

RISK ANALYSIS:

CHANCE OF HAVING OSTEOPOROSIS: age – weight (kg) = ??? > 20 = 50 – 60% 0 – 20 = 15 – 20% < 0 = less than 5%
(valid in men as well)

ESTIMATE 10 YEAR % RISK OF A FRACTURE using BMI or BMD tables (both give similar fracture estimates)

RISK FACTORS: previous “atraumatic” fracture, parent hip fracture, smoker, rheumatoid arthritis, glucocorticoids (5mg/d for > 3 months), > 3 drinks/day

RISK FACTORS	Zero				One				Two			
	35	30	25	20	35	30	25	20	35	30	25	20
BMI												
Female												
50	2	3	3	3	4	4	5	5	6	6	7	8/1
60	5	6	6	7/2	7	9	10/1	10/4	11/1	13/2	14/2	16/6
70	8/1	9/2	10/2	11/4	11/2	13/3	15/4	17/7	16/4	18/6	21/7	25/12
80	14/4	16/5	19/7	21/11	20/8	23/10	27/13	31/20	28/14	33/18	38/22	43/32
Male												
50	2	2	2	2	3	3	4	4	4	5	6	6
60	3	4	4	4	5	6	6	7/1	7	8	10/1	10/2
70	4	5/1	6/1	6/2	6	7	8/2	9/4	8	10	12/4	13/6
80	6/2	7/3	9/4	9/5	9/4	11/5	13/7	14/10	13/7	16/9	19/12	21/16

RISK FACTORS	Zero			One			Two		
	-1.5	-2.5	-3.5	-1.5	-2.5	-3.5	-1.5	-2.5	-3.5
t-score									
Female									
50	4	5/1	9/4	6	8/2	14/7	8	12/3	21/11
60	7	10/2	16/6	10/1	14/3	23/9	14/1	20/5	32/14
70	9/1	13/3	21/7	12/1	18/4	30/11	16/2	25/6	41/16
80	13/3	18/6	29/14	17/6	26/12	40/24	24/10	35/20	52/37
Male									
50	4	5/2	11/6	5	8/3	16/10	8/1	12/5	24/16
60	6/1	9/3	15/8	8/1	12/4	21/11	12/2	18/6	29/17
70	6/2	10/4	16/8	9/3	14/6	22/13	12/4	19/10	31/20
80	7/3	11/5	16/9	11/5	16/9	23/16	15/9	22/15	32/25

NUMBERS IN TABLE MEAN: % overall fractures / % hip fractures

ex// 5/1 means 5% risk of overall fracture and 1% risk of hip fracture

BALLPARK FRACTURE BENEFIT: take above risks of fractures and reduce it by relative numbers

(% is RRR)	Fracture risk reduction	Vertebral	Non-vertebral	Hip
Exercise (weight bearing)	30% (NSS)			
Calcium	10%	15%		5%
Vitamin D (in combo with Ca)	10%			15%
Bisphosphonates, denosumab, teriparatide	20 – 30% (for estimates use 30%)	50%	30%	
HRT (use lowest dose to decrease sx of menopause for 3-4 yrs)	22%			38%

NOTE: estimated risks are for 10 years but most studies of medications are for only 1-3 years
ALSO: not sure if Ca and/or Vit D actually does anything, so best estimate is 10% RRR

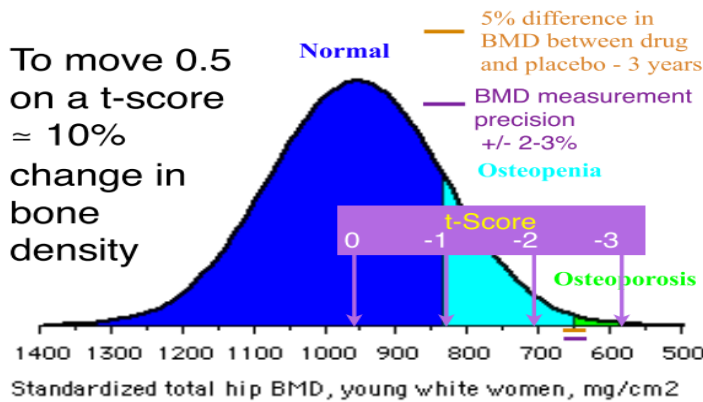
HARMS FOR BISPHOSPHONATES (+ costs/inconvenience)

- Mild GI symptoms: 1 – 10%
- Osteonecrosis of jaw: 0.02 – 0.1%
→ Greater risk if having dental work/extraction
- Atypical hip fractures: 0.002 – 0.1%

HOW LONG TO TREAT FOR???

> If you stop after 5 years, BMD decreases but fracture risk doesn't increase

BONE MINERAL DENSITY TESTING:



- > The precision of a BMD test is not enough to pick up BD changes once on treatment
- > BD typically decreases 0.5% per year, so most remeasure every 7-10 years