

After a heart attack, or coronary artery stents

Ischaemic Heart Disease (IHD), which involves areas of heart muscle not receiving enough oxygen to function correctly, is a common medical problem in our community.

IHD can lead to a heart attack (myocardial infarct) or other heart problems. If significant IHD is identified early enough then the areas of artery narrowing or blockage are often treated by the insertion of stents (small tubes or straws) that help keep the artery open.

This Medical Information Sheet outlines the CAA's approach to recertification of pilots* who have either had a heart attack, or who have had stents inserted in an effort to treat their IHD.

CAUTION

This Medical Information Sheet contains general advice concerning the CAA's regulatory handling of medical conditions. This sheet is not intended as clinical medical advice and should not ever be used as the basis of decisions concerning your medical care. You should consult your medical advisers and discuss your options thoroughly with them before making any decisions about your medical care.

Will a heart attack ground me forever?

Not usually. Although a heart attack will ground you for at least six months, the majority of pilots who suffer a heart attack are eventually returned to flying. Occasionally a pilot is not recertificated, but this is usually after a heart attack that has damaged very substantial amounts of the heart muscle (often multiple heart attacks) or that has damaged areas of the heart critical for managing the heart's rhythm. If, after a heart attack, you still have areas of the heart that receive inadequate oxygen during exercise then you will also not be returned to flying until that remaining problem has been addressed.

Will I be able to return to flying after having stents inserted?

Most pilots who have coronary artery stents inserted to treat their IHD do return to flying. For professional pilots, the return to flying is usually subject to endorsements that limit passenger carrying flights to multi-crew operations ... as, or with, a co-pilot.

Does the type of stent matter?

There are different types of stents available. If you are having a 'coated' stent inserted, rather than a bare-metal stent, CAA will probably suggest that you stay on *clopidogrel* medication for 12 months (instead of the usual 6 months) and may ask for further testing (usually a stress test) a couple of months after you have stopped taking the *clopidogrel*.

Some cardiologists believe that coated stents should not be used for pilots, but CAA will usually return pilots with coated stents to duty in a similar time to those with bare metal stents, as long as everything else is OK, and subject to the increased *clopidogrel* requirement and the possibility of further testing later on.

What will be needed to consider returning me to flying?

To be considered for return to flying after you have suffered a heart attack, or have undergone coronary artery stent insertion, a number of things will be required. These include, but are not necessarily limited to, the following:

1. At least 6 months have elapsed since the heart attack and/or stent surgery.
2. The absence of any ongoing reversible myocardial ischaemia has been appropriately demonstrated at least 6 months after the heart attack / surgery. Often your cardiologist will arrange stress testing earlier than six months. This will be done for reasons of their clinical management of your case. If this is done CAA will still ask for testing after 6 months.
3. Information to demonstrate that you're entirely recovered, that you're tolerating any medication that you're taking, that those medications are safe, that you're heart is functioning well, and that there have been no complications likely to have aviation safety consequences. This is usually achieved through a thorough clinical review by your cardiologist, although sometimes further tests are included.
4. That you have taken appropriate and effective measures to reduce your future cardiovascular risk.

* While this MIS only mentions pilots, the information provided applies equally well to Air Traffic Controllers.

5. Every other aspect of your medical condition is OK. This includes that you do not need to be taking any anti-angina medications.

If all of these matters are entirely normal then it's likely you will be returned to flying status. If there are significant ongoing abnormalities, such as there still being areas of heart muscle that don't get enough oxygen, then it's not likely recertification will occur at this time.

Every case is different, and tests or investigations suited for one person may not be the best for another. Before seeking return to flying after a heart attack or coronary artery stenting you should liaise with the CAA medical unit to determine what information is most suitable to your individual situation.

Will my return to flying be unrestricted?

If you are a professional pilot any return to flying can often be unrestricted except in respect to the carriage of passengers. In the majority of cases, after heart attack or stent insertion, return to flying will allow carriage of passengers only in a multi-crew flight environment (*as or with copilot*).

Many private pilots who return to flying after a heart attack or stent insertion return in an unrestricted capacity.

Because there is a broad range of disease severity and treatment options / outcomes there are also quite a broad range of possible aviation regulatory medical outcomes. If effectively treated, very low-grade disease may be associated with a lower risk of future problems and so will generally be subject to less restrictive return-to-flying conditions. Conversely, more severe disease that is less effectively treated will be more likely to not be returned to flying and, if returned, more likely to be returned with more restrictive conditions.

Will further tests be needed?

Almost certainly. The long-term follow-up of pilots who return to flying after a heart attack or stent insertion will include periodic testing, usually stress tests, and also cardiologist reviews.

The stress testing is likely to be on an annual basis for professional or biennial for private pilots, and is likely to be a long-term ongoing requirement.

Looking at the law

Civil Aviation Rule Part 67: Medical Standards

The cardiovascular medical standards in Part 67 of the Civil Aviation Rules are very similar for Class 1 (rule 67.103), Class 2 (rule 67.105), and Class 3 (rule 67.107) medical certificates. The exact wording of the class 1 cardiovascular system medical standards is shown below. These standards state that an applicant must—

- (1) have no history or diagnosis of any condition of the heart or circulatory tree that is of aeromedical significance*; and
- (2) without limiting paragraph (d)(1), have no history or diagnosis of any of the following specific medical conditions, to an extent that is of aeromedical significance:
 - (i) coronary artery disease;
 - (ii) left bundle branch block;
 - (iii) right bundle branch block unless ischaemic causes have been excluded;
 - (iv) uncontrolled hypertension;
 - (v) abnormality of the muscle, valves, or conduction system of the heart;
 - (vi) abnormality of the rhythm of the heart; and
- (3) without limiting paragraph (d)(1), have no disorder requiring a cardiac pacemaker; and
- (4) have no excessive cardiovascular risk factors unless normal myocardial perfusion can be demonstrated.

The class 2 and class 3 cardiovascular system medical standards are virtually identical in their wording to their class 1 counterpart.

The details of the CAA cardiovascular risk assessment procedure and further testing are found in the medical General Directions (GDs) which can be downloaded from the CAA website.

* Rule 67.3(a) defines "aeromedical significance": A medical condition is of aeromedical significance if, having regard to any relevant general direction, it interferes or is likely to interfere with the safe exercise of the privileges or the safe performance of the duties to which the relevant medical certificate relates.

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