



XXX

CONGRESSO NAZIONALE GISMO

MALATTIE MUSCOLO-SCHELETRICHE
TERAPIA INTEGRATA, PERSONALIZZATA E QUALITÀ DI VITA
ROMA 6 - 7 ottobre 2023

GISMO

Gruppo Italiano Studio
malattie Metabolismo Osseo

- Osteoporosi
- Malattie Muscolo-Scheletriche
- Malattie Metaboliche
- Dolore
- Nutrizione



Patrizia D'Amelio

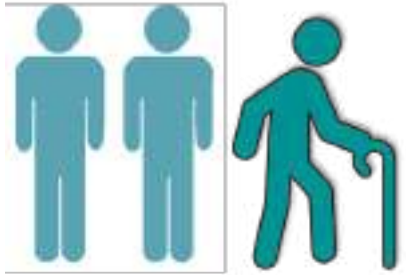


*Centre Hospitalier Universitaire
Vaudoise – UNIL- Lausanne*

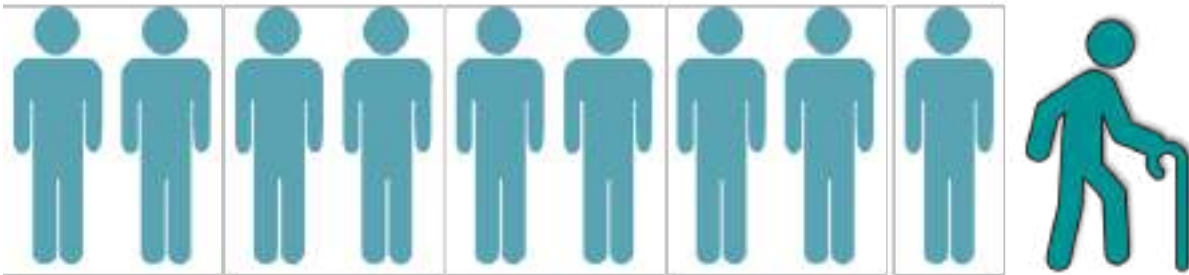


*La fragilità ossea del soggetto
