

HEALTH

Taking Fish Oil During Pregnancy Is Found to Lower Child's Asthma Risk

By DENISE GRADY DEC. 28, 2016

Women who took fish oil during the last three months of pregnancy significantly lowered the risk that their children would develop asthma, a study in Denmark has found.

Among children whose mothers took fish-oil capsules, 16.9 percent had asthma by age 3, compared with 23.7 percent whose mothers were given placebos. The difference, nearly 7 percentage points, translates to a risk reduction of about 31 percent.

But in the study released on Wednesday, the researchers say they are not ready to recommend that pregnant women routinely take fish oil. Although the study found no adverse effects in the mothers or babies, the doses were high, 2.4 grams per day — 15 to 20 times what most Americans consume from foods.

Before doctors can make any recommendations, the study should be replicated, and fish oil should be tested earlier in pregnancy and at different doses, Dr. Hans Bisgaard, the leading author of the study, said in an email. He is a professor of pediatrics at the University of Copenhagen and the head of research at the Copenhagen Prospective Studies on Asthma in Childhood, an independent research unit.

Doctors are eager to find ways to prevent asthma, a chronic disease that causes wheezing, coughing and breathing trouble, and that sends many families to the emergency room again and again.

The incidence has more than doubled in developed countries in recent decades. More than six million children in the United States have asthma, according to the Centers for Disease Control and Prevention, as do more than 330 million children and adults worldwide, according to the Global Asthma Network.

Dr. Bisgaard said it was not possible to tell from the study whether pregnant women could benefit from simply eating more fish. Pregnant women are generally advised to limit their consumption of certain types of fish like swordfish and tuna because they contain mercury. But many other types are considered safe, especially smaller fish like sardines that are not at the top of the food chain and therefore not likely to accumulate mercury and other contaminants from eating other fish.

The results were published in *The New England Journal of Medicine*. The scientists bought fish oil from a company that makes it, but they said the company had no role in the study. The research was paid for by the Danish government and private foundations.

An editorial in the same journal by an expert who was not part of the study praised the research, saying it was well designed and carefully performed. The author of that editorial, Dr. Christopher E. Ramsden, from the National Institutes of Health, said the findings would help doctors develop a “precision medicine” approach in which fish-oil treatment could be tailored to women who are most likely to benefit.

But Dr. Ramsden also said it was too soon to put the new findings into practice, and he recommended further study.

Previous research had suggested that fish oil might help prevent asthma. The idea is plausible, because inflammation in the airways and lungs plays a major role in asthma, and fatty acids in fish oil are thought to prevent inflammation. The richest sources in food include fish like herring, sardines, mackerel, eel and salmon.

Because the earlier studies suggesting a benefit from fish oil were not conclusive, the Danish researchers decided to test the idea.

They recruited 736 women. Starting in their third trimester, half the women took 2.4 grams of fish oil a day and half took placebo capsules of olive oil, continuing until one week after birth.

About a quarter of the mothers and a fifth of the fathers had asthma, and they were evenly distributed between the fish-oil and placebo groups.

The capsules were an over-the-counter product called Incromegea TG33/22, a fish extract made by the British chemical company Croda Health Care. The extract contained the fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).

The researchers tracked the children's health, finding asthma less common in those whose mothers had taken the fish oil, with the effect lasting at least through age 7, the longest follow-up.

By age 3, the biggest difference had emerged from data on mothers who, before treatment, had the lowest levels of EPA and DHA in their blood. In that group, only 17.5 percent of the children whose mothers took fish oil developed asthma, compared with 34.1 percent whose mothers took the placebo — a difference of 16.6 percentage points, and a risk reduction of about 54 percent.

Low levels of EPA and DHA in the blood can be related to diet but also to genetics. The body normally converts another fatty acid, found in plant-based foods, to EPA and DHA. But some people — about 13 percent in the study — carry a genetic variant that impairs their ability to make the conversion. The researchers found that children born to women with little EPA and DHA in their diets, and to women with the genetic variant, were among those most likely to benefit from exposure to fish oil in pregnancy.

Dr. Bisgaard said that, pending further study, the best way to apply the findings would probably be to test women for the fatty-acid levels in their blood, and for the genetic variant, to determine who might benefit from fish oil. He said that genetics could differ among different populations and that there might be ethnic variations in risk.

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