

## -ARTEFACTS-

ARTEFACT	AXIS	SOLUTION(S)	SACRIFICE
NOISE (RF and GRAIN)	Phase and frequency	-(grain) increase NEX, increase slice thickness, increase FOV, increase resolution -(RF) find leak...kill it	-increase scan time due to increased SNR
CHEMICAL SHIFT	frequency	-Increase bandwidth  -reduce FOV  -chemical saturation	-decrease min TE, decrease SNR -reduce SNR and decreases resolution -reduces SNR may lose slices
MOTION	phase	-better restraint -increase anesthesia -add anti-spasmodics -pre-sat bands for resp. and cardiac	-none -risk to patient -risk to patient -may increase scan time
FLOW MOTION	phase	-Gradient Moment Nulling Or Flow Compensation -pre-saturation band	-increases scan time  -may increase scan time and increase min TE
MAGNETIC SUSCEPTIBILITY	Frequency and phase	-use spin echo -reduce Echo Train Length -increase NEX -shim volume -swap phase and freq	-all of these increase scan time
ALIASING (WRAP)	Frequency and phase	-no frequency wrap -no phase wrap (foldover suppression)  -enlarge FOV	-none -may reduce SNR May increase scan time Increases motion artefact due to reduced NEX(NSA) -reduces resolution
TRUNCATION	phase	increase phase encodings	increase scan time
PHASE MISMAPPING	phase	- Swap phase and freq - pre-saturation -Grad moment rephasing	-May need no phase wrap -may lose a slice -increase min TE
ZIPPER	Frequency	-immediately call engineer	-you now have a very unhappy engineer!

SHADING	Frequency and phase	-check shim -load coil correctly -prescan correctly	none
CROSS TALK	Slice select	none	none
CROSS EXCITATION	Slice select	-interleaving -squaring off RF pulses	-doubles the scan time -reduces SNR