SOCIETÀ ITALIANA GERONTOLOGIA E GERIATRIA

CONGRESSO NAZIONALE

8° Corso Multiprofessionale di Nursing

Le nuove sfide dell'assistenza

52° Firenze, Palazzo dei Congressi

28 novembre - 2 dicembre 2007

Paese vecchio, assistenza nuova: il caso Italia

# La VMD come strumento di ricerca infermieristica


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Antonello De Santis

Centro di Medicina dell'Invecchiamento

Università Cattolica del Sacro Cuore, Roma

# Mission RSA Fontecchio


BENVENUTI A
FONTECCHIO

# *Il paziente "moderno"*
# *(o… il paziente geriatrico attuale)*

**FRAGILITA'**

- **Comorbidità**
- **Politerapia**
- **Stato funzionale**
  - Stato cognitivo
  - Funzione fisica
  - Tono dell'Umore
- **Stato sociale**
- **Incontinenza**
- **Malnutrizione**
- **Cadute**
- **Anemia/Osteoporosi/Sarcopenia**

**Con quale modello assistenziale**

**Con quale metodologia**

# ASSISTENZA

ad oggi quasi 1500 ricoveri (tra cui anche una bambina di 6 mesi)

# FORMAZIONE

aggiornamento professionale continuo con corsi ECM per tutti gli operatori

# RICERCA

- trial NGF
- sperimentazione farmaco
- trial EGF
- database VAOR-RSA
- *i.l.*SIRENTE Study

# RUOLO DELL'INFERMIERE NELLA RICERCA

## Vienna declaration on nursing in support of the european targets for health

Conferenza europea sulla professione infermieristica

Vienna, Austria 21-24 giugno 1988

**Art 6 "dovrebbe essere incoraggiata la ricerca per migliorare la pratica professionale seguendo queste indicazioni mediante l'adozione di attività di ricerca e di supporto finanziario. La ricerca utilizzare in modo efficiente le risorse umane ed assicurare la valutazione e l'utilizzo dei risultati. Nel processo di ricerca dovrebbe essere coinvolto il personale infermieristico.**

## Obiettivi del corso di laurea infermieristico inerenti alla ricerca

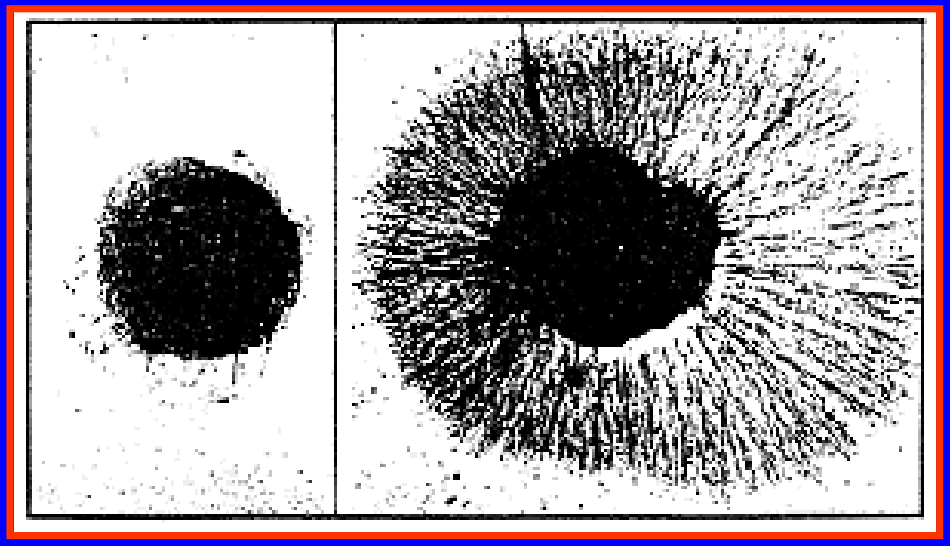
- **Identificare specifici problemi e aree di ricerca nell'ambito di competenza**
- **Realizzare ricerche in collaborazione con equipe multidisciplinari**
- **Interpretare ed applicare i risultati di ricerca nella pratica assistenziale**

# Nerve Growth Factor actions on skin

## Nerve Growth Factor

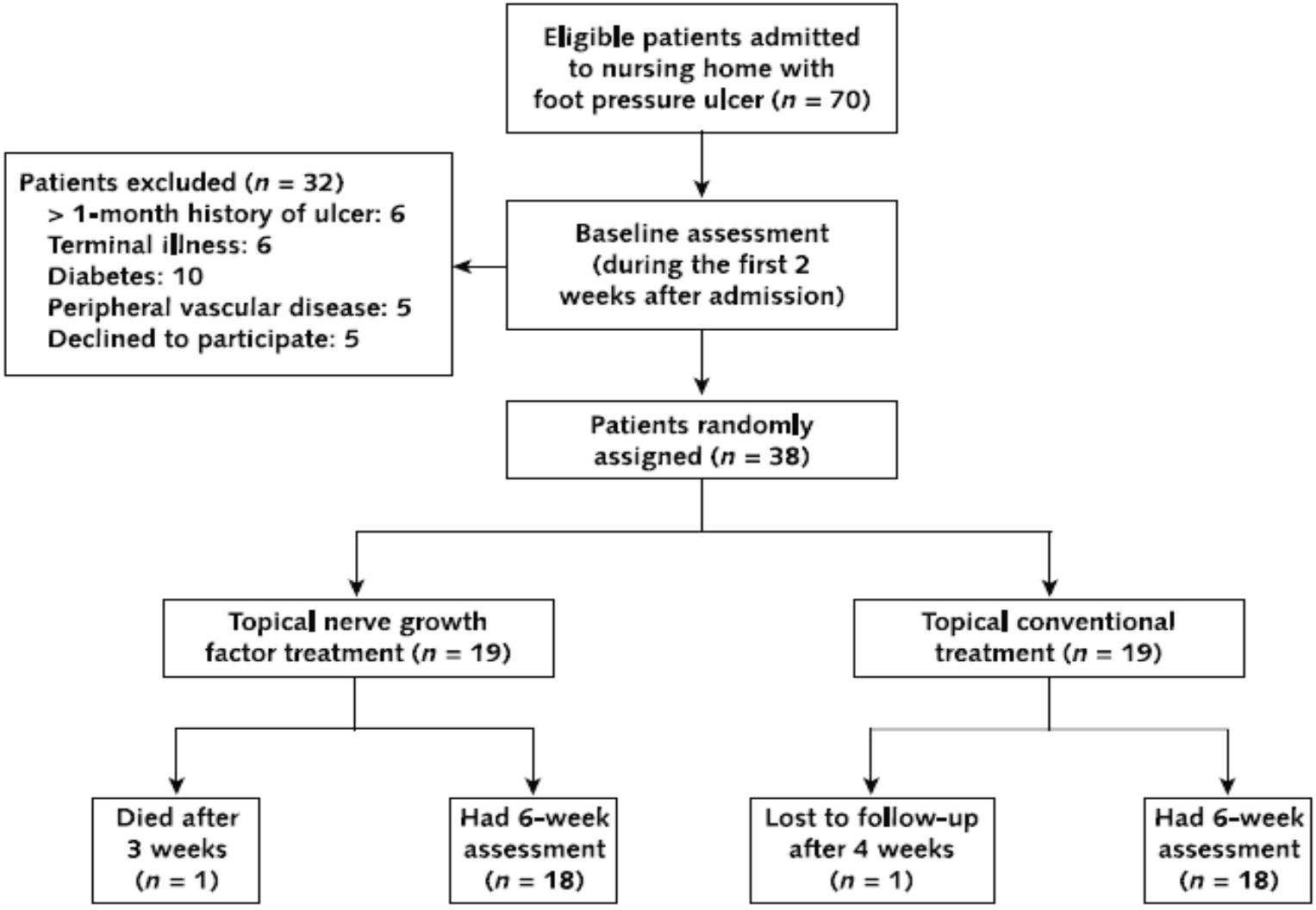
- Fibriblasts migration
- Keratinocytes proliferation
- Vascular neo-angiogenesis
- Neurogenic inflammation

