

Innovative Treatments: There Are Many Ways to Heal the Brain

Many Ways To Optimize the Brain

- **