

CARDIOVASCULAR WAIVERS

CONDITION: CORONARY ARTERY DISEASE (ICD9 414.9)

Revised March 2002

AEROMEDICAL CONCERNS: Coronary artery disease (CAD) is the leading cause of permanent suspension from flying duties. The major concern is sudden in-flight incapacitation as a result of sudden death, altered consciousness, or incapacitating angina. Heat, hypoxia, hyperventilation, work-related stress, and/or high Gz maneuvers all increase myocardial oxygen demand; thus, possibly provoking dysrhythmia and infarction in individuals with pre-existing coronary artery lesions.

WAIVERS:

Initial Applicants and Rated Aviation Personnel (All Classes): Coronary artery disease is considered disqualifying for all flying duty classes (AR 40-501, p. 4-15).

Minimal Coronary Artery Disease (MCAD): A waiver may be considered for those diagnosed with asymptomatic Minimal Coronary Artery Disease. MCAD is defined as gradeable lesions on angiography resulting in < 40% occlusion of any coronary artery provided that the aggregate of occlusions is < 120%. MCAD is waivable in conjunction with right bundle branch block, multifocal atrial tachycardia, frequent ventricular ectopy, and recurrent, nonsustained supraventricular tachycardia (SVT). MCAD is considered non-waivable if associated with left bundle branch block, WPW pattern on ECG, sustained SVT, mitral valve prolapse, or nonsustained ventricular tachycardia.

Significant Coronary Artery Disease (SCAD): Aircrew members with Significant Coronary Artery Disease, i.e., *single lesions > 40% or aggregate lesions > 120%*, or who have a history of myocardial infarction or coronary artery surgery to include PTCA, balloon angioplasty, coronary artery stent placement, endarterectomy or coronary bypass are not waivable.

INFORMATION REQUIRED: Aviators with CAD need :

- Initial complete cardiology evaluation to include risk factor analysis,
- Aeromedical graded exercise test (AGXT),
- Baseline Thallium or Sestamibi GXT scan, Stress echocardiogram or Electron Beam Computed tomography (EBCT); and,
- Cardiac catheterization. (See Cardiovascular Screening APL.)

This testing may be done locally, by designated Army Aeromedical Cardiology Consultant, or with Brooks Aeromedical Consultation Service (AMCS) following consultation with USAAMA. Local work-ups, to include final reports of all studies will be forwarded to USAAMA for review prior to any waiver action. If films or complete tracings are required they will be requested. Local flight clearance is not authorized unless granted in coordination with USAAMA.

FOLLOW-UP: Comprehensive cardiology evaluations should be performed every three years and include an interval history and physical examination. Stress Thallium or stress echocardiogram should be performed every three years as well as localization of calcium deposits in the coronary artery distribution system by Electron Beam Computerized Tomography (EBCT) if available. If EBCT is planned for follow-up testing, a baseline study should be completed upon notification of waiver for use as comparison. Repeat cardiac catheterization is not required unless there is a change in the patient's condition (decreased exercise tolerance or angina for instance) or results from any of the previously mentioned follow-up examinations deviate from previous test results. In these cases, the aviator would be disqualified from aviation duties except for simulator flights until an evaluation and work-up by an aviation medicine qualified cardiology specialist is accomplished. The results would then be reviewed by AAMA and a recommendation for flying duty made.

TREATMENT: Only prophylactic aspirin, nicotine weaning, antihypertensive therapy and lipid lowering medications are approved. All other medications are not waiverable. (See Medication APLs)

DISCUSSION: The risk of sudden death from an unheralded heart attack at age 40/50/60 is 8/36/100 times greater than at age 30 and is the initial presentation in more than one third of myocardial infarctions. Up to 60% of patients die in the first hour. The literature suggests that individuals with normal coronary arteries on catheterization have a very low risk of experiencing a cardiac event within the next few years. Those with lesions less than 50% were found to have an incidence of endpoints (angina, myocardial infarct, progression, or sudden death) comparable to unscreened low-risk populations in the Framingham and Rochester studies. Those with 50% lesions had a 5 to 7 times higher risk of endpoints. After angioplasty, restenosis will occur in 30% within 6 months with an additional 15% restenosis over the next 2 to 7 years. The risk of a cardiac event (infarct, death, bypass surgery) after angioplasty is 28% in 5 years in single vessel disease and 56% in 7 years in multivessel disease. Coronary artery bypass surgery will increase exercise tolerance and relieve angina in up to 85% of cases, but the symptoms will recur in approximately 8% of the patients per year.

REFERENCE:

OTSG Memorandum , 18 October 2001, SUBJECT: Flying Duty Medical Examinations (FDME) For Department of the Army (DAC) Employees.

Prevention of Coronary Heart Disease in Clinical Practice. European Society of Cardiology/European Atherosclerosis Society/European Society of Hypertension/European Society of General Practice/Family Medicine/International Society of Behavioral Medicine/European Heart Network. 1998. (Available from the National Guideline Clearing House: [www. guideline.gov/index.asp](http://www.guideline.gov/index.asp))