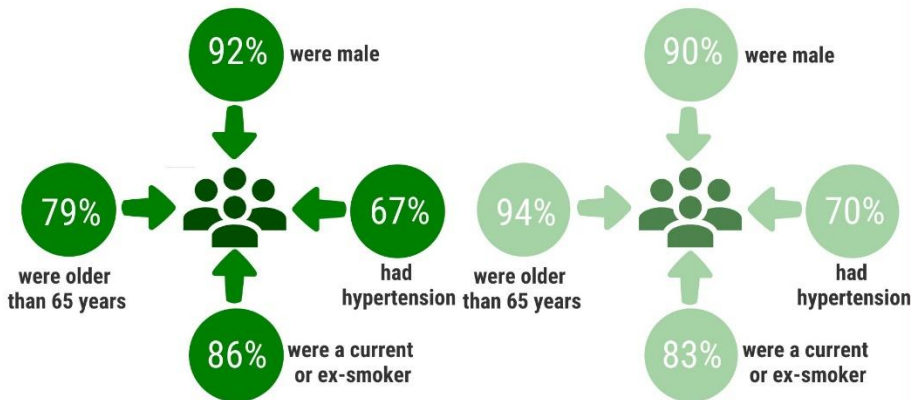
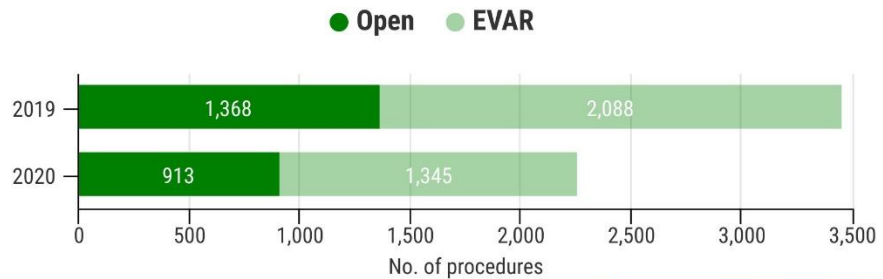


# Repair of abdominal aortic aneurysm (AAA) to prevent rupture

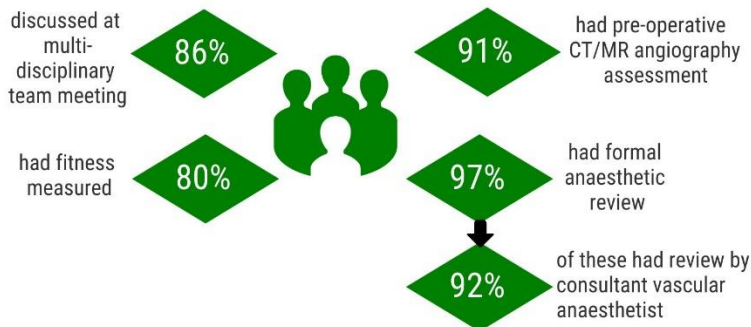
AAA is an abnormal expansion of the aorta (the largest vessel taking blood away from the heart). If left untreated, it may enlarge and rupture causing fatal internal bleeding. An infra-renal aneurysm occurs below the level of the renal (kidney) arteries within the aorta.

## Impact of COVID-19

There were 2,258 elective infra-renal AAA repairs submitted to the NVR in 2020, which is a decrease of 35% on the 3,456 procedures in 2019.



## How were patients assessed?



## Glossary

The average is the median; "typical range" is the interquartile range.

