

Prise en charge du patient fragile en EMS: optimiser la santé de l'appareil locomoteur



Patrizia D'Amelio, MD, PhD

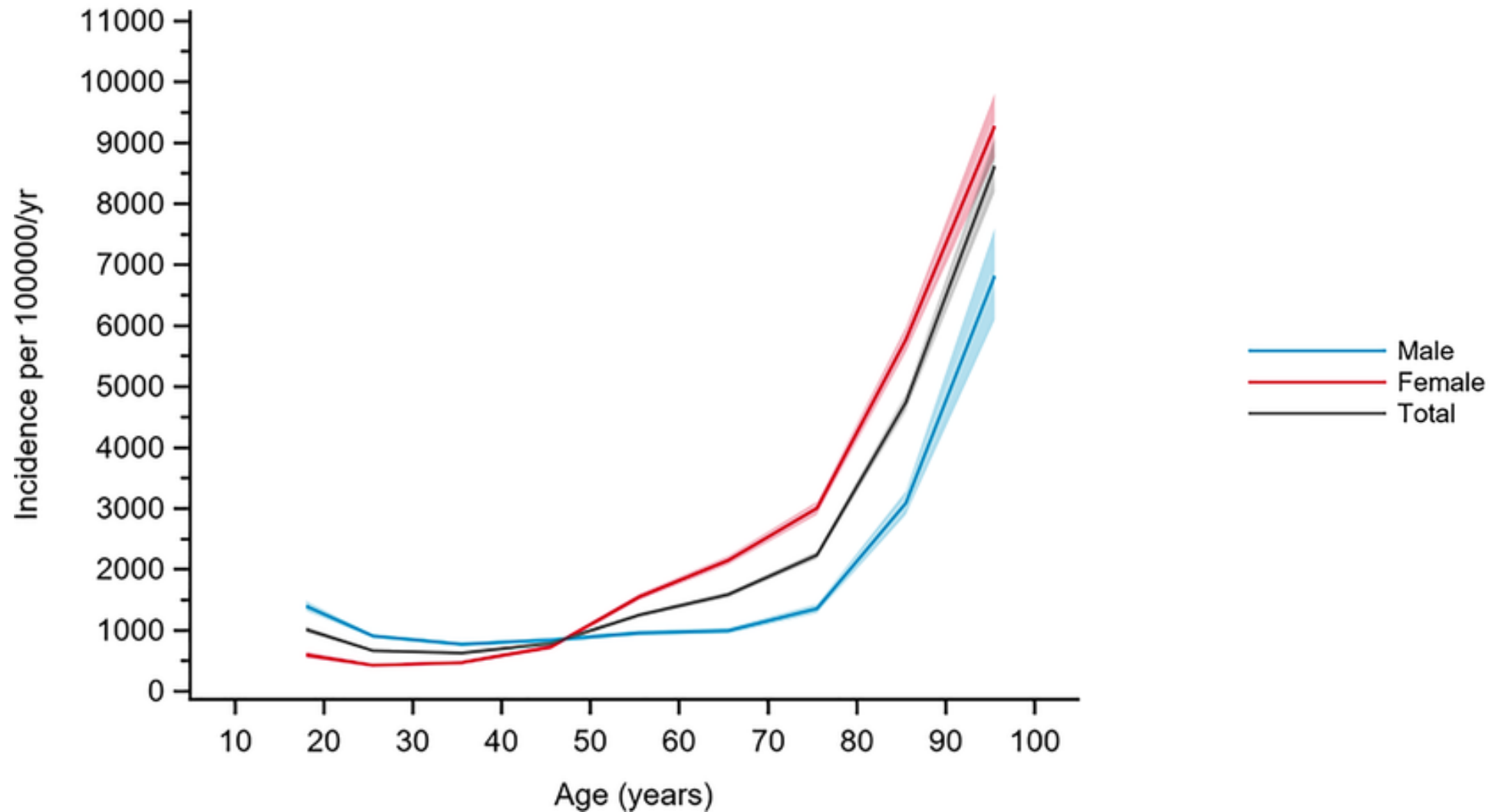
Service de Gériatrie et Réadaptation Gériatrique
CHUV, Lausanne

