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EDUCATION

- BS, Physical Therapy, University of California, San Francisco, CA, 1963
- MPH, Medical Care Administration, University of California, Berkeley, CA, 1968
- PhD, Special Education, University of California, Berkeley / San Francisco State University, San Francisco, CA, 1985

BOARD CERTIFICATIONS

- Physical Therapist [2] (PT)

BIOGRAPHY

Dr. Nancy Byl is currently an Emeritus Professor in the Department of Physical Therapy and Rehabilitation Science. After completing her MPH in 1968, she joined the UCSF faculty in the Division of Ambulatory and Community Medicine. She was the Director of Rehabilitation at Pacific Medical Center and Children's Hospital and then completed her PhD in 1985. She

joined the faculty in the Curriculum of Physical Therapy in l985. She had the opportunity to create a joint MPT with San Francisco State University and then created the Department of Physical Therapy and Rehabilitation Science in the School of Medicine in l990. She served as Chair until 2008. In that time, approval was received to offer a DPTSc degree from UCSF/SFSU, to initiate the post professional DPT degree and then the entry level DPT as a joint UCSF/ SFSU degree. The post professional DPT also included CSUFresno. Dr. Byl has received numerous awards including becoming a Catherine Worthingham Fellow of the American Physical Therapy Association (APTA) and received the Lucy Blair Service Award. From the California Chapter of the APTA, she has also received the Charles Magistro Award for Outstanding Service, the Royce B. Noland Award of Merit, and the Outstanding Research Presentation Award. She has served on the Board of Directors of the CPTA for multiple terms and currently is President of the Physical Therapy Fund which supports research for young physical therapy investigators. Dr. Byl currently provides specialty lectures in the academic program, provides patient care in the UCSF PT Health and Wellness Center and is involved in multiple clinical research studies involving rehabilitation technology and exercise programs for patients post stroke and post Parkinson?s Disease.

CLINICAL & RESEARCH INTERESTS

- Principles of neural plasticity and the origin of repetitive strain injuries and focal hand dystonia using an animal model
- Effectiveness of onservative sensorimotor strategies for rehabilitating patients with focal hand dystonia.
- Application of the principles of neuroplasticity and intense, dual task aerobic exercise to effective intervention programs for the elderly and those with neurological or musculoskeletal degenerative disease
- Determining the biomarkers for the origin of impairments and neuroprotection for patients with Parkinson?s disease
- Initiation studies with the Department of Radiology on the effects of transmagnetic stimulation as an effective rehabilitation strategy to aid retraining and recovery post-stroke, PD or aging
- Integrating rehabilitation robotics into paradigm shifts for neurorehabilitation to augment usual physical therapy

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CURRENT RESEARCH

Dr. Byl's areas of research range from basic science to clinical and translational research focused on translating the principles of neuroplasticity to practice for patients with focal hand dystonia, stroke, brain trauma, and Parkinson?s Disease. Initially, she studied the relationship between vestibular processing and learning disabilities in adolescent boys, and then the relationship of vestibular processing and postural righting problems relative to chronic low back pain and idiopathic adolescent scoliosis. Dr. Byl also worked closely with the Wound Healing Laboratory, participating in team-based research analyzing the effects of ultrasound and subcutaneous oxygen on wound healing. The team investigated the effects of transcutaneous drug delivery of steroids with ultrasound (phonophoresis, sonophoresis) and the effects of hyaluronic acid for scar-free healing.

Over the last 20 years, Dr. Byl has had the opportunity to work with a team of neuroscientists

including Michael Merzenich, PhD, to study the etiology of behaviorally induced focal hand dystonia. Together, they created a paradigm shift in the understanding that the etiology of focal hand dystonia could be due to aberrant learning as measured by changes in brain topography (sensory and motor). They have applied what they learned about etiology to retraining paradigms. Today, Dr. Byl collaborates on funded research studies with researchers in bioimaging, neurology, and engineering at UCSF, UCSC, and UCB, evaluating brain mapping, biomarkers, changes in brain activation patterns, and clinical outcomes following acute recovery and chronic rehabilitation-based recovery, based on attended, task-oriented rehabilitation strategies including the integration of robotic technology.

RECENT PUBLICATIONS

- View the list on PubMed [3]

Links
[1] mailto:nancy.byl@ucsf.edu
[2] http://www.apta.org/
[3] http://www.ncbi.nlm.nih.gov/pubmed/?term=nancy+byl