# NERVE GROWTH FACTOR
# a milestone in the modern biology

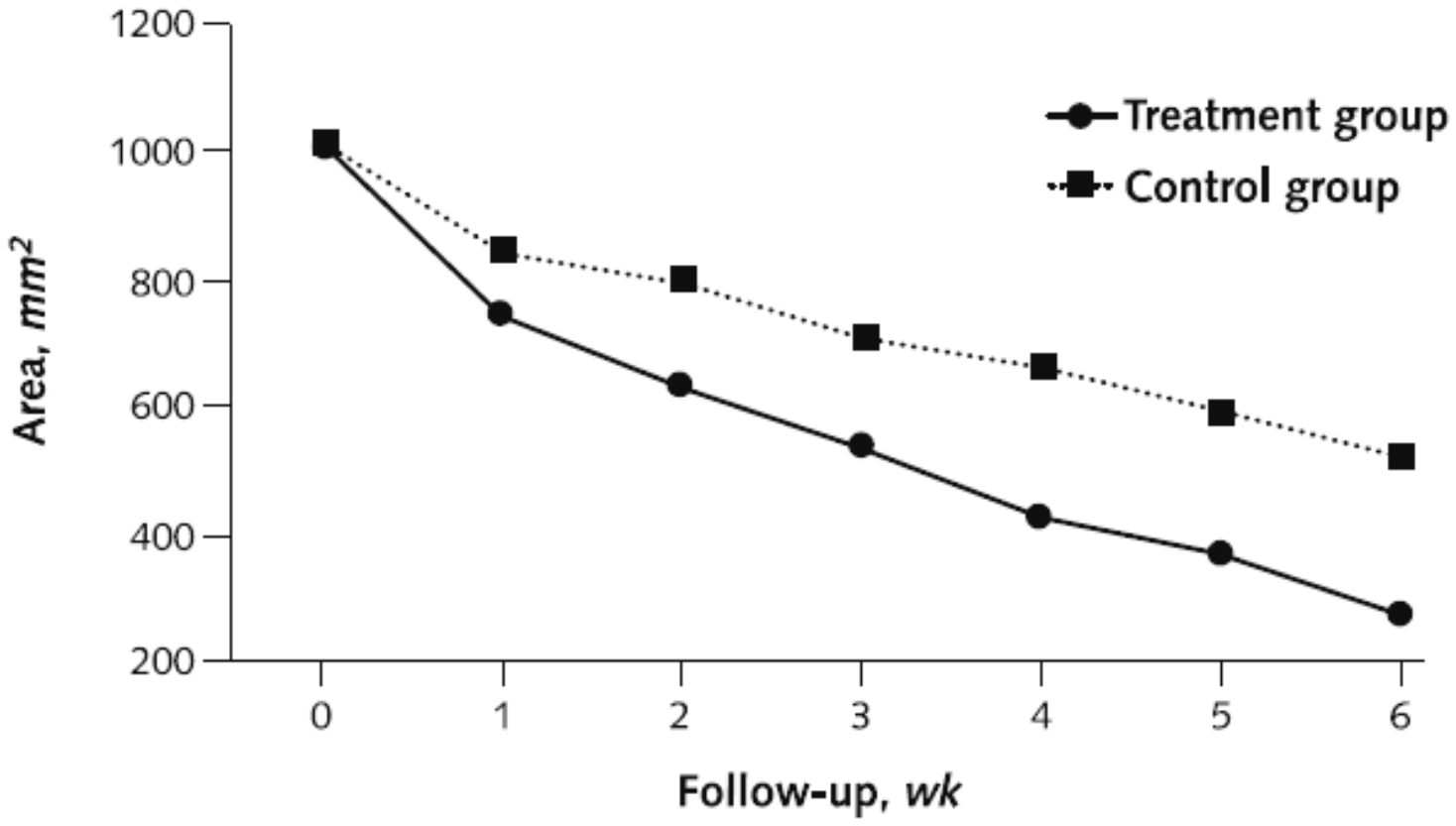


***Un ganglio sensoriale dissezionato da un embrione di pollo viene coltivato alla presenza di NGF. Nella foto a sinistra il ganglio di controllo. Nella foto a destra, il preparato dopo ventiquattro ore di coltura: si può notare un'enorme crescita delle fibre nervose.***
In "Scientific American", 1979, p. 48.

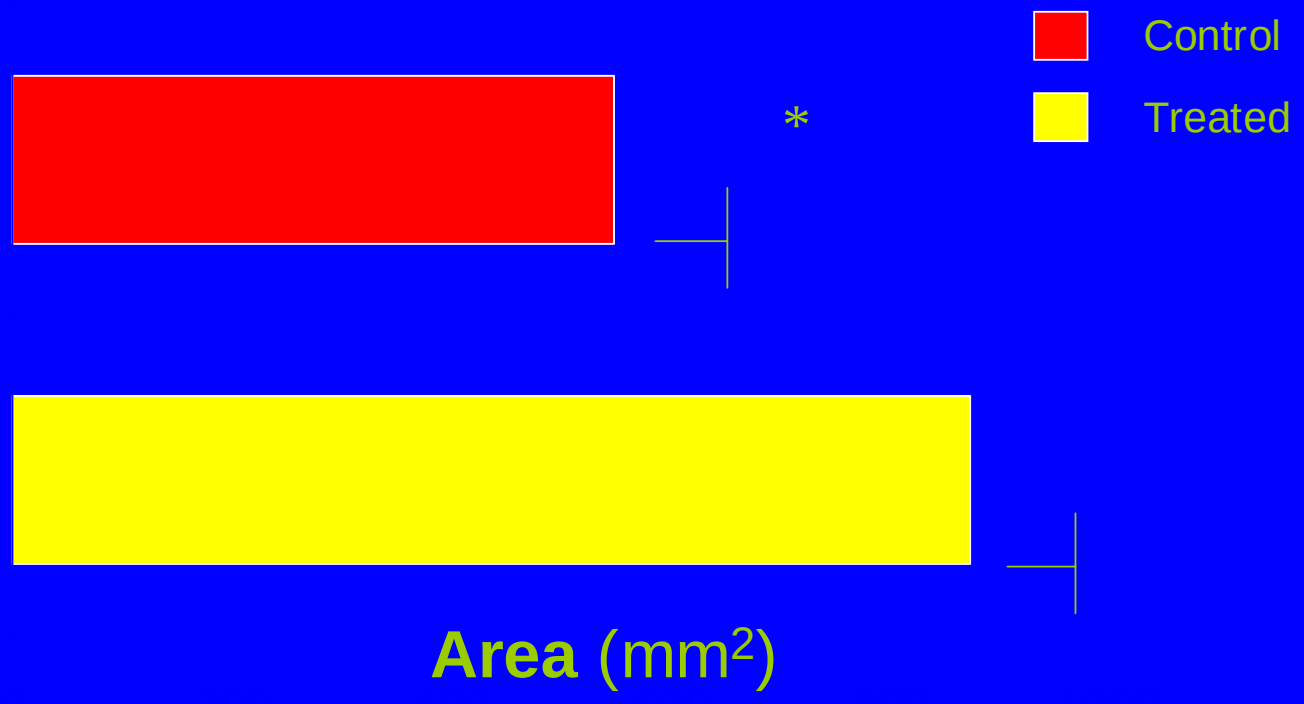
# Trial Profile



# Unadjusted means of pressure ulcer area over 6-week follow-up in the treatment and control groups.

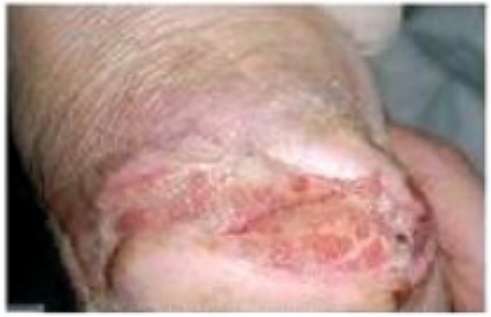


# Mean reduction in pressure sores area

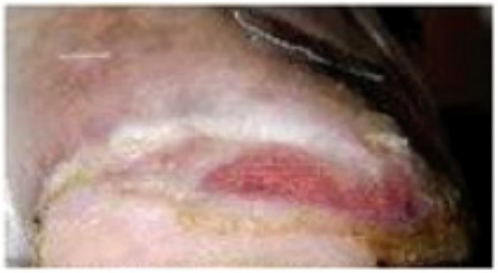



* *p vs. treated < 0.001*

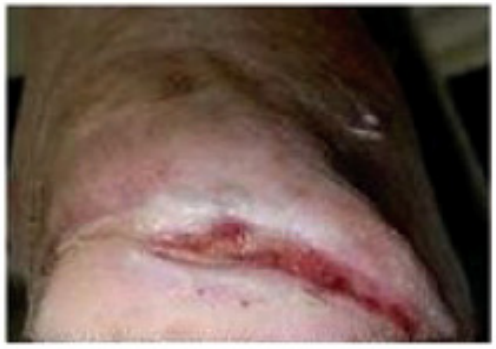
# The heel of a patient with a pressure ulcer (patient 5) before, during, and after treatment with nerve growth factor



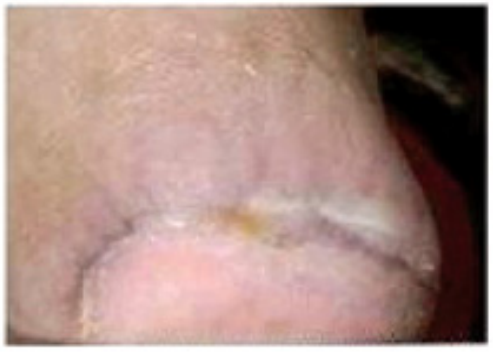
Baseline



Week 2



Week 4



Week 6

# Topical Treatment of Pressure Ulcers with Nerve Growth Factor

## A Randomized Clinical Trial

Francesco Landi, MD, PhD; Luigi Aloe, MD; Andrea Russo, MD; Matteo Cesari, MD; Graziano Onder, MD; Stefano Bonini, MD; Pier Ugo Carbonin, MD; and Roberto Bernabei, MD

**Annals of Internal Medicine**
*Established in 1927 by the American College of Physicians*

*2003, Volume 139, Page 635-41*

Background: The prevalence of pressure ulcers of the foot is a major health care problem in frail elderly patients. A pressure sore dramatically increases the cost of medical and nursing care, and effective treatment has always been an essential nursing concern. Management options for pressure ulcers include local wound care; surgical repair; and, more recently, topical application of growth factors.

Objective: To examine the effects of topical treatment with nerve growth factor in patients with severe, noninfected pressure ulcers of the foot.

Design: Randomized, double-blind, placebo-controlled trial.

Setting: Teaching nursing home of Catholic University of the Sacred Heart, Italy.

Patients: 36 persons with pressure ulcers of the foot.

Intervention: 18 patients received nerve growth factor treatment, and 18 patients received only conventional topical treatment.

Measurements: The course of the ulcers during follow-up was evaluated by tracing the perimeter of the wound onto sterile, transparent block paper and determining the stage.

Results: At baseline, the treatment and control groups did not differ across demographic variables, clinical characteristics, and functional measures. The mean area (±SD) of the ulcers was $1012 \pm 633$ mm$^2$ in the treatment group and $1012 \pm 655$ mm$^2$ in the control group ($P > 0.2$). The average reduction in pressure ulcer area at 6 weeks was statistically significantly greater in the treatment group than in the control group ($738 \pm 393$ mm$^2$ vs. $485 \pm 384$ mm$^2$; $P = 0.034$).

Conclusion: Topical application of nerve growth factor may be an effective therapy for patients with severe pressure ulcers.

*Ann Intern Med.* 2003;139:635-641. www.annals.org

For author affiliations, see end of text.

See editorial comment on pp 694-695.

