SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA
Azienda Ospedaliero - Universitaria di Ferrara

università di ferrara
DA SEICENTO ANNI GUARDIAMO AVANTI.

L' EQUILIBRIO " FRAGILE " NEL PAZIENTE ANZIANO

Sabato 27 Ottobre 2012

Aula Magna Nuovo Arcispedale S.Anna
Cona, Ferrara

Quale approccio ai disturbi dell'equilibrio nell'anziano ?

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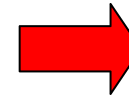
Il paziente "Geriatrico"

- **Comorbilità**
- **Politerapia**
- **Età > 75 aa**
  - Incontinenza
  - **Cadute**
  - Problemi nutrizionali
  - Osteoporosi
  - Anemia
  - **Sarcopenia**
  - Instabilità clinica
  - Patologia a cascata

Declino funzionale



- **Cognitivo**
- **Fisico**
- **Psichico**
- **Socio-economico**

da: Bernabei, modificata

INQUADRAMENTO CLINICO DIZZINESS:
1. LE PATOLOGIE ACUTE

Escludere subito le condizioni ad alto rischio:

- Infarto miocardico acuto
- Aritmia cardiaca (es. FA, Flutter, blocco A-V)
- Sanguinamento gastrointestinale occulto
- Infezioni acute (es.: polmonite)
- Esposizione a sostanze tossiche (es. CO)

Sloane et al., Ann Int Med 2001

INQUADRAMENTO CLINICO DIZZINESS: 2. LA COMORBIDITA’

- Hypertension/hypotension (only when severe)
- Cardiovascular disease (cardiomyopaties)
- Psychiatric disorders (depression, anxiety)
- Visual disturbances (cataracts, diabetes)
- Conditions associated with decreased blood flow/oxygen to the brain (congestive heart failure, COPD, hypoxia)
- Peripheral neuropathy (diabetes)
- Anemia
- Stress, tension, fatigue

