

EDINBURGH PREGNANCY RESEARCH TEAM NEWSLETTER



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Welcome...

... to the Spring Issue of the Edinburgh Pregnancy Research Team Newsletter



It's been a busy start to 2023 for the Edinburgh Pregnancy Research Team, so busy that it's almost the end of May!

We have a quick recap on our current studies and an introduction to two new studies in this issue, as well as a more detailed look at STOPPIT-3 and STOPPIT-M, a clinical medicine trial we're currently running. We also look back at a previous study, Co-OPT. You might even spot some new members of our team on our 'Meet the Team' page.

So hopefully you can grab a drink and enjoy reading. Thank you to all of you for your help! We wouldn't be able to do it without you.

*The Edinburgh
Pregnancy Research Team*



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Spotlight Study

STOPPIT-M

STOPPIT-3 and STOPPIT-M

STOPPIT-3 is looking at antenatal corticosteroids given in twin pregnancies with planned birth (IOL or ELCS) between 35+0 - 38+6 weeks. It is a double-blind, placebo-controlled study. STOPPIT-3 participants can also participate in STOPPIT-M if they are having an ELCS (elective caesarean section) birth.

Antenatal corticosteroids (ACS) have been used in pregnancy to reduce neonatal respiratory morbidity and mortality in preterm birth for over 30 years and there is good research into their benefit from 24+0 - 32+0 weeks. Due to this it was suggested that they might be beneficial to use if a higher chance of neonatal respiratory support was anticipated out-with these gestations, for example elective caesarean birth, with some evidence of short term benefits. This led to a wide variety of practice across the UK. Pregnant women and people now face a 'postcode lottery' - some hospitals routinely offer ACS up to 39+0 for ELCS, as an example. However, in the past 12 years there have been some potential side effects noted in ACS use.

You may have heard of some of these side effects, and may even be aware of changes to practice of administering ACS due to these potential side effects. Often research around these potential side effects can be conflicting.



There is fairly clear evidence from population studies that babies who were exposed to ACS were noted to have their growth impacted - weight, length and head circumference, and that ACS exposed babies may have a higher chance of developing hypoglycaemia in the neonatal period.

Perhaps most widely discussed, some studies suggested that babies exposed to ACS have a higher chance of being diagnosed with neurodevelopmental issues later in childhood, for example learning difficulties, ADHD, autism. However, we need to note that:

- these neurodevelopmental issues are fairly widespread in the general population;



STOPPIT-M **Spotlight Study continued STOPPIT-3 and STOPPIT-M** STOPPIT **3**

- ACS are recommended when we have concerns about a pregnancy and anticipate preterm birth so it's difficult to know whether the potential neurodevelopmental side effects noted in some studies were due to the steroids, or due to other factors in the perinatal period;
- admission to the NNU itself is associated with a higher chance of being diagnosed with learning difficulties, ADHD and autism, and as ACS may reduce NNU admissions in the late preterm/early term period the benefit may outweigh potential side effects.

However, as mentioned earlier the research around potential side effects from ACS can be contradictory, and reassuringly, more recent research suggests that there isn't an increased incidence of neurodevelopmental issues in childhood for those babies exposed to ACS. The ALPS trial, which has only recently been presented and awaiting publication soon, looked at the effects of administering ACS in the late preterm period, and followed up childhood outcomes several years later. When looking at neurodevelopment, there was no statistical significance in diagnoses of neurodivergence between those exposed to ACS and those



exposed to placebo.

Crucially, there is little research into whether ACS benefit twins; and little research into whether their use in the late preterm and early-term period is beneficial for twins; or if those benefits outweigh any of the above detailed potential risks. Evidence from singleton studies are extrapolated and applied to multiple pregnancies, and routine practice varies across the UK. As twins make up ~3% of live births in the UK, and yet ~15% of NNU admissions, and current guidelines advise birth in the late preterm-early term period, this is an area that desperately needs to be researched.

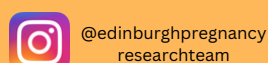
In STOPPIT-3 we are trying to answer these questions. Women and people pregnant with twins, with IOL or ELCS planned at 35+0-38+6 are invited to participate in this double-blind, placebo-controlled study where they will receive two injections (either dexamethasone or saline placebo) within the 7 days prior to ELCS/IOL. The primary outcome is whether admission to NNU for respiratory support was required, and we will follow up at 2 years of age. In STOPPIT-M we are collecting samples at the time of ELCS to understand how ACS work.



