Higher Blood Pressures in Supravalvular Aortic Stenosis Explained by Cardiologists

Cardiologists at the National Heart and Lung Institute offer an explanation why patients with supravalvular aortic stenosis frequently have higher blood pressure in the innominate artery than in the aorta.

Hypothesis Tested

Slowing of this rapidly moving stream of blood would convert kinetic energy to potential energy and thus increase innominate pressures to exceed pressures in the aorta. When the simulated stenotic orifice was replaced by a fine mesh screen in order to maintain a pressure gradient, but eliminate the jet, innominate pressures were not found to be increased.

In addition, when the simulated stenosis was moved within the aorta to mimic valvular aortic stenosis, increases in innominate artery pressures were abolished.

Mr. Hunter’s election to the Royal Society was for his significant contributions to the biomedical sciences and is a rare honor accorded few individuals not having an M.D. (laude) from Howard University in 1943.

He subsequently completed a year’s postgraduate work in Zoology and Education and was a graduate assistant in Zoology at Howard.

Mr. Hunter joined the Cancer Institute in 1949 as a medical biology technician in the Cytochemistry Section, Laboratory of Biochemistry. In 1951 he received the title of biologist in the same laboratory. In 1962 he was elevated to the rank of research biologist and 3 years later became a health scientist administrator (Biological Sciences) Extramural Programs when he joined the NICHD.

He held this position for 4 years prior to being named assistant director for Planning and Evaluation. Mr. Hunter is a member of the American Society for Cell Biology and the American Association for the Advancement of Science.
Housing Registry Needs Listings of All Available Houses and Apartments

Do you have housing for sale or rent? Are you looking for housing?

To assist employees in locating suitable housing, the Employee Relations and Recognition Branch of the Office of Personnel Management maintains a housing registry. This registry includes houses for sale as well as houses, apartments, and rooms for rent.

To improve services, additional listings are needed—particularly furnished rooms and apartments. Employees who have housing available are requested to list it in the registry.

Time Off Is Authorized When Needed to Vote

Limited time off for voting in the general elections on Nov. 3 may be authorized under certain conditions. This time should be charged to administrative leave.

If the polls are not open 3 hours before or after an employee's work hours, he may report for work 3 hours after the polls open or leave work 3 hours before the polls close—whichever requires less time.

If friends or neighbors have housing for rent or sale their accommodations may also be listed.

Five 3 x 5 cards should be sent to ERRB, Bldg. 31, Room 2B-30, stating description of property, whether for rent or sale, how furnished, location in relation to NIH and price, when available, telephone number, and any other pertinent information.

Statement Required

The following signed statement must appear on the back of each card: "This property is available on an open occupancy basis without restriction of race, color, creed, or national origin."

One of the cards will be kept on file in ERRB. The other four will be posted on bulletin boards at: Bldg. 31, next to the elevator; first floor, B wing; Bldg. 1, next to the elevators, basement level; Bldg. 10, near the snack bar; ground level, and Westwood Bldg., ground level, outside the snack bar.

Listings may be sent in at any time; however, all are removed at the end of the month.

To continue listings for the next month, a new set of cards must be sent to ERRB.

Davis Xmas Plan Encourages Employees To Play 'Santa Claus' for CC Patients

There are times when a fellow needs a visit from his brother. The young CC patient has much to tell about his room, the nurses, and Christmas activities planned. Out-of-town traveling expenses for the patient's brother and parents were paid through the Patient Welfare Fund.

There is one before-Christmas shopping expedition that can be cheerfully eliminated, thanks to James B. Davis, Director, Office of Administrative Services. That is shopping for Christmas cards for NIH colleagues.

Instead, donate the money to the Patient Welfare Fund. This is the idea behind the "Davis Plan," which, every Christmas for the past 10 years, has augmented the Patient Welfare Fund.

Mr. Davis used to send cards to colleagues—over 200 of them—but thought how the money might better be spent, thus evolved the Davis Plan.

R&W Contributcs

Now all NIH employees can be a part of a Christmas program to help patients at the Clinical Center. The NIH Recreation & Welfare Association also contributes substantially to the Fund.

Benefits CC patients and their families derive from the Patient Welfare Fund, with the assistance of the Davis Plan, are numerous. For instance, patients are given money for long-distance phone calls to their families and, in some cases, the Fund pays for the transportation for the visit of a relative to a CC patient.

At Christmas time these morale boosters—visits and phone calls—may very well be more important than at any other time of the year.

Donate Funds Instead

Instead of buying Christmas cards say "Merry Christmas" to your NIH colleagues and donate that sum normally spent on cards to the Patient Welfare Fund.

For further information, contact Jim Davis at Ext. 62315. Checks may be made to the NIH Patient Welfare Fund.

Subject: The Development of Early Communication

Interview takes place during intermission of the Library of Congress concerts.
CFC Quotas Announced; Secy. Richardson Urges Generous Drive Support

As the Combined Federal Campaign—now in its fourth week—seeks funds for 164 agencies, a quota of $218,687 for NIH has been announced.

The National Institute of Environmental Health Sciences already has gone over its quota by 128.3 percent, with contributions received thus far from only half of its staff.

In a memo to all Department employees, H.E.W. Secretary Elliot L. Richardson noted:

“In the past, a great majority of Department employees have recognized their obligation to participate in a community effort to aid those in need of assistance. "When contacted this year, I urge each of you to generously support this non-government effort directed toward the relief of some of the ills of our society."

This year’s drive is stressing the advantage of using the payroll deduction plan—the most effective and painless method of making a meaningful contribution to those in need.

Any contribution may be designated for a specific participating agency. Undesignated donations will be distributed in accordance with a predetermined percentage to: National Health Agencies, 7.7 percent; United Givers Fund, 7.32 percent; and International Service Agencies, 7.1 percent.

Technical Developments Increase Deaths From Heart Disease

The greater production of electricity in a country, the more deaths there are from heart disease. The same holds true of heart disease in relation to average annual income, number of television sets and telephones, and other indices of technical development.—WHO Facts.

