

# Summary of the Capitol Hill Breakfast Briefing on Pain Management

*Sponsored By The Honorable Tom Harkin*

May 7, 1997

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The FRIENDS of the NINR held the second of three Capitol Hill breakfast briefings this year on May 7th on the issue of research on pain. FRIENDS, an independent, non-profit membership organization, supports the NINR by promoting public awareness of the role of nursing research in advancing health care practice in the United States. Those attending the briefing included Congressional staff, nurse researchers and administrators, and members of public and private organizations having a special interest in pain research.

Providing introductory remarks was Colleen Conway-Welch, Ph.D, RN, FAAN, President of FRIENDS and Dean of Vanderbilt University School of Nursing. She acknowledged the event's sponsor, Tom Harkin (D-IA), and noted his strong support of the National Institutes of Health and of the National Institute of Nursing Research. As a member of the Senate Appropriations Committee, he has made accessible and affordable quality health care a priority and is a leader in disability policy. She also introduced Dick Thompson, Vice President of Government Affairs of Bristol-Myers Squibb, which hosted the breakfast. The pharmaceutical company will also host the next breakfast briefing -- Disease Management and Genetics - on September 24, 1997. Turning to the topic of the briefing, Dr. Conway-Welch said that pain management is an integral part of nursing care. Treatment of pain must be personalized and preemptive - pain must be controlled before treatment for disease can be effective and healing can begin.

Patricia A. Grady, PhD, RN, FAAN, Director of the National Institute of Nursing Research, stated that pain poses one of the most difficult challenges for everyone involved in health care - from researchers who try to understand the underlying biological and behavioral mechanisms to health care providers who try to relieve their patients' pain. With its unique focus on the whole patient, nursing research stands at the intersection of these two efforts. Pain is responsible for nearly 40 million visits to health care providers each year. It costs the United States more than \$100 billion annually in health care expenditures and lost productivity. It can prolong hospital stays and impede recovery. Some research indicates that it may even be life-threatening. Dr. Grady concluded her remarks by describing the NINR's work with other NIH institutes and offices in encouraging studies to determine:

- The critical interplay between biology and behavior and its influence on the way that pain is experienced,
- Similarities and differences in the way pain is expressed and experienced by various population groups, including genetic, cultural, age, and gender considerations, and
- Ways in which pain is best managed in these groups.

## THE RESEARCH

### **Gender Differences in Responses to Pain Medicines. Dr. Christine Miaskowski, Professor and Chair of the Department of Physiological Nursing at the University of California, San Francisco**

Dr. Miaskowski stressed that pain is a very personal experience and that its undertreatment is a major public health problem. Strategies are needed to determine how to deal with pain. Her research centers on the role of gender in pain relief, a research area that has not received much attention. She noted that no literature on the subject could be found. Most studies on pain relief have used male participants, which, according to Dr. Miaskowski, means that 51 percent of the population has been ignored. Related research findings have shown, however, that men seem to tolerate more pain than women, although both genders credit women in coping more effectively with pain.

Dr. Miaskowski's study, which appeared in *Nature Medicine*, received widespread media attention, including stories in *Time* magazine and *The New York Times*. Her findings indicate that women receive dramatically better pain relief with kappa-opioids, a seldom used type of narcotic analgesic, than do men when both undergo surgery for wisdom teeth removal. Kappa-opioids also have the advantage of producing fewer side effects than more commonly used mu-opioid painkillers, such as morphine. The import of these findings go far beyond the immediate study. Awareness has been raised about the need to determine if men and women respond differently to all types of medication and the reasons these gender differences occur. This knowledge could lead to the development of pain treatments that are specific and more effective for men and women.

Dr. Miaskowski is currently studying gender differences and the placebo effect. She is also focusing on the relationship between female hormone levels and the effectiveness of pain relief interventions.

## **Perioperative Pain and the Promotion of Tumor Metastasis. Gayle G. Page, DNSc, RN, Assistant Professor at the College of Nursing, Ohio State University.**

Dr. Page, who has collaborated in the past with the renowned pain physiologist, Dr. John C. Liebeskind, emphasized the prevalence of pain by pointing out that everyone knows someone who has experienced the painful effects of cancer. Over one million people are diagnosed with cancer each year. A large number undergo surgery, and afterwards they typically mention their pain. In itself, the painful stress of surgery is potentially life-threatening, since it compromises immunity and can promote metastasis, the spread of disease throughout the body. Studies have shown that in humans, surgery suppresses the proliferation of lymphocytes and natural killer cell activity.

The focus of Dr. Page's research is to investigate the impact of pain associated with surgery on natural killer cells and the development of metastasis, and to discover if pain relief will affect these outcomes. Using a specially engineered animal model of breast cancer metastasis, Dr. Page found that surgery compromised the animal immune system ability to resist metastasis. Of particular consequence, she found that providing morphine before and after surgery significantly decreases the observed metastatic-enhancing effects of surgery. If applicable to humans, these results suggest that the provision of pain relief would improve an individual's resistance to a negative consequence of undergoing surgery. Dr. Page indicated that preoperative pain medication is particularly important, because it promotes better pain management after surgery by preventing the cycle of pain from developing.

Because other findings have shown that in unstressed animals, the female estrous cycle affects susceptibility to metastasis, Dr. Page has also investigated the possibility that the estrous cycle affects the ability to resist the metastatic-enhancing effects of surgery. Her results indicate that before and during the time of ovulation, female animals are more susceptible to metastasis following surgery than they are after having completed ovulation.

If these findings hold true for humans, then premenopausal women may benefit by scheduling surgical interventions during the latter phase of their menstrual cycle.

Dr. Page plans to continue to explore pain mechanisms and gender differences as they relate to the metastatic consequences of surgery. Her overall goal is to demonstrate that the management of pain is not only humane, but a physiologic necessity.

## **CHALLENGES**

Demographic shifts underscore pain research as an important area of investigation for nursing research. An increase is anticipated in chronic illnesses that can affect all ages and which are frequently accompanied by pain. The following facts and projections underscore the importance of research into chronic illness:

- In 1987, 90 million Americans were living with chronic conditions, with direct health care costs of \$272 billion annually. These figures do not include institutionalized persons or the indirect costs of care.
- By 1995, the number had risen to 99 million individuals, at an annual cost of \$479 billion.
- Estimates now indicate that in 2030, 148 million people will have chronic conditions, and associated annual direct costs will rise to \$798 billion.

NINR's research falls primarily into four categories:

- Managing symptoms
- Avoiding complications of illness and disability
- Managing and controlling pain
- Supporting family caregivers

The goal is to develop better strategies for preventing or treating symptoms of disease, such as pain, in order to improve the quality of life for patients and their families and preserve independent functioning for those with chronic illnesses as long as possible.