Signal-intensity ratio (SIR) is a measure used in medical imaging to compare the intensity of a signal from a region of interest (ROI) with the intensity of a signal from a reference area.

In magnetic resonance imaging (MRI), SIR is commonly used to evaluate the enhancement of a lesion or tissue following the administration of a contrast agent. The SIR is calculated by dividing the signal intensity of the ROI by the signal intensity of a reference area that should not be affected by the contrast agent.

The SIR can be used to assess the degree of enhancement of the ROI relative to the reference area, which can provide information about the vascularity or perfusion of a lesion or tissue. An increase in SIR indicates increased enhancement, which can indicate the presence of an abnormality or pathology.

SIR can also be used in other imaging modalities such as computed tomography (CT), ultrasound, and positron emission tomography (PET) to compare signal intensities in different areas of the body and evaluate changes in tissue or lesion characteristics over time.