Former Military Corpsmen and Medics Augment CC's Cancer Nursing Service

Four former military corpsmen and medics are working as patient care technicians in the Clinical Center's Cancer Nursing Service. They are pilots in a project to help relieve the CC nursing shortage.

The men are assigned to male patients "requiring the most comprehensive nursing care," according to Louise C. Anderson, chief of the CC Nursing Department.

Mrs. Anderson, who conceived the idea, saw it through to a project that may well become "standard operating procedure" in many hospitals.

Explains Rationale

Explaining the evolution and implementation of her idea, the CC Nursing chief said, "For the past 5 years we have been consistently short of male assistants for the nursing care of men patients. "We had men with nursing experience on our staff who were obviously very competent. Four men met the criteria established for patient care were chosen."

A close-working team headed by a group leader to direct activities and plan time was established.

Nursing personnel and the team group participated in a 6-week orientation program to establish procedures.

Evaluating the plan at the end of a 3-month period, Mrs. Anderson found it extremely workable.

"Patients and physicians have been very complimentary on how these men function," she added.

Clarence I. Haywood is leader of the patient care technician team. For 16 months he served as a federal medical technician in Viet Nam, where he administered first aid to combat casualties.

Mr. Haywood was trained as a hospital corpsman at the Charles Town Naval Hospital. Later, he was assigned to Camp Lejeune as a field medical technician.

"What Mrs. Anderson is doing here is giving us responsibilities and letting us function with limited supervision," Mr. Haywood said. "In this job we work better as team members and have an opportunity to use all our skills."

The other members of the team are Kyle Smith, Melvin Taylor, and Solomon Romero. Mr. Taylor has had combat experience in Korea as a medical corpsman. Mr. Smith and Mr. Romero were army medics before coming to NIH.

As patient care technicians, their duties are diverse. They assist investigators with diagnostic procedures, change sterile dressings, irrigate wounds, and help with special procedures.

The nursing technicians utilize various types of therapy and are especially adept at aiding male patients with ambulatory problems. This team plan has been so successful that 10 men are training to function the same way.

"Our plan," Mrs. Anderson said, "is to develop at least one team of trained technicians for each nursing service."

Major Holland Will Speak At NCI-VA Ward Opening

A program for the opening of the National Cancer Institute-Veterans Administration Medical Oncology Ward in the VA Hospital, Washington, D.C. will be held Thursday, Oct. 15, at 2 p.m. in the Theater of the hospital.

Major James F. Holland, chief of Medicine A, Roswell Park Memorial Hospital, will be the featured speaker.

He is also president of the American Association for Cancer Research.

Dr. H. Eagle to Present Jules Freund Seminar

The Twelfth Annual Jules Freund Memorial Seminar will be presented by Dr. Harry Eagle, professor of Cell Biology at Albert Einstein College of Medicine, Yeshiva University.

The seminar will be held at noon on Monday, Oct. 19, in the Jack Masur Auditorium of the Clinical Center.

Dr. Eagle's subject will be "Serum pH, the Contact Inhibition of Normal Human Cells." The scientific community is invited to attend.

Former NIH Researcher

Dr. Eagle has been at Albert Einstein since 1951. Prior to that, he was an investigator in the Public Health Service, including NCI and NIAID. While chief of NIAID's Laboratory of Cell Biology, he was a colleague of Dr. Jules Freund.

Dr. Eagle, whose present research interest is cell and tissue culture, developed the Eagle's medium (a synthetic medium widely used for tissue cultures) and the Eagle test for syphilis.

His span of investigation has included blood coagulation, penicillin, bacterial physiology, and the detoxification of metal poisoning.

Dr. Eagle served as scientific advisor to the Sloan-Kettering Institute for Cancer Research and the Helen Hay Whitney Foundation. He is a trustee of the Microbiological Foundation (Walker) and the Hebrew University in Jerusalem.

Honors Noted

Among his honors are the Albert Einstein Commemorative Award, the N.Y. Academy of Medicine Award, and an honorary Doctor of Science degree from Wayne University.

The National Institute of Allergy and Infectious Diseases has presented the Jules Freund Memorial Seminar annually since 1961 in honor of the first chief of its Laboratory of Immunology.

Detroit Nurses Conduct Study on Child Caring

Results of a recent study suggest that infants whose families move frequently have particular need for nursing and preventive care.

The Visiting Nurse Association of Detroit, under contract with the Bureau of Health Manpower Education's Division of Nursing, conducted a research project on child caring patterns in the Detroit area.

Data show that one differentiating factor in families whose infants suffer diarrhea and poor weight gain is isolation instability.

A full report of the study is now being prepared by the Detroit agency.
Willard Vincent Named Chief of OAS Branch

The Office of Administrative Services has announced the appointment of Willard E. Vincent, assistant chief, Plant and Office Services Branch, as chief of the Protection and Safety Management Branch.

Mr. Vincent succeeds George F. Morse, who retired from Federal service.

In his new assignment, Mr. Vincent will be responsible for developing and administering programs concerned with the security and safety of NIH personnel and property.

Mr. Vincent came to NIH from the Department of Commerce in 1957 where he had served as a Security Officer. He served first as the assistant administrative officer and later as assistant to the chief of the Protection Safety Branch.

From 1953 to 1958, he worked as a Security Evaluator in the Security Division, HIEW.

For the 2 years prior to joining NIH, he held the position of Special Agent in the Security Division, Department of State.

With the exception of his tenure in the Plant and Office Services Branch, Mr. Vincent's entire career has been devoted to security, protection, and related fields. He is a U.S. Army veteran of World War II where he served in counterintelligence.

He was the recipient of a Sustained Superior Performance Award in 1968.

Two Investigators Join NINDS Collaborative and Field Research Program

Two scientists have been named to the staff of the National Institute of Neurological Diseases and Stroke Collaborative and Field Research Program.

Dr. Bernard H. Fox has been appointed assistant to Dr. Heinz W. Berendes, chief of the Perinatal Research Branch. Dr. Fox has been named to the Epidemiology Branch, Office of the Associate Director for C&FR.

Both men were previously with the Neurological and Sensory Disease Control Program, Regional Medical Program Service, Health Sciences and Mental Health Administration.