Lausanne, 15.05.2025

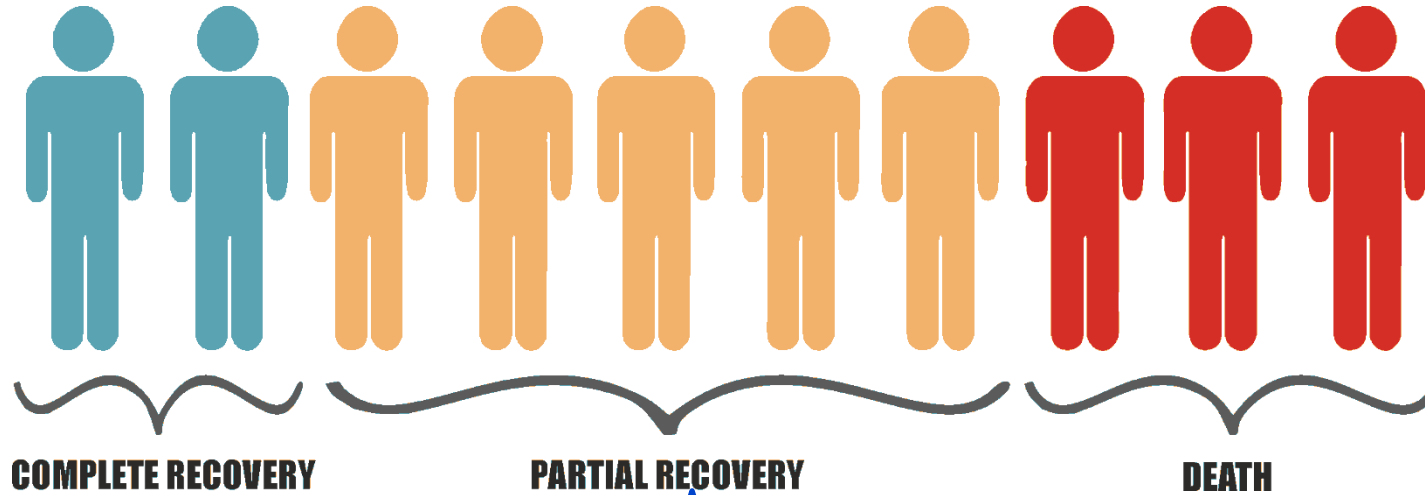


World is facing waves of aging

Fractures incidence increases with aging



Consequences of fractures



LOSS OF INDEPENDENCE



After a fracture cannot climb the stairs



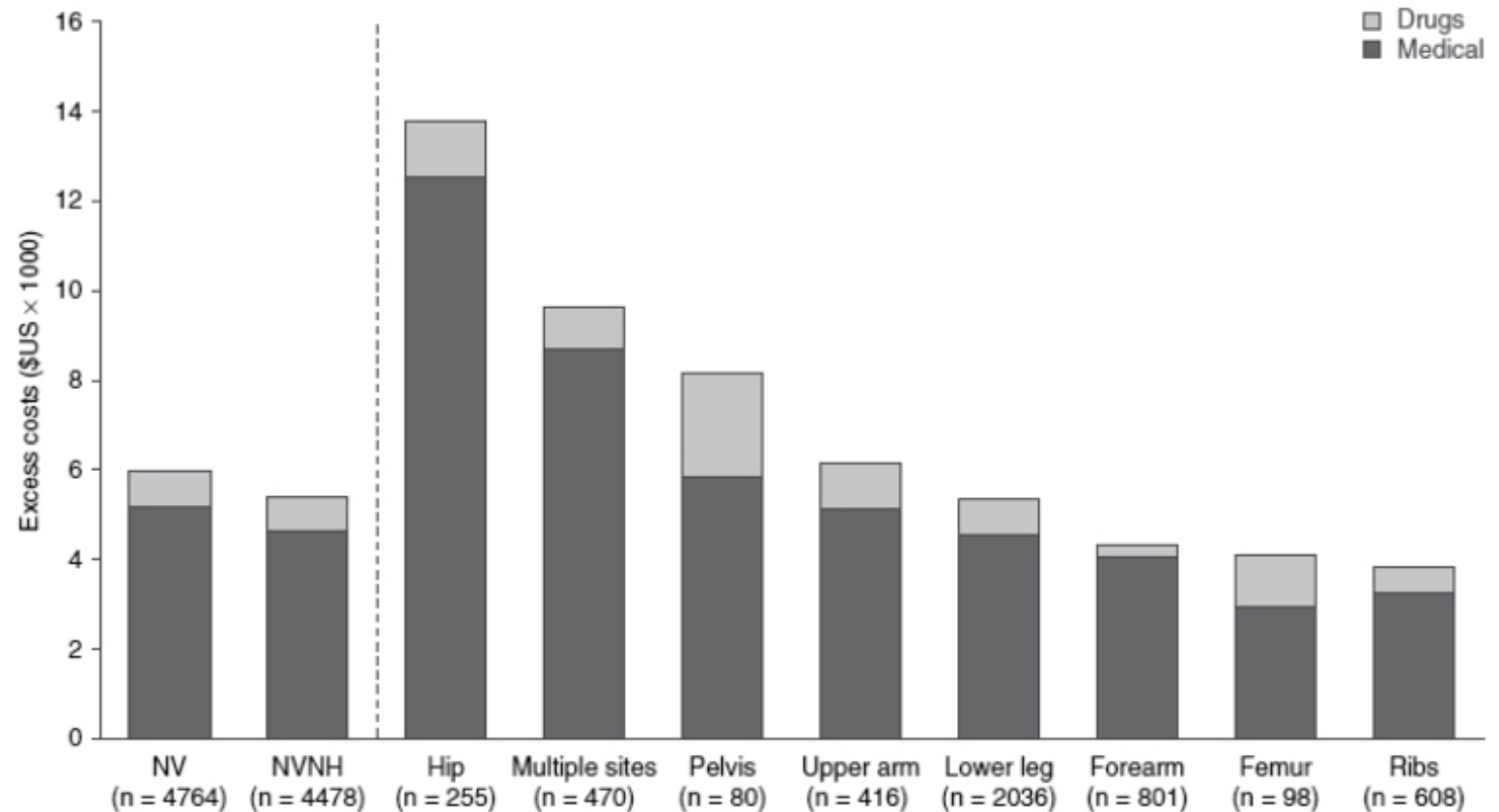
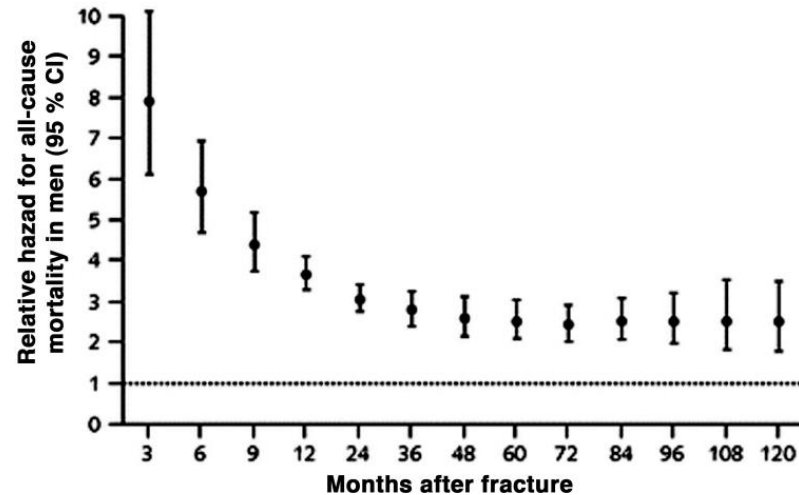
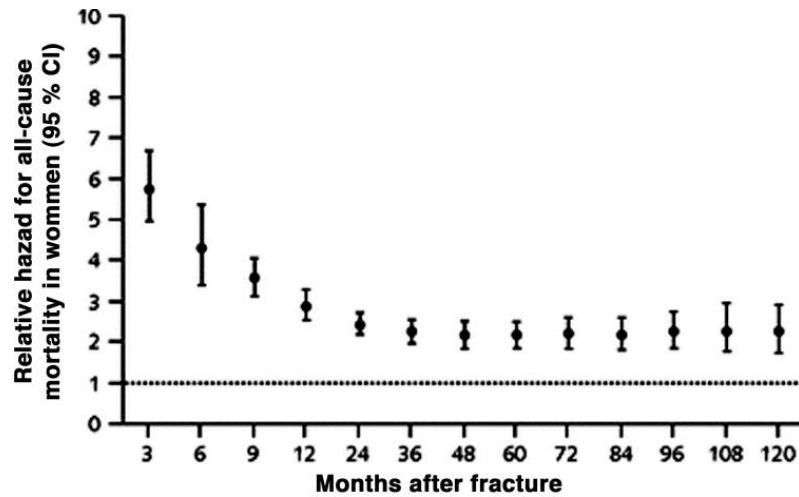
Loose independence

