

Frederick Klenner

Frederick Robert Klenner (1907–1984) practiced medicine and **nutritional therapy** in Reidsville, North Carolina. In the 1940s, he began experimenting with vitamin C in huge doses—often injected intravenously—as therapy for many diseases, including poliomyelitis, measles, and tetanus. He also used large doses of thiamine (vitamin B₁) and other B vitamins to reverse diseases attacking the nervous system, such as polio and multiple sclerosis. Publishing 28 clinical studies, Klenner became one of the founders of orthomolecular medicine, a practice that most medical doctors consider ineffective and lacking in scientific evidence. His work has garnered practically no attention in mainstream medicine.

Contents

Childhood, education and marriage

- Surviving the flu epidemic
- Strict discipline
- Ethnic hierarchy
- High school and priestly studies
- Chemistry and physiology
- Conflictive courtship, secret marriage

Early medical practice with vitamin C

- Viral pneumonia
- Fultz quadruplets
- Controlling measles 'like a dog on a leash'

Polio cured

- Leg paralysis reversed
- Brown bread prophylaxis
- Apparent refutation by Albert Sabin

Humanity and bigotry

Cure for tetanus

Injected doses of vitamin C (sodium ascorbate)

A boost from Adelle Davis

Nutritional therapy for multiple sclerosis (MS)

Home tyrant, gun fanatic

Critique of polio vaccine

Ambivalence towards Linus Pauling

Professional recognition

Contributions to health science

Decline and death

Notable Quotes

Klenner's medical papers & case studies

Reference Notes

Sources

External links

Reference Notes

Childhood, education and marriage

Klenner was born in Johnstown, Pennsylvania on October 22, 1907, to Mary (née Bewak) and Frank Klenner, the youngest of their eight children. His parents had come to the United States from Austria as children. When Fred was born, Frank and Mary were living on a farm near Johnstown, although Frank kept working at the Bethlehem Steel mill, where he had labored since a young man. One of the Klenners' older daughters, Gertrude, had trouble breathing; their doctor had suggested she might do better in the countryside, away from the smoky gray fumes spewed out by Johnstown's blast furnaces. Even so, Gertrude died on the farm of pneumonia, at age 16.^[1]

Mary Klenner took her children to mass every Sunday at St. Joseph's Catholic church near the steel mill where her husband Frank worked. At the Catholic school next door to the church, Fred began his education. People viewed him as a smart, sensitive and earnest child. When Fred was eight, the Klenners moved back into Johnstown, living in a two-story shingled house on the bluffs overlooking the Conemaugh River. That enabled Fred to spend more time at church, where he served as an altar boy. After school, he volunteered to wash windows and do other chores for the nuns at the convent alongside the church.^[2]

Surviving the flu epidemic

In autumn 1918, when Fred was going on 11, a flu epidemic ravaged the country, killing hundreds in Johnstown. Entire families died, and overwhelmed hospital staffs turned away new patients. Fred and his sister Agnes, two years older, fell ill with high temperatures. Mary, steeped in herbal remedies, gave her sick children large doses of bitter tea made from the leaves of boneset (*Eupatorium perfoliatum*).^[3] Both Fred and Agnes recovered.^[4] Fred Klenner later assayed boneset tea for vitamin C; he found that a single cup contained 10 to 30 grams of the vitamin.^[5]

Strict discipline

Despite working long and exhausting hours at the steel mill, Frank Klenner found the time to master several musical instruments and play in an Austrian band. A strict disciplinarian, Frank urged all his children to take up music. Fred studied piano and played duets with his sister Agnes at school and family get-togethers. Their mother Mary had a strict rule about guns: She allowed none in the house.^[6]

Ethnic hierarchy

Fred took a job delivering the *Johnstown Tribune* on foot around his neighborhood, every weekday after school. A variety of ethnic groups lived in Johnstown, with those descended from English settlers topping the social hierarchy. The Klenners' group—Austrian and German immigrants—stood near the top, along with descendants of Welsh and Irish immigrants. At the bottom lived several hundred blacks brought in from southern states to take the jobs of white steelworkers during their strike of 1919–20. The black immigrants lived in a shantytown by the river, separate from the rest of Johnstown. Fred had no contact with them.^[7]

High school and priestly studies

Attending Catholic High School, Fred focused on his studies and church activities. Growing tall and slim, he played on a school football team that went undefeated; but he showed no interest in the girls who hung out with the victorious athletes. Graduating in 1924, Fred declared his intention to become a priest—much to the delight of his mother Mary.

With his father's financial support, Fred became the only Klenner child to pursue education beyond high school, enrolling at Saint Vincent College in Latrobe. There—according to his later account—Fred lived in a tiny attic compartment with poor ventilation, getting up at 4 o'clock every morning to work in the fields. During his first school year, he caught tuberculosis from a priest who carried the disease. He returned home for more than a year, nursed by his mother with her home remedies. Rethinking his life plans, Fred told Mary he no longer wanted to become a priest, but rather a doctor.^[8]

Chemistry and physiology

Fred now enrolled in Saint Francis College in Loretto, Pennsylvania, majoring in chemistry and achieving both a bachelor's (B.S.) and master's (M.S.) degree. He graduated with honors, receiving the college medal for scholastic philosophy and a teaching fellowship. He then took a second teaching fellowship in chemistry at Catholic University in Washington, DC, where he pursued doctoral studies in physiology.

During a research trip through the south, Fred stopped at Duke University in Durham, North Carolina, and decided he wanted to continue his studies there. Admitted to Duke, he gave a demonstration at a science symposium: Applying his knowledge of physiology and chemistry, he freed the nervous system of a frog by immersing the animal in a solution of 10% nitric acid. Arthur Sperry Pearse, chairman of the biology department, became Klenner's mentor and persuaded him to enter Duke University School of Medicine.^[9]

Conflictive courtship, secret marriage

While studying at Duke medical school, Klenner became ill and chanced to meet **Annie Hill Sharp** (born 1914), then a senior nursing student. Annie nursed Fred back to health, leading to a romance between the two^[10] Annie, born into a large and prominent family in Reidsville, North Carolina and sister of Susie Sharp, became the second woman in Duke medical school's history to graduate with a bachelor of science (B.S.) degree. During his last year of medical school, Fred returned home to Johnstown, speaking enthusiastically of the long-haired, dark-eyed

nurse he had befriended. His mother Mary felt anguished to learn the girl was not Catholic: Annie's paternal grandmother adhered passionately to the Primitive Baptist faith, while her mother Annie Britt Sharp, raised Methodist, took her children every Sunday to the Methodist church in Reidsville.^[11]

Annie Britt Sharp discovered accidentally that her daughter Annie had converted to Catholicism, thus signaling her secret intention to marry Fred, "this brooding young Catholic from the North." Annie Britt voiced her strenuous opposition to her daughter, but could not sway the young woman's resolve. Fred and Annie Hill married quietly in November 1937 in Greensboro, North Carolina, over a year after Fred had graduated from Duke with a medical degree (M.D.), and while he worked on his residency at the tuberculosis sanatorium in Winston-Salem. They kept their wedding a secret from Annie's family, not revealing it until the following autumn.^[12] After completing his three years' residency in Winston-Salem, Fred moved with Annie into her hometown of Reidsville, where he entered private medical practice in 1939.

