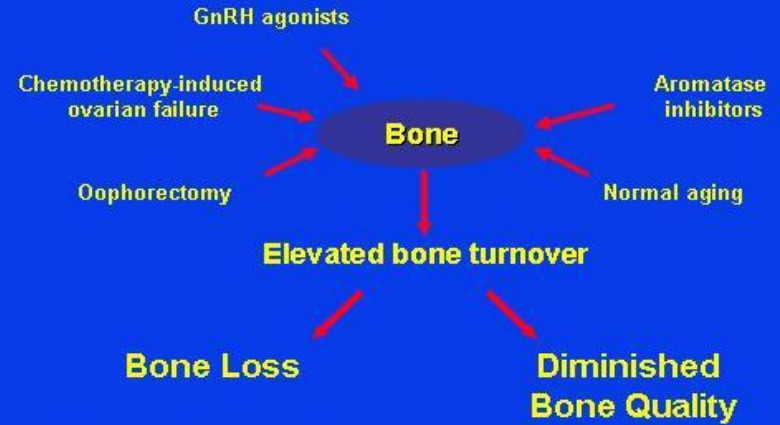


# Vitamin D in the Breast Clinic

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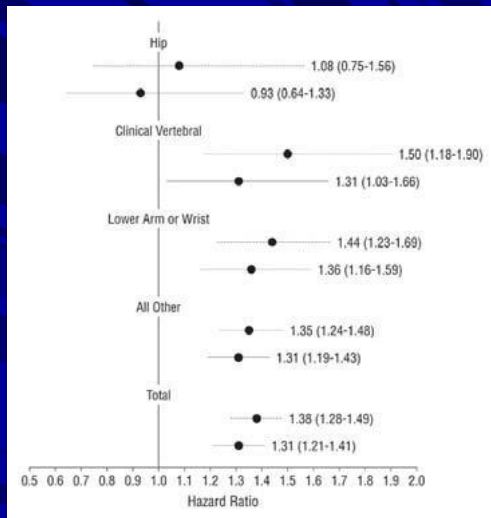
## Causes of Breast Cancer Treatment-Induced Bone Loss



Pfeilschifter J et al. *J Clin Oncol*. 2000;18:1570-1593.

Gralow, ASCO 2008

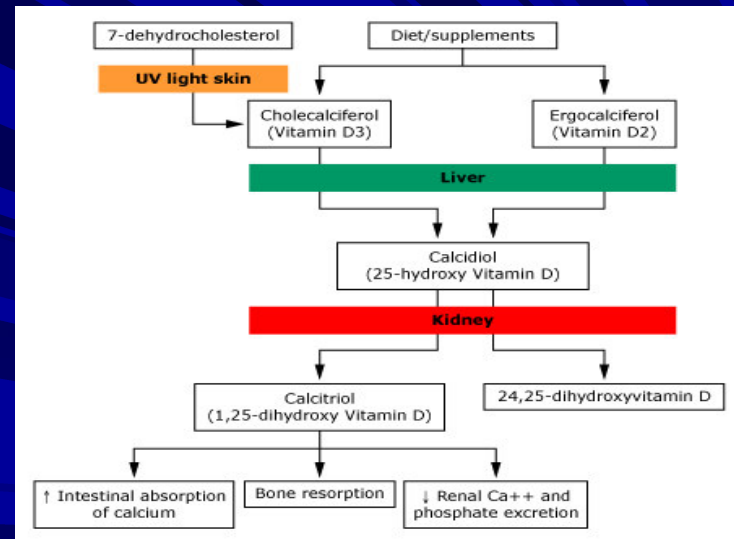
Hazard ratios (95% confidence intervals) of fractures among breast cancer survivors compared with the reference group



Chen, Z. et al. *Arch Intern Med* 2005;165:552-558.

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## Vit D levels in Breast Cancer Patients

Study	Diagnosis	N	Deficient < 20 ng/mL 37.5%	Insufficient 20-29 ng/mL 38.5%	Sufficient > 30 ng/mL 24%
Goodwin J Clin Onc 2009		512			
Crew J Clin Onc 2009	Adjuvant chemotx and 400 IU	103	74%	20%	6%
Waltman Can Nurs 2009	On Als	29	6.9%	79.3%	13.8%
RPCI unpub	Diagnosis	509	39.7%	41.4%	18.9% Goodwin ASCO 2009 adapted

## Distant Disease Free Survival Goodwin et al, J Clin Oncol 27:3757-3763, 2009.

	deficient	insufficient	sufficient
HR (95% CI)	1.94 (1.16-3.25)	1.37 (0.80-2.33)	1.0
5 year	82%	85%	88%
10 year	69%	79%	83%

Goodwin, ASCO 2009

## Current Recommendations in US

- 200, 400, 600 IU/day dietary allowance vitamin D<sub>3</sub> in individuals under 50, 50-70, older than 70.
- Evidence that these doses associated with decreased mortality and improved bone health.
- Evidence that this is inadequate dosing in breast cancer patients.

## Vitamin D Repletion

- Oral daily intake of 1000 IU vitamin D<sub>3</sub> can increase serum 25,0HD levels by about 10 ng/mL<sup>1</sup>
  - Varies with sunlight, BMI, dietary intake.
- Circulating levels of 32 ng/mL are associated with normal mineral metabolism, optimal levels for breast cancer prevention exceed 40-50 ng/mL.<sup>2</sup>

<sup>1</sup> Heaney, RP, et al: Human serum 25OHD response to extended oral dosing with cholecalciferol. Am J Clin Nutr 77: 204-210, 2003.

<sup>2</sup> Garland CF, et al. Vit D and prevention of breast cancer. Pooled analysis. J Steroid Biochem Mol Biol 103: 708-711, 2007.