

UK National Screening Committee (UK NSC)

Screening for cardiac conditions associated with sudden cardiac death in young people

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1. Background

Sudden cardiac death in young people is rare, with an estimated 1 to 3 deaths per 100,000 people each year, but its impact is profound. Each death is deeply felt by families and communities.

This document accompanies the 2026 evidence map on screening for cardiac conditions associated with sudden cardiac death in young people and provides an overview of the following:

- how common sudden cardiac death is
- what screening can and cannot achieve
- the current UK National Screening Committee (UK NSC) recommendation
- the key findings of the 2026 evidence review
- consideration of other types of evidence
- ongoing related work across the UK NSC and NHS

The UK NSC has a responsibility to ensure that any recommendations on screening are grounded in robust evidence and avoid unintended harm.

1.1 How common is sudden cardiac death?

Some published statistics suggest that sudden cardiac death may occur more often than the figures used in this review. However, some of those statistics include deaths or conditions that would not be identified or prevented by the proposed screening test.

When deciding whether to introduce screening, we must focus specifically on:

- the conditions the test can detect
- how often those conditions occur in the population who would be screened

Based on the best available evidence, sudden cardiac death caused by the specific detectable conditions remains rare in young people.

2. What screening can and cannot achieve

In the context of sudden cardiac death, screening aims to find apparently healthy people who may have an increased risk of this condition. These people can then be offered treatment that may be beneficial and potentially prevent sudden cardiac death. However, screening is not without harm. Screening tests do not detect all cardiac conditions associated with sudden cardiac death. Screening tests can result in false positives (suggestion of a heart problem where none exists) and false negatives (suggestion of no heart problem where one exists). False positive and false negative test results both carry risk of harm. False positive test results can cause:

- anxiety and psychological harm
- unnecessary investigations or treatment (for example, medications)
- medical procedures (for example, surgery for an implantable defibrillator)

False positive test results may prompt people to make life-changing decisions, such as giving up exercise, which could have a negative long-term impact on their health and wellbeing. False negative test results may provide false reassurance to those who are at risk of sudden cardiac death, potentially delaying further assessment or diagnosis.

3. Current UK NSC recommendation

The 2019 review of screening for cardiac conditions associated with sudden cardiac death concluded that systematic population screening of people under the age of 39 is not recommended. This was because although sudden cardiac death in young people is an important health problem based on its severity:

- research showed that current tests were not accurate enough to use in asymptomatic young people

- there was no research showing that screening reduces the chance of sudden cardiac death in the general population

4. 2026 evidence review

4.1 Scope of the review and key questions

The 2026 evidence review was undertaken in accordance with the UK NSC [evidence review process](#) as part of the scheduled regular review of screening for sudden cardiac death in young people.

The 2026 evidence review looked at the volume and type of evidence for the following questions in people aged 12 to 39 years old:

1. How common is sudden cardiac death?
2. How accurate are available screening tests in identifying cardiac conditions associated with sudden cardiac death?
3. How effective is a screening programme at preventing sudden cardiac death?

Sections 4.2 to 4.4 summarise the findings for the three review questions.

4.2 Question 1: How common is sudden cardiac death?

The evidence review found that a large volume of research has been published on the incidence of sudden cardiac death since the 2019 UK NSC review. The systematic reviews estimate that sudden cardiac death affects approximately 1 to 2 people per 100,000 each year, while the cohort studies estimate 1 to 3 people. The evidence also found that the incidence of sudden cardiac death is the same for athletes versus non-athletes. Overall, these numbers are similar to the findings of the 2019 review.

4.3 Question 2: How well does the test work?

There are studies looking at tests used to identify conditions associated with sudden cardiac death. However, many of these studies did not follow up people who received a negative test result.

This is important because without proper follow-up, we cannot reliably measure:

- how many people the test might miss
- how safe it would be to reassure someone that they are not at risk

Sensitivity tells us how often the test correctly finds people who really do have a cardiac condition. Few studies reported sensitivity but, in those studies that attempted to do so, reported figures ranged from approximately 29% to 86%,

depending on the test. However, it was unclear how these were calculated due to lack of follow-up testing.

The false-positive rate (FPR) is how often the test wrongly flags a healthy person as having a cardiac condition. Only one review reported on FPR for the general population. This review said FPR varied from 2% to 36%, depending on the screening method used.