**Annals of Internal Medicine**
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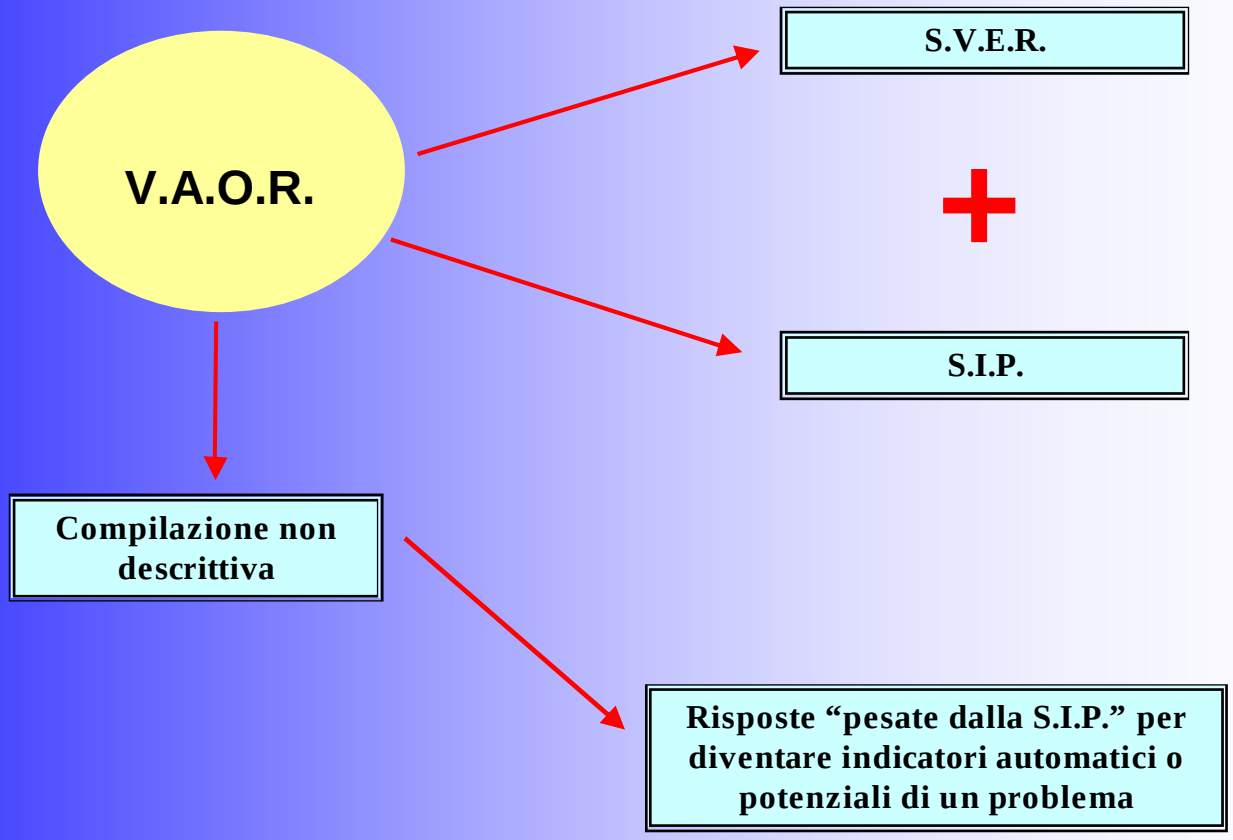
From Catholic University of the Sacred Heart, Rome, Italy; Teaching Nursing Home, Santa Maria della Pace, Catholic University of the Sacred Heart, Fontecchio, Italy; Institute of Neurobiology and Molecular Medicine, National Research Council, Rome, Italy; J. Paul Sticht Center on Aging and Rehabilitation, Wake Forest University–Baptist Medical Center, Winston-Salem, North Carolina; and Bietti Foundation, Campus Biomedico University, Rome, Italy.

**Acknowledgments:** The authors thank Professor Rita Levi-Montalcini for her encouragement in the realization of the study. They also thank S. Torre, MD; A. De Santis, HN; and all of the nursing home staff of Opera Santa Maria della Pace, Teaching Nursing Home of Fontecchio, for their contribution to the study protocol.

# IL COMUNE DENOMINATORE DEI TRE PUNTI PRECEDENTI È LA VMD DI SECONDA GENERAZIONE



# RIUNIONE D’ EQUIPE

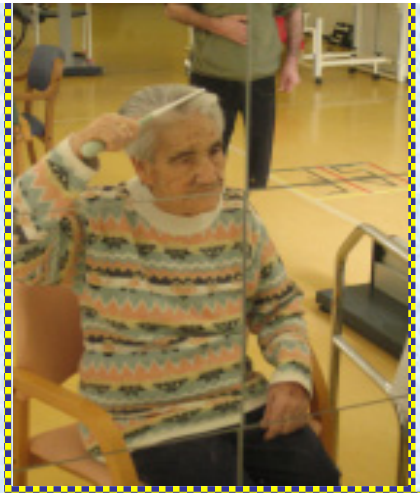
# PAI

***8.2 PIANO DI ASSISTENZA INDIVIDUALIZZATA DELL'OSPITE:*** ***Valutazione nr. 1***

***Sig. D.G. A.*** **Data 25.03.2007**

| AREA PROBLEMATICA | OBIETTIVO | INTERVENTO DI: | VERIFICA | CONTROLLO QUALITA' data _____ |
|---|---|---|---|---|
| CAPACITA' FISICA /ATT. VITA QUOTIDIANA(TRASFERIMENTI DEAMBULAZIONE) | - ORTOSTASI e DEAMBULAZIONE ASSISTITA (deambulatori) | F.T | 60 gg | OBIETTIVO ORTOSTASI e DEAMBULAZIONE RAGGIUNTO. NON ULTERIORI OBIETTIVI DA RAGGIUNGERE |
| VESTIRSI | - AUTONOMIA COMPLETA CON AUSILI | T.O. | 60 gg | AUTONOMIA RAGGIUNTA MA NECESSITA DI AIUTO NELLA ORGANIZZAZIONE |
| IGIENE PERSONALE | - AUTONOMIA NELLA GESTIONE DELLA PARTE SUPERIORE DEL CORPO | T.O. | 60 gg | RAGGIUNTA MA CON AIUTO NELLA ORGANIZZAZIONE |
| | | | | |
| DEFICIT COGNITIVO/DEPRESSIVO DETERIORAMENTO COGNITIVO | VALUTAZIONE E TRATTAMENTO | MEDICO T.O. (REALITY ORIENTATION THERAPY) ATTIVITA' DI GRUPPO | 60 gg | CORRETTA VALLUTAZIONE DEL PROBLEMA PROSECUZIONE DELLE ATTIVITA' INTRAPRESE |
| CONDIZIONI DELLA CUTE / PIAGA DA DECUBITO | - MEDICAZIONE QUOTIDIANA - REDIGERE PROTOCOLLO STANDARDIZZATO - GUARIGIONE | I.P. – MEDICO | 60 gg | OBIETTIVO RAGIUNTO |
| DOLORE | VALUTAZIONE E REMISSIONE DELLA SINTOMATOLOGIA | MEDICO – F.T. | 60 gg | OBIETTIVO RAGGIUNTO |









# Fontecchio, 8 Maggio 1999

UNIVERSITÀ CATTOLICA DEL SACRO CUORE
FACOLTÀ DI MEDICINA E CHIRURGIA "A. GEMELLI" - ROMA

RESIDENZA SANITARIA ASSISTENZIALE SANTA MARIA DELLA PACE
FONTECCHIO (AQ)

**1999 - O.M.S.**
**ANNO DELL'ANZIANO**

***MODELLI INTEGRATI DI ASSISTENZA CONTINUATIVA PER L'ANZIANO***


7 - 8 Maggio 1999

**Incontro - Dibattito**

**L'INTEGRAZIONE TRA R.S.A. E TERRITORIO**

***Aula Magna***

10,40 Saluto dell'On. Emilio Colombo, Presidente dell'Istituto di Studi Superiori G. Toniolo e dell'Opera S. Maria della Pace

Moderatori:
A. Cicchetti, predetto

Prof. G. Taglieri, Ordinario di Gerontologia e Geriatria, Università de L'Aquila

10,50 *Funzione della R.S.A. all'interno della rete integrata dei servizi*
Prof. P. Carbonin, predetto, Dr. F. Landi, Centro di Medicina dell'Invecchiamento Università Cattolica del Sacro Cuore

11,10 *Le unità speciali nelle RSA*
Prof. G. Abate, predetto

11,30 *Il Ruolo dell'I.N.R.C.A. nell'Assistenza socio sanitaria per l'Anziano*
On. A. De Matteo, Vice Commissario Istituto Nazionale Ricovero e Cura per gli Anziani

# LA PREVEDIBILITA' DELLA DURATA DELLA VITA

GENOMA
GENI "PROTETTORI

FRAGILITA'
AMBIENTALE

Influenza genoma ≈ 25%

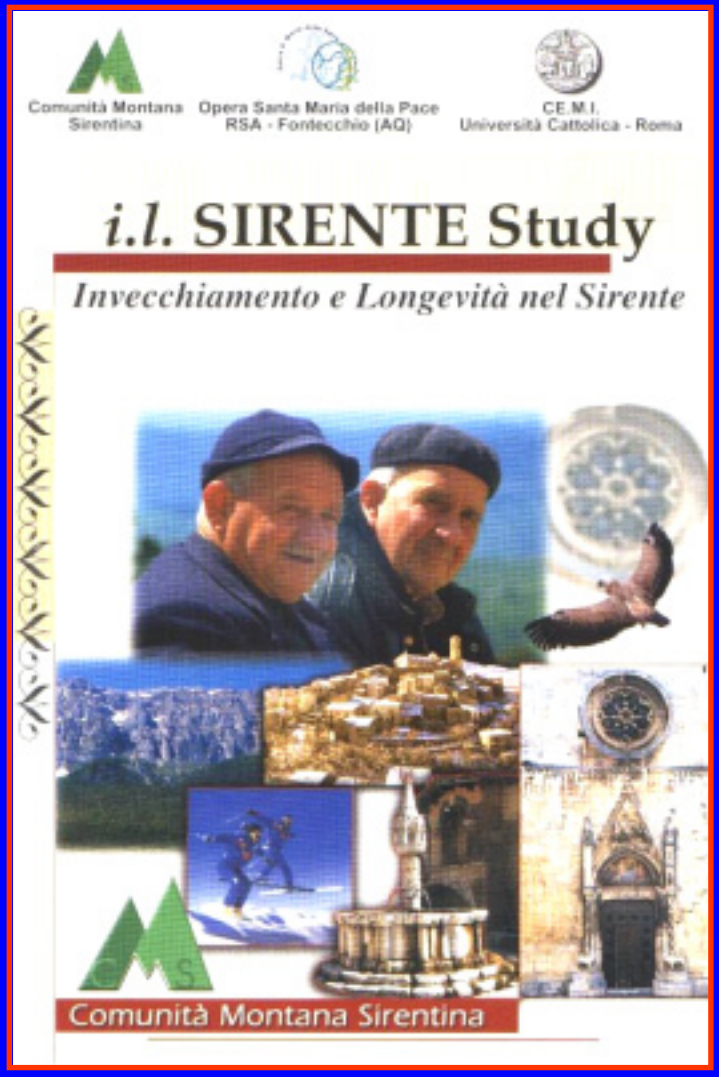
Mutazioni stocastiche

?