anziano: fisiologia o patologia?*

Aging world

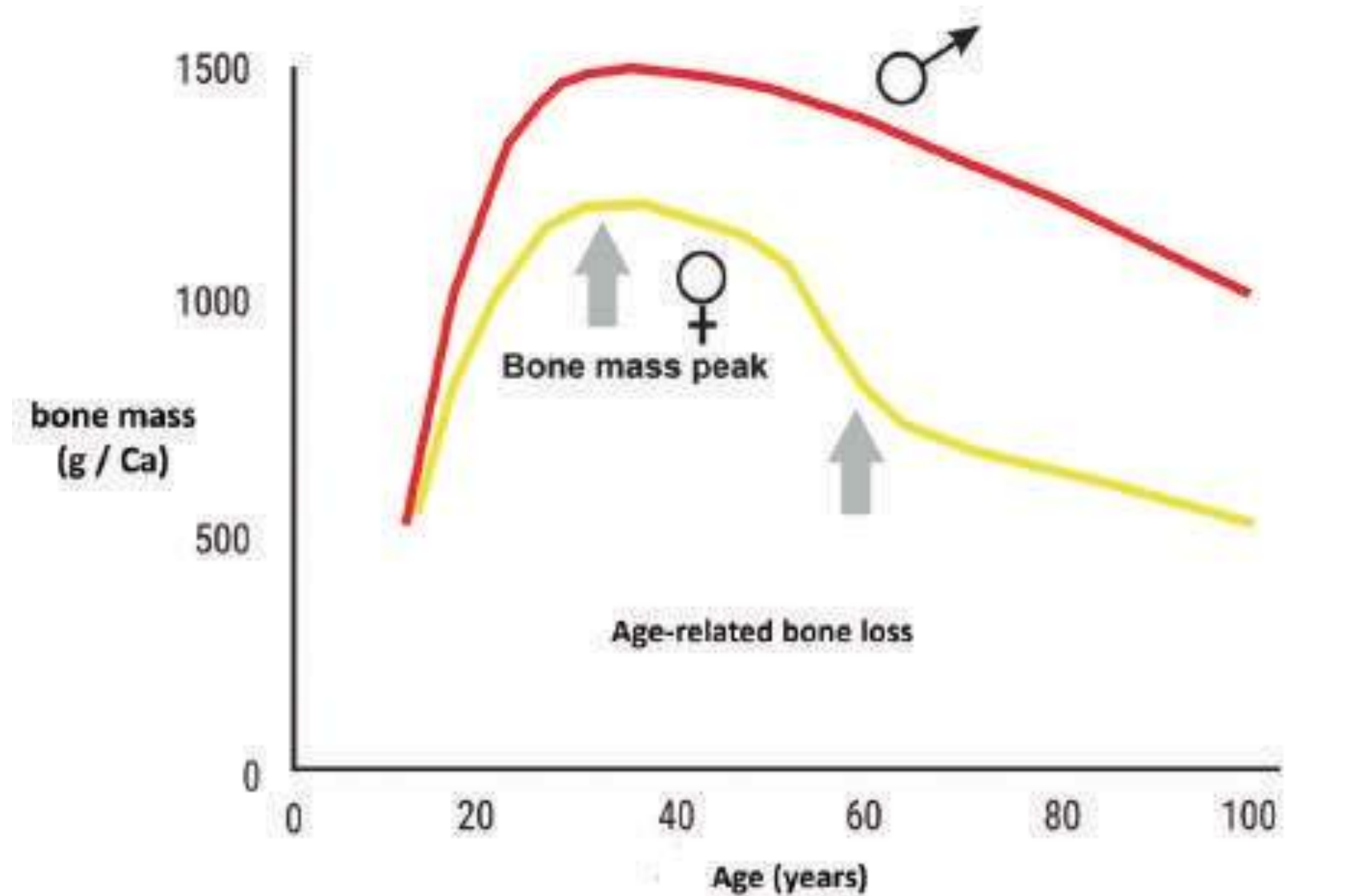


In 2050, 1 person out of 3 will be older than 65 years

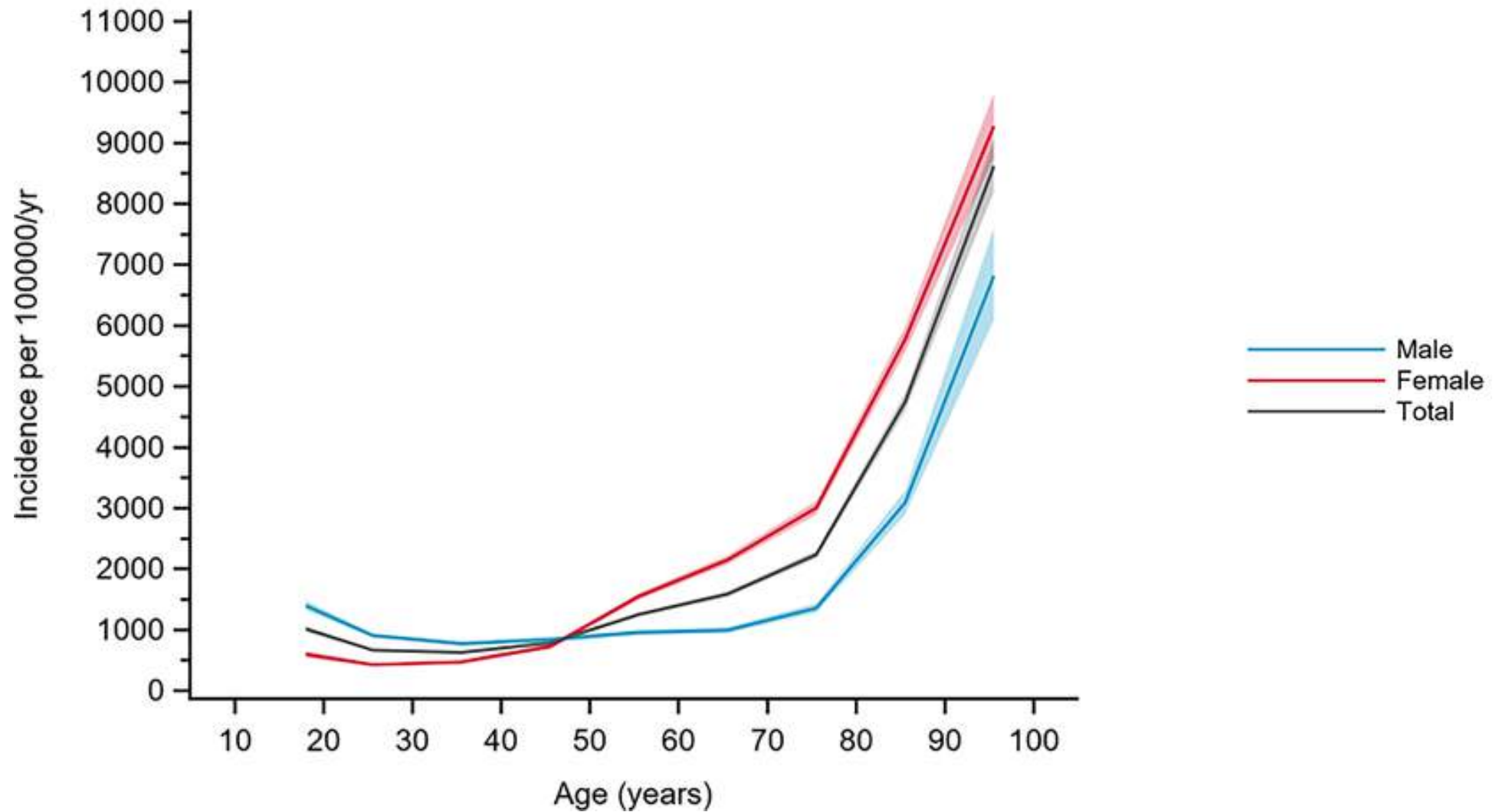


1 out of 10 will be older than 80

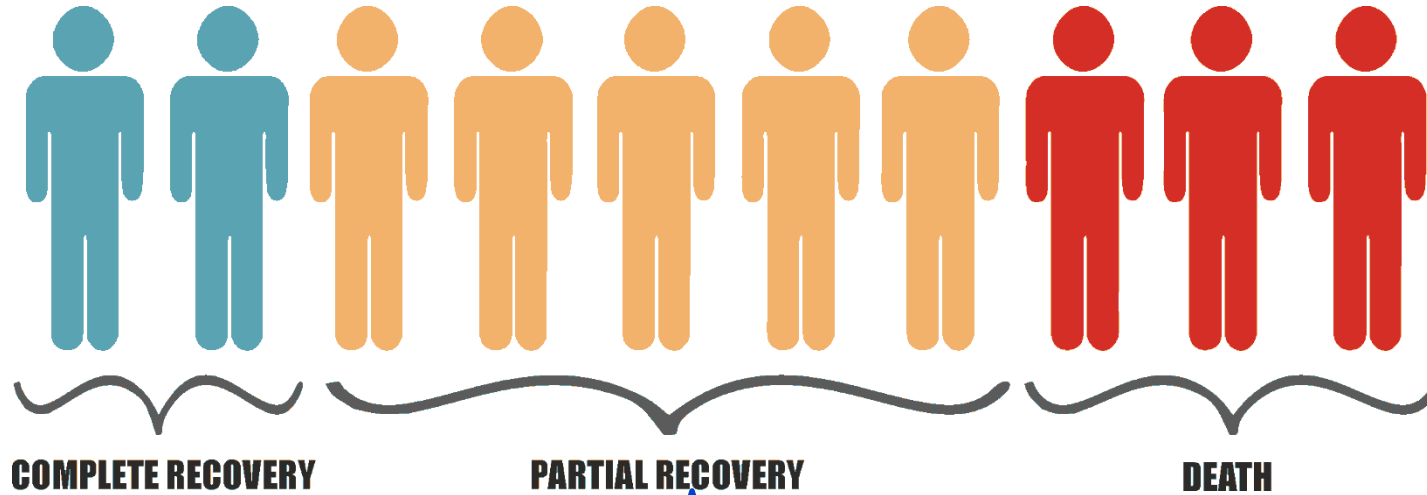
Osteoporosis: is it a disease or normal aging?



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

A green highway sign with a white border. The sign features the text "DECISIONS AHEAD" in large white capital letters at the top. Below this, a yellow horizontal bar contains the text "CHOOSE YOUR PATH WISELY" in black capital letters. At the bottom of the sign, there are four white arrows pointing downwards, spaced evenly across the width of the sign. The sign is set against a background of a blue sky with scattered white and orange-tinted clouds.

DECISIONS AHEAD

CHOOSE YOUR PATH WISELY



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

Which patient needs treatment?

