Women's Health in the Media

Karen Carlson MD
Massachusetts General Hospital
Harvard Medical School

Women's Health: Disease mongering

- Pregnancy
- Menopause
- Osteoporosis
- Overactive bladder

Women's Health: Messages that confuse women

- **Breast cancer**
  - **Screening**
    - **Use of MRI for screening**
  - **Treatment**
    - **Medication to prevent breast cancer**

Pregnancy:

The mother of all medicalization

Variation in C-section rates

National Center for Health Statistics, 2007 data

Rate of U.S. women dying in childbirth on the rise; C-sections, obesity may play role

Author: MIKE STOBBE AP Medical Writer
Date: August 24, 2007

Publication: Associated Press

U.S. women are dying from childbirth at the highest rate in decades, new government figures show. Though the risk of death is very small, experts believe increasing maternal obesity and a jump in Caesarean sections are partly to blame. Some number crunchers note that a change in how such deaths are reported also may be a factor.

Menopause

Osteoporosis

Osteoporosis: Clinical Context in 2010

- 44 million people in US over 50 have osteoporosis or osteopenia[1]
- Number of hip fractures and associated costs could double or triple by 2040[2]
- Multiple effective treatments for osteoporosis are available
  - Bisphosphonates (Fosamax, Actonel, Boniva)
  - Raloxifene (Evista)

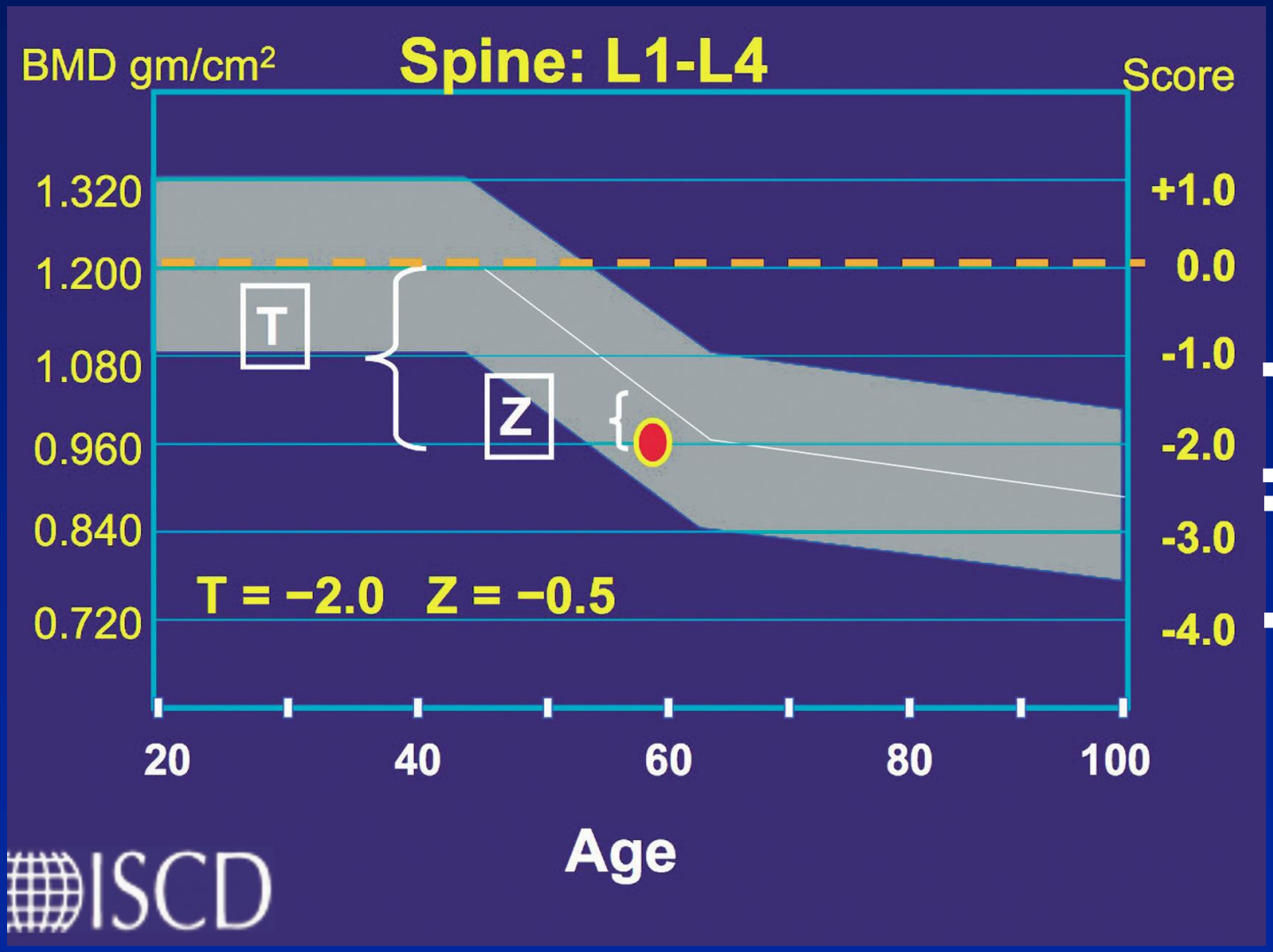
1 National Osteoporosis Foundation 2 Surgeon General's report

