

## VALVULAR HEART DISEASE IN AIRCREW: ASSESSMENT AND IMPACT

*VALVULOPATHIE CARDIAQUE PARMIL LES PERSONNELS NAVIGANT: EVALUATION ET IMPACT*

**JL d'Arcy**, N Guettler, R Rienks, E Davenport, G Gray, E Nicol  
*Royal Air Force Aviation Medicine Clinical Service, Henlow, Bedfordshire, United Kingdom*  
[joanna.d'arcy@nhs.net](mailto:joanna.d'arcy@nhs.net)

**Introduction:** Valvular heart disease (VHD) has a variable progression, and is asymptomatic until late in the disease process. Clinically significant degrees of VHD may result in decreased G tolerance, and a risk of arrhythmia, which may result in distraction or incapacitation. The frequency of periodic medical examinations amongst aircrew may result in the detection of milder forms of VHD when a cardiac murmur is heard. More severe may cause symptoms, which trigger further investigation. When VHD is found, appropriate assessment and aeromedical disposal must be carefully considered.

**Background:** Aircrew who are found to have VHD require appropriate assessment to carefully establish the severity of their disease, which guides aeromedical disposal. Interval follow up must also be planned. Methods of assessment will depend on the relevant valve lesion, severity of the disease, any interval change in the haemodynamic effect of the lesion, and onset of symptoms. In many cases, transthoracic echocardiography will be the main way of assessing VHD. However, trans-oesophageal echocardiography, cardiac magnetic resonance, exercise stress testing and echocardiography, as well as cardiac rhythm monitoring, may all play a part. Work up for valve surgery when appropriate may also prompt investigation for possible coronary artery disease.

**Summary:** This paper will discuss the different methods of assessing VHD, in order to inform aeromedical decision making. The risks associated with VHD will be discussed, and the potential impact of significant VHD on aircrew will be explored. VHD is a challenging area, due to the variability in the natural history of the disease, and the potential for presentation late in the disease process. An awareness of the potential haemodynamic effects of VHD on aircrew, methods which may be used to assess its severity, and the possible impact on aeromedical fitness, are all of relevance to aeromedical examiners.