

Nancy I. Williams, ScD, FACSM, FNAK, is a professor of kinesiology and physiology and past head of the Department of Kinesiology at Pennsylvania State University. Her contributions to the field of women's health and exercise have significantly advanced the understanding of the complex interplay between metabolic, reproductive and skeletal physiology in exercising women.

Dr. Williams completed her undergraduate studies at Bucknell University, her doctorate at Boston University and her postdoctoral training at the University of Pittsburgh. Dr. Williams's research career has been defined by excellence, and she has pursued her goals with diligence, passion and integrity. Her publications have contributed substantively to the establishment of clinical guidelines for patient care and widely used consensus guidelines.

Dr. Williams was the first to prospectively quantify pulsatile luteinizing hormone (LH) patterns in exercising women while manipulating energetic status, isolating the effects of caloric restriction versus strenuous training on the associated slowing of LH pulse frequency. This research spurred an uptick in subsequent studies that defined the effects of varying energetic levels on reproductive function.

Dr. Williams then published seminal exercise studies using a monkey model during her postdoctoral fellowship and later performed important randomized clinical trials in humans. Results from her clinical trials demonstrated that the induction of menstrual disorders varied with levels of caloric-restriction exercise training, defining the magnitude of the daily energy deficit that was causal to menstrual disruption. Subsequently, Dr. Williams and colleagues were the first to demonstrate that the reversal of menstrual disturbances was achieved by increasing food intake in women without any decrease in exercise training. This work revealed the important public health finding that physical exercise itself had no suppressive effect on the menstrual cycle, but rather it was energy deficiency created by under-fueling that played the causal role in the induction of menstrual disturbances.

These findings have been transformative, representing the only randomized and prospective studies that demonstrate the full progression from normal ovulatory menstrual cycles to amenorrhea and, in turn, its complete reversal. Dr. Williams's work has transformed our understanding of the key role that energetic status plays on menstrual function and bone health.

Dr. Williams is a sought-after speaker, having delivered numerous lectures in the US and in Hong Kong, Monaco, Nigeria, Kenya and New Zealand. To date, she has published over 120 peer-reviewed papers in the highest quality journals in her field – in fact, 56% of her papers have appeared in the top 10% of journals indexed in terms of their number of citations. Her work has been supported by the National Institutes of Health, the US Department of Defense and other agencies.

Dr. Williams has not only furthered scholarship and outreach within her area of expertise but also in the broader field of kinesiology as a past president of the American Kinesiology Association and the Female and Male Athlete Triad Coalition.

Dr. Williams is a true thought leader who meets all criteria for the ACSM Citation Award. Dr. Williams is an ideal role model for women in science and women's health.