## Patient outcomes after surgery in 2020

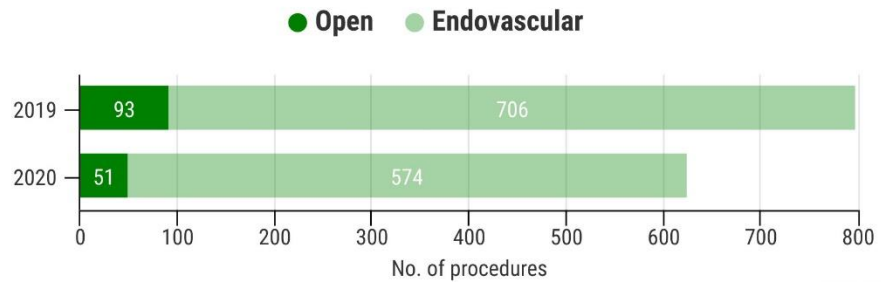


# Repair of elective complex aortic aneurysms to prevent rupture

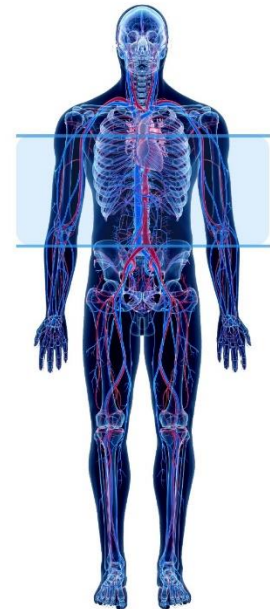
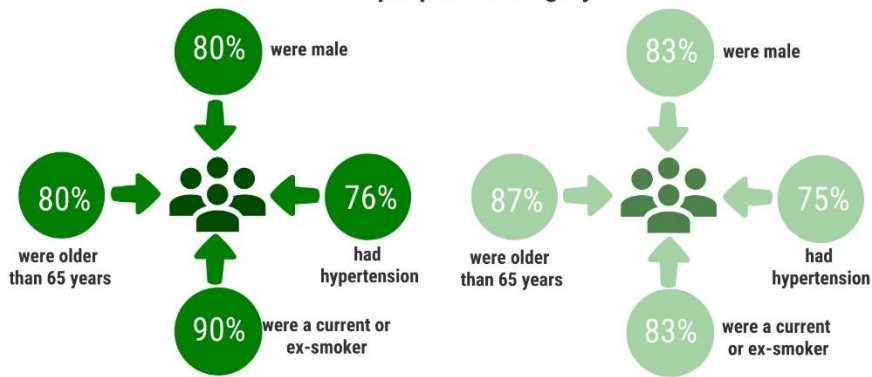
The term complex is used to describe those aneurysms that occur above the level of the renal (kidney) arteries. These are more complicated than the standard infra-renal repairs and require specialist teams, often within a specialist hospital.

## Impact of COVID-19

There were 625 repairs of elective complex AAAs carried out in 2020, which is a 22% reduction on the 799 procedures in 2019.



## Which people had surgery?



## Glossary

The average is the median; "typical range" is the interquartile range.

The most common complex endovascular procedures were:

**Fenestrated EVARs (FEVAR)**, which involves a graft containing holes (fenestrations) to allow the passage of blood vessels from the aorta.

**Branched EVAR (BEVAR)**, which involves separate grafts being deployed on each blood vessel from the aorta after the main graft has been fitted.

**Thoracic endovascular aortic/aneurysm repair (TEVAR)**, which involves a repair of the aorta within the chest region of the body.

## Patient outcomes after surgery in 2020



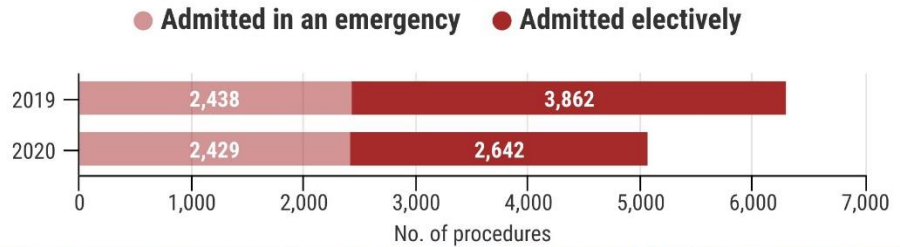
# Lower limb bypass for peripheral arterial disease to prevent limb loss

Peripheral arterial disease (PAD) is a restriction of the blood flow in the lower limb arteries that can severely affect a patient's quality of life, and risk their limb.

