



## A SNAPSHOT OF PEOPLE, PAPERS AND BREAKTHROUGHS OVER THE PAST 85 YEARS

Baker IDI Heart and Diabetes Institute is a world renowned medical research facility. Our work extends from the laboratory to hospital research and wide-scale national and international community studies with a focus on diagnosis, prevention and treatment of diabetes and cardiovascular disease. Over the years, our researchers have been responsible for many groundbreaking advances including:

- › Establishing open heart surgery in Australia (in collaboration with The Alfred Hospital)
- › Proving that exercise can lower blood pressure
- › Improving preservation techniques for the long distance transport of donor hearts for transplantation
- › Proving that mental stress and cigarette smoking both provide powerful, selective and potentially harmful stimulation of the nerves of the heart
- › Developing techniques to assess stiffness of arteries, enabling the reliable early detection of atherosclerosis and hypertension
- › Developing a method to repair heart valves without surgery
- › Identifying key factors involved in blood clotting
- › Defining the differences between the two forms of diabetes, type 1 and type 2
- › Initiation and publication of findings from AusDiab; the first national study to provide estimates of the number of people with diabetes and obesity
- › Establishing the first 'one-stop shop' for diabetes care in Australia
- › Developing the first assay for a predictive test for type 1 diabetes
- › Pioneering the first home blood glucose monitoring in Victoria and one of the first in the world

**IN 2008 THE BAKER HEART RESEARCH INSTITUTE MERGED WITH THE INTERNATIONAL DIABETES INSTITUTE (WHICH HAD OPERATED IN MELBOURNE FOR OVER 25 YEARS) TO FORM BAKER IDI HEART AND DIABETES INSTITUTE.**

1926-1948

**April 1, 1926: The Baker Medical Research Institute is established.**

When John F. Mackeaddie, a clinical doctor and medical researcher, had the idea for improving the laboratory facilities of The Alfred Hospital, he wanted the hospital to be able to keep up with the exciting new advances that were occurring overseas, especially in relation to the management of diabetes and other metabolic disorders. He was able to persuade his friend, the pharmacist and philanthropist Thomas Baker and his wife, Alice and sister-in-law, Eleanor Shaw, to assume financial responsibility for a medical institute. Together they decided that the institute should not only provide a better laboratory service for the hospital but should also have facilities for medical research. The Baker Medical Research Institute was born.

**Research 1926 – 1948:**

The institute's relationship with The Alfred Hospital from its very formation suggested it would evolve as a place of clinically relevant research. An overview of early research projects, before cardiovascular disease became the main focus in 1975, confirms this was the case. Early Baker research pursuits range from surgery to asthma and infectious diseases. Important early projects ranged in focus from the central nervous system and pioneering work by Mackeaddie and colleagues into better techniques for X-rays of the cerebrospinal fluid and studies of its cell content and chemistry in various diseases. Their work greatly improved the diagnostic ability for diseases of the central nervous system.

From this base, Laurence Cox, between 1930 and 1938, was able to relate clinical observations with pathological findings in a large series of brain tumours. His research was reviewed in the American Journal of Pathology in 1933. Work in infectious diseases by the Baker's first director, William J Penfold, led to a new technique for bacteriological research: "blood culture", by which organisms circulating in the bloodstream were grown in the laboratory.

Charles Richter and Beno Gutenberg develop the Richter scale for measuring earthquakes.

1932

Director 1938-1949 Arthur Basil Corkill.

1938

First assembly (and calculations) of a general purpose electronic computer, covering 1800 feet of floor space.

Director 1949-1974 Tom E.Lowe.

1949

Virologist Frank Fenner releases the myxoma virus, to control rabbits, in the Murray River Valley.

1950

*Venous Occlusion Plethysmography: A critical study*  
Alfred J. Barnett MD, FRACP, FRCP.

1951

*Fluid Balance in Congestive Cardiac Failure two Mechanisms in Diuresis*

T.E. Lowe, MD, DSc Melb, FRACP, MRCP

- › First director of the Clinical Research Unit (now known as ABMU), 1949.
- › Director of the Baker 1949-1974.

1952

*An Anti-Insulin Factor in the Plasma of Diabetic Patients*

Joseph Bornstein and Phyllis Trewella

Professor Joseph Bornstein, MD, DSc, FRACP

- › At the Baker from 1948 -1952.
- › Probably the first to demonstrate the metabolic distinction between types 1 and 2 diabetes.

US physician Jonas Salk develops the first polio vaccine  
February 6, first use of a mechanical heart in a human patient.

First organ transplant: Richard Herrick received a kidney from his twin brother Ronald at Boston's Peter Bent Brigham Hospital on December 23, 1954.

1954

*The Vectorelectrocardiogram in Bundle Branch Block*

T.E. Lowe and J.M. Gardiner

Dr JM Gardiner MD, FRCP, FRACP, FACC

- › Dr Gardiner was a superb cardiologist who brought modern cardiology to Melbourne in the 1950s and established the Cardiovascular Diagnostic Service. A great teacher.

1955

*Gastric, Duodenal and Jejunal Motility in Man: Physiological studies by Balloon-Kymography*

Roderick Andrew AO, MD, FRCP, FRACP

- › Professor Andrew probably had the longest association with the Baker, from 1947 until his death in the mid-90s. An eminent gastroenterologist and first medical dean at Monash University.

1954 – *The Mechanism of Arterial Hypertension: A Comparison of the Effects of Hexamethonium Bromide in Hypertensive and Normotensive Patients.*

April 18, death of Albert Einstein.

1957

*The Nature of the Pigmentary Disturbance in Addison's Disease*

Bryan Hudson and Geoff Bentley

Professor Bryan Hudson, DSc, MD, FRCP, FRACP

- › A most distinguished endocrinologist with major findings on pituitary hormones and first Monash professor of Medicine.

Associate Professor Geoff Bentley, PhD

- › Led pharmacology research from 1952-1955.

April 12, Russian cosmonaut Yuri Gagarin becomes first human in space.

1961

*Total Body Perfusion*

G.R. Stirling, K.N. Morris and F. Kincross

Dr George Stirling, MBBS, FRACS, FACS (1955-1962)

- › Dr Stirling pioneered research into the beginnings of modern cardiac surgery – heart-lung perfusion systems, myocardial preservation, and hyperthermia.

Dr. Ken Morris

- › Performed the first open-heart operation in Australia in 1957.

1963

*Experimental Pancreatitis: Use of a new Antiproteolytic Substance, Trasylol*

A.D. McCutcheon MD, FRACP and D Race, MBBS

- › Dr Doug McCutcheon worked at the Baker at various times from 1950 until 1961.

January 11, US surgeon-general makes first announcement that smoking may be bad for health.

1964

*A Structural Study of Abnormal Haemoglobins Occurring in New Guinea*

C.C. Curtain

Dr Cyril Curtain PhD, DSc (1955-1966)

- › Dr Curtain was a protein chemist and biochemist who conducted outstanding research on blood proteins in clinical disorders.

January 2, first successful human heart transplant.

1968

July 20, First manned moon landing.

US Department of Defence invents the internet.

1969

*Myocardial Function during  $\beta$ -Adrenergic Blockade*

Winifred G. Naylor

Professor Gwen Naylor, DSc (1955-1972)

- › Professor Naylor was one of the Institute's most prolific and innovative scientists and an international authority on myocardial metabolism, function and pharmacology.

Her work contributed greatly to the introduction of calcium channel blockers, a keystone of treatment for high blood pressure and angina.

May 14, launch of the first US space station, Skylab.

1973