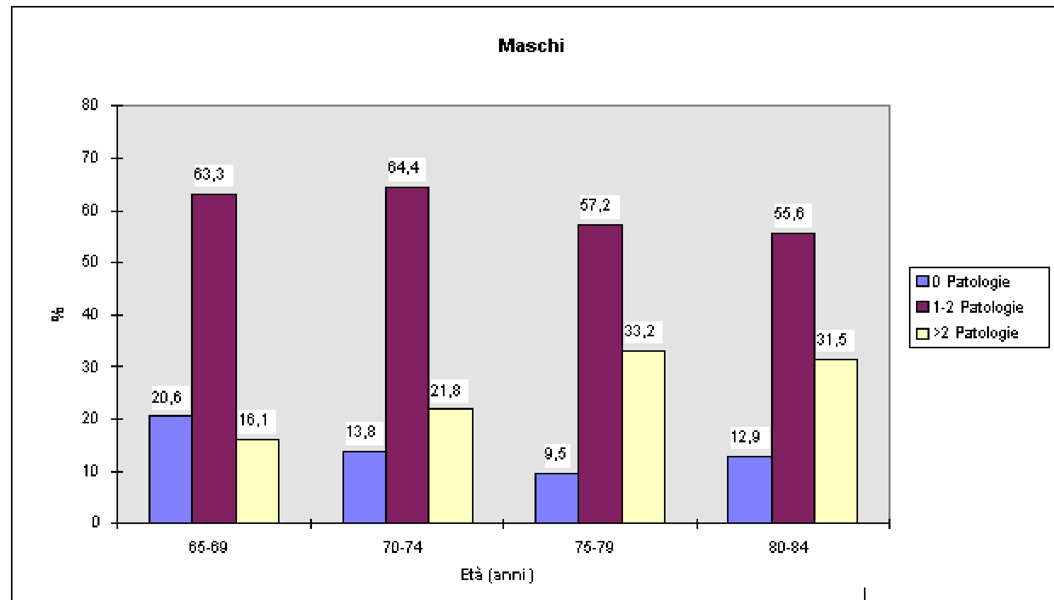
Consiglio Nazionale delle Ricerche

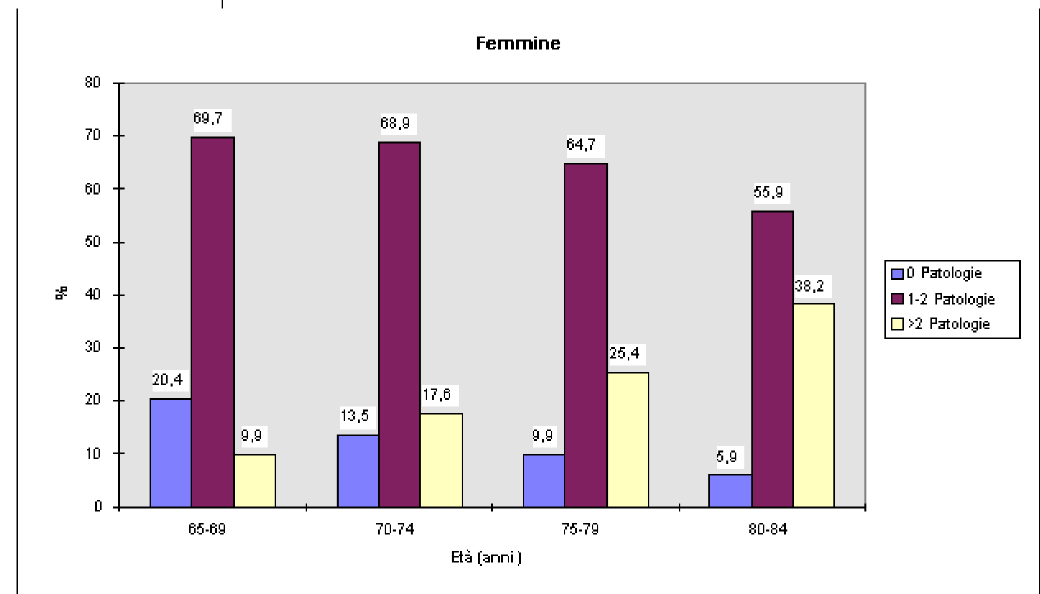
Progetto Finalizzato Invecchiamento

Lo Studio ILSA

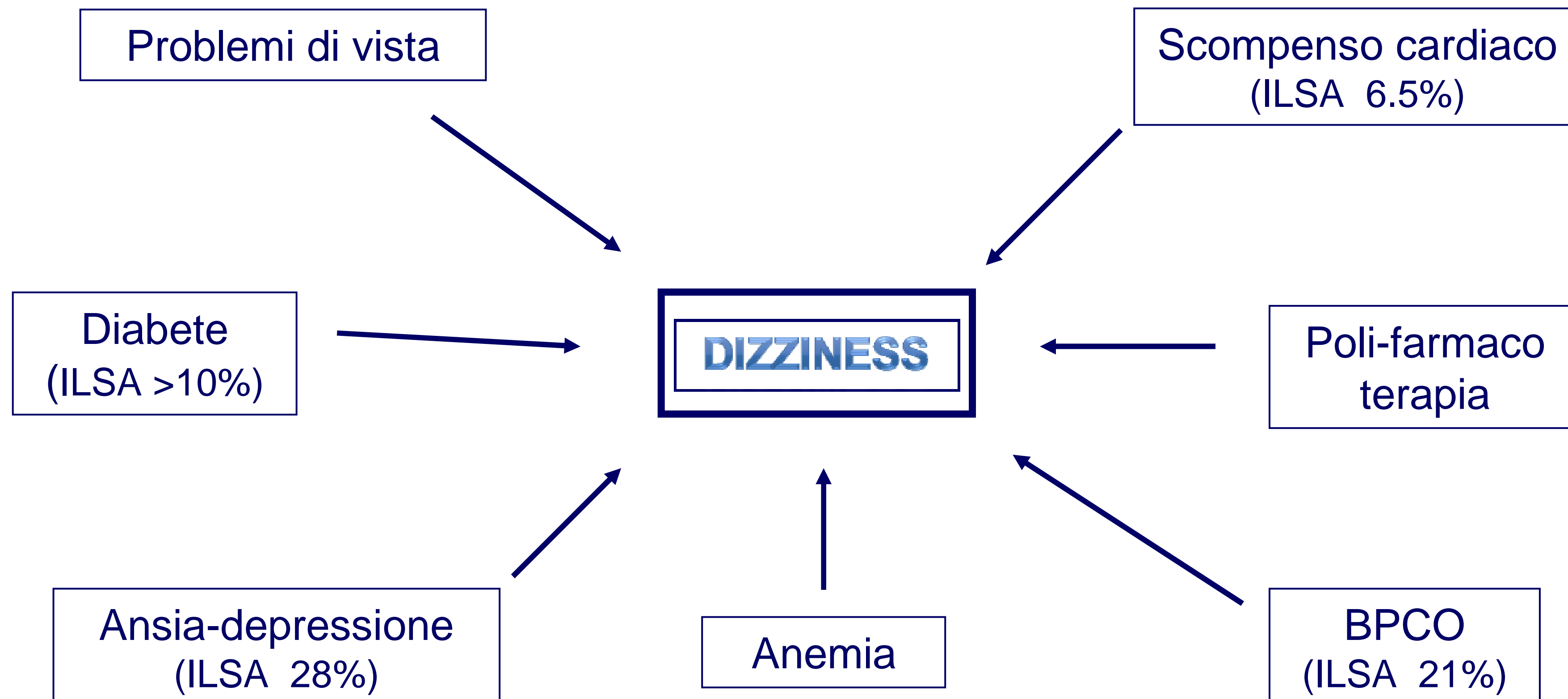
Italian Longitudinal Study on Aging

Studio ILSA: comorbidità ed età





Comorbidità e dizziness nel soggetto anziano



Caratteristiche demografiche e cliniche dei pazienti ricoverati in 24 reparti di Geriatria e Medicina Interna **(STUDIO G.I.F.A.)**

Età (media)	72.4
65-80, %	44
>80, %	33
Maschi, %	53.3
Numero di Patologie (media)	**4**
> 4	**40%**
Numero di farmaci alla dimissione	4.7
Ulcere da pressione	5.3 %
