LELI FOR ACUTE STROKE
Jackson Streeter, PhotoThera, Inc. USA

- One stroke every 45 sec in NA
- 1.8 million new strokes per year in industrialized
- One FDA approved TX is TPa

Strokes:
- 85% ischemia
- 15% hemorrhagic: 50 % die within 3 hours
- Time is the critical element of stroke TX
  - TPA can only be used w/i 3 hours or make worse

Technology
- Laser through skull to cortex,
- Absorbed by mitochondria, (not removing clot) which increases mitochondrial viability and activity,
- Stimulates over 100 metabolic reactions (increase ATP, neurotransmitters, decrease apaptosis
- Results in neuroprotection

Human studies
STAIR (stroke therapy academic and industry roundtable) Criteria
- Appropriate animal models
- Functional tests more important than imaging
- External lab validation
- “Exposure”
- Time window

Their additional criteria:
- Effective in human neurons in vitro
- Able to deliver required amount of energy in man
- Work in a clot model (rabbit clot model)

Rabbit MCA Occlusion: filament threaded to block MCA, inducing and infarct
- Can delay TX up to 24 hours and still show efficacy
- 808 nm, 10 mW/cm², 1.2 joules
- See efficacy at 2, 3, 4 wks after a single treatment, significant at p<0.0001

Questions:
- Hemorrhagic stroke? Have shown benefit in 6 animals

Need 150 joules to get warming and increased blood flow.