HIGH MORTALITY RATE



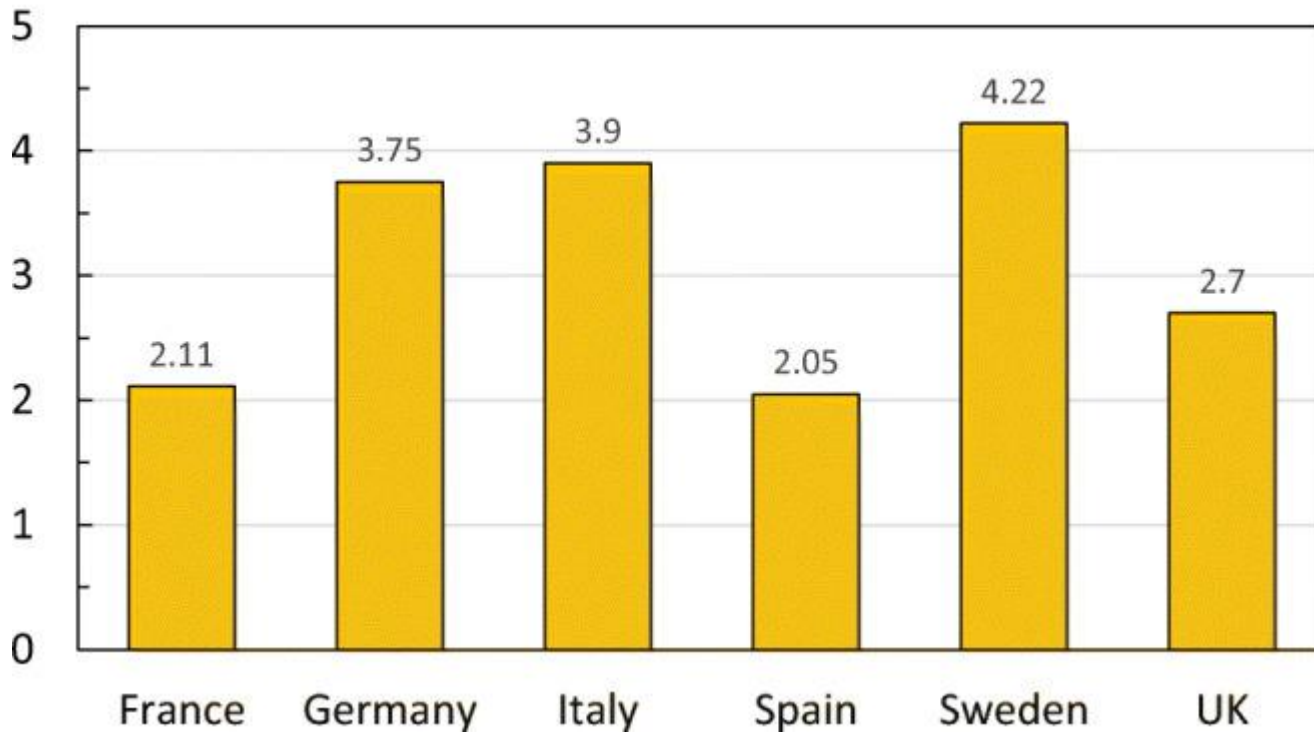
Within a year of hip fracture

Public health impact of osteoporosis

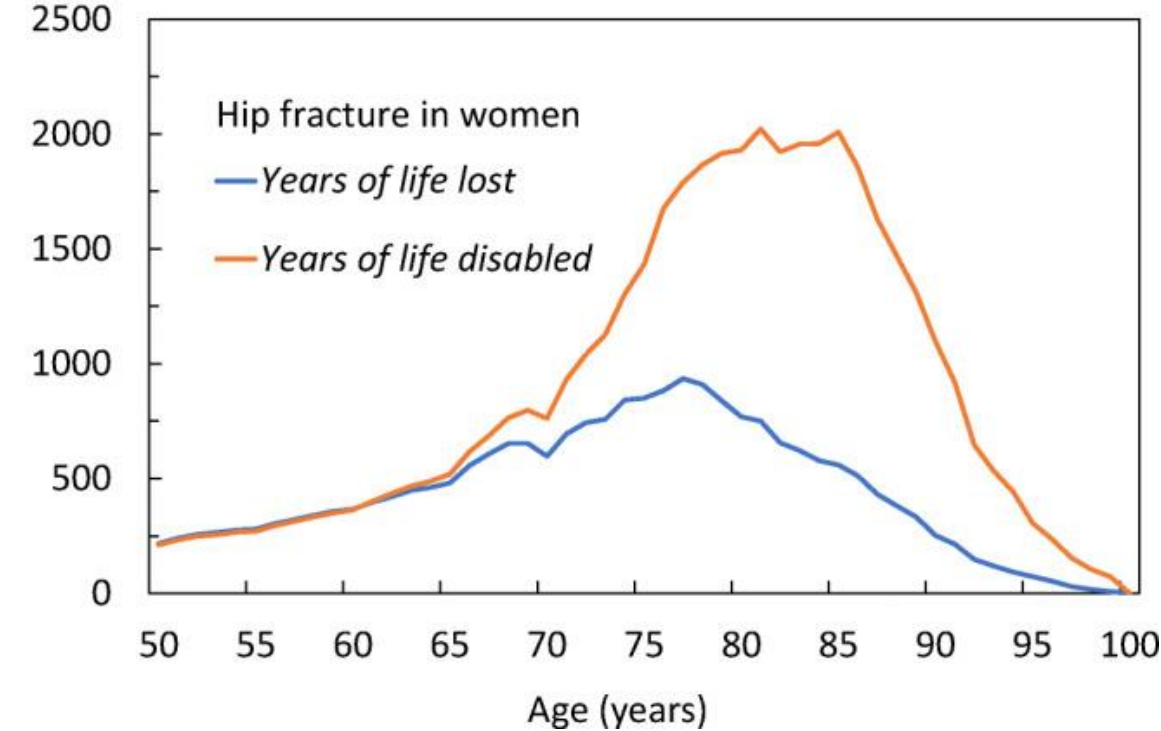


Public health impact of osteoporosis

QALYs lost (/1000)

