

## Plus ça change, plus c'est la même chose\* [The More Things Change, the More They Remain the Same.]



During my 5 years of medical school, I spent 1 summer and 1 year performing clinical research in the Clinical Physiology Laboratory (Klinisk Fysiologisk Laboratorium) at Bispebjerg Hospital in Copenhagen, Denmark. The head of the laboratory at that time, Niels A. Lassen, MD, was a world's authority on measuring blood flow in a variety of organs using radioactive tracers. He had learned the technique while studying at the National Institutes of Health under Dr Seymour S. Kety. The technique for measuring blood flow was simple and elegant. One injected a small bolus of radioactive xenon ( $X^{133}$ ) dissolved in saline into the selected organ and followed its washout with a scintillation detector.<sup>1,2</sup> My projects involved the determination of blood flow in the gastrocnemius and soleus muscles during walking on a treadmill in normal individuals and in patients with peripheral vascular disease.

Niels Lassen and his associate director of the laboratory, Andre Larsen, had previously shown that leg muscle training achieved with a regular walking program significantly improved time to the onset of claudication in patients with atherosclerotic peripheral arterial disease.<sup>3</sup> The training program was simple: The patient walked until claudication occurred. Then, they stood still quietly until the discomfort subsided. Walking was then resumed until claudication developed again. This pattern of walk, rest, walk, rest was repeated for an hour or more at least 3 times per week. The results of this study were illuminating: Compared with control patients who did not walk, patients who trained were able to walk significantly longer before claudication developed.<sup>3</sup>

My research projects involved similar patients with severe peripheral vascular disease. The investigations demonstrated reduction in blood flow in the calf muscles during exercise with reactive hyperemia during the postexercise

rest period. Patients who trained using the Larsen/Lassen protocol significantly improved their walking time and their exercise muscle blood flow.<sup>4-6</sup> Other muscle blood flow investigations were also performed during my stay at the Klinisk Fysiologisk Laboratorium.<sup>7</sup>

Over the many years since I was a medical student, a considerable number of other studies have been performed confirming what had been reported from Niels Lassen's laboratory. It is interesting to note that Hippocrates recommended walking as therapy more than 2500 years ago.<sup>8</sup> Multiple other recent subsequent investigations have confirmed the advice of Hippocrates and the research from the Bispebjerg Hospital performed in the 1960s.<sup>9-11</sup>

What has fascinated and, at times, irritated me is that recent publications dealing with this well-studied and ancient approach to the therapy of patients with peripheral vascular disease completely ignore previous, definitive studies such as those from Lassen's laboratory. Recently, I discussed this issue with a former president of the University of Arizona and a highly regarded investigator. He gave me this sage advice: In almost all cases, what we do as academicians represents small incremental additions to a large body of existing knowledge. He told me not to expect being remembered or cited because that will not happen and that even work done by previous Nobel Prize winners disappears into the mists of time. I have taken his advice to heart and stopped examining bibliographies from articles dealing with the areas in which I have worked for more than 50 years, hoping that my work would be cited. I am now comfortable with the idea that my contributions helped to bring us to where we are at present in our knowledge, and I need not worry about whether I have been cited.

As always, I enjoy hearing from readers about this commentary or others that I have written at [jalpert@email.arizona.edu](mailto:jalpert@email.arizona.edu)

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\*Epigram in French by Jean-Baptiste Alphonse Karr in the January 1849 issue of his journal *Les Guêpes* ("The Wasps").

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