Brain SPECT Imaging in PTSD and EMDR

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Amen Clinic, SPECT and EMDR

- Mid 90s Dr. J. Lendl introduces us to EMDR, starts to work in our clinic
- Personal experience with EMDR
- 1997 we start doing before and after studies, EMDR calms brain function
- 2001 K. Lansing with support from Dr. Shapiro design a SPECT/EMDR study

SPECT and PTSD

Diamond Pattern (LT)
- Increased anterior cingulate
- Increased basal ganglia
- Increased thalamus (limbic)
- Increased right lateral temporal lobe

SPECT and PTSD

Amen Clinic 2003 Study
- 19 patients with PTSD by DSM-IV
- Compared to 19 age, sex matched normals
- Baseline study
- Analysis – SPM
- Results – marked increased prefrontal and left and right temporal lobe activity
SPECT and EMDR
Amen Clinic 2001 - 2003 Study

- 6 patients with PTSD by DSM-IV
- 3 States
  - Concentration
  - First EMDR session
  - After Treatment

SPECT and EMDR
Amen Clinic 2001 - 2003 Study Results

- Initial EMDR session (s) increases overall brain activity, especially in the prefrontal areas, but decreases right temporal lobe activity
- After Rx with EMDR increased prefrontal activity, especially on left and significant decreased right temporal lobe activity
SPECT/ During EMDR p 0.005

SPECT/ Post Rx EMDR p 0.005

EMDR – KC One Session

EMDR – LT

before after

before after
Does PTSD Reset the Brain?
- Yes
- More likely in vulnerable patients
- Vulnerability seen with pre-existing PFC, AC, BG or limbic problems, patients with brain injuries and pre-existing mood disorders or ADD

Does EMDR Help?
- Yes, in our study
- Clinically, marked decrease in symptoms
- Seen on brain SPECT imaging, especially calming in right lateral temporal lobe and increases in PFC

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