

Omega-3 status test for prematurity risk

SA Maternal Serum Antenatal Screening (SAMSAS) Program

? Information for AMIC Workers, Midwives and Health Professionals

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Aboriginal Communities
and Families Health
Research Alliance (ACRA)

Aboriginal Communities and Families Health Research Alliance (ACRA), South Australian Health and Medical Research Institute (SAHMRI) and SA Pathology are evaluating serum omega-3 testing for women with singleton pregnancies in South Australia.

Why do Omega-3 status testing?

Women with a singleton pregnancy and low omega-3 status in their blood are at higher risk of early preterm birth than women with adequate omega-3 status^{1,2}. Supplementing women with a low omega-3 status may reduce their risk of early birth^{1,2}.

In contrast, when supplementing all women independent of their omega-3 status, a reduction in preterm birth is not achieved³. Therefore, a targeted approach to omega-3 supplementation is necessary³.

The latest National Health and Medical Research Council and Department of Health National Pregnancy Care guidelines recommend advising omega-3 supplementation to pregnant women with low omega-3 status.

Omega-3 status testing before 20 weeks' gestation will identify those women who may benefit from supplementation.



1 Simmonds LA, Sullivan TR, Skubisz M, Middleton PF, Best KP, Yelland LN, et al. Omega-3 fatty acid supplementation in pregnancy - baseline omega-3 status and early preterm birth: exploratory analysis of a randomised controlled trial (ORIP). *BJOG*. 2020;27(8):975-981. <https://doi.org/10.1111/1471-0528.16168>

2 Carlson SE, Gajewski BJ, Valentine CJ, Kerling EH, et al. Higher dose docosahexaenoic acid supplementation during pregnancy and early preterm birth: A randomised, double-blind, adaptive-design superiority trial. *EClinicalMedicine*. 2021;36:100905.

3 Makrides M, Best K, Yelland L, McPhee A, Zhou S, Quinlivan J, et al. A randomized trial of prenatal omega-3 fatty acid supplementation and preterm delivery (ORIP trial). *Nwe England Journal of Medicine*. 2019;381:1035-1045. <https://doi.org/10.1056/nejmoa1816832>

4 Percentage of total omega-3 fatty acid status in serum.

Omega-3 status test results: how to advise women

Omega-3 status ⁴	Guidance to incorporate into pregnancy care plan
Less than 3.7% (low status)	<p>Take omega-3 fatty acid supplements until 37 weeks, to reduce the risk of early preterm birth.</p> <p>Suggested dose: 800 mg DHA and 100 mg EPA per day.</p> <p>Suitable supplements include Infantem (Pharmamark)* and Omega Brain (Blackmores).</p>
Between 3.7 and 4.3% (moderate status)	<p>No action required.</p> <p>If women are already taking omega-3 fatty acids as part of a multivitamin and mineral supplement or a standalone supplement, this may continue.</p>
Above 4.3% (sufficient status)	<p>Omega-3 supplements are not required and provide no benefit to risk of early preterm birth.</p> <p>If you are already taking omega-3 fatty acids as part of a multivitamin and mineral supplement and wish to continue, the dose of DHA and EPA should not be more than 250 mg per day.</p>

*Vegan algal oil supplement of DHA and EPA.

Potential risks with omega-3 fatty acid supplementation

- For women with sufficient omega-3 status (above 4.3%), higher dose omega-3 supplements (more than 900 mg per day) may increase their risk of early preterm birth¹.
- Omega-3 fatty acid supplements should be avoided for women requiring Clexane because of possible additive anti-coagulant effects.
- Low dose aspirin can be taken with omega-3 fatty acid supplements. Recent randomised trials of omega-3 fatty acid interventions have included women on low dose aspirin without increase in adverse events.

Omega-3 blood sample and cost

No additional blood sample is required as omega-3 analysis will be performed on serum collected as a part of the established SAMSAS program. The omega-3 fatty acid analyses will be performed at no cost to women or the health service.

Evaluation of Omega-3 status testing program

This ACRA-SAHMRI-SA Pathology collaboration will assess the feasibility and reach of identifying women with low omega-3 status, providing appropriate advice and ultimately assessing success in reducing the rates of early preterm birth in the community. This will be done by deidentified linkage of the omega-3 status test results with relevant pregnancy outcome data. Women who do not want their data linked will need to contact (08) 8128 444 or email omega3@sahmri.com. The evaluation has been approved by the Women's and Children's Health Network (WCHN) Human Research Ethics Committee (HREC/20/WCHN/138)

and the Aboriginal Health Council of South Australia (AHCSA #04-22-1053). Should you wish to discuss the study with someone not directly involved, you may contact the executive secretary of the Human Research Ethics Committee, WCHN (08) 8161 6521.

How to order the Omega-3 status test

- 1 Discuss the omega-3 status test and refer woman to the Aboriginal Families Information.
- 2 Order using the updated SAMSAS pathology request form by ticking the omega-3 status test box.
- 3 Refer the women to the Privacy Disclosure on the SAMSAS request form.
- 4 The omega-3 status test results will be reported to the requesting provider as a standalone report and will be available on OACIS.
- 5 Check to see if your clinic has free omega-3 supplements to provide to your patients with low omega-3 status.

Further Information

For further information regarding omega-3 status testing, results interpretation and a list of supplements with different doses of omega-3:

 Visit sahmri.org/omega3

 Call the omega-3 status test hotline **0438 273 155**

For request forms:

 **0438 273 155**

 omega3@sahmri.com