The other end of the spectrum…

"We've convinced people that you've got to have a certain bone density or you'll have fractures and horrible things will happen to you."

Dr. Susan Love

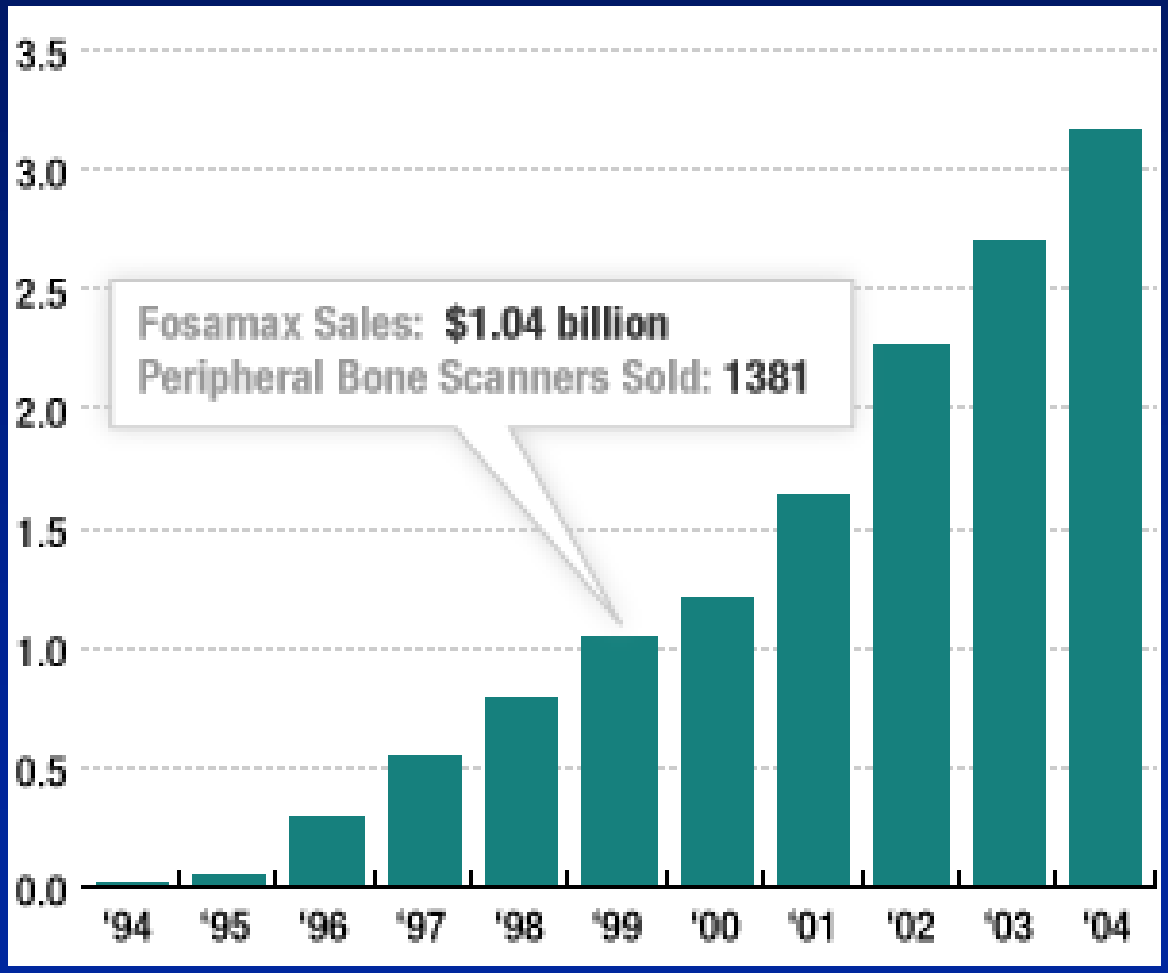
How osteoporosis and osteopenia are defined



International Society of Clinical Densitometry, NOF Clinican's Guide 2010

NPR excerpt here

Bone density testing and rate of Fosamax prescribing in U.S.



