when the results of his studies immediately find practical applications.

— Louis Pasteur

Gli studi epidemiologici-GRG

Progetto Ome (1981)
RSA-Casa Industria (1983)
Centro Storico Brescia
RSA-Alzano (Bg)
PROLOGUS-RSA
Ospitaletto (Bs)
Coccaglio (Bs)
Tirano (So)
PeQol (Bs-Pd)
SCUD-EU
CODEM

.....

- **CGA can be performed in a number of places** (such as hospital, home, and nursing home) and with varying **program types** and **levels of intensity** (such as hospital GEUs, hospital acute care for elderly [ACE] units, hospital consultation teams, outpatient brief screening assessment programs, or intensive in-home assessment and case management programs).

- But **wherever** it is performed, CGA is at the hub of the geriatric care system, serving as a common language, a set of guideposts, a method of gate-keeping, and in fact the foundation for everything we do in geriatrics.

CGA History

Mid-1930s through about 1975

Early conceptualization and model development.

In 1935 Dr. Marjory Warren was given the medical responsibility for a workhouse infirmary in London with primary elderly patients labelled as “incurable”. She showed to the medical profession then that something could be done. **She noted that elderly patients were heterogeneous and thus assessed and classified them according to their mobility, continence and mental states.**

- **Warren MW. Care of the chronic sick: a case for treating chronic sick in blocks in a general hospital. *Br Med J* 1943; 2:822-823.**
- **Warren MW. Care of the chronic aged sick. *Lancet* 1946;1:841-843.**

**La geriatria nasce con
l'assessment!**

- **La geriatria è l'assessment**

Assessment Domains

Comprehensive geriatric assessment is most successful when conducted by a **geriatric interdisciplinary team**, which typically includes a geriatrician, a nurse, a social worker, and a pharmacist. For most elderly patients, the outpatient clinic is a sufficient and relatively inexpensive setting for evaluation; comprehensive geriatric assessment usually does not require the technology or intense monitoring available in an acute care inpatient setting. However, patients with physical or mental impairments may have difficulty keeping appointments, and chronically ill patients who need to rest during the assessment process may require inpatient assessment.

The **principal domains** assessed in all forms of **geriatric assessment** are functional ability, physical health, cognitive and mental health, and the socioenvironmental situation.

Standardized instruments make evaluation of these domains more reliable and efficient. They also facilitate the communication of clinical information among health care practitioners and the monitoring of changes in the patient's condition over time.

TABLE 4–2. INSTRUMENTS USED IN COMPREHENSIVE GERIATRIC ASSESSMENT

Instrument	Method	Score*	Administration Time (min)
Katz ADL Scale (see TABLE 4–3)	Interview of patient, caregiver, or nurse or self-administered questionnaire	0–12	2–4
Lawton IADL Scale (see TABLE 4–4)	Interview of patient, caregiver, or nurse or self-administered questionnaire	0–16	3–5
Mini-Mental State Examination	Interview of patient	0–30	5–15
Geriatric Depression Scale (short form—see TABLE 33–4)	Interview of patient or self-administered questionnaire	15–0	3–6
Tinetti Balance and Gait Evaluation (see TABLE 21–2)	Observation of patient's performance	0–14	5–15

*From poor to good.

ADL = activities of daily living; IADL = instrumental activities of daily living.

What is functional assessment?

In its simple form, functional assessment is the evaluation of a person's ability to carry out the basic ADLs (bathing, dressing, toileting, transferring, continence, eating).

(Katz,1963; Barthel,1965)

What is functional assessment?

In addition to the basic-self care activities or ADL, functional assessment has expanded to include those activities necessary to survive as an individual in a community environment.

These IADL focus on three major areas, household chores (cooking, laundry and cooking), mobility related activities (shopping and transportation), and cognitive (money management, phone, medication administration).

(Lawton & Brody, 1969)

ACTIVITIES OF DAILY LIVING (KATZ INDEX)

A) Fare il bagno

- 2. Non riceve alcuna assistenza (entra ed esce dalla vasca autonomamente) A
- 1. Riceve assistenza solo nel lavare una parte del corpo (schiena, gamba) A
- 0. Riceve assistenza nel lavare più di una parte del corpo (o rimane non lavato) NA

B) Vestirsi (preleva gli indumenti dall'armadio e dai cassetti inclusa la biancheria intima, indossa gli abiti anche usando fermagli, comprese le bretelle se indossate).

- 2. Prende gli abiti e si veste completamente senza assistenza. A
- 1. Prende gli abiti e si veste completamente senza assistenza, tranne che per allacciare le scarpe. A
- 0. Riceve assistenza nel vestirsi oppure rimane parzialmente o completamente svestito. NA

C) Toilette: andare ai servizi per urinare e defecare; il pulirsi ed il rivestirsi.

