ADVANCES IN TECHNOLOGY-ASSISTED NEUROREHABILITATION

Edited by

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CHAPTER

15

Invasive neuromodulation as a tool for neurorehabilitation

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OUTLINE

15.1 Introduction

The current meaning of "invasive neuromodulation" implies the ability to modify the activity of the nervous system through the targeted administration of a stimulus, using mainly electrical energy or chemical agents for this purpose, oriented to different specific nervous structures, central and/or peripheral. Emerging trends involve the targeted introduction of genes or gene and light regulators (optogenetics).

Although the intimate mechanisms of neuromodulation are not very well-known, empirical effectiveness has led to considerable clinical application.

This therapeutic strategy has as a primary objective to normalize, modulate, or restore altered nerve circuits in different diseases that fundamentally affect the nervous system.

Its origin, already present in ancient cultures, evokes the use of natural sources that generate electric current, such as the torpedo fish, to mitigate conditions that cause pain. Through the direct application of this specimen on the affected area, analgesia could be achieved.

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