

# **ΟΣΤΕΟΠΟΡΩΤΙΚΑ ΚΑΤΑΓΜΑΤΑ: Η ΠΡΑΓΜΑΤΙΚΗ ΣΗΜΑΣΙΑ ΤΗΣ ΟΣΤΕΟΠΟΡΩΣΗΣ**

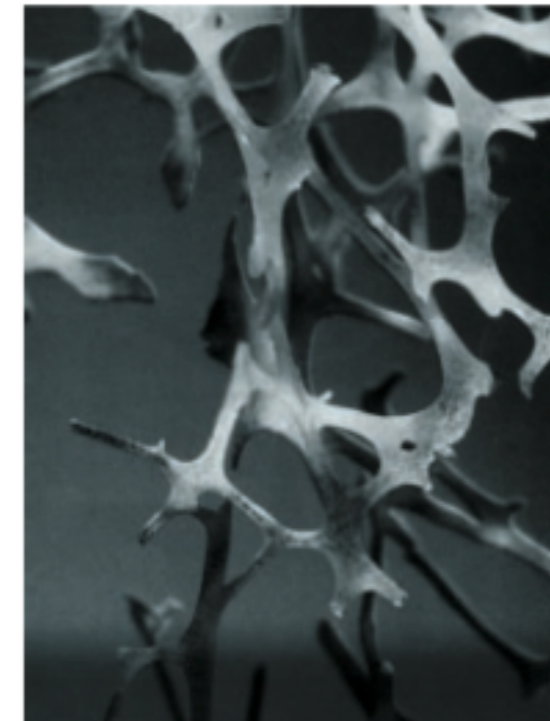
**Ε. ΧΡΟΝΟΠΟΥΛΟΣ  
ΑΝΑΠΛ. ΚΑΘΗΓΗΤΗΣ ΟΡΘΟΠΑΙΔΙΚΗΣ ΕΚΠΑ**

# ΣΥΧΡΟΝΟΣ ΟΡΙΣΜΟΣ ΟΣΤΕΟΠΟΡΩΣΗΣ

## ***NIH Consensus Statement***

Volume 17, Number 1  
March 27-29, 2000

Η οστεοπόρωση ορίζεται ως μια σκελετική διαταραχή που χαρακτηρίζεται από μειωμένη **οστική αντοχή**, εκθέτοντας έτσι ένα άτομο σε αυξημένο **κίνδυνο καταγμάτων**.

