Time to Echo (TE)

What is TE?

TE, meaning Time to Echo, is a user selectable parameter which determines when the MR signal should be sampled. Across different pulse sequences, TE selections can vary greatly. The Spin Echo is the most straightforward example: TE will control how much T2 decay processes can influence image contrast. Long TE's (80-120) will allow a moderate amount of T2 decay to occur, allowing tissues with short T2 times to lose signal and become dark, creating contrast with long T2 tissues. Short TE's (<30) will restrict the amount of decay allowed, and reduce the influence of T2 decay processes to influence the image. Very long TE's (500+) will allow all tissues except for pure fluids to decay, creating myelographic contrast. This is relatively true when considering the Fast Spin Echo, though there are important caveats discussed in more detail here in the ETL section. Note in the image series below as TE is increased from 15-500 how different tissues decay at different rates, moving the contrast from Proton Density through to clinical T2 ranges, to very heavily T2 weighted myelographic contrast.