Research Summary

Update on Vitamin E and Its Potential Role in Preventing or Treating Bronchopulmonary Dysplasia.

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Who sponsored this research?

This research was supported by the Environmental influences on Child Health Outcomes (ECHO) program, Office of The Director, National Institutes of Health.

Why was this research needed?

Bronchopulmonary dysplasia (BPD) is a chronic lung disease that mostly affects newborns and infants. It occurs when a newborn or infants’ lungs are damaged from being on a ventilator (a machine that provides oxygen). We already know that there is a connection between low levels of vitamin E and the risk of BPD. Some doctors use vitamin E to help prevent BPD in newborns and infants. However, the last time researchers studied how vitamin E may affect BPD was 1991. Since then, we have learned more about how to reduce the risk of oxygen and ventilator-related lung injuries in newborns. We also know more about how vitamin E affects overall lung health. People only get vitamin E through their diet or supplements, like vitamins, so it’s important to understand if people need more of it.

What was the purpose of the research?

To update our knowledge and understanding of vitamin E and BPD.

Who was involved?

No study participants were involved in this research. The researchers involved are experts in neonatology (the study of newborns), epidemiology (understanding health in certain populations of people), pulmonary medicine (medicine related to the lungs) and environmental interventions (how changing something in a person’s environment affects health).

What happened during the study?

Researchers gathered and analyzed existing research on vitamin E. From this analysis, they suggest ideas for future research that could help us learn more about vitamin E and its role in preventing or treating BPD.

What were the results of the research?

The researchers learned:
There was not enough information in existing studies to recommend using vitamin E to prevent BPD.

A specific type of vitamin E called α-tocopherol isoform may be helpful in preventing or treating BPD.

*Results reported here are for a single research review. Other or future reviews or studies may provide new information or different results. You should not make changes to your health without first consulting your healthcare professional.

Impact of this research

The researchers think that studying the vitamin E α-tocopherol isoform would help provide more information on the benefits and risks of using it to prevent and treat BPD. This type of vitamin E is already associated with better health outcomes for conditions such as asthma, allergic airway swelling, and improved lung growth than other forms of vitamin E. However, without further studies, there is not enough information to recommend it now.

What happens next?

Researchers are interested in studying individual types of vitamin E as dietary supplements to improve lung health and as a potential way to treat or prevent BPD. We will need more and better data from research studies to understand if taking certain vitamin E isoforms can help reduce the risk of:

- BPD for newborns when taken by a pregnant women at risk of preterm birth.
- BPD for premature newborn when given to the newborn right after birth.
- Having long-term lung problems that may continue later into life.

Where can I learn more?


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