**INTRODUCTION TO PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION**

**Proprioceptice Neuromuscular Facilitation (PNF)** is a concept of treatment. The basic of this method works up an american physician and neurologist Herman Kabat with physiotherapists Margaret Knott and Dorothy Voss. Its underlying philosophy is that all human beings, including those with disabilities, have untapped existing potential (Kabat 1950).

Authors don’t discriminate between weakened muscles from inactivity or from paresis (EIDE periferal or central). That’s why this koncept is practicable in all medical branches.

**The keystone of PNF:** facilitation of motor efferent centres and pathwas on the base of systematic stimalation of afferent systems. It means facilitation of movement per signalling from owns body (exteroceptors, proprioceptors). Impulses from these receptors influence motor neurons in front spinal horns in unity with efferent impulses from brain centres. We exploit impact of visual and auditive receptors.

The basic neurophysiologic principles

* **Afterdischarge:** The effect of a stimulus continues after the stimulus stops. If the strength and duratiion of the stimulus increse, the afterdischarge increase also. The feeling of increased power that comes after a maintained static contraction is a result of afterdischarge.
* **Temporal summation:** A succession of weak stimuli (subliminal) occuring within a certain (short) period of time combine (summate) to cause excitation.
* **Spatial summation:** Weak stimuli aplied simultaneously to different areas of the body reinforce each other (summate) to cause excitation. Temporal and spatial summation can combine for greater aktivity.
* **Irradiation:** This is a spreading and increased strength of a resonse. It occurs when either the number of stimuli or the strength of stimuli is increased. The response may be either excitation or inhibition.
* **Successive induction:** An increased excitation of the agonist muscles follows stimulation (contraction) of their antagonists Techniques involving reversal of antagonists make use of this property (Induction: stimulation, increase excitability).
* **Reciprocal innervation (reciprocal inhibition):** Contraction of muscles is accompanied by stimultaneuos inhibition of their antagonists. Reciprocal innervation is a necessary part of coordinated motion. Relaxation techniques make use of this property.

Server: https://uloz.to (there is the whole textbook)

Find the file: PNF in practise (pdf, 12 MB) – the author: Susan S. Adler, Dominiek Beckers, Math Buck (https://uloz.to/file/ZLA6SDYh/pnf-in-practice-pdf)