- 2. Va ai servizi, si pulisce, si riveste senza assistenza (può usare supporti, e' in grado di maneggiare la padella o la comoda vuotandola al mattino). A
- 1. Riceve assistenza nell'andare ai servizi o nel pulirsi o nel rivestirsi o nell'usare la padella. NA
- 0. Non va ai servizi per i bisogni corporali. NA

D) Spostarsi

- 2. Entra ed esce dal letto come pure si siede e si alza dalla sedia senza assistenza (può usare supporti) A
- 1. Entra ed esce dal letto come pure si siede e si alza dalla sedia con assistenza. NA
- 0. Non si alza dal letto. NA

E) Continenza

- 2. Controlla completamente da solo minzione e defecazione. A
- 1. Ha occasionali "incidenti". NA
- 0. Il controllo della minzione o della defecazione è condizionato dalla sorveglianza; usa il catetere o e' incontinente. NA

F) Alimentarsi

- 2. Si alimenta da solo senza assistenza. A
- 1. Si alimenta da solo eccetto che per tagliare la carne o nell'imburrare il pane. NA
- 0. Riceve assistenza nell'alimentarsi o viene alimentato parzialmente o completamente per SNG o ev. NA

punteggio totale ___/12 funzioni perse (n. NA) ___/6

TABLE 4-4. LAWTON INSTRUMENTAL ACTIVITIES OF DAILY LIVING SCALE*

Activity		Score†
Can you prepare your own meals	without help,	2
	with some help, or	1
	are you completely unable to prepare any meals?	0
Can you do your own housework or handy-man work	without help,	2
	with some help, or	1
	are you completely unable to do any housework?	0
Can you do your own laundry	without help,	2
	with some help, or	1
	are you completely unable to do any laundry?	0
Do you or can you take prescribed drugs	without help (ie, correct doses at the correct time),	2
	with some help (ie, someone prepares the drug and/or reminds you to take it), or	1
	are you completely unable to take prescribed drugs without help?	0
Can you get to places beyond walking distance	without help,	2
	with some help, or	1
	are you completely unable to travel unless special arrangements are made?	0
Can you go shopping for groceries	without help,	2
	with some help, or	1
	are you completely unable to do any shopping?	0
Can you manage your own money	without help,	2
	with some help, or	1
	are you completely unable to manage money?	0
Can you use the telephone	without help,	2
	with some help, or	1
	are you completely unable to use the telephone?	0

* Some questions may be sex-specific and can be modified by the interviewer.

†The maximum score is 16, although scores have meaning only for a particular patient (eg, declining scores over time reveal deterioration).

Adapted with permission from M Powell Lawton, PhD, Director of Research, Philadelphia Geriatric Center, Philadelphia.

**Patients living at home
impaired in one or more
BADLs function: 10%**

**Patients living at home
impaired in one or more IADLs
function: 50%**

Mercoledì 18 agosto 1999
ore 15.34

“Caterina cammina!!!”

Il problema del self-report

Il problema della sensibilità

A third domain of functional assessment is mobility, also referred to as lower limb functioning (gait and balance).

(Tinetti Balance and Gait scale. 1986)

SCALA DI VALUTAZIONE DELL'EQUILIBRIO E DELL'ANDATURA

A) EQUILIBRIO.

Il soggetto è seduto su una sedia rigida, senza braccioli. Se il soggetto non sta in equilibrio il punteggio è 0.

1) Equilibrio da seduto	-si inclina o scivola dalla sedia	0
	-è stabile, sicuro	1
2) Alzarsi dalla sedia	-è incapace senza aiuto	0
	-deve aiutarsi con le braccia	1
	-si alza senza aiutarsi con le braccia	2
3) Tentativo di alzarsi	-incapace senza aiuto	0
	-capace, ma richiede più di un tentativo	1
	-capace al primo tentativo	2
4) Equilibrio stazione eretta (primi 5sec.)	-instabile (vacilla, marcate oscillazioni tronco)	0
	-stabile grazie all'uso del bastone o altri ausili	1
	-stabile senza ausili per il cammino	2
5) Equilibrio stazione eretta prolungata	-instabile (vacilla, marcate oscillazioni tronco)	0
	-stabile, ma a base larga (malleoli mediali distano >10cm)	1
	-stabile a base stretta senza supporti	2
6) Romberg	-instabile	0
	-stabile	1
7) Romberg sensibilizzato	-incomincia a cadere	0
	-oscilla, ma si ripiglia da solo	1
	-stabile	2
8) Girarsi di 360°	-a passi discontinui	0
	-a passi continui	1
	-instabile (si aggrappa, oscilla)	0
	-stabile	1
9) Sedersi	-insicuro (sbaglia la distanza, cade sulla sedia)	0
	-usa le braccia o ha un movimento discontinuo	1
	-sicuro, movimento continuo	2

non eseguibile ____

____/16

B) ANDATURA. Il paziente sta in piedi di fronte al rater; cammina lungo il corridoio o attraverso la stanza, all'inizio con il suo passo usuale, poi con un passo rapido, ma sicuro. Può usare gli abituali ausili per il cammino. Se il soggetto non deambula il punteggio è 0.

