A negative correlation between plasma zinc level and percentage of red blood cell phospholipid n-3 PUFA was showed in patients with major depression.

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The present study presents plasma zinc levels and fatty acid profiles of red blood cell (RBC) phospholipids in patients with major depression. We recruited 94 subjects with major depression (Hamilton depression rating score; HDRS >18 points as MD group) and 95 healthy controls and collected their blood samples for determination of plasma zinc concentration and RBC phospholipid fatty acid profile. Although the dietary patterns were not different between the two groups, the results indicated a significant higher plasma zinc level and a lower percentage of RBC phospholipid n-3 polyunsaturated fatty acids (n-3 PUFA) in MD group ($P<0.05$) than controls. Subjects that HDRS were over 25 points had even higher plasma zinc concentration than which HDRS were less than 25 points ($P<0.05$). Surprisingly, a significantly negative correlation between plasma zinc and percentage of RBC phospholipid n-3 PUFA was also observed in MD group ($p<0.05$). The evidence provide information that the abnormal zinc and n-3 PUFA metabolism might occur in major depression thus coordination of the two nutrients in major depression could be a key factor in future study.