

Honoring a Scientific Giant

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Since Dr. Burkitt was closely involved with several CHIP projects, we are especially pleased to feature some of his achievements.



Denis P. Burkitt, MD, of London, England, received the prestigious Bower Award and Prize for Achievement in Science presented by the Franklin Institute in Philadelphia. This international award includes a gold medal and cash prize of \$373,000 making it the richest American prize in science. The annual recipient of the award, made possible by a \$7.5 million bequest from Philadelphia chemical manufacturer Henry Bower, is selected by an internationally distinguished panel chaired by C. Everett Koop, MD, the former US Surgeon General.

The award ceremonies were followed by an all-day symposium “Diet and Disease” in honor of Dr. Burkitt. It addressed today’s common diseases in the industrialized world that were rare or unknown before World War I and that are still rare in most Third World countries. Epidemiological studies were cited showing that diseases, such as cancer and cardiovascular disease, become increasingly common with nutritional extravagance, national affluence and industrialization, and they consume a disproportionate amount of our health resources.

The Bower Award and Prize for Achievement in Science

Citation

For innovative and creative research, under extremely difficult circumstances in a tropical developing region, leading to the establishment of a virus-cancer linkage in the widespread childhood disease that has become known as Burkitt’s Lymphoma and leading to the redirection of cancer research and treatment throughout the world. For his inventive and methodical documentation of factors that explain the geographic distribution of disease among world populations. For his advocacy of the hypothesis implicating a deficiency of dietary fiber as a fundamental cause of health afflictions in the industrialized world and for his humanitarian devotion to the health of mankind.

“Diet and Disease” brought together outstanding researchers, such as William Castelli (Framingham Heart Study), T. Colin Campbell (China Diet Study) and Henry Blackburn (Mayo Professor at the University of Minnesota), who addressed the role of diet and nutrition in preventing and reversing these Western lifestyle diseases.

Humble Beginnings

When Denis Parsons Burkitt was a student at Trinity College in Dublin, Ireland, his tutor told his father he doubted Denis would graduate. The tutor obviously underestimated his student, for Burkitt proved to be a man whose dedication, curiosity and observational skills provided clues to unlock some of cancer’s deeper secrets.

Born in Enniskillen, Northern Ireland, on February 28, 1911, Burkitt was graduated from Trinity College in 1935, went on to receive his medical training at Dublin University and served as a surgeon in the Royal Army Medical Corps during World War II.

After the war, Burkitt joined His Majesty’s Colonial Service and was posted to Africa where he served as a government surgeon and lecturer in surgery at Makerere University’s School of Medicine. With only one qualified doctor to assist him, Burkitt was charged with every aspect of health care for 270,000 people spread over 10,000 square miles of Uganda.

The Cancer Discovery

Ten years after his arrival in Africa, Burkitt examined a child with four strange tumors in his mouth. Burkitt dismissed them as a curiosity. Later he saw a child with a swollen face and exactly the same problem. In time he discovered that these four tumors are always associated with tumors in other parts of the body. Burkitt reasoned that they must be different manifestations of the same tumor. All had the same age distribution: they were unknown in children under the age of 2, most common in children 6 to 8, and rarely ever found in children over the age of 12.

The Search

With a research grant of \$75, he wrote to colleagues throughout Africa asking if they had seen these tumors in their areas. Their answers gave him a rough map across Africa; the geographical distribution of this cancer of the body’s lymph system was directly related to climate.

While lecturing in London, Burkitt met research pathologist Anthony Epstein, who was trying to see if human cancers could be caused by viruses. Burkitt sent Epstein tumor tissue from Africa. Three years later, Epstein and his colleagues discovered in the tumor a virus they called the Epstein-Barr virus. Burkitt’s discovery, now called Burkitt’s lymphoma, had become the vehicle for recognizing a virus that we now know is ubiquitous—though the tumor occurs only in patients whose resistance has been lowered by a particular form of malaria.

Dr. Burkitt then began looking for a cure. Because the virus was characterized by multiple tumors, surgery was not a solution. Radiation therapy was too costly for Third World countries. He found, however, that Burkitt's lymphoma responded well to new cancer drugs and today, the Burkitt lymphoma is one of the most treatable cancers in the world.

