

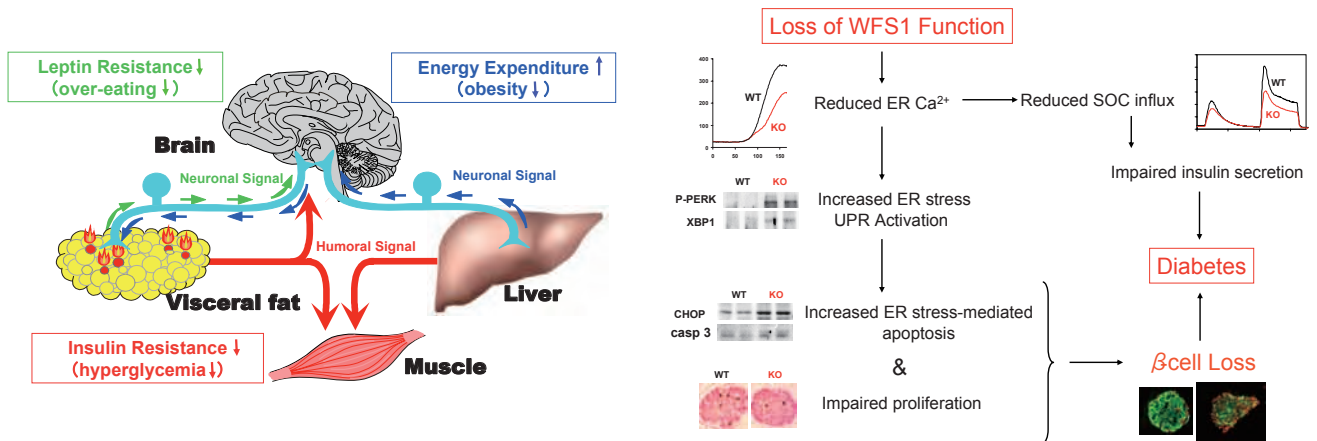


Profile

Yoshitomo Oka, MD PhD, is currently a professor of medicine and chief of the Diabetes and Molecular Metabolism division at Tohoku University Graduate School of Medicine and University Hospital. He graduated from School of Medicine at the University of Tokyo in 1974, and has since focused on lifestyle related diseases, particularly diabetes mellitus. His pioneering work on glucose transport is highly regarded world-wide. He has also conducted elegant experiments on genes causing diabetes and the mechanisms of pancreatic beta cell survival. He has received many awards including the Japan Diabetes Society Award (for a young investigator) in 1992, the Japan Endocrinology Society Award (for a young investigator) in 1994, and the Japan Diabetes Society Award (for an established investigator) in 2008. He was a chairman of the 50th Japan Diabetes Society Meeting in 2007 and has been nominated as chairman of the Japanese Society of Internal Medicine for 2009.

Research Activities

Metabolism is coordinated and regulated via interactions among different organs / tissues throughout the body. This coordinated metabolic regulation is apparently essential for maintaining systemic homeostasis, particularly glucose and energy metabolism. Therefore, communication among organs / tissues is extremely important and disturbance of this control system may lead to the development of metabolic disorders. Insulin secreted from pancreatic beta cells is one of the important humoral factors necessary for communication. In addition, Professor Oka's research group has identified afferent autonomic nerve signals from intra-abdominal adipose tissue that modulate hypothalamic leptin sensitivity and regulate food intake. The research group has also found that metabolic information originating in the liver reaches the brain and increases sympathetic outflow into muscle and adipose tissues. Their findings indicate that, in addition to humoral factors including adipocytokines, neuronal circuits involving autonomic nerves constitute an important metabolic regulatory system. The brain obtains a variety of metabolic information from peripheral organs / tissues through these two avenues, resulting in cooperative metabolic regulation among tissues / organs throughout the body.



Message

Clinical medicine and the medical sciences in general are making rapid progress. Medical science researchers have contributed to this remarkable progress. I hope that you will be one of these medical science researchers.

An unexpected discovery can lead to extraordinary progress. Such discoveries are often a matter of "serendipity". Nobody truly knows what is required for "serendipity" to occur. The only thing I know is that "luck comes to scientists who make every effort to prepare themselves to recognize luck when it arrives."

We recently discovered the metabolic information highway, which is a neuronal network involved in the maintenance of systemic homeostasis. We are currently searching for the molecule(s) activating the nerve endings reflecting the metabolic states of organs. This discovery is anticipated to lead to novel therapies for diabetes associated with obesity, a major problem in this era of over-nutrition.