

# Effect of Icosapent ethyl on inflammation in the vessel wall assessed by the Fat Attenuation Index Score (IRIS-FAI)

<b>Submission date</b> 22/06/2024	<b>Recruitment status</b> Recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 22/08/2024	<b>Overall study status</b> Ongoing	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 08/11/2024	<b>Condition category</b> Circulatory System	<input type="checkbox"/> Individual participant data <input checked="" type="checkbox"/> Record updated in last year

## Plain English Summary

### Background and study aims

Cardiovascular disease is a general term for conditions affecting the heart or blood vessels. Although there have been improvements in the prevention and treatment of cardiovascular disease, it continues to be a major health concern globally. Icosapent Ethyl (IPE), also known as 'Vazkepa', is an approved medication in the UK. This medication is given to people who have their cholesterol levels under control with statins but may still be at risk of cardiovascular disease for other reasons, such as high triglycerides (a type of fat in the blood). The risk that remains after statin use is known as "residual risk". People with high triglyceride levels are at greater risk of having a cardiovascular event, such as a heart attack or stroke. Clinical trials have shown that IPE can help lower this risk in people who are known to have cardiovascular disease and who have raised triglycerides. However, the way IPE works is not fully understood. This trial aims to understand how IPE works by assessing the effect of IPE on a marker known as the Fat Attenuation Index (FAI) score. FAI can detect inflammation in the coronary arteries using images from a CT scan (also known as a coronary CT angiography). Testing the effect of IPE on the FAI score will provide a better understanding of how IPE works and how it can be used to improve the health of people who are at risk of having a cardiovascular event.

### Who can participate?

High-risk adults aged  $\geq 18$  years old with established cardiovascular disease and raised triglyceride levels who are already receiving statins.

### What does the study involve?

The research will be carried out across approximately 6 different NHS hospital sites in the UK. The hypothesis is that targeted treatment of participants with high vascular inflammation taking IPE reduces vascular inflammation to a greater extent than standard-of-care treatment. Participants randomised to the treatment arm will be asked to take two capsules of IPE twice daily for 52 weeks.

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

The study has the potential to provide important insights into the use of IPE as an adjunct

therapy for reducing cardiovascular risk in high-risk, statin-treated patients with established CVD and elevated plasma triglycerides (TGs).

As IPE is an approved medication with an established safety profile, there is a low risk of side effects. The most commonly reported adverse events are gastrointestinal disturbances and skin reactions. However, in rare cases, IPE has been associated with an increased risk of bleeding, particularly in patients receiving concomitant anticoagulant therapy. Therefore, patients receiving anticoagulants will be excluded from the study. Undesirable effects will be noted in the participant information leaflet for the patient's review and consideration, before consenting to the study.

The study involves a low risk of radiation exposure, as it uses computed tomography (CT) imaging to assess coronary fat attenuation index. The radiation dose associated with coronary CT angiography is generally low. The risk of radiation exposure will be minimized by using low-dose CT imaging protocols and limiting the number of scans to only those necessary for the study at follow-up as baseline measurements have already been obtained as part of routine clinical practice. If a participant has had a routine CTCA scan within 3 months before the Week 52 visit, a repeat CTCA at Week 52 scan will not be required to avoid repeated exposure to radiation.

There is a limited amount of data on the use of IPE in pregnant women, and it is not known whether the drug is excreted in human milk. Therefore, women of childbearing potential will be asked to undertake a urine pregnancy test at the randomisation clinic visit. Results must be reviewed, and eligibility confirmed before dispensing trial medication. If a participant becomes pregnant during the study, trial medication should be discontinued immediately. This information will be clearly stated in the PIS.

Blood tests may cause some redness, swelling of the vein, infection or fainting and this is explained to participants in the PIS.

Participants will be asked to travel to the clinic more regularly than they normally would, which could interfere with everyday plans. Participants will be compensated for their travel costs. To reduce the burden on the participant, 5 out of the 9 visits will be conducted by telephone rather than in the clinic.

The participants will be given the option to download a free digital health app (such as ELFIE) on their mobile phones as a tool to increase medication compliance. The app can push reminder notifications to the participant's mobile phone when they are required to take their medication. This is an optional tool, and will not be mandatory for any participant.