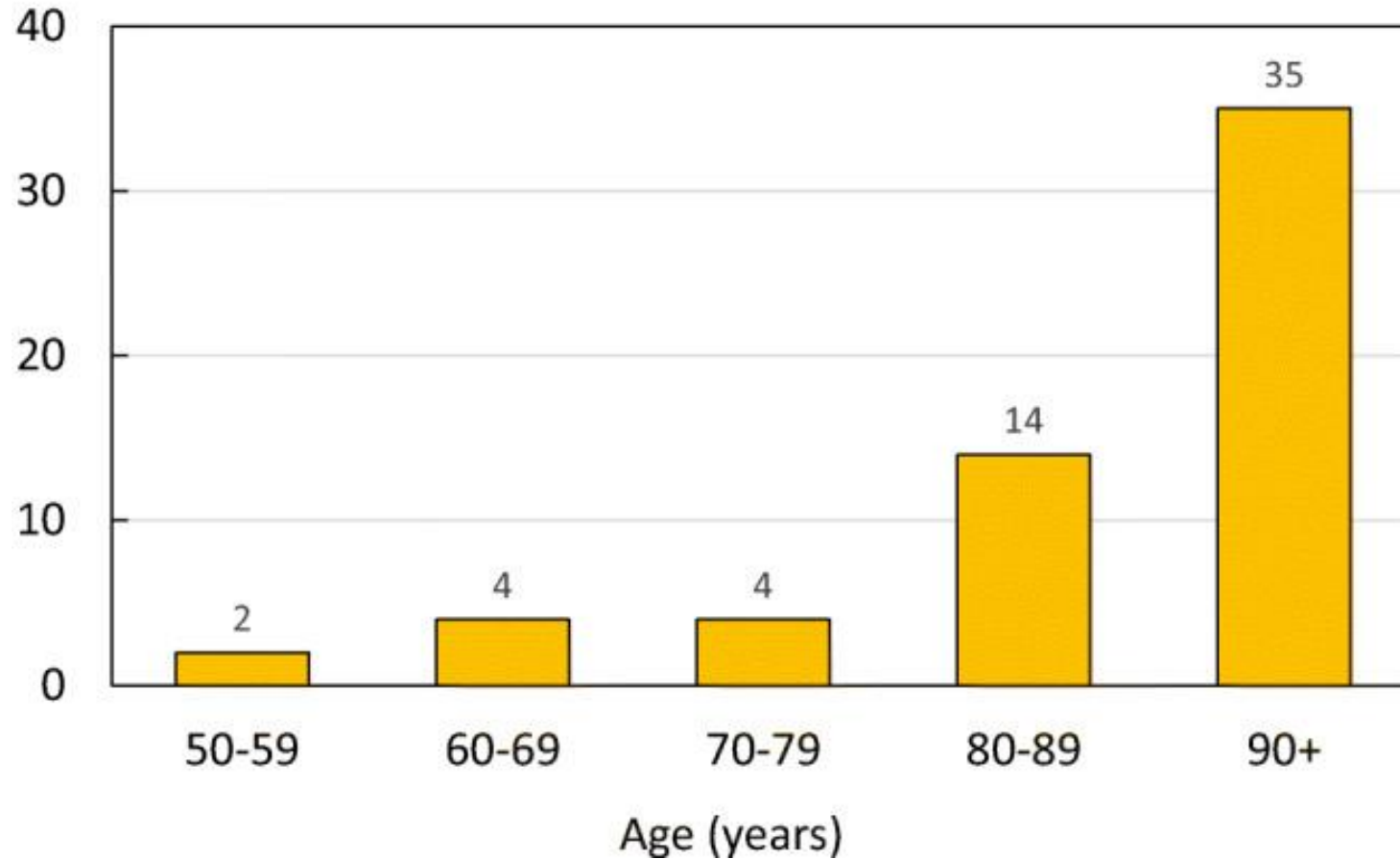


Life years

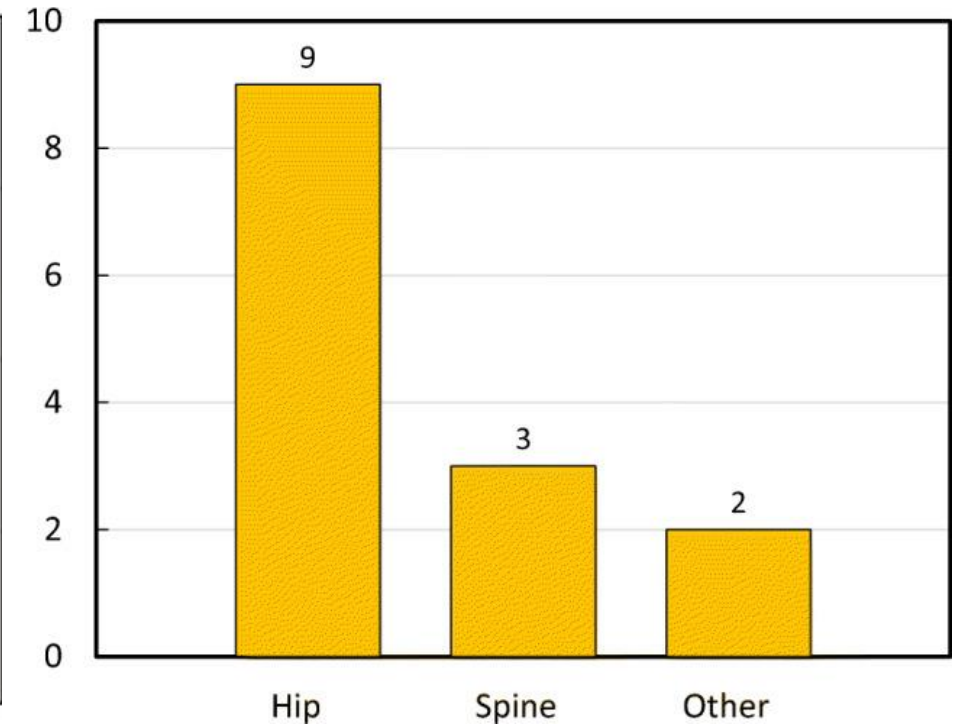


Public health impact of osteoporosis

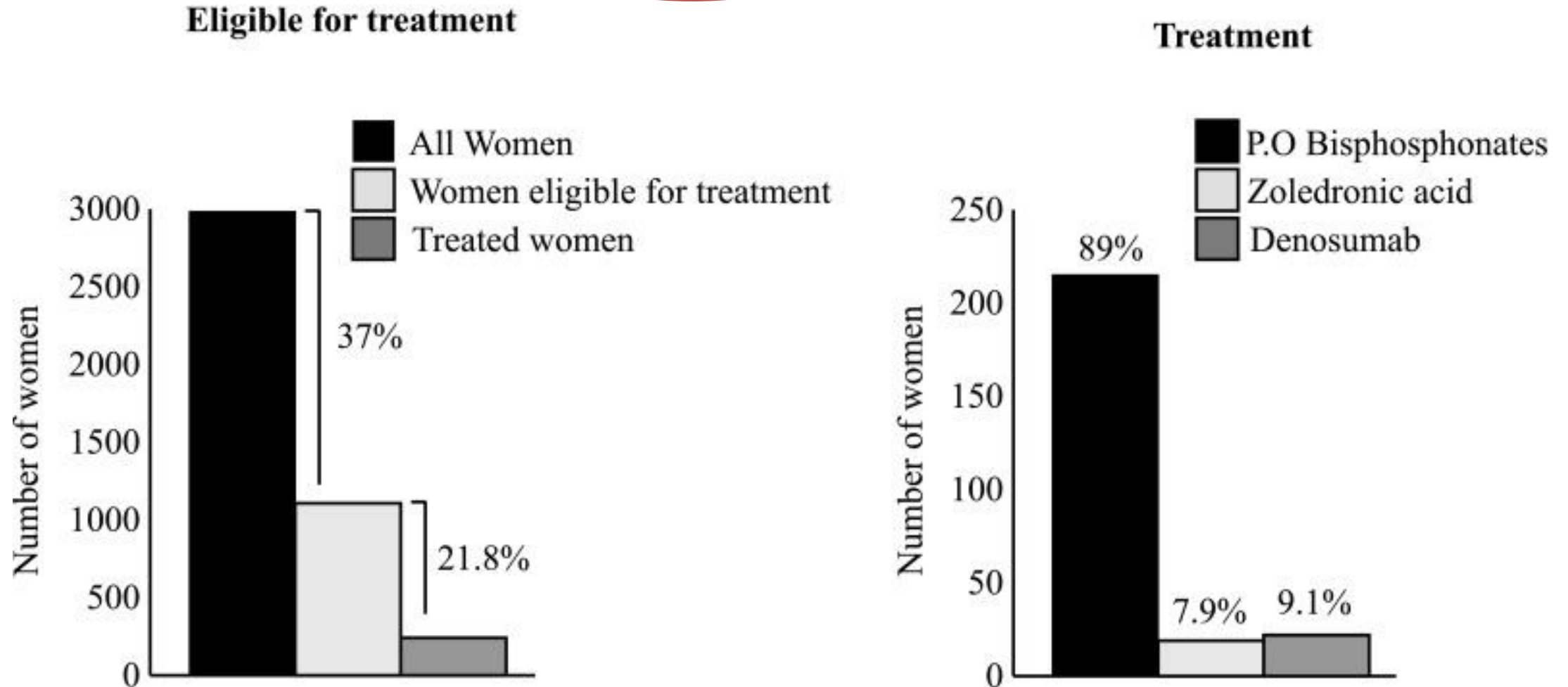
Admission to LTC (%)