FIND OUT MORE: www.stoppitstudy.co.uk

STOPPIT.Trial@ed.ac.uk

[@Stoppit3Study](https://twitter.com/Stoppit3Study)



Retrospect: A Look Back at a Previous Study

Consortium for the Study of Pregnancy Treatments (Co-OPT): An international birth cohort to study the effects of antenatal corticosteroids



The Edinburgh Pregnancy Research Team formed the Consortium for the Study of Pregnancy Treatments (Co-OPT) which is a collaboration across different disciplines to investigate the effects of treatments given in pregnancy. To quote from our website: *"Fifty percent of pregnant women are prescribed drugs in pregnancy, but there are significant knowledge gaps about the safety, optimum dosage and long-term effects of medications in pregnancy. The Consortium for the Study of Pregnancy Treatments (Co-OPT) is a collaboration designed to investigate this"*.

The initial focus of Co-OPT was on antenatal corticosteroids (ACS) which, as mentioned in the article looking at our current studies STOPPIT-3 and STOPPIT-M, are given to pregnant women and people in threatened preterm labour, or if we are planning to deliver babies preterm, to reduce neonatal respiratory morbidity and mortality.

The primary objective was to find out the safety of inappropriately-timed ACS:

- when they are given more than 7 days before birth;
- given in the preterm period but the baby is born at term;
- or given at >36+0 weeks.

The secondary objective was to find out what characteristics influenced maternal and neonatal outcomes following ACS and to develop predictive models as well as trying to establish the best dose, formulation and regimen for administering ACS.



Co-OPT was an international study, and also established a Parental Advisory Board (PAB) group which had members from across Europe contributing data thanks to the assistance of the European Foundation for the Care of Newborn Infants (EFCNI). Dr Emily Frier created an infograph (see next page) with help from PAB and Tom Harris (a graphic designer) explaining the use of ACS before elective caesarean births at term. This is available from the Royal College of Obstetricians and Gynaecologists (RCOG) for clinicians.

Key publications can be found on our website, and led to the RCOG **Green-top Guideline No. 74 Antenatal corticosteroids to reduce neonatal morbidity and mortality** which recommends further research areas, and Co-OPT findings which include that ACS are most beneficial if given within the 48 hours of birth, where imminent birth is anticipated between 24+0-34+6.

Consortium for the Study of Pregnancy Treatments (Co-OPT): An international birth cohort to study the effects of antenatal corticosteroids - continued

USE OF ANTENATAL CORTICOSTEROIDS AT TERM, BEFORE PLANNED CAESAREAN BIRTH
Infographic supported by the Royal College of Obstetricians and Gynaecologists

WHO?
Steroids are sometimes offered to pregnant women due to have a planned Caesarean birth between 37 to 39 weeks' pregnant.

WHAT?
Steroids are naturally occurring chemical messengers (hormones) which are essential for life. We offer a man-made version of steroids to some pregnant women before birth to benefit the baby.
We know that steroids help premature babies (born before 37 weeks) with their breathing.

WHEN?
Steroids are given within the week leading up to the birth.

HOW?
Steroids pass into the mother's blood, then cross the placenta, to reach the baby.

WHY?
Babies born by planned Caesarean are more likely to have difficulties clearing the fluid in their lungs at birth, and are more likely to need to be admitted to the Neonatal Unit. This is an area which specialises in the care of unwell or premature newborn babies. These risks are higher for babies born before 39 weeks. Steroids probably reduce the chance that a baby born by Caesarean will need admission to the Neonatal Unit for breathing problems.

UNCERTAINTIES
Steroids are thought to be generally safe and have been used in Maternity settings for over thirty years, especially before premature birth. There is good evidence to show that steroids have benefits for babies born before 35 weeks. However, there is less evidence on the benefits of steroids for babies born by Caesarean section after 37 weeks. For babies born near their due date, by Caesarean section, it is still not clear if steroids can help to reduce breathing problems, or if steroids reduce the overall possibility a baby is admitted to a Neonatal Unit. There is also some evidence that steroids given later in pregnancy might cause low blood sugars in baby after birth. There is less information available on longer-term effects of steroids in babies, particularly those born near their due date. Steroids given later in pregnancy might also affect a baby's brain development, leading to delay in reaching milestones or affecting educational achievement, however, the evidence for this is limited.

SIDE EFFECTS FOR MOTHER

- Nausea
- Pain at injection site
- Flushing
- Rise in blood sugar if diabetes

For more information scan here

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This infographic is based on RCOG Green-top Guideline No. 74: Stock SJ, Thomson AJ, Papworth S; The Royal College of Obstetricians, Gynaecologists. Antenatal corticosteroids to reduce neonatal morbidity and mortality. BJOG 2022; https://doi.org/10.1111/1471-0528.17027

Infographic on Antenatal Corticosteroids developed by Dr Emily Frier, designed by Tom Harris with members from PAB group. See www.ed.ac.uk/edinburgh-pregnancy-research/current-studies/coopt/antenatal-corticosteroids-infographic for free download

However benefits were also seen if given within 24 hours of birth. It also recommends that when women/pregnant people are having an elective caesarean birth at 37+0-38+0, there should be an informed discussion as the benefits in these circumstances are less clear.