AHMT < 7 (0-10)	24%
Sintomi depressivi	36%

Valutazione dell’anziano affetto da dizziness

- ANAMNESI
- ESAME OBIETTIVO
- TEST DIAGNOSTICI

Valutazione dell'anziano affetto da dizziness

- ANAMNESI

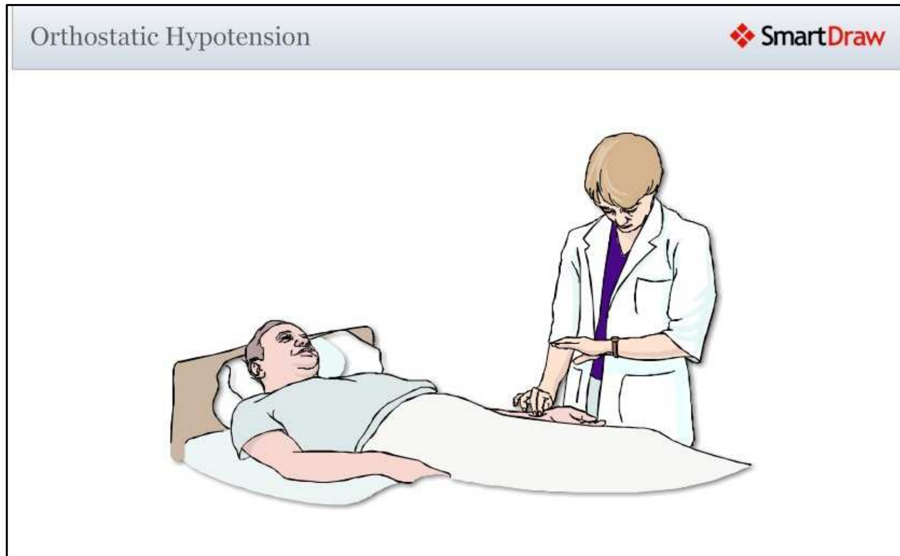
- è la parte più importante
- bisogna lasciare che il soggetto descriva con parole proprie la sintomatologia
- è importante capire se si tratta di una delle tre forme specifiche (**vertigine, lipotimia, instabilità**)
- capire se la posizione ha effetto sui sintomi
- se vi sono altri **sintomi associati**
- quali **farmaci** assume, per quale patologie, da quanto tempo