Expecting Fred's medical business to start slow, Annie took a job at Duke Hospital. Annie's parents welcomed Fred to live with them in their big family house, and Annie's father helped Fred set up an office. When Fred's medical practice grew quicker than expected, Annie returned from her job in Durham. She and Fred moved into a small house of their own in Reidsville.

Fred Klenner started practicing medicine in Reidsville as a complete outsider: He appeared as a northern Catholic in a southern town that did not yet have a Catholic church. His parents-in-law had found him hard to live with when they brought him into their home. Fred often suffered severe migraine headaches, driving him to act—according to his mother-in-law—"as crazy as a moon-eyed horse."^[13]

Early medical practice with vitamin C

While specializing in diseases of the chest, Dr. Klenner also pursued general practice, since it gave him broader opportunities to serve patients and make medical observations. Around 1944, his wife Annie suffered bleeding gums, and her dentist recommended extracting all her teeth. Questioning that solution as too drastic, Klenner remembered reading about researchers who had used vitamin C to cure chimpanzees with a similar problem. He gave Annie several injections of the vitamin, and the bleeding stopped.^[14] Klenner went on to perform many experiments on himself using vitamin C. He then began to apply vitamin C therapy to his patients.

Viral pneumonia

From 1943 to 1947, Klenner reported successful treatment of over 40 cases of viral pneumonia using massive doses of vitamin C. From these cases he drew conclusions on the optimal dosage and method of delivery—intravenous, intramuscular, or oral—of vitamin C for each patient.^[15] "When a diagnosis of virus pneumonia was entertained," wrote Klenner, "the patient was given 1000 mg vitamin C intravenously every six to twelve hours. If...a diagnosis was established in the home the usual initial dose was 500 mg given in the gluteal muscle. Subsequent injections were given I.V. because the injection was thus made painless and the response was faster. In infants and very small children, however, 500 mg I.M. every six to twelve hours was the method of choice. From three to seven injections gave complete clinical and x-ray response in all of our cases."^[16]

Klenner had hospital privileges at Reidsville's Annie Penn Hospital where, among other tasks, he delivered hundreds of babies. He gave high doses of vitamin C to the pregnant women who came under his care, following up with vitamin C supplements to their newborns. Klenner's healthy, trouble-free infants became known by the hospital staff as the "Vitamin C Babies."^[17]

"The simple stress of pregnancy," Klenner, later wrote, "demands supplemental vitamin C... When one considers the demands of the fetus and infant, especially premature babies, it is obvious that high vitamin C intakes are required during pregnancy because this 'parasite' will drain available 'C' from the mother...In my own practice I was able to take women who had had as many as five abortions [miscarriages] without a successful pregnancy and carry them through two and three uneventful pregnancies with the use of supplemental vitamin C...Genetic errors might be prevented if prospective mothers were advised to take 10 or more grams of ascorbic acid daily."^[18]

Fultz quadruplets

On May 23, 1946 in Reidsville, Dr. Klenner, assisted by African-American nurse Margaret Ware, delivered the Fultz quadruplets in "the Basement," the blacks-only wing of Annie Penn Hospital.^[19] Klenner used his high vitamin C maternity regimen to help 37-year-old Annie Mae Fultz give birth to her quadruplet girls, who became the first recorded set of identical African-American quadruplets, and the first quadruplets to survive in the southern United States. "Our only nursery equipment," Klenner later wrote, "was one hospital bed, an old, used single-unit hot plate and an equally old ten-quart kettle." Lacking an incubator, Klenner improvised cotton gauze blankets and laid the newborns together for warmth.^[20]

Three of the babies weighed about two pounds each, the fourth just over three pounds. The quadruplets took their first food through medicine droppers, and Dr. Klenner started giving them vitamin C at once. "A premature baby specialist from Duke said they had a 50/50 chance to survive," Klenner later recounted. "I kept the humidity normal and kept giving them a lot of vitamin C, starting with 500 milligrams a day and—as they got older—gradually increasing the amount."^[21]

The babies' mother Annie Mae could neither hear nor speak, having suffered an attack of meningitis at age two.^[22] Annie Mae was married to Pete Fultz, a poor tenant farmer. The couple had been raising six previous children. Klenner decided to name all four newborn girls Mary, followed by names of women from his own family: Mary Ann (for his wife), Mary Louise (his daughter), Mary Alice (his aunt) and Mary Catherine (his great aunt).^[23]

Klenner brokered a deal with the Pet milk company, a Saint Louis dairy, which provided the girls with Pet milk formula, food, medical care, a private nurse, and a 147-acre (59-hectare) farm purchased from Klenner's father-in-law James Sharp^[24]—in exchange for the right to use their images in Pet milk advertisements.^[25] Pet Milk provided a four-room house on the farmland for the Fultzes and their now nine growing children. However, Pet put the nurse in charge of the quadruplets' daily care, permitting Annie Mae to see her four babies only once a week.^[26] Decades later, Dr. Klenner still displayed pictures of the baby quadruplets in his office and home.^[27]

Controlling measles 'like a dog on a leash'

In the spring of 1948, measles swept through North Carolina. Klenner had his young daughters play with children who showed signs of measles contagion. When his girls developed redness in their eyes and throat, catarrh, spasmodic bronchial cough and Koplik's spots, Klenner started treating them with vitamin C.

"In this experiment," reported Klenner, "[I] found that 1000 mg [one gram] every four hours, by mouth, would modify the attack. Smaller doses allowed the disease to progress. When 1000 mg was given every two hours, all evidence of the infection cleared in 48 hours. If the drug was then discontinued for a similar period (48 hours) the above syndrome returned. We observed this off-and-on picture for 30 days, at which time the drug (vitamin C) was given 1000 mg every two hours around the clock for four days. This time, the picture cleared and did not return. These little girls did not develop the measles rash during the above experiment and, although exposed many times since, still maintain this 'immunity.'" Klenner summed up his experimental therapy to control his daughters' measles infection: "For the first time, a virus infection could be handled as if it were a dog on a leash."^[28]

For advanced cases of measles, Klenner delivered vitamin C by intramuscular injection. "The results proved to be even more dramatic," wrote Klenner, with "complete control of the measles syndrome" within 36 hours. "Unless the virus is completely destroyed," declared Klenner, "...the infection will again manifest itself after a short incubation period. Small, single daily doses do not even modify the course of the infection."^[29]

Polio cured

In 1948, Klenner published his first research report on the use of high doses of vitamin C in the treatment of viral diseases. In 1949, he published a study in *Southern Medicine & Surgery* and gave a talk at the annual conference of the American Medical Association (AMA) describing how he had cured all 60 of his polio patients by intravenous injection—or intramuscular injection, for children up to four years old—of sodium ascorbate. Moreover, none of Klenner's 60 polio patients showed deformities in musculature or motor function common among polio survivors.^[30] Klenner's findings disputed the prevailing notion that, once a person got infected with the polio virus, the disease had to "run its course."^[31]

"It might be interesting to learn," stated Klenner at the AMA conference in Atlantic City on June 10, 1949, "how poliomyelitis was treated in Reidsville, North Carolina during the 1948 epidemic. In the past seven years, virus infections have been treated and cured in a period of 72 hours by...massive frequent injections of ascorbic acid, or vitamin C. I believe that if vitamin C in these massive doses—6,000 to 20,000 mg in a 24-hour period—is given to these patients with poliomyelitis, none will be paralyzed and there will be no further maiming or epidemics of poliomyelitis."^[32] Of the four speakers who followed Klenner—all specialists in polio infection—none mentioned or responded to his assertions.