To find out more, or to download the above Infographic, please see our website: www.ed.ac.uk/edinburgh-pregnancy-research/current-studies/coopt

Did You See Us...?

14th April 2023 - EPRT were invited to 'Our Planet, Our Health, Our Future' at Dynamic Earth as part of the Edinburgh Science Festival. Dr Rosie Townsend spoke at the event which was exploring the interaction of environment and climate with our health, from the womb throughout our life course. Some of our team were present and had a stand for our Born in Scotland study. It was a great night and we were delighted to be there!

5th May 2023 - EPRT were asked to do a social media takeover for the Edinburgh Medical School to celebrate **International Day of the Midwife 2023**. It was great to celebrate midwives and midwifery!

Coming Up!

The Edinburgh Pregnancy Research Team have some events coming up that we would love you to come alone to!

What? 'Data Trusts: Lessons Learned and Future Directions' Symposium

EPRT Born in Scotland Data Trust will be at this multi-disciplinary symposium which will bring together academics, health researchers, information governance experts, policy makers, and fellow data intermediary pioneers, to share lessons learned from the Data Trust Initiative pilot projects, and consider future directions for trustworthy data governance.

When? 31st May 2023

Where? Scarman House, University of Warwick

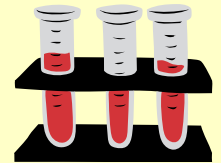


What? Central Scotland Technical Conference

ERRT will submit a poster for our Edinburgh Tissue BioBank to the Central Scotland Technical Conference

When? 6th June 2023

Where? Hunter Halls, University of Glasgow



What? Red 4 Research Day

Look out for stalls around RIE and University of Edinburgh buildings with Research Teams (including EPRT!). Come and tell us what pregnancy research questions are important to you. Not to bribe anyone but... we will have free pens!

When? 16th June 2023

Where? Royal Infirmary of Edinburgh



What? The Centre for Cardiovascular Science (CVS) Symposium

EPRT will submit a Born in Scotland and a Edinburgh Reproductive Tissue Biobank (ERTBB) poster for the symposium. You can follow along on the day by keeping an eye on the CVS Twitter feed, #CVS2023

When? 16th June 2023

Where? Royal Infirmary of Edinburgh



Meet the Team

The Edinburgh Pregnancy Research Team (EPRT) encompasses a diverse group of academic researchers, medics, midwives and laboratory staff. We work together within NHS Lothian and the University of Edinburgh to improve pregnancy outcomes and experiences through research. We also work collaboratively with many other academic and clinical teams and organisations, with the same shared interest in promoting research in pregnancy.



Professor Rebecca Reynolds
Professor of Metabolic Medicine,
University of Edinburgh; Honorary
Consultant Physician, NHS Lothian



Professor Sarah Stock
Personal Chair of Maternal and Fetal Health;
Consultant Obstetrician, NHS Lothian; Maternal and
Fetal Medicine Subspecialist, Royal Infirmary
Edinburgh



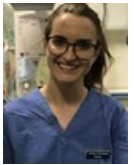
Dr Rosie Townsend
SCREDS Clinical Lecturer;
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Dr Marisa Magennis
Research Coordinator;
Project Manager



Shona Low
Senior Research
Midwife



Jess Thompson
Research Midwife



Em Thompson
Research Midwife



Anna Preston
Research Midwife



Indira Kemp
Research Midwife



Sarah Donaldson
Research Midwife



Rosie Jenks
Research Midwife



Wendy Mak
Research Practitioner



Jayne Brady
Senior BioBank
Technician



Liam McGrandles
Research Technician



Dr Sarah Murray
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Trainee in Maternal and Fetal
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Dr Emily Frier
Research Fellow



Dr Alex Viner
Senior Trainee in Obstetrics
and Gynaecology, NHS
Lothian



Dr Niamh McLellan
Research Fellow



Fabienne Decrue
Research Fellow



Jazz Kirkwood
PhD Student



Farah Francis
PhD Student



Irfa Rizwan
PhD Student

Any Questions?

If you have any questions about our studies, want more details or would like to contact one of our team then email:
researchmidwives@nhslothian.scot.nhs.uk
or phone: 0131 242 2480

Our Current Research Projects

A quick update!



