

## HEART DISEASE—MURMURS

### **Overview:**

A heart murmur is the noise generated by the flow of blood through the various chambers, valves, and vessels of the heart. Normally this blood flow cannot be heard. Murmurs occur as the result of blood flow turbulence, often the result of defective heart valves. Defects that cause heart murmurs may be congenital, brought about by certain non-cardiovascular diseases (e.g. rheumatic fever) or by a whole host of cardiovascular diseases.

There are different kinds of heart murmur with varying degrees of significance. Although there is some disagreement in the medical literature, *innocent murmurs* most frequently refer to murmurs that have neither functional nor organic significance. *Functional murmurs*, generated by minor congenital abnormalities or for unknown reasons, are also often considered relatively insignificant. Other murmurs are the result of structural defects, either inherited or brought about by the progression of heart disease. These so called *organic murmurs* are sometimes of concern as they are indicators of potentially significant underlying heart defects, including aortic stenosis, aortic regurgitation, mitral stenosis, and mitral regurgitation. Heart murmurs are typically described in five ways:

<b>Location</b>	Does the murmur originate at the apex of the heart or at its base? Sometimes the location is also described as mitral, aortic, or as pulmonic, depending on the closeness to the respective hear valve. Other times the location is described in relation to the sternum or rib interspaces.
<b>Timing</b>	Does the murmur occur during contraction (systole) or relaxation (diastole, or presystole) of the heart? Systolic murmurs can be divided into three categories: midsystolic ejection murmurs; pansystolic murmurs; and late systolic murmurs. The type of murmur diagnosed will help determine the cause of the murmur and may shed light on the underlying organic deformity, if any, that may be taking place.
<b>Transmission</b>	Is the murmur only heard over a specific location? Or does it radiate to other areas? If so, which?
<b>Constancy</b>	Is the murmur heard all the time, regardless of position? If so, it is likely caused by structural (organic) abnormalities. If the murmur is inconsistent, and if it can only be heard with the individual in erect position, the murmur is often suspected to be innocent (functional) absent other contrary indicators.
<b>Loudness</b>	Loudness is often expressed using Levine's (1933) scale of 1 through 6. The typical expression is 1 of 6 or 5 of 6 etc. in order not to confuse the rating with another scales sometimes used. This other scale rates loudness from 1 to 4 (e.g. 3 of 4). Low level loudness (1 or 2 of 6; or 1 of 4) are typically of no significance or very little significance. Loudness level 3 of 6 (or 2 of 4) may or may not be of significance and warrants further analysis. Levine's 4 through 6 (3 or 4 of 4) indicate likely organic abnormality and/or heart disease of greater or lesser degree. It should be noted that some medical directors place relatively little weight on the loudness data obtained due to the subjective nature of the reports.

### **Impact on Life Underwriting:**

Unfortunately, the reporting of heart murmurs is a subjective process. Analysis by the examining physician depends on the experience of that physician. A medical director will want to obtain other clinical data (especially APSs), to conclude what type of significance a particular murmur may have.

Murmurs, whether innocent, functional, or organic, are of interest to the medical director as some of them, even in the absence of current cardiovascular disease, can lead to heart disease earlier in life than would be expected for individuals without murmurs. A minor valve abnormality may have no significance for a young adult; however, if calcification sets in over the decades, the impact of a heart valve defect may be enhanced. Such processes can have the potential for heart disease earlier in life than otherwise expected.

Standard offers are common for many murmurs in older applicants, as long as other more serious heart conditions can be ruled out. Organic murmurs (those caused by structural abnormalities) are rated for cause and their impact on heart function. If inherited, and without evidence of related disease, such cases often get standard or very low table ratings. On the other hand, if the murmur is caused by serious cardiovascular disease, especially the kind that is likely to continue to worsen, the case will be highly rated or declined, primarily depending on the prognosis for the proposed insured.

If an offer of insurance is obtained that is too high to place, it may be to the proposed insured's advantage to obtain additional medical information about the murmur. A stress echocardiogram, in particular, may be able to confirm that a clinically doubtful murmur functionally insignificant and probably not due to early stages of degenerative heart disease. The availability of such data can often turn a low substandard case into a standard offer, or improve upon a higher rating. Of course, we would still encourage the proposed insured to place whatever offer has been made first, just in case the additional testing is less favorable and perhaps shows that indeed there is a progression of degenerative heart disease, which would lead to an even higher rating or a decline. SB 04/23/2001