Dr. Fox will coordinate the various task forces of the Branch and will serve as liaison between it and the Perinatal Research Committee.

Mr. Turner, who has co-authored 10 papers on epidemiology, will coordinate data from all of the Epidemiology Branch's programs.

4-Drug Treatment for Hodgkin's Disease May Double Survival Time of Patients

A 4-drug treatment developed in 1964 for advanced Hodgkin's disease is more than doubling the survival time of patients who respond to treatment, according to scientists of the National Cancer Institute.

Dr. Vincent T. DeVita, Arthur Serpick, and Paul Carbone of NCI reported their findings to the International Society of Hematology in Munich, Germany, last month.

Last year Dr. DeVita and his colleagues reported that 35 to 43 patients (86 percent) treated with the four drugs—vinblastine, procarbazine, prednisone, and an alkylating agent—responded with a complete remission or temporary disappearance of all evidence of disease.

This is 4 times the rate of complete remissions usually achieved in advanced Hodgkin's disease.

The median duration of these complete remissions is now between 32 and 42 months after the end of therapy. At present, the longest continuing complete remission is lasting 62+ months.

The researchers noted that 5 patients among the 35 complete responders (48 percent) remain free of all evidence of cancer.

65 Percent Surviving

Twenty-eight of the entire group of 43 patients (65 percent) are surviving, at the very least 32 months after the end of therapy. The median survival time of the entire group and the complete responders is not yet known, but in the latter case it will exceed 42 months.

This is more than double the duration of survival of 20 months usually reported in medical literature for patients with this advanced cancer treated with single-drug therapy.

Patients were given six 2-week cycles of drug therapy, each followed by a rest period of about 14 days.

During each cycle, procarbazine was given daily, and vinblastine and an alkylating agent (either nitrogen mustard or cyclophosphamide) were given on the first and eighth day.

Most Are Outpatients

Prednisone was given daily during cycles 1 and 4 only. The average duration of therapy was 5.8 months, and although all patients had advanced disease, most were able to receive almost all of their treatment as outpatients.

Twenty-three of the patients were males; twenty were females. At the start of treatment, their mean age was 31 years. There was no difference in survival with regard to sex.

None of the patients were considered resistant to any form of therapy, although nine patients had received prior local radiotherapy and two had received a single prior exposure to one of the drugs.

Immediate side-effects consisted mainly of nausea and vomiting in the first two days of each cycle.

The major limiting toxicity was damage to the bone marrow, believed to be a factor in the deaths from infection of two patients.

Older patients frequently had some loss of reflexes and constipation, but this disappeared when vinblastine treatment was stopped. In most patients toxicity was well tolerated and disappeared after the cessation of treatment.

Dr. DeVita and his colleagues conclude that combinations of drugs in full doses, each with independent antitumor activities and somewhat different toxicities, produce a higher percentage of complete remissions and longer survival times for patients than any available drug used alone.

Dr. George Willis Joins Grants Asso. Program

Dr. George M. Willis, a native of Alto, Tex., has joined the Grants Associates Program for a year of training in grants administration.

Dr. Willis, a 1952 graduate of Prairie View A & M College, received his M.S. degree (1959) and his Ph.D. degree (1962) in Plant Pathology from Ohio State University.

From 1955 to 1958, he was a graduate assistant in Plant Pathology at this university.

He was with the Ohio Agricultural Development Center in Wooster, Ohio, as a research assistant from 1969 to 1962.

Later Dr. Willis became a plant pathologist at the Center, devoting more time to experimental testing and scientific writing.

From 1962 to 1968, he was a research plant pathologist with the Plant Sciences Laboratory, Ft. Detrick, Md.

In 1968, he became professor of Botany and director of the Biology Audiotutorial Program, Central State University, Wilberforce, Ohio, a position he held until he accepted his present appointment.

Dr. Willis is a member of the American Association for the Advancement of Science, the Research Society of America, Sigma Xi, the Sigma Gamma Delta Society, the Society of Sigma Xi, and the Gamma Alpha Scientific Professional Fraternity.

Dr. James Whittico Is Appointed To Advisory Manpower Council

Dr. James M. Whittico, Jr., a surgeon and assistant clinical professor at the St. Louis University School of Medicine, Mo., has been named to the National Advisory Council on Education for Health Professions for a term ending February 1973.

A graduate of the American Board of Surgery (1951) and a fellow of the American College of Surgeons (1962), Dr. Whittico is a member of the National Medical Association, in which he held various offices, and the AMA.
Deadly Shark May Hold Key to Unlocking Secret Of Blood-Brain Barrier

NINDS scientists are approaching brain research in many new ways, including a study of the blood-brain barrier (BBB) of the shark to learn the secret of its resistance to injury.

The BBB regulates and limits the exchange of substances between the blood and the central nervous system.

Guards Brain

As a guardian of the brain, allowing certain agents in the blood ready access and denying or restricting entry to others, the BBB is largely responsible for the health and proper functioning of the central nervous system. According to Dr. Igor Klatzo, chief of the NINDS Laboratory of Neuropathology and Neuroanatomical Sciences, the shark is particularly significant to BBB research because of its amazing resistance to brain damage.

In experiments at the Lerner Marine Laboratory on the Bahamian island of Bimini, one of the world’s foremost marine biological research centers, sharks have been subjected to brain damage that no human or other mammal could endure.

Dr. MatNichol

Twenty years ago, the National Institute of Neurological Diseases and Blindness was born. It was created to guide and direct the national research effort in the neurological, sensory, communicative, and neuromuscular disorders.

Two years ago, one of its original functions, research on blindness, was largely removed by the creation of a new National Eye Institute.

Shortly thereafter, the word "stroke" was incorporated in a revised title to reflect an increased institutional responsibility in this area of research.

Clearly the old, yet new, National Institute of Neurological Diseases and Stroke is undergoing change. Has organizational change been accompanied by progress in other areas?

As the NINDS celebrates its 20th anniversary, it seems a good time to look at its history, goals, progress, and problems.