Modificazioni
ambiente e società
Aderenza soggetto

MUTAZIONI
SENESCENZA

STILI DI VITA



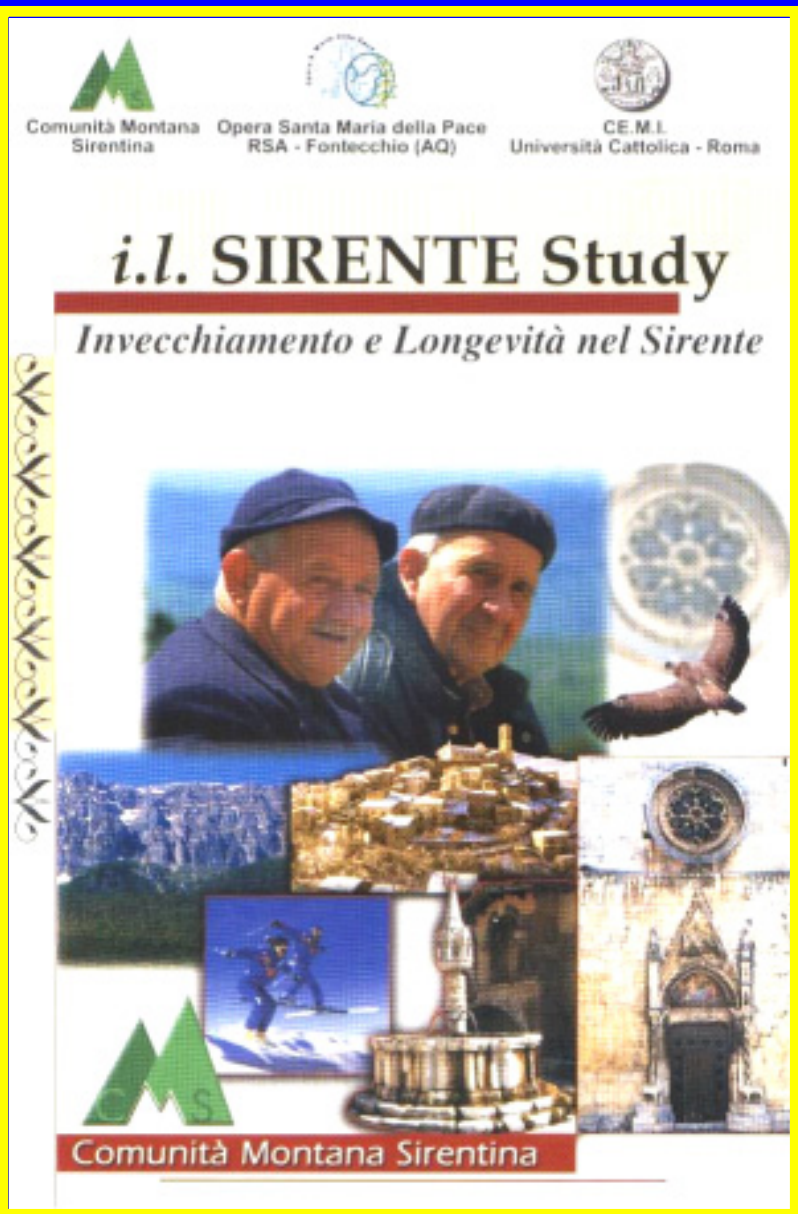

**Fontecchio 26 Giugno 2007**

## Gestione Risorse Socio-Sanitarie nella Comunità Montana Sirentina

# Il Sirente: una risorsa per la ricerca in geriatria

**Dott. Andrea RUSSO**

Istituto di Medicina interna e Geriatria – Centro Medicina dell'Invecchiamento
Università Cattolica del Sacro Cuore, Roma




# 364 ultra-ottantenni nati e residenti nella Comunità Montana Sirentina


**Stato attuale:**

- trasversale completato
- maggio 2007 fine follow-up
- disponibilità di plasma, siero e sangue intero
- attivate collaborazioni interne ed esterne

# NUOVE CONOSCENZE/INFORMAZIONI CHE IL PROGETTO SI PREFIGGE DI PRODURRE

1. Costruzione di un sistema di valutazione - “assessment” degli anziani fragili -→ VAOR-ADI
2. Sistema di archiviazione dei dati.
3. Capire e di ampliare le conoscenze rispetto all’invecchiamento
4. Identificare possibili interventi al fine di combatterne le conseguenze (in particolare, disabilità e non-autosufficienza).
5. Programmazione socio-sanitaria (costruzione di nuovi servizi, interventi sulla struttura sociale e sull’ambiente che possano migliorare la salute degli anziani).
6. L’utilizzazione di questo tipo di popolazioni viene considerata una efficace soluzione ai problemi posti dallo studio delle basi biologiche che determinano l’invecchiamento di successo.

Comunità Montana Sirentina | Opera Santa Maria della Pace RSA - Fontecchio (AQ) | CE.M.I. Università Cattolica - Roma

# *i.l.* SIRENTE Study

*Invecchiamento e Longevità nel Sirente*


Fig. 1 - *Location of Sirente Mountain Community in Central Italy (Abruzzo Region) comprising thirteen municipalities; numbers of men and women enrolled in study are shown for each town.*

# SEZIONE B. STATO COGNITIVO

| | | | |
|---|---|---|---|
| 1 | **MEMORIA/ CAPACITA' DI RICORDARE** | ***(Codifica per la capacità di ricordare ciò che ha appreso)***<br>**0.**Memoria OK **1.**Problemi di memoria | |
| | | **A .** Memoria a breve termine OK- sembra ricordare dopo 5 minuti<br>**B**. Memoria procedurale OK-può eseguire tutti o gran parte degli steps in ordine senza suggerimenti | |
| 2 | **CAPACITA' DI PRENDERE LE DECISIONI QUOTIDIANE** | **A**. Come il cliente prende decisioni circa l'organizzazione della giornata (p. es., quando alzarsi o mangiare, cosa indossare o cosa fare)<br>**0**. *INDIPENDENTE*-decisioni sempre ragionevoli<br>1. *COMPROMISSIONE LIEVE*-**qualche** difficoltà in situazioni nuove<br>**2.** *COMPROMISSIONE MINIMA*-in specifiche situazioni, decisioni inadeguate; richiesti suggerimenti/supervisione in tali occasioni<br>**3.** *COMPROMISSIONE MODERATA*-decisioni scarse; richiesti suggerimenti/supervisione in tutte le occasioni<br>**4**. *COMPROMISSIONE SEVERA*-mai/raramente prende decisioni<br>**B** Peggioramento della capacità di prendere decisioni rispetto a 90 GIORNI PRIMA (o dalla data dell'ultima valutazione se inferiore a 90 giorni)<br>**0.**No **1.**Si | |
| 3 | **INDICATORI DI EPISODIO CONFUSIONAE ACUTO** | **A** Improvviso o recente cambiamento della funzione mentale NEGLI ULTIMI 7 GIORNI (inclusa capacità attentiva, consapevolezza dell'ambiente, essere coerente, fluttuazioni imprevedibili durante la giornata)<br>**0**.No **1**.Si<br>**B** .Negli ULTIMI 90 GIORNI (o dalla data dell'ultima valutazione se inferiore a 90 giorni) il cliente è divenuto agitato o così disorientato tanto che la sua sicurezza è messa in pericolo o richiede protezione<br>**0**.No **1**.Si | |

## SEZIONE H.FUNZIONE FISICA:
## •AUTONOMIA NELLE IADL NEGLI ULTIMI 7 GIORNI
## •AUTONOMIA NELLE ADL NEGLI ULTIMI 3 GIORNI

**1**

**Autonomia nelle IADL-** codificare per la funzione del cliente nelle attività consuete in casa o al di fuori durante gli **ultimi 7 giorni**, p.es, preparazione dei pasti, spesa, ecc.Codificare si (A) che (B) per gli item a-g.

(A) CODICI PER L'AUTONOMIA NELLE IADL-(codificare per l'autonomia durante gli ultimi 7 giorni)

0.*INDIPENDENTE*-Io ha fatto da solo
**1**.*QUALCHE AIUTO*-Aiutato qualche volta
**2.***AIUTO COMPLETO*-Compiuto con aiuto tutte le volte
**3**.*DA ALTRI*-Eseguito da altri
**8**.*ATTIVITA' NON ESEGUITA*

| (A) CODICI PER LA DIFFICOLTÀ NELLE IADL. Quanto è (o sarebbe difficile per il cliente svolgere il compito da solo)<br>**0**.*NESSUNA DIFFICOLTA'*<br>**1**.*QUALCHE DIFFICOLTA'*-p.es., richiede qualche aiuto, è molto lento o si stanca<br>***2.****GRANDE DIFFICOLTA'*-p.es., nessuno/scarso coinvolgimento nelle attività | **(A) (B)**<br>**Autonomia** | **Difficoltà** |
|---|---|---|
| **a.PREPARAZIONE DEI PASTI**-Come prepara i pasti (p.es, programmare i pasti, cuocere, preparare il cibo, usare gli utensili) | | |
| **b.LAVORI DOMESTICI USUALI**-Come compie i lavori domestici usuali in casa (p.es, lavare i piatti, spolverare, rifare il letto, mettere in ordine, fare il bucato) | | |
| **c.USO DEL DENARO**-Come paga i conti, gestisce il libretto degli assegni, tiene le spese di casa | | |
| **d.GESTIONE DEI FARMACI**-Come gestisce i farmaci (p.es, ricordarsi di prendere le pillole, aprire i flaconi, prendere le dosi giuste, fare le iniezioni, applicare pomate) | | |
| **e.USO DEL TELEFONO**-Come fa o riceve telefonate (se necessario con ausili come grandi numeri sulla tastiera, amplificatore acustico) | | |
| **f.FARE LA SPESA**-Come fa la spesa per il vitto e le cose di casa (p.es, scelta delle cose, uso dei soldi) | | |
| **g.USO DEI TRASPORTI**-Come il cliente si sposta con i mezzi (p.es, va in luoghi non raggiungibili a piedi) | | |

**2**

**AUTONOMIA NELLE ADL**-La sezione seguente descrive la funzione fisica del cliente nelle abituali attività personali della vita quotidiana, per esempio, vestirsi, mangiare, ecc durante gli **ULTIMI 3 GIORNI, considerando tutti gli episodi di queste attività.** Per i clienti che abbiano svolto l'attività autonomamente, assicurarsi di determinare e registrare se altri abbiano incoraggiato l'attività o siano stati presenti per supervisionare o controllare l'attività *(Nota-per l'uso della vasca, codificare per l'episodio a maggior dipendenza negli* ***ULTIMI 7 GIORNI)***