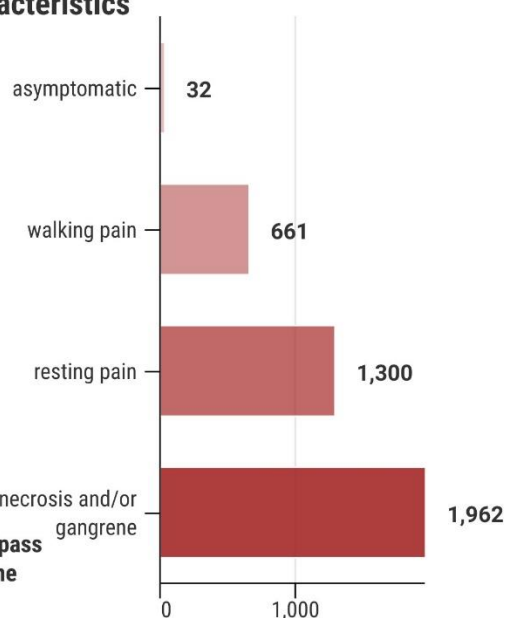
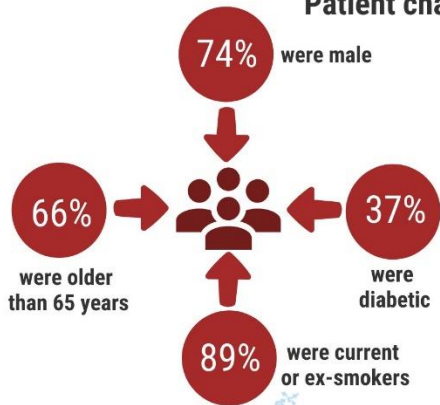
Open surgical (bypass) interventions become options when conservative therapies have proved to be ineffective.

## Impact of COVID-19

There were 5,071 lower limb bypass procedures carried out in 2020, which is a 20% reduction on the 6,300 procedures in 2019.



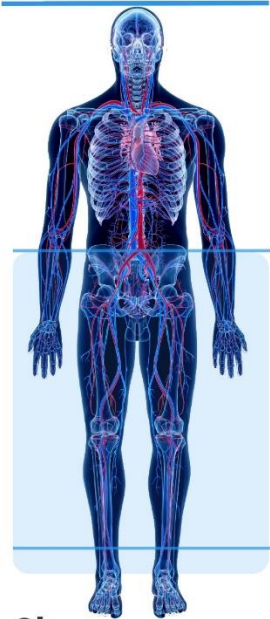
## Patient characteristics



53% of patients admitted with CLTI had their bypass within 5 days, which is the recommended time

However for 29/61 vascular units, 25% of patients waited more than 10 days

In the NVR data, CLTI is defined as patients admitted in an emergency with either resting pain or necrosis and/or gangrene.



## Glossary

The average is the median; "typical range" is the interquartile range.

Chronic limb-threatening ischaemia (CLTI) is the most severe form of PAD, where the blood flow to the legs becomes severely restricted.

## Patient outcomes post bypass in 2020



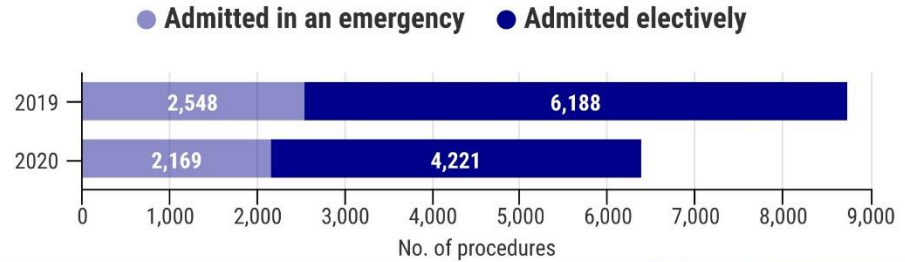
# Lower limb angioplasty/stenting for peripheral arterial disease

Peripheral arterial disease (PAD) is a restriction of the blood flow in the lower limb arteries that can severely affect a patient's quality of life, and risk their limb.