Klenner later recalled pleading with doctors at the main polio hospital in Greensboro, North Carolina to give vitamin C to all their patients; he even offered to pay for it. Those doctors declined his request and offer.^[33]

Leg paralysis reversed

In 1951, Klenner described the case of a 5-year-old girl infected with polio. She had suffered paralysis in both legs for over four days. Klenner prescribed immediate leg massage, then injected her with vitamin C round the clock. After four days, she could again move both legs, but only slowly and deliberately. Released from the hospital at that point, the girl continued taking 1,000 mg (one gram) of vitamin C orally every two hours with fruit juice for seven days. By day 11 of the treatment, she was walking about her house, although slowly. Klenner discontinued vitamin C and prescribed vitamin B₁. By day 19, the girl had completely recovered her sensory and motor function, and suffered no long-term impairment.^[34]

Brown bread prophylaxis

Klenner also drew nutritional conclusions from 50 diagnosed cases of polio in and around Toronto, Canada in 1949. He cited a report indicating that children of families eating brown bread who contracted polio did not suffer paralysis—while, in families eating white bread, many children with polio wound up paralyzed. "...Brown bread has 28 times more vitamin B₁ than does white bread," Klenner noted. "Obviously, then, the paralysis which complicates acute poliomyelitis appears to be due to a B₁ avitaminosis. Vitamin C, by removing edema fluid, relieves from pressure these vessels that supply nutriment to the horn cells, thus allowing the normal complement of vitamin B₁ to reach these cells."^[35]

Apparent refutation by Albert Sabin

In 1939, Albert Sabin—who later developed the live oral polio vaccine—published a research paper demonstrating that vitamin C had no value in combatting polio virus.^[36] Sabin tried to replicate the work of Claus Jungeblut, MD, a nutritional investigator of polio and other pathological conditions. Working with rhesus monkeys, Jungeblut had reported in 1935 that "extraordinarily small amounts of vitamin C are capable of rendering non-infectious, multiple paralytic doses of poliomyelitis virus."^[37]

Sabin, summing up his experiments with rhesus monkeys, reported that "vitamin C, both natural and synthetic preparations, had no effect on the course of experimental poliomyelitis induced by nasal instillation of the virus... Vitamin C administration was begun immediately after the instillation of virus—and, if it were capable of exerting any effect on the virus or the tissues, it could have done so even before multiplication of virus had begun."^[38]

Sabin's findings seemed to rule out—in advance—Klenner's successful treatment of 60 polio patients with injected megadoses of vitamin C in 1948. In a 1952 paper, Klenner argued that both Jungeblut and Sabin had given inadequately small doses of vitamin C to their experimental subjects under the stress of polio infections. That under-dosing of vitamin C, argued Klenner, explained Jungeblut's equivocal results and Sabin's negative results.^[39]

Humanity and bigotry

In December 1942, Annie Hill Klenner gave birth to Mary Ann, the Klenners' first child; Annie was 28 at the time, Fred 35. Their second daughter Gertrude, born in September 1944, was named after Fred's sister who had died in her teen years. Their third and final child, Fritz (Frederick Jr.) was born in July 1952. Dr. Klenner, now 44, had

long desired a son to bear his name and take over his life's work.^[40] While the children were growing, Annie helped with Fred's medical practice on occasion. Later on, she became his full-time nurse. "I'd never see my husband if I didn't work with him," observed Annie. "...Sometimes he overworks and feels kind of tired."^[41]

To spur the early growth of his medical practice, Dr. Klenner offered free treatment to policemen, firemen, pharmacists and ministers. He never sent bills to any patient. If a patient could not pay at the time of treatment, Klenner deferred the charge. He made house calls at all hours of the day and night.^[42] He set up his clinic on the second floor above a pharmacy in an old brick building in downtown Reidsville. To get there, one had to climb a steep set of creaky wooden stairs in dim light, leading to a hallway with plaster crumbling off its dull green walls. The drab and cluttered treatment rooms contained antiquated equipment and decorations.^[43]

Doors directed patients to separate waiting rooms for blacks and whites—a practice Klenner maintained into the 1980s,^[44] almost two decades after the Civil Rights Act of 1964 banned racial discrimination in both public facilities and private businesses that serve the public.^[45] One wall of Klenner's clinic sported a huge poster reading **GEORGE WALLACE FOR PRESIDENT** over a decade after Wallace's national campaign had appealed to the prejudices of disaffected whites. Magazines for gun enthusiasts studded the waiting rooms, along with publications from the John Birch Society, White Citizens Councils, and Christian Crusade. The literature displayed in Klenner's waiting rooms branded racial integration as a communist plot, women's rights as sacrilegious, and Martin Luther King as an enemy spokesman.^[46]

A Civil War buff, Klenner declared to some friends and acquaintances that the wrong side had won that war. He also spoke favorably of the Ku Klux Klan—despite the Klan's strident anti-Catholic prejudice, which would seem to threaten a devout Catholic like Klenner. He expressed sympathy for the Nazis—even after the U.S. declared war on Germany in 1941—claiming that Adolf Hitler was “misunderstood.”^[47]

After Annie Klenner became Fred's full-time nurse, the couple managed their clinic with no other help. They developed a strong personal bond with many of their patients. “When you were around them, you became very, very secure about whatever illness you had,” remarked a patient and family friend. “You also became dependent on them. It became almost like a love affair.” Dr. Klenner brought his religious fervor into his medical practice. Quoting bible passages to his patients, he prayed for them and promised to keep doing so. He handed them prayer cards that offered protection from evil. He even sprinkled some with what he called holy water from a Catholic shrine in France. “He got all the chronics,” noted Phil Link, an admiring Reidsville pharmacist. “He got all the ones the others had given up on.”^[48]

Cure for tetanus

In September 1951, Dr. Klenner cured a 6-year-old boy of tetanus—also called lockjaw—by massive doses of vitamin C (sodium ascorbate) and the muscle-relaxant drug Tolserol (Mephenesin), both injected intravenously. Two days before admission to hospital, the boy's "abdominal muscles assumed board-like rigidity [along with] abdominal pain... These episodes were being experienced more often while increasing in duration. His diet was self limited to liquids due to the inability to open his mouth more than 30%; this created pain at the

temporomaxillary joint and was always followed by the sudden 'involuntary' clamping of his jaws. On the day of admission...the slightest stimulation would contract his back muscles with such force that he would form an arch with his body resting on his feet and head."^[49]

In the first 24 hours, Dr. Klenner gave the boy multiple injections of vitamin C—totaling 22 grams (22,000 mg)—spaced between three and five hours apart. He continued this regimen over the next 24 hours, injecting another 24 grams of vitamin C. The boy now had only mild abdominal cramps, his convulsive seizures relieved by intravenous injections of Tolserol. Dr. Klenner also gave the boy intermittent doses of penicillin and calcium gluconate, the latter to replace calcium possibly depleted by the vitamin C megadoses.^[50]

