Medical Education and Research Grant Outcome Report

Name: Does Treatment of Hypovitaminosis D Increase Calcium Absorption

Principal Investigator: Karen E. Hansen, MD, Assistant Professor

Phone/e-mail: 608-263-3457/keh@meidcine.wisc.edu

Department: Medicine – Rheumatology

Program: New Investigator Program

Grant Duration: 03-01-07 to 02-28-09 (24 months)

Expenditures: $100,000 (100% expended)

Use of Funds (Taxonomy): Type 1 translational research

Research Keywords: Calcium absorption, menopause, nutrition, treatment, vitamin D

Description: Vitamin D insufficiency (VDI) occurs in over 50% of postmenopausal women in Wisconsin and is believed to cause low calcium absorption, contributing to osteoporosis. If research shows that correcting VDI improves calcium absorption and bone health, such data may have a significant impact on public health policy at the state and national level.

The investigators recruited and studied 19 postmenopausal women with VDI. Women's calcium absorption was measured when vitamin D insufficient and later when vitamin D replete.

Results: Researchers demonstrated that calcium absorption increased (3%, p=0.04) with correction of VDI. These findings filled a knowledge gap and might assist experts in future determination of optimal vitamin D intake for older adults.

Existing literature does not demonstrate whether a 3% increase in calcium absorption corresponds with improved skeletal health or muscle fitness. The data collected, however, have established the foundation for future extra-mural funding for research related to VDI.

In addition, Dr. Hansen was recognized nationally as an expert in the field of vitamin D research.

Met Objectives: Project completed

Timeline for Application of Result.s: 5-7 years

New Partnerships or Collaborations: Hansen's research team was interdisciplinary and included UW staff within the Waisman Biomanufacturing Facility, the Pharmaceutical Research Center, the General Clinical Research Center, the Wisconsin State Laboratory of Hygiene and the Biostatistics Department.

Matched Dollars (cash or in-kind): $113,084

Dissemination:

- Published article: *Journal of Bone and Mineral Research*
- Four articles to be submitted for publication
- Oral presentation (national): American College of Rheumatology
- Two upcoming oral presentations (national): American Society for Bone and Mineral Research; Institute of Food Technologies
- Interview for national NBC news program

Additional Funding: National Institutes of Health funding was requested for a large placebo-controlled trial evaluating the value of low-dose and high-dose vitamin D for postmenopausal women with VDI. Study outcomes include the change in calcium absorption, bone mass, and muscle fitness. If funded, the study will assist the Food and Nutrition Board in its determination of the optimal dose and serum 25(OH)D level for postmenopausal women.