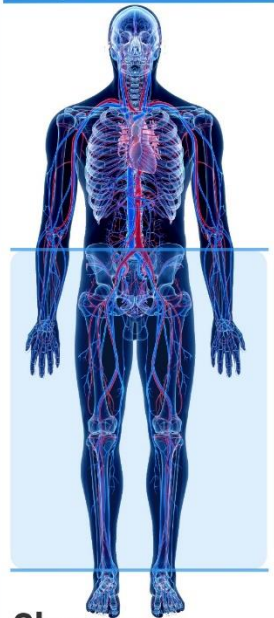
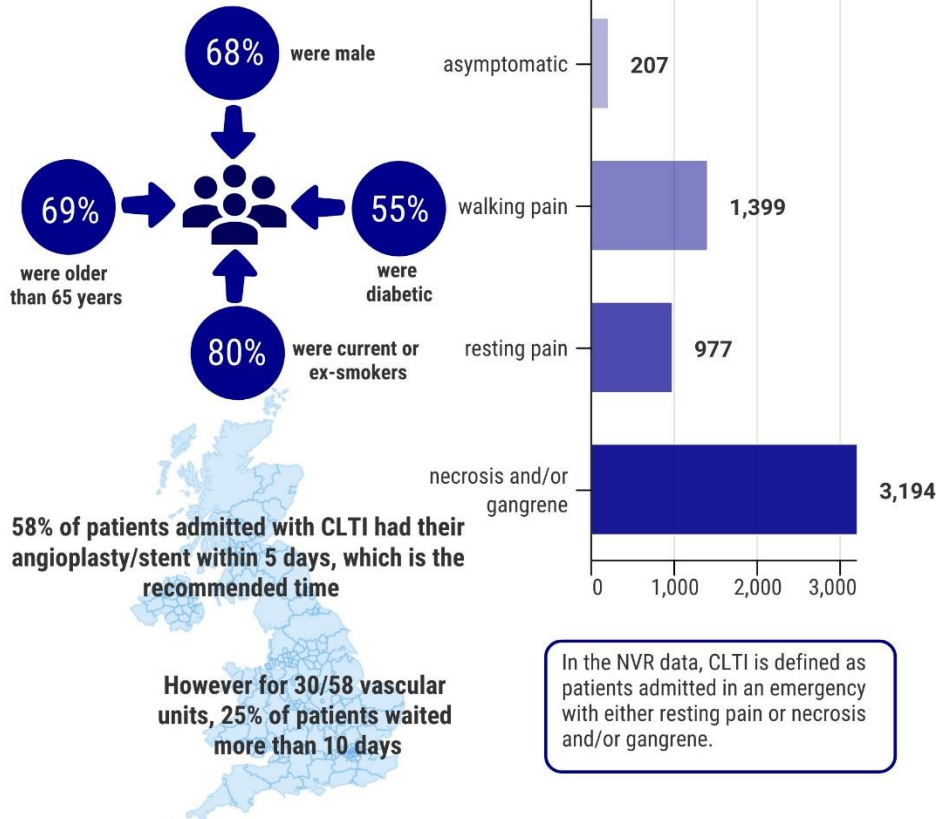
Endovascular interventions become options when conservative therapies have proved to be ineffective.

## Impact of COVID-19

There were 6,390 lower limb angioplasty/stent procedures carried out in 2020, which is a 27% reduction on the 8,736 procedures in 2019.



## Patient characteristics

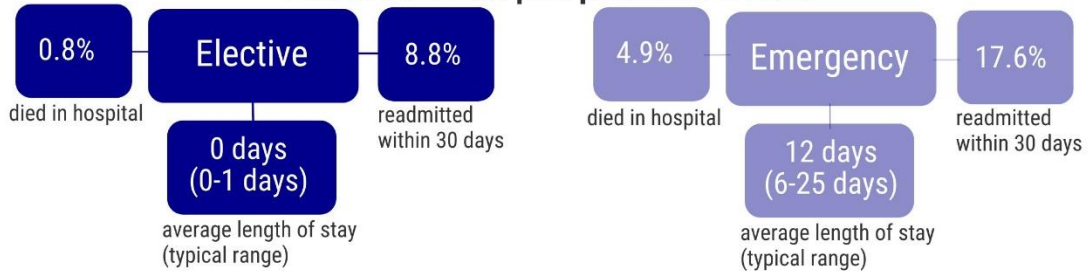


## Glossary

The average is the median; "typical range" is the interquartile range.

Chronic limb-threatening ischaemia (CLTI) is the most severe form of PAD, where the blood flow to the legs becomes severely restricted.