10) Inizio della deambulazione (immediatamente dopo il via)			
-una certa esitazione o più tentativi	0	-nessuna esitazione	1
11) Lunghezza ed altezza del passo			
Piede dx		Piede sx	
-durante il passo il piede dx non supera il sx	0	-durante il passo il piede sx non supera il dx	0
-il piede dx supera il sx	1	-il piede sx supera il dx	1
-il piede dx non si alza complet. dal pavimento	0	-il piede sx non si alza complet. dal pavimento	0
-il piede dx si alza complet. dal pavimento	1	-il piede sx si alza complet. dal pavimento	1
12) Simmetria del passo			
-il passo dx e sx non sembrano uguali	0	-il passo dx e sx sembrano uguali	1
13) Continuità del passo			
-interrotto o discontinuo	0	-continuo	1
14) Traiettorie			
-marcata deviazione	0		
-lieve e moderata o uso di ausilio	1		
-assenza di deviazione e di uso di ausili	2		
15) Tronco			
-marcata oscillazione o uso di ausili	0		
-non oscillazione, ma flessione delle ginocchia, della schiena o allargamento delle braccia durante il cammino	1		
-non oscillazione, flessione, uso delle braccia o ausili	2		
16) Cammino			
-i talloni sono separati	0	-i talloni quasi si toccano durante il cammino	1
non eseguibile ____		____/12	

A hierarchical exercise scale to measure function at the Advanced Activities of Daily Living (AADL) level.

Reuben DB, Laliberte L, Hiris J, Mor V
Jags, 1990; 38:855-861

Standard functional assessment instruments often fail to capture subtle impairment in community-dwelling older persons.

To create a scale to measure function at the Advanced Activities of Daily Living (AADL) level, we chose three questions to separate a community sample into four levels: frequent vigorous exercisers (8.0%), frequent long walkers (10.8%), frequent short walkers (23.7%), and nonexercisers (57.5%).

These levels of exercise formed a hierarchical scale that correlated positively in a graduated manner with progressively advanced social activities of daily living, current health status, and mental health. At 1-year follow-up, 20% of persons declined in exercise level, 63% showed no change in exercise level, and 17% improved their exercise level. Changes in exercise level in both directions were associated with changes in mental health status.

The Advanced Activities of Daily Living scale may be a sensitive measure of earlier functional decline, but longer follow-up will be necessary to determine its clinical usefulness.

An objective measure of physical function of elderly outpatients.

The Physical Performance Test.

Reuben DB, Siu AL.

Jags, 1990; 38:1105-1112

Direct observation of physical function has the advantage of providing an objective, quantifiable measure of functional capabilities. We have developed the Physical Performance Test (PPT), which assesses multiple domains of physical function using observed performance of tasks that simulate activities of daily living of various degrees of difficulty. Two versions are presented: a nine-item scale that includes writing a sentence, simulated eating, turning 360 degrees, putting on and removing a jacket, lifting a book and putting it on a shelf, picking up a penny from the floor, a 50-foot walk test, and climbing stairs (scored as two items); and a seven-item scale that does not include stairs. The PPT can be completed in less than 10 minutes and requires only a few simple props. We then tested the validity of PPT using 183 subjects (mean age, 79 years) in six settings including four clinical practices (one of Parkinson's disease patients), a board-and-care home, and a senior citizens' apartment. The PPT was reliable (Cronbach's alpha = 0.87 and 0.79, interrater reliability = 0.99 and 0.93 for the nine-item and seven-item tests, respectively) and demonstrated concurrent validity with self-reported measures of physical function. Scores on the PPT for both scales were highly correlated (.50 to .80) with modified Rosow-Breslau, Instrumental and Basic Activities of Daily Living scales, and Tinetti gait score. Scores on the PPT were more moderately correlated with self-reported health status, cognitive status, and mental health (.24 to .47), and negatively with age (-.24 and -.18). Thus, the PPT also demonstrated construct validity. The PPT is a promising objective measurement of physical function, but its clinical and research value for screening, monitoring, and prediction will have to be determined.