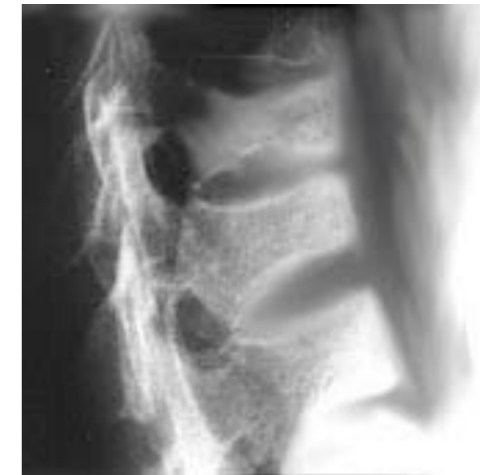


***Osteoporosis Prevention,  
Diagnosis, and Therapy***

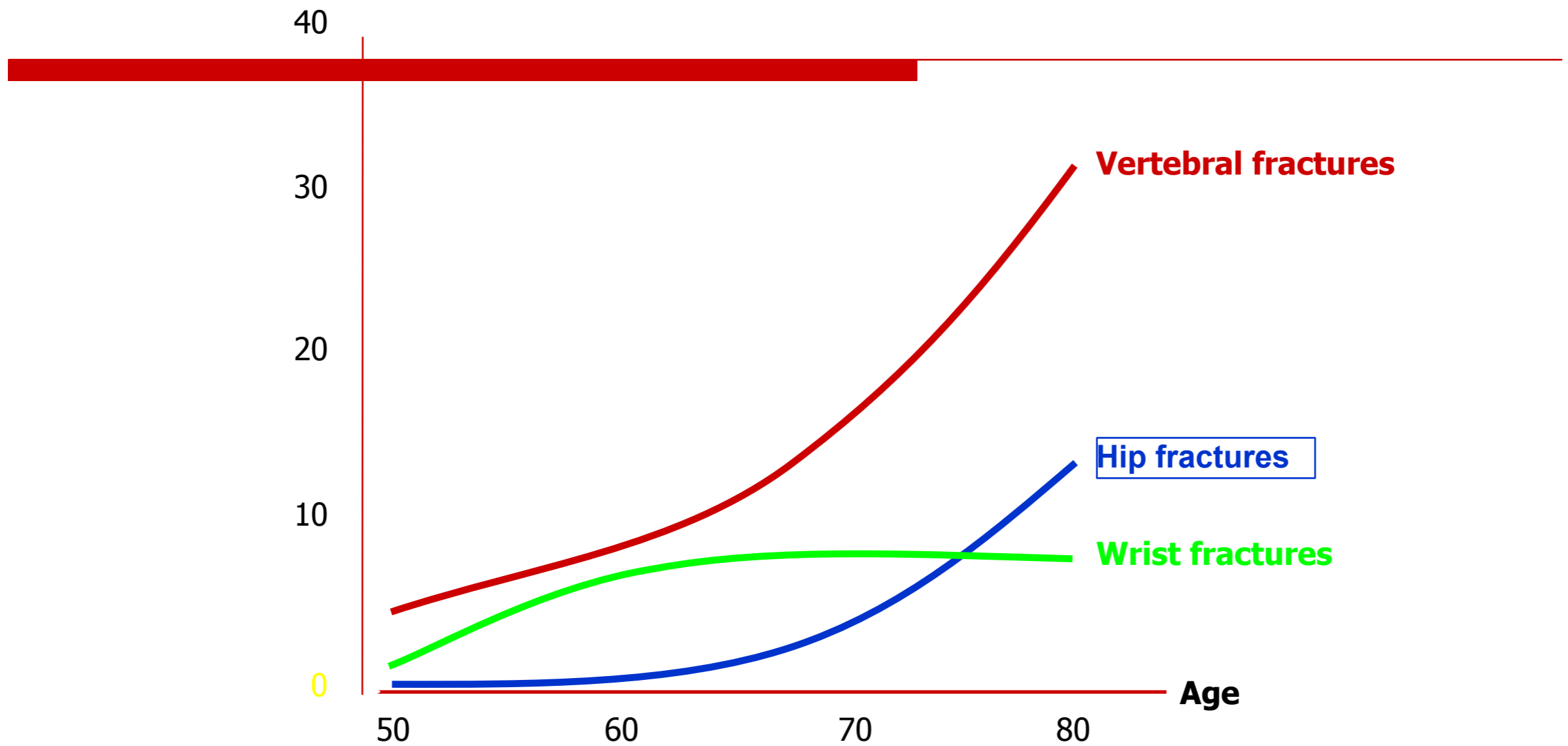
NATIONAL INSTITUTES OF HEALTH  
Office of the Director

# ΚΑΤΑΓΜΑΤΑ ΕΥΘΡΑΥΣΤΟΤΗΤΑΣ (FRAGILITY FRACTURES)

- ΚΑΤΑΓΜΑΤΑ ΧΑΜΗΛΗΣ ΔΥΝΑΜΗΣ/ΕΝΕΡΓΕΙΑΣ (ΠΤΩΣΗ ΑΠΟ ΤΟ ΥΨΟΣ ΤΟΥ ΣΩΜΑΤΟΣ ή <1m)
- ↓ ΟΣΤΙΚΗ ΑΝΤΟΧΗ
- ↑ ΝΟΣΗΡΟΤΗΤΑ
- ↑ ΘΝΗΣΙΜΟΤΗΤΑ



**Annual incidence per 1 000 women**



## Fragility fractures are common and have severe consequences

Fragility fractures lead to major morbidity, decreased quality of life and increased mortality

- 10-25% excess mortality
- 50% unable to walk independently after hip fracture
- 50% show substantial decline from prior level of function (many lose ability to live independently)
- Increased depression, chronic pain, disability
- **Increased risk of subsequent fracture**



## Economic cost of osteoporosis and fragility fractures in Europe

21

- In **Europe** the total direct costs of osteoporotic fractures are over €31 billion and are expected to increase to more than €76 billion in 2050<sup>1</sup>
- In **France** osteoporotic hip fractures are estimated to cost about €1 billion every year<sup>2</sup>
- In **Spain** the total direct hospital cost of osteoporotic fractures in 1995 was ~ €222 million<sup>2</sup>
- In **England & Wales** the total direct hospital cost of osteoporotic fractures in 1999 was ~ €847 million<sup>2</sup>

1. Kanis and Johnell, Osteoporos Int.2005; 16 Suppl 2:S3-7

2. Osteoporosis in the European Community: A Call to Action, IOT Nov, 2001



## Epidemiology and Economic Burden of Osteoporosis in Greece

A report prepared in collaboration with the International Osteoporosis Foundation (IOF) and the European Federation of Pharmaceutical Industry Associations (EFPIA)

Axel Svedbom · Emma Hernlund · Moa Ivergård ·  
Julie Compston · Cyrus Cooper · Judy Stermark ·  
Eugene V. McCloskey · Bengt Jönsson · George P. Lyrakis ·  
Polyzois Makras · John A. Kanis