## Patient outcomes post procedure in 2020



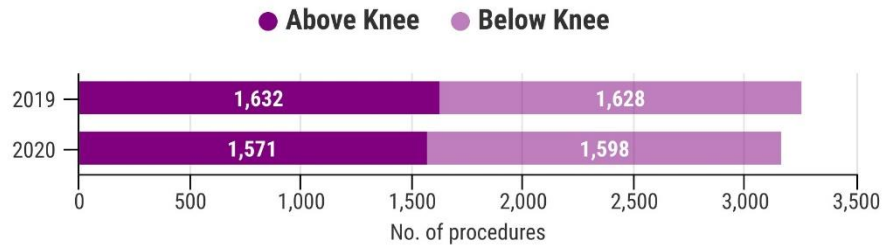
# Lower limb major amputation for peripheral arterial disease

Peripheral arterial disease (PAD) is a restriction of the blood flow in the lower limb arteries that can severely affect a patient's quality of life, and risk their limb.

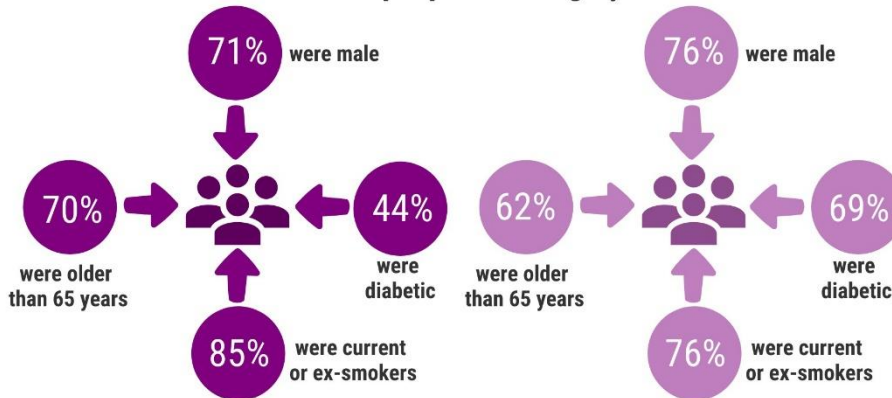
PAD can gradually progress in some patients and an operation to improve blood flow may no longer be possible. In these situations, people will require amputation of the lower limb. Additionally, patients without PAD but with a complication of diabetes may require a major amputation.

## Impact of COVID-19

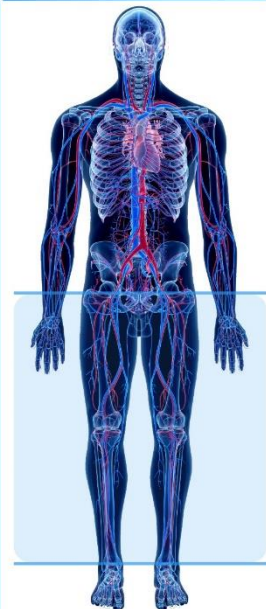
In 2020 there were 3,169 major lower limb amputations submitted to the NVR. This was only a slight reduction on the 3,260 procedures in 2019.



## Which people had surgery?



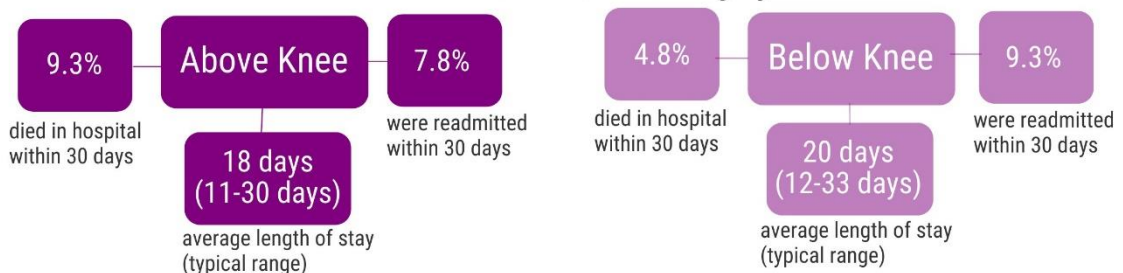
Hospitals should aim to have an above knee amputation to below knee amputation ratio below 1. In 2020, the national ratio was 0.98, but it varied greatly across the country. 29 hospitals had a ratio above 1, and of these, 12 were above 1.5.



