Nephrogenic systemic fibrosis (NSF) is a rare disorder that occurs in some individuals with reduced kidney function, who have been exposed to an intravenous contrast material that contains gadolinium. A contrast material is a dye that is sometimes used during magnetic resonance imaging (MRI). The term, fibrosis, refers to the thickening and scarring of connective tissue, most often the consequence of inflammation or injury. NSF is characterized by thickening and hardening (fibrosis) of the skin, subcutaneous tissues, and, sometimes, underlying skeletal muscle. The arms and legs are most often affected. In some cases, the skin on the trunk can also become involved. This proliferation of fibrotic tissue may become systemic, extending to other areas including the smooth, delicate membrane that surrounds the lungs (pleura), the sac surrounding the heart (pericardium), the thin sheet of muscle that aids respiration by moving up and down when breathing (diaphragm), and the outermost layer (dura mater) of the three membranes covering the brain and spinal cord. Diagnostic criteria for NSF have been recently developed. A diagnosis of NSF is usually made based upon a detailed patient history, a thorough clinical examination and identification of characteristic findings. Surgical removal and microscopic study of a small sample of affected skin tissue (skin biopsy) is required to verify the diagnosis. Additional tests may be performed to exclude several other disorders that can resemble NSF.