Why won't my patients do what I recommend?

Conflict about the treatment decision

- Lack of knowledge
- Unrealistic expectations
- Social pressures
- Lack of confidence that their values matter
- Lack of support or resources
- Mismatch in patient and clinician's approach to decisions
- **Misinformation and distrust based on media reports**

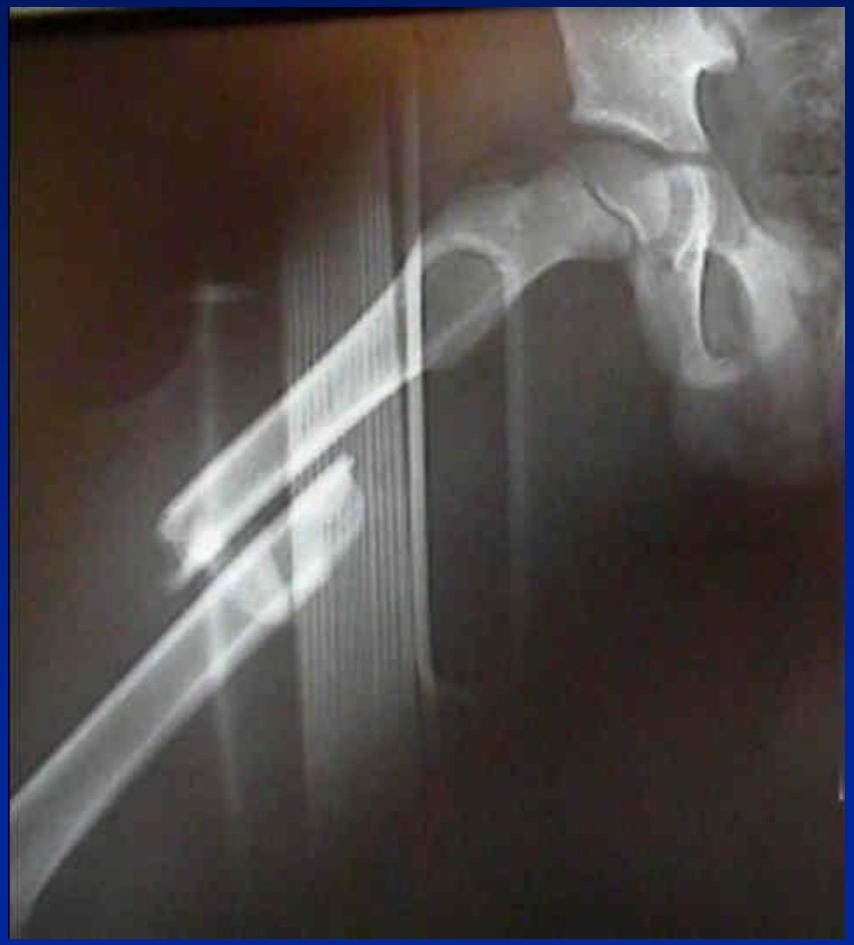
Based on O'Connor and Jacobsen 2007

Osteoporosis Drugs, Like Fosamax May Increase Risk of Broken Bones in Some Women

Long-term Use of Popular Class of Osteoporosis Drugs May Have Opposite Effect for Some Women, Experts Say

March 8, 2010

Atypical femoral shaft fractures in postmenopausal women on bisphosphonates



Lenart BA. New Engl J Med 2008;358:1304.

A new disease:
over-active bladder (OAB)

Consumer Reports video from Gary's blog

Most Read Articles:
Overactive Bladder (OAB)

*Popular **Overactive Bladder (OAB)** articles most read by fellow clinicians*

Ironically, despite nearly equal prevalence, OAB symptoms in men are infrequently treated. New therapeutic strategies for treating overactive bladder in men are also discussed.

Therapeutic Advances in Urology

Women's Health: Messages that confuse women

- **Breast cancer**
  - **Screening**
    - **Use of MRI for screening**
  - **Treatment**
    - **Medication to prevent breast cancer**

MRI for breast screening

American Cancer Society Guidelines for Breast Screening with MRI as an Adjunct to Mammography; Saslow D et al.

CA: A Cancer Journal for Clinicians 2007;57:75.