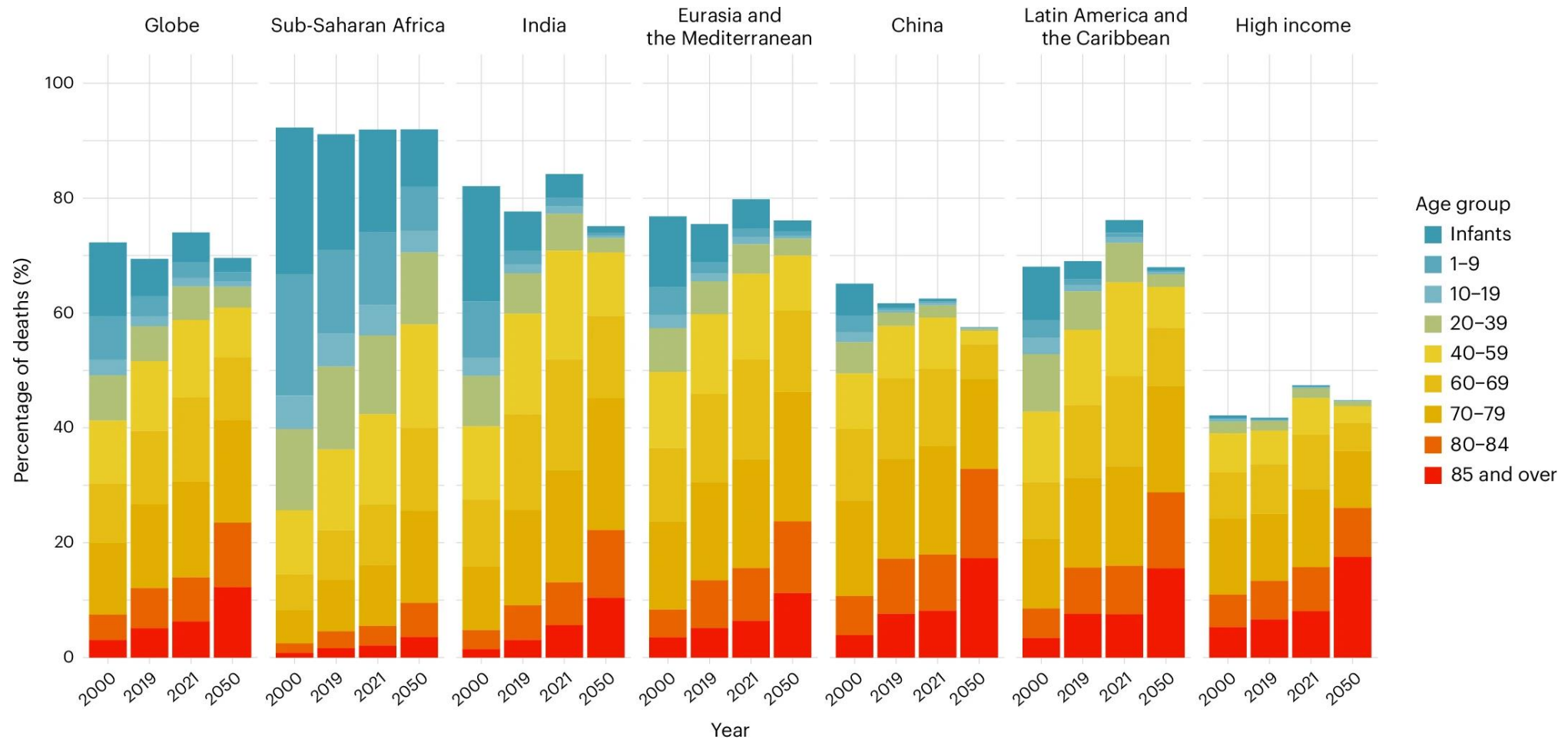
LTC (% admitted)



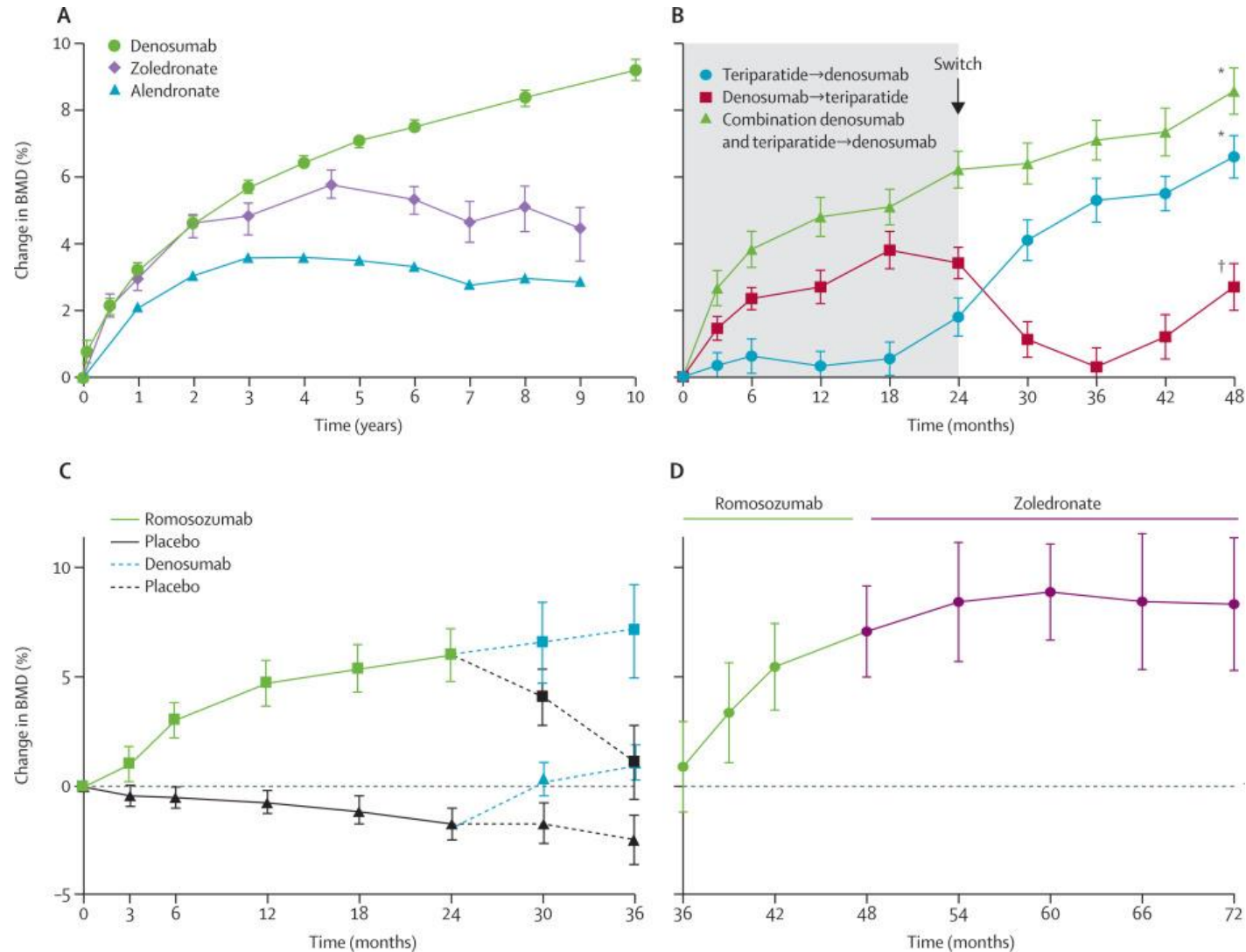
Treatment gap



Avoidable mortality as a percentage of all deaths for 2000, 2019, 2021 and 2050.



Efficacy of anti osteoporotic treatment



A green highway sign with a white border. The sign features the text "DECISIONS AHEAD" in large white capital letters. Below this, a yellow rectangular banner contains the text "CHOOSE YOUR PATH WISELY" in black capital letters. At the bottom of the sign, there are four white downward-pointing arrows.

DECISIONS AHEAD

CHOOSE YOUR PATH WISELY



Treatment is appropriate if the expected benefit outweighs the risk to which we expose the patient.

