

approach is explaining the low degree of risk. It may also be helpful to offer to increase the frequency of visits as a means of early detection of problems. If cost is a problem, encourage bulk purchase or generic medications. What if the patient does not perceive that this is really a problem of concern? In this instance, the clinician can emphasize that risk increases with age, that osteoporosis itself generally is not symptomatic, and the patient's perception of risk may be understated. This same diagnostic approach applies to the other aspects of the osteoporosis prevention regimen.

Last on the list of barriers is lack of social support. This obstacle is presented separately because it can apply to *all* aspects of an osteoporosis regimen. Typically, patients who live alone, or who for other reasons have low social support, can experience far greater problems in remembering and staying motivated to follow the regimen. Arranging for home visits, making telephone calls, discussing with family

members, or forming self-help groups are ways to deal with this barrier to adherence. Admittedly, the adherence-enhancing methods indicated in Table 1 are not esoteric. They are, indeed, common sense. The point is that many patient education efforts are approached in a disorganized, desultory fashion. Taking 1 or 2 minutes to first perform the behavioral diagnosis will, in fact, make the counseling far more effective and efficient.

## Conclusion

By approaching these problems of informed consent and nonadherence management in a systematic manner, we can substantially reduce the burden of osteoporosis among elderly women. Although the counseling techniques themselves are not difficult, their routine application in medical practice has proven to be one of the greatest challenges the clinician can face.

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## Panel Session: Management/Education

### The Awareness of Osteoporosis Among Health Professionals, Consumers, and Journalists

JOHN H. RENNER, MD

Dr. Renner is Director of Community Health, Trinity Lutheran Hospital, Kansas City, MO. This article is based on his presentation at the FDA Special Topic Conference on Osteoporosis, sponsored by the Food and Drug Administration, held at Bethesda, MD, October 30, 1987.

#### Synopsis . . . . .

*A survey of physicians, consumers, journalists, and experts on osteoporosis showed that the level of awareness, particularly among consumers and physicians, regarding osteoporosis and calcium supplementation is high. Professionals and consumers*

*alike agree that osteoporosis is a serious disease. Most think that the disease is preventable, although serious. Most women are aware that osteoporosis may begin years before symptoms become evident, and that they may be subject to the disease. Most consumers and professionals believe that the ideal time to begin osteoporosis prevention is adolescence. If prevention does not begin during that age, some physicians suggest that any steps toward prevention taken premenopausally are beneficial.*

*Nearly all of those surveyed believe that calcium as well as exercise helps prevent osteoporosis. Although about 90 percent of the physicians surveyed agreed that estrogen replacement therapy (ERT) alleviates osteoporosis; only 48 percent of postmenopausal women believe that ERT is helpful. The majority of the professionals who responded believe that most women do not get enough calcium in their diets, and that most women do not exercise enough.*

*Although in most instances the consumers responding to this study were slightly less informed about the risks and factors associated with osteoporosis than were the professionals, the opinions of the four groups surveyed were similar for most of the topics discussed.*

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**P**HYSIICIANS AND THE PUBLIC have been deluged in recent years with information about osteoporosis,

but at times that information has been contradictory, confusing, or incomplete. In order to evaluate the

**Table 1. Physician replies (percent) to survey statement: "Most women accept estrogen replacement therapy."**

Response	Specialty <sup>1</sup>			
	FP/GP	IM	OB/GYN	DO
Agree . . . . .	46.4	40.6	52.0	44.8
Neutral . . . . .	42.1	44.6	33.8	41.0
Disagree . . . . .	11.6	14.9	14.3	14.2

<sup>1</sup>FP/GP = family practice/general practice; IM = Internal medicine; OB/GYN = obstetrics/gynecology; DO = Doctor of Osteopathy.

