

Transfer Factor Plus: An In Vivo Study

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Purpose of Study: To determine the effectiveness of natural products in increasing the function of Natural Killer (NK) cell activity in chronic illnesses. In this study persons suffering from Fibromyalgia were chosen to take part in an in vivo study.

Background: It is felt that chronic illnesses represent immune system failures in most instances, particularly in the Fibromyalgia Syndrome. There have been many published reports of low Natural Killer cell activity or function in persons with Fibromyalgia.

Natural Killer Cells: Natural Killer cells are the first line of defense in our innate immune systems. Natural Killer cells are lethal lymphocytes containing granules filled with potent chemicals. They do not need to recognize a particular antigen but rather attack “nonself”. They protect against and target tumor cells and a wide variety of infectious microbes, particularly virally infected cells. NK cells kill by binding to their targets and delivering a lethal burst of chemicals that produce holes in the target cell’s membrane. Fluids seep in and leak out and the cells burst and die.

Patient Selection: Nine patients were enrolled in the study who had been diagnosed with Fibromyalgia and who weren’t taking any known immune stimulants at the time of enrollment.

Nutritional Supplements Used in Study:*

Name:	Dosage:
Transfer Factor Plus™	One, twice daily, days 1-10 Two, twice daily, days 11-20
Fibro AMJ™Daytime Formula	Two, three times daily
Fibro AMJ™Nighttime Formula	One, nightly
Choice 50™Antioxidants	One, twice daily

Length of Study: Blood work was drawn on day 1 before the beginning of the use of the products and on day 21 after using the products for 20 consecutive days.

Methodology: The patients' blood was drawn and peripheral blood mononuclear cells were isolated and NK cell activity was assessed by a variation of the 51Cr release assay. The target cells were live K562 erythroleukemic cells. NK cytolytic activity was calculated at the baseline of day 1 and on the 21st day.

Patient NK Results

	4/02/00	4/23/00
Name of Patient	NK Assay Baseline %	NK Assay Final %
JB	13	29
DS	13	19.5
CW	13	31.5
PM	6	25.5
LG	9	25.5
SR	10	25
BM	6.5	27
JK	8.5	23.5
MW	11	35.5
Mean of Results	10	26.9

Comment: If a person has a Natural Killer cell activity below 20%, they are felt to be more susceptible to acute or chronic illnesses, or to have a compromised ability to recover from existing illnesses. All of the nine volunteers had NK cell function of less than 20% activity with a range of 6 to 13%, and an average of the group of 10% activity.

Summary: All of the nine patients had significant increases in Natural Killer cell activity. The levels after 20 days on the products now ranged from 19.5% to 35.5% with an average of 26.9% or 269% of baseline.

Prior in vitro testing of Transfer Factor Plus revealed an increase in activity of 248%. Other products were used in addition to Transfer Factor Plus to address other issues associated with Fibromyalgia (Fibro AMJ Daytime and Nighttime Formulas and Choice 50 antioxidants). These products are not known to have an effect on natural killer cell activity. We believe the significant immunostimulatory effect was achieved through the use of Transfer Factor Plus.

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*Products provided by 4Life™ Research
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