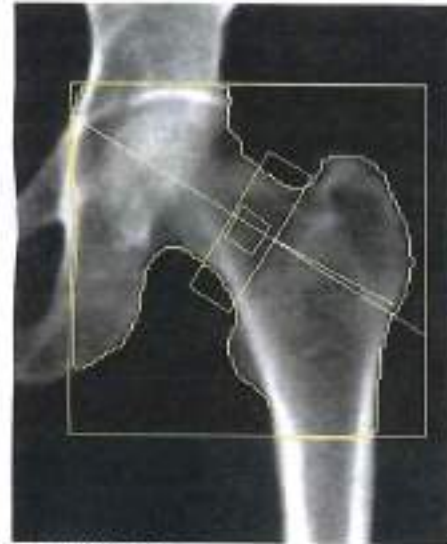


Image not for diagnostic use.
k = -1.145, d0 = 51.4
101 x 99
NECK: 46 x 13

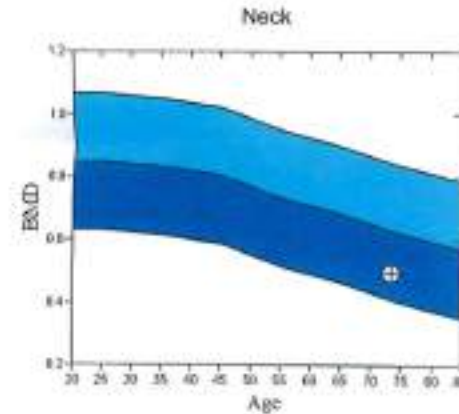
Scan Information:

Scan Type: a Left Hip
Analysis:
Left Hip

DXA Results Summary:

Region	Area (cm ²)	BMC (g)	BMD (g/cm ²)	T-score	Z-score
Neck	4.75	2.36	0.496	-3.2	-1.2
Trunk	10.73	5.05	0.470	-2.3	-0.8
Lower	17.08	12.47	0.731	-2.4	-0.9
Total	32.56	19.88	0.610	-2.7	-1.0

Total BMD CV 1.0%, ACF = 1.008, BCF = 1.011, TH = 4.829
WHO Classification: Osteoporosis



Which patient needs treatment?



- Age 75
- Menopause at 48
- BMD femoral neck -3.2 SD
- BMI: 24
- Does not smoke or drink
- Does not take glucocorticoids
- No history of autoimmune disease
- No other comorbidities

Which patient needs treatment?



Mrs D.

- Never fractured
- No family history of femur fracture



Mrs F.

- Left wrist fracture at age 65
- Madame's mother fractured her femur at age 73

Mrs D.



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	19
Hip Fracture	7.5

If you have a TBS value, click here:

Mrs F.



Outil de Calcul

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

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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)
Hologic: T-score: -3.0