He soon developed a program for the support of extramural research, particularly in the universities, through research grants. Training grants were then established in neurological and communicative disorders. Much of the material considered by the initial review committees and later by the National Advisory Council was supported through extramural programs. By 1966, the NINDS supported 1277 research grants and 216 training programs.

In 1957, NINDB launched the Nation’s first cooperative research attack against cerebrovascular disease. Among the 1958 programs was one to determine the role played by the administration of oxygen to premature infants in the production of RLF.

Preventive Found

The study found the disorder could be prevented by reducing the concentration of oxygen administered to premature infants.

In April 1957, NINDB launched the Nation’s first cooperative research attack against cerebrovascular disease. Among the 1958 programs was one to determine the role played by the administration of oxygen to premature infants in the production of RLF.

During the early 1960s, the Institute, working in conjuncion with the University of Puerto Rico, acquired and modernized a monkey colony on an island in Puerto Rico along with various laboratory facilities.

In April 1957, NINDB launched the Nation’s first cooperative research attack against cerebrovascular disease. Among the 1958 programs was one to determine the role played by the administration of oxygen to premature infants in the production of RLF.

Clues to Riddle of MS, Other Disorders Sought

Among Known Viruses

While several scientists are looking for the answer to the MS riddle through the discovery of a "slow" virus, others hope to find clues to this disease among the known viruses.

There is a strong possibility, many researchers believe, that MS represents an atypical response to a common viral disease such as measles.

In 1958, NINDB and Institute-supported scientists reported the discovery that a common virus is associated with a progressive, chronic nervous system disease in humans.

Their demonstration that measles virus is associated with a rare brain disorder, subacute sclerosing panencephalitis (SSPE), may help in developing the theory that viruses may cause multiple sclerosis, Parkinson’s disease, and other more common neurological diseases.
NINDS Support Advances L-DOPA Use, Exploits New Investigations and Therapy

"Their work is an exciting development in the application of biochemistry to the treatment of a chronic neurologic condition and the most important contribution to medical therapy of a neurologic disease in the past 50 years . . ."

Thus spoke the prestigious New England Journal of Medicine in an editorial in its issue of February 1969.

The reference was to the development of L-DOPA (levodihydroxyphenylalanine) for treatment of Parkinson's disease, an ailment estimated to affect between 500,000 and 1,000,000 Americans.

Role Cited

Although the Institute cannot claim major credit for the discovery, it has played an important role in bringing L-DOPA into widespread use, and is increasing its efforts to exploit all new research opportunities the development has created.

L-DOPA therapy illustrates the important interrelation of basic research and clinical investigation.

Fundamental research at NIH in the late 1950's, performed in the main in NIH laboratories by Dr. Bernard B. Brodie and colleagues, produced a wealth of new information on neurochemical transmitter substances, known as catecholamines.

Then in 1960, scientists at the University of Vienna reported that they had found a marked depletion of the amine, dopamine, in the basal ganglia of Parkinson patients at autopsy. This clearly pointed to the possibility of replacement therapy.

Early efforts to replace dopamine directly were unsuccessful. It was found that it would not cross the blood-brain barrier.

is bristling with unsolved problems of which doctors and related scientists are too painfully aware.

In contrast, medical developments of the last 20 years, particularly antibiotics and immunological techniques, have brought an almost incredible reduction in infant mortality from acute infectious diseases. Epidemics have been controlled.

The control of chronic disease, of which diseases of the brain and nervous system are a large proportion, however, has not kept pace.

It is not at all surprising. The brain is the most complex structural organization known to man. It comprises more than 4 billion cells, each with a separate role in the processes of thinking, moving, seeing, hearing, and even digestion.

Recent advances point to a much more hopeful future. This past year, long-term research efforts undertaken and supported by NINDS, have been paying off in several important areas described in some detail elsewhere in this issue.

Then scientists in several countries suggested that dopamine's metabolic precursors—precluding links in the chain of chemical reactions leading to its production—might cross the barrier.

The suggestions were correct but early trials with DOPA, dopamines immediate precursor, were inconclusive.

As it subsequently became clear, DOPA was not at first given in such a way that an effective concentration could be built up slowly to minimize side effects.

It remained for two PHS grantees to open up this new "biochemical engineering" approach. The first, Dr. George C. Cotzias of the AEC's Brookhaven National Laboratory, began preliminary trials of DOPA in 1966 and settled many of the controversial interpretations of previous results by using high doses and prolonged administration.

Findings Confirmed

His work was confirmed and extended by a number of clinical groups, the largest headed by Dr. Melvin Yahr, Director of the NINDS-supported Parkinson's Disease Research Center at Columbia University.

Trials were launched by two drug companies, Hoffman-LaRoche and Eaton Labs, and L-DOPA was licensed for general prescription use by the FDA on June 4, 1970.

In addition to funding the Columbia Center, NINDS supports a number of projects in which the mode of action of L-DOPA is being studied, and also sponsors scientific meetings aimed at stimulating research in the field.

Although L-DOPA is now in the stage of commercial production and is helping thousands of severely disabled Parkinson patients, a number of urgent questions remain.

Unclear How It Works

First, scientists are not yet completely clear on how it works, and they have yet to discover the cause of the underlying error in brain cell metabolism that seems to be the cause of Parkinsonism.

Another question is whether L-DOPA therapy slows down the progress of Parkinson's disease.

Opinions among the most experienced investigators differ, and not enough time has passed to tell. One of the problems with L-DOPA therapy is that the drug has a large number of possible side effects.

Scientists in Canada and Switzerland are combining L-DOPA with enzyme inhibitors which make possible dosage reductions and substantially reduce side effects.

However, there are many unanswered questions about the enzyme inhibitors. Metabolic disturbances in animals given inhibitors have been noted, and it has also been pointed out that the inhibitors may cause chromosome damage.

Still poorly understood are the most uncommon psychiatric aspects of L-DOPA therapy. Some patients experience impaired judgment, anxiety, depression, hallucinations, and other mental disturbances.
Rare Metabolic Defects Being Uncovered With New Diagnostic Tool

Amniocentesis—a way to diagnose disease before birth by tapping amniotic fluid and then studying the fetal cells harvested and grown from it—is still in its infancy.