PHYSICAL PERFORMANCE TEST

	sec.	score
1) Scrivere una frase "Il sole tramonta nel mare"	_____	_____
2) Alimentazione simulata	_____	_____
3) Sollevare un libro e metterlo su una mensola	_____	_____
4) Indossare e togliersi una giacca	_____	_____
5) Prendere una moneta dal pavimento	_____	_____
6) Ruotare su se stesso	_____	_____
7) Camminare per 15 m	_____	_____

punteggio _____/28

8) Salire le scale (una rampa)	_____	_____
9) Salire le scale (quattro rampe)	_____	_____

punteggio _____/36

Codifica

item 1-2-4

≤10sec. =4
10.5-15sec.=3
15.5-20sec.=2
>20sec. =1
incapace =0

item 3-5

≤2sec. = 4
2.5-4sec.= 3
4.5-6sec.= 2
>6sec. = 1
incapace = 0

item 6

discontinuo = 0
continuo = 2
instabile = 0
stabile = 2
incapace = 0

item 7

≤15 sec = 4
15.5-20sec = 3
20.5-25sec = 2
>25 sec = 1
incapace = 0

item 8

≤5 sec = 4
5.5-10 sec = 3
10.5-15sec = 2
>15 sec = 1
incapace = 0

item 9

4 rampe = 4
3 rampe = 3
2 rampe = 2
1 rampe = 1
incapace = 0

Physical Performance Test and Activities of Daily Living Scales in the assessment of health in elderly people

**Rozzini R., Frisoni GB., Bianchetti A., Zanetti O., Trabucchi M.
J Am Geriatr Soc, 1993; 41:1109-113.**

Functional status of 549 community-dwelling elderly subjects (Age and Aging, 1996)

	n	%
BADL (functions lost)		
Independent	401	73.0
Dependent in one function	67	12.2
Dependent in two or more functions	81	14.8
IADL (functions lost)		
Independent	262	47.7
Dependent in one function	116	21.1
Dependent in two or more functions	171	31.2
PPT (score)		
>20	257	46.9
11-20	195	35.5
<11	82	14.9
(Missing data)	15	2.7)

The prevalence of chronic conditions and their age and gender adjusted associations with BADL, IADL and PPT in multiple linear regression analysis (Age and Aging, 1996)

Independent variables	%	Dependent variables		
		BADL (B)	IADL (B)	PPT (B)
Heart diseases	33.2	0.02	0.09	-2.75***
Hypertension	36.2	0.04	0.05	-0.05
Anemia	8.9	0.00	-0.01	-2.26*
Diabetes mellitus	14.0	-0.07	-0.11	-0.89
COPD	21.7	0.08	0.24	-1.58*
Previous bone fractures	9.5	0.06	0.04	-1.83
Liver diseases	6.7	-0.04	-0.28	-0.46
Parkinsonism	2.2	0.47	0.13	-7.31***
Previous stroke	5.1	-0.04	0.14	-11.37***
Degenerative joint disease	62.5	0.11	0.09	-0.69
Poor hearing	14.9	0.42**	0.54	-3.00***
Poor vision	14.6	0.21	0.35	-6.88***
Depression	25.7	0.75***	1.11***	-1.55*
Cognitive deterioration	14.0	1.02***	2.19***	-2.91**
Cancer	4.0	0.16	0.21	-3.59*

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Multiple analysis of the relationship between BADL, IADL, and PPT and the chronic conditions which were found to be associated to disability after adjustment for age and gender (Age and Aging, 1996)

	B	SE B	Sig T
BADL			
Cognitive deterioration	0.85	0.14	0.000
Depression	0.63	0.11	0.000
Poor hearing	0.29	0.13	0.033
IADL			
Cognitive deterioration	2.03	0.19	0.000
Depression	0.87	0.15	0.000
PPT			
Previous stroke	-9.00	1.34	0.000
Poor vision	-5.53	0.86	0.000
Heart diseases	-2.34	0.62	0.000
Cognitive deterioration	-2.77	0.86	0.001
Parkinsonism	-5.40	1.97	0.006
Cancer	-3.34	1.53	0.021

Functional ability:

Comprehensive geriatric assessment begins with a review of the major categories of functional ability: activities of daily living (ADLs) and instrumental activities of daily living (IADLs).

ADLs are self-care activities that a person must perform every day (eg, eating, dressing, bathing, transferring between the bed and a chair, using the toilet, controlling bladder and bowel). Patients unable to perform these activities and obtain adequate nutrition usually require caregiver support 12 to 24 hours/day.

IADLs are activities that enable a person to live independently in a house or apartment (eg, preparing meals, performing housework, taking drugs, going on errands, managing finances, using a telephone).

Reliable instruments for measuring patients' abilities to perform ADLs and IADLs and for determining what kind of assistance may be needed include the Katz ADL Scale and the Lawton IADL Scale.

Deficits in ADLs and IADLs indicate a need for additional information about the patient's socioenvironmental situation. When elderly persons begin to need help performing these activities, their risk of becoming more dependent increases.

