

Early 'full-term' babies may have poorer respiratory fitness through adolescence and young adulthood

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Babies born early in a full-term pregnancy range may be more likely to have poor cardiorespiratory fitness through adolescence and young adulthood, according to new research in *Journal of the American Heart Association*, the Open Access Journal of the American Heart Association/American Stroke Association.

"We believe that earlier births—even within the at-term range—may interrupt normal development and lead to permanent changes of tissues and organs, thereby affecting cardiorespiratory [fitness](#)," said Isabel Ferreira, Ph.D., lead study author and associate professor at The University of Queensland in Australia. "As such, recent trends towards deliveries at shorter gestational lengths within the at-term period are worrisome."

Cardiorespiratory fitness reflects the ability of the body to supply oxygen to muscles during physical activity. It also affects metabolic and cardiovascular health throughout a person's lifetime.

Previous studies have reported lower cardiorespiratory fitness levels among individuals born prematurely. However, these effects are largely unknown in the context of full-term births.

This Northern Ireland-based study, the first of its kind, examined 791 participants born within the full-term range of 37-42 weeks. Their

cardiorespiratory fitness was determined at ages 12, 15 and 22 by measuring their [maximal oxygen uptake](#) level after undergoing standardized physical tests.

Researchers found:

- Compared to full-term (39-40 weeks) and late-term births (41-42 weeks), early-term births (37-38 weeks) have approximately 57 percent higher risk of developing poor cardiorespiratory fitness during adolescence and young adulthood.
- Each week increase in gestational age was associated with a 14 percent risk reduction of poor cardiorespiratory fitness.

They also found that diet, physical activity and smoking behavior of the participants did not affect their findings.

Given the strong links between [cardiorespiratory fitness](#) and other cardiometabolic risk factors in youth and later in life, these findings suggest that individuals born early-term may be at a higher risk of developing high blood pressure, type 2 diabetes and metabolic syndrome. They may also be at a higher risk of suffering cardiac events in middle-age, researchers said.

According to Ferreira, these results should help shape policies to deter current trends towards avoidable deliveries at lower gestational ages.

"Healthcare providers and mothers should be informed of the lifelong health risks that early-term deliveries may have on their offspring and refrain from these (e.g., scheduled caesarean sections or induced labor) unless there is a medical indication to anticipate deliveries," said Ferreira.

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