0.***INDIPENDENTE***-Nessun aiuto o supervisione-OPPURE-Aiuto/supervisione prestati solo uno o due volte (per qualsiasi attività)
**1.*SEMPLICE AIUTO***-Mezzo o dispositivo fornito o messo a portata del cliente 3 o più volte
**2.*SUPERVISIONE***-Controllo, incoraggiamento o suggerimenti prestati 3 o più volte durante gli ultimi 3 giorni-OPPURE-supervisione (1 o più volte) più assistenza fisica data solo 1 o 2 volte (per un totale di 3 o più episodi di aiuto o supervisione)
3.***ASSISTENZA LIMITATA***-Cliente molto attivo; ha ricevuto aiuto fisico nella manovra guidata degli arti o altra assistenza che non implichi il sollevamento in 3 o più occasioni-OPPURE-combinazione del sollevamento del peso corporeo con aiuto fornito solo 1 o 2 volte durante il periodo (per un totale di 3 o più episodi di aiuto fisico)

**4.*ASSISTENZA INTENSIVA*-Il** cliente eseguiva parte dell'attività (50% o più dei compiti), ma ha richiesto aiuto del/i seguente/i tipo/i **3 o più volte**:
--Aiuto nel sollevarsi-OPPURE-
--Aiuto completo da parte di un altro durante parte (ma non tutti) gli ultimi 3 giorni
**5.*MASSIMA ASSISTENZA***-Il cliente ha svolto e portato a termine meno del 50% dei propri compiti (compresa l'assistenza fisica di 2 o più persone), ha richiesto aiuto nel sollevamento del peso corporeo o aiuto completo in alcuni compiti 3 o più volte
**6.*DIPENDENZA TOTALE***-Aiuto completo da parte di un altro
**8.*ATTIVITA' MAI ESEGUITA*** (indipendentemente dalle capacità)

| | |
|---|---|
| **a.MOBILITA' A LETTO**-Compreso sdraiarsi ed alzarsi, girarsi da un lato all'altro, assumere posizioni nel letto | |
| **b.TRASFERIMENTO**-Compreso spostarsi tra due punti-da/al letto,sedia, sedia a rotelle, in piedi [*Nota-Escluso da/a bagno/W.C.]* | |
| **c.SPOSTAMENTI IN CASA**-[Nota-Se in sedia a rotelle, codificare il livello di autosufficienza quando seduto] | |
| **d.SPOSTAMENTI FUORI CASA**-[ Nota-Se in sedia a rotelle, codificare il livello di autosufficienza quando seduto] | |
| **e.VESTIRE LA PARTE SUPERIORE DEL CORPO**-Come il cliente indossa e toglie **(vestiti, biancheria)** dalla vita in su. Compresi protesi, apparecchi ortopedici, abbottonatura, maglioni, ecc. | |
| **f.VESTIRE LA PARTE INFERIORE DEL CORPO**-Come il cliente indossa e toglie **(vestiti, biancheria)** dalla vita in giù. Compresi protesi, apparecchi ortopedici, cinture, pantaloni, gonne, scarpe e abbottonatura | |
| **g.MANGIARE**-Compreso alimentarsi in qualunque modo, sondino naso-gastrico incluso | |
| **h.USO DEL W.C.**-Compreso l'uso del bagno o della comoda, della padella, del pappagallo, come si siede e si alza dal W.C., come si pulisce dopo, cambia il pannolone, maneggia dispositivi speciali (colostomia o catetere), si sistema i vestiti | |
| **i.IGIENE PERSONALE**-Compreso pettinarsi i capelli, pulirsi i denti, farsi la barba, truccarsi, lavarsi/asciugarsi faccia e mani, farsi il bidet (ESCLUSO bagno e doccia) | |
| **j.USO DELLA VASCA**-come il cliente fa il bagno/doccia o spugnature (ESCLUDERE il lavaggio di schiena e capelli). Comprende come ogni parte del corpo viene lavata: braccia e gambe, torace, addome, regioni intime. ***Codificare per l'episodio di maggior dipendenza negli ULTIMI 7 GIORNI*** | |

# SEZIONE O. VALUTAZIONE DELL'AMBIENTE

| | | | |
|---|---|---|---|
| 1 | **AMBIENTE DOMESTICO**<br>**[Segnalare tutto ciò che rende l'ambiente domestico pericoloso o inabitabile (se no, segnare9**<br><br>***NESSUNO DEI PRECEDENTI;* se temporaneamente in istituto basare la valutazione sulla visita della casa)]** | Illuminazione alla sera (compresa illuminazione assente o insufficiente nel soggiorno, camera letto, cucina, bagno, corridoi)<br><br>Pavimento e tappeti (p.es., buchi nel pavimento, fili elettrici dove si cammina, tappeti sparsi)<br><br>Bagno e servizi igienici (p.es., W.C. non funzionante, tubi che perdono, assenza di corrimano seppure necessari, vasca scivolosa, bagno esterno)<br><br>Cucina (p.es., fornelli pericolosi, frigorifero rotto, infestazione di topi o scarafagi)<br><br>Riscaldamento e condizionamento (p.es., troppo caldo in estate, troppo freddo in inverno, stufa a legna in una casa con un asmatico)<br><br>Sicurezza personale (p.es., paura della violenza, problemi di sicurezza nell'andare alla posta o a trovare i vicini, traffico intenso nella strada)<br><br>Accesso a casa(p.es,difficoltà a entrare/uscire di casa)<br><br>Accesso alle stanze (p.es., incapace a fare le scale)<br><br>*NESSUNO DEI PRECEDENTI* | **a.**<br>**b.**<br>**c.**<br>**d.**<br>**e.**<br>**f.**<br>**g.**<br>**h.**<br>**i.** |
| 2 | **CONTESTO ABITATIVO** | **a.**In confronto agli **ULTIMI 90 GIORNI FA** ( o dalla data dell'ultima valutazione) il cliente adesso vive con altre persone-p.es., è andata a vivere da un'altra persona, un'altra persona si è trasferito da lui<br><br>0.No 1.Si<br>**b.**Il cliente o il supporto principale ritengono che sarebbe meglio se il cliente vivesse in un altro contesto<br><br>0.No 1.Cliente 2.Supporto 3.Cliente e supporto | |

# STILI, ABITUDINI E QUALITA' DI VITA

- Percezione soggettiva della salute
- Abitudini alimentari
- Consumo di alcolici
- Fumo di sigaretta
- Attività lavorative svolte in passato
- Condizioni economiche
- Attività sportive svolte in passato fino ad oggi




# "BALANCE TEST"

## Piedi Uniti

- ☐ 1. Si Rifiuta
- ☐ 2. Incapace di prendere e mantenere
- ☐ 3. Mantiene la posizione tra 2 e 9 sec
- ☐ 4 mantiene la posizione per 10 sec con oscillazione
- ☐ 5 mantiene la posizione per 10 sec senza oscillazioni

## “CHAIR STAND TEST”

La prova consiste nell’alzarsi dalla sedia senza usare le braccia che dovranno rimanere conserte per 5 ripetizione

- ☐ 1. Si rifiuta
- ☐ 2. Prove interrotte
- ☐ 3. Test completato

N° di prove completato ☐

Tempo impiegato ☐☐ ☐☐

# “4-m WALKING TEST”

La prova consiste nel percorrere 4 metri di corridoio prima, a passo abituale e poi veloce.