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

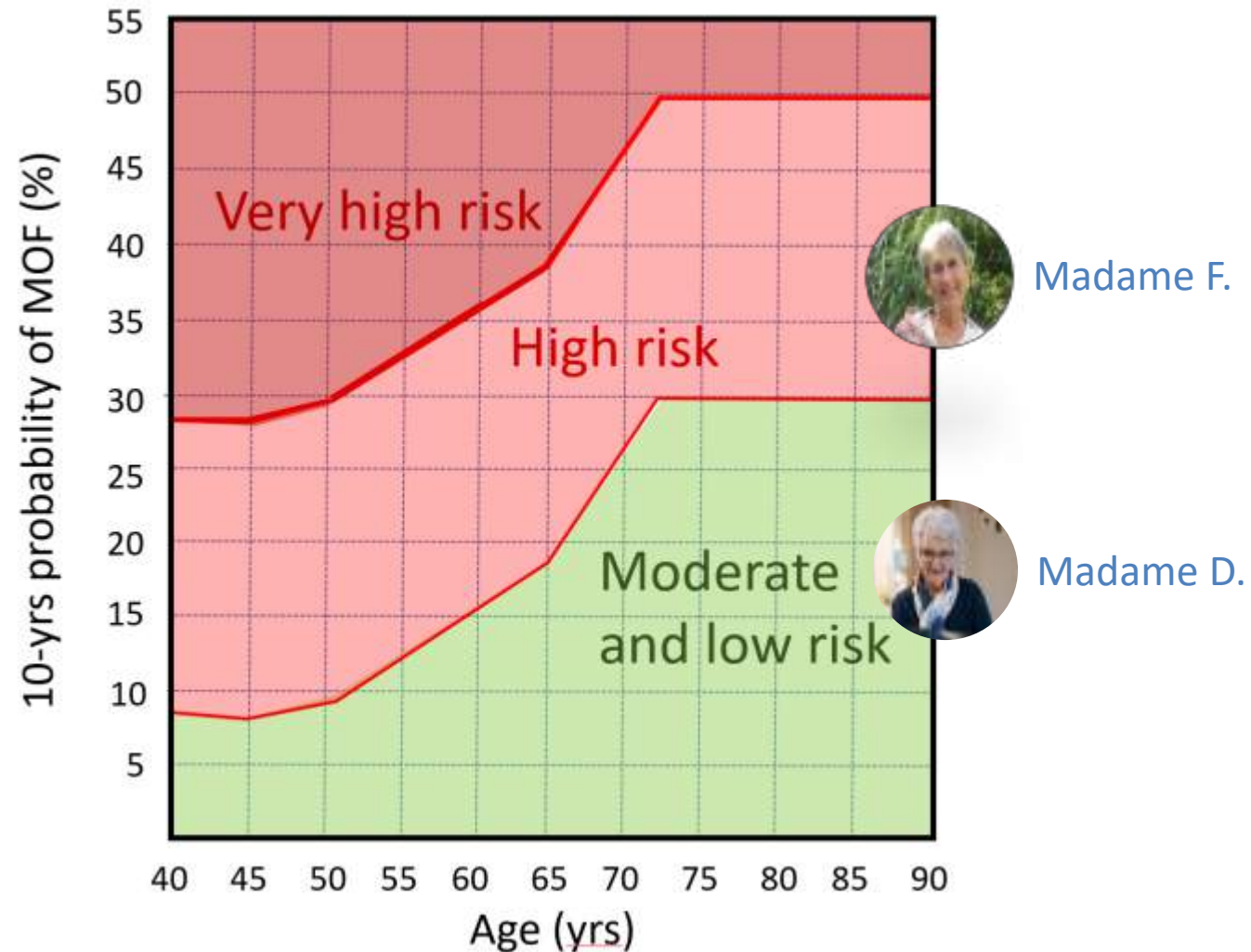
with BMD

Major osteoporotic	50
Hip Fracture	37

[View NOGG Guidance](#)

If you have a TBS value, click here:

What is the risk threshold for intervention?



What if the patient is very old and comorbid?