During the two-week hospital treatment, Dr. Klenner also tried five intravenous injections of tetanus antitoxin (T.A.T.), the most commonly used therapy for tetanus at that time. After each dose of antitoxin, the boy relapsed into severe abdominal pain. Klenner concluded that the antitoxin "has no curative value and at...best is harmful." On the other hand, he recommended a deep intramuscular injection of antitoxin above the puncture wound through which the tetanus and other toxic bacteria had invaded.^[51]

Injected doses of vitamin C (sodium ascorbate)

For patients with acute illnesses, Klenner generally injected 350 to 700 milligrams of sodium ascorbate per kilogram of body weight per day. For a person weighting 70 kilograms (about 154 pounds), that would amount to 24,500 mg—around 25 grams of sodium ascorbate per day. For optimal effect, Klenner injected sodium ascorbate intravenously, but also considered intramuscular injection satisfactory, especially for children.^[52] "Doses above 400 mg per kg body weight," wrote Klenner regarding intravenous injection, "must be diluted to at least 1 gram to 18 cc solution, using 5% dextrose in water, saline in water, or Ringer's solution. One gram calcium gluconate must be added to these bottle injections to replace calcium ions pulled from the calcium-prothrombin complex. There is no limit to the amount that can be administered by vein when honoring these two precautions."^[53] For critically ill patients, such as a woman suffering puerperal sepsis, Klenner used an *initial* injection as high as 1200 mg per kg body weight.^[54]

For intramuscular injection, Klenner specified 500 mg of sodium ascorbate per 1 cc of solution. "Pain was slight and lasted only a few minutes," reported Klenner for a patient with a pulmonary viral infection. "Procaine, 0.5 to 2 per cent, instilled from a second syringe into the gluteal muscle through a placed needle just before giving the vitamin might solve this problem."^[55]

A boost from Adelle Davis

In her best-selling book, *Let's Eat Right to Keep Fit*, published in 1954, nutritionist Adelle Davis featured Dr. Klenner as the pioneer in vitamin C therapy. "Some years ago," wrote Davis, "it was my good fortune to visit with Dr. Klenner and hear him lecture. He showed slides of hospital records and fever charts and told of...meningitis, encephalitis, virus pneumonia, and serious complications following scarlet fever and other diseases treated with massive amounts of vitamin C. Many patients had not been expected to live; often huge amounts of antibiotics had

been given without success; in most instances, fevers ranged from 103° to 105°F [39.4° to 40.6°C]. Within a few minutes after the vitamin was injected, fevers started to drop and temperatures frequently reached normal within a few hours...”^[56]

Davis added that Klenner reported finding no trace of vitamin C in the blood of extremely ill patients just minutes after he had injected them with massive doses of the vitamin; nor did any vitamin C appear in their urine. Klenner concluded that vitamin C “combines immediately with toxins and/or virus, thus causing the fever to drop. In cases where the fever rises again later, he believes that too little vitamin C has been given in the initial dose; that virus not destroyed multiples and again causes the temperature to increase. For this reason, he emphasizes that if the original dose is sufficiently large, no further massive amounts need be given.”^[57]

Davis also interviewed Dr. Klenner by telephone to learn of his results in treating severely burned patients with huge amounts of vitamin C. “He remarked that the pain disappeared so quickly that painkillers often were not needed, that the wounds healed readily and cleanly, and that no skin grafts were necessary. He told me that he even sprayed open burns every few hours with a 3% solution of vitamin C or laid clothes moistened with this solution over the burn, and that patients found it especially soothing...”^[58]

Adelle Davis’ endorsement of Klenner’s vitamin C therapy gave his practice a big boost. Seriously ill people from all over the country—often written off as hopeless cases by their doctors—found their way to the Klenner clinic in Reidsville. The waiting room filled up daily, with patients often waiting hours to see Dr. Klenner. Some patients had to get hoisted up the steep stairs to the clinic on wheelchairs or stretchers.^[59]

Nutritional therapy for multiple sclerosis (MS)

Klenner treated multiple sclerosis patients with huge quantities of B vitamins and many other micronutrients, to repair their damaged nerves. He based his protocol partly on clinical studies by Elias Lincoln Stern, MD, who reported: “Many chronic or incurable conditions of the central and peripheral nervous systems may respond favorably to the intra-spinal subarachnoid injection of synthetic vitamin B₁. It should prove of particular value in cases of multiple sclerosis, encephalitis, syphilis, and poliomyelitis.”^[60] While Klenner found this vitamin B₁ therapy effective in re-enabling severely-ill MS patients to walk, he described the cure as “relatively transient.” Even so, it led him to suspect that multiple sclerosis stemmed from severe vitamin deficiency.^[61]

Klenner later expanded his nutritional therapy for MS to include thiamine hydrochloride (B₁), riboflavin (B₂), niacin (B₃), pyridoxine (B₆), cobalamin (B₁₂), ascorbic acid, choline, lecithin, calcium gluconate, calcium pantothenate, magnesium, and aminoacetic acid (glycine).

In addition, Klenner gave his MS patients vitamin E, crude liver extract, and adenosine-5-monophosphoric acid. To relieve tremor and stiffness, he prescribed available drugs. He recommended nutrient-dense diets for his patients, including fresh fruits and green vegetables, with large amounts of milk and eggs. He told patients to limit fats and eat only whole-grain bread, with “no junk foods, especially sweets.”^[62]

Klenner confidently summed up his nutritional therapy: “Any victim of multiple sclerosis who will dramatically flush with the use of nicotinic acid, and who has not yet progressed to the stage of myelin degeneration, as witnessed by sustained ankle clonus..., can be *cured* with the adequate employment of thiamine hydrochloride

and other factors of the vitamin B complex in conjunction with essential proteins, lipids, carbohydrates and injectable crude liver." [63]

As word spread of Klenner's alternative treatment for multiple sclerosis, a growing number of MS patients—many already crippled and given up on by their doctors—moved temporarily to Reidsville from other states, to receive long-term treatment from Klenner. Dr. Klenner diagnosed more and more cases of multiple sclerosis. Other medical doctors—as well as the National Multiple Sclerosis Society—rejected his nutritional therapy. Some doctors criticized Klenner for over-diagnosing multiple sclerosis, claiming he cured non-existent diseases with his vitamins.[64] Indeed, Klenner diagnosed his 25-year-old son Fritz with multiple sclerosis in 1977. He also diagnosed his 33-year-old niece (by marriage) Susie Newsom Lynch, with multiple sclerosis in 1980.[65]

Home tyrant, gun fanatic

Klenner impressed his driven personality on his home and family. One family friend who admired Klenner described him as “a very kind and caring man, but...Prussian to the core... He wanted to rule the family... He didn't encourage his daughters' having any friends... And he kept [his son] Fritz close to himself.” A family acquaintance who viewed Klenner as an “oddball” observed: “He never let the children live a normal life. His wife, Annie Hill, was a prisoner in that house. She was his slave.” Annie Hill habitually called her husband “Doctor.” The few people invited into the Klenner house entered dark rooms cluttered with so many books, papers, boxes and knickknacks that they could scarcely walk or find a place to sit.[66]

Klenner enthusiastically collected stamps, coins, electric trains, clocks, miniature wagons, German beer steins, cut glass, and antique furniture. Most of all he collected guns, especially German army weapons; he obtained a federal firearms license that permitted him to buy and sell guns in large quantities. In addition to guns and other objects that caught his fancy, he crammed his house with thousands of books and periodicals—whose topics spanned from medicine and law, to works of mystical religion and right-wing tracts that trumpeted the coming doomsday. He stacked up cases of preserved foods, vitamins and medicines as a hedge against calamity. He stayed up late at night listening to classical music, reading medical journals, and often writing up his clinical reports and hypotheses.[67]