Where is the study run from?  
Imperial College London

When is the study starting and how long is it expected to run for?  
June 2024 to July 2026

Who is funding the study?  
Amarin UK Limited

Who is the main contact?  
Imperial Clinical Trials Unit

## Contact information

### Type(s)

Public, Scientific

### Contact name

Ms Claire Brennan

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Scientific, Principal Investigator

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## Additional identifiers

### EudraCT/CTIS number

Nil known

### IRAS number

1009727

### ClinicalTrials.gov number

Nil known

### Secondary identifying numbers

24IC8850, IRAS 1009727

## Study information

### Scientific Title

Effect of icosapent ethyl on coronary Fat Attenuation Index score in high-risk, statin treated patients with established cardiovascular disease and elevated plasma triglycerides

## Acronym

IRIS-FAI

## Study hypothesis

To evaluate the impact of IPE treatment on coronary inflammation (assessed by Fat Attenuation Index-Score).

-To evaluate the impact of Icosapent Ethyl (IPE) treatment on cardiovascular risk (assessed by CaRi-Heart®) plaque morphology and biochemical lipid and inflammation parameters.

-Evaluating the effect of IPE on lipid parameters, including plasma Triglycerides (TGs), high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C), and non-HDL-C.

- Assessing the safety and tolerability of IPE in high-risk, statin-treated patients with established cardiovascular disease and elevated plasma TGs.

## Ethics approval required

Ethics approval required

## Ethics approval(s)

Approved 12/08/2024, South Central - Hampshire A Research Ethics Committee (2 Redman Place, Stratford, London, E20 1JQ, United Kingdom; +44 (0)207 104 8120, 207 104 8210, 2071048135; hampshirea.rec@hra.nhs.uk), ref: 24/SC/0231

## Study design

Randomized controlled open-label parallel-group trial

## Primary study design

Interventional

## Secondary study design

Randomised parallel trial

## Study setting(s)

Hospital

## Study type(s)

Safety, Efficacy

## Participant information sheet

## Condition

Cardiovascular disease, hypertriglyceridemia

## Interventions

This trial has an open-label treatment arm with Icosapent Ethyl (IPE) and a usual care arm. 50 participants will be randomised to IPE plus usual care, and 50 will be randomised to usual care only.

Participants in the IPE arm will be given standard advice that is consistent with usual clinical practice i.e. to take two 998mg capsules, orally, twice daily at a similar time each day and to take the medication with or following a meal.

Eligibility for inclusion in the trial will be confirmed at the randomisation visit. The randomisation sequence will be created by Sealed Envelope and will be incorporated into the EDC. Randomisation will be performed using random permuted blocks of size 4 and 6. To aid concealment the block size will be randomly chosen for each block.

All participants will be followed up for 52 weeks from randomisation.

### **Intervention Type**

Drug

### **Pharmaceutical study type(s)**

Therapy

### **Phase**

Not Applicable

### **Drug/device/biological/vaccine name(s)**

Vazkepa [Icosapent Ethyl]

### **Primary outcome measure**

Median change in coronary artery inflammation measured using the Fat Attenuation Index-Score from screening to 12 months, IPE vs standard of care, including all randomized participants (Intention to treat)

### **Secondary outcome measures**

1. Median change in CaRi-Heart® Risk, and the associated predicted 8-year risk of cardiac mortality and major adverse cardiovascular events, with IPE vs standard of care (comparison by change from screening to 12 months, IPE vs standard of care)
2. Median change in non-calcified plaque volume and total atherosclerotic plaque burden between screening CTCA and 12-month CTCA, IPE vs usual care
3. Median change in plasma lipid parameters, from screening to 12 months

### **Overall study start date**

19/06/2024

### **Overall study end date**

01/07/2026

## **Eligibility**

### **Participant inclusion criteria**

1. Adult aged  $\geq 18$  years old
2. Participants will come from one of the following groups:
  - 2.1. Enrolled in the ORFAN registry OR
  - 2.2. Undergone CTCA with CaRi-Heart® analysis performed
3. CTCA performed  $\leq 2$  months before screening [defined as screening]

