

# A trial of egg recovery rates for IVF using a collection chamber that provides environmental control: Eggcell Trial

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		<input type="checkbox"/> Protocol
<b>Registration date</b> 27/02/2017	<b>Overall study status</b> Suspended	<input type="checkbox"/> Statistical analysis plan
		<input type="checkbox"/> Results
<b>Last Edited</b> 15/12/2022	<b>Condition category</b> Pregnancy and Childbirth	<input type="checkbox"/> Individual participant data
		<input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

About 1 in 7 couples have difficulty conceiving and infertility is recognised to be one of the most life-changing events in healthy young adults. In most cases, IVF is the only option that will improve their chance of a family. Routine IVF treatment involves collecting eggs by inserting a needle through the vagina into the follicles in the ovary. Each follicle contains an egg. The eggs are then taken to the laboratory to be mixed with sperm to create an embryo. The embryo is then transferred to the womb about 3-5 days later. During this procedure eggs and embryos are outside the protective environment of the body and are susceptible to environmental stress. There is a lot of evidence to show that the stage of development of eggs at this time is extremely sensitive to temperature and pH (acidity) changes and that controlled temperature and pH are necessary for successful fertilization. "Eggcell" is a medical device which has been developed to allow collection of eggs into an enclosed, warm environment. This protects the eggs from the environmental variations that occur in the standard test tube procedures. Eggcell use may improve the chance of eggs developing normally. The aim of this study is to compare egg recovery rates using Eggcell compared to standard techniques.

### Who can participate?

Women aged 23-39 who are undergoing routine IVF treatment.

### What does the study involve?

Participants are randomly allocated to one of two groups. Those in the first group have their eggs collected using the standard test tube method. Those in the second group have their eggs collected using the Eggcell method. The clinical procedure for the patient is unchanged. The egg collection procedure will be explained to the patient (orally and in writing) prior to starting treatment according to routine clinical practice in both groups. Information is collected from the patients' medical notes about medical and fertility history and to record the outcome of the fertility treatment. There are no follow up visits or assessments required and information about how many participants in each group become pregnant and have a baby is assessed by reviewing medical records.

What are the possible benefits and risks of participating?  
There are no direct benefits or risks involved with participating in this study.

Where is the study run from?  
Newcastle Fertility Centre (UK)

When is the study starting and how long is it expected to run for?  
February 2019 to November 2020 (updated 16/10/2020, previously: December 2020)

Who is funding the study?  
National Institute for Health Research (UK)

Who is the main contact?  
Dr Karen Nicholson  
Karen.Nicholson2@newcastle.ac.uk

## Contact information

**Type(s)**  
Public

**Contact name**  
Dr Karen Nicholson

**Contact details**  
Newcastle Clinical Trials Unit  
1-4 Claremont Terrace  
Newcastle University  
Newcastle upon Tyne  
United Kingdom  
NE2 4AE  
+44 191 208 2521  
Karen.Nicholson2@newcastle.ac.uk

**Type(s)**  
Public

**Contact name**  
Miss Chrissie Butcher

**Contact details**  
Newcastle Clinical Trials Unit  
1-4 Claremont Terrace  
Newcastle University  
Newcastle upon Tyne  
United Kingdom  
NE2 4AE  
+44 (0) 191 2083819  
Chrissie.Butcher@ncl.ac.uk

**Type(s)**

Scientific

**Contact name**

Prof Alison Murdoch

**Contact details**

Biomedicine West Wing  
International Centre for Life  
Times Square  
Newcastle upon Tyne  
United Kingdom  
NE1 4EP

-  
alison.murdoch@newcastle.ac.uk

## **Additional identifiers**

**Clinical Trials Information System (CTIS)**

Nil known

**Protocol serial number**

32163, Eudamed Number: CIV-GB-17-10-021745

## **Study information**

**Scientific Title**

A trial of egg recovery rates for IVF using a collection chamber that provides environmental control: Eggcell Trial

**Acronym**

Eggcell

**Study objectives**

The aim of this study is to compare the recovery rate of eggs aspirated from the ovary using Eggcell (a medical device that enables collection of the fluid into an enclosed, warm environment) with the current test tube method.

**Ethics approval required**

Old ethics approval format

**Ethics approval(s)**

Approved 31/10/2016, North East - Newcastle & North Tyneside 2 Research Ethics Committee, ref: 16.NE.0330

**Study design**

Randomised; Interventional; Design type: Process of Care, Device

**Primary study design**

Interventional

## Study type(s)

Treatment

## Health condition(s) or problem(s) studied

Specialty: Reproductive health and childbirth, Primary sub-specialty: Reproductive and Sexual Medicine; UKCRC code/ Disease: Reproductive Health and Childbirth/ Other obstetric conditions, not elsewhere classified

## Interventions

Participants will be randomised in the ratio 1:1 to receive either Eggcell or standard treatment using permuted random blocks of variable length. Randomisation will be stratified by site. An individual not otherwise involved with the study will produce the final randomisation schedule for use by this system.

