2024 Clinical Practice Guideline on Omega-3 (DHA/EPA) Supply to Reduce Risk of Preterm and Early Preterm Birth

A summary of the Expert Guideline published in AJOG MFM

Preterm birth in the United States

Preterm birth (PTB) and especially early preterm birth (ePTB) are leading causes of infant mortality in the U.S. and are associated with increases in several lifelong disabilities[1,2].

The U.S. preterm birth rate has increased dramatically in recent years and reached 10.4% in 2022[1].

There are profound racial and ethnic disparities in PTB and ePTB rates, with a 55% and 115% higher burden, respectively, in non-Hispanic Black women as compared to White women[3]. A recent economic analysis concluded that the total cost burden of PTB in the U.S. was over $34 billion, with the majority of that attributed to ePTB[4].

Adequate omega-3 (DHA & EPA) status reduces risk of preterm birth

High-quality evidence demonstrates that adequate intake and status of omega-3 long chain polyunsaturated fatty acids, namely docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA), reduce the risk of PTB and especially of ePTB. A 2018 Cochrane review concluded that omega-3 supplementation reduced PTB by 11%, and ePTB by 42%[5]. However, this analysis did not propose intake levels that would be adequate for risk reduction. More recently, an NIH-funded clinical trial in the U.S. demonstrated that high dose supplementation (1,000 mg DHA/day) was more effective than a low dose (200 mg DHA/day) at reducing PTB, and particularly at reducing ePTB in women with low baseline DHA status[6].

Link to the Clinical Practice Guideline in AJOG MFM

Clinical Practice Guideline Summary

An international panel of 24 experts representing several medical and scientific societies recently published a Clinical Practice Guideline in Am J Obstet Gynecol MFM outlining their conclusions and recommendations on DHA and EPA intake to reduce the risk of PTB and ePTB[7]. The group was organized and supported by the Child Health Foundation (Stiftung Kindergesundheit) at LMU University Hospitals in Munich, and the guideline has been endorsed by the European Board and College of Obstetrics and Gynaecology[8].

The panel concluded the following:

- Intakes of up to 1,000 mg of DHA + EPA or DHA alone in pregnant women do not raise safety concerns.
- Observational studies and RCTs in pregnant women show that lower intakes of fish and lower blood levels of the omega-3 fatty acids DHA and EPA found in fish are associated with a significantly increased risk of preterm and early preterm birth.
- Women of childbearing age should aim to obtain a regular supply of omega-3 fatty acids from foods providing these fatty acids, including fish and oily fish, and/or from supplements providing DHA & EPA, or DHA alone.

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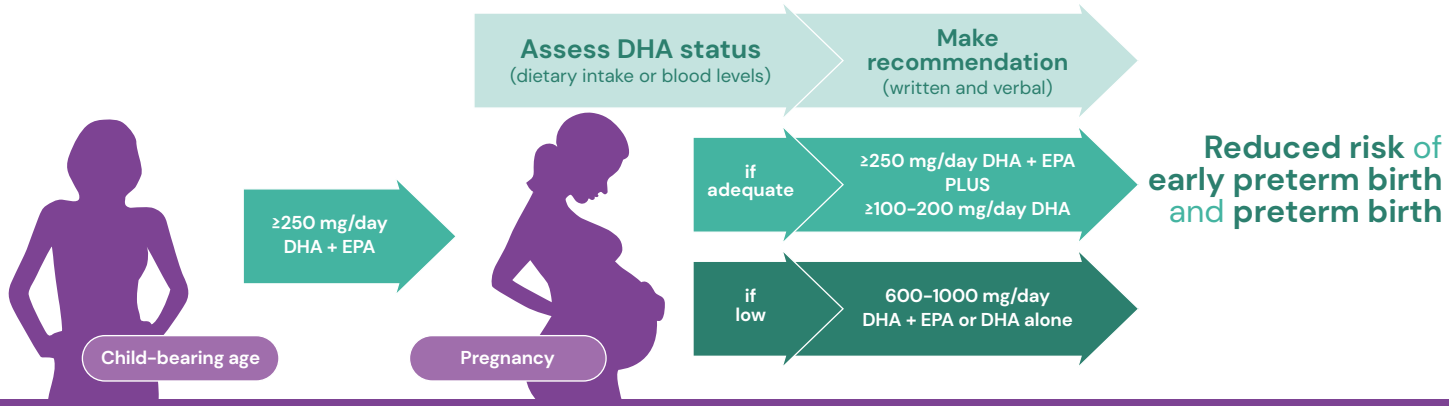
The panel made the following consensus recommendations for intakes:

Population	Recommendation (avg. intake)
Women of childbearing age	**≥250 mg/d omega-3 DHA+EPA** from **foods** and/or **supplements**
Pregnant women	**At least 350 – 450 mg/d DHA+EPA** (the same ≥250 mg/d omega-3 DHA+EPA as above, plus an additional ≥100 – 200 mg/d DHA)
Pregnant women with low DHA intakes or blood levels at the beginning of pregnancy	**~600 – 1000 mg/d DHA+EPA, or DHA alone, from 2nd trimester** (not later than ~20 weeks gestation) until childbirth or ~37 weeks gestation

- Identification of women at increased risk of preterm and early preterm birth due to a low DHA intake and/or low DHA blood levels is achievable by screening with a few questions on dietary intake of foods rich in DHA and EPA and on use of omega-3 supplements. The panel defined low intake as ≤150 mg/d of DHA habitually before or early in pregnancy.
- DHA measurement from a blood lipid component is an additional option to identify women with low status, however further standardization of laboratory methods and appropriate cutoff values is needed.
- It is important to provide women of childbearing age, pregnant women, and their partners with evidence-based information, preferably both verbally and in writing, on how to achieve an appropriate intake of DHA or DHA + EPA for women of childbearing age and pregnant women.



In conclusion, high-quality evidence demonstrates that adequate intake and status of DHA and EPA reduce the risk of PTB and ePTB. Women of childbearing age are encouraged to consume at least 250 mg/d, with an additional ≥ 100 – 200 mg DHA/d during pregnancy. Pregnant women with low intakes of DHA benefit most from higher doses (~600 – 1000 mg/d) and these women can be identified via a simple dietary assessment, or by a blood test.

1. Martin JA, *et al.* (2023) Births in the United States, 2022. NCHS Data Brief, no 477. National Center for Health Statistics.
2. Schieve LA, *et al.* (2016) Population impact of preterm birth and low birth weight on developmental disabilities in US children. Ann Epidemiol. 2016;26(4):267-274. doi:10.1016/j.annepidem.2016.02.012.
3. Hamilton BE, *et al.* (2023) Births: Provisional Data for 2022. NVSS Vital Statistics Rapid Release, Report No. 28.
4. Frost & Sullivan. (2022) Reducing the economic impact of preterm and early preterm birth in the United States by providing supplemental algal DHA to expectant mothers.
5. Middleton P, *et al.* (2018). Omega-3 fatty acid addition during pregnancy. Cochrane Database of Systematic Reviews, DOI: 10.1002/14651858.CD003402.pub3.
6. Carlson SE, *et al.* (2021) Higher dose docosahexaenoic acid supplementation during pregnancy and early preterm birth: A randomised, double-blind, adaptive-design superiority trial. EClinicalMedicine 36, DOI: https://doi.org/10.1016/j.eclinm.2021.100905.
7. Cetin I, *et al.* (2024) Omega-3 fatty acid supply in pregnancy for risk reduction of preterm and early preterm birth. Am J Obstet Gynecol MFM 6: 101251.
8. Savona-Ventura C, *et al.* (2024) Omega-3 fatty acid supply in pregnancy for risk reduction of preterm and early preterm birth: A position statement by the European Board and College of Obstetrics and Gynaecology (EBCOG). Eur J Obstet Gynecol Reprod Biol. 295: 124-125.

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