

# Two servings of salmon a week is healthy for pregnant women and their babies: study

March 20 2012

---

University of Granada researchers have proven that eating two servings of salmon reared at a fish farm (enriched with omega-3 fatty acids and only slightly contaminated) a week during pregnancy is beneficial both for the mother and child.

This research study –conducted within the framework of a Project funded by the VI EU Framework Program called The Salmon in Pregnancy Study (SiPS)– reveals that the intake of salmon increases omega-3 fatty acid levels both in the mother and child and improves their antioxidant defenses; the cause is the selenium and retinol content of salmon. In addition, salmon does not alter oxidative stress levels, inflammatory response and vascular homeostasis.

To carry out this study, a randomized sample of [pregnant women](#) with low fish intake was selected. The sample was divided into two groups: the control group –which continued with their regular diet– and the Salmon group –which incorporated two servings of "treated" salmon from 20 weeks of gestation until term. The salmon used in this study had been reared in a [fish farm](#) under a controlled diet including special ingredients (vegetable oils and food as algae and zooplankton); through this diet, salmon became rich in [omega-3 fatty acids](#) and presented high concentrations of antioxidant vitamins –as Vitamins A and E– and selenium; in addition fish contained very low contaminant levels.

## Blood and Urine Samples

Blood and urine samples were taken from the two groups, who were also asked to complete a questionnaire of food habits at weeks 20 and 34 of gestation –which would provide information about food intake during the previous 12 weeks. Subsequently, blood and urine samples were taken again at week 38 of gestation and at labor –where also cord blood samples were taken.

The researchers found that omega-3 fatty acid concentrations improved when pregnant women who did not frequently eat fish ate two servings of salmon weekly; the same results were obtained for the newborns. Two servings of salmon per week help the mother and her child reach the minimum recommended omega-3 fatty acid intake.

Additionally, the researchers found that the biomarkers for lipid oxidation and oxidative damage to DNA were not affected by the intake of salmon. Thus, researchers concluded that eating two servings of salmon a week during pregnancy does not increase oxidative stress. In fact, selenium and retinol concentrations were increased in pregnant women's plasma, and selenium concentrations increased in the newborns. This improvement in antioxidant defenses might help prevent and reduce the additional oxidative stress associated with [pregnancy](#).

Finally, eating [salmon](#) reared at a fish farm did not negatively affect pregnant women's antioxidant defenses, carbohydrate and lipid metabolism, adipokine and cytokine concentrations and biomarkers for vascular homeostasis in the newborns.

**More information:** References:

Miles EA, Noakes P, Kremmyda L-S, Vlachava M, Diaper ND, Rosenlund G, Urwin H, Yaqoob P, Rossary A, Farges M-C, Vasson M-P, Liaset B, Frøyland L, Helmersson J, Basu S, García E, Olza J, Mesa MD, Aguilera CM, Gil A, Calder PC. The salmon in pregnancy study-

study design, subject characteristics, maternal fish and marine n-3 fatty acid intake, and marine n-3 fatty acid status in maternal and umbilical cord blood. *Am J Clin Nutr* 2011; 94(6): 1986S-1992S.

García-Rodríguez CE, Helmersson-Karlqvist J, Mesa MD, Miles EA, Noakes PS, Vlachava M, Kremmyda LS, Diaper ND, Godfrey KM, Calder PC, Gil A, Basu S. Does increased intake of salmon increase markers of oxidative stress in pregnant women? The Salmon in Pregnancy Study. *Antioxid Redox Signal* 2011; 15(11): 2819-2923.

García-Rodríguez CE, Mesa MD, Olza J, Vlachava M, Kremmyda LS, Diaper ND, Noakes PS, Miles EA, Ramirez-Tortosa MC, Liaset B, Frøyland L, Rossary A, Farges MC, Vasson MP, Aguilera CM, Helmersson-Karlqvist J, Godfrey KM, Calder PC, Basu S, Gil A. Does consumption of two portions of salmon per week enhance the antioxidant defense system in pregnant women? *Antioxid Redox Signal* 2012, in press.

Provided by University of Granada

Citation: Two servings of salmon a week is healthy for pregnant women and their babies: study (2012, March 20) retrieved 26 April 2024 from <https://medicalxpress.com/news/2012-03-salmon-week-healthy-pregnant-women.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.