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Healthy Aging: Achieving the Goal of Natural Death

Throughout his career, which now spans four decades, Dr. Bland has been significantly influenced by certain key publications in the medical literature. One of these articles—one that he has cited often since its publication 34 years ago—is a piece titled "Aging, Natural Death, and the Compression of Morbidity." It is an article by a single author—James Fries, MD—that appeared in the *New England Journal of Medicine* in 1980. Dr. Fries is an immunologist and rheumatologist who has spent his career at Stanford University, where he now holds the title of professor emeritus. REF #1

To Dr. Bland, this 1980 article was ground breaking. To others, some of whom expressed their opinions openly in letters to the editor that were subsequently published in *NEJM*, the article inspired criticism and scorn. What was the issue people found so polarizing? It was the assertion made by Dr. Fries—supported by data he had compiled—that the onset of disability and diminished quality of life generally associated with advanced age could be postponed. He wrote:

> *Chronic illness may presumably be postponed by changes in life style, and it has been shown that the physiologic and psychologic markers of aging may be modified.*

Why the controversy? In the context of today's attitudes toward healthy lifestyle choices, this hypothesis appears perfectly reasonable. But in 1980, this concept was contrary to the prevailing opinions of the medical establishment, which had long held that some level of disability was a natural consequence of the aging process. In the 34 years since this first publication, Dr. Fries has conducted study after study that prove this belief—that disability is inevitable as humans age—to be inaccurate and misguided. In this issue, Dr. Bland and Dr. Fries discuss the details of this work.

Clinician/Researcher of the Month

James Fries, MD
Professor of Medicine (Immunology and Rheumatology) Emeritus
Stanford University School of Medicine
Palo Alto, CA
https://med.stanford.edu/profiles/james-fries

The interview opens with Dr. Fries providing some insight as to what the field of gerontology looked like several decades ago. The paradigm, at the time, was referred to as the "failure of success," and it was based upon the idea that the more science found ways to extend life, the worse the health of the population was going to be. In fact, the science of gerontology was once colloquially referred to as the "science of drawing downwardly sloping lines." Dr. Fries saw many flaws—both conceptual and

quantitative—in this attitude, and so began his work on transforming the focus of gerontology from illness and disability to the improvement of human health and human life. He describes his approach this way:

> *The key concept was to go into a longitudinal life-type of thinking and talk about how to postpone disease. Not talking about preventing disease or curing disease. Postponing disease is by far the strongest approach that you have, and we now know that.*

One key area of focus for Dr. Fries has been the development of better metrics and methods for data collection. He did extensive work on patient-reported outcome methodology, and eventually developed the Health Assessment Questionnaire (HAQ) and the Health Assessment Questionnaire—Disability Index (HAQ-DI), two widely used outcome measurement tools. In the 1980s, Dr. Fries and his colleagues undertook two important studies to gather longitudinal data on aging, the Runner's study in 1984 and the University of Pennsylvania Alumni study in 1986. Dr. Bland and Dr. Fries discuss these studies and the data and insights each provide in detail. Participants in these studies continue to be followed now, more than 30 years later. One key finding from the Runner's study has been that morbidity, as a variable, can be postponed by up to 16 years by regular vigorous physical exercise. REF #2-3

Dr. Fries has designed many other studies as well, including one 13-year study that was published in 2008 that measured the effects of vigorous exercise and disability in both normal-weight and overweight seniors. Another recently published study again followed runners (this time over 21 years), with an emphasis of the impact of exercise on disability and survival curves; Dr. Fries describes data generated on joint health that was gathered from this study. REF #4-5

At the time it was created, the HAQ represented an advance in the ability to assess morbidity over time. Advances in technology have led to the development of new measurement science and computerized adaptive testing, and Dr. Fries has been working in recent years on the development of a new metric called the NIH Patient-Reported-Outcomes Measurement Information System (PROMIS). PROMIS, as Dr. Fries explains, seeks to identify, develop, and evaluate new floor (very poor functional abilities) and ceiling (very high functional abilities) items to enable broader and more precise assessment of physical function. REF #6-7

In 2011, Dr. Fries and his colleagues published a follow-up to his 1980 article that was titled "Compression of Morbidity 1980-2011: A Focused Review of Paradigms and Progress." This was followed up in 2012 with an article by Dr. Fries titled "The Theory and Practice of Active Aging." Both articles revisit the "compression of morbidity," concept that Dr. Fries introduced in 1980, which suggested postponing functional declines and compressing morbidity into a shorter period later in life. But a new paradigm also emerges from the current work of Dr. Fries that is based upon his decades of study and data collection. He calls it "active aging" and describes in this way:

> *A radically nontraditional paradigm of aging which posits possible improvement in health despite increasing longevity.*

Dr. Bland and Dr. Fries conclude their discussions with observations about how both attitudes and the healthcare system continue to evolve. REF #8-9

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