

# A pre-pregnancy study examining the effects of an intensive lifestyle package supported with Liraglutide treatment, a medication equivalent to a natural hormone produced in the stomach, in obese women with previous history of pregnancy diabetes

<b>Submission date</b> 21/12/2016	<b>Recruitment status</b> No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered
		<input type="checkbox"/> Protocol
<b>Registration date</b> 22/12/2016	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan
		<input type="checkbox"/> Results
<b>Last Edited</b> 30/05/2017	<b>Condition category</b> Nutritional, Metabolic, Endocrine	<input type="checkbox"/> Individual participant data
		<input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Up to 15% of pregnant women develop a temporary type of diabetes during pregnancy called gestational diabetes mellitus (GDM). In GDM, women develop high blood sugar levels as the body is unable to produce enough insulin (a hormone that helps convert sugar into stored energy). GDM is associated with increased risks for mother and baby including increased risk of later life diabetes for the mother and increased risk of childhood obesity for the baby. If a woman overweight or obese or has previously had GDM, then their risk of developing it is higher. Treatments during pregnancy to reduce the risk of GDM to date have been unsuccessful, and so it is important to look at the months before pregnancy as a time to intervene and reduce the chance of developing GDM in a subsequent pregnancy. Optimising mother's health prior to a pregnancy holds considerable potential to improve mother and baby's health in pregnancy. This study is looking at one such intervention in women at risk of GDM before pregnancy. The aim of this study is to find out whether this programme, which includes intensive lifestyle changes and treatment with a medication called Liraglutide, is feasible and acceptable to women.

### Who can participate?

Women who are obese (without being diabetic) and/or have previously had GDM.

### What does the study involve?

Participants are randomly allocated to one of two groups. Those in the first group take part in the GDM prevention intervention. This involves taking part in an intensive lifestyle change programme involving a healthy diet and physical activity, as well as receiving daily injections of liraglutide (a drug which mimics the action of a protein called GLP-1 which triggers the release of insulin). Those in the second group receive intensive lifestyle advice also. Participants in both

groups come to a clinic service in a monthly basis over a 6-month period, where various measurements and blood collection are carried out.

What are the possible benefits and risks of participating?

Participants may benefit from potentially improved the blood sugar levels and a reduction of the incidence of diabetes in subsequent pregnancies, as well as improved control of blood glucose in participants with type 2 diabetes mellitus and a reduction body weight. Liraglutide is generally tolerated well, however the most frequently reported adverse effects of Liraglutide are gastrointestinal (gut), more than 5% of patients will present with nausea, diarrhoea, vomiting, constipation, abdominal pain, and dyspepsia (indigestion). Serious side effects are rare during Liraglutide treatment.

Where is the study run from?

National Maternity Hospital (Ireland)

When is the study starting and how long is it expected to run for?

September 2016 to December 2020

Who is funding the study?

University College Dublin (Ireland)

Who is the main contact?

Professor Fionnuala McAuliffe

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## Contact information

### Type(s)

Scientific

### Contact name

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## Additional identifiers

**EudraCT/CTIS number**

**IRAS number**

**ClinicalTrials.gov number**

**Secondary identifying numbers**

EC 26.2016

## **Study information**

### **Scientific Title**

An open-label randomized trial of an intensive lifestyle package supported with Liraglutide treatment in obese, non-pregnant women with previous history of Gestational Diabetes Mellitus

### **Study objectives**

Pre-pregnancy treatment with an intensive lifestyle intervention supported by daily Liraglutide injections in obese non-pregnant women with previous gestational diabetes is feasible and acceptable.

### **Ethics approval required**

Old ethics approval format

### **Ethics approval(s)**

National Maternity Hospital Ethics Committee, 14/11/2016, ref: EC 26.2016

### **Study design**

Single-centre open label randomised controlled trial

### **Primary study design**

Interventional

### **Secondary study design**

Randomised controlled trial

### **Study setting(s)**

Hospital

### **Study type(s)**

Prevention

### **Participant information sheet**

Not available in web format, please use the contact details below to request a patient information sheet

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

1. Gestational diabetes
2. Glucose intolerance
3. Obesity

## **Interventions**

Eligible participants are randomised to one of two groups in a ratio of 1:1 for usual care versus intervention using computer-generated allocation.

**Intervention arm:** The study intervention involves a treatment package of an intensive lifestyle approach (including diet and physical activity advice) supported by a daily treatment of Liraglutide for a period of 6 months. The control group will have usual care.

At baseline and at 6 months an OGTT will be carried out and bloods analysed for metabolic parameters such as HOMA-IR, hsCRP, lipids and HbA1c.

A 3-day food diary and a lifestyle questionnaire will be given to participants, at baseline and at 6 months, to assess behaviour change, readiness and analyse nutritional quality of the diet.