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~~)

Madame C: estimation of fracture risk



Outil de Calcul

Veillez 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

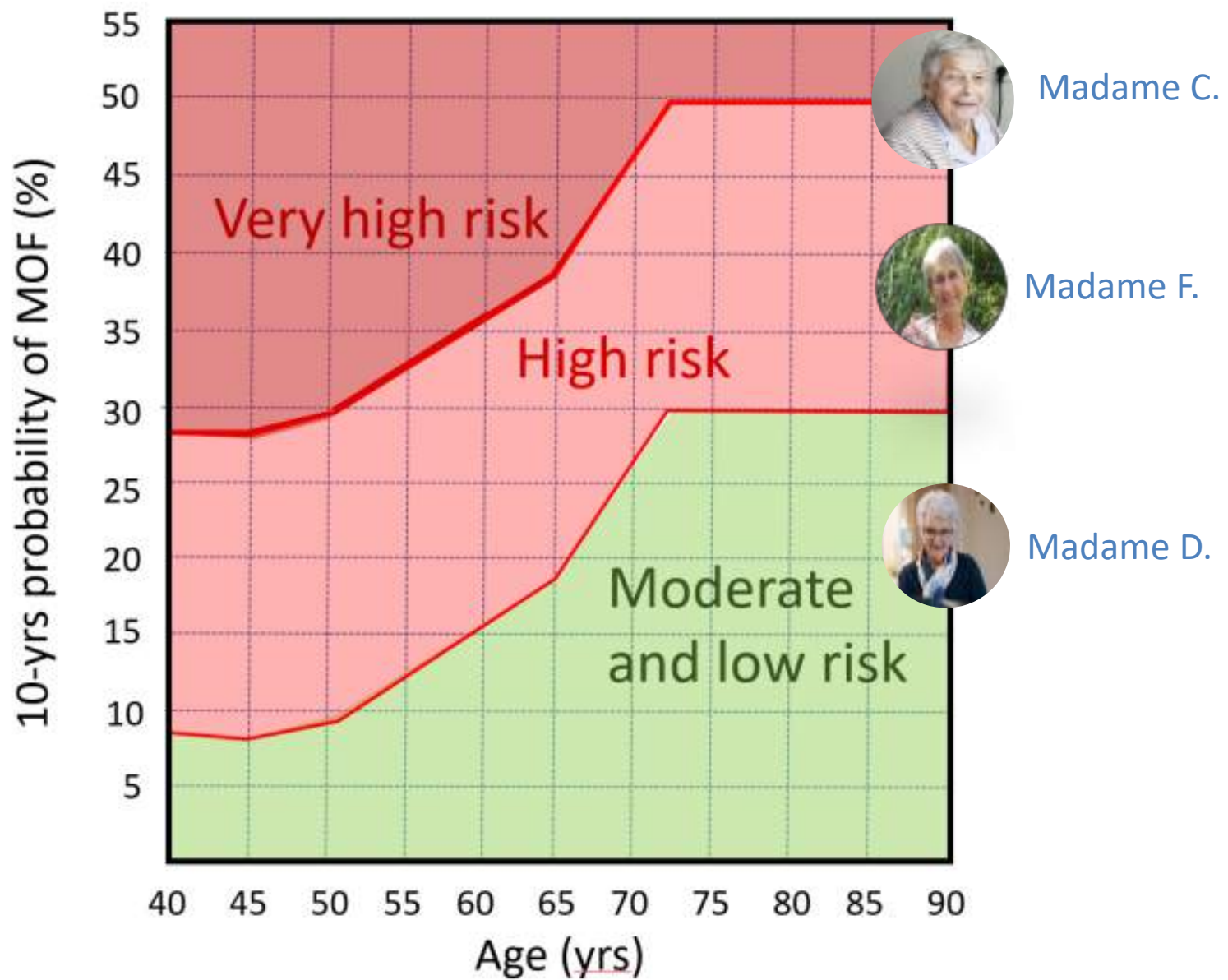
12. DMO du Col Fémoral (g/cm²)
 T-score: -3.0