Arch Osteoporos (2013) 8:137

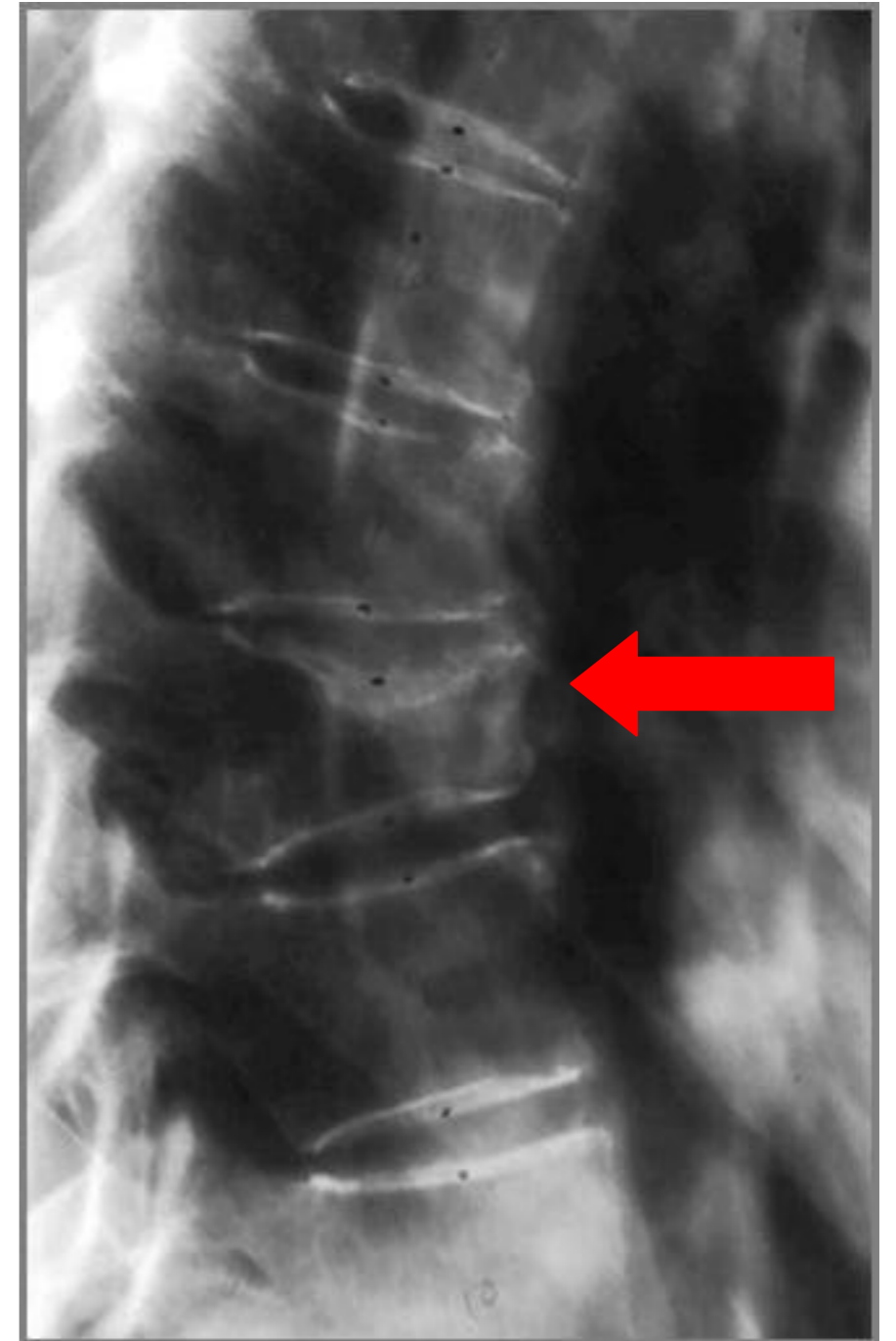
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**Table 11** Total cost (€) in 2010 by fracture site in men and women in Greece. Note that costs for fracture prevention therapy and monitoring are not included

Age	Hip	Vertebra	Forearm	Other	All
Women					
50–74	48,369,258	11,486,508	6,113,659	73,776,407	139,745,833
75+	127,379,563	9,637,933	3,324,635	89,646,828	229,988,958
All	175,748,821	21,124,441	9,438,294	163,423,235	369,734,791
Men					
50–74	26,076,779	6,758,503	1,216,407	63,523,373	97,575,062
75+	58,263,114	5,674,285	522,848	57,536,757	121,997,003
All	84,339,893	12,432,788	1,739,255	121,060,130	219,572,065
Women and Men					
50–74	74,446,037	18,245,011	7,330,066	137,299,780	237,320,894
75+	185,642,677	15,312,218	3,847,483	147,183,584	351,985,962
All	260,088,713	33,557,229	11,177,549	284,483,365	589,306,856

