

Cardiovascular Disease

In 1928 the New York Heart Association published a classification of patients with cardiac disease based on clinical severity and prognosis. This classification has been updated in seven subsequent editions of *Nomenclature and Criteria for Diagnosis of Diseases of the Heart and Great Vessels* (Little, Brown & Co). The ninth edition, revised by the Criteria Committee of the American Heart Association, New York City Affiliate, was released March 14, 1994. The new classifications are summarized below for the many physicians and scientists who use them to describe the status of individual patients.

A principal change in this edition is terms for the classes. Early editions referred to *functional capacity* and therapeutic classifications. The terms *cardiac status* and *prognosis* were used in the seventh (1973) and eighth (1979) editions. However, *functional capacity* is the term generally used by the medical profession. Therefore, the Criteria Committee is again using that term, which is based on subjective symptoms, and adds as the second category *objective assessment*, which is based on measurements such as electrocardiograms, stress tests, x-rays, echocardiograms, and radiological images. In addition, the Canadian Cardiovascular Society Grading Scale (Campeau L. *Circulation*. 1976;54:522. Letter), which considers anginal symptoms not previously included in the classes, has been incorporated into the new edition.

Shown below are the new terms and definitions.

Criteria for use of the terms *minimal*, *moderately severe*, and *severe disease* cannot be defined precisely. Grading is based on the individual physician's judgment. The objective assessment of a patient with cardiac disease who has not had specific tests of cardiac structure or function is classified as undetermined.

The classification of patients according to cardiac functional capacity is only part of the information needed to plan the management of patients' activities. A prescription for physical activity should be based on information from many sources. Functional capacity is an estimate of what the patient's heart will allow the patient to do and should not be influenced by the character of the structural lesions or an opinion as to treatment or prognosis. A recommendation for physical activity is based not only on the amount of effort possible without discomfort but also on the nature and severity of the disease.

Following are examples of functional capacity and objective assessment classifications.

- A patient with minimal or no symptoms but a large pressure gradient across the aortic valve or severe obstruction of the left main coronary artery is classified: Functional Capacity I, Objective Assessment D
- A patient with a severe anginal syndrome but angiographically normal coronary arteries is classified: Functional Capacity IV, Objective Assessment A
- A patient with acute myocardial infarction, shock, reduced cardiac output, and elevated pulmonary artery wedge pressure is classified: Functional Capacity IV, Objective Assessment D

- A patient with mitral stenosis, moderate exertional dyspnea, and moderate reduction in mitral valve area is classified: Functional Capacity II or III, Objective Assessment C

Uncertain Diagnosis

No Heart Disease: Predisposing Etiologic Factor

The diagnostic category *No heart disease: Predisposing etiologic factor* includes patients in whom no cardiac disease is evident but whose course should be followed by periodic examinations because of a history of an etiologic factor that might cause heart disease. These should be recorded as *No heart disease: History of (state the etiologic factor)*.

No Heart Disease: Unexplained Manifestation

The diagnostic category *No heart disease: Unexplained manifestation* includes patients with symptoms or signs referable to the heart but in whom a diagnosis of cardiac disease is uncertain at the time of examination. These cases should be recorded as *No heart disease: Unexplained manifestation*, with a further recommendation that reexamination be performed after a stated interval.

When there is a reasonable uncertainty that the symptoms or signs are not of cardiac origin, the diagnosis should be *No heart disease*.

Functional Capacity	Objective Assessment
Class I. Patients with cardiac disease but without resulting limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, dyspnea, or anginal pain.	A. No objective evidence of cardiovascular disease.
Class II. Patients with cardiac disease resulting in slight limitation of physical activity. They are comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnea, or anginal pain.	B. Objective evidence of minimal cardiovascular disease.
Class III. Patients with cardiac disease resulting in marked limitation of physical activity. They are comfortable at rest. Less than ordinary activity causes fatigue, palpitation, dyspnea, or anginal pain.	C. Objective evidence of moderately severe cardiovascular disease.
Class IV. Patients with cardiac disease resulting in inability to carry on any physical activity without discomfort. Symptoms of heart failure or the anginal syndrome may be present even at rest. If any physical activity is undertaken, discomfort is increased.	D. Objective evidence of severe cardiovascular disease.

*The Criteria Committee of the New York Heart Association. *Nomenclature and Criteria for Diagnosis of Diseases of the Heart and Great Vessels*. 9th ed. Boston, Mass: Little, Brown & Co; 1994:253-25

Table 1. Stages of Heart Failure

Stage	Description	Examples
A	Patients at high risk of developing HF because of the presence of conditions that are strongly associated with the development of HF. Such patients have no identified structural or functional abnormalities of the pericardium, myocardium, or cardiac valves and have never shown signs or symptoms of HF.	Systemic hypertension; coronary artery disease; diabetes mellitus; history of cardiotoxic drug therapy or alcohol abuse; personal history of rheumatic fever; family history of cardiomyopathy.
B	Patients who have developed structural heart disease that is strongly associated with the development of HF but who have never shown signs or symptoms of HF.	Left ventricular hypertrophy or fibrosis; left ventricular dilation or hypocontractility; asymptomatic valvular heart disease; previous myocardial infarction.
C	Patients who have current or prior symptoms of HF associated with underlying structural heart disease.	Dyspnea or fatigue due to left ventricular systolic dysfunction; asymptomatic patients who are undergoing treatment for prior symptoms of HF.
D	Patients with advanced structural heart disease and marked symptoms of HF at rest despite maximal medical therapy and who require specialized interventions.	Patients who are frequently hospitalized for HF or cannot be safely discharged from the hospital; patients in the hospital awaiting heart transplantation; patients at home receiving continuous intravenous support for symptom relief or being supported with a mechanical circulatory assist device; patients in a hospice setting for the management of HF.