What is screening?

Screening is testing people who have no symptoms to look for hidden, early evidence of disease.

The value of a test to screen for breast cancer depends on how well it works in a particular group of women.

Definitions: Positive and Negative Tests

True positive = test is abnormal (positive) and women has breast cancer

False positive = test is abnormal but woman does not have BC

True negative = test is normal (negative) and woman does not have BC

False negative = test is normal, but woman actually has BC

The Perfect Test

100% true positives 0% false positives

100% true negatives 0% false negatives

How good is a test?

We use the terms sensitivity and specificity to describe how well a test works in a given group of people.

Sensitivity

Sensitivity:

How good a test is at correctly identifying people who have the disease.

$$\frac{\text{True positives}}{\text{True positives + False negatives}}$$

Perfect test: $\frac{100}{100 + 0}$ x .01 = 100% sensitivity

Specificity

Specificity:

How good the test is at correctly identifying people who are well.

$$\frac{\text{True negatives}}{\text{True negatives} + \text{False positives}}$$

Perfect test: $\frac{100}{100 + 0}$ **x .01 = 100% specificity**

Role of MRI in Screening

Advantages:

Greater sensitivity in highest-risk women (e.g. BRCA1/2)

	MRI	Mammography
Sensitivity:	77-100%	16-40%

Disadvantages:

Significant false-positive rate:

15-20% require biopsy on first screen

<10% on later screens

Must have MRI-guided biopsy capability on-site

Cost of MRI: $1500 - 2000

April 2007: ACS Announces Guidelines for MRI in Breast Cancer Screening

Many experts and advocates believed that these recommendations were premature, based on the limited amount of scientific evidence showing benefit for MRI, as well as concerns about cost-effectiveness

American Cancer Society recommendations

- Recommend annual MRI screening if:
  - BRCA mutation
  - First-degree relative of BRCA carrier, but untested
  - Lifetime risk 20-25% or greater, *as defined by BRCAPRO or other models dependent on family history*
  - Radiation to chest between age 10 and 30 years

Ca: Cancer J Clin 2007;57:75

Results of ACS Announcement

- More women ask physicians to order MRI
- More physicians order MRI, both from clinical concern and fear of malpractice
- Insurers are pressured into covering MRI, further increasing use of MRI for screening

An example:
MRI in highest risk women

Hypothetical starting risk: cancer present in 20 out of 1000 women screened

MRI sens: 90% *MRI spec: 80%*

	MRI pos	MRI neg
Breast cancer	18	2
No breast cancer	200	780

218 women have biopsy to find 18 cancers
(about 1 out of 12 biopsies show cancer)

An example:
MRI in average risk women

Hypothetical starting risk: cancer present in 5 out of 1000 women screened

	MRI pos	MRI neg
Breast cancer	4	1
No breast cancer	199	796

203 women have biopsy to find 4 cancers
(about 1 out of 50 biopsies show cancer)

Cancer Society calls for annual MRIs for women at greatest risk of breast cancer

St. Louis Post-Dispatch, 3/28/07

MRIs urged in breast cancer detection

Chicago Tribune, 3/28/07

Reporting on treatments

Chemoprevention of breast cancer

What is Relative Risk Reduction?

- **A relative comparison of risks: it tells you how much lower the modified risk is compared to the starting risk.**

$$\text{RRR} = \frac{\text{starting risk} - \text{modified risk}}{\text{starting risk}}$$

Describing Relative Risk Reduction

$$\frac{\text{4 out of 1000 (placebo) - 2 out of 1000 (drug X)}}{\text{4 out of 1000 (placebo group}} = \frac{.004 - .002}{.004} = .5 = 50\% \text{ lower}$$

In other words:

Drug X lowers the 5 year risk of dying from BC by 50 percent.

What is Absolute Risk Reduction?

- An absolute comparison of risk – tells you how much lower the modified risk is than the starting risk in absolute terms.

EXAMPLE:

RCT women take drug X or placebo. After 5 years:

- **4 of 1000 women in placebo group die of BC (starting risk)**
- **2 of 1000 women in drug X group die of BC (modified risk)**

ARR = risk of BC death (placebo group)
- risk of BC death (drug X group)

= 0.004 - 0.002 = 0.002 = 0. 2%

Describing Absolute Risk Reduction

Here are 2 ways to describe this absolute risk reduction:

- Drug X lowers 5 year risk of breast cancer death by 0.2 percentage points.
- For every 1000 women who take drug X for 5 years there will be 2 less breast cancer deaths.