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

Major osteoporotic	53
Hip Fracture	43

[View NOGG Guidance](#)

If you have a TBS value, click here:



Madame C

September 2020: Left femoral neck fracture treated with hip prosthesis



Madame C: la suite

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

December 2021 entry into geriatric care



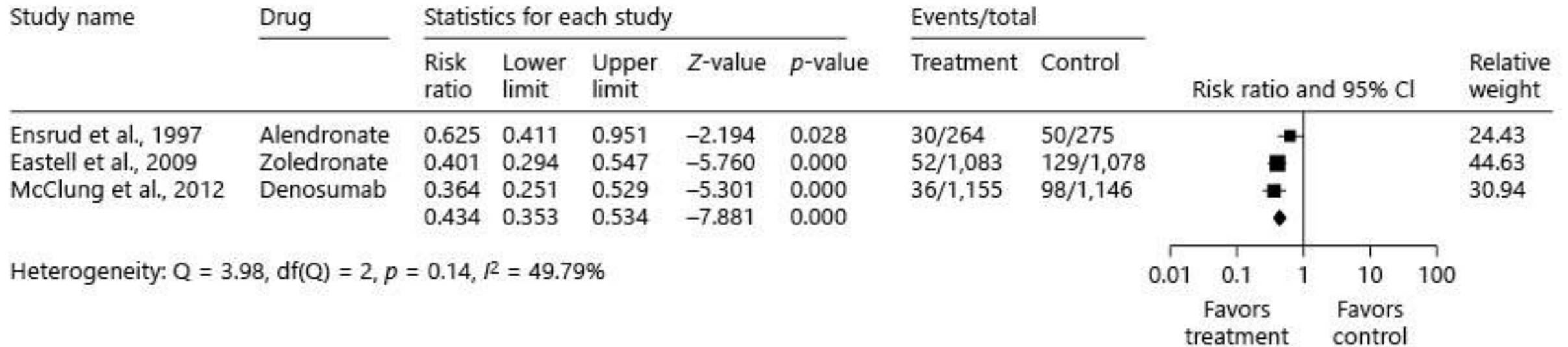


Madame C: at hospital discharge

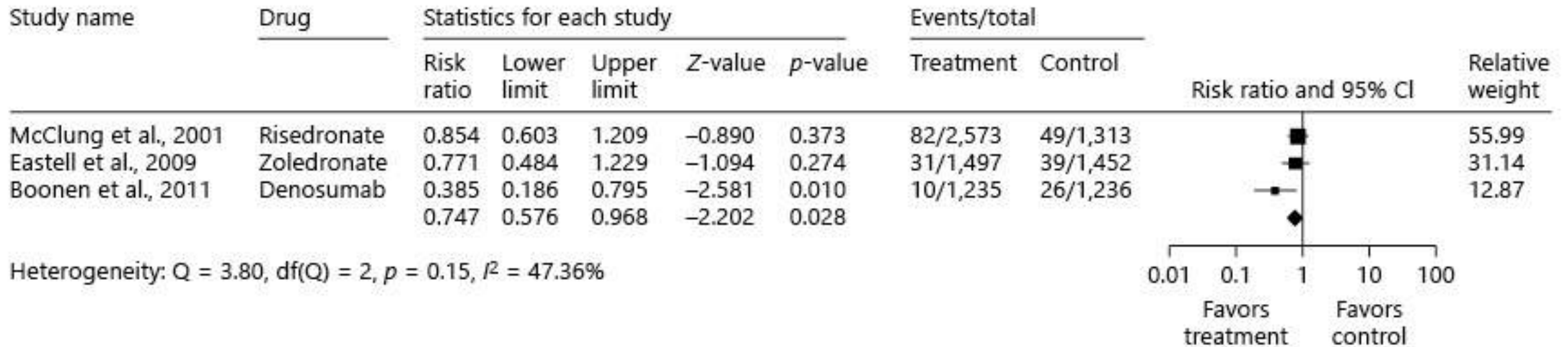


- **ADL: 1/6** (~~toileting, dressing, WC, transfers, continence, eating~~)
- Mini GDS: 3/4
- MMSE 18/30
- **CDR 2**

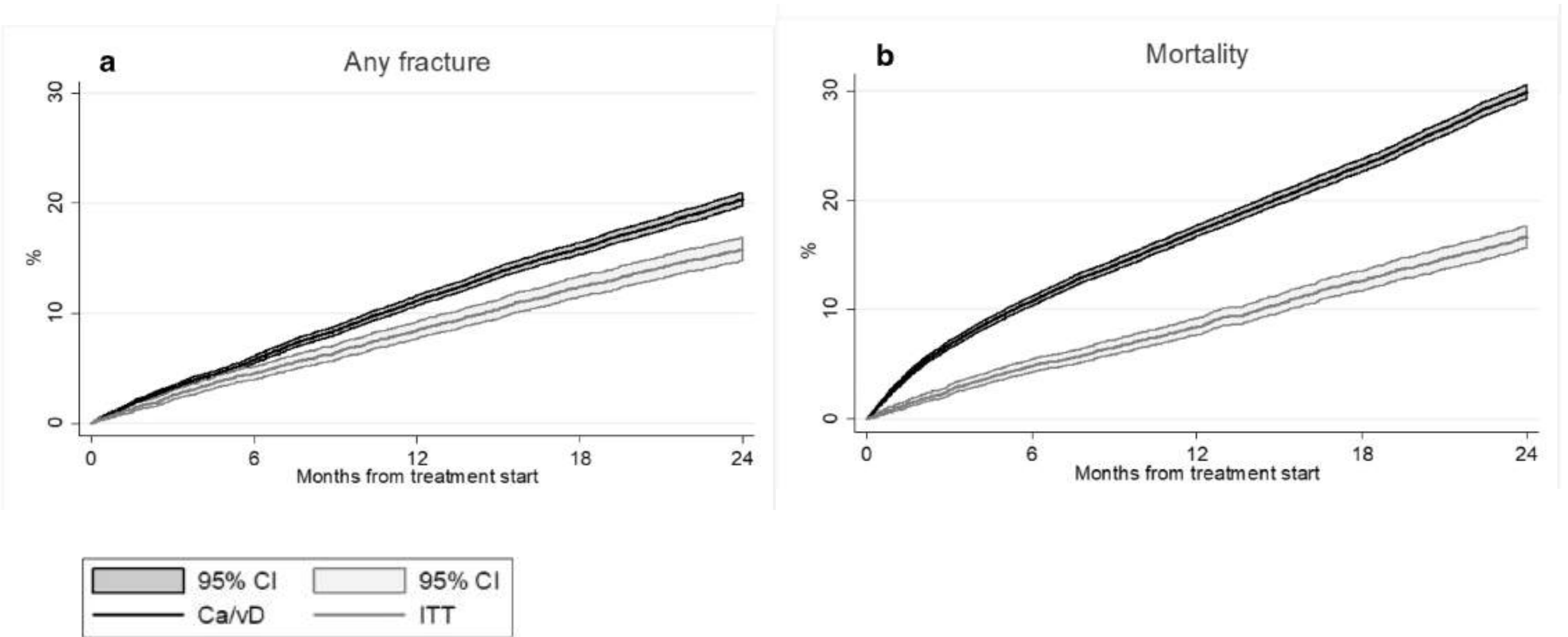
Meta-analysis of the effect of antiresorptive agents on vertebral fracture risk reduction in patients aged ≥ 75 years.



