Research shows that cystic fibrosis impacts growth in the womb

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"Clubbing" of the fingers is a classic features of Cystic Fibrosis, although not present in many patients. Credit: Jerry Nick, M.D./ Wikipedia

New research, published in *Thorax*, funded by the Cystic Fibrosis Trust has shown that babies with cystic fibrosis (CF) are born weighing less than babies without the condition, even allowing that they are more likely to be born prematurely.

The research, conducted by CF-EpiNet—a Cystic Fibrosis Trust Strategic Research Centre (SRC) of which the University of Liverpool is a member—has shown that having CF results in lower average birth weight, revealing the need for further research into how CF affects the development of babies in the womb.

Findings

The research team compared babies born with and without CF using data on 2.2?million babies in Denmark and Wales. This research, published in July in *Thorax*, a world-leading respiratory medicine journal, indicates that, while babies with CF are often born prematurely, this only accounts for around 40% of the effect on birth weight. This means that the CF mutation could also have an effect on the way babies develop within the womb. These results may be the first step to understanding and improving the health of babies with CF before they are born.

The findings further show that babies born to disadvantaged families are likely to have a lower weight at birth, regardless of whether or not they have cystic fibrosis. This indicates that the socio-economic inequalities in outcomes that occur in CF may start in the intrauterine period.

CF-EpiNet

The CF-EpiNet SRC allows researchers to use and enhance the data within the Trust's UK CF Registry to tell us more about what happens when you live with cystic fibrosis. This study has used databases for Wales and Denmark to begin investigating the effects of socio-economic deprivation on outcomes in CF.

These databases contain anonymous information from the whole population across these countries.

Importance?

Poor nutrition and slow growth are common features in babies with CF, and both can have an impact on the lung function and survival of those babies in the future.

Rebecca Cosgriff, Registry Lead, said: "Currently, we do not know how birthweight affects future health. The next stage of the research will be to link the databases used in this study with the UK CF Registry. This will add in more CF-specific information and may give further insight.

"A direct result of this study could be that birthweight is added to the data collected by the UK CF Registry from people with CF (or their guardians, if under 18) who choose to share it. By investigating the possible link between factors that cause low birthweight and adult health outcomes, we hope to be able to find ways to address these inequalities and give parents of babies with CF hope for a brighter future."

Impact similar to smoking

Professor David Taylor-Robinson, Co-Principal Investigator, University of Liverpool, said: "Our study shows the importance of data linkage for child health. Using datasets linked across different sources we could look at over two million children in two countries to show that CF has a large effect on birth weight, similar to the impact of maternal smoking during pregnancy.

"The results show that having CF impacts directly on intrauterine growth. More research is needed to understand the biological mechanisms for this, and to assess how birthweight predicts survival for people with CF. From a clinical perspective it is important to optimise support for children with CF right from the start of life "

Medical Xpress

More information: Daniela K Schlüter et al, Impact of cystic fibrosis on birthweight: a population based study of children in Denmark and Wales, *Thorax* (2018). DOI: 10.1136/thoraxjnl-2018-211706

Provided by University of Liverpool

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