# CYP2C19 Genotype Testing to Guide Clopidogrel Use After Ischaemic Stroke or Transient Ischaemic Attack

The **National Institute for Health and Care Excellence** (NICE) Diagnostic Assessment Programme (DAP) is a specialist programme that evaluates new, innovative diagnostic technologies. The guidance for CYP2C19 genotype guided use of clopidogrel in IS/TIA was published on 31st July 2024.

## NICE Recommendation

- Use CYP2C19 genotype testing to assess if clopidogrel is a suitable antiplatelet for people who have just had an ischaemic stroke or transient ischaemic attack (TIA).
- Laboratory based testing and point-of-care testing (POCT) are recommended.
- The **Genedrive CYP2C19 ID Kit** should be used when laboratory-based testing is not available.

## Why the Committee Made These Recommendations

- Clopidogrel is an antiplatelet drug used after ischaemic stroke or TIA (sometimes called a 'mini stroke') to reduce the risk of blood clots that can cause further strokes.
- Clopidogrel is metabolised into its active form by an enzyme encoded by a gene called CYP2C19. In some people, CYP2C19 has variations that reduce the enzyme's function (known as 'loss-of-function' variants or alleles). This means clopidogrel does not work as well in these people.
- Testing for these alleles is known as CYP2C19 genotype testing. It aims to identify people with CYP2C19 loss-of-function alleles so they can be offered alternative antiplatelet drugs to lower their risk of blood clots.

## What it Means in Practice

The National Stroke clinical guideline recommends that dual antiplatelet therapies (such as Clopidogrel and aspirin) are administered in **<24 hours** of the event[2]. It is challenging to meet the turnaround time required for genotype guided clopidogrel use in under 24 hours with conventional laboratory testing workflows.

## The Genedrive CYP2C19 ID Kit vs Genomadix Cube

- Detects more CYP2C19 alleles (6)
- Does not need a freezer to store reagents
- Is cheaper
- Can connect with electronic patient records

## Point-of-Care Testing

If laboratory-based testing is not available, or it will take a long time to develop capacity to provide it, then point-of-care tests could be used. **The Genedrive CYP2C19 ID Kit should be used when laboratory-based testing is not available.**


genedrive

1. https://www.nice.org.uk/guidance/dg59/consultation/html-content-5
2.. https://www.strokeguideline.org/chapter/whats-new-in-2023/