Tempo impiegato ☐☐☐☐

N° Passi ☐☐

# “FORZA MUSCOLARE ARTO SUPERIORE (KG)”

**HAND GRIP**

dx ☐ ☐

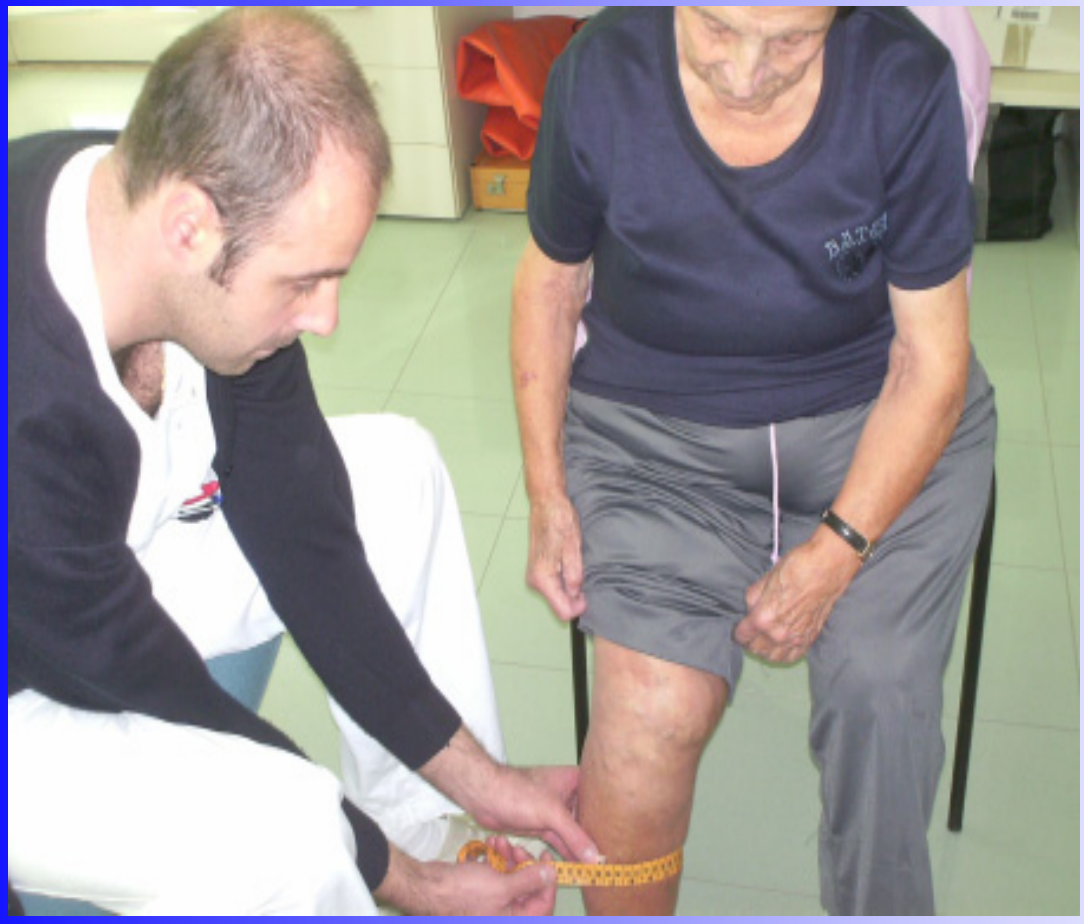
sn ☐ ☐

# “MISURE ANTROPOMETRICHE”

Plica Tricipitale

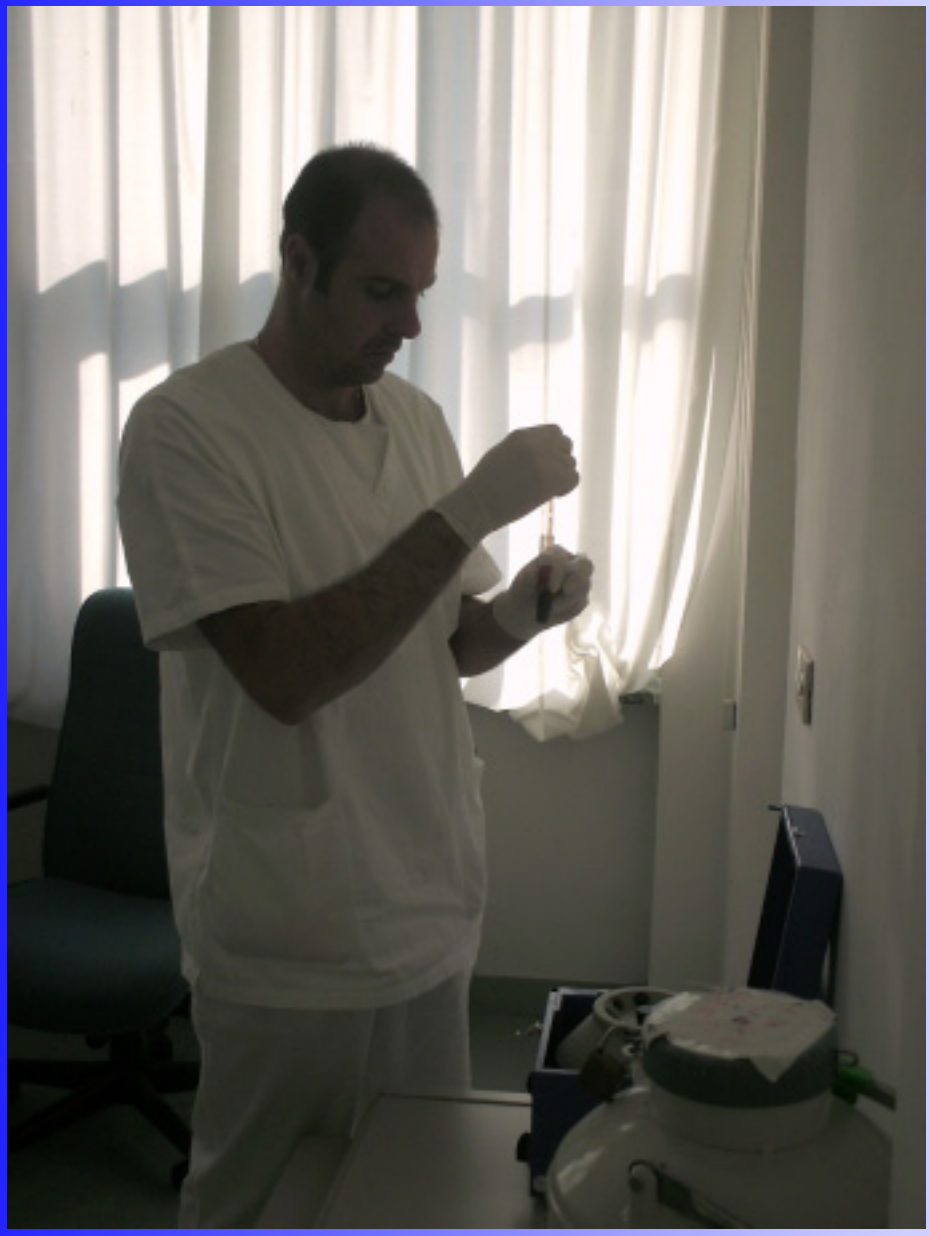
Peso Kg

Altezza Cm



## “MISURE ANTROPOMETRICHE”

- ø Braccio
- ø Gamba
- ø Coscia



## BANCA DEL DNA

**Tutti i soggetti venivano sottoposti ad un prelievo di sangue venoso (5ml), il sangue veniva utilizzato per l'estrazione del DNA**

## BANCA DEL DNA

**Il sangue veniva centrifugato tramite l'uso di una centrifuga refrigerata ed il DNA GENOMICO estratto tramite l'uso di specifici kit di estrazione**

## BANCA DEL DNA

**Le provette ricavate venivano conservate a - 20° in bombole di azoto liquido**

Il DNA estratto veniva successivamente conservato a –80°C e catalogato per la creazione di una BANCA DEL DNA, associato ad un archivio telematico contenente tutte le informazioni demografiche e cliniche dei soggetti.

Aging Clinical and Experimental Research

# The *ilSIRENTE* study: a prospective cohort study on persons aged 80 years and older living in a mountain community of Central Italy

Francesco Landi[1], Andrea Russo[1], Matteo Cesari[1,2], Christian Barillaro[1], Graziano Onder[1], Valentina Zamboni[1], Antonello De Santis[1], Marco Pahor[2], Luigi Ferrucci[3], and Roberto Bernabei[1]

[1]Department of Gerontology, Geriatric and Physiatric, Catholic University of Sacred Heart, Rome, Italy, [2]Department of Aging and Geriatric Research, University of Florida, College of Medicine, Gainesville, FL, and [3]Longitudinal Studies Section, Clinical Research Branch, National Institute of Aging, Baltimore, MD, USA

*ABSTRACT. Background and aims: "Invecchiamento e Longevità nel Sirente" (Aging and Longevity in the Sirente geographic area, ilSIRENTE) aims at investigating the socio-demographic, functional, clinical and biological characteristics of all subjects aged 80 years and older residing in a well-defined mountain area of Central Italy. Methods: Data are from the baseline evaluation of the ilSIRENTE prospective cohort study. A list of all persons living in the Sirente area was obtained from the Registry Offices of the 13 municipalities involved in the study. Data collection started in December 2003 and was completed in September 2004. Among the 429 residents older than 80 years eligible for the study, 364 accepted to participate (response rate 84%). Participants were assessed by trained staff who collected information on socio-demographic factors, clinical conditions, medication use, physical performance and muscle strength. All participants were also evaluated using the Minimum Data Set for Home Care (MDS-HC) form and a slightly modified version of the "Invecchiare in CHIANTI" study. Results: The mean age of participants was 85.6±4.8 years (range 80-102 years), with over 20% of participants aged 90 years or older. More than 65% of participants were women. Most participants (70%) were independent or required limited assistance in performing basic activities of daily living (ADL), whereas 30% of participants were independent in instrumental activities of daily living (IADL). Cognitive function (assessed by the Cognitive Performance Score) was normal in 80% of the sample. Higher degrees of disabilities (defined as the sum of dependencies in ADLs and IADLs) were associated with worse physical performance and lower muscle strength. Conclusions: Data on the socio-demographic characteristics and health status of very old people living in the Sirente mountain community are discussed and compared with findings from other epidemiological studies.*

*(Aging Clin Exp Res 2005; 17: 486-493)*



## INTRODUCTION

The rapid aging of populations living in Western countries has led to a disproportionate increase in the number of persons in the "old-old" age group, comprising those over 75-85 years of age (1, 2). A variety of factors, including better nutrition, improved work environment, better lifestyle, accessibility of health services and availability of medications, have contributed to this remarkable demographic phenomenon. However, the transition from a "young" to an "old" population has been followed by increased prevalence of chronic diseases and functional impairments. Promoting adequate physical functions and, at the same time, preventing disability in late life are of crucial importance for all professionals involved in health-care for older people, health-care planners who have to estimate service needs associated with increasing disability, and the elderly themselves.

To avoid an unbearable burden of disease and disability on future generations, new more effective strategies of disease and disability prevention programs should be explored. Many authors have already demonstrated that physical disability is associated with clinical conditions that are potentially preventable, such as chronic diseases

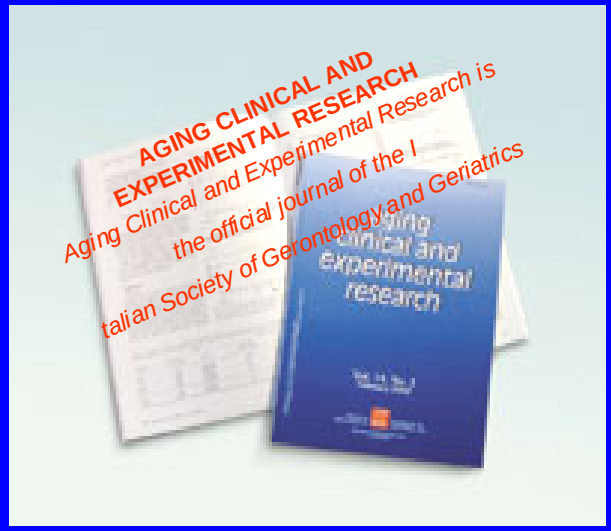




Fig. 1 - *Location of Sirente Mountain Community in Central Italy (Abruzzo Region) comprising thirteen municipalities; numbers of men and women enrolled in study are shown for each town.*


Occupational and Environmental Medicine

Southamptom, United Kingdom

ORIGINAL ARTICLE

# Lifetime occupation and physical function: a prospective cohort study on persons aged 80 years and older living in a community

A Russo, G Onder, M Cesari, V Zamboni, C Barillaro, E Capoluongo, M Pahor, R Bernabei, F Landi

*Occup Environ Med* 2006;63:438–442. doi: 10.1136/oem.2005.023549

See end of article for authors' affiliations

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Accepted 27 January 2006

**Background:** Several studies have reported predictors for loss of mobility and impairments of physical performance among frail elderly people.
**Aim:** To evaluate the relationship between lifetime occupation and physical function in persons aged 80 years or older.
**Methods:** Data are from baseline evaluation of 364 subjects enrolled in the *ilSIRENTE* study (a prospective cohort study performed in a mountain community in Central Italy). Physical performance was assessed using the physical performance battery score, which is based on three timed tests: 4-metre walking speed, balance, and chair stand tests. Muscle strength was measured by hand grip strength. Lifetime occupation was categorised as manual or non-manual work.
**Results:** Mean age of participants was 85.9 (SD 4.9) years. Of the total sample, 273 subjects (75%) had a history of manual work and 91 subjects (25%) a history of non-manual work. Manual workers had significant lower grip strength and physical performance battery score (indicating worse performance) than non-manual workers. After adjustment for potential confounders (including age, gender, education, depression, cognitive performance scale score, physical activity, number of diseases, hearing impairment, history of alcohol abuse, smoking habit, and haemoglobin level), manual workers had significantly worse physical function (hand grip strength: non-manual workers 32.5 kg, SE 1.4, manual workers 28.2 kg, SE 0.8; physical performance battery score: non-manual workers 7.1, SE 0.4, manual workers 6.1, SE 0.2).
**Conclusions:** A history of manual work, especially when associated with high physical stress, is independently associated with low physical function and muscle strength in older persons.