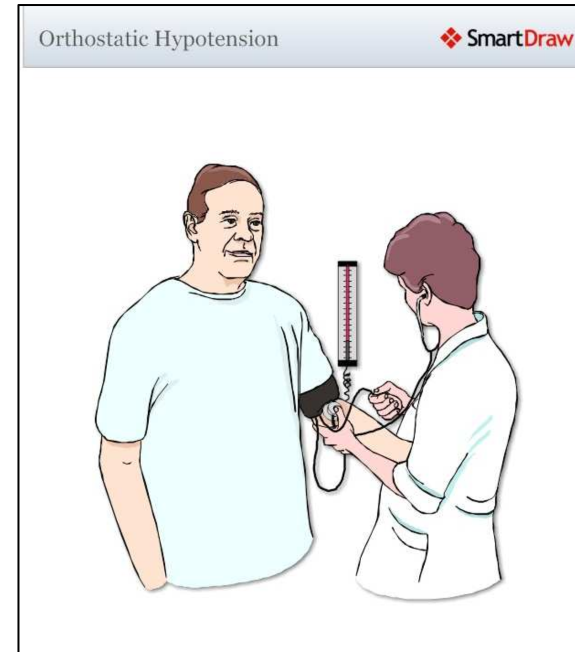
Valutazione dell'anziano affetto da dizziness

➢ ESAME OBIETTIVO

- misurare la PA in clino e ortostatismo
- cercare il nistagmo
- esame obiettivo cardiologico (ritmo cardiaco, soffi) e neurologico
- osservare l'equilibrio e la marcia

Ipotensione ortostatica

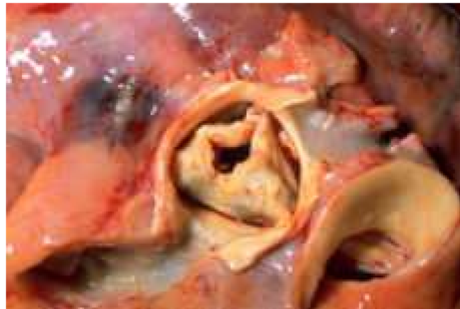


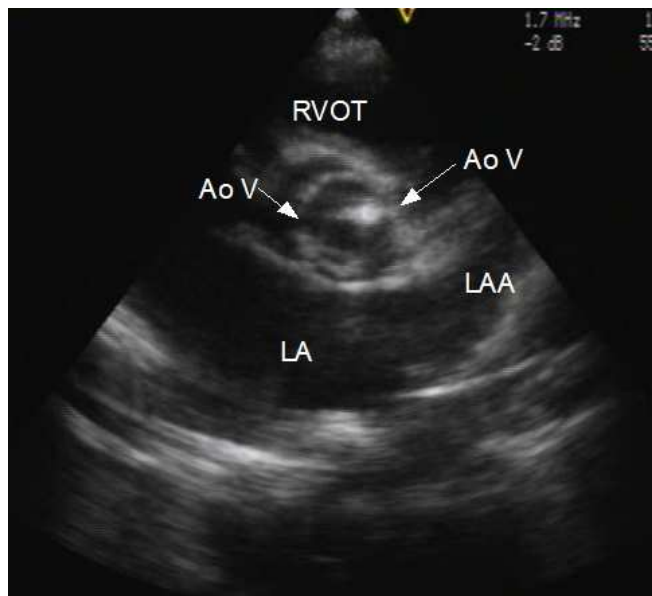


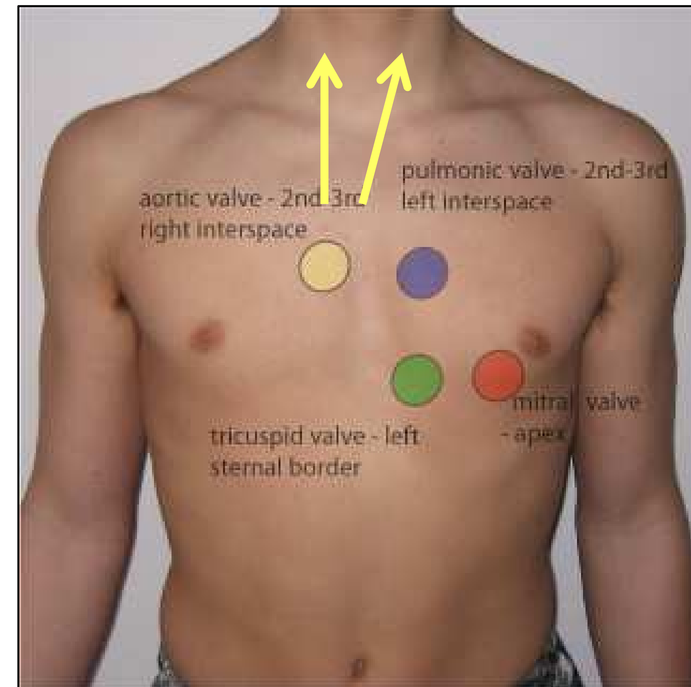
Diminuzione della pressione arteriosa sistolica ≥20 mmHg o della diastolica ≥10 mmHg rispetto al clinostatismo dopo 3 minuti di ortostatismo

Riduzione di pressione arteriosa > 25 mmHg nel passaggio dal clinostatismo all'ortostatismo (dopo mantenimento della postura eretta per 2 minuti) o rilievo di valori di pressione arteriosa sistolica < 90 mmHg.

