Objective
To evaluate pregnant women’s knowledge regarding the importance of long-chain omega-3 polyunsaturated fatty acids (LC \( n \)-3 PUFA) consumption during pregnancy and assess their views on current information availability.

Design
A 27-item demographic and food safety/behaviour questionnaire was administered to pregnant women during their antenatal clinic visits.

Setting: Antenatal clinics at two regional hospitals in New South Wales, Australia.

Subjects: One hundred and ninety (\( n \) 190) pregnant women.

Results
Three quarters of the women had not received information regarding LC \( n \)-3 PUFA.

Approximately half of the women were aware of issues relating to LC \( n \)-3 PUFA; however, their knowledge was limited, with most obtaining their knowledge from books and magazines.

Women generally had low (30\%, 29\%) to moderate (28\%, 24\%) levels of concern about LC \( n \)-3 PUFA and mercury, respectively.

Conclusions
Pregnant women lack knowledge of LC \( n \)-3 PUFA and health-care services do not provide pregnant women with adequate information on the importance of eating foods high in LC \( n \)-3 PUFA during pregnancy.

THESE AUTHORS ALSO NOTE:

“Omega-3 polyunsaturated fatty acids (\( n \)-3 PUFA) are important for health, including cardiovascular health, mental health and inflammatory disorders.”
Most of these health benefits have been attributed to the long-chain (LC) eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).

The conversion of alpha-linolenic acid [18-carbon long omega-3] to DHA [22-carbon long omega-3] is limited. “Hence, direct consumption of DHA is preferred.”
“The main dietary source of DHA is fish and seafood.”

“DHA is a major structural component membrane phospholipids in utero and in infancy, especially of the nervous system.”

“Due to the importance of DHA in the brain and retina, it plays a crucial role in normal neurotransmission and visual function, as well as in controlling the processes of learning and development.”

“Decreased levels of DHA have been associated with depression.”

DHA is crucial for proper neural, visual and cognitive development of the fetus.

Both DHA and arachidonic acid are transferred from the mother to the fetus during pregnancy.

“Arachidonic acid is easily synthesised from linoleic acid, which is abundant in the diet, whereas DHA is consumed in much lower amounts.”

“If the maternal intake of DHA is limited, DHA will be mobilised from the maternal stores to supply the growing fetus with this essential nutrient.”

[Important]

The requirements for DHA is higher in pregnant women.

“Insufficient intakes of DHA have particularly been noted for the developed nations such as Australia, Canada, the UK and the USA.”

“Although fish and seafood are the richest source of DHA, they can be a major source of contaminants such as methyl mercury, polychlorinated biphenyls, dioxins and other environmental contaminants.”

Large and long living predatory fish, such as shark, ray, swordfish and gemfish, accumulate higher levels of mercury and it is these fish that pose the greatest threat of exposure to mercury.

Smaller fish such as shellfish, salmon and canned (or fresh) tuna accumulate very low levels of mercury.

Methyl mercury is harmful to the developing nervous system.

This study involved 190 pregnant women.

Only 23% of these women received any information about LC n-3 PUFA.

37% were aware of the risk associated with eating fish and mercury.
Only 29% were aware of the benefits of omega-3 fatty acids for the baby and mother.

The results of this study show that the higher the income and, especially the higher the education, the greater the knowledge regarding fish consumption, mercury and omega-3 fatty acids. The sources for this knowledge was:
- 28% from books and magazines
- 26% from family doctors
- 20% from midwives

“The present study identified that only a small number of women had received even limited information about LC n-3 PUFA and safe fish consumption from their health-care provider.”

“Women reported very limited exposure to information on the importance of LC n-3 PUFA and safe fish intake during pregnancy.”

77% received no information on these issues during their health-care visits.

“A large number of pregnant women reported not receiving information about LC n-3 PUFA during contact with the health-care system for their pregnancy.”

“It would appear that a few government agencies are providing information on fish consumption during pregnancy, but it does not include information about LC n-3 PUFA, is not promoted by the health services and does not reach health-care providers or the pregnant women in their care.”

KEY POINTS FROM DAN MURPHY

1) “Pregnant women lack knowledge of LC n-3 PUFA and health-care services do not provide pregnant women with adequate information on the importance of eating foods high in LC n-3 PUFA during pregnancy.” [In Australia]

2) “Omega-3 polyunsaturated fatty acids (n-3 PUFA) are important for health, including cardiovascular health, mental health and inflammatory disorders.” Most of these health benefits have been attributed to the long-chain (LC) eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).

3) The conversion of alpha-linolenic acid [18-carbon long omega-3] to DHA [22-carbon long omega-3] is limited. “Hence, direct consumption of DHA is preferred.”

4) “The main dietary source of DHA is fish and seafood.”

5) “DHA is a major structural component membrane phospholipids in utero and in infancy, especially of the nervous system.”
6) “Due to the importance of DHA in the brain and retina, it plays a crucial role in normal neurotransmission and visual function, as well as in controlling the processes of learning and development.”

7) “Decreased levels of DHA have been associated with depression.”

8) DHA is crucial for proper neural, visual and cognitive development of the fetus.

9) Both DHA and arachidonic acid are transferred from the mother to the fetus during pregnancy.

10) “Arachidonic acid is easily synthesised from linoleic acid, which is abundant in the diet, whereas DHA is consumed in much lower amounts.”

11) “If the maternal intake of DHA is limited, DHA will be mobilised from the maternal stores to supply the growing fetus with this essential nutrient.”

12) The requirements for DHA is higher in pregnant women.

13) “Insufficient intakes of DHA have particularly been noted for the developed nations such as Australia, Canada, the UK and the USA.”

14) “Although fish and seafood are the richest source of DHA, they can be a major source of contaminants such as methyl mercury, polychlorinated biphenyls, dioxins and other environmental contaminants.”

15) Large and long living predatory fish, such as shark, ray, swordfish and gemfish, accumulate higher levels of mercury and it is these fish that pose the greatest threat of exposure to mercury.

16) Smaller fish such as shellfish, salmon and canned (or fresh) tuna accumulate very low levels of mercury.

17) Methyl mercury is harmful to the developing nervous system.

18) In this study of 190 pregnant women:
37% were aware of the risk associated with eating fish and mercury.
29% were aware of the benefits of omega-3 fatty acids for the baby and mother.

19) The results of this study show that the higher the income and, especially the higher the education, the greater the knowledge regarding fish consumption, mercury and omega-3 fatty acids. The sources for this knowledge was:
   28% from books and magazines
   26% from family doctors
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