

■ ELISA/ACT Biotechnologies LLC ■

LRA by ELISA/ACT[®]

CLINICAL PEARLS UPDATE#9

Fibromyalgia

November 3, 2003

Dear Colleague:

Fibromyalgia (FM) affects 12-18 million Americans according to the American College for Rheumatology. Successful comprehensive management using LRA by ELISA/ACT[®] tests and treatment plans are illustrated in the attached abstract reports. Attached is a clinical update newsletter that details how this advanced approach can be applied in your practice with beneficial results.

Functional, *ex vivo* lymphocyte response assays (LRA by ELISA/ACT) offer the most advanced tests available for determination of the individual's responses to the widest available range of substances tested by any lab in the world.

We are grateful for the opportunities to be of service to you and your patients.

Sincerely,

Russ Jaffe, MD, Ph.D., CCN, NACB
Lab Director

Shanklin DR, Stevens MV, Hall MF, Smalley DL. Environmental immunogens and T-cell-mediated responses in fibromyalgia: evidence for immune dysregulation and determinants of granuloma formation. *Exp Mol Pathol* 2000;69(2):102-118.

Department of Pathology, University of Tennessee, Memphis, TN 38163, USA.

Thirty-nine patients with fibromyalgia syndrome (FMS) according to American College of Rheumatology criteria were studied for cell-mediated sensitivity to environmental chemicals. Lymphocytes were tested by standard [(3)H]thymidine incorporation *in vitro* for T cell memory to 11 chemical substances. Concanavalin A (Con A) was used to demonstrate T cell proliferation. Controls were 25 contemporaneous healthy adults and 252 other concurrent standard controls without any aspect of FMS. Significantly higher ($P < 0.01$) stimulation indexes (SI) were found in FMS for aluminum, lead, and platinum; borderline higher ($0.05 > P > 0.02$) SI were found for cadmium and silicon. FMS patients showed sporadic responses to the specific substances tested, with no high-frequency result (>50%) and no obvious pattern. Mitogenic responses to Con A indicated some suppression of T cell functionality in FMS. Possible links between mitogenicity and immunogenic T cell proliferation, certain electrochemical specifics of granuloma formation, maintenance of connective tissue, and the fundamental nature of FMS are considered.

[(3)H]thymidine incorporation into reactive lymphocytes has been widely used, better precision (3% variance verses 15-30% variance) and more comprehensive tests are available using our LRA by ELISA/ACT tests.

Lekander M, Fredrikson M, Wik G. Neuroimmune relations in patients with fibromyalgia: a positron emission tomography study. *Neurosci Lett* 2000 Mar 24;282(3):193-196.

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To study relations between neural and immune activity in patients with chronic pain, we correlated regional cerebral blood flow measured with [(15)O]butanol positron emission tomography to immune function in five patients with fibromyalgia. Partly replicating previous data in healthy volunteers, natural killer cell activity correlated negatively with right hemisphere activity in the secondary somatosensory and motor cortices as well as the thalamus. Moreover, natural killer cell activity was negatively and bilaterally related to activity in the posterior cingulate cortex. Thus, immune parameters were related to activity in brain areas involved in pain perception, emotion, and attention. Implicated from a small study population, these strong neuro-immune associations are discussed in view of recent findings concerning mechanisms and adaptive values in immuno-cortical communication and regulation.

An additional resource is Claire Musickant's *Fibromyalgia: My journey to wellness* based on her experience of the importance of delayed food / chemical allergic responses in FM.



We have published a successful community-based, randomized controlled trial (RCT) applying this approach to Fibromyalgia ± Chronic fatigue (CFIDS), Reflex sympathetic dystrophy (RSD), and Mitochondrial dysfunction syndrome (MDS).

Note: We believe the comprehensive optional treatment guide included with LRA by ELISA/ACT tests, if requested, provides the best current therapy for sustained remissions in Fibromyalgia and myofascial pain syndromes.