But the list of diseases surrendering their biochemical secrets grows, promising to make amniocentesis into one of the most valuable diagnostic techniques available.

Tapping amniotic fluid from pregnant women, usually in their 14th-18th weeks, is a relatively simple and painless procedure.

The key to diagnosis, however, lies in knowing what to look for in the cells of fetal origin drawn out of the fluid surrounding the fetus.

If a biochemical or structural (chromosomal) defect exists in the fetal cells, the abnormality also exists in the fetus.

The metabolic defect responsible for most genetic disorders—which cause about one in five childhood deaths—is the absence of a specific enzyme.

The specific missing enzyme must be identified as the culprit in order for amniocentesis to be used to diagnose these genetic disorders.

Over the past 4 years, NINDS scientists and scientists elsewhere have forced six rare hereditary diseases to give up their biochemical secrets by discovering the exact missing enzyme in each.

Taken as a group, these diseases are known as sphingolipidoses because in each, the missing enzyme allows the build-up of a fatty material called sphingolipid in tissues.

Now that the enzymes have been identified, these six may soon be added to the list of disorders diagnosable by amniocentesis.

Dr. Roscoe O. Brady and Dr. Edwin Kolodny, NINDS Laboratory of Neurochemistry, along with Dr. Bruno W. Volk, Isaac Albert Research Institute, confirmed that the absence of hexosaminidase produces the symptoms of Tay-Sachs disease—the most prevalent of the sphingolipidoses.

Children with this presently incurable disorder suffer from mental retardation and blindness and usually die by age 5.

Their finding confirmed other studies done by Drs. John S. O’Brien and Shintaro Okada, NINDS grantee at the University of California at San Diego.

Head-joined Siamese Twins Successfully Separated by NINDS Surgeons in 1956

A unique accomplishment by neurosurgeons in the Clinical Center was the separation of the Bunton twins, Virginia and Tina.

The girls, now 14 years old, are the only head-joined Siamese twins in the United States, and perhaps in the world, to survive surgery and recover completely.

Surgery to separate the twins, which required dividing the shared bone of the two brains, was performed in 1956 by the late Dr. Maitland Baldwin, NINDS neurosurgeon.

Invitation to Observe Kuru in New Guinea Stimulates NINDS ‘Slow Virus’ Research

Six children, all victims of kuru, assembled at the Okapa research center (New Guinea) in 1957. All died of the disease within 6 months after the picture was taken.

Kuru thus became the first chronic disease of human brain shown to be caused by an infectious agent.

NINDS scientists later transmitted kuru to a second, smaller primate—the spider monkey—raising hope that the agent might be made to grow in the laboratory, where it will be easier to study and isolate.

Other Studies Launched

Institute investigators then launched into studies of other chronic, central nervous system diseases. The disease bearing the closest resemblance to kuru in America and elsewhere throughout the world is Jakob-Creutzfeldt.

A number of animals were inoculated with brain tissue taken from Jakob-Creutzfeldt patients. These injections induced disease in eight chimpanzees after incubation periods of only 12 to 14 months.

Since the discovery that kuru and Jakob-Creutzfeldt are caused by some transmissible agent, scientists in the slow virus program have extended their search to viruses which might be involved in the etiology of more prevalent neurological disorders such as multiple sclerosis, Parkinson’s disease and amyotrophic lateral sclerosis.

During a recent site visit to Washington University School of Medicine, St. Louis, Mo., Dr. Mathilde Solywoty, chief, Section on Program Projects and Clinical Centers, conferred with Dr. James L. O’Leary (right) and Dr. William M. Landau, past and present Program Director, respectively, of the school’s NINDS-supported “Coordinated Basic and Clinical Brain Research Program.”

EXTRAMURAL (Continued from Page 5)

Neurological Diseases and Stroke Council is obtained on site visits to institutions seeking support.

Each site investigator team—composed of non-Government scientists—is accompanied by the NINDS scientist-administrator responsible for managing the program area into which the application falls.

On a site visit, detailed consideration is given to the scientific merit of the proposal, the ability of the investigator, the adequacy of facilities, the relationship of budgetary estimates to the proposed work, and the overall significance of the project in relation to the need for knowledge in the scientific areas involved.

Findings of the site investigator team are summarized and transmitted to the NANDS. Composed of 12 leaders in medical science, education, and public affairs, the Council reviews each application from the standpoint of policy, program needs, and availability of funds, as well as scientific merit.

Finally, the Council sends its recommendations to the NIH Director who makes the formal awards according to these recommendations and as funds permit.
NINDS Clinicians Probe Complex Illnesses at CC

An awareness of how many "things" can go wrong with the brain and nervous system came to millions of TV viewers who weekly faced the complexities of neurosurgery with Ben Casey. The show fizzled out—the complexities have not.

They are being dealt with continuously by clinicians in the Institute's Medical and Surgical Neurology Branches. The Surgical Neurology Branch has 22 in-patients at the Clinical Center and 12-16 out-patients a week.

The decision to admit a patient, based on the patient's medical history and applicability to current studies, is made by Drs. John M. Van Buren and Ayub Ommaya.

Through studying these patients doctors are trying to find answers to a number of perplexing problems from pain to epilepsy.

In addition to those two, neurosurgeons are also currently studying head injury, diseases precipitating involuntary movements such as parkinsonism and dystonia, and brain tumor.

Engel Heads Branch

The Medical Neurology Branch headed by Dr. W. King Engel, with Dr. John R. Warmolts, associate neurologist, is studying a variety of patients, especially in neurologic and muscular problems.

Eleven clinical staff doctors see patients with muscular dystrophy, myotonia, periodic paralysis, metabolic and endocrinologic muscle disease, myasthenia gravis, neuritis, and neurological disease accompanied by protein abnormalities.

Diagnostic and basic research studies are being conducted on patients with amyotrophic lateral sclerosis and ataxia.

Babies with muscular weakness as well as their parents who are "carriers" (pass on hereditary diseases without having the disease themselves) are also seen.