Control group: Participants undergo egg collection using standard techniques. This involves a standard practice of ultrasound guided transvaginal egg collection carried out across the UK.

Intervention group: Participants undergo egg collection using the Eggcell procedure. The clinical procedure for the patient is unchanged for the routine planned procedure. The egg collection procedure will have been explained to the patient (orally and in writing) prior to starting treatment according to routine clinical practice. She will have signed the required treatment and HFEA consent forms.

Preparation for the clinical procedure will be carried out according to the clinic policy for ultrasound guided transvaginal egg collection. When the patient is positioned for egg collection, the "Flush" foot pedal is depressed to pass warm fluid through the collection needle. This will ensure that the needle is warm before the procedure starts.

After insertion of the needle into the ovarian follicle, the 'Collection' foot pedal is depressed to aspirate the follicular fluid. When the follicle is fully collapsed according to the ultrasound appearance, the next follicle is treated. The egg collection procedure is completed according to routine practice.

There will be no follow up visits or assessments required from the patient that are related to participation in the Trial. For the collection of follow up data required for the Trial, this will be obtained by a review of their clinical records.

## Intervention Type

Other

## Primary outcome(s)

Egg recovery rate per patient defined as the number of eggs recovered divided by the number of follicles aspirated is assessed on the egg collection day.

## Key secondary outcome(s)

1. Fertilisation rate defined as the total number of fertilised eggs with 2PN seen on day 1 divided by the total number of MII eggs retrieved on the egg collection day (day 1)
2. The number of TOP grade embryos on days 3 (cleavage stage) and 5 (blastocyst). Embryo development will be graded according to the United Kingdom National External Quality Assessment Service (UK NEQAS) grading system - Embryo Morphology Scheme .
3. Early treatment outcome defined as the presence of an intrauterine sac containing at least one foetal pulse per egg collection on day 14/+21 days
4. Implantation rate defined as the total number of foetal pulsations divided by the total

number of embryos transferred on day 14/+21 days

5. Live birth rate defined as the total number of babies born divided by the total number of egg collections at 9 months/+3 months

6. Delivery rate per embryo defined as the total number live birth events divided by the total number of embryos transferred at 9 months/+3 months

7. Clinician's experience of each procedure recorded using a questionnaire designed for the purpose of this study on the egg collection day

8. Embryologist's experience of each procedure recorded using a questionnaire designed for the purpose of this study on the egg collection day

### **Completion date**

30/11/2020

## **Eligibility**

### **Key inclusion criteria**

1. Women having routine IVF treatment can be considered who have grown  $\geq 10$  and  $\leq 20$  follicles of size  $\geq 16$ mm in diameter as seen on the scan prior to hCG injection.

2. Provision of informed consent

3. Aged 23-39 (inclusive)

### **Participant type(s)**

Patient

### **Healthy volunteers allowed**

No

### **Age group**

Adult

### **Sex**

Female

### **Key exclusion criteria**

1. Women who have grown less than 10 or more than 20 follicles of size 16mm in diameter

2. Unable to give informed consent

3. Insufficient English to allow completion of informed consent and study questionnaire

4. Women with a previous poor recovery rate ( $< 50\%$ )

5. Previous participation in this study

6. Women who have indicated that they do not wish to be involved in research

### **Date of first enrolment**

01/02/2019

### **Date of final enrolment**

19/10/2020

## **Locations**

### **Countries of recruitment**

United Kingdom

England

**Study participating centre**  
**Newcastle Fertility Centre**  
Biomedicine West Wing  
International Centre for Life  
Times Square  
Newcastle upon Tyne  
United Kingdom  
NE1 4EP

## Sponsor information

### Organisation

Newcastle upon Tyne Hospitals NHS Foundation Trust

### ROR

<https://ror.org/05p40t847>

## Funder(s)

### Funder type

Government

### Funder Name

National Institute for Health Research

### Alternative Name(s)

National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

### Funding Body Type

Government organisation

### Funding Body Subtype

National government

### Location

United Kingdom

# Results and Publications

## Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study is not expected to be made available due to the strict confidentiality regulations of the HFEA and that specific combinations of clinical data could identify individuals.

## IPD sharing plan summary

Not expected to be made available

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Other publications</a>	Eggcell laboratory validation prior to use with human participants	15/12/2022	15/12/2022	Yes	No
<a href="#">Participant information sheet</a>	version V2	05/01/2017	27/02/2017	No	Yes
<a href="#">Participant information sheet</a>	version V3.0	28/10/2018	02/03/2020	No	Yes