**Table 2. Physician replies (percent) to survey statement: "Exercise helps prevent osteoporosis."**

Response	Specialty <sup>1</sup>			
	FP/GP	IM	OB/GYN	DO
Agree . . . . .	88.5	97.1	89.0	85.1
Neutral . . . . .	11.0	1.0	9.6	14.1
Disagree . . . . .	0.6	1.9	1.4	0.7

<sup>1</sup>FP/GP = family practice/general practice; IM = Internal medicine; OB/GYN = obstetrics/gynecology; DO = Doctor of Osteopathy.

**Table 3. Physician replies (percent) to survey statement: "Most women get enough exercise."**

Response	Specialty <sup>1</sup>			
	FP/GP	IM	OB/GYN	DO
Agree . . . . .	1.6	1.0	3.2	—
Neutral . . . . .	19.4	13.9	20.5	23.5
Disagree . . . . .	79.0	85.2	76.3	76.5

<sup>1</sup>FP/GP = family practice/general practice; IM = Internal medicine; OB/GYN = obstetrics/gynecology; DO = Doctor of Osteopathy.

awareness of osteoporosis and the means of prevention, an extensive survey was recently conducted. Questionnaires were sent to 11,000 primary care physicians (including physicians specializing in family practice, general practice, internal medicine, and obstetrics/gynecology), consumers, journalists, and 11,000 experts on osteoporosis. A total of 1,516 responded, including 761 primary care physicians, 733 consumers, 15 journalists, and 7 experts. The results of the survey are presented here.

## Consumers

Eighty-seven percent of the consumers who responded considered osteoporosis a serious disease. Sixty-eight percent thought that most women were subject to osteoporosis, and 60 percent (all women) were making special efforts to prevent osteoporosis. Sixty-six percent thought the disease was preventable.

Among teenagers responding, 84 percent felt that prevention of osteoporosis should begin when one is a teenager. In contrast, 4.2 percent of postmenopausal women felt that prevention should start during menopause.

Eighty-five percent of consumers felt that calcium helps prevent osteoporosis, 68 percent were trying to obtain extra calcium via their diets or supplementation, and 42 percent were actually taking a calcium supplement.

Seventy percent felt that exercise helps prevent osteoporosis, and 46 percent were actually exercising.

Forty-eight percent of postmenopausal women felt that estrogen helps prevent osteoporosis, but 41 percent expressed some doubt. Eleven percent actually disagreed. Clearly, many consumers are not convinced that osteoporosis is not an inevitable part of aging.

## Physicians

This group of respondents included many physicians in the specialties of family practice, general practice, internal medicine, and obstetrics and gynecology. Most were MDs; a few were DOs (Doctors of Osteopathy). The majority were in private practice, and they represented a wide geographic area.

Ninety percent of primary care physicians felt that osteoporosis was a serious condition. Seventy-seven percent thought it was preventable. In the expert category (see details below), almost 100 percent felt it was preventable; 66 percent of the primary care physicians thought the time to start prevention was adolescence.

Unfortunately, the 23 percent of physicians who think that osteoporosis is not preventable will not treat their patients preventively. Neither physician nor patient is likely to do anything about osteoporosis.

About 90 percent of primary care physicians felt that estrogen therapy helped prevent osteoporosis; all of the experts thought the therapy was preventive and safe. Most of the primary care physicians considered it safe.

On the average, 40 percent of primary care physi-

cians accepted estrogen replacement therapy (table 1). By specialty, 75–100 percent of patients were on estrogen replacement therapy in the obstetric/gynecology group, but in the internist group the number was only 4 percent.

Among primary care physicians, about 90 percent felt that exercise helps prevent osteoporosis (table 2); more than 79 percent felt that most women get too little exercise; and on the average (table 3), 54 percent encourage their patients to get more exercise. This prescription for exercise may be not only for osteoporosis, but also for cardiovascular health.

Concerning calcium, about half the primary care physicians felt that teenagers were getting too little calcium. For premenopausal women, about 52 percent of the physicians felt that women are getting too little calcium, and about 73 percent felt that postmenopausal women are getting too little calcium (table 4). Overall, 55 percent of all female patients were being encouraged by primary care physicians to increase their calcium intake.

