



# Svetlana Masgutova Educational Institute

*The Masgutova Neurosensorimotor Reflex Integration - MNRI® Method*

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## **Claude Bernard, French Experimental Physiologist, 1813-1878**

Bernard, a French Physiologist, was best known during his lifetime for discoveries relating to digestive processes, the liver, and regulation of the blood supply by vasomotor nerves. More specifically, he discovered that pancreatic secretions helped to break down fat molecules to aid the process of digestion and that the principle processes of digestion take place in the small intestine and not the stomach. His next discovery uncovered the liver's ability to break down glycogen energy reserves into sugar as a source of quick energy for the body and to keep sugar levels in the body constant. Finally, he discovered that the vasomotor nerves control the widening and narrowing of blood vessels in response to temperature changes in the environment, constricting in cold weather to conserve energy and expanding in hot weather to dissipate heat. As Bernard advanced his work on blood vessels and thought about the body's ability to maintain a constant internal temperature, he began to formulate his ideas about the constancy of the internal environment of the body. In 1854, he formally presented his concept of automatic constancy of milieu interieur (internal environment).

“ The fixity of the milieu supposes a perfection of the organism such that the external variations are at each instant compensated for and equilibrated . . . All of the vital mechanisms, however varied they may be, have always one goal, to maintain the uniformity of the conditions of life in the internal environment . . . All of the vital mechanisms, however varied they may be, have always one goal, to maintain uniformity of the conditions of life in the internal environment . . . The stability of the internal environment is the condition for the free independent life.” (C. Bernard Lectures on the phenomena common to animals and plants, 1878, Translated publication 1874, Hoff, Guillemin)

Between 1854 and the time of his death in 1878, Bernard would continue to expand his concept of milieu interieur to explain the constant blood sugar levels uncovered in his work on the liver, the pancreatic juices he had revealed in his work on digestion, and much more. Few took note of Bernard's insightful revelations during his lifetime despite the central role they played in many of his well-attended lectures and his continued writing on the subject. After his death, milieu interieur slowly worked its way into studies with sea animals and physiology of mammals. It was not until American physiologist Walter Cannon, however, that Bernard's concept of milieu interieur gained the central recognition in neurophysiology and psychology that it deserved. (C. Gross, Claude Bernard and the Constancy of the Internal Environment, *The Neuroscientist*, 1998, p. 383-384)