# ΣΠΟΝΔΥΛΙΚΑ ΚΑΤΑΓΜΑΤΑ

- Σημαντικός αριθμός ασθενών δεν γνωρίζει πως έχει ήδη υποστεί σπονδυλικό κάταγμα!
- Τα περισσότερα είναι ασυμπτωματικά (τυχαίος έλεγχος= ΜΟΡΦΟΜΕΤΡΙΚΑ)
- Κλινικά ονομάζονται τα # που συνοδεύονται από έντονο άλγος
- Η παρουσία και μόνο σπονδυλικού κατάγματος συνιστά επαρκή λόγο για έναρξη θεραπείας για οστεοπόρωση.<sup>1</sup>





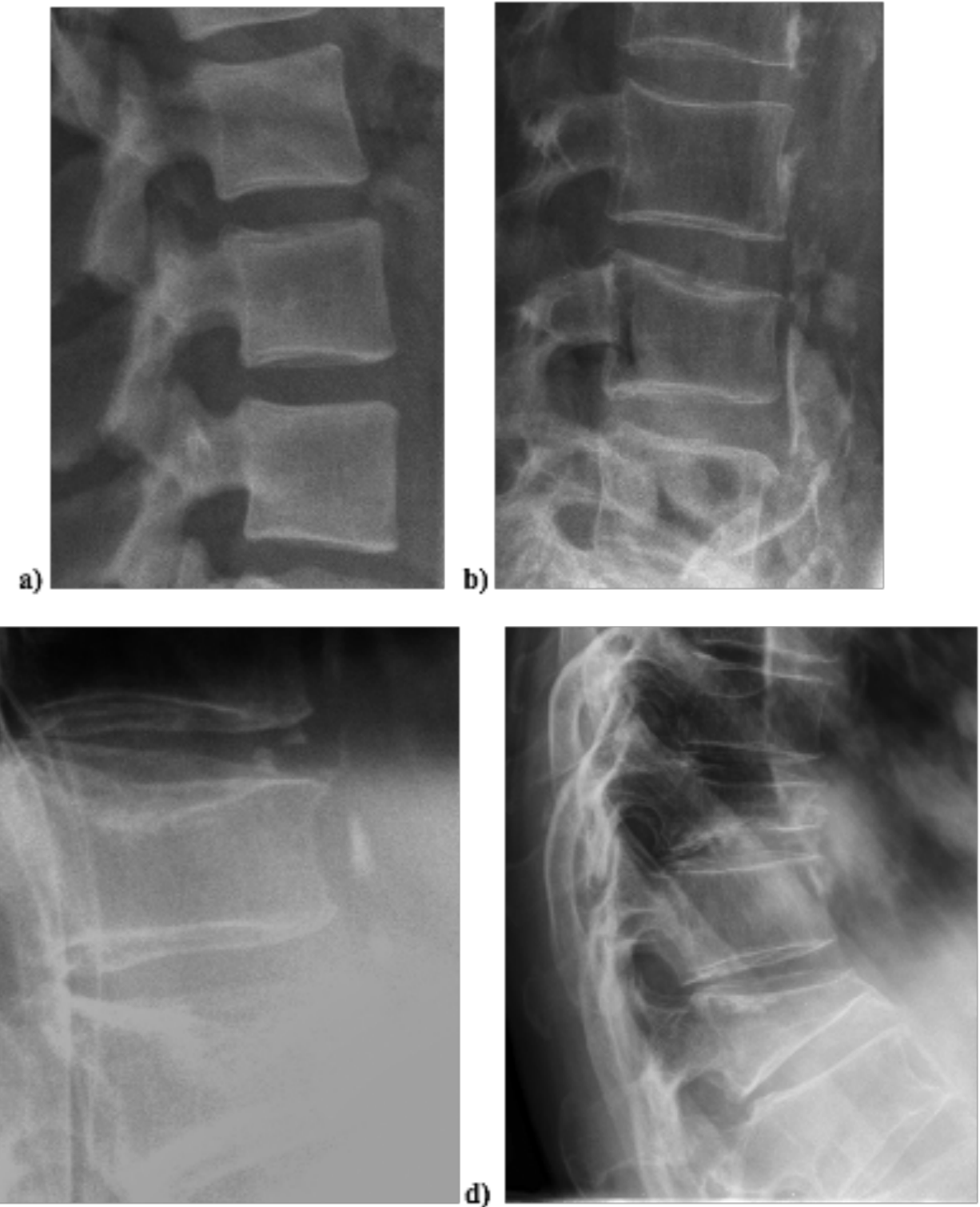
## Vertebral Fracture Initiative

### Part II

### Radiological Assessment of Vertebral Fracture

ΑΝΑΔΕΙΞΗ  
ΚΑΤΑΓΜΑΤΩΝ  
1<sup>ου</sup>, 2<sup>ου</sup> και 3<sup>ου</sup>  
βαθμού κατά  
Genant