Critique of polio vaccine

Having cured polio in 1948 via megadoses of vitamin C and large doses of vitamin B₁, Klenner viewed the development of the Salk polio vaccine with a studied and critical eye. "Many experiments have been conducted during the past 45 years," wrote Klenner in 1955, "in an attempt to find a safe, effective vaccine for poliomyelitis. Experience has proved that recovery from most virus diseases results in permanent immunity. From these immunized individuals one can find neutralizing or protective antibodies in their sera. This has led to the *false* notion that the presence of neutralizing antibodies in the serum of an individual always indicates immunity. This is *true* only when these antibodies are the result of a Natural infection." [68]

"Salk in 1953 reported that his efforts 'carried special blessings,' since the vaccines of Maurice Brodie and [John] Kolmer in the early 1930's 'were discontinued because the preparations employed were found unsafe for human use,'" continued Klenner. "The experiences to date with the so-called Salk vaccine would place this product in the

same category—and it must, therefore, be discontinued for human use.”^[69]

Ambivalence towards Linus Pauling

Linus Pauling’s best-selling book, *Vitamin C and the Common Cold*, published in 1970, brought the benefits of vitamin C in preventive health and therapy boldly into the public sphere. Pauling relied heavily on Klenner’s clinical reports but mentioned Klenner only briefly—as Klenner remarked to some family members. “If he wants the big name for it, let him have it,” Klenner told his sister Agnes. “He doesn’t know much about it, anyway.”^[70]

Professional recognition

In March 1978, on the 50th anniversary of the discovery of vitamin C by Albert Szent-Györgyi, Dr. Klenner—now 70 years old—garnered praise at a special symposium of the World Congress of Health held in Palm Springs, California.^[71] Along with over twenty other doctors and scientists, Klenner received a gold medallion mounted on a golden chain, depicting four men in profile: Albert Szent-Györgyi, Linus Pauling, Irwin Stone, and Klenner himself. “On a gold medal with two Nobel Prize winners, and Irwin Stone!” Klenner beamed to his long-time patient Bill Davis. “You can’t get much higher than that.”^[72]

Contributions to health science

Klenner published 27 medical reports, most about the use of high doses of vitamin C to treat more than 30 diseases—two on the treatment of severe neuropathy, including multiple sclerosis (MS).^[73] He wrote his final known medical report in 1980, "Multiple Sclerosis Diagnosis and Treatment Suggestions." It was published after Klenner's death by Lendon Smith in the *Clinical Guide to the Use of Vitamin C*.^[74]

"Ascorbic acid is the safest and most valuable substance available to the physician," asserted Klenner. He recommended that patients be given "large doses of vitamin C in all pathological conditions while the physician ponders the diagnosis."^[75] He inspired Linus Pauling and Irwin Stone to expand research into the far-reaching benefits of vitamin C, and convinced Adelle Davis to incorporate vitamin C therapy into her clinical nutrition practice.

Decline and death

By 1980, Dr. Klenner’s health was in marked decline. Now 73 years old, he had high blood pressure and an unsteady heart. Despite the pacemaker implanted in him to regulate his heartbeat, climbing the steep steps to his office now challenged him: He had to stop along the way to catch his breath.^[76] Yet he kept treating as many as 30 to 40 patients a day.^[77] Most other medical doctors who knew him continued to reject and scorn his nutritional therapy. In a bitter dispute over his methods, he gave up his privileges at Annie Penn Hospital, and refused to have anything to do with that hospital from then on.^[78]

In February 1984, now unable to climb the steps to his office, Dr. Klenner retired. His wife Annie nursed him at home. On May 20, 1984, rushed by ambulance to Morehead Hospital in Eden, Klenner died of heart disease at age 76—with his son Fritz at his side. Hundreds of patients came to view his body lying in state at the Reidsville

funeral home. Only one doctor attended his funeral.^[79]

Notable Quotes

- "Twentieth-century man seemingly forgets that his ancestors made crude drugs from various plants and roots, and that these decoctions, infusions, juices, powders, pills and ointments served [their] purpose. Elegant pharmacy has only made the forms and shapes more acceptable."^[80]
- "Hippocrates declared the highest duty of medicine to be to get the patient well. He further declared that, of several remedies, physicians should choose the least sensational.^[81] Vitamin C would seem to meet both these requirements."^[82]
- "The vital contribution of ascorbic acid to the body tissues can be summed up in the formation and maintenance of normal intercellular material, especially in the connective tissue, bones, teeth, and blood vessels... Our son, who will be 19 in July, has never developed a tooth cavity. Since age 10 he has received at least 10 grams ascorbic acid, daily, by mouth. Before age 10, the amount given was on a sliding scale."^[83]
- "Recently the FDA has published a 'warning' that too much soda-ascorbate might be harmful, referring to the sodium ion... For many years I have taken 10 to 20 grams of sodium ascorbate by mouth daily, and my blood sodium remains normal... 20 grams each day and my urine remains at or just above pH 6."^[84]
- "Some physicians would stand by and see their patient die rather than use ascorbic acid because, in their finite minds, it exists only as a vitamin."^[85]
- "The years of labor in animal experimentations; the cost in human effort and in 'grants,' and the volumes written, make it difficult to understand how so many investigators could have failed in comprehending the one thing that would have given positive results a decade ago. This one thing was the size of the dose of vitamin C employed and the frequency of its administration."^[86]
- "Ascorbic acid is the safest and most valuable substance available to the physician."^[87]
- "Few men who make outstanding contributions to society live to see the fruits of their labors ripen."^[88]

Klenner's medical papers & case studies

- "**Virus Pneumonia and its Treatment with Vitamin C**," February 1948. *Southern Medicine & Surgery*, vol. 110, no. 2, pp. 36–8 & 46.^[6] (http://www.seanet.com/~alexs/ascorbate/194x/klenner-fr-southern_med_surg-1948-v110-n2-p36.htm)
- "**Treatment of Poliomyelitis and Other Virus Diseases with Vitamin C**," July 1949. *Southern Medicine & Surgery*, vol. 111, no. 7, pp. 209–14.^[7] (http://www.seanet.com/~alexs/ascorbate/194x/klenner-fr-southern_med_surg-1949-v111-n7-p209.htm)
- "Fatigue, Normal and Pathological, with Special Consideration of Myasthenia Gravis and Multiple Sclerosis," Sept. 1949. *Southern Medicine and Surgery*, vol. 111, no. 9, pp. 273–7.
- "**Massive Doses of Vitamin C and the Virus Diseases**," April 1951. *Southern Medicine and Surgery*, vol. 113, no. 4, pp. 101–7.^[8] (http://www.seanet.com/%7Ealexs/ascorbate/195x/klenner-fr-southern_med_surg-1951-v103-n4-p101.htm)
- "Vitamin and Massage Treatment for Acute Poliomyelitis," Aug. 1952. *Southern Medicine and Surgery*, vol. 114, no. 8, pp. 194–7.
- "**Use of Vitamin C as an Antibiotic**," 1953. *Journal of Applied Nutrition*, vol. 6, pp. 274–8.^[9] (https://www.seanet.com/~alexs/ascorbate/195x/klenner-fr-j_appl_nutr-1953-v6-p274.htm)
- "**Treatment of Trichinosis with Massive Doses of Vitamin C and Para-Aminobenzoic Acid**," April 1954. *Tri-State Medical Journal*, pp. 25–30.^[10] (https://www.researchgate.net/publication/265006462_The_Treatment_of_Trichinosis_with_Massive_Doses_of_Vitamin_C_and_Para-Aminobenzoic_Acid)
- "Case History: Cure of a 4-Year-Old Child Bitten by a Mature Highland Moccasin with Vitamin C," July 1954. *Tri-State Medical Journal*.
- "**Recent Discoveries in the Treatment of Lockjaw with Vitamin C and Tolserol**," July 1954. *Tri-State Medical Journal*, vol. 2, no. 5, pp. 7–11.^[11] (http://www.mv.helsinki.fi/home/hemila/CT/Klenner_1954_ch.pdf)

