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Ways to help pregnant women avoid preterm birth

Omega-3 fatty acid addition during pregnancy

Ways to help pregnant women avoid preterm birth

Authors: Medley N, Vogel JP, Care A, Alfirevic Z

What is the issue?

Preterm birth, or being born before 37 weeks of pregnancy, is a major reason why newborns die and may also mean long-term disability for surviving infants. There are many ways healthcare providers try to prevent women from having their babies too early. Pregnant women may be encouraged to take vitamins, reduce smoking, take medicines for infections or attend regular healthcare visits. Our overview looks at different ways (or interventions) to prevent preterm birth. We searched for relevant papers in the Cochrane Library on 2 November, 2017.

Why is this important?

Preterm birth is devastating and costly for women, families and health systems. We aimed to summarise relevant information for pregnant women, healthcare workers and researchers.

What evidence did we find?

We included 83 systematic reviews with evidence about whether or not the intervention was able to reduce pregnant women's chance of having a preterm birth or a baby death. Seventy of these reviews had information about preterm birth. We categorised the evidence we found as: clear benefit or harm; no effect; possible benefit or harm; or unknown effect.

Outcome: preterm birth

Clear benefit

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We were confident that the following interventions were able to help specific populations of pregnant women avoid giving birth early: midwife-led continuity models of care versus other models of care for all women; screening for lower genital tract infections; and zinc supplementation for pregnant women without systemic illness. Cervical stitch (cerclage) was of benefit only for women at high risk of preterm birth and with singleton pregnancy.

Clear harm

We found no treatment that increased women's chance of giving birth preterm.

Possible benefit

The following interventions may have helped some groups of pregnant women avoid preterm birth, but we have less confidence in these results: group antenatal care for all pregnant women; antibiotics for pregnant women with asymptomatic bacteriuria; pharmacological interventions for smoking cessation; and vitamin D supplements alone for women without health problems.

Possible harm

We found two interventions that may have made things worse for some pregnant women: intramuscular progesterone for women at high risk of preterm birth with multiple pregnancy; and taking vitamin D supplements, calcium and other minerals for pregnant women without health problems.

Outcome: perinatal death

Clear benefit

We were confident in evidence for midwife-led continuity models of care for all pregnant women; and for fetal and umbilical Doppler for high-risk pregnant women; these interventions appeared to reduce women's chance of experiencing baby death.

Clear harm

We found no intervention that increased women's risk of baby death.

Possible benefit

We found a possible benefit with cervical stitch (cerclage) for women with singleton pregnancy and high risk of preterm birth.

Possible harm

One review reported possible harm associated with having fewer antenatal visits, even for pregnant women at low risk of pregnancy problems. The pregnant women in this review already received limited antenatal care.

Outcomes: preterm birth and perinatal death

Unknown benefit or harm

For pregnant women at high risk of preterm birth for any reason including multiple pregnancy, home uterine monitoring was of unknown benefit or harm. For high-risk pregnant women with multiple pregnancy: bedrest, prophylactic oral betamimetics, vaginal progesterone and cervical cerclage were all of unknown benefit or harm.

What does this mean?

There is valuable information in the Cochrane Library relevant to women, doctors, midwives and researchers interested in preventing early birth. We have summarised the results of systematic reviews to describe how well different strategies work to prevent early birth and baby death. We organised our information in clear figures with graphic icons to represent how confident we were in the results and to point readers toward promising treatments for specific groups of pregnant women.

Our overview found no up-to-date information in the Cochrane Library for the important treatments of cervical pessary, vaginal progesterone or cervical assessment with ultrasound. We found no high-quality evidence relevant to women at high risk of preterm birth due to multiple pregnancy. It remains important for pregnant women and their healthcare providers to carefully consider whether specific strategies to prevent preterm birth will be of benefit for individual women, or for specific populations of women.

Omega-3 fatty acid addition during pregnancy

Authors: Middleton P, Gomersall JC, Gould JF, Shepherd E, Olsen SF, Makrides M

What is the issue?

Do omega-3 long chain polyunsaturated fatty acids (LCPUFA) taken during pregnancy - either as supplements or as dietary additions in food (such as some types of fish) - improve health outcomes for babies and their mothers? This is an update of a Cochrane Review that was first published in 2006.

Why is this important?

Preterm birth (babies born before 37 weeks pregnancy (gestation)) is a leading cause of disability or death in the first five years of life. Fish and fish oil contain omega-3 LCPUFA (particularly docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA)) and have been associated with longer pregnancies. So it is suggested that additional omega-3 LCPUFAs in pregnancy may reduce the number of babies born preterm and may improve

outcomes for children and mothers. However, many pregnant women do not eat fish very often. Encouraging pregnant women to eat fatty fish (which generally have low toxin levels) or to use omega-3 LCPUFA supplements may improve children's and women's health. This is an update of a Cochrane Review that was first published in 2006.

What evidence did we find?

We searched for evidence in August 2018 and found 70 randomised controlled trials (RCTs; this type of trial provides the most reliable results) (involving 19,927 women). Most trials evaluated a group of women who received omega-3 LCPUFA and compared them with a group of women who received something that looked like omega-3 LCPUFA but did not contain it (placebo) or received no omega-3. The trials were mostly undertaken in upper-middle or high-income countries. Some studies included women at increased risk of preterm birth. The quality of the evidence from the included studies ranged from high to very low; this affected the certainty of the findings for different outcomes.

We found the incidence of preterm birth (before 37 weeks) and very preterm birth (before 34 weeks) was lower in women who received omega-3 LCPUFA compared with no additional omega-3. There were also fewer babies with low birthweight. However, omega-3 LCPUFA probably increased the incidence of pregnancies continuing beyond 42 weeks, although there was no difference identified in induction of labour for post-term pregnancies. The risk of the baby dying or being very sick and going to neonatal intensive care may be lower with omega-3 LCPUFA compared with no omega-3. We did not see any differences between groups for serious adverse events for mothers or in postnatal depression. Very few differences between the omega-3 LCPUFA groups and no omega-3 groups were observed in child development and growth.

Eleven trials reported that they had received industry funding. When we omitted these trials from the main outcomes (such as preterm birth and very preterm birth) it made very little, or no difference, to the results.

What does this mean?

Increasing omega-3 LCPUFA intake during pregnancy, either through supplements or in foods, may reduce the incidence of preterm birth (before 37 weeks and before 34 weeks) and there may be less chance of having a baby with a low birthweight. Women who take omega-3 LCPUFA supplements during pregnancy may also be more likely to have longer pregnancies. More studies are underway and their results will be included in a further update of this review. Future studies could consider if and how outcomes may vary in different populations of women, and could test different ways of increasing omega-3 LCPUFA during pregnancy.

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If you have any questions or comments with regard to the above document please feel free to contact me.

Kind regards

Dr Vanessa Jordan PhD

New Zealand Cochrane Fellow
Cochrane New Zealand
Academic Co-ordinator: PoplHlth 711: Systematic reviews and Meta Analysis
Department Obstetrics and Gynaecology
Auckland University
Private Bag 92019
Auckland 1142
New Zealand
Ph. +64 9 9239490
Fax +64 9 303 5969
Mobile: 027 540 2212
E-mail: v.jordan@auckland.ac.nz