

ELECTRODES AND CHRONIC OPTIC NERVE STIMULATION

Jean Delbeke

*Department of Physiology & Pharmacology, Université Catholique de Louvain,
Brussels, Belgium*

Abstract

Visual pathways are often schematized as a parallel afferent transmission of pixel image matrices. Suggested interfaces would thus have numerous contacts in close proximity to the target elements. However, well organized tissue reactions would actively keep electrodes away from the neural units.

Alternatively, self sizing spiral cuffs were wrapped around the optic nerve of two blind volunteers in an attempt to develop a visual prosthesis. Unexpected features of the optic nerve code have emerged. This interface remained well tolerated for more than ten years. However, there is still a long way to go before to reach the useful vision rehabilitation.

Keywords: implantable electrodes, foreign body reaction, visual prosthesis, optic nerve code, neural interface