Diagnostic evaluations, electromyography, and clinical biochemistry tests are helping doctors understand the processes involved.

Long-Term Perinatal Study Yielding New Knowledge About Maternity, Infant Care

The causes of certain disorders affecting children—cerebral palsy, epilepsy, mental retardation, and many communication disorders are for the most part unknown.

It is clear, however, that their origins lie in events that occur between conception and the early months of life.

One of the first actions of the newly organized staff of the Institute in 1952 was to plan a long-range program to study the nature of these prenatal and early neonatal causes of neurosensory deficit.

Thus was conceived the project which was eventually to involve thousands of medical researchers, workers, and patients.

14 Institutions Involved

It is the Collaborative Perinatal Research Project, a national program being conducted by NINDS in collaboration with 14 medical institutions.

Experiments with guinea pigs and monkeys had demonstrated that mental retardation could result from prenatal asphyxia, but data on the perinatal injuries in children was rare.

Research generally consisted of tracing the causative factors of mental retardation or cerebral palsy, usually years after the victim's birth.

Such retrospective research seemed painfully inadequate to the challenge of discovering the causes of these and other disorders.

By 1954, plans were underway to launch a prospective project for perinatal studies. This collaborative project was the first attempt to collect data early in pregnancy from women whose children would be closely checked until the age of seven.

Begun in 1959

The project began in 1959, and since then data have been gathered on 58,000 women and their offspring. Every possible detail of the deliveries of these infants was observed and recorded. Further tests followed, and each child is regularly checked thereafter until his seventh year.

Investigators are attempting to associate the results of pregnancy with specific maternal characteristics. The mothers have been carefully checked for weight, height, weight gain during pregnancy and menstural history, and the importance of these factors is being tested.

Other studies consider the possible influences of such factors as race, sex, birthweight and gestational age on the development of the child.

In the near future, timetables will be developed for processing the voluminous data from this project.

Reports are expected to focus on:

1. "The identification of prenatal factors operative 1) in neurologic problems identified in one-year-old children, 2) in neurological and developmental problems that are identified in children at 4 years and at 7 years, and 3) as precursors of deficiencies in speech, language and hearing performance."

2. "The identification of perinatal factors affecting children—cerebral palsy, epilepsy, mental retardation, and many communication disorders are for the most part unknown.

3. "The identification of perinatal factors operative 1) in neurologic problems identified in one-year-old children, 2) in neurological and developmental problems that are identified in children at 4 years and at 7 years, and 3) as precursors of deficiencies in speech, language and hearing performance."

Response to a red ring is one of the mental development tests given to 8-month-olds in the Collaborative Perinatal Research Project.

NEW AGE

(Continued from Page 4)

Training Programs Help Overcome Shortage of Neurological Scientists

The sharp rise in the number of neurological scientists in this country in the past 20 years has come about largely as a result of NINDS training programs.

When the Institute was founded, it was evident that medical ability to prevent, treat, or cure neurological and sensory disorders was suffering by a lack of trained manpower.

Thus, the recruitment and training of laboratory and clinical scientists for careers in research and teaching became a matter of first importance.

Adapts to Needs

Through the Training Grants and Awards Branch, Extramural Programs, the NINDS initiated programs to train needed specialists in neurology, ophthalmology and then an Institute responsibility—oto-otolaryngology.

Over the years Institute programs have been adapted to new training requirements as they developed and have been extended to institutions and to individual scientists throughout the Nation.

An example of the impact of the NINDS training efforts is in the field of child neurology. The first two organized child neurology training grant programs were undertaken with NINDS support in 1957.

Today, the Institute supports 12 child neurology training grant programs. In addition, more than a third of the neurology training grants recognize a child neurologist on the training staff.

Approximately 80 child neurologists have completed training within this period and are now themselves recruiting investigators providing clinical care to neurologically disordered children in academic institutional settings.

219 Programs Supported

In fiscal year 1970, NINDS supported a total of 219 training programs at a cost of $11.5 million. In addition to the 12 child neurology programs, these included 62 in neurology; 46 in oto-otolaryngology; 33 in neurosurgery; 14 in neuropsychology; 13 in neurophysiology, and 10 in neuroradiology.

Also, six in the communicative disorders; five each in medical audiology, neuroanatomy, and neurology; and five each in neuropsychology and speech pathology; three in sensory physiology; two each in cerebrovascular disorders, neurobiology, and neurochemistry and one in neurovirology.

Studies on the basic level are having direct practical implications for determining safe levels of noise in industry, transportation, and other factors in the human environment.
NHLI Plans for Centers To Solve High Priority, Specific Area Problems

The National Heart and Lung Institute intends to establish, on a competitive basis, a limited number of specialized research centers devoted to the solution of specific problems identified by the Institute as of high priority, and in one of four disease areas.

These are: arteriosclerosis, thrombosis, pulmonary disease, and by...

Program Aims Cited

The program will focus resources, facilities, and manpower on particular problems and expedite the development and application of new knowledge essential for improved diagnosis, treatment, and prevention of these diseases.

The support mechanism for the centers will be grants-in-aid but it will differ from other research grants both in its goal orientation and in the degree of NHLI participation.

In this sense, the award of a center grant will connote a special relationship between the Institute and the grantee institution.

The deadline for receipt of application is Jan. 1, 1971. Applicants may be 5...
Dr. Johns Heads NCI's Newly-Created Section Of Drug Metabolism

Brilliant, Warm, Generous, Gentle—Colleagues Eulogize Ernest Cotlove at Memorial Service

A memorial service honoring the late Dr. Ernest Cotlove was held at the Washington Hebrew Congregation on Sept. 27.

Dr. Cotlove was acting chief of the Clinical Pathology Department, Clinical Center, at the time of his death on Sept. 13 (See NIH Record, Sept. 29).

Following are excerpts from eulogies delivered at the service as well as other tributes to Dr. Cotlove:

We who were privileged to be closely associated with Ernest Cotlove during his decade in the National Heart Institute were impressed by his absolutely first-rate mind.

His brilliance and meticulousness shone in his fundamental investigations into the distribution of electrolytes in tissues, in his studies on the heterogeneity of insulin, and in the fact that he was the first to label insulin radioactively.