4. FAI score  $\geq$  75th percentile in the left anterior coronary or right coronary artery or with FAI score  $\geq$  95th percentile in the circumflex coronary artery; OR CaRi-Heart® Risk  $>$ 5%
5. Evidence of established coronary artery disease defined by the presence of at least one of the following:
  - 5.1. Evidence of coronary artery plaques (evaluatable, pre-randomization CTCA with quantifiable, non-calcified plaque in an unstented segment)  
Or Coronary artery Calcium Score (CAC)  $>$  100
6. Fasting or non-fasting serum triglycerides  $\geq$ 1.7mmol/L within the last 6 months either on ORFAN baseline blood sample or blood sample taken from routine care, whichever is available and/or most recent
7. Stable dose of statin therapy for  $>$ 30 days before randomization
8. Able to undergo CT imaging of the coronary arteries at 12 months follow-up
9. Women of childbearing potential willing to use an acceptable method(s) of birth control during the study and for 30 days after the end of treatment, including Combined hormonal contraception (oral contraceptive pills, contraceptive patch, vaginal ring), Progestogen-only contraception (oral contraceptive pills, injectable, implant, intrauterine device [IUD], hormonal intrauterine system [IUS]), Barrier methods with spermicide (condoms, diaphragm with spermicide), Intrauterine device (IUD) without hormones, and Sterilization (surgical sterilization of the participant or partner). There are no protocol-specific birth control requirements for men with partners who can become pregnant.
10. Willing and able to provide written informed consent to participate in the study

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

Patient

### **Age group**

Adult

### **Lower age limit**

18 Years

### **Sex**

Both

### **Target number of participants**

100

### **Participant exclusion criteria**

1. Use of other omega 3 fatty acid medicines either prescription or over the counter within the previous 28 days
2. Known allergy or hypersensitivity to icosapent ethyl or any of its components
3. History of pancreatitis or uncontrolled diabetes mellitus (HbA1c  $>$  8% or 10.1 mmol/L)
4. Use of PCSK9 inhibitors within the previous 90 days
5. Use of Bile Acid sequestrants within the previous 7 days
6. Serum triglycerides  $>$ 5.63mmol/L
7. Serum calculated or directly measured LDL-C  $\geq$ 2.6mmol/L
8. Current use of anticoagulant therapy
9. Prior history of permanent or persistent Atrial Fibrillation. Patients with a history of paroxysmal atrial fibrillation are eligible
10. Any condition that, in the opinion of the study investigator, would make a patient ineligible for icosapent ethyl as per the SmPC, or for CTCA

11. Active chronic treatment with any anti-inflammatory agents (e.g. NSAIDs, systemic corticosteroids)
12. Severe Chronic kidney disease (estimated glomerular filtration rate < 30 mL/min/1.73 m<sup>2</sup> and /or serum creatinine > 2.5 mg/dL or 220 µmol/l).
13. Hepatic dysfunction (aspartate aminotransferase [AST] or alanine aminotransferase [ALT] > 3 × the upper limit of normal [ULN] measured on local labs in last 6 months)
14. Participants who have participated in another research study involving a treatment intervention or an investigational product, in the past 12 weeks.
15. Contraindication to iodinated contrast media for CTCA.
16. Pregnancy or unwilling to take a pregnancy test at the randomisation visit or lactating women.

**Recruitment start date**

31/08/2024

**Recruitment end date**

30/05/2025

## Locations

**Countries of recruitment**

England

United Kingdom

**Study participating centre**

-

United Kingdom

-

## Sponsor information

**Organisation**

Imperial College London

**Sponsor details**

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**Sponsor type**

University/education

**Website**

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**ROR**

<https://ror.org/041kmwe10>

## **Funder(s)**

**Funder type**

Industry

**Funder Name**

Amarin UK Limited

## **Results and Publications**

**Publication and dissemination plan**

1. Peer reviewed scientific journals
2. Conference presentation
3. Submission to regulatory authorities

**Intention to publish date**

01/07/2027

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

The 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