**Figure 6: Vertebral fractures:** a) normal appearance b) grade 1 mild upper endplate fracture c) grade 2 moderate vertebral fracture d) grade 3 severe vertebral fractures

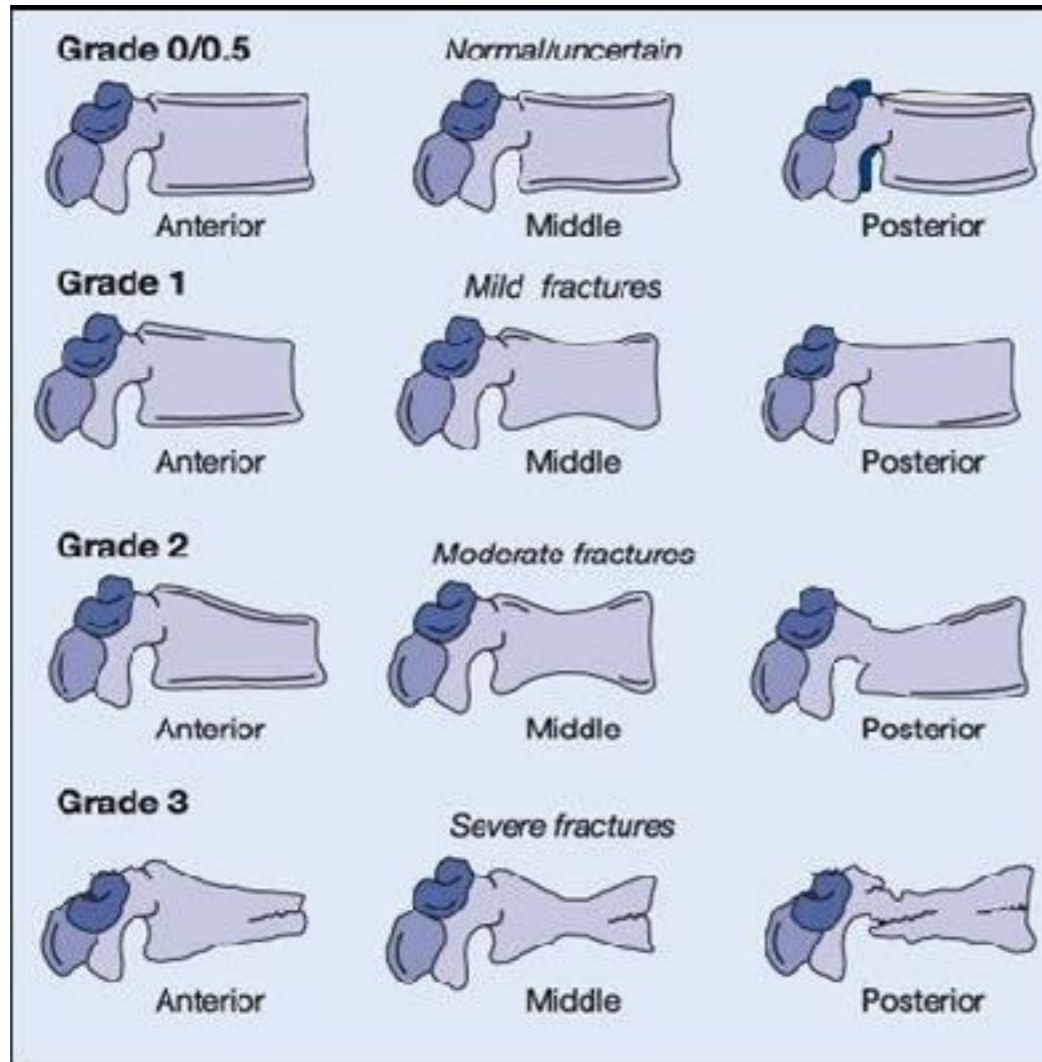


# ΑΠΕΙΚΟΝΙΣΤΙΚΗ ΔΙΑΓΝΩΣΗ ΚΑΙ ΤΑΞΙΝΟΜΗΣΗ- ΗΜΙΠΟΣΟΤΙΚΗ ΜΕΘΟΔΟΣ GENANT

Wedge

Biconcave

Crush



Normal (Grade 0)

Mild fracture (Grade 1, 20-25%)