# Basel, Switzerland

Experimental Section

Gerontology

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Received: July 5, 2005
Accepted: September 25, 2005

## Comorbidity and Physical Function: Results from the Aging and Longevity Study in the Sirente Geographic Area (ilSIRENTE Study)

Matteo Cesari[a,b] Graziano Onder[a] Andrea Russo[a] Valentina Zamboni[a] Christian Barillaro[a] Luigi Ferrucci[c] Marco Pahor[b] Roberto Bernabei[a] Francesco Landi[a]

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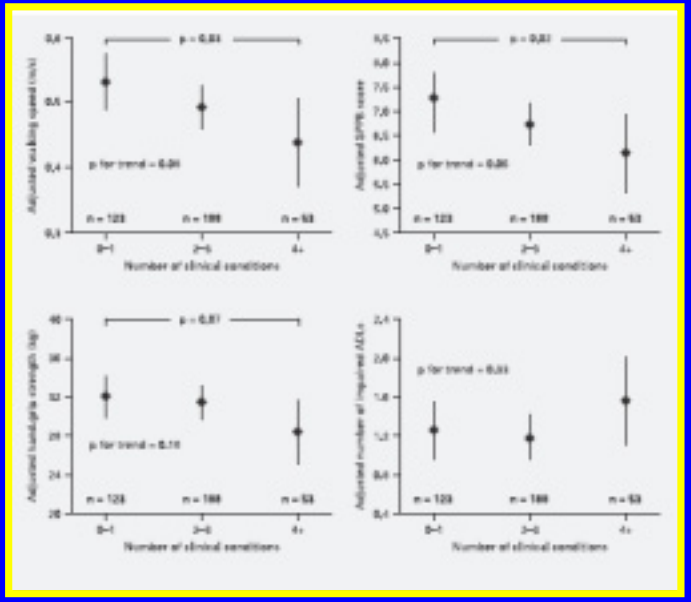
**Key Words**
Geriatrics · Disability · Comorbidity · Comorbidity and physical function · ilSIRENTE study · Physical performance · Muscle strength measures · Functional status measures

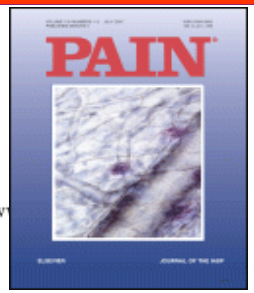
**Abstract**
*Background:* Physical function measures have gained increased importance in the evaluation of older persons. The presence of comorbidity is a major and growing issue in geriatrics. *Objective:* To evaluate the relationship between comorbidity and physical function in community-dwelling older persons. *Methods:* Data are from baseline evaluation of the ilSIRENTE study (n = 364). Physical performance was assessed using the Short Physical Performance Battery (SPPB) and the 4-meter walking test. Muscle strength was measured by hand-grip strength. Functional performance was assessed using Basic and Instrumental Activities of Daily Living (ADLs and IADLs, respectively). Comorbidity was defined as ≥3 clinical conditions. Analyses of covariance and linear regressions were performed to evaluate the relationship between comorbidity and physical function. *Results:* The mean age of participants was 85.9 (SD = 4.9) years. About one third (37.4%) of participants reported ≥3 clinical conditions. Participants with comorbidity had significantly worse results in all the physical function tests. Participants with comorbidity had significantly lower adjusted results for the 4-meter walking test (0.444 m/s) and the SPPB score (6.131) compared to those without comorbidity (0.531 m/s and 7.221; all p = 0.001, respectively). Participants with comorbidity were more IADL-impaired (3.152) than participants without comorbidity (2.767; p = 0.04). No significant association of ADLs and hand-grip strength with comorbidity was reported. Similar strengths of association for the 4-meter walking test (per SD increase, β = –0.280; p = 0.001) and the SPPB (per SD increase, β = –0.285; p = 0.001) with comorbidity were reported. *Conclusions:* Physical function measures, especially walking speed and SPPB, are associated with comorbidity. Physical performance measures may improve the clinical evaluation of older persons.



University of California, San Francisco

Pain 121 (2006) 53–59




# Association between daily pain and physical function among old–old adults living in the community: Results from the ilSIRENTE study

Graziano Onder [a,*], Matteo Cesari [a,b], Andrea Russo [a], Valentina Zamboni [a], Roberto Bernabei [a], Francesco Landi [a]

[a] *Department of Gerontology, Catholic University of Sacred Heart, Rome, Italy*
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Received 12 April 2005; received in revised form 18 November 2005; accepted 5 December 2005

**Abstract**

Little is known about the impact of pain on physical function among old–old subjects. The aim of the present cross-sectional study was to assess the association of daily pain with muscle strength and physical performance in a population of subjects aged 80 or older living in the community. We used data from baseline evaluation of the ilSIRENTE Study. Muscle strength was measured by hand grip strength. Physical performance was assessed using the physical performance battery score, which is based on three timed tests: 4-m walking speed, balance, and chair stand tests. Daily pain was defined as any type of pain or discomfort in any part of the body manifested every day over the 7 days preceding the assessment. Mean age of 273 participants was 85.1 (SD 4.6) years, 181 (66.3%) were women and 150 (54.9%) reported daily pain. After adjustment for potential confounders, participants with daily pain had lower grip strength and physical performance battery score (indicating worse performance) than other participants (hand grip strength: daily pain 31.5 kg, SE 1.4, no daily pain 35.0, SE 1.1, $p = 0.02$; physical performance battery score: daily pain 6.5, SE 0.3, no daily pain 7.2, SE 0.3, $p = 0.05$). Both hand grip strength and physical performance battery score progressively declined as pain severity increased. In conclusion, the present study shows that among old–old subjects living in the community, daily pain is highly prevalent and that this condition is associated with impaired muscle strength and physical performance.

# Depression and Physical Function

## Results From the Aging and Longevity Study in the Sirente Geographic Area (ilSIRENTE Study)

Andrea Russo, MD, PhD, Matteo Cesari, MD, PhD, Graziano Onder, MD, PhD, Valentina Zamboni, MD, Christian Barillaro, MD, Marco Pahor, MD, Roberto Bernabei, MD, and Francesco Landi, MD, PhD


Ann Arbor VA Medical Center, MI

**ABSTRACT**

Depression in older persons represents a major issue because of its relevant prevalence and the associated higher risk of adverse health-related events. The aim of this study was to evaluate the relationship of depressive symptoms with measures of physical performance, muscle strength, and functional status. Data are from baseline evaluation of the ilSIRENTE Study (n = 364). Physical performance was assessed using the Short Physical Performance Battery and the 4-meter walking test. Muscle strength was measured by hand-grip strength. Functional performance was assessed using Basic and Instrumental Activities of Daily Living. Depression was defined by analyzing the different depressive manifestations included in the Minimum Data Set for Home Care Form: verbal expression of sad and/or anxious mood and demonstrated signs of mental distress. Analyses of covariance and linear regressions were performed to evaluate the relationship between depression and physical function. Participants with depression showed significantly worse results in all of the physical function tests. Subjects with depression presented significantly lower adjusted mean results for the 4-meter walking test (0.41 m/s; SE, 0.03) and the Short Physical Performance Battery score (5.68; SE, 0.38) compared with those without depression (0.50 m/s; SE, 0.01 and 6.93; SE, 0.21; all $P < .01$, respectively). Participants with depressed mood also presented a higher number of impaired instrumental activities of daily living (3.69; SE, 0.25) compared with participants with less than 3 depressive symptoms (2.85; SE, 0.14; $P = .005$). No significant difference was reported for the hand-grip strength and the Basic Activities of Daily Living scale. In conclusion, physical performance and functional status measures are significantly and negatively influenced by the presence of depression in community-dwelling older persons aged 80 years and older. (*J Geriatr Psychiatry Neurol* 2007;XX:XXX–XXX)

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Clinical Pharmacology & Therapeutics

# Anticholinergic Drugs and Physical Function Among Frail Elderly Population

2007;81:235-41

F Landi[1], A Russo[1], R Liperoti[1], M Cesari[1,2], C Barillaro[1], M Pahor[2,3], R Bernabei[1] and G Onder[1]

Increasing evidence from experimental studies and human observations suggests that drugs with anticholinergic properties can cause physical and mental impairment. The aim of this study was to evaluate the relationship between the use of drugs with anticholinergic activity and measures of physical performance, muscle strength, and functional status in persons aged 80 years or older. Data are from baseline evaluation of 364 subjects enrolled in the ilSIRENTE study. The ilSIRENTE study is a prospective cohort study performed in the mountain community living in the Sirente geographic area (L'Aquila, Abruzzo) in Central Italy. Physical performance was assessed using the physical performance battery score (Short Physical Performance Battery), which is based on three timed tests: 4-meter walking speed, balance, and chair stand tests. Muscle strength was measured by hand grip strength. We defined as anticholinergic drugs all medications for which serum anticholinergic activity was previously demonstrated. Analyses of covariance were performed to evaluate the relationship of anticholinergic drugs with physical function. In the unadjusted model, all the physical performance, muscle strength, and functional measures showed significant associations with the anticholinergic drug use. After adjustment for potential confounders (age, gender, smoking, physical activity level, cognitive performance score, living alone, body mass index, congestive heart failure, lung diseases, diabetes), these associations were weaker but still statistically significant (physical performance battery score: non-users anticholinergic drugs 6.9, SE 0.1, users anticholinergic drugs 6.1, SE 0.2, $P = 0.05$; hand grip strength: non-users anticholinergic drugs 31.3 kg, SE 0.8, users anticholinergic drugs 28.8 kg, SE 1.0, $P = 0.05$; Activities of Daily Living scale score: non-users anticholinergic drugs 1.2, SE 0.1, users anticholinergic drugs 1.6, SE 0.1, $P = 0.03$; Instrumental Activities of Daily Living scale score: non-users anticholinergic drugs 2.7, SE 0.1, users anticholinergic drugs 3.4, SE 0.1, $P < 0.001$). The use of medication with anticholinergic properties is common among community older subjects in Italy. Our results suggest that among old-old subjects the use of anticholinergic drugs is associated with impaired physical performance and functional status.