These same personal qualities also reflect in the method that he co-developed for chloride determination and in his contribution to laboratory medicine. His innovative accomplishments are going to remain in use for a long time.

We are all fortunate that Ernest Cotlove was available at the time when a man of his capacities was needed.

Dr. Robert W. Berliner
Deputy Director for Science, NIH

It is given to only a few to make a lasting impact on society. Ernest Cotlove was among these. Under his expert guidance, the most advanced computer processing application to laboratory automation was developed and remains today the model for all other such systems.

But his greatest and lasting contribution was a remarkable native skill in teaching. By a career thus dedicated, Ernest Cotlove's profound impact on his associates and former residents will influence laboratory medicine long into the future.

For this and for the personal privilege and benefit of knowing and learning from Ernest Cotlove, we are all deeply grateful.

Dr. George Z. Williams, Director Research Institute of Laboratory Medicine
Pacific Medical Center
(formerly chief, Clinical Pathology Department, CC)

To know Ernest Cotlove was to feel a deep sense of warmth. It was not his concern for patients alone; his calm, open look at the world around him; his focused sense of humor which saw a bright side to things in the midst of all their seriousness, or his concern with social issues which transcended concentration on real but smaller problems.

It was most of all his interest in people as individuals, his wonderful warmth as a human being.

Dr. Herbert L. Abrams
Professor of Radiology
Harvard Medical School

Ernest Cotlove was my ideal as a scientist. His contributions to science and medicine extend far beyond the publications that bear the signature of his authorship, and the techniques that are marked with the stamp of his inventiveness.

His contributions extend also to the influence that he had on other scientists who admire his work, his ideals, and his impeccable standards.

Few of us are capable of leading the same sort of life that he did, but by emulating his, we could significantly enhance our own.

Dr. Solomon A. Barson
Professor of Medicine
Mount Sinai School of Medicine

I speak most knowingly of Ernest Cotlove during the decade from 1950 to 1960 when we both participated in the beginning of the intramural research program of the National Heart Institute.

The qualities that he brought to his colleagues there were both intellectual and emotional—an enormous credential, an unflagging generosity in spirit, a warm friendliness.

How long he is remembered as a scientist, those of us whose lives were touched by his will, as long as we live, carry the memory of this fine and generous and gentle friend.

Dr. Thomas J. Kennedy, Jr.
Associate Director for Program Planning and Evaluation, NIH

(Continued on Page 11)
Dr. Kuffler will introduce the guest lecturer. Dr. Kuffler’s presentation is titled “Viewing Living Synapses and Exploration of the Chemosensitivity of the Neuronal Surface.” His fundamental studies, termed “nerve-ending/imaginative,” have potential application to ophthalmology, neuromuscular disorders, and epilepsy.

Certain neurological disorders, for example, are due to the blockage of the flow of impulses from one nerve cell to the next or from a nerve cell to a muscle cell. Other nerve diseases are caused by the conversion of a single impulse to repetitive impulses.

Describes New Preparation

In his lecture, Dr. Kuffler will discuss some of the discoveries in chemical substances. He will describe the new preparation he and his colleagues have developed for studying synaptic transmission via chemical substances. He will discuss some of the discoveries in neurobiology this method has allowed.

Viewing a preparation made from the tissue separating the stria of the frog’s heart, Dr. Kuffler can see parasynaptic nerve cells in great detail. With special optics, he has been able to directly observe neuronal cell bodies, presynaptic and postsynaptic axons, and the glial cells (supportive non-excitary cells) which surround the assembly.

In this model, Dr. Kuffler has also been able to observe cellular entities within the living nerve cells and obtain cells in which the outlines of synaptic boutons can be seen scattered on neuronal surfaces.

Study of Mechanism Possible

His ability to identify a synapse—the junction between one neuron and the next—has greatly increased his opportunity to study the mechanisms by which the synaptic bouton excites the body of the nerve cell which lies across the synapse.

The moderator of all the impulses sent across synapses is the parasynaptic nerves system and in at least some parts of the central nervous system is an excitatory chemical, acetylcholine. During his presentation, Dr. Kuffler will describe in detail his finding that sympathetic areas of the living nerve cell are more sensitive to acetylcholine than extra-synaptic regions of the cell body surface.

He will also discuss his interesting discovery in the denervated heart—the heart in which the vagus nerve, the heart’s parasynthetic or inhibitory nerve, has been cut.

Dr. Kuffler has found that new chemoreceptive areas will form in a heart deprived of its inhibitory influence. Born in Tap, Hungary, Dr. Kuffler received his M.D. in physiology from the University of Vienna in 1938.

In 1947 he became associated professor of Ophthalmology at Johns Hopkins School of Medicine where he remained until 1964 when he was named professor of Neurophysiology and Neuropharmacology at Harvard School of Medicine.

DN Pamphlet Designed To Help Older People And Diabetic Patients

Feet First, a colorful, illustrated question-and-answer booklet to help older people and diabetic patients of all ages avoid the consequences of foot infection has been published by the Division of Nursing, Bureau of Health Manpower Education.

The pamphlet also serves as a tool for teaching nursing and home health aides the rudiments of foot care for elderly and diabetic patients. An excerpt is printed below.

NIMH Art Therapy Unit Holds Seminar To Show Techniques With Families

The Art Therapy Unit of the Adult Psychiatry Branch, National Institute of Mental Health, recently held a seminar on “Art Techniques for Encouraging Families” at the Clinical Center for 16 members of the American Art Therapy Association.

Hanna Y. Kwiatkowska, who heads the unit, demonstrated—by means of video tape—the use of art therapy with families of disturbed patients. The technique points out some of the problems in the family which contribute to the patient’s mental condition. It allows the patient and members of his family to draw pictures related to their life together. Glues to the nature of problems and suggestions for their solution are often developed. Sessions are held at the Clinical Center as a part of NIMH family therapy research.

Attendees Assume Roles

Those attending viewed the tapes on a special television screen and were asked to assume the role of a family member in a simulated art therapy session.

