



Building the foundations for a healthy pregnancy: The role of DHA

Globally, premature birth is a leading cause of death among infants and children under the age of five, and survivors can face a lifetime of disabilities.⁵ An extensive – and expanding – body of evidence showcases that omega–3 supplementation during pregnancy, particularly DHA, can reduce the risk of preterm and early preterm birth.^{2,3,4}

A Cochrane Review, which examined data from 70 randomized controlled trials, revealed high quality evidence that the intake of omega-3 fatty acids during pregnancy reduced the risk of preterm birth by 11% and early preterm birth by 42%.² A recent revision of these meta-analyses confirmed the conclusions.⁴ In addition, two sizeable trials have highlighted the significance of baseline DHA levels early in pregnancy – with a low baseline omega-3 blood status linked to an elevated risk of preterm and early preterm birth.^{6,7}





The first-ever global expert consensus on clinical recommendations for omega-3 fatty acid supplementation in pregnant women to reduce the risk of preterm and early preterm births was published in 2023.³ The worldwide panel included 24 specialists in the fields of obstetrics & gynecology, pediatrics and nutrition.

The experts agreed on the following conclusions:

- 1. Lower intakes and lower blood levels of fish and of the omega-3 fatty acids EPA and DHA is associated with a significantly increased risk of preterm birth.
- 2. Intakes of up to 1000 mg/day of EPA and DHA, or of up to 1000mg/day of DHA alone, do not raise safety concerns in the general population and in pregnant women.

Guidelines for omega-3 supplementation at each stage of the motherhood journey include:



Preconception

DHA intake during preconception is paramount as women with low early-pregnancy DHA levels or intakes are at higher risk of preterm birth. Considering this, women of childbearing age – particularly those trying to conceive – should ensure regular omega–3 intake either from diet or supplements providing a minimum of 250mg per day (EPA+DHA or DHA alone).



Pregnancy

Throughout pregnancy it is recommended that women supplement with an extra 100–200mg of DHA daily to reduce preterm birth risk (totaling at least 350–450mg EPA+DHA or DHA alone). These levels are higher than historical recommendations, however numerous prenatal supplements fall short of containing sufficient amounts of EPA+DHA or DHA aligned with the updated guidelines.⁸



High-risk cases

Women with low omega-3 (particularly DHA) intake or status early in pregnancy face an elevated risk of preterm birth. The guidelines suggest higher daily doses of 600-1000mg EPA+DHA or DHA alone for these women.³ Identifying women with low baseline intake or status can be achieved through a blood test or simple <u>food frequency questionnaire</u>.⁹



Optimal DHA supplementation during pregnancy can be a challenge for expectant mothers – who often experience nausea and heartburn, are sensitive to specific aromas and may find it difficult to swallow large pills.

Nonetheless, the significance of incorporating DHA supplementation into daily routines has been clinically proven. The ADORE trial compared the benefits of high dose algal DHA supplementation (1000mg per day) with a lower dose of 200mg per day.⁷ It found that early preterm birth rates (<34 weeks gestation) were 50% lower among women with a low baseline DHA status who received the high dose DHA supplement (compared to low dose).

The study also explored differences in adherence to the supplement regimen by measuring the levels of DHA in the blood at the beginning and end of pregnancy. Among women with low DHA status at baseline and who were adherent to the high dose supplementation, early preterm births were reduced even more (by 65%). Early preterm birth rates for those who were not adherent to the high dose were similar to those who received the lower dose. This underscores the importance of providing DHA in formats that are easy to adhere to.¹⁰



Early preterm birth rates were 50% lower in women with low baseline DHA who received high dose supplementation.

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life'sDHA® B31	Powder	Triglycerides	310 mg/g	Gummy Powders	Limited: US, LATAM, EMEA	Kosher

 $^{^{}st}$ B31 algal powder, due to the use of bovine geletine, cannot use a vegan claim. TG: Triglycerides.

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References

- 1. DSM, ELN U&A Study, 2017
- Middleton et al. Omega-3 fatty acid addition during pregnancy (review).
 Cochrane Database of Systematic Reviews. 2018;11:CD003402.
- 3. Cetin et al. Omega-3 fatty acid supply in pregnancy for risk reduction of preterm and early preterm birth. AJOG MFM, 2023.
- Best et al. ISSFAL statement number 7 omega-3 fatty acids during pregnancy to reduce preterm birth. PLEFA, 2022;186:102495.
- 5. World Health Organization. Preterm birth, [website], accessed 18 December 2023.
- Simmonds et al. Omega-3 fatty acid supplementation in pregnancy baseline omega-3 status and early preterm birth: exploratory analysis of a randomized controlled trial. BJOG, 2020;10.1111/1471-0528.16168.
- 7. Carlson et al. Assessment of DHA on reducing early preterm birth: the ADORE randomized controlled trial protocol. BMC Pregnancy Childbirth, 2017;17(1):62.
- 8. Adams et al. Evidence based recommendations for an optimal prenatal supplement for women in the US: vitamins and related nutrients. Matern Health Neonatol Perinatol., 2022;8:4.
- 9. Crawford et al. Validation of an abbreviated food frequency questionnaire for estimating DHA intake of pregnant women in the United States. Prostaglandins, leukotrienes and essential fatty acids, 2022;177:102398.
- 10. Carlson et al. Early and late preterm birth rates in participants adherent to randomly assigned high dose docosahexaenoic acid (DHA) supplementation in pregnancy. Clin Nutr., 2023;42(2):235–243.