Madame C



- **Age 85**
- Menopause at 48
- BMI: 24
- BMD femoral neck -3.2 SD
- **Vertebral fracture aged 74**
- **Mrs.C's mother fractured her femur at age 73**
- Does not smoke or drink
- Does not take glucocorticoids
- No history of autoimmune disease

Madame C



- Mild, uninvestigated neurocognitive disorders (CDR1)
- Type 2 diabetes
- Parkinson's disease
- ADL: 5/6 (toileting, dressing, WC, transfers, ~~continence~~, eating)
- IADL: 4/8 (telephone, ~~shopping~~, ~~meals~~, ~~housework~~, laundry, transport, ~~medication~~, ~~budget~~)

**Do we start an anti-osteoporotic
treatment?**



Madame C: estimation of fracture risk



Outil de Calcul

Veuillez répondre aux questions ci-dessous pour calculer la probabilité de fracture sur 10 ans sans ou avec DMO

Pays: **Royaume-Uni** Nom/Identité: [A propos des facteurs de risques](#)

Questionnaire:

1. Âge (entre 40 et 90 ans) ou Date de Naissance
Âge: Date de Naissance: A: M: J:

2. Sexe ☐ Masculin ☒ Féminin

3. Poids (kg)

4. Taille (cm)

5. Fracture antérieure ☐ Non ☒ Oui

6. Parents ayant eu une fracture de la hanche. ☐ Non ☒ Oui

7. Actuellement Fumeur ☒ Non ☐ Oui

8. Glucocorticoïdes ☒ Non ☐ Oui

9. Polyarthrite rhumatoïde ☒ Non ☐ Oui

10. Ostéoporose secondaire ☐ Non ☒ Oui

11. Acool trois unités par jour ou plus ☒ Non ☐ Oui

12. DMO du Col Fémoral (g/cm²)
 T-score: -3.0

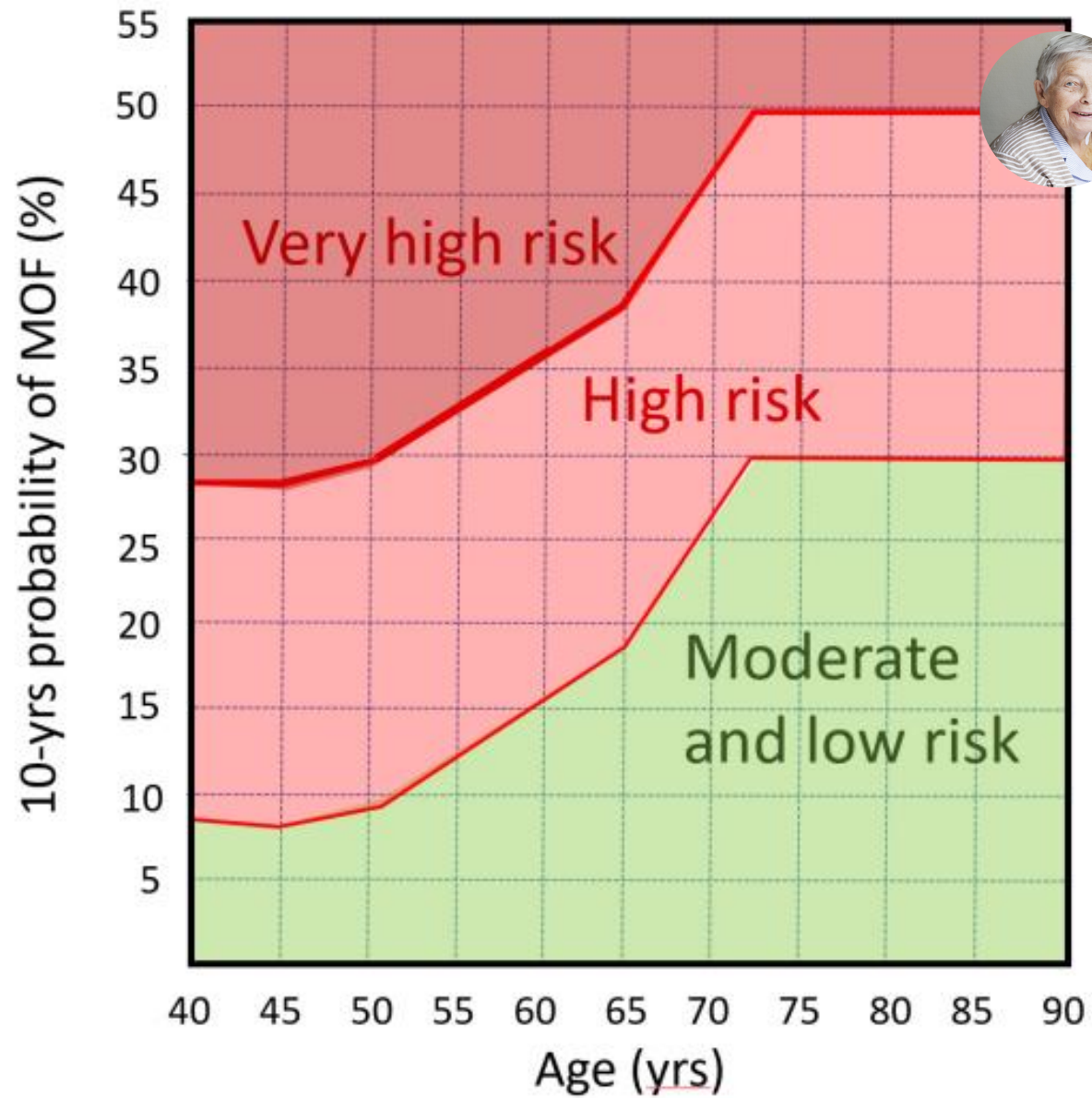
BMI: 23.9
The ten year probability of fracture (%)

with BMD

Major osteoporotic	53
Hip Fracture	43

[View NOGG Guidance](#)

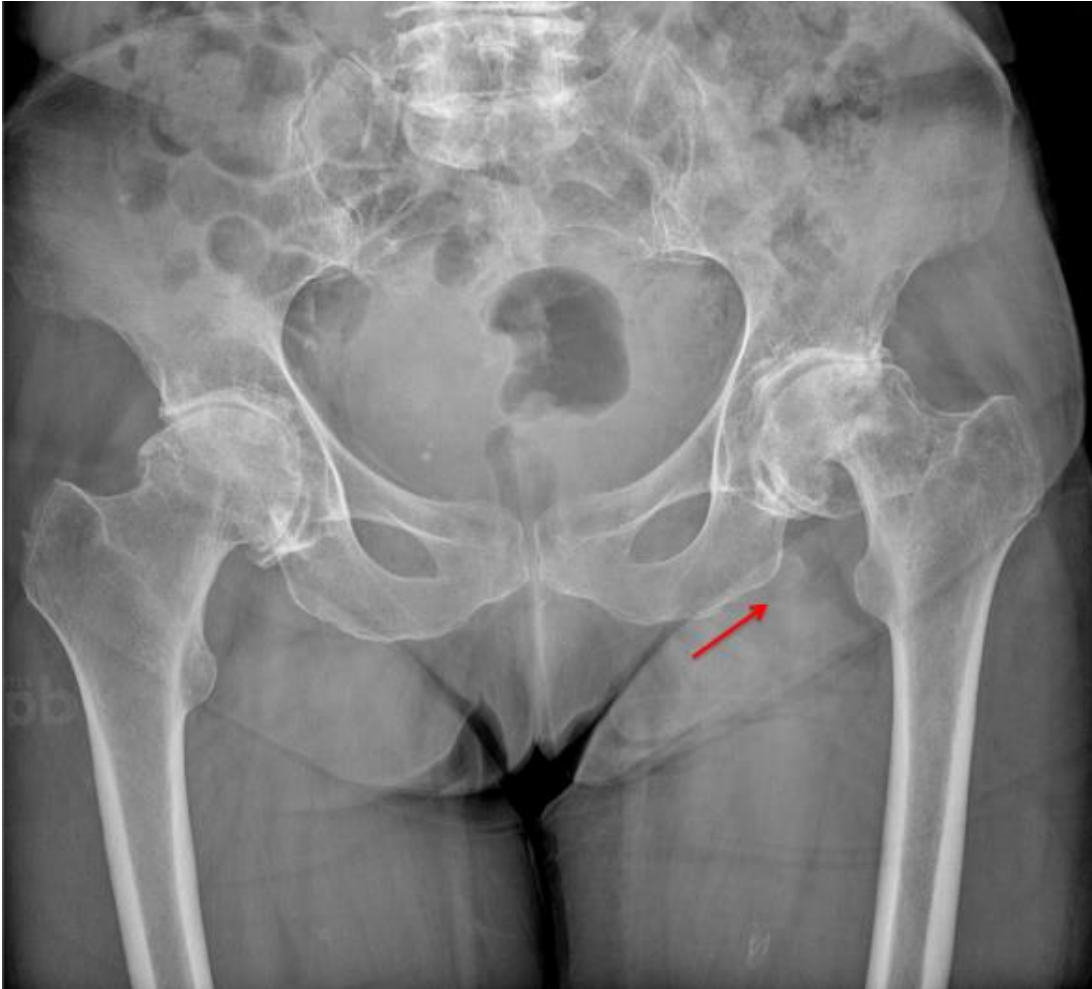
If you have a TBS value, click here:



Madame C.

