

NUTRITION PREVENTS DISC CELL DEATH GREATER THAN THE CHEMICAL IRRITANT INTERLEUKIN CAUSES IT

Zhao, CQ; Liu, D; Li, H; Jiang, LS; Dai, LY. Interleukin-1 beta enhances the effect of serum deprivation on rat annular cell apoptosis. APOPTOSIS 12 (12). DEC 2007. p.2155-2161

Interleukin-1 beta (IL-1 beta) suppresses the synthesis of matrix components and of the disc cells by stimulating the expression of matrix metalloproteinases, leading to disc degeneration. To determine if this is a cause of apoptosis (select disc cell death), rat annular cells were cultured with or without serum supplement. First-passage rat annular cells were cultured with 0% or 10% fetal bovine serum (FBS) supplement and stimulated with 0, 10, 20 or 50 ng/ml IL-1 beta for 12, 24 or 48 h. When rat annular cells were cultured with 10% FBS supplement, no significant changes in apoptotic incidences were seen; however, serum deprivation for 24 h led to an increase in apoptotic incidences. Results indicate that IL-1 beta alone is not a sufficient stimulus to induce disc cell apoptosis and that in order to suppress disc cell apoptosis, improving the nutrient supply to the disc may be more effective than antagonizing the adverse effects of IL-1 beta.

Editor Note:

Concept: NUTRITION IS MORE IMPORTANT IN PREVENTING DISC DEGENERATION THAN CHEMICAL IRRITANTS ARE IN CAUSING IT.

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