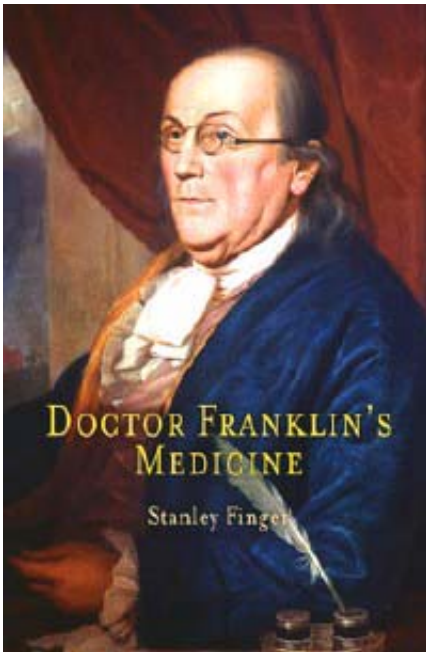


# 'Doctor Franklin's Medicine' explores founding father's vast medical legacy

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Benjamin Franklin's myriad contributions as scientist, inventor, publisher and statesman will be back in the spotlight in coming months as America celebrates his 300th birthday on Jan. 17, 2006.

Major exhibits on his life and work are opening in London and Philadelphia, and a traveling exhibit moves next year to museums in St. Louis, Houston, Denver, Atlanta and Paris. While much of the hoopla

will focus on Franklin's role as an influential American diplomat, a new book suggests that he deserves considerable recognition for his important but overlooked contributions to medicine.

"Franklin played a critical role in development of modern medicine," suggests Stanley Finger, Ph.D., a noted medical historian and professor of psychology in Arts & Sciences at Washington University in St. Louis. "With strong interests in bedside and preventative medicine, hospital care, and even medical education, he helped to change medical care in both America and Europe."

In his forthcoming book, "Doctor Franklin's Medicine" (University of Pennsylvania Press, January 2006), Finger presents a colorful and context-rich analysis of Franklin's medical efforts.

Finger has written widely on the history of the brain and behavioral sciences, and his recent books include "Origins of Neuroscience," "Trepanation," and "Minds Behind the Brain." He is also senior editor of the Journal of the History of the Neurosciences.

## **'A rare bird'**

More than a simple listing of Franklin's medical contributions, Finger's latest book reveals what was theorized about health and disease early in the 18th century, and shows how Franklin strove to improve medicine with careful observations, actual experiments and hard data.

"Franklin was a rare bird," Finger says. "His broad contributions are especially remarkable in that he had no medical training and, in fact, only two years of classroom education. What is even more amazing is that he came from the colonies, where life was still a struggle -- not from a major European cultural center."

One of the unique features of Finger's book is that he shows how Franklin's life and medical views were partly shaped by personal events, including the loss of his son Francis to smallpox, and his own visual problems, painful gout and massive bladder stone.

While Franklin is often caricatured as a pudgy, balding and bespectacled old man in short pants and stockings, Finger first presents him as a muscular runaway from Boston, who settled in Philadelphia and made his first voyage to London in his teens. Stanley Finger

## **Careful observations, experiments**

He points out that it was Franklin's appetite for books and love of learning, and how he ran his successful printing business and wanted to improve life in the colonies, that led him into medicine.

Like most Americans, Franklin was a pragmatist; he was clearly more interested in whether something worked than why. "He avoided the metaphysics of the ancients and shunned the unanchored speculations of academics," Finger writes. "Not one to be guided by loose medical theorizing, he turned to data based on observations and careful experiments."

A lack of formal medical training was no barrier to practicing medicine in 18th-century America. In fact, only a small percentage of colonial healers had formal medical training and even fewer possessed college degrees.

"What distinguished Franklin from the myriad other colonials who practiced or dabbled in medicine was that he approached clinical medicine with the mindset of an experimental natural philosopher," Finger writes.

"He skillfully designed experiments, collected data and compiled tables to determine trends and outcomes. He also read voraciously, contacted authorities to solicit their opinions and searched for historical antecedents. Moreover, Franklin had a remarkable ability to recognize the good ideas of others and the tenacity to move these ideas toward a productive end."

Franklin used his printing presses and social connections to advance good causes, such as building the first major charity hospital in the colonies and the first American medical school. He also informed people about dangerous epidemics, worthy new cures and medical quackery.

"Religious dogma, grandiose formulations and the gripping tentacles of the past did not hold him back, and he was anxious to develop and share medical ideas with anyone, anywhere," Finger writes.

"Physicians all across Europe were clamoring to meet him to learn his views on everything from smallpox inoculations to whether electricity might have a future in medicine."

In fact, Finger argues, "what Franklin achieved on the political front in Europe might not have been possible had he not previously established such a strong following for his work in electrical science and many accomplishments in medicine."

## **Important contributions to medicine**

Among Franklin's contributions to the fields of health, fitness and medicine:

-- Medical institutions: He was instrumental in founding the first major civilian charity hospital and the first medical school in the colonies. Established at the College of Philadelphia, later renamed the University

of Pennsylvania, the first medical school in British North America opened its doors in 1765. His Pennsylvania Hospital provided free care for the injured poor and the mentally ill.

-- Small pox: He studied inoculation as a weapon against horrific epidemics of smallpox. By compiling and publishing detailed statistics on high percentages of colonists saved from smallpox through inoculation, he became one of the first people to use statistics in a public health campaign.

-- Common cold: He investigated causes of the cold and influenza. While many blamed colds on wet clothing and damp air, he noted no increase in colds among sailors and others exposed to wet conditions. Observing that people often catch colds while confined in close quarters, he concluded that people spread colds, and that they probably have something to do with the transmission of microscopic particles.

-- Medical inventions: Bifocal lenses and a "long arm" that extended the user's reach were among his many inventions aimed at making life easier for the aged and afflicted. He was also involved with designing and making what might have been the first flexible urinary catheter in the colonies.

-- Lead poisoning: An epidemiologist at heart, Franklin observed that many patients suffering from stomach pains and other symptoms in a Paris hospital were craftsmen in trades exposed to high levels of lead: typesetters, glazers, plumbers, potters and painters. He helped colleagues understand the perils of lead-contaminated rum and other beverages, and warned of lead in household implements, such as pans and even milk storage containers.

-- Medical electricity: The world's greatest authority on electricity, Franklin experimented with the use of electrical shocks to treat paralysis,

blindness, deafness, hysteria and depression. He observed only short-term improvements in treating stroke victims, but had greater success treating hysteria. After studying effects of several accidental jolts to his head and the heads of others, he and a colleague became the first to propose electroshock treatments for depression.

-- Exercise: An accomplished swimmer and a lifetime proponent of regular exercise, Franklin recommended daily swims in an era when bathing was rare. For those unable to take in outdoor exercise, he advocated 15 minutes of brisk stair climbing at intervals throughout the day. He worked out with dumbbell weights, even into his eighties. He surmised that health benefits were not necessarily linked to the length or type of exercise, but hinged instead on the degree of body warmth generated. Noting his heart rate and temperature rose while exercising, he recommended that everyone engage in what we would now refer to as regular cardiovascular exercise.

-- Quackery: Franklin lead the commission that debunked the fantastic claims of Franz Mesmer, who believed he could cure people by harnessing and directing an invisible magnetic force that permeated the cosmos. With very clever experiments, Franklin showed that suggestion and patient expectations could account for Mesmer's cures, not his faddish theory of "animal magnetism."

Source: Washington University in St. Louis

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