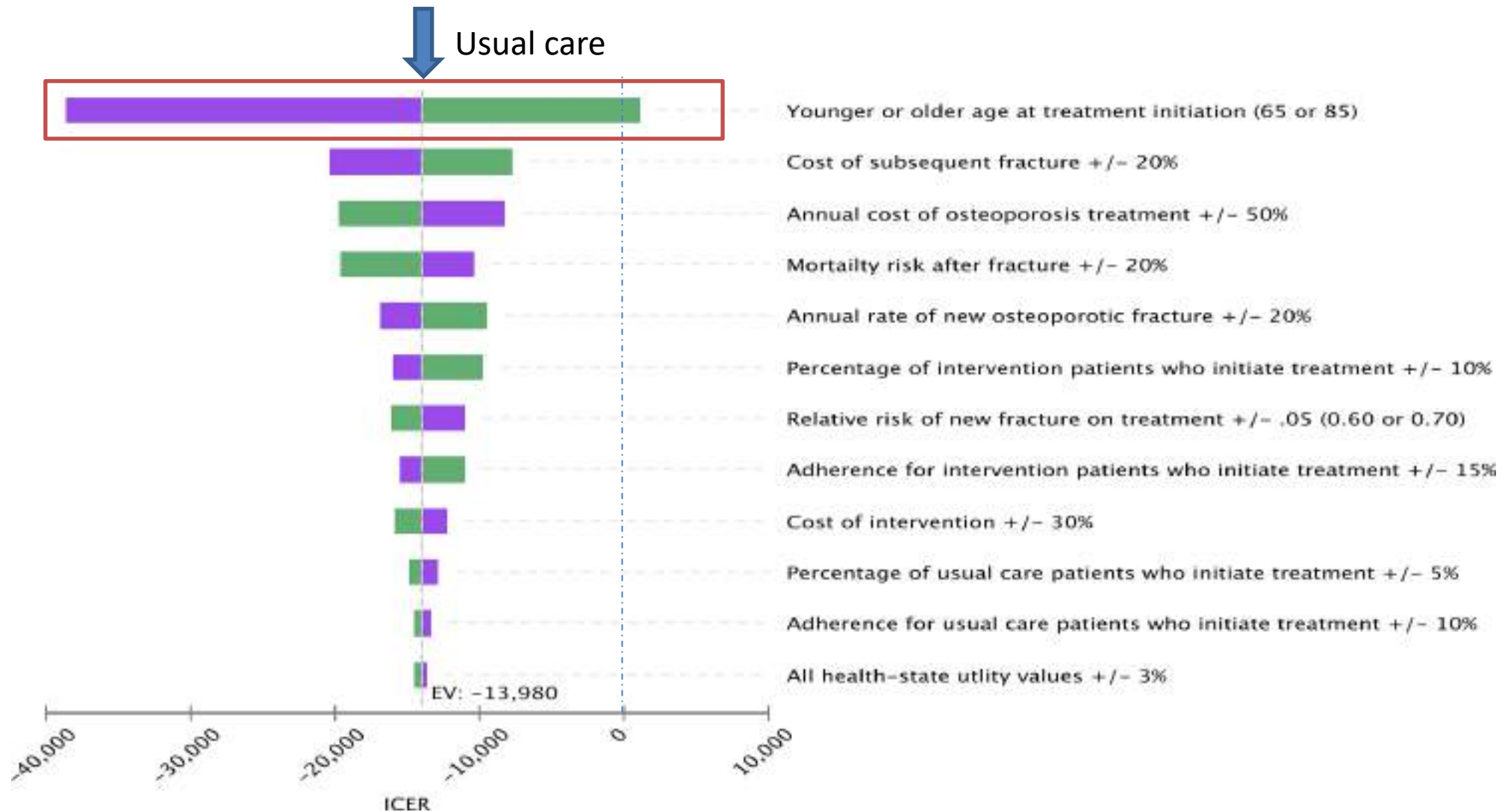
Meta-analysis of the effect of antiresorptive agents on reducing the risk of femur fracture in patients aged ≥ 75 years



Efficacité dans le « real world » du traitement de l'ostéoporose chez les personnes les plus âgées



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

Take home messages

- ✓ Patients at high risk of fracture should be prescribed anti-osteoporotic treatment

A photograph of an elderly woman with voluminous white curly hair, wearing a light grey cardigan over a black and white polka-dot top. She is seated at a table, holding a lit cigarette in her right hand and a glass of red wine in her left. Blue smoke rises from the cigarette against a dark blue background.

Jeanne Calment smoke, drank
and rarely exercised and she
lived to 122

Is frailty and functional decline an
inevitable part of aging?