Madame C

September 2020: Left femoral neck fracture treated with hip prosthesis



Madame C: after surgery

- from 01.31 to 05.10.2021: 3 episodes of hip prosthesis dislocation

December 2021 entry into geriatric care





Madame C: at hospital discharge



- **ADL: 1/6** (~~toileting, dressing, WC, transfers, continence, eating~~)
- Mini GDS: 3/4
- MMSE 18/30
- **CDR 2**

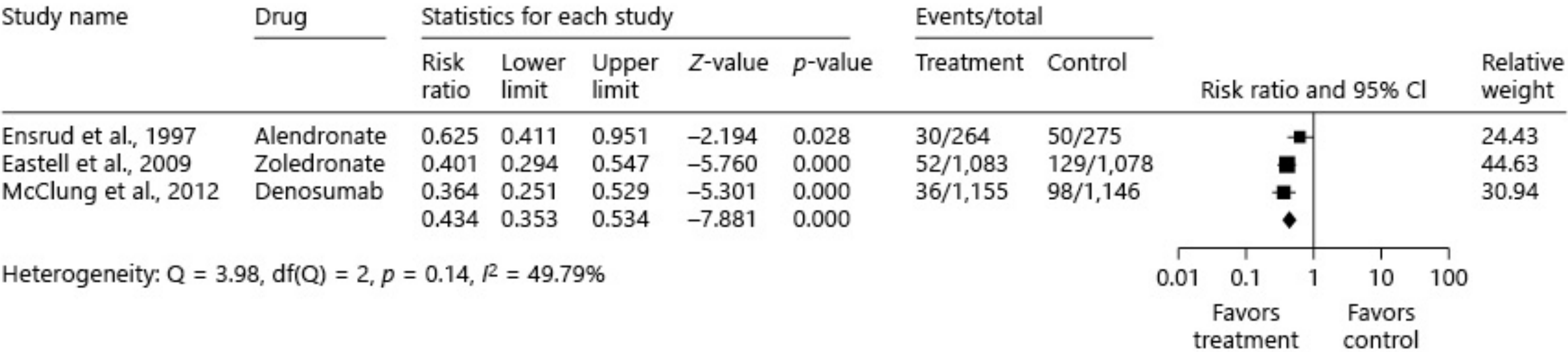
**Do we start an anti-osteoporotic
treatment?**



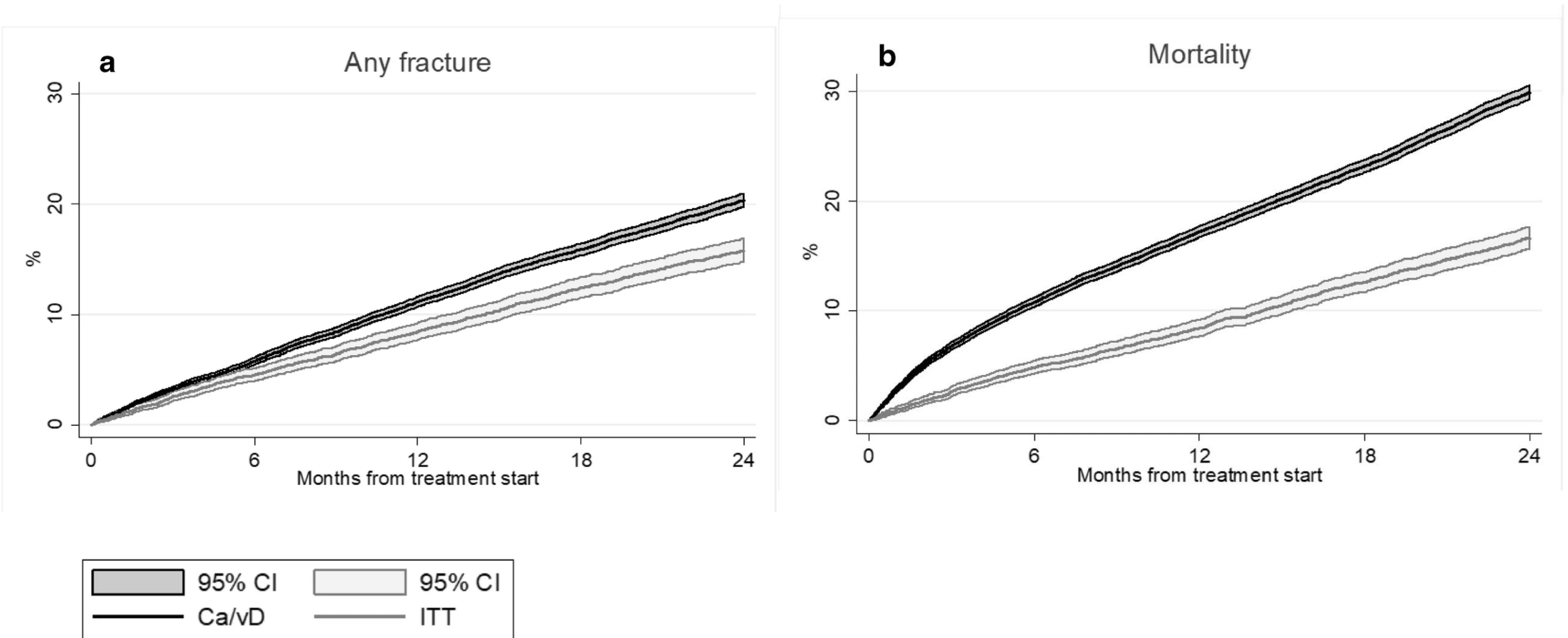
Why shouldn't we treat an old and frail patient? When a prescription is inappropriate?

- Lack of evidence of efficacy?
- Increase in adverse events?
- Unfavorable cost/benefit ratio?
- Therapeutic futility?

Meta-analysis of the effect of antiresorptive agents on vertebral fracture risk reduction in patients aged ≥ 75 years.



Effectiveness of osteoporosis treatment in the "real world" among the oldest old

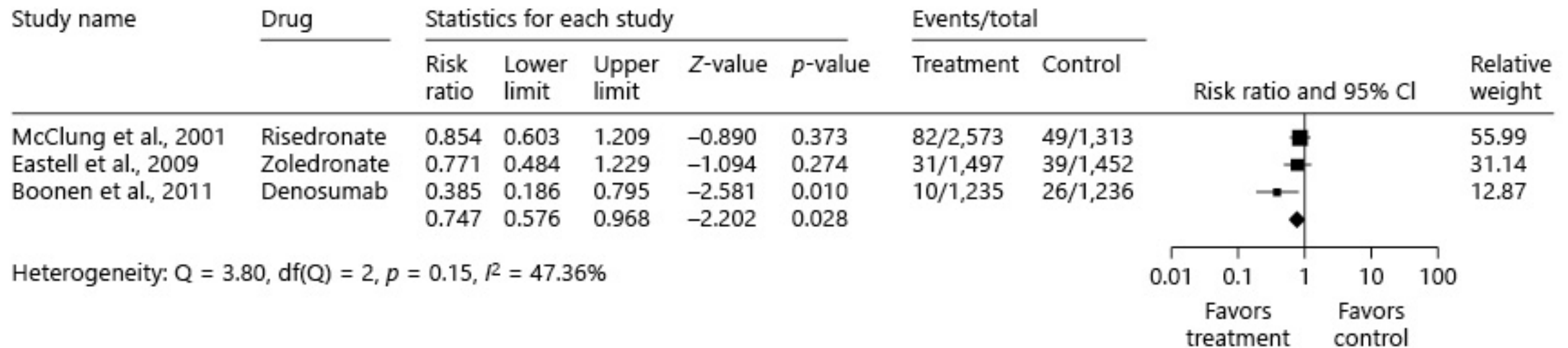


Why shouldn't we treat an old and frail patient? When a prescription is inappropriate?

