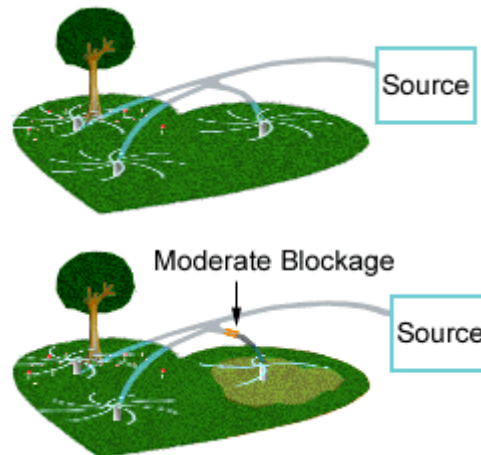


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**What is a heart attack?** The heart is a muscular organ that pumps blood to the body at an average of 72 times per minute. The coronary arteries are responsible for supplying oxygen and nutrients to the heart muscle. A temporary decrease in blood supply can cause the muscle to "starve" for oxygen and result in chest discomfort or angina. A prolonged total loss of supply can cause irreversible damage of the heart muscle and produces a heart attack. To understand this, let us imagine that the heart is represented by a garden kept lush and green by water sprinkler system. The lawn is divided into three areas, each receiving water from a separate pipe or coronary artery, as shown on the left (below)..

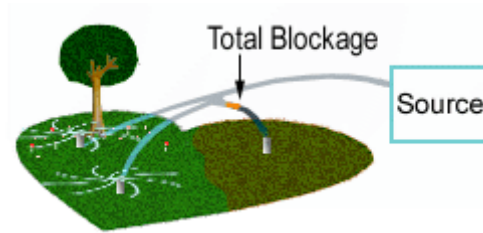


Now imagine that one of these pipes is partially blocked by debris and rust. During a hot summer season, the rusty pipe is unable to keep up with the water needs of the garden. The area supplied by the partially blocked pipe begins to dry and turns brown, but is still alive, as shown on the right (above).. If the garden had symptoms, it would feel pain as it starves for water and nutrients.



If water flow is now restored or increased, the garden once again turns green and the pain goes away. This is equivalent to angina. The big difference being that angina usually

lasts only a few minutes, while the garden's "symptoms" occurs over a matter of weeks or months.



Now let us imagine that the pipe becomes abruptly and totally blocked (above). Water supply to a section of the garden is completely and permanently interrupted. The grass turns brown and then dies. Once this happens, subsequent restoration of water supply will never return that section of the lawn to its original live, lush and green status. The plant life in one section of the garden has suffered the equivalent of a heart attack and turned into "scar tissue."

The human heart, like the garden example, can experience prolonged "starvation" or angina before the affected muscle dies and turns into scar tissue. Scar tissue loses a muscle's power to pump. Thus, that portion of the pump becomes stiff, moves sluggishly and decreases the ability of the left ventricle (major pumping chamber of the heart) to efficiently pump blood to the body. The symptoms of chest pain preceding a heart attack can last from several minutes to a few hours.



The pictures below demonstrate the different phases of atherosclerosis or blockage within a coronary artery. You may click on the left and middle button to stop and then play the slide show. The slides will "loop" continually. You may click on the "Rewind" button to restart the slide show from the beginning.



The majority of heart attacks occur when a blockage plaque "ruptures" or develops a crack on the inner aspect of the blood vessel. Clot develops at this site and then grows to completely block the channel of the artery. This cuts off blood supply to the heart muscle supplied by that artery and results in a heart attack.



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