The average amount of calcium that was thought to be received by all patients was 655 milligrams (mg) (table 5), which is a little higher than the estimate obtained from the Health and Nutrition Examination Survey (1). In addition, only about 19 percent of the physicians felt that taking a patient's dietary history was an accurate way to determine calcium intake, and only 28 percent of physicians felt that they might be able to persuade women to change their dietary habits to increase their calcium intake.

## Journalists

Of the 15 journalists who responded, over two-thirds had written an article on osteoporosis, and all thought it was a serious condition. All also thought that prevention should begin in adolescence, and most thought teenage girls were not getting enough calcium in their daily diets. However, one-third think women are likely to change their dietary habits.

Most of the journalists thought that calcium was effective in preventing osteoporosis, but also thought that there was no consensus among experts on the issue. In general, they also thought that most women do not get enough calcium from their diets, that diet is the best source of calcium, and that calcium in tablet form may not be completely absorbed.

Some of this concern about tablets may stem from the large number of inexpensive, poor quality supplements now on the market. This concern is not new or unfounded. The type of calcium contained in a supplement determines how much calcium is actually

Table 4. Physician replies (percent disagreeing) with survey statement: "Most women get enough calcium from their normal daily diets."

Age group	Specialty <sup>1</sup>			
	FP/GP	IM	OB/GYN	DO
Teenage . . . . .	52.5	43.3	49.1	49.2
Premenopausal . . . . .	54.6	42.3	63.5	45.8
Postmenopausal . . . . .	74.2	76.0	77.6	65.6

<sup>1</sup>FP/GP = family practice/general practice; IM = internal medicine; OB/GYN = obstetrics/gynecology; DO = Doctor of Osteopathy.

Table 5. Physician replies (percent) to estimate of patient's daily calcium intake

mg per day	Specialty <sup>1</sup>			
	FP/GP	IM	OB/GYN	DO
1–499 . . . . .	25.0	26.8	22.7	26.5
500–999 . . . . .	59.7	58.1	62.1	58.9
1,000+ . . . . .	15.4	15.1	15.2	14.7
Mean . . . . .	640	751	616	614

<sup>1</sup>FP/GP = family practice/general practice; IM = internal medicine; OB/GYN = obstetrics/gynecology; DO = Doctor of Osteopathy.

Table 6. Experts comparison between suggested calcium intake and estimated calcium intake of women of various age groups

Age group	Calcium (mg per day) women should consume		Calcium (mg per day) woman probably consume	
	Range	Median	Range	Median
	Teenage . . . . .	1,000–1,500	1,200	500–800
Premenopausal . . . . .	800–1,000	1,000	500–800	600
Postmenopausal . . . . .	1,250–1,500	1,500	480–650	600
Geriatric . . . . .	1,000–1,500	1,500	400–600	500

available to the body. Dr. Shangraw has discussed this subject in his presentation (2).

## Experts

These findings are based on responses from seven bone and mineral experts.

All of these experts estimated that the need for calcium far exceeded the amount of calcium women in every age group actually consumed (table 6). Especially noteworthy was their opinion that the average amount an elderly person receives is only 500 mg per day.

Consuming food products with a high calcium content is another way that patients can increase their calcium intake. Physicians have also emphasized the eating of green, leafy vegetables, but recent research suggests that the bioavailability of calcium in green, leafy vegetables is no greater than in some of the tablets that do not dissolve.

In summary, I believe that we can do some simple things to improve the situation. We can advocate

increased calcium intake and exercise. We can educate women of all ages and take some leadership in the discussion of estrogen therapy, and we should try to keep our messages simple to facilitate public understanding.

**References** .....

1. McDowell, A.J.: The Health and Nutrition Examination Survey. Health Services Mental Health Administration Health Rep 86: 592-595 (1971).
2. Shangraw, R.F., and Carr, C.J.: Am Pharm 1987 NS27 (2) 149-157.

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