

# Evaluating dietary intervention before surgical treatment for epilepsy

<b>Submission date</b> 13/11/2014	<b>Recruitment status</b> Stopped	<input type="checkbox"/> Prospectively registered
		<input type="checkbox"/> Protocol
<b>Registration date</b> 13/11/2014	<b>Overall study status</b> Stopped	<input type="checkbox"/> Statistical analysis plan
		<input type="checkbox"/> Results
<b>Last Edited</b> 16/01/2020	<b>Condition category</b> Nervous System Diseases	<input type="checkbox"/> Individual participant data
		<input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Focal cortical dysplasia (FCD) is an abnormality of brain development that is a common cause of epilepsy, which results in repeated seizures. The ketogenic diet is a high fat, low carbohydrate, low protein diet designed to mimic the effects of fasting. The aim of this study is to find out whether the ketogenic diet improves seizure control, brain development and quality of life in children with FCD type II who are about to undergo surgery for epilepsy.

### Who can participate?

Children aged 5 - 15 with epilepsy that is resistant to drug treatment and believed to be the result of FCD type II, who are considered to be surgically treatable.

### What does the study involve?

Participants are randomly allocated to either receive 6 months of treatment with a ketogenic diet before their surgery, or to proceed directly to surgery (no pretreatment).

### What are the possible benefits and risks of participating?

Not provided at time of registration

### Where is the study run from?

University of Liverpool (UK)

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

November 2014 to September 2019

### Who is funding the study?

EU Seventh Framework Programme

### Who is the main contact?

Dr Christiana Papamichael  
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## Contact information

**Type(s)**

Scientific

**Contact name**

Dr Christiana Papamichael

**Contact details**

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**Additional identifiers****ClinicalTrials.gov (NCT)**

NCT02261753

**Protocol serial number**

17696

**Study information****Scientific Title**

Evaluating Dietary Intervention Before surgical treatment for Epilepsy (EDIBLE)

**Acronym**

EDIBLE v1.0

**Study objectives**

The investigators are undertaking the first European Randomised Controlled Trial (RCT) for epilepsy surgery in children with FCD type II, to prospectively evaluate the role of the KD prior to surgery in improving seizure outcome. The investigators will evaluate the role of the ketogenic diet as a disease-modifying treatment to achieve seizure control and improve neurodevelopment and quality of life. The ketogenic diet is a high fat, low carbohydrate, low protein diet designed to mimic the effects of fasting on the body. It will be administered by calculation as per local standardised classical ketogenic diet protocol with utilisation of long chain fat in a ratio of 2:1 to 4:1 carbohydrate and protein.

**Ethics approval required**

Old ethics approval format

**Ethics approval(s)**

14/LO/1885

## Study design

Randomised; Interventional; Design type: Prevention

## Primary study design

Interventional

## Study type(s)

Treatment

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

Topic: Children; Subtopic: All Diagnoses; Disease: All Diseases

## Interventions

Children will be randomised to either receive 6m treatment presurgery with a ketogenic diet, or to proceed direct to surgery (no pretreatment).

## Intervention Type

Other

## Phase

Not Applicable

## Primary outcome(s)

Time to 6 month remission; the time to 6 months of seizure freedom from the date of randomisation

## Key secondary outcome(s)

Current as of 19/09/2017:

1. Time to first seizure from date of randomisation;
2. Time to 12 month remission after randomisation;
3. Time to 24 month remission after randomisation (if enough time for follow-up is available);
4. Quality of life at 12 months after randomisation (and at 24 months if enough time for follow-up is available);
5. Adaptive behaviour assessment at 12 months (()) after randomisation (and at 24 months if enough time for follow-up is available);
6. Methylation changes in tissue (DNA) from children pre-treated with the ketogenic diet. Tissue will be stored in the EEBB, and further distributed to DESIRE partners (Baker IDI Heart and Diabetes Institute Holdings Ltd, Varionostic GMBH,CEGAT) for further analysis;
7. Changes in peripheral DNA (blood platelets) following treatment with the KD. Tissue will be stored in the EEBB, and further distributed to DESIRE partners (Baker IDI Heart and Diabetes Institute Holdings Ltd, Varionostic GMBH,CEGAT) for further analysis;
8. Proportion of immediate AEs following resective surgery (i.e. surgical complications within 30 days) in the group pre-treated with KD compared to those without.
9. Compare the general AE occurrence between the group pre-treated with KD compared to the group without KD pre-treatment.

