## **Accepted Manuscript**

Omega-3 Polyunsaturated Fatty Acid Supplementation in Prevention and Treatment of Maternal Depression: Putative Mechanism and Recommendation

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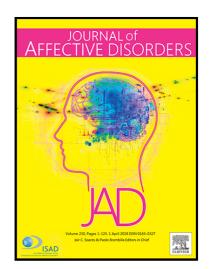
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#### ACCEPTED MANUSCRIPT

### **Highlights**

- Postpartum depression is caused in part by omega-3 deficiency, which not only
  affects neurotransmission activity (e.g., serotonin) on brain cell membranes, but
  also induces neuro-inflammation.
- Clinical evidence has shown beneficial effects of omega-3 supplementation on prenatal and postpartum depression.
- To elicit beneficial effects, a lengthy replenishment of docosahexaenoic acid (DHA) in neuronal cellular membrane is required to restore the brain neurotransmission function, and a short-term supplementation of eicosapentaenoic acid (EPA) to suppress the omega-6 fatty acids induced neuro-inflammation and subsequently, depression.
- Dietary supplementation with omega-3 fatty acids rich in EPA during pregnancy or postpartum reduces some symptoms of depression.

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