Eur J Clin Pharmacol
DOI 10.1007/s00228-007-0321-5

PHARMACOEPIDEMIOLOGY AND PRESCRIPTION


# Impact of inappropriate drug use on physical performance among a frail elderly population living in the community

**Francesco Landi · Andrea Russo · Rosa Liperoti · Christian Barillaro · Paola Danese · Marco Pahor · Roberto Bernabei · Graziano Onder**

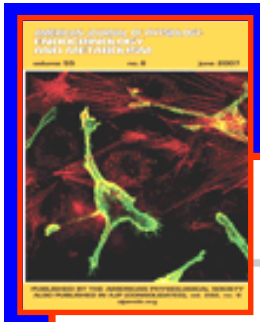
**Division of Clinical Pharmacology**
**University Hospital**
**90185 Umeå**
**Sweden**

Received: 3 March 2007 / Accepted: 30 April 2007


**Abstract** *Objective* The criteria for inappropriate drug use developed by Beers have been widely used in drug utilization reviews to assess the quality of prescribing, but there is still inconclusive evidence that these criteria can impact on patient outcomes. The aim of the present study was to evaluate the relationship between the use of inappropriate drugs and measures of physical performance, muscle strength and functional status in an elderly population (80+ years).

*Methods* Data are from the baseline evaluation of 364 subjects enrolled in the ilSIRENTE study, a prospective cohort study performed in a mountain community living in the Sirente geographic area (L'Aquila, Abruzzo) in Central Italy. Physical performance was assessed using the physical timed tests: 4-m walking speed, balance and chair stand tests. Muscle strength was measured by hand grip strength. Inappropriate drug use was defined by the 2003 Beers criteria. Analyses of covariance were performed to evaluate the relationship of inappropriate drugs with physical function.

*Results* In the unadjusted model, all of the physical performance, muscle strength and functional measures showed significant associations with inappropriate drug use. Following adjustment for potential confounders, which included age, gender, physical activity level, cognitive performance scale, comorbidity, lung diseases and diabetes, these associations were still statistically significant for the physical performance battery score [non-users inappropriate



The American Physiological Society
INTEGRATING THE LIFE SCIENCES FROM MOLECULE TO ORGANISM
Bethesda, USA

*Am J Physiol Endocrinol Metab* 291: E829–E834, 2006;
doi:10.1152/ajpendo.00138.2006.

# Body mass index, free insulin-like growth factor I, and physical function among older adults: results from the ilSIRENTE study

**Graziano Onder,[1] Rosa Liperoti,[1] Andrea Russo,[1] Manuel Soldato,[1] Ettore Capoluongo,[2] Stefano Volpato,[3] Matteo Cesari,[1,4] Franco Ameglio,[2] Roberto Bernabei,[1] and Francesco Landi[1]**

[1]*Department of Geriatrics,* [2]*Institute of Biochemistry and Clinical Biochemistry, Catholic University of Sacred Heart, Rome;* [3]*Second Department of Clinical and Experimental Medicine, University of Ferrara, Ferrara, Italy; and* [4]*Department of Aging and Geriatric Research, University of Florida, Gainesville, Florida*

Submitted 22 March 2006; accepted in final form 19 April 2006

**Onder, Graziano, Rosa Liperoti, Andrea Russo, Manuel Soldato, Ettore Capoluongo, Stefano Volpato, Matteo Cesari, Franco Ameglio, Roberto Bernabei, and Francesco Landi.** Body mass index, free insulin growth factor I, and physical function among older adults: results from the ilSIRENTE study. *Am J Physiol Endocrinol Metab* 291: E829–E834, 2006; doi:10.1152/ajpendo.00138.2006.—The aim of the present study was to evaluate the mediating role played by obesity on the relationship of free insulin-like growth factor I (IGF-I) and IGF-binding protein-3 (IGFBP-3) with muscle strength and physical performance. Data were from baseline evaluation of the ilSIRENTE Study. Muscle strength was measured by hand grip strength. Physical performance was assessed using the walking speed and the 0–3 Short Physical Performance Battery (SPPB) score. Based on its median value, free IGF-I was categorized in the following two groups: low IGF-I (IGF-I <0.65 ng/ml; $n$ = 174) and high IGF-I (IGF-I ≥0.65 ng/ml; $n$ = 175). Similarly, IGFBP-3 was categorized in the following two groups: low

have more hospitalizations and a poorer quality of life (36). Therefore, identification of mechanism involved in maintenance of physical function and prevention of functional decline in older persons represents one of the primary goals of geriatric medicine.

Alterations in the hormonal axes have been proposed as critical, independent mediators of functional decline in older adults. In particular, insulin-like growth factor I (IGF-I) has been indicated as an important modulator of muscle strength and function, not only during the developmental period but across the entire life span (2, 24). Although biological plausibility supports a role in the disablement process, studies assessing the association of IGF-I and IGF-binding protein-3 (IGFBP-3) with muscle strength and physical performance in older adults have provided conflicting results (3, 5, 16, 18).

Despite controversial results reported for the relationship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Growth Hormone & IGF Research 17 (2007) 58–66

**Copenhagen - Denmark**

The Growth Hormone Research Society

www

IGF Society

# Free insulin-like growth factor-I and cognitive function in older persons living in community

Francesco Landi [a,*], Ettore Capoluongo [b], Andrea Russo [a], Graziano Onder [a], Matteo Cesari [a,c], Paola Lulli [b], Angelo Minucci [b], Marco Pahor [c], Cecilia Zuppi [b], Roberto Bernabei [a]

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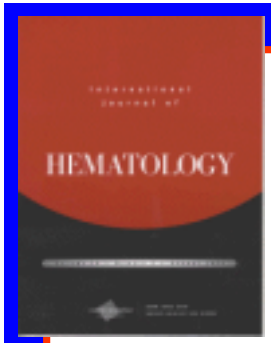
Received 20 December 2005; revised 14 November 2006
Available online 8 January 2007

## Abstract

*Context:* Increasing evidences from experimental and human studies suggest that the activity of the growth hormone (GH/insulin-like growth factor-I) axis may contribute to the age-related cognitive decline and poor cognition in late life.
*Objective:* The aim of the present study was to evaluate the relationship of total serum free IGF-I and its binding protein-3 with cognitive performance in older persons aged 80 years or older.
*Design:* Data are from baseline evaluation of the *ilSIRENTE* study ($n = 353$). Cognitive performance was evaluated using five items enclosed in the Minimum Data Set for Home Care assessment form: short-term memory, procedural memory, cognitive skills in daily decision making, verbal expression, comprehension. Free insulin-like growth factor-I (free IGF-I) and IGF-binding protein-3 (IGFBP-3) in blood were measured. Analysis of covariance (ANCOVA) was used to examine the relationship between cognitive impairment and the serum free IGF-I and IGFBP-3 concentrations, after adjustment for potential confounding variables.
*Results:* After adjustment for potential confounders, which included age, gender, education, cerebrovascular disease, ischemic heart disease, congestive heart failure, hypertension, diabetes, depression, Parkinson diseases, thyroid diseases, smoking status, alcohol abuse, body mass index, and number of medications, individuals with verbal expression problems ($n = 20$) and individuals with




**Tokyo, Japan**

International Journal of
HEMATOLOGY

The Japanese Society of Hematology

# Insulin-like Growth Factor–Binding Protein 3 and Hemoglobin Concentration in Older Persons Living in the Community

Francesco Landi,[a] Andrea Russo,[a] Ettore Capoluongo,[b] Matteo Cesari,[c] Rosa Liperoti,[a] Paola Danese,[a] Roberto Bernabei,[a] Graziano Onder[a]

[a]*Department of Gerontology and Geriatrics, Catholic University of Sacred Heart, Roma, Italy;*
[b]*Institute of Biochemistry and Clinical Biochemistry, Catholic University of Sacred Heart, Roma, Italy;*
[c]*Department of Aging and Geriatric Research, University of Florida – College of Medicine, Gainesville, Florida, USA*

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**Abstract**

A decreased hemoglobin concentration is a common clinical condition in elderly subjects, and in at least 20% of the cases it is not possible to directly attribute the anemia to specific factors. The aim of the present study was to evaluate the relationship of different levels of insulin-like growth factor–binding protein 3 (IGFBP-3) with the blood concentration of hemoglobin in persons aged 80 years and older. Data are from a baseline evaluation of the Aging and Longevity in the Sirente Geographic Area (ilSIRENTE) study (n = 253). Analysis of covariance was used to examine the effect of different IGFBP-3 levels on hemoglobin concentration. After adjustment for potential confounding variables, which included age, sex, number of diseases, renal failure, cancer, gastric ulcer, albumin, and iron concentrations, individuals in the group with higher IGFBP-3 concentrations showed a significantly higher mean hemoglobin concentration than participants in the group with lower IGFBP-3 concentrations (13.4 ± 1.4 g/dL versus 12.9 ± 1.9 g/dL, respectively; $P = .03$). In conclusion, the present study has shown that a higher IGFBP-3 level is associated with a higher hemoglobin concentration among older people living in the community. This finding suggests that the growth hormone/IGF axis may play an important role in hematopoiesis, and it may be implicated in the age-related decline in hemoglobin concentration.

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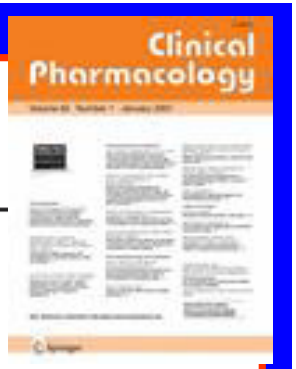


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PHARMACOEPIDEMIOLOGY AND PRESCRIPTION

# Use of ACE inhibitors is associated with elevated levels of IGFBP-3 among hypertensive older adults: results from the IlSIRENTE study

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**Abstract**

*Objective* Several studies in vitro or in rodent models have suggested a potential relationship between angiotensin-converting enzyme (ACE) inhibition and the insulin-like growth factor 1 (IGF-1) axis. However, this relationship has only rarely been investigated in humans. The aim of the present cross-sectional study was to assess the association of ACE inhibitors with free IGF-1 and IGFBP-3 in the blood of older hypertensive adults.

*Methods* Data are from the baseline evaluation of the

older. For the present study we selected a subpopulation of 264 hypertensive participants without congestive heart failure. Free IGF-1 and IGFBP-3 in the blood were measured by a radioimmunoassay method. Analyses of covariance were performed to evaluate the differences in free IGF-1 and IGFBP-3 levels according to the use of ACE inhibitors.

*Results* The mean age of participants was 85.7 years (SD: 4.9), 170 (64%) were women and 123 (47%) were using an ACE inhibitor. Following adjustment for potential con-

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***"La nostra vita, in questo pellegrinaggio, non può essere esente da prove e il nostro progresso si compie attraverso il loro superamento. Nessuno può conoscere se stesso se non è provato; né può essere coronato senza aver vinto; né può vincere senza combattere".***

***(da un bigliettino, scritto di suo pugno, trovato nel cassetto del suo comodino)***