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Stopping or continuing RAS-inhibitor medicines before surgery

Submission date 16/06/2026	**Recruitment status** Recruiting	[_] Prospectively registered [X] Protocol
Registration date 13/10/2026	**Overall study status** Ongoing	[_] Statistical analysis plan [_] Results
Last Edited 13/10/2026	**Condition category** Surgery	[_] Individual participant data [X] Record updated in last year

Plain English summary of protocol

Background and study aims

Many people take medicines called renin-angiotensin system (RAS) inhibitors, such as ACE inhibitors and angiotensin receptor blockers (ARBs), to treat high blood pressure, heart failure or kidney disease. When people taking these medicines need major surgery, doctors must decide whether the medicines should be continued or temporarily stopped around the time of the operation. Both approaches may affect blood pressure during and after surgery and could influence the risk of complications. Currently, there is uncertainty about which approach is best. This study aims to determine whether stopping or continuing RAS inhibitor medicines before major elective non-cardiac surgery leads to better recovery and health outcomes.

Who can participate?

Patients aged 50 years and older who are awaiting major elective non-cardiac surgery and are currently taking a RAS inhibitor medicine (an ACE inhibitor and/or ARB).

What does the study involve?

Participants are randomly allocated to one of two groups between five and ten days before surgery. Those in the stop group stop taking their RAS inhibitor medicine for three days before surgery and restart it four days after surgery. Those in the continue group continue taking their medication as usual before and after surgery. Information on blood pressure, laboratory results and cardiovascular medications is collected during the seven-day intervention period. Participants are followed up 30 days and 180 days after surgery to assess their recovery, health outcomes and quality of life.

What are the possible benefits and risks of participating?

The study may help identify the safest and most effective way to manage RAS inhibitor medicines around the time of surgery, improving care for future patients. Participants may not receive a direct benefit from taking part.

The medicinal products involved in the trial (RAS-inhibitor drugs) are licensed in the UK and will be used within their licensed range of indications, dosage and form. Patients will already be on the medication prior to enrolment. The main risks of stopping RAS inhibitor medicine are strokes and damage to the heart. The main risks of continuing are damage to the heart and kidneys.

Only a small number of people experience these problems, and they are the same whether they join the trial or not. Joining the study will therefore have very few risks beyond those of normal care.

Where is the study run from?
The study is coordinated by Queen Mary University of London, UK, and is currently recruiting participants through NHS hospitals in the UK.

When is the study starting and how long is it expected to run for?
September 2026 to March 2030.

Who is funding the study?
The study is funded by the National Institute for Health and Care Research (NIHR), UK.

Who is the main contact?
Principal Investigator: Dr Tom Abbott, t.abbott@qmul.ac.uk

Contact information

Type(s)
Principal investigator

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Additional identifiers

Integrated Research Application System (IRAS)

1013340

Study information

Scientific Title
Stopping or continuing RAS-inhibitor drugs before major elective non-cardiac surgery

Acronym
PROTECT-SPACE II

Study objectives
To discover if patients aged 50 years and above and waiting for major planned surgery (not heart-related) have better health outcomes and save hospital costs by stopping or continuing their heart medicines called RAS inhibitors.

1. To describe the effect of the treatment in patients with and without a risk of heart failure.
2. To describe the effect of the treatment in patients with and without chronic kidney disease.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 30/09/2026, London – South East Research Ethics Committee (2 Redman Place, Stratford, London, E20 1JQ, United Kingdom; -; londonsoutheast.rec@hra.nhs.uk), ref: 26/LO/0495

Primary study design
Interventional

Allocation
Randomized controlled trial

Masking
Open (masking not used)

Control
Active

Assignment
Parallel

Purpose
Prophylaxis

Study type(s)
Other

Health condition(s) or problem(s) studied
Adult patients undergoing major elective non-cardiac surgery

Interventions
Eligible participants who have consented will be randomised by computer program between five and ten days before surgery via the study's database.

There are two groups a participant could be randomly allocated to:
1. Stop group: people in this group will be asked to stop taking their RAS-inhibitor medicine for three days before surgery and start taking it again four days after surgery.
2. Continue group: people in this group will continue taking their RAS-inhibitor medicine before and after surgery as usual. During the seven day intervention period information will be collected on blood pressure, lab results and cardiovascular medications. Follow-up information will be collected 30 days and 180 days after surgery, including information on post-operative complications, mortality and health-related quality of life.

Intervention Type
Drug

Phase
Phase IV

Drug/device/biological/vaccine name(s)
ACE inhibitors, angiotensin receptor blockers

Primary outcome(s)
1. Days Alive and at Home within 30 days after surgery (DAH30) measured using participant medical record review at one time point

Key secondary outcome(s)
1. Myocardial injury within three days after surgery measured using participant medical record review at one time point

2. Acute kidney injury within seven days after surgery measured using participant medical record review at one time point

3. High blood pressure events within seven days after surgery measured using participant medical record review at one time point

4. Low blood pressure events within seven days after surgery measured using participant medical record review at one time point

5. Stroke within 30 days after surgery measured using participant medical record review at one time point

6. Other postoperative complications within 30 days after surgery measured using participant medical record review at one time point

7. Mortality at 180 days after surgery measured using participant medical record review at one time point

8. Hospital in-patient readmission within 180 days after surgery measured using participant medical record review at one time point

9. Health-related quality of life measured using the EQ-5D-5L at 30 and 180 days after surgery

10. Hospital care costs within 180 days after surgery measured using site questionnaires at the end of the study

Completion date
31/03/2030

Eligibility

Key inclusion criteria
Patients aged ≥50 years, awaiting major elective non-cardiac surgery, and taking a RAS-inhibitor (ACE-i and/or ARB with a single active ingredient formulation)

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
50 Years

Upper age limit
110 Years

Sex
All

Total final enrolment
0

Key exclusion criteria
1. Inability or refusal to provide informed consent
2. Clinician refusal to allow a patient to participate

Date of first enrolment
30/09/2026

Date of final enrolment
01/04/2029

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Barts Health NHS Trust
The Royal London Hospital
80 Newark Street
London
England
E1 1FR

Sponsor information

Organisation
Queen Mary University of London

ROR
https://ror.org/026zzn846

Funder(s)

Funder type

Funder Name
National Institute for Health and Care 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

IPD sharing plan summary

Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet	version 2.0	02/09/2026	13/10/2026	No	Yes
Protocol file	version 2.0	11/09/2026	13/10/2026	No	No