Previous secondary outcome measures:

1. Methylation changes in tissue (DNA); Timepoint(s): At the time of surgery between ketogenic diet pre-treatment group vs non pre-treated group
2. Neuropsychological assessment; Timepoint(s): Neuropsychological assessment at 12 and at 24 months after randomisation

3. Peripheral DNA changes (blood); Timepoint(s): At baseline and at the time of surgery
4. Proportion of immediate AEs following resective surgery; Timepoint(s): Surgical complications within 30 days from surgery
5. Quality of life; Timepoint(s): Quality of life at 12 and at 24 months after randomisation

**Completion date**

26/07/2017

**Reason abandoned (if study stopped)**

Participant recruitment issue

## Eligibility

**Key inclusion criteria**

Current as of 19/09/2017:

This is applicable to all participating countries with trial approvals working to Protocol V5.0 06 /09/2016 except Austria and Germany (working to Protocol V2.0 17/03/2015)

1. Children aged 3 - 15 years;
2. MRI changes consistent with a diagnosis of FCD type II a or b;
3. History of at least two epileptic seizures in the past 6 months before randomisation;
4. Seizure semiology consistent with focal onset, agreed after pre-surgical discussion to be surgically treatable;
5. Parent/ legal representative willing to give consent.

Previous inclusion criteria:

1. Children aged 5-15 years
2. MRI changes consistent with a diagnosis of Focal Cortical Dysplasia type II a or b
3. History of continuing seizures for less than 5 years
4. History of at least two epileptic seizures in the past 6 months before randomisation
5. Seizure semiology consistent with focal onset, agreed after pre-surgical discussion to be surgically treatable
6. Failure of at least two antiepileptic drugs to control the seizures
7. Parent/legal representative willing to give consent

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Child

**Lower age limit**

3 years

**Upper age limit**

15 years

**Sex**

All

**Key exclusion criteria**

1. Previous use of the ketogenic diet
2. Not a surgical candidate for Focal Cortical Dysplasia resection
3. Administration of the ketogenic diet is medically contraindicated

**Date of first enrolment**

01/11/2014

**Date of final enrolment**

26/07/2017

**Locations**

**Countries of recruitment**

United Kingdom

England

Scotland

Austria

Czech Republic

France

Germany

Italy

Switzerland

United States of America

**Study participating centre**

**University of Liverpool**

Liverpool

United Kingdom

L69 3GA

**Study participating centre**

**Krankenhaus Mara Maraweg**

Bielefeld,

Germany

33617

**Study participating centre**  
**Bristol Royal Hospital for Children**  
24 Upper Maudlin Street  
Bristol  
United Kingdom  
BS2 8BJ

**Study participating centre**  
**Birmingham Children's Hospital**  
Steelhouse Lane  
Birmingham  
United Kingdom  
B4 6NH

**Study participating centre**  
**Royal Hospital for Sick Children**  
9 Sciennes Road  
Edinburgh  
United Kingdom  
EH9 1LF

**Study participating centre**  
**Children's Hospital Meyer**  
Viale Gaetano Pieraccini, 24  
Florence  
Italy  
50139

**Study participating centre**  
**Hôpitaux Universitaires de Genève**  
Rue Gabrielle-Perret-Gentil 4  
Geneva  
Switzerland  
1205

**Study participating centre**  
**Great Ormond Street Hospital for Children**  
Great Ormond Street  
London

United Kingdom  
WC1N 3JH

**Study participating centre**  
**HFME - Hospices Civils De Lyon**  
3 Quai des Célestins  
Lyon  
France  
69002

**Study participating centre**  
**Royal Manchester Children's Hospital**  
Oxford Road  
Manchester  
United Kingdom  
M13 9WL

**Study participating centre**  
**Motol University Hospital**  
150 06, V Úvalu 84 Czechia  
Prague  
Czech Republic  
150 00

**Study participating centre**  
**Ospedale Pediatrico Bambino Gesù**  
Piazza di Sant'Onofrio, 4  
Rome  
Italy  
00165

**Study participating centre**  
**Hopital de Hautepierre**  
1 Avenue Molière  
Strasbourg  
France  
67200

**Study participating centre**

**Schön Klinik Vogtareuth**  
Krankenhausstraße 20  
Vogtareuth  
Germany  
83569

**Study participating centre**  
**Medical University Vienna**  
Spitalgasse 23  
Vienna  
Austria  
1090

**Study participating centre**  
**Johns Hopkins Hospital**  
1800 Orleans Street  
Baltimore  
United States of America  
21287,

## **Sponsor information**

**Organisation**  
University College London (UK)

**ROR**  
<https://ror.org/02jx3x895>

## **Funder(s)**

**Funder type**  
Government

**Funder Name**  
Seventh Framework Programme

**Alternative Name(s)**  
EC Seventh Framework Programme, European Commission Seventh Framework Programme, EU  
Seventh Framework Programme, European Union Seventh Framework Programme, FP7

## Funding Body Type

Government organisation

## Funding Body Subtype

National government

## Location

# Results and Publications

## Individual participant data (IPD) sharing plan

No individual data will be analysed. The identity of participants will remain confidential and results from blood and tissues samples donated for research purposes will not be copied into participants' medical notes.

## IPD sharing plan summary

Not provided at time of registration

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">HRA research summary</a>			28/06/2023	No	No
<a href="#">Study website</a>	Study website	11/11/2025	11/11/2025	No	Yes