Stenosi aortica



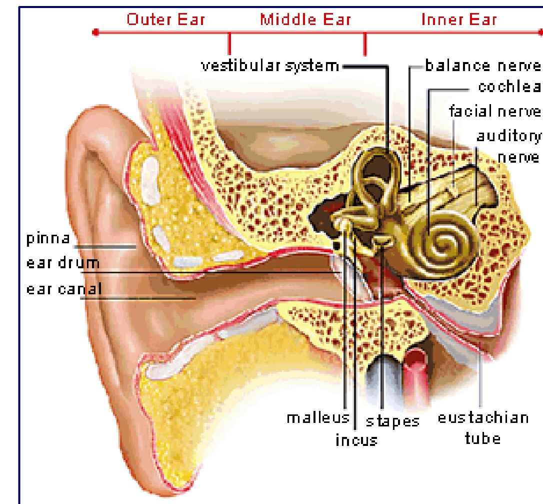




Valutazione dell’anziano affetto da dizziness

➢ TEST DIAGNOSTICI

- audiometria
- test vestibolari
- esami ematochimici routine, EGA
- TC cerebrale (solo talvolta)
- di solito l’EEG non è utile
- ECG a riposo, Holter, Eco-cardio, TILT test



Clinical evaluation of elderly people with chronic vestibular disorder

Juliana Maria GazzolaI, Fernando Freitas GanançaII, Mayra Cristina Aratani III, Monica Rodrigues Perracini IV, Maurício Malavasi Ganança V

Table 2. Absolute and relative frequency of associated diseases in 120 elderly patients with chronic vestibular dysfunction.

	Absolute Frequency (n)	Relative Frequency (%)
Infectious and parasitic diseases	6	5,0
Neoplasms (tumors)	8	6,7
Diseases of the blood and hematopoietic organs and immune disorders	2	1,7
Nutritional endocrine and metabolic diseases	63	52,5 ←
Mental and behavioral disorders	25	20,8 ←
Diseases of the nervous system	12	10,0
Diseases of the eye and annexes	35	29,2 ←
Diseases of the circulatory system	88	73,3 ←
Diseases of the respiratory system	12	10,0
Diseases of the digestive system	14	11,7
Diseases of the skin and subcutaneous tissue	2	1,7
Diseases of the osteomuscular system and connective tissue	76	63,3 ←
Diseases of the genitourinary system	15	12,5

Table 3. Absolute and relative frequency of the number of medications used by 120 elderly patients with chronic vestibular dysfunction.

	Categories	Absolute Frequency (n)	Relative Frequency (%)
Number of medications	Non-user	4	3,3
	1 or 2 medications	35	29,2
	3 or 4 medications	37	30,8 ←
	5 or more medications	44	36,7 ←

Rev. Bras. Otorrinolaringol. 2006

Health, functional, and psychological outcomes among older persons with chronic dizziness

- 261 of 1087 (**24%**) community dwelling elderly (>71 years) had chronic dizziness
- Dizziness: *"Episodes of feeling dizzy, unsteady, or like you were spinning, moving, light-headed, or faint"*
- Had to be present for at least 1 month
- Outcome measured: death, hospital, falls, syncope, worsening health, worse depression, decreased confidence and function in ADLs and social activities

Tinetti et al. JAGS 2000

Health, functional, and psychological outcomes among older persons with chronic dizziness

- Duration of dizziness > 1 yr: **63%**
- Episodes daily (31%), weekly (13%), and monthly (49%)
- At baseline: NO difference in age, gender, race, MMSE
- **Compared to controls: more chronic conditions, drugs, impairments in hearing or balance, depressive symptoms, and falls.**

Tinetti et al. JAGS 2000

Health, functional, and psychological outcomes among older persons with chronic dizziness

