

MINNEAPOLIS MEDICAL RESEARCH FOUNDATION, INC.

at Hennepin County General Hospital  
Minneapolis, Minnesota

October 14, 1964

Welcome to the Research Facilities of  
The Minneapolis Medical Research Foundation

The hyperbaric research facility which you are visiting has recently been completed with final installation of the medical gas systems. We have been able to use the four chambers for research treatment and experimental work since May 1, 1964 and up to October 1, 1964 we made 146 dives in the facility.

We are now ready for an expanded usage of this hyperbaric complex. We are pleased you can be with us today to learn something of this new field of medicine and surgery.

General Purpose of Hyperbaric Medicine

The basic physiologic accomplishment made possible by the treatment of subjects under increased atmospheric pressure is the saturation of the blood and body fluids with oxygen in a physically dissolved state. The physical gas laws established by Henry, Boyle, Charles, and Dalton are basic to an understanding of this method. According to Henry's Law -- the quantity of a gas dissolved into a liquid increases directly as the pressure exerted on the liquid by a given gas. According to the Law of Dalton -- in a mixture of gases the quantity of a specific gas dissolved by a liquid depends upon the partial pressure of that gas in equilibrium with the liquid. Thus, it can be seen that 100% oxygen given through a mask or an endotracheal tube provides physically dissolved oxygen to the body tissues and fluids in large quantities. In order that tissues of the body receive the benefit of hyperbaric oxygenation a circulation must be present to some degree. However, when available oxygen in the physically dissolved state is increased to high levels tissues suffering from hypoxia on the basis of reduced flow can be benefitted. This is a new area of medical research and many years of careful and thoughtful work will be necessary to bring this over-all method to more final fruition.

The Minneapolis Hyperbaric Research Facility

The financing for this hyperbaric facility has come from the National Institutes of Health and from our own community.

1. Hyperbaric chambers and ancillary mechanical equipment. . . . . \$342,000.00  
(From the National Institutes of Health, National Heart Institute)
2. The hyperbaric research building adjacent to the parent research building  
National Institutes of Health . . . . . 72,000.00  
Anonymous benefactors from Minneapolis. . . . . 112,000.00  
Total cost of hyperbaric facility . . . . . \$526,000.00

Annual support for the research hyperbaric chambers is provided in a grant from the National Institutes of Health in the amount of \$65,000 per year. Additional operating funds will be sought from research agencies and local foundations.

Sponsorship for the Hyperbaric Program

Principal Investigator. . . . Claude R. Hitchcock, M.D., Ph.D.

Co-principal Investigators. . . John J. Haglin, M.D., Ph.D.  
Frederick W. Hoffbauer, M.D., M.S.  
Frank E. Johnson, M.D., M.S.

Immediate Applications for Hyperbaric Medicine

1. Corrective heart surgery for cyanotic infants.
2. Treatment of gas gangrene infections.
3. Treatment of carbon monoxide poisoning.
4. Treatment of questionably viable skin flaps.
5. Acute respiratory insufficiency.
6. "Bends" following scuba diving.

Areas of Particular Interest for Research

1. Infections including tuberculosis, tetanus, and other common organisms.
2. Cancer therapy using hyperbaric oxygen and chemotherapeutic agents.
3. Applications in organ grafting.
4. Acute circulatory insufficiency.

Claude R. Hitchcock, M.D.  
President of the Foundation

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