Positive predictive value tells us how often a positive test result reflects a true cardiac problem. In most studies, around 2% to 14% of positive screening tests were ultimately confirmed as a cardiac problem.

We do not currently have strong enough evidence to be confident that the test is accurate and reliable for use as a screening tool in healthy young people.

4.4 Question 3: Does screening prevent deaths or improve outcomes?

There is very little good-quality evidence comparing screening with not screening.

This means we do not know whether offering screening to all young people would:

- prevent deaths
- reduce serious illness
- improve long-term outcomes compared with usual care

The available studies are small, low quality, or inconclusive. Without clear evidence that screening improves outcomes, it would not be appropriate to introduce a national programme.

4.5 Summary of findings and implications

The evidence found in the 2026 review is very similar to that reported in previous UK NSC reviews. No new research was identified that would change the current recommendation for screening for cardiac conditions associated with sudden cardiac death in young people.

Some studies published since the 2019 review have looked at different ways of carrying out screening. Because of this, it might be useful to consider looking more closely at the available evidence on test accuracy. However, test accuracy on its own is only one part of the UK NSC's overall decision-making process. A more in-depth review of test accuracy alone would not be enough to change the current recommendation.

Therefore, based on the findings of the 2026 evidence review, the UK NSC recommendation is that no further [evidence synthesis](#) work should be commissioned at this time. The UK NSC recommends that the topic of population screening for cardiac conditions associated with sudden cardiac death in young people should be reconsidered in 3 years' time. If new evidence becomes available before this next

review that may impact this recommendation, it should be submitted through the UK NSC's [open call for topics](#).

4.6 Consideration of those involved in organised sport

As part of the 2024 annual call for new screening topics, a proposal was submitted to screen for cardiac conditions in people aged 14 to 35 years old who take part in organised sport.

The evidence map focused on young people in the general population, but it also included studies of people who participate in sport. Evidence indicates that incidence is similar in athletes and non-athletes, meaning that young people involved in organised sport are not a clearly defined higher-risk group for sudden cardiac death.

Because physical activity is encouraged for all young people, including in the national school curriculum, a programme aimed at sports participants would instead closely resemble population-level screening.

There are also practical limitations. Sport takes many forms, including informal and individual activities, and not all young people take part in organised or grassroots clubs. Delivering screening through sports settings would therefore be difficult, could lead to unequal access, and would likely operate as opportunistic testing rather than as a structured national programme.

For these reasons, although evidence relating to sports participants was considered and informed the overall conclusions, a programme targeting sportspeople would, in practice, amount to screening the wider younger population, were it to be considered as a UK NSC recommendation.

5. What about other evidence?

In some areas of healthcare, decisions can be supported by combining different types of evidence.

The UK NSC recognises that such approaches can be appropriate in some contexts, particularly in diagnostic assessment where testing occurs in symptomatic populations.

However, population screening differs in important ways:

- screening is offered to large numbers of healthy, asymptomatic individuals
- the balance between benefit and harm is typically much finer
- even small uncertainties in test performance or treatment effect can have significant population-level consequences

For this reason, the UK NSC places particular weight on direct evidence that a screening programme reduces mortality or morbidity ([criterion 11](#)), or on a

sufficiently robust and coherent body of linked evidence that allows reliable modelling of population benefit and harm.

In the case of sudden cardiac death:

- we do not have strong evidence about how often the test misses people
- we do not have clear evidence showing screening improves outcomes in young people

Because of these uncertainties, modelling would rely heavily on assumptions and would not provide a sufficiently secure basis for introducing screening.

6. Ongoing related work across the NHS and UK NSC

While screening for cardiac conditions associated with sudden cardiac death in young people is not recommended, the NHS and the UK NSC continue to take forward work related to sudden cardiac death.

The NHS screens for congenital heart disease through the NHS antenatal and newborn screening programmes.

To reduce the risk of sudden cardiac death, NHS England has published a [national service specification for inherited cardiac conditions](#) that covers patients who often present as young adults with previously undiagnosed cardiac conditions, as well as families following a relative's inherited cardiac condition diagnosis or related death.

NHS England also provides training in first aid, CPR, and the use of defibrillators in communities and in schools.

The UK NSC received a proposal during the 2024 annual call for new screening topics for a targeted screening programme for first-degree relatives of people affected by inherited cardiac conditions. An evidence map was commissioned to gauge the volume and type of evidence on this topic. On the basis of the findings of that evidence map, the UK NSC recommended that further work should be commissioned.