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Meta-analysis of the effect of antiresorptive agents on reducing the risk of femur fracture in patients aged ≥ 75 years



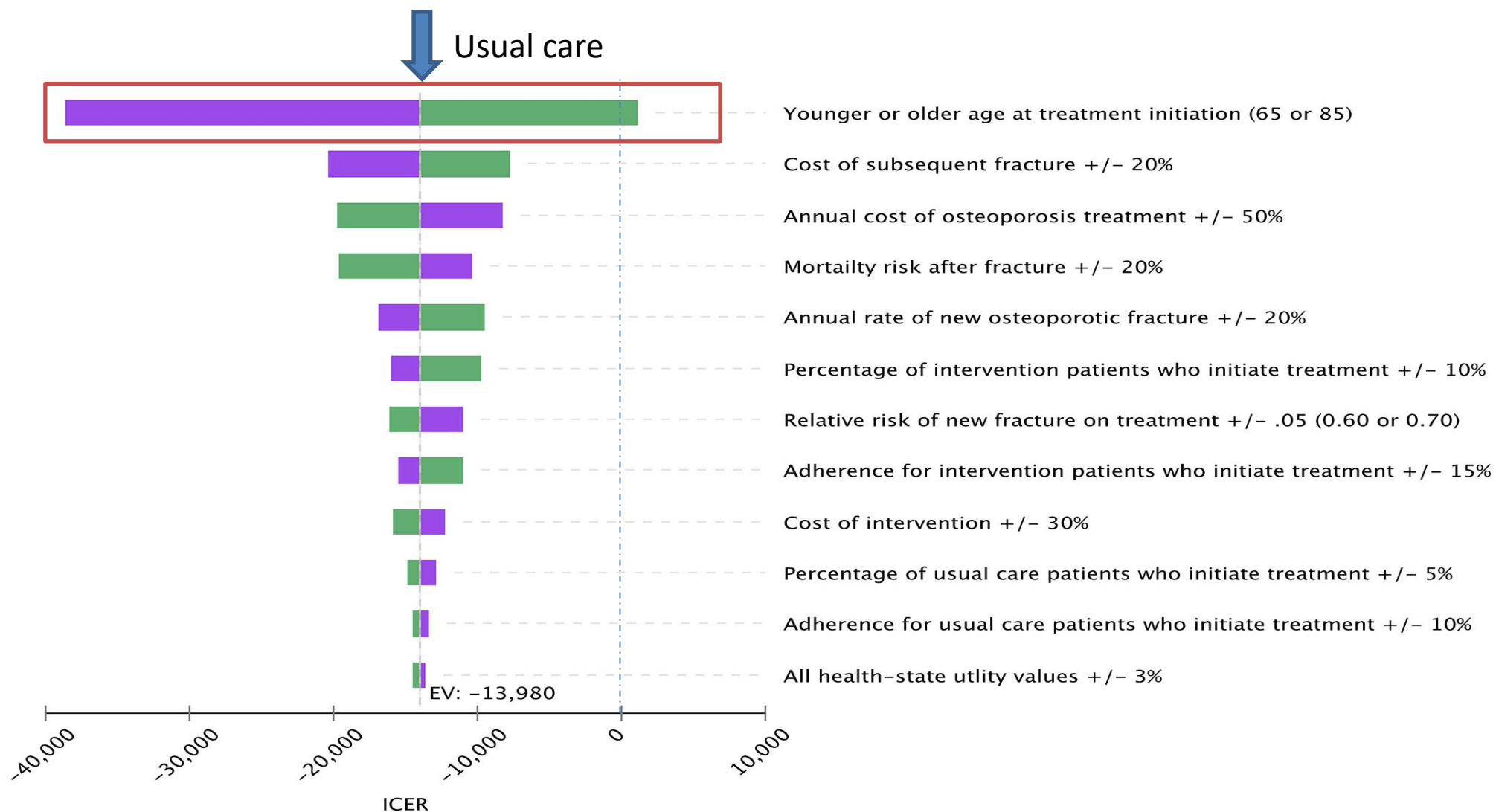
Why shouldn't we treat an old and frail patient? When a prescription is inappropriate?

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- Therapeutic futility?

NO!

NO!

Cost-effectiveness of an intervention to prevent secondary fractures



incremental cost-effectiveness value (ICER)

Nayak S, Singer A, Greenspan SL. J Am Geriatr Soc. 2021

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- Unfavorable cost/benefit ratio?
- Therapeutic futility?

NO!

NO!

NO!

Association of Disease Definition, Comorbidity Burden, and Prognosis With Hip Fracture Probability Among Late-Life Women

Kristine E. Ensrud, MD, MPH; Allyson M. Kats, MS; Cynthia M. Boyd, MD; Susan J. Diem, MD, MPH; John T. Schousboe, MD, PhD; Brent C. Taylor, PhD, MPH; Douglas C. Bauer, MD; Katie L. Stone, PhD; Lisa Langsetmo, PhD; for the Study of Osteoporotic Fractures (SOF) Research Group

Key Points

Question What is the association of disease definition, comorbidity burden, and prognosis with 5-year hip fracture probabilities among women 80 years and older?

Findings This prospective cohort study found that the 5-year hip fracture probability, taking into account the competing risk of death, was over 3-fold higher among women with osteoporosis compared with women without osteoporosis but at high fracture risk. The difference between groups in hip fracture probabilities was even more pronounced in women with a greater number of comorbidities or poorer prognosis.

Meaning Women 80 years and older with osteoporosis, including those with more comorbidities or poorer prognosis, have a high hip fracture probability despite accounting for competing mortality risk and may be the group most likely to be candidates for drug treatment to prevent hip fractures.

Time to Benefit of Bisphosphonate Therapy for the Prevention of Fractures Among Postmenopausal Women With Osteoporosis

A Meta-analysis of Randomized Clinical Trials

William James Deardorff, MD; Irena Cenzer, PhD; Brian Nguyen, BA; Sei J. Lee, MD, MAS

10 RCTs comprising 23 384 postmenopausal women with osteoporosis.

The pooled meta-analysis found that 12.4 months (95%CI, 6.3-18.4 months) were needed to avoid 1 non vertebral fracture per 100 postmenopausal women receiving bisphosphonate therapy

Why shouldn't we treat an old and frail patient? When a prescription is inappropriate?

- Lack of evidence of efficacy?
- Increase in adverse events?
- Unfavorable cost/benefit ratio?
- Therapeutic futility?

NO!

NO!

NO!

NO!

Take home messages

- ✓ Patients at high risk of fracture should be prescribed anti-osteoporotic treatment
- ✓ Antiresorptive and anabolic agents are effective treatments for reducing fracture risk in older patients
- ✓ Are well tolerated
- ✓ Therapeutic futility must be considered as a possible risk, but ageism puts our patients at risk of not being treated.