- "Critical Analysis of the Francis Report Concerning the 1954 Poliomyelitis Vaccine Program," June 1955. *Tri-State Medical Journal*, no. 6.
- "Poliomyelitis Vaccine: Brodie vs. Salk," July 1955. *Tri-State Medical Journal*, no. 7.
- "New Office Procedure for the Determination of Plasma Levels for Ascorbic Acid," Feb. 1956. *Tri-State Medical Journal*, pp. 26–8.
- "Poliomyelitis: Case Histories," Sept. 1956. *Tri-State Medical Journal*, pp. 28–31.
- "An 'Insidious' Virus," June 1957. *Tri-State Medical Journal*, pp. 10–12.
- "Black Widow Spider: Case History," Dec. 1957. *Tri-State Medical Journal*, pp. 15–18.
- "The Clinical Evaluation and Treatment of a Deadly Syndrome Caused by an Insidious Virus," Oct. 1958. *Tri-State Medical Journal*, pp. 11–15.
- "The Folly in the Continued Use of a Killed Polio Virus Vaccine," Feb. 1959. *Tri-State Medical Journal*, pp. 11–19.
- "Virus Encephalitis as a Sequela of the Pneumonias," Feb. 1960. *Tri-State Medical Journal*, pp. 7–11.
- "Observations on the Dose and Administration of Ascorbic Acid When Employed Beyond the Range of a Vitamin in Human Pathology," winter 1971. *Journal of Applied Nutrition*, vol. 23, numbers 3 & 4, pp. 61–88. [12] (<http://www.doctoryourself.com/klennerpaper.html>)
- "Response of Peripheral and Central Nerve Pathology to Mega-Doses of the Vitamin B-Complex and Other Metabolites," parts 1 & 2, 1973. *Journal of Applied Nutrition*, pp. 16–40. [13] (http://www.townsendletter.com/Klenner/KlennerProtocol_forMS.pdf)
- "Significance of High Daily Intake of Ascorbic Acid In Preventive Medicine," spring 1974. *Journal of the International Academy of Preventive Medicine*, vol. 1, no. 1, pp. 45–69. [14] (https://www.seanet.com/~alexs/ascorbate/197x/klenner-fr-j_int_assn_prev_med-1974-v1-n1-p45.htm)

Reference Notes

1. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, page 227.
2. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, pp. 227-8, 228-9.
3. "Boneset: The Secret Herb of the Indigenous." (<https://medicinalherbals.net/boneset-herb/>)
4. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 228.
5. Lendon Smith, M.D. "Clinical Guide to the Use of Vitamin C" (http://www.seanet.com/%7Ealexs/ascorbate/198x/smith-lh-clinical_guide_1988.htm)
6. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, pp. 228, 229.
7. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 229.
8. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, pp. 229-30.
9. Frederick R. Klenner. [1] (<http://www.doctoryourself.com/klennerpaper.html>) "Observations on the Dose and Administration of Ascorbic Acid When Employed Beyond the Range of a Vitamin in Human Pathology." *Journal of Applied Nutrition*, vol. 23, numbers 3 & 4, winter 1971. Short biography of Klenner following his article.
10. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 114.
11. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, https://en.wikipedia.org/wiki/Frederick_Klenner

- 1988, pp. 111 & 230.
12. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p 230.
 13. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, pp. 116, 230-1.
 14. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 232.
 15. Robert Landwehr. [2] (http://www.seanet.com/~alexs/ascorbate/199x/landwehr-r-j_orthomol_med-1991-v6-n2-p99.htm) "The Origin of the 42-Year Stonewall of Vitamin C." *Journal of Orthomolecular Medicine*, vol. 6, no. 2, pp. 99-103, 1991.
 16. Fred R. Klenner. [3] (http://www.seanet.com/~alexs/ascorbate/194x/klenner-fr-southern_med_surg-1948-v110-n2-p36.htm) "Virus Pneumonia and its Treatment with Vitamin C." *Southern Medicine & Surgery*, vol. 110, pp. 36-38, Feb. 1948.
 17. Irwin Stone. *The Healing Factor: Vitamin C Against Disease*. Grosset and Dunlap, pp. 191-2, 1972.
 18. Frederick R. Klenner. [4] (<http://www.doctoryourself.com/klennerpaper.html>) "Observations on the Dose and Administration of Ascorbic Acid When Employed Beyond the Range of a Vitamin in Human Pathology." *Journal of Applied Nutrition*, vol. 23, numbers 3 & 4, winter 1971.
 19. Ladyrayne. "The Fultz Quadruplets" (<https://talkinstuff.wordpress.com/2015/06/10/the-fultz-quadruplets/>).
 20. Lorraine Ahearn. [5] (<https://archive.is/vKZZ#selection-1247.0-1247.22>) "And then there was one." *News and Record*, August 4, 2002.
 21. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, pp. 232-3.
 22. Charles L. Sanders. "The Fultz Quads: Grown Up, Disappointed and Bitter." (<https://books.google.com/books?id=1OEDAAAAMBAJ&lpg=PA1&pg=PA212#v=onepage&q&f=true>) *Ebony* magazine, November 1968, p. 214.
 23. "Growing Up Strong on PET Milk??? The Fultz Quadruplets" (<https://mid-centurypink.blogspot.com/2013/07/growing-up-strong-on-pet-milk-fultz.html>).
 24. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 233.
 25. Elita Blacktating. "Little Known Black History Fact: The Fultz Quads." (<http://blacktating.blogspot.com/2010/10/little-known-black-history-fact-fultz.html>) Breastfeeding News and Views from a Mom of Color, Oct. 28, 2010.
 26. "Quadruplets' First Birthday." *Ebony* magazine, May 1947, p. 18.
 27. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 233.
 28. Fred Klenner. "The Use of Vitamin C as an Antibiotic." (https://www.seanet.com/~alexs/ascorbate/195x/klenner-fr-j_appl_nutr-1953-v6-p274.htm) *Journal of Applied Nutrition*, vol. 6, pp. 274-8, 1953.
 29. Fred Klenner. "The Use of Vitamin C as an Antibiotic." (https://www.seanet.com/~alexs/ascorbate/195x/klenner-fr-j_appl_nutr-1953-v6-p274.htm) *Journal of Applied Nutrition*, vol. 6, pp. 274-8, 1953.
 30. Fred R. Klenner. "Treatment of Poliomyelitis and Other Virus Diseases with Vitamin C." (http://www.seanet.com/~alexs/ascorbate/194x/klenner-fr-southern_med_surg-1949-v111-n7-p209.htm) *Southern Medicine & Surgery*, vol. 111, no. 7, pp. 209-214, July 1949.
 31. Robert Landwehr. "The Origin of the 42-Year Stonewall of Vitamin C" (http://www.seanet.com/~alexs/ascorbate/199x/landwehr-r-j_orthomol_med-1991-v6-n2-p99.htm), *Journal of Orthomolecular Medicine*, 2002. Vol. 6, No. 2, p. 52.

