

## Underwriting a Mitral Valve Disorder

### THE CASE

### STUDY FOR

### THIS MONTH

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*A 54-year old female is applying for a term policy with a \$750,000 specified amount. She discloses that she has a heart murmur. An APS indicates mitral valve regurgitation of a mild degree and valve deformity (thickening) that has not changed in the last five years.*

The mitral valve is one of the four heart valves and is located between the two chambers on the left side of the heart, the left atrium and the left ventricle. Normal mitral valves keep the blood from flowing backward from the left ventricle into the left atrium and then backing up into the lungs, thus causing shortness of breath. Mitral valve regurgitation, also called mitral insufficiency, is a condition characterized by a weakened mitral valve that allows blood to flow backwards. This is the most common valve problem encountered in underwriting.

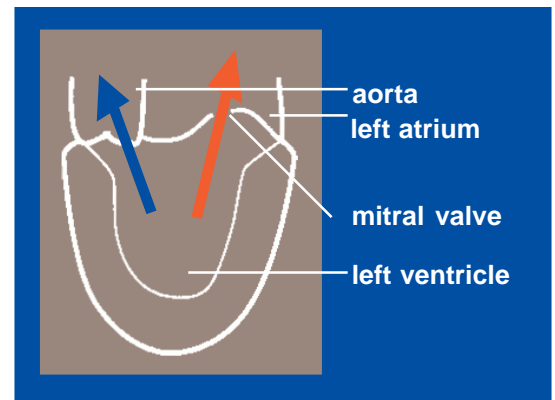
When the mitral valve malfunctions, the heart is often overworked. As the regurgitation becomes more severe, the heart weakens and fails to pump blood efficiently causing blood to congest the lungs and other organs, a disorder known as congestive heart failure. Severe regurgitation can also lead to an arrhythmia (abnormal heart rhythm), atrial fibrillation (the atria “quiver” instead of effectively beating), and premature ventricular contractions (PVCs, “extra” heartbeats caused by irritation in the ventricles). All these disturbances can cause sudden death. Occasionally the damaged mitral valve can become infected causing further valve injury, thus necessitating the use of antibiotics with certain surgical procedures, especially dental.

Conditions of the mitral valve are best studied with the echocardiogram which provides a picture of the structures of the heart through the use of sound waves. This technique is not to be confused with the electrocardiogram (EKG) which graphically records the electrical activities of the heart.

Rheumatic fever is the most common cause of mitral valve damage, accounting for about one-third of mitral regurgitation. The appetite suppressant medication, fenfluramine in the fen-phen diet treatment caused valvular dysfunction but the problem seems to be remedied since the medication was withdrawn from the market.

Another common condition causing regurgitation of the mitral valve is myxomatous (mik-so'mah-tus) degeneration which accounts for much of the mitral

valve prolapse (MVP) cases found in underwriting. Here, the mitral valve is damaged by material deposits into the valve structure. These deposits cause the valve flaps to thicken and become weak. The valve then flops out of its position into the atrium. This situation can become progressively worse and involve other heart structures around the mitral valve. This condition, which has no known cause, is not as innocent as other mitral valvular conditions.



— normal blood flow  
— blood flow during regurgitation

Symptoms of mitral regurgitation are few until the condition becomes severe. Fatigue and shortness of breath are the most common problems. Occasionally chest pain and palpitations are attributed to mitral regurgitation.

Severe mitral regurgitation can be treated by replacing the damaged valve with an artificial valve. Valve replacement mortality risks are mostly due to blood clots. A newer treatment approach focuses on repairing the original damaged valve, a procedure known as valvuloplasty. This is the preferred treatment and has less overall risk.

In the case study mentioned above, the risk is likely to be underwritten with a standard base rate. The lack of complications and the stable condition over five years time provide optimism about the potential outcome. Without the good track record, the risk would be Table Two. With moderate mitral regurgitation or with atrial fibrillation the risk would be greater, closer to Table Four.



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