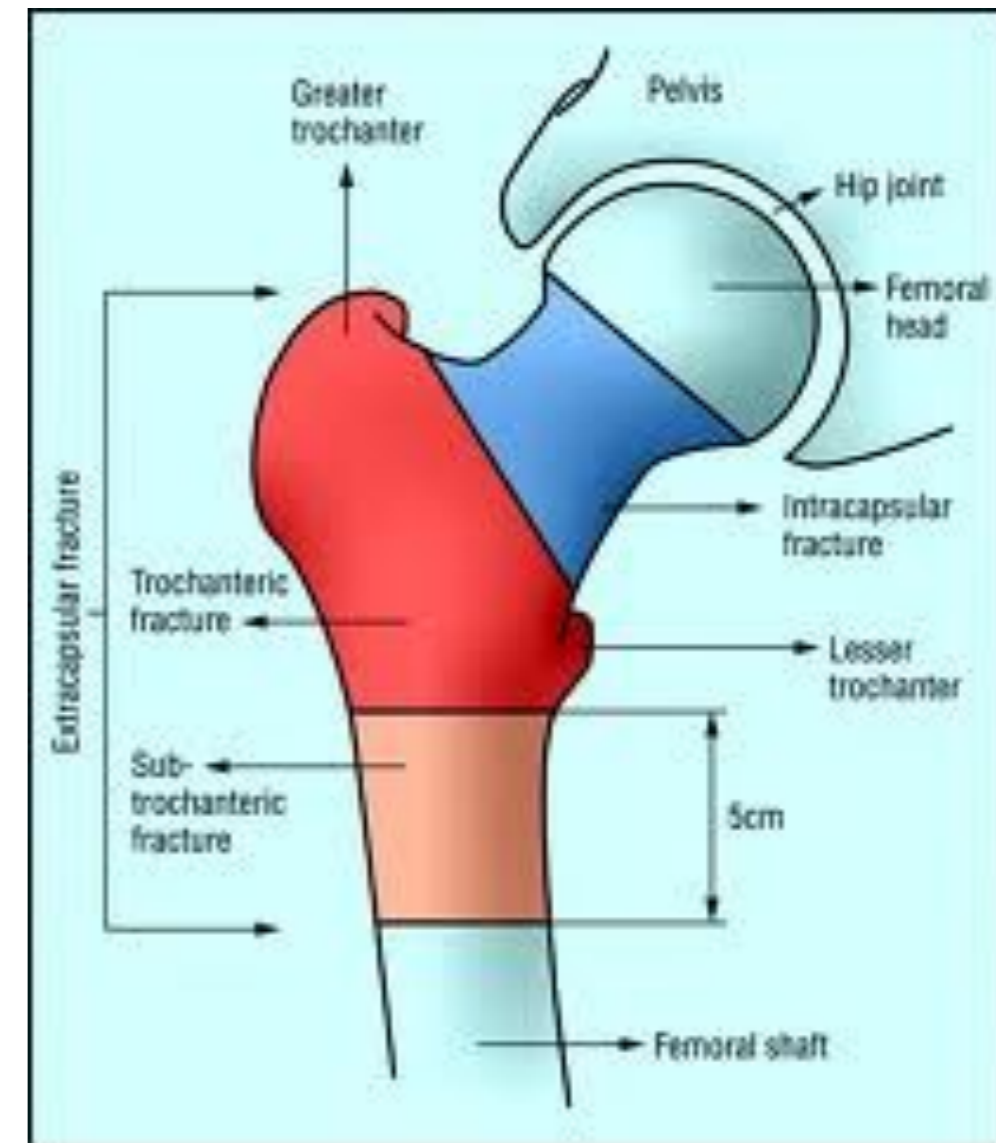
Moderate fracture (Grade 2, 25-40%)

Severe fracture (Grade 3, 40%)

→ Combines the advantages of a quantitative method with visual assessment

# ΚΑΤΑΓΜΑΤΑ ΙΣΧΙΟΥ

- ΣΗΜΑΝΤΙΚΗ ΝΟΣΗΡΟΤΗΤΑ-ΘΝΗΣΙΜΟΤΗΤΑ
- ΥΨΗΛΟ ΚΟΙΝΩΝΙΚΟ, ΙΑΤΡΙΚΟ, ΟΙΚΟΝΟΜΙΚΟ ΚΟΣΤΟΣ
- ΜΕΓΑΛΥΤΕΡΗ ΠΡΟΚΛΗΣΗ ΣΤΗΝ ΠΡΟΛΗΨΗ
- ΑΦΟΡΟΥΝ ΚΥΡΙΩΣ ΑΣΘΕΝΕΙΣ > 70χ