32. Robert Landwehr. The Origin of the 42-Year Stonewall of Vitamin C (http://www.seanet.com/~alexs/ascorbate/199x/landwehr-r-j_orthomol_med-1991-v6-n2-p99.htm), *Journal of Orthomolecular Medicine*, 2002. Vol. 6, No. 2, pp. 99-103.
33. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 233.
34. Fred R. Klenner. "Massive Doses of Vitamin C and the Virus Diseases." (http://www.seanet.com/%7Ealexs/ascorbate/195x/klenner-fr-southern_med_surg-1951-v103-n4-p101.htm) *Southern Medicine and Surgery*, vol. 103, no. 4, pp. 101-7, April 1951.
35. Fred R. Klenner. "Massive Doses of Vitamin C and the Virus Diseases." (http://www.seanet.com/%7Ealexs/ascorbate/195x/klenner-fr-southern_med_surg-1951-v103-n4-p101.htm) *Southern Medicine and Surgery*, vol. 103, no. 4, pp. 101-7, April 1951.
36. Albert B. Sabin. "Vitamin C in Relation to Experimental Poliomyelitis, with Incidental Observations on Certain Manifestations in Macacus Rhesus Monkeys on a Scorbutic Diet" (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2133652/pdf/507.pdf>) *Journal of Experimental Medicine*, vol. 69, no. 4, pp. 507-16, March 31, 1939.
37. Claus W. Jungeblut. "Inactivation of Poliomyelitis Virus by Crystalline Vitamin C (<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.274.208&rep=rep1&type=pdf>)" *Journal of Experimental Medicine*, vol. 62, pp. 517-21, Oct. 1935.
38. Albert B. Sabin. "Vitamin C in Relation to Experimental Poliomyelitis, with Incidental Observations on Certain Manifestations in Macacus Rhesus Monkeys on a Scorbutic Diet" (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2133652/pdf/507.pdf>) *Journal of Experimental Medicine*, vol. 69, no. 4, p. 514, March 31, 1939.
39. Andrew W. Saul. "Claus Washington Jungeblut, MD: Polio Pioneer, Ascorbate Advocate." (<http://www.doctoryourself.com/jungeblut.html>) *Journal of Orthomolecular Medicine*, vol. 21, no. 2, 2006.
40. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 268.
41. F. Miller, "Klenner's office recalls old-fashioned practitioner." *Greensboro Daily News*, undated reprint.
42. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 231.
43. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 225.
44. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 225.
45. Steven Schwinn. "Civil Rights Act of 1964: Enduring and Revolutionary." (https://www.americanbar.org/publications/insights_on_law_and_society/14/winter-2014/civil-rights-act-of-1964--enduring-and-revolutionary.html) *Insights on Law and Society*, American Bar Association, vol. 14, no. 2, winter 2014.
46. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, pp. 225, 226.
47. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, pp. 226, 231.
48. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, pp. 234-6.
49. Fred R. Klenner. "Recent Discoveries in the Treatment of Lockjaw with Vitamin C and Tolserol" (http://www.mv.helsinki.fi/home/hemila/CT/Klenner_1954_ch.pdf) *Tri-State Medical Journal*, vol. 2, no. 5, July 1954, page seven.
50. Levy, Thomas E., M.D. *Curing the Incurable: Vitamin C, Infectious Diseases and Toxins*. LivOn Books, 2009, pp. 123 & 174.
51. Fred R. Klenner. "Recent Discoveries in the Treatment of Lockjaw with Vitamin C and Tolserol" (http://www.mv.helsinki.fi/home/hemila/CT/Klenner_1954_ch.pdf) (https://en.wikipedia.org/wiki/Frederick_Klenner)

51. Fred R. Klenner. Discoveries in the Treatment of Lockjaw with vitamin C and Ioseron (http://www.mv.neisink.fi/home/hemila/CT/Klenner_1954_ch.pdfRecent) *Tri-State Medical Journal*, vol. 2, no. 5, page eleven, July 1954.
52. Lendon Smith, M.D. "Clinical Guide to the Use of Vitamin C: The Clinical Experiences of Frederick R. Klenner, M.D." (http://www.seanet.com/%7Ealexs/ascorbate/198x/smith-lh-clinical_guide_1988.htm), 1988.
53. Frederick Robert Klenner. "Significance of High Daily Intake of Ascorbic Acid In Preventive Medicine." (https://www.seanet.com/~alexs/ascorbate/197x/klenner-fr-j_int_assn_prev_med-1974-v1-n1-p45.htm) *Journal of the International Academy of Preventive Medicine*, vol. 1, no. 1, pp. 45-69, spring 1974.
54. Fred R. Klenner. "Observations on the Dose and Administration of Ascorbic Acid When Employed Beyond the Range of a Vitamin in Human Pathology." (<http://www.doctoryourself.com/klennerpaper.html>) *Journal of Applied Nutrition*, vol. 23, numbers 3 & 4, winter 1971.
55. Fred R. Klenner. "Massive Doses of Vitamin C and the Virus Diseases." (http://www.seanet.com/%7Ealexs/ascorbate/195x/klenner-fr-southern_med_surg-1951-v103-n4-p101.htm) *Southern Medicine and Surgery*, vol. 103, no. 4, pp. 101-7, April 1951.
56. Adelle Davis. *Let's Eat Right to Keep Fit*. Harcourt Brace Jovanovich, 1954, pp. 131-2.
57. Adelle Davis. *Let's Eat Right to Keep Fit*. Harcourt Brace Jovanovich, 1954, p. 132.
58. Adelle Davis. *Let's Eat Right to Keep Fit*. Harcourt Brace Jovanovich, 1954, p. 136.
59. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 234.
60. Elias Lincoln Stern. "The intraspinal (subarachnoid) injection of vitamin B₁ for the relief of intractable pain and for inflammatory and degenerative diseases of the central nervous system: Preliminary report" (<https://www.sciencedirect.com/science/article/pii/S0002961038906786>) *American Journal of Surgery*, vol. 39, issue 3, p. 395, March 1938.
61. Andrew W. Saul. "Hidden in Plain Sight: The Pioneering Work of Frederick Robert Klenner, M.D." (<http://orthomolecular.org/library/jom/2007/pdf/2007-v22n01-p031.pdf>) *Journal of Orthomolecular Medicine*, vol. 22, No. 1, p. 34, 2007.
62. Fred Klenner. Two-page list of nutritional recommendations for patients. Hand-dated January 25, 1979 by Irwin Stone, received from Linus Pauling Institute of Science and Medicine.
63. Frederick Klenner. "Response of Peripheral and Central Nerve Pathology to Mega-Doses of the Vitamin B-Complex and Other Metabolites." (http://www.townsendletter.com/Klenner/KlennerProtocol_forMS.pdf) Parts 1 and 2. *Journal of Applied Nutrition*, 1973, pp. 16-40.
64. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 238.
65. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, pp. 224, 503-4.
66. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, pp. 268-9, 402.
67. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, pp. 269-70.
68. Fred R. Klenner. "Poliomyelitis Vaccine: Brodie vs. Salk," *Tri-State Medical Journal*, no. 7, July 1955.
69. Fred R. Klenner. "Poliomyelitis Vaccine: Brodie vs. Salk," *Tri-State Medical Journal*, no. 7, July 1955.
70. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 236.
71. Richard Passwater, Ph.D. "Vitamin C Update." (<https://wholefoodsmagazine.com/columns/vitamin-connection/vitamin-c-update/>) *Whole Foods* magazine, October 2017.

72. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 237.
73. Frederick Klenner. "Response of Peripheral and Central Nerve Pathology to Mega-Doses of the Vitamin B-Complex and Other Metabolites." (http://www.townsendletter.com/Klenner/KlennerProtocol_forMS.pdf) Parts 1 and 2. *Journal of Applied Nutrition*, 1973, pp. 16-40.
74. Lendon Smith, M.D. "Clinical Guide to the Use of Vitamin C" (http://www.seanet.com/%7Ealexs/ascorbate/198x/smith-lh-clinical_guide_1988.htm)
75. Andrew W. Saul. "Hidden in Plain Sight: The Pioneering Work of Frederick Robert Klenner, M.D." (<http://orthomolecular.org/library/jom/2007/pdf/2007-v22n01-p031.pdf>) *Journal of Orthomolecular Medicine*, vol. 22, No. 1, p. 36, 2007.
76. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 238.
77. "In Memoriam: Irwin Stone and Frederick R. Klenner" (https://www.seanet.com/~alexs/ascorbate/198x/rimland-b-orthomol_psych-1984-v13-n4-p285.htm) *Orthomolecular Psychiatry*, vol. 13, no. 4, p. 285, 1984.
78. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, p. 319.
79. Jerry Bledsoe. *Bitter Blood: A True Story of Southern Family Pride, Madness, and Multiple Murder*. Dutton, 1988, pp. 319-20.
80. Fred R. Klenner. "Observations on the Dose and Administration of Ascorbic Acid When Employed Beyond the Range of a Vitamin in Human Pathology." (<http://www.doctoryourself.com/klennerpaper.html>) *Journal of Applied Nutrition*, vol. 23, numbers 3 & 4, winter 1971.
81. "Hippocrates: Father of Medicine" (http://www.greekmedicine.net/whos_who/Hippocrates.html): "In therapeutics, Hippocrates saw the physician as the servant and facilitator of Nature. All medical treatment was aimed at enabling the natural resistance of the organism to prevail and overcome the disease, to bring about recovery. In the treatments he prescribed, Hippocrates [favored] conservatism and moderation over radical or extreme measures."
82. Fred R. Klenner. "Massive Doses of Vitamin C and the Virus Diseases." (http://www.seanet.com/%7Ealexs/ascorbate/195x/klenner-fr-southern_med_surg-1951-v103-n4-p101.htm) *Southern Medicine and Surgery*, vol. 103, no. 4, pp. 101-7, April 1951.
83. Fred R. Klenner. "Observations on the Dose and Administration of Ascorbic Acid When Employed Beyond the Range of a Vitamin in Human Pathology." (<http://www.doctoryourself.com/klennerpaper.html>) *Journal of Applied Nutrition*, vol. 23, numbers 3 & 4, pp. 61-88, winter 1971.
84. Fred R. Klenner. "Observations on the Dose and Administration of Ascorbic Acid When Employed Beyond the Range of a Vitamin in Human Pathology." (<http://www.doctoryourself.com/klennerpaper.html>) *Journal of Applied Nutrition*, vol. 23, numbers 3 & 4, winter 1971.
85. Andrew W. Saul. "Hidden in Plain Sight: The Pioneering Work of Frederick Robert Klenner, M.D." (<http://orthomolecular.org/library/jom/2007/pdf/2007-v22n01-p031.pdf>) *Journal of Orthomolecular Medicine*, vol. 22, no. 1, p. 31, 2007.
86. Fred R. Klenner. "Treatment of Poliomyelitis and Other Virus Diseases with Vitamin C." (http://www.seanet.com/~alexs/ascorbate/194x/klenner-fr-southern_med_surg-1949-v111-n7-p209.htm) *Southern Medicine & Surgery*, vol. 111, no. 7, p. 209, July 1949.
87. Andrew W. Saul. "Hidden in Plain Sight: The Pioneering Work of Frederick Robert Klenner, M.D." (<http://orthomolecular.org/library/jom/2007/pdf/2007-v22n01-p031.pdf>) *Journal of Orthomolecular Medicine*, vol. 22, No. 1, p. 36, 2007.
88. Fred R. Klenner. "Poliomyelitis Vaccine: Brodie vs. Salk," *Tri-State Medical Journal*, no. 7, July 1955.

Sources

- Levy, Thomas E., M.D. *Curing the Incurable: Vitamin C, Infectious Diseases and Toxins*. LivOn Books, 2009.
- McCracken, Robert, Ph.D. *Injectable Vitamin C and the Treatments of Viral and Other Diseases: A Compilation of Pioneering Literature*. Hygea Publishing Co., 2009.

External links

- [15] (<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.274.208&rep=rep1&type=pdf>) Claus W. Jungeblut, MD. "Inactivation of Poliomyelitis Virus by Crystalline Vitamin C." *Journal of Experimental Medicine*, vol. 62, pp. 517–21, Oct. 1935.
- [16] (<http://www.doctoryourself.com/jungeblut.html>) Andrew Saul. "Claus Washington Jungeblut, MD: Polio Pioneer, Ascorbate Advocate" *Journal of Orthomolecular Medicine*, vol. 21, no. 2, 2006.
- [17] (<http://www.doctoryourself.com/klennerbio.html>) Andrew Saul. "Hidden in Plain Sight: The Pioneering Work of Frederick Robert Klenner, MD." *Journal of Orthomolecular Medicine*, vol. 22, no. 1, pp. 31–38, 2007.
- [18] (<http://vitamincfoundation.org/www.orthomed.com/polio.htm>) Fred R. Klenner. "The Treatment of Poliomyelitis and Other Virus Diseases with Vitamin C." *Southern Medicine & Surgery*, vol. 111, no. 7, July 1949. Closing comment by Robert Cathcart, MD.
- [19] (<http://www.doctoryourself.com/vitciv.html>) Robert Cathcart, MD. "Preparation of Sodium Ascorbate for IV and IM Use." 1996.
- [20] (<http://orthomolecular.org/resources/omns/v02n02.shtml>) "Vitamin C has been Known to Fight 30 Major Diseases...for Over 50 Years"
- Find-A-Grave (<http://www.findagrave.com/cgi-bin/fg.cgi?page=gr&GSln=klenner&GSbyrel=in&GSdyrel=in&GSob=n&GRid=53142190&>) Klenner's gravestone, with a brief biography.
- [21] (<https://www.findagrave.com/memorial/9393731/annie-hill-klenner>) Annie Hill Sharp Klenner's gravestone, with a brief biography.

Reference Notes

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