Abstract

Over the last decade the view that the adult central nervous system is a rigid construct, and that there is no recovery following its injuries has been revised. My work has focused on understanding spinal cord injury induced neuroplasticity in order to harness this naturally occurring repair process into treatments. This quest had started on a straightforward path by focusing on rewiring of injured axons, however quickly developed into an odyssey involving adaptive changes (beneficial and detrimental) at various anatomical and physiological levels, far beyond the central nervous system. Such changes include, changes in neuronal properties, to hypoxia in the spinal cord and gut dysbiosis. The many pieces of the puzzle of spinal cord injury induced plasticity opens up various new treatment approaches.