

## CARDIOMYOPATHY: IMPACT ON AIRCREW

*CARDIOMYOPATHIE: IMPACT SUR L'AEQUIPAGE DE L'AIR*

**R Rienks**, N Guettler, E Davenport, J D'Arcy, G Gray, E Nicol  
*Central Military Hospital, Utrecht, the Netherlands*  
[rienk@rienkrienks.nl](mailto:rienk@rienkrienks.nl)

**Introduction:** Cardiomyopathy is a disease of the heart muscle that, depending of the cause, may result in deterioration of the heart muscle and a decrease in left ventricular ejection fraction (dilating cardiomyopathy), stiffening of the heart muscle and reduction of the myocardial function (restrictive cardiomyopathy), or proliferation of myocytes with or without obstruction of the left ventricular outflow tract (hypertrophic (obstructive) cardiomyopathy, H(O)CM). Cardiomyopathy may lead to heart failure, decreased exercise capacity, and arrhythmias like atrial and ventricular fibrillation. When cardiomyopathy is symptomatic, it is incompatible with flying duties. However, there is a subset of patients with cardiomyopathy (usually hypertrophic cardiomyopathy) that is asymptomatic and has a good prognosis, and thus may be eligible for (restricted) flying. It is sometimes a diagnostic challenge to establish the diagnosis of cardiomyopathy and to differentiate it from other myocardial abnormalities, like athlete's heart, or myocarditis.

**Methods:** Asymptomatic aircrew with cardiomyopathy are usually found by (a combination of) an abnormal ECG and a positive family history of cardiomyopathy or Sudden Cardiac Death (SCD). The key diagnostic tool for the diagnosis of cardiomyopathy is the cardiac MRI. In aircrew, the most important risk is an incapacitating (fatal) arrhythmia. To estimate the risk of SCD in HCM, a calculator (HCM Risk-SCD Calculator) has been developed using age, echocardiographic criteria, family history, the presence of (non)sustained ventricular tachycardia and unexplained syncope as its elements. Also, genetic counseling may be used to establish the diagnosis of cardiomyopathy and to estimate the risk of SCD.

**Discussion:** This paper will discuss how to evaluate the risk of sudden incapacitation in asymptomatic aircrew with cardiomyopathy and how to advise them with respect to (un)restricted flying.

**Conclusion:** Cardiomyopathy in aircrew is a challenging disease, both for the Aeromedical Examiner and for the patient. A thorough evaluation may identify patients who can continue flying despite the diagnosis of cardiomyopathy.