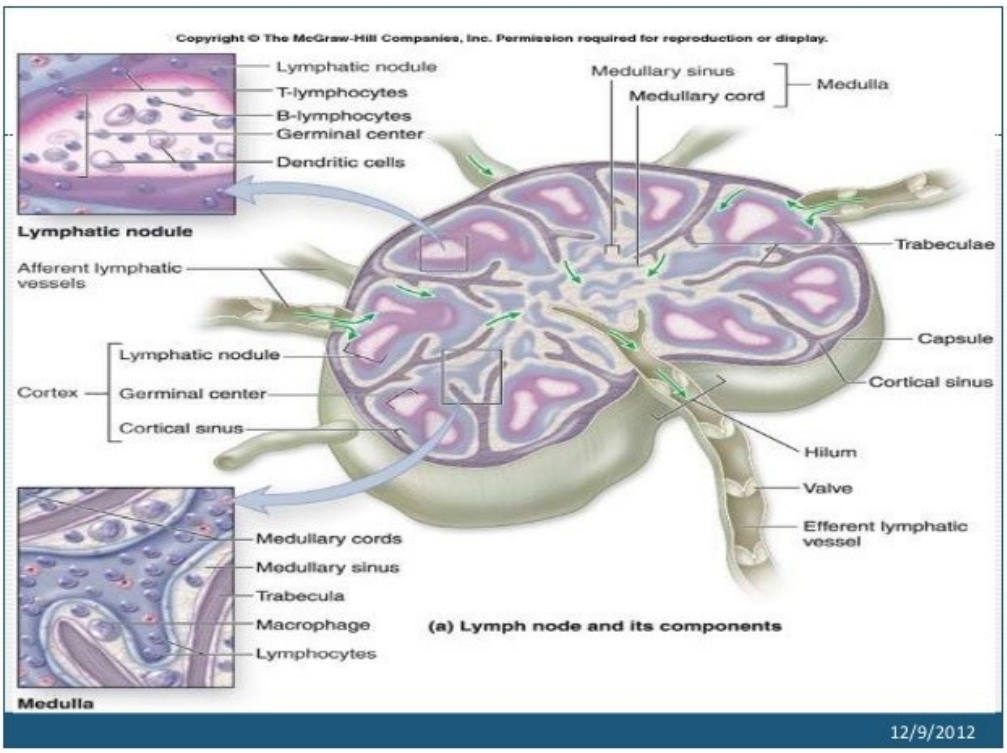
Medical PEMF Studies

cell2n
Innovative Cellular Healing

Email Info@cell2n.com
Website www.cell2n.com

L Y M P H O C Y T E S

The effect of exposure to high flux density static and pulsed magnetic fields on lymphocyte function.



1. Bioelectromagnetics. 2003 Sep;24(6):373-9.

Aldinucci C(1), Garcia JB, Palmi M, Sgaragli G, Benocci A, Meini A, Pessina F, Rossi C, Bonechi C, Pessina GP.

Author information:
(1)Department of Physiology, University of Siena, Siena, Italy.

We investigated whether a combination of static electromagnetic field (EMF) at a flux density of 4.75 T together with pulsed EMF at a flux density of 0.7 mT generated by an NMR apparatus (NMRF), could promote movements of Ca(2+), cell proliferation, and the eventual production of proinflammatory cytokines in human lymphocytes as well as in Jurkat cells, after exposure to the field for 1 h. The same study was also performed after activation of cells with 5 micro g/ml phytohaemagglutinin (PHA) immediately before the exposure period. Our results clearly demonstrate that NMRF exposure increases the [Ca(2+)](i), without any

cell2n
Innovative Cellular Healing
Email Info@cell2n.com
Website www.cell2n.com

proliferative, or activating, or proinflammatory effect on both normal and PHA stimulated lymphocytes. Accordingly, the levels of interferon gamma, tumor necrosis factor alpha, interleukin-1beta, interleukin-2, and interleukin-6 remained unvaried after exposure. Exposure of Jurkat cells statistically decreased the [Ca(2+)](i) and the proliferation. This is consistent with the low levels of IL-2 measured in supernatants of these cells after exposure. On the whole our data suggest that static and pulsed NMRF exposure contribute synergistically in the increase of the [Ca(2+)](i) without any activating or proinflammatory effect either in normal or in PHA challenged lymphocytes. In Jurkat cells, by changing the properties of cell membranes, NMRF exposure can influence Ca(2+) transport processes and hence Ca(2+) homeostasis, causing a marked decrease of proliferation.

Copyright 2003 Wiley-Liss, Inc.

PMID: 12929155 [PubMed - indexed for MEDLINE]