Dr. James K. Dent, a member of the Adult Psychiatry staff, and Dr. Juliana Day Franz, a former staff member, also participated in the seminar.

Mrs. Kwiatkowska is receiving a growing number of requests to conduct seminars on her technique at schools and hospitals in this country and abroad.

Feet First may be purchased in quantity at 60 cents a copy from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

A single copy may be obtained from the Division of Nursing, 9000 Rockville Pike, Bethesda, Md. 20014.

Dr. Lenfant Will Direct Expanded NHLI Program For Pulmonary Research

Dr. Claude J. M. Lenfant has been appointed associate director for Lung Programs of the National Heart and Lung Institute.

Dr. Lenfant will plan and administer an expanded institute program of research and training activities directed against emphysema and other lung diseases. He will also coordinate NHLI efforts with those of other Institutes of NIH.

In addition, he will work with other Federal agencies.
Conferees to Seek Best Systems for Reporting Adverse Drug Reactions

Methods of detecting, evaluating, and reporting adverse reactions to drugs will be discussed at an International Conference on Adverse Reactions Reporting Systems to be held Oct. 22-23 in the U.S. Department of Commerce Auditorium.

The Drug Research Board of the National Research Council, National Academy of Sciences-National Academy of Engineering, is organizing the conference. NIH is one of several co-sponsors.

Members of the scientific community are welcome. Registration fee for scientists attending is $5. Registration forms may be obtained from the Drug Research Board by phoning 961-1600.

Data Deficient

The Drug Research Board reports that detection and scientific evaluation of adverse reactions to drugs are deficient in the United States at present.

As a result, the Board concluded that much current data on this subject are of questionable value. Also, information which might be obtained through current programs does not effectively reach concerned investigators.

The Board recommends closer coordination of data from the various programs in order to disseminate this information more quickly.

Speakers from the United States and several countries with well-developed systems for reporting adverse drug reactions will outline ways in which data might be made more closely co-ordinated.

Three NIH scientists will take part in the program. Dr. Thomas C. Chalmers, Director of the Clinical Center, will be chairman of a session, Friday morning, Oct. 22, on “Investigation of Specific Problems.”

Latest Participants in NIH Visiting Scientists Program Listed Here

<table>
<thead>
<tr>
<th>Date</th>
<th>Name and Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/29</td>
<td>Dr. Gary E. R. Hook, New Zealand, Pharmacology and Toxicology Branch, Sponsor: Dr. Hans L. Falk, NIEHS, Research Triangle Park, N.C.</td>
</tr>
<tr>
<td>9/15</td>
<td>Dr. Yoshio Shimada, Japan, Laboratory of Molecular Aging, Sponsor: Dr. Bertram Sadler, NICHD, Baltimore City Hospitals, Baltimore, Md.</td>
</tr>
<tr>
<td>9/15</td>
<td>Dr. John R. Bend, Canada, Pharmacology and Toxicology Branch, Sponsor: Dr. Hans L. Falk, NIEHS, Research Triangle Park, N.C.</td>
</tr>
<tr>
<td>9/22</td>
<td>Dr. Satoko Ohinata, Japan, National Center for Prevention and Control of Alcoholism, Sponsor: Dr. Jack Mandelson, NIMH, Barlow Bldg., Rm. 12A0B</td>
</tr>
<tr>
<td>9/28</td>
<td>Dr. Sotoshi Mizuno, Japan, Laboratory of Physiology, Sponsor: Dr. D. Carleton Gajdusek, NINDS, Bldg. 36, Rm. 5B16</td>
</tr>
<tr>
<td>9/20</td>
<td>Dr. Israel Schechter, Israel, Laboratory of Biomedical Sciences, Sponsor: Dr. Philip Leder, NICHD, Bldg. 10, Rm. 5B1E</td>
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Demonstrated competence, may request examination for qualification for skipper.

Skippers are eligible for scheduling boat rentals during the sailing season. Applications for skipper examination also are available at the R&W office. The examination fee is $6.

An additional charge is made for rental of a Flying Scott for half a day, which may be shared with other applicants.

Sailing, Sailing, Over . . .

Registration Deadline For Classes Oct. 20

Registration for the Fall 1970 beginners class instruction in sailing the Flying Scott slopes owned by the NIH Recreation and Welfare Association will continue through Oct. 20.

Forms, instructions and class materials are available at the R&W office, Rm. 1A-18, Bldg. 81.

The course, given by the NIH Sailing Association, requires attendance at one or two orientation sessions that will be held at NIH preceding the boat instruction and practice sailing near Annapolis early in the evenings on 6 consecutive weekdays — Monday through Friday.

Registration requires a deposit of $30 for instruction and boat rental. The Sailing Association membership fee is $6; course materials cost $2.75. Those completing the course qualify as crew members of the Sailing Association.

Crew members, or those with previous sailing experience and demonstrated competence, may request examination for qualification for skipper.

For Classes Oct. 20

Sailing Association membership fee is $6; course materials cost $2.75. Those completing the course qualify as crew members of the Sailing Association.

Crew members, or those with previous sailing experience and demonstrated competence, may request examination for qualification for skipper.

In addition, the Sailing Association offers a “Multi-Phase Prospective Study of Women Using Oral Contraceptives.”

On Friday afternoon (Oct. 23), Dr. David P. Rall, associate scientific director for Experimental Therapeutics, NCI, will participate in a session entitled “Coordination of Programs.”

Guest participants in the program are the National Cancer Institute, National Institute of Child Health and Human Development, and National Institute of General Medical Sciences, the Food and Drug Administration, the Pharmaceutical Manufacturers’ Association, and the Registry of Tissue Reactions to Drugs.

Harold Joyner, nursing assistant, CC Nursing Department’s Neurology Nursing Service, receives an award and $50 check for his suggestion to alter a foot board from CC Nursing Department chief Louise C. Anderson (left) and Elizabeth Edwards, chief, Neurology Nursing Service. By adding one stationary stainless steel bolt, swiveling of the board is prevented and the patient is given support to prevent foot drop after surgery. A second removable bolt permits adjustment of the board to fit individual patients.