# ΠΤΩΣΕΙΣ ΚΑΙ ΚΑΤΑΓΜΑΤΑ ΙΣΧΙΟΥ

> 90% ΚΑΤΑΓΜΑΤΩΝ  
ΙΣΧΙΟΥ ΠΡΟΚΑΛΟΥΝΤΑΙ  
ΑΠΟ ΠΤΩΣΗ

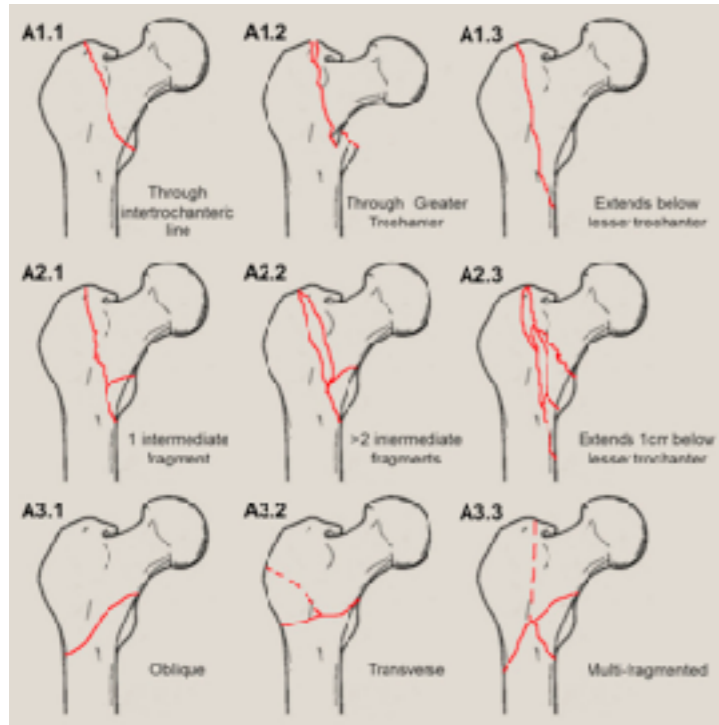
ΑΛΛΑ:

<2% ΤΩΝ ΠΤΩΣΕΩΝ  
ΠΡΟΚΑΛΟΥΝ ΚΑΤΑΓΜΑ  
ΙΣΧΙΟΥ!!!

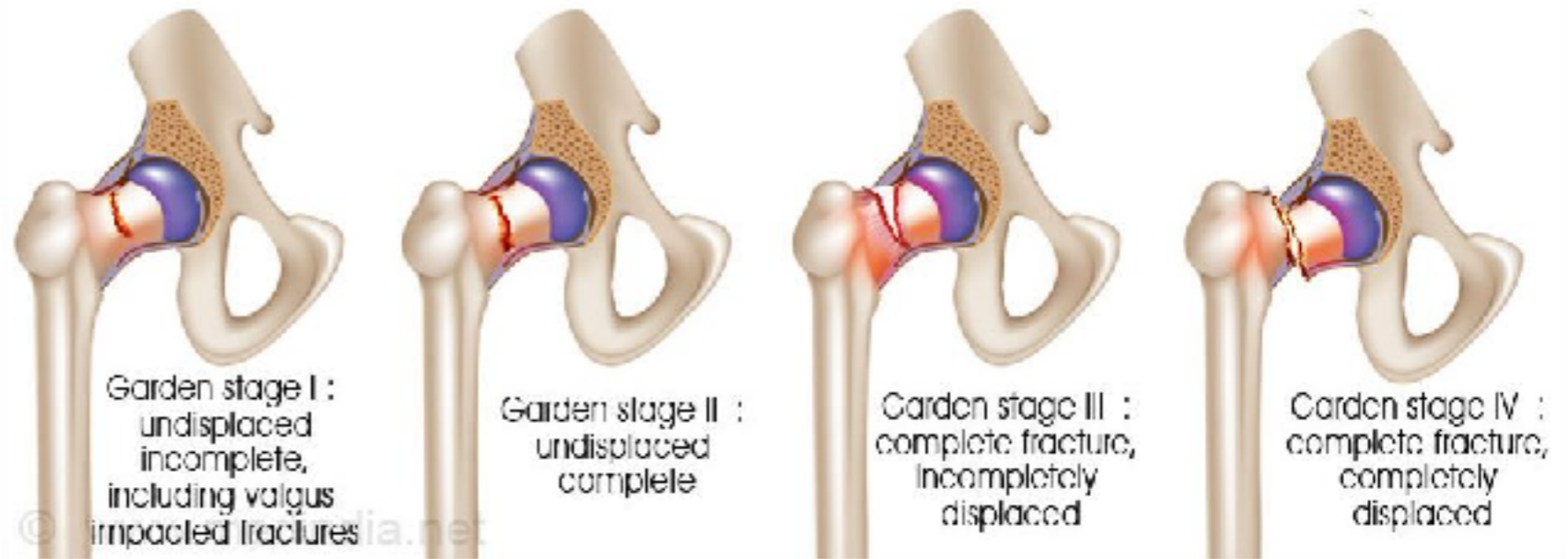


**Peak impact forces applied to greater trochanter:  
270 - 730 kg (2400 - 6400 N)  
(for 5th to 95th percentile woman)**