Born in Scotland in the 2020s (BiS) is a cohort study in the pilot phase. It is currently recruiting in NHS Lothian, with plans to recruit participants from across Scotland. We now have over 450 participants, and are opening to recruitment in the Borders soon. We are also working on the **Born in Scotland Data Trust** project - where we want to test how a new, different model for looking after data (called a data trust) could work in practice using BiS as a case study. There is a Data Trust Symposium at the end of May - see our 'Coming Up' feature for more information!

Find out more: www.ed.ac.uk/cardiovascular-science/born-in-scotland
www.ed.ac.uk/edinburgh-pregnancy-research/current-studies/born-in-scotland-data-trust



STOPPIT-3 is a double-blind, randomised placebo-controlled study which aims to resolve uncertainty about whether antenatal corticosteroids (ACS) reduces respiratory morbidity and NNU admission for twins. Women/people pregnant with twins having IOL or ELCS at 35+0-38+6 who meet the eligibility criteria can sign up, and those who have ELCS can also sign up to **STOPPIT-M**. In **STOPPIT-M** we collect samples at the time of caesarean birth and want to find out why ACS work in some babies, but other babies still develop problems.

Find out more: www.ed.ac.uk/edinburgh-pregnancy-research/current-studies/stoppit3



EPRT are helping to recruit in NHS Lothian for a UK-wide study being conducted by the University of East Anglia called **BabyBreathe**. **BabyBreathe** is a package of support designed for the postnatal period to help women stay smoke free postnatally. We are continuing to recruit for this study, and pregnant women and people can sign up themselves if they are interested.

Find out more: www.ed.ac.uk/edinburgh-pregnancy-research/current-studies/babybreathe



Edinburgh Reproductive Tissue Bio Bank (ERTBB)

The **ERTBB** has been set up to aid medical and scientific researchers working in the field of reproductive biology, with the long term goal of improving the health, diagnosis and treatment of women and their unborn infants.

The Bank provides anonymised, high quality tissue samples & matched medical data for researchers working on projects which have already obtained ethical approval from an appropriate ethics committee.

Find out more: www.ed.ac.uk/edinburgh-pregnancy-research/current-studies/biobank

Our New Research Projects

A quick introduction!

I-Test

I-Test

During pregnancy, the structure and function of the blood vessels throughout the body change. In pregnancy these changes may lead to complications, such as conditions like pre-eclampsia. The I-Test study is using Optical Coherence Tomography (OCT) which is a non-invasive scan of the back of the eye (retina). It is a simple and quick test that you may already have had during a trip to the opticians.

The main goal of the study is to collect proof-of-principle data, to show that new retinal biomarkers may be able to be used for early detection of pregnancy complications. These could then potentially be integrated into models that are predictive of the risk of stillbirth.

Find out more: www.ed.ac.uk/edinburgh-pregnancy-research/current-studies/itest

Small Baby Clinic

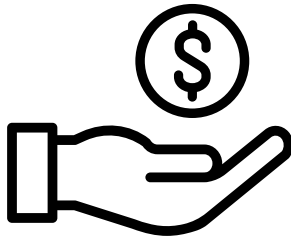
Small Baby Research Clinic

EPRT recently set up the **Small Baby Research Clinic**, following the success of our Metabolic Clinic and Preterm Birth Clinic, both of which have now been adopted by several NHS localities.

Up to 8-10% of babies can be small. Most babies who measure small are growing normally (ie they are genetically small and their size is appropriate). However, we cannot always distinguish on ultrasound between a baby that is small but appropriately grown, and a baby who has a small size due to their placenta not working as well. Because we are committed to providing high quality care using the very latest evidence, we support a number of research studies investigating the health of babies in the womb through this clinic. This means that those attending will be offered information about our active studies while they are receiving care through this clinic, and will have the option to sign up for any studies they are interested in (but participation in any research is not obligatory).

Find out more: www.ed.ac.uk/edinburgh-pregnancy-research/current-studies/smallbabyclinic





Support Us



The Edinburgh Pregnancy Research Team is a group of health and science professionals, working across the University of Edinburgh and NHS. We are committed to promoting and supporting perinatal research in order to improve pregnancy outcomes and experiences for pregnant women and families.



You can help us by fundraising... while you shop!

The easiest way to do this is to go to our website:
www.easyfundraising.org.uk/causes/eprt/



Easyfundraising partners with over 7,000 brands who will donate part of what you spend to a cause of your choice. It won't cost you any extra. The cost is covered by the brand.

Brands pay easyfundraising a commission because when you start your shop from the easyfundraising website or app, they can see we sent you to them. If you make a purchase, a commission is generated, and that gets turned into a donation for us - magic!

Keep in Touch!

If you have any questions about our studies, would like further information or references for anything in this newsletter, please don't hesitate in contacting us. We would be delighted to hear from you!



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<https://www.facebook.com/EdinburghPregnancyResearchTeam>



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