



J.J.R Macleod, MD

Playing a vital – though often neglected – role in the discovery of insulin, and making a world-class, history-making contribution to research, Dr. John James Rickard (J.J.R.) Macleod is now recognized for collaborating in one of the most important breakthroughs in medicine. Already well known internationally for his research in carbohydrate metabolism and physiology, Dr. Macleod was recruited to the University of Toronto from the United States, where he directed the research that led to the discovery and clinical use of insulin as an effective therapy for diabetes mellitus.

Dr. Macleod received his medical degree at the University of Aberdeen. What followed were many prestigious appointments in London, England and the United States. In 1918, he was elected Professor of Physiology at the University of Toronto, where he was made director of the Physiological Laboratory and Associate Dean of the Faculty of Medicine.

The uneasy story of the discovery of insulin begins in 1920, when Dr. Banting took his research proposal on the pancreas and diabetes to Dr. Macleod's laboratory. Dr. Macleod worked closely and, often times, in great conflict with Dr. Banting in the planning and execution of the research that led to the discovery. After extensive historical analysis and an investigation by the Nobel Prize Committee, it is clear that Dr. Banting's research proposal would not have been successfully completed without Dr. Macleod's contributions. As director of the work, he also played a critical role after the discovery in overseeing insulin production, clinical trials, licensing and ongoing research.

Dr. Macleod's interest in carbohydrate metabolism and especially in diabetes began in 1905 and he published a multitude of papers on carbohydrate metabolism and experimentally-produced glycosuria. Dr. Macleod's curiosity and meticulous research methods took him into a wide range of fields, including work on the phosphorous content of muscle, air sickness, electric shock and the chemistry of the tubercle bacillus and the carbamates. He was also instrumental in the introduction of scientific methods of investigation into clinical work. Beyond the laboratory, he was a very successful teacher and popular lecturer and his students and research associates found him a sympathetic and stimulating worker who would not tolerate careless work.

For his complete body of work, both during and after his tenure in Canada, Dr. Macleod was elected a Fellow of the Royal Society of Canada, has received several honorary doctorates, at the Universities of Toronto among others, and also holds many international honours. In 1922, Dr. Macleod shared the 1923 Nobel Prize in Physiology or Medicine with Dr. Frederick Banting.