At 6 months the intervention arm will complete an acceptability questionnaire to assess patient views of the intervention and a diary card to assess compliance with study medication.

At the end of the treatment/intervention period of 6 months the participant will have finished the study trial. Participants will be contacted if conception is achieved, to follow up in their potential development of gestational diabetes or impaired glucose tolerance.

**Control arm as of 02/05/2017:**

**Control arm:** Participants will receive intensive lifestyle alone. Participants will be followed up after 6 months.

**Original control arm:**

**Control arm:** Participants receive usual care, including general lifestyle advice. Participants will be followed up after 6 months.

## **Intervention Type**

Mixed

## **Primary outcome measure**

1. Proportion of eligible women who would agree to participate in the study. This will be calculated by the % of women who agree to study participation out of all those eligible women who were approached for study participation.
2. Acceptability of women of taking daily Liraglutide injections. This will be assessed by an acceptability questionnaire completed after 6 months of study participation
3. Proportion of women that complied with the study protocol and completed the study intervention. This will be assessed by adherence to study drug using a drug compliance diary, attendance at study visits, satisfactory collection of study endpoints

## **Secondary outcome measures**

1. Fasting glucose levels are measured in fasting plasma samples at baseline and 6 months
2. Effect on glucose homeostasis after treatment, as measured by OGTT, HbA1c, HOMA-ir at baseline and 6 months
3. Effect on inflammatory markers, including C- reactive protein, as measured by blood samples at baseline and 6 months
4. Weight loss as assessed by weighing participants at baseline and 6 months
5. Gestational diabetes mellitus incidence and/or impaired glucose tolerance in a subsequent pregnancy as measured by a positive result in a future pregnancy for gestational diabetes using standard diagnostic criteria

## **Overall study start date**

01/09/2016

**Completion date**

31/12/2020

## Eligibility

**Key inclusion criteria**

1. Severe obesity BMI  $\geq 35$  kg/m<sup>2</sup> without Type 2 Diabetes Mellitus and with previous gestational diabetes (with or without insulin)
2. Participants must be able and willing to give written informed consent and to comply with the requirements of this study protocol
3. Participant must be a female, aged 18 years or above at baseline
4. Planning a pregnancy within the next one to two years
5. Negative pregnancy test
6. Contraception during the study period

Removed 02/05/2017:

Post pregnancy Type 2 Diabetes Mellitus with BMI  $\geq 30$  kg/m<sup>2</sup> and HbA1C  $>42$  mmol/mol

**Participant type(s)**

Patient

**Age group**

Adult

**Lower age limit**

18 Years

**Sex**

Female

**Target number of participants**

50 participants in total.

**Key exclusion criteria**

1. Allergy/sensitivity to study medication
2. Female subjects who are pregnant or breast-feeding or considering becoming pregnant during the study period
3. Medical disorder requiring medication other than stable hypertension, hypothyroidism, polycystic ovarian syndrome
5. Ongoing abuse of alcohol or narcotics
6. Family or personal history of multiple endocrine neoplasia type 2 (MEN2) or familial medullary thyroid carcinoma (FMTC)
7. Personal history of non-familial medullary thyroid carcinoma
8. History of acute or chronic pancreatitis
9. Obesity induced by drug treatment
10. Use of approved weight lowering pharmacotherapy
11. Previous surgical treatment of obesity
12. History of major depressive disorder or suicide attempt
13. Uncontrolled hypertension
14. Subjects unable to provide written informed consent

Added 30/05/2017:  
15. Type 2 diabetes mellitus

**Date of first enrolment**  
01/04/2017

**Date of final enrolment**  
31/01/2020

## **Locations**

**Countries of recruitment**  
Ireland

**Study participating centre**  
**National Maternity Hospital**  
Holles St, Grand Canal Dock  
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## **Sponsor information**

**Organisation**  
Clinical Research Centre - University College Dublin

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**Sponsor type**  
University/education

**Website**  
<http://www.ucd.ie/medicine/ourresearch/researchenvironment/ucdclinicalresearchcentre/>

**ROR**  
<https://ror.org/05m7pjf47>

# Funder(s)

**Funder type**

University/education

**Funder Name**

University College Dublin

**Alternative Name(s)**

UCD

**Funding Body Type**

Private sector organisation

**Funding Body Subtype**

Universities (academic only)

**Location**

Ireland

## Results and Publications

**Publication and dissemination plan**

Planned publication in a high-impact peer reviewed journal after study completion.

**Intention to publish date**

31/12/2021

**Individual participant data (IPD) sharing plan**

The current data sharing plans for the current study are unknown and will be made available at a later date

**IPD sharing plan summary**

Data sharing statement to be made available at a later date