- Longitudinally (1 year): dizzy patients NO more likely to die, be hospitalized, suffer a new MI or stroke, of lose function in ADLs
- Chronic dizziness was associated with: **falls, syncope, worsening depression, and self-rated health decline**

Tinetti et al. JAGS 2000

Tinetti Recommendations

When failing to diagnose a single entity, goals of care should be redirected to attempts to ameliorate contributing factors and symptoms by addressing:

- **anxiety**
- **depressive symptoms**
- **hearing impairment**
- **balance impairment**
- **postural hypotension**
- **reduction in medications**

Tinetti et al. JAGS 2000

Prognosi dell'anziano affetto da dizziness

- di solito si risolve in giorni o mesi
- ***sintomi cronici o ricorrenti*** sono riportati nel 25% dei casi e spesso sono correlati a ***patologie psichiatriche, instabilità posturale o patologie vestibolari***
- NON è associato ad un aumento del rischio di mortalità, ospedalizzazione o grave disabilità
- è però associato a **maggior rischio di cadute, stress psicologico, depressione e riduzione della attività sociali**

Is only Abnormal Gait ?

- **Pain**
- **Muscle weakness**
- **Impaired joint mobility** (e.g. arthritis, contractures)
- Sensory/balance deficit (e.g. neuropathy, stroke)
- Impaired central processing (e.g. dementia, stroke, drugs)

Rubentstein, Annals Long Term Care 2004

Abnormal Gait: pain

- Antalgic gait:
  - Painful hip, knee, foot
- Decrease single limb support period (less time on bad leg)
- Shorter stride on opposite side
- Limp

Abnormal Gait: weakness

- Muscle (e.g. sarcopenia, malnutrition)
- Neuropathy (e.g. diabetes)
- Cardiac / pulmonary: heart failure, COPD
- Anemia (e.g. deficit vit. B-12, folate, iron)
- Medications (e.g. alcohol, statins, etc.)

INQUADRAMENTO CLINICO DIZZINESS:
3. LA POLI-FARMACO-TERAPIA

$\geq$ 5 farmaci = fattore di rischio di dizziness

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Drugs and elderly patients

"But know also, man has an inborn craving for medicine. It really is one of the serious difficulties with which we have to contend"

Sir William Osler
1849-1919

Drugs and elderly patients

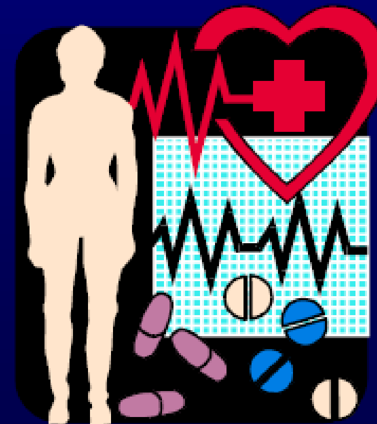
Polypharmacy in the elderly

- Expectation of prescribing
  - 60% GP visits results in prescription
- Multiple points of medical service contact
- Reluctance to stop medication that has been prescribed for a long time
- Continuation of hospital discharge medications (esp hypnotics, anti-emetics, aperients, analgesics)

Drugs and elderly patients

ADR's in the elderly

- Implicated in up to 15% of elderly hospital admissions
  - likely to be an underestimate due to atypical presentations
- Up to 5 times more likely in elderly
- Incidence increases with:
  - increasing no. medications
    - <3 2% chance ADR
    - >10 17% chance ADR
  - increasing age



Drug-Induced Dizziness

- **Drugs that cause hypovolemia or decrease blood pressure**
- **Ototoxic drugs** (ASA, aminoglycosides)
- **NSAIDs** (including COX2 inhibitors)
- **Alcohol:** postural hypotension with high levels, vertigo when levels decline

Medications and Falls in the Elderly: A Review of the Evidence and Practical Considerations

Elsaris Z. Riefkohl, PharmD, Heather L. Bieber, PharmD, Mark B. Burlingame, PharmD, BCPS, and David T. Lowenthal, MD, PhD

Table 1 Drugs and Drug Classes to Consider in Evaluating Elderly Patients with an Increased Risk of Falling*

- Antidepressants† ‡
- Antipsychotics†
- Benzodiazepines†
- Antihypertensives
- Antihistamines§
- Anticonvulsants†
- Nonsteroidal anti-inflammatory drugs
- Corticosteroids
- Muscle relaxants
- Narcotic analgesics
- Antiarrhythmics (type IA†)
- Digoxin†
- Nitrates
- Hypoglycemics
- Antiparkinson drugs
- Histamine H_2-receptor blockers

* Not all drugs and drug classes listed have been associated with falls in published research. Therefore, this list should be used in the context of a comprehensive clinical assessment for each individual patient.

