

# **Polyunsaturated fatty acid deficit in patients with bipolar mania: a possible link between therapeutic and psychoimmunological findings**

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## **Abstract**

The aim of this study is to test the hypothesis that the depletion of polyunsaturated fatty acids of erythrocyte membrane in patients with bipolar disorder and to connect the previous therapeutic and psychoimmunological findings. Method: Fatty acid compositions on erythrocyte membrane in 20 bipolar manic patients and 20 healthy controls were analyzed by thin layer chromatography and gas chromatography.

Results: The major finding was significantly reduced arachidonic acid (20:4 $\omega$ -6) and docosahexaenoic acid (22:6 $\omega$ -3) compositions in bipolar patients as compared to normal controls. P values were <0.0001 and 0.001 respectively. There were no differences in total  $\omega$ -3 and  $\omega$ -6 polyunsaturated fatty acids (PUFAs).

Discussion: This abnormality may relate to the mechanisms of mood stabilizers and the previous findings on the abnormal psychoimmunology of patients with bipolar disorder. Larger sample size on medicated patients or drug-free manic, well-controlled designs on the diet and smoking, and fatty acid composition measurements during full remission after the index episode are warranted in further studies. Acknowledgement: The work was supported by the grants, NSC 89-2320-B-038-046 and NSC 90-2320-B-038-046 from the National Science Council, and China Chemical and Pharmaceutical Company, Taipei, Taiwan.