## Glossary

The average is the median; "typical range" is the interquartile range.

## Patient outcomes after surgery

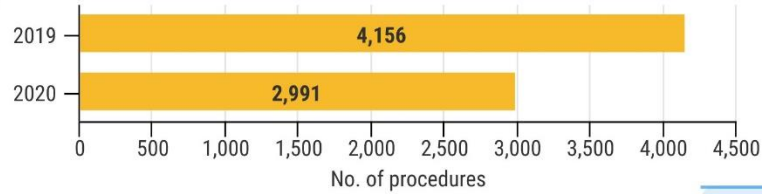


# Carotid artery surgery to prevent stroke

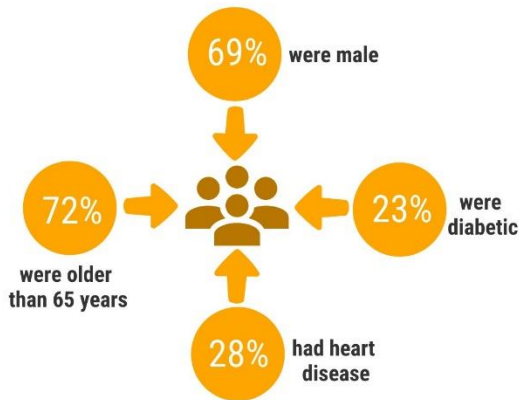
A procedure in which build-up of plaque is removed from the carotid artery in the neck is called a carotid endarterectomy (CEA).

## Impact of COVID-19

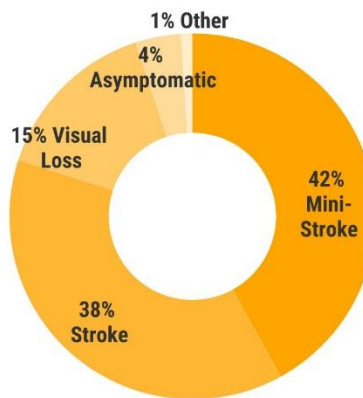
There were 2,991 CEAs submitted to the NVR in 2020, which is a 28% reduction of the 4,156 in 2019.



## Which people had surgery?

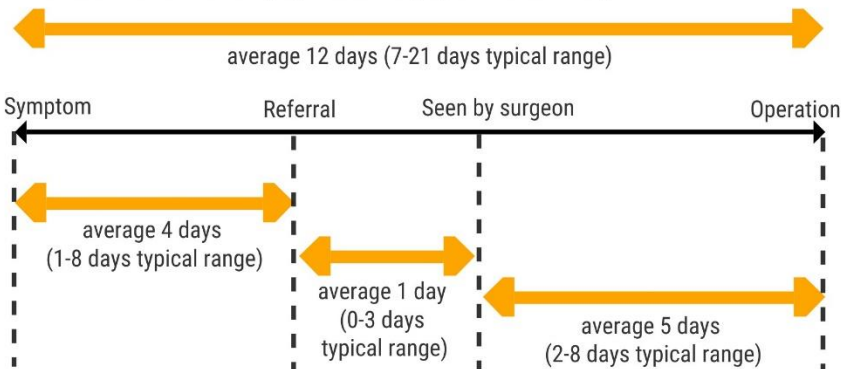


## Reasons for surgery



## Treatment times for symptomatic patients

Recommended time from symptom to surgery is within 14 days



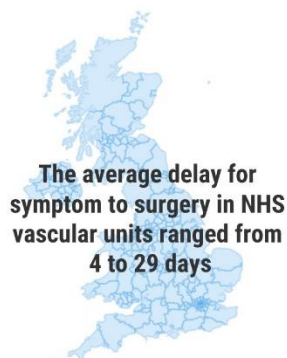
## Glossary

A mini stroke, also known as a transient ischaemic attack (TIA), resolves completely within 24 hours.

Visual loss (amaurosis fugax) is the loss of vision in one eye due to an interruption of blood flow to the retina.

The average is the median; "typical range" is the interquartile range.

A patient showing symptoms is known to be symptomatic.



## Outcomes of surgery