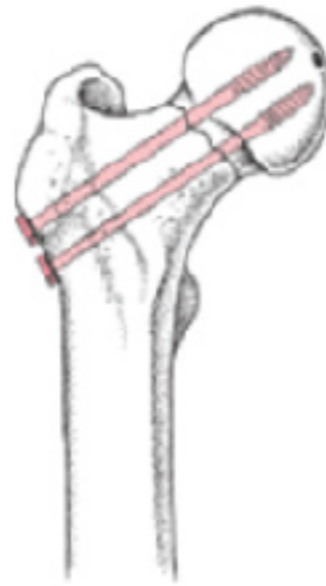
# ΚΑΤΑΓΜΑΤΑ ΙΣΧΙΟΥ-ΤΑΞΙΝΟΜΗΣΗ



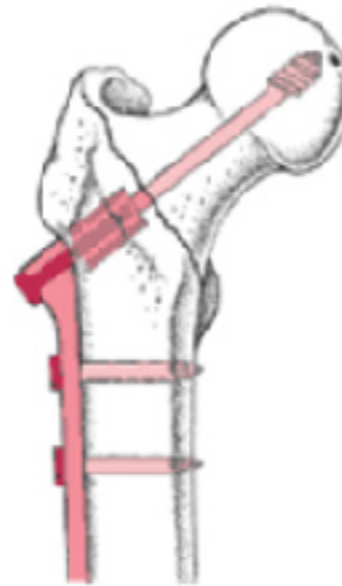
## GARDEN CLASSIFICATION OF HIP FRACTURES



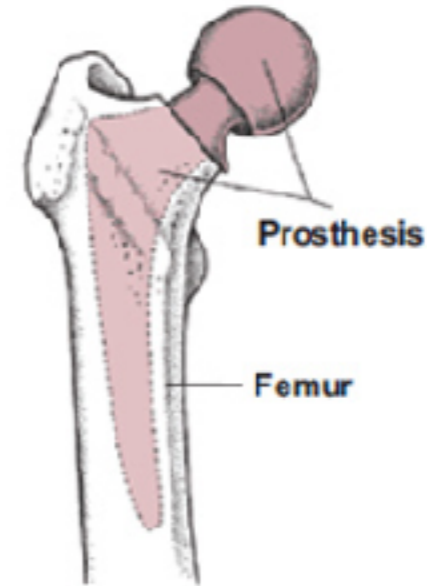
**Intramedullary Nail**



**Cannulated Screws**



**Compression Screws**
















**Hemiarthroplasty**

*Pictures of trochanteric nail, sliding hip screw, and cannulated screws courtesy of AO Principles of Fracture Management, 2<sup>nd</sup> Expanded Edition, 2007. Copyright AO Publishing Davos, Switzerland.*

# ΚΑΤΑΓΜΑΤΑ ΑΝΩ ΑΚΡΟΥ

## AO/OTA Classification

<b>Extra articular</b>	<b>23-A1</b> ulna, radius intact	<b>23-A2</b> radius, simple and impacted	<b>23-A3</b> radius, multifragmentary
			
	 proceed	 proceed	 proceed
<b>Partially articular</b>	<b>23-B1</b> radius, sagittal	<b>23-B2</b> radius, frontal, dorsal rim	<b>23-B3</b> radius, frontal, volar rim
			
	 proceed	 proceed	 proceed
<b>Complete articular</b>	<b>23-C1</b> simple, metaphyseal simple	<b>23-C2</b> simple, metaphyseal multifragmentary	<b>23-C3</b> multifragmentary
			
	 proceed	 proceed	 proceed

	2 part	3 part	4 part
Anatomical neck			
Surgical neck			
Greater tuberosity			
Lesser tuberosity			
Fracture dislocation anterior			
Fracture dislocation posterior			

## European guidance for the diagnosis and management of osteoporosis in postmenopausal women

J. A. Kanis · E. V. McCloskey · H. Johansson · C. Cooper · R. Rizzoli · J.-Y. Reginster ·  
on behalf of the Scientific Advisory Board  
of the European Society for Clinical and Economic  
Aspects of Osteoporosis and Osteoarthritis  
(ESCEO) and the Committee of Scientific Advisors  
of the International Osteoporosis Foundation (IOF)

Η ΚΛΙΝΙΚΗ ΣΗΜΑΣΙΑ ΤΗΣ  
ΟΣΤΕΟΠΟΡΩΣΗΣ  
ΕΓΚΕΙΤΑΙ ΣΤΑ ΚΑΤΑΓΜΑΤΑ!

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Although the diagnosis of the disease relies on the quantitative assessment of bone mineral density, which is a major determinant of bone strength, **the clinical significance of osteoporosis lies in the fractures that arise.**

# ΑΝΤΙΜΕΤΩΠΙΣΗ ΑΣΘΕΝΟΥΣ ΜΕ ΚΑΤΑΓΜΑ

