

# Severe atherosclerosis in the neck arteries (carotid stenosis) - an observational study

<b>Submission date</b> 21/03/2024	<b>Recruitment status</b> Recruiting	<input type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
<b>Registration date</b> 07/05/2024	<b>Overall study status</b> Ongoing	<input checked="" type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 03/09/2025	<b>Condition category</b> Circulatory System	<input type="checkbox"/> Individual participant data <input checked="" type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Carotid stenosis is a common cause of ischemic stroke. This study assesses many issues, but the two most important are:

1. What is the risk of stroke when patients with symptomatic near-occlusion (very severe stenosis) do not undergo carotid surgery?

Several previous studies have shown that patients with symptomatic near-occlusion do not need carotid surgery, why guidelines recommend conservative treatment. However, the way near-occlusion was diagnosed in these studies is too difficult to do in routine health care. Researchers have just developed a new diagnostic tool - phase contrast MRI - that makes it easy to set the diagnosis. They will now study what happens when this method is implemented in routine health care.

2. What is the best preoperative medical treatment?

It is unclear if intensive or less intensive antiplatelet medication is preferable before carotid surgery. Intensive is known to be better for many other causes of stroke than carotid stenosis and this is most likely also true for carotid stenosis. Guidelines state that either is acceptable. We use the intensive treatment and will compare the risk of stroke with studies that use less intensive treatment.

### Who can participate?

Patients treated for carotid stenosis

### What does the study involve?

The study involves an extra blood sampling and more follow-up.

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

The risks and benefits of participating are very minor. Most of the aspects of the study happen in the clinic and are the same whether one participates in the study or not. All are treated according to what is considered to be the state of the art.

### Where is the study run from?

Region Västra Götaland (Sweden)

When is the study starting and how long is it expected to run for?  
October 2023 to December 2041

Who is funding the study?  
Region Västra Götaland (Sweden)

Who is the main contact?  
Dr Elias Johansson, elias.johansson@neuro.gu.se

## Contact information

### Type(s)

Public, Scientific, Principal investigator

### Contact name

Dr Elias Johansson

### Contact details

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## Additional identifiers

### Protocol serial number

UCC protocol 2024-03-18

## Study information

### Scientific Title

Sahlgrenska Carotid Cohort

### Acronym

SCC

### Study objectives

Observational study with several goals. The primary goals are:

1. Assess long-term risk of stroke when systematically detecting and conservatively treating symptomatic carotid near-occlusion
2. Assess the impact of dual antiplatelet therapy on the risk of preoperative stroke before carotid endarterectomy

### Ethics approval required

Ethics approval required

### Ethics approval(s)

approved 02/04/2024, Etikprövningsmyndigheten (Box 2110, Uppsala, 750 02, Sweden; +46 (0) 10 475 08 00; [registrator@etikprovning.se](mailto:registrator@etikprovning.se)), ref: 2024-00221-01

## **Study design**

Observational longitudinal cohort study

## **Primary study design**

Observational

## **Study type(s)**

Diagnostic, Treatment, Safety, Efficacy

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

Symptomatic carotid stenosis or carotid web

## **Interventions**

The study assesses the risk of vascular events, radiology findings and blood biomarkers in patients treated at or referred to the neurology clinic at Sahlgrenska, Gothenburg, Sweden.

Notable aspects are:

1. The researchers introduce phase-contrast MRI in routine practice to detect near-occlusion and treat patients with symptomatic near-occlusion conservatively (i.e. systematically implement guideline-recommended management).
2. They use dual antiplatelet therapy before surgery and will compare prognosis with previous (completed) studies where single antiplatelet therapy was used.
3. They draw and store blood for biomarker analyses.
4. There is a 10-year follow-up.

## **Intervention Type**

Other

## **Primary outcome(s)**

1. Recurrent preoperative stroke, assessed clinically, from presenting event until carotid surgery or stenting
2. Postoperative stroke or death, assessed clinically, within 30 days of carotid surgery or stenting
3. Long-term vascular events including, stroke, TIA, myocardial infarction, new-onset angina, new-onset heart failure, new-onset symptomatic peripheral artery disease, arterial revascularization and vascular death. Assessed for 10 years by annual review of medical records and diagnosis registry searches at 5 and 10 years.

## **Key secondary outcome(s)**

1. Diagnostic: Flow measured in internal carotid artery and several comparison arteries on preoperative phase contrast MRI
2. Diagnostic: Artery diameters in the stenosis, internal and external carotid arteries measured on preoperative CT-angiography
3. Diagnostic: Flow velocities measured in common carotid artery, the stenosis and distal to the stenosis on preoperative ultrasound
4. Prognostic: All ipsilateral ischemic events (stroke, retinal artery occlusion, TIA and amaurosis fugax) recorded between the presenting event and surgery/stenting
5. Prognostic: All-type stroke recorded preoperatively between presenting event and surgery /stenting

6. Pathophysiological: Collateral status assessed by flow direction assessment of intracerebral arteries on preoperative phase contrast MRI
7. Pathophysiological: Collateral status assessed by appearance (normal/small/not seen) of intracerebral arteries on preoperative CT angiography
8. Pathophysiological: Velocity and flow profiles of the common carotid artery, the stenosis and distal to the stenosis on preoperative ultrasound
9. Pathophysiological: Intraoperative measurements of stump pressure, flow, cerebral oxygenation (NIRS)

**Completion date**

31/12/2041

## Eligibility

**Key inclusion criteria**

1, 2 or 3 + 4 and 5:

1. Suspicion of symptomatic  $\geq 50\%$  carotid stenosis or occlusion
2. Symptomatic  $< 50\%$  stenosis (on all exams) that is considered for carotid surgery or stenting anyway, usually due to repeated symptoms despite best medical therapy
3. Carotid web, both symptomatic and asymptomatic
4. Treated at or referred to the neurology clinic at Sahlgrenska University Hospital
5. Informed consent

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Upper age limit**

150 years

**Sex**

All

**Key exclusion criteria**

Does not meet the inclusion criteria

**Date of first enrolment**

02/05/2024

**Date of final enrolment**

31/12/2031

# Locations

## Countries of recruitment

Sweden

## Study participating centre

**Sahlgrenska University Hospital**

Blå Stråket 7

Gothenburg

Sweden

43541

# Sponsor information

## Organisation

Region Västra Götaland

## ROR

<https://ror.org/00a4x6777>

# Funder(s)

## Funder type

Government

## Funder Name

Västra Götalandsregionen

## Alternative Name(s)

Region Västra Götaland, Västra Götaland Regional Council, Västra Götaland region, Västra Götalandsregiona, VGR

## Funding Body Type

Government organisation

## Funding Body Subtype

Local government

## Location

Sweden

# Results and Publications

## Individual participant data (IPD) sharing plan

Data is stored in the research group and can be made available upon reasonable request.

The name and email address of the investigator/body who should be contacted for access to the datasets: Dr Elias Johansson (elias.johansson@neuro.gu.se).

The type of data that will be shared: All data (clinical, radiological and biomarkers) is subject to sharing.

Dates of availability: From study start and onwards.

Whether consent from participants was required and obtained: Consent is required and obtained.

Comments on data anonymization: Shared data will be pseudonymised.

Any ethical or legal restrictions: Data will be shared after completing of a material transfer agreement (MTA) and collaborative research agreement.

## IPD sharing plan summary

Available on request

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Protocol file</a>			07/05/2024	No	No
<a href="#">Statistical Analysis Plan</a>			07/05/2024	No	No