The Man

It is ironic that an outsider to the cancer research establishment should have had such success. Dr. R. J. C. Harris, director of the Imperial Cancer Research Fund, attributes it to his remarkable talent as an observer, his perseverance when experts disputed his findings, his deep religious beliefs, the special relationships he established with medical missionaries throughout Africa, and his love for the children afflicted with the disease he was investigating.

Fiber Discovery

Burkitt returned to Britain in 1966 as a member of the Medical Research Council, External Scientific Staff. He found that it was easier to coordinate his cancer research program, involving 150 African hospitals, from London where he found beds full of patients suffering from diseases he hadn't seen in 20 years abroad: heart disease, gallstones, diabetes and obesity. These diseases were obviously related to Western lifestyles. The more he compared his data from Africa to what he saw in the West, the more he became convinced of the importance of dietary fiber. In 1970, he began to look into the relationship between fiber and bowel cancer, which—after lung cancer—was the most common cancer in Western countries. In the process, Burkitt emerged as the leader in the movement to reintroduce fiber into the modern diet. Theories once discounted are

**HONORARY
FELLOWSHIP**

DR. BURKITT is one of the best-known surgeons today. What has made him famous is his remarkable ability to observe disease patterns around him, to identify their peculiarities and to develop conditions and hypotheses. Like many surgeons, Dr. Burkitt is rarely in doubt about his convictions on medical matters, but unlike the rest of us he consistently turns out to be correct.

“Denis Burkitt supported the theory that many of the diseases that are widespread in Western countries but are absent in the Third World, including appendicitis, diverticulitis, diabetes, heart disease and certain cancers, are due to the way we eat. On the basis of his convictions he launched a worldwide crusade to increase our consumption of vegetable fibers.

“It is impossible to grasp the number of lives that have been improved or saved and will continue to be improved as a result of Dr. Burkitt's epidemiological acumen and of his missionary zeal when promoting our health!

—*Royal College of Physicians and Surgeons of Canada, Oct. 1992*

accepted today. His book, *Eat Right*, earned him the title “Bran Man” in a 1980 story in *People Magazine*.

Honors

Dr. Burkitt has received major scientific awards in Great Britain, Ireland, the United States, Canada, Germany, France and Italy, including the Gold Medal of the British Medical Association, the Lascar, General Motors and Bristol Myers Cancer Awards in the U.S., and the Paul-Ehrlich Gold Medal in Germany. He is a fellow of the Royal Society and an honorary fellow of Trinity College, Dublin. He has written, edited or co-edited six books and has been the sole or joint author of over 300 scientific publications.

First Scoffed at, then Vindicated

When Denis Burkitt, however, began telling people 30 years ago that they could reduce the risk of heart attack by eating more whole wheat bread, critics dismissed him as one more health-food eccentric. In the mid-1970s I was sitting next to an eminent cardiologist and professor listening to Burkitt’s lecture. As he wound up his colorful and unforgettable fiber presentation, my neighbor was upset.

“Typical Englishman,” he exploded, “high on humor, low on science.”

Yet, 20 years later, this same man quoted Burkitt extensively in his book on diet and heart disease.

When he passed away in 1993 at the age of 82, the British surgeon was a legend in the medical world, and his ideas had up-ended conventional wisdom on how to deal with many of the killer diseases of the 20th century.

“There were many skeptics and opponents in the early years, but Dr. Burkitt turned out to be correct,” reads the citation from the Royal College of Physicians and Surgeons of Canada, which had made him an honorary fellow.

“Dr. Fiber,” as he was nicknamed in the medical community, was a colorful man with ramrod posture and great vitality. When he began his research on fiber, the only thing he could find in the scientific literature was the word fiber *optics*. Some 30 years later, physicians and scientists agree that fiber is vital for good health. It has now been established that fiber can—

- reduce the risk of heart disease by reducing serum cholesterol levels;
- stabilize blood sugar levels by slowing down the absorption of certain nutrients;
- promote regularity of bowel movements by enlarging and moistening the stool;
- contribute to the normalization of diverticular disease and hemorrhoids by lowering the pressure in both the colon and rectum.

Experts say the trend toward low-fat high-fiber food may have contributed to a 40% drop in coronary heart disease in North America since 1970.

Recognition of the importance of dietary fiber in the prevention of colon and rectal cancer has been growing. The US National Cancer Institute estimates that 40% of cancers may be related to diet and over-nutrition.