Chemoprevention of breast cancer

Effects of tamoxifen vs raloxifene on the risk of developing invasive breast cancer and other disease outcomes:

the NSABP Study of Tamoxifen and Raloxifene (STAR) P-2 Trial

Vogel VG et al. JAMA 2006;295.

STAR P-2 Trial

- Purpose:

  To compare raloxifene (Evista) to tamoxifen for reducing risk of invasive breast cancer in healthy women at high risk for breast cancer

STAR P-2 Trial

- Background:

  NSABP-P1 trial published in 1998 showed that tamoxifen reduced risk of breast cancer in women at higher risk

High risk = predicted risk of an average 60 year old

≥ 1.66% over 5 years

NSABP-P1 trial of tamoxifen for prevention

Benefits: 50% reduction in risk of both invasive and noninvasive breast cancer

No evidence for effect on breast cancer mortality

Risks: 2-fold increase in blood clots and endometrial cancer; 1.6 –fold increase in stroke

Chemoprevention of breast cancer: selective estrogen receptor modulators (SERMs)

	Estrogenic Effect	
	Tamoxifen	Raloxifene
Uterus	+	~
Bone	+	+
Liver	+	+
Clotting	+	+
Heart	no effect	no effect

Key Findings of STAR P-2 Trial

- No difference between tamoxifen and raloxifene on incidence of breast cancer
  - 4.3 per 1000 women per year (tamoxifen)
  - 4.4 per 1000 women per year (raloxifene)
- Tamoxifen – fewer cases of invasive BC
- Raloxifene – significantly less risk of thromboembolic events, cataracts; suggestion of less uterine cancer
- No differences for other invasive cancers, ischemic heart events, and stroke

April 26, 2006

"Sorting Out Pills to Reduce Breast Cancer Risk"

Denise Grady, The New York Times, May 9, 2006

The NCI held a news conference…and jubilantly announced that a second drug, raloxifene, was just as good as tamoxifen at preventing invasive cancer---with fewer side effects….

But it's not clear that women concerned strictly about breast cancer will line up for this drug, either. A closer look at the recent study suggests that raloxifene's advantages may not be as great as the government announcement implied. Some cancer experts were less than enthusiastic, and patient advocates were downright skeptical.

The New York Times, May 9, 2006

”The outcome of this study is not as clear cut as we might have hoped for,” said Dr. Len Lichtenfeld, …of the American Cancer Society. “It will take some time for experts to review the data to determine which of the two treatments is preferable.”

Fran Visco, president of the National Breast Cancer Coalition, said the new study had been hyped, adding, “We have many concerns about it on many levels.”

The New York Times, May 9, 2006

So raloxifene looked just as good as tamoxifen. Even better news, the cancer institute said, was that those taking raloxifene had "36% fewer uterine cancers and 29% fewer blood clots."…

But numbers can be tricky. Expressed as percentages, the differences between the drugs for uterine cancer and blood clots sound large.

The New York Times, May 9, 2006

"But the actual numbers are small," Dr. Lichtenfeld said.

Among women taking tamoxifen, 36 of 4732 got uterine cancer, while for raloxifene the number was 23 of 4712…As for blood clots, there were 141 in the 9726 women on tamoxifen and 100 in the 9745 on raloxifene.

"Women who took raloxifene did get uterine cancer, and they did have blood clots," Dr. Lichtenfeld said. "Any suggestion that tamoxifen is the only drug saddled with getting these diseases is not accurate."

The New York Times, May 9, 2006

The concern is that many women would have to take tamoxifen or raloxifene for few to benefit. In 1,000 high risk women…for instance, without treatment 40 would be expected to develop invasive breast cancer over the next five years. If all 1,000 were treated, only 20 cases would occur.

But since there is no way to predict who will actually get cancer, everyone has to be treated, meaning that 980 will be exposed to the drug's risks but will get no cancer benefit.

The New York Times, May 9, 2006

"The results were announced by the cancer institute in a news release and a telephone conference for news reporters. Contrary to usual practice, the complete data had not yet been revealed to scientists or published in a medical journal, though the institute said it intended to do so. Officials said they announced the findings before publishing them because they had implications for public health."

The New York Times, May 9, 2006

Ms. Visco said, “How is it ethical to do that, to make this much hype around something that is not a health emergency, and you can’t check their data?”

Take home points

- Provide basic info on benefits, risks, and costs
  - balanced and understandable
  - absolute risks, not relative risk, preferred
- Acknowledge that patients' values and preferences vary
  - present patient stories that reflect spectrum

Primum non nocere