† Published research suggests an association between the use of this drug or drug class and an increased risk of falling.

‡ Includes selective serotonin reuptake inhibitors (SSRIs).

§ Especially sedating antihistamines, such as diphenhydramine HCl (e.g., Benadryl®, Pfizer) and hydroxyzine (e.g., Atarax®, Pfizer).

Drug-Induced Dizziness

SENSORY INPUT

- Peripheral neuropathy
  - phenytoin
  - nitrofurantoin
  - isoniazid
  - vincristine
- Visual impairment
  - anticholinergics
  - steroids
  - amiodarone
  - chloroquine
- Vestibular impaiment
  - aminoglycosides
  - ethacrynic acid
  - frusemide
  - aspirin
  - quinates
  - NSAIDs

Drug-Induced Dizziness

CENTRAL PROCESSING

- Sedation/confusion
  - hypnotics
  - BZP's
  - antipsychotics
  - antidepressants
  - anticonvulsants
  - antiparkinsonian drugs
  - antihistamines
  - alcohol
  - H2 antagonists
  - NSAIDs
- Parkinsonism
  - butyrophenones

Drug-Induced Dizziness

MUSCLE WEAKNESS

- BZP's
- steroids
- dantrolene
- baclofen
- thyroxine

Drug-Induced Dizziness

POSTURAL HYPOTENSION

- Antihypertensives
- Antidepressants
- Antiparkinsonian drugs
- Diuretics
- Antipsychotics
- Nitrates
- Antiemetics

The NEW ENGLAND JOURNAL of MEDICINE

A Multifactorial Intervention to Reduce the Risk of Falling among Elderly People Living in the Community

Mary E. Tinetti, Dorothy I. Baker, Gail McAvay, Elizabeth B. Claus, Patricia Garrett, Margaret Gottschalk, Marie L. Koch, Kathryn Trainor, and Ralph I. Horwitz

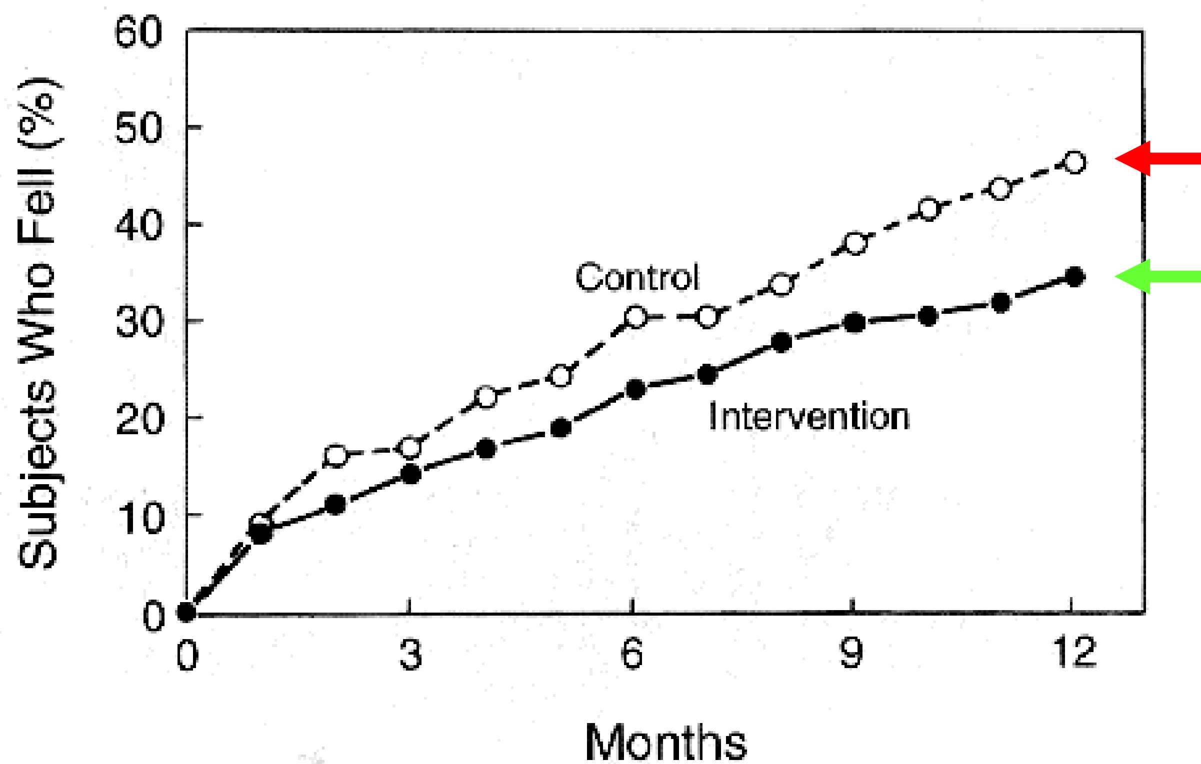
Volume 331:821-827 **September 29, 1994** **Number 13**

Risk Factor	Intervention
Assessed by a nurse	
Postural hypotension: drop in systolic blood pressure ≥20 mm Hg or to <90 mm Hg on standing	Behavioral recommendations, such as ankle pumps or hand clenching and elevation of head of bed; decrease in dosage, discontinuation, or substitution for medications that may contribute to hypotension*
Use of any benzodiazepine or other sedative–hypnotic agent	Education about the appropriate use of sedative–hypnotic agents; nonpharmacologic treatment of sleep problems, such as sleep restriction; tapering and discontinuation of medications*
Use of ≥4 prescription medications	Review of medications with primary physician*
Inability to transfer safely to bathtub or toilet	Training in transfer skills; environmental alterations, such as grab bars or raised toilet seats
Environmental hazards for falls or tripping	Appropriate changes, such as removal of hazards, safer furniture (correct height, more stable), installation of structures such as grab bars or handrails on stairs
Assessed by a physical therapist	
Any impairment in gait	Gait training; use of an appropriate assistive device; balance or strengthening exercises if indicated†
Any impairment in transfer skills or balance	Balance exercises; training in transfer skills if indicated; environmental alterations†
Impairment in leg or arm muscle strength or range of motion (hip, ankle, knee, shoulder, hand, elbow)‡	Exercises with resistive bands and putty; resistance was increased when the subject was able to complete 10 repetitions through the full range of motion†

*The primary physician made the final decision on adjustments in medication.

†Balance exercises included the performance of four levels of progressively more destabilizing maneuvers with decreasing amounts of support. Subjects were instructed to perform resistive and balance exercises twice daily for 15 to 20 minutes.

‡Listed in descending order of priority. Subjects underwent no more than three programs to improve balance or of individual resistive exercise.



Intervention	153	130	113	103	95
Control	148	123	102	89	76
Relative risk	—	0.86	0.77	0.79	0.75

Drug-Induced Dizziness

Single intervention
Reducing Psychotropic Use

Design
- RCT (n = 93)
- People using benzodiazepines or antidepressants
- Gradual withdrawal of psychotropics (blind) over 3 months

Results
- **66% reduction in risk of falling at 44 weeks**
- 81% re-commenced using psychotropics within 1 month of end of trial

Source: *Campbell et al. J Am Geriatr Soc* 1999;47:850-853

Drug-Induced Dizziness

Approach to drug regimen review

- Is there an indication for ongoing therapy?
- Is there a condition that isn't being treated?
- Is the dose suitable?
- Is the drug working?
- Is the drug producing any side-effects?
- Is the drug interacting with another drug(s)?
- Is the drug interacting with another medical condition(s)?
- Is the patient able to afford the medication?
- Is the patient able to comply with treatment?

Approccio “olistico” al paziente anziano

1. **Escludere le patologie acute**
2. **Valutare la comordilità del soggetto**
3. **Valutare attentamente la terapia farmacologica (revisione critica)**
4. **Valutare il rischio di caduta nell’ambiente domestico**

Summary of Treatments

- **Try to identify a Specific Diagnosis and treat**
- **Try vestibular desensitization if cause**
- **Stop all non-essential medications**
- **Correct vision problems (if possible)**
- **Use cane for impaired proprioception**
- **Exercise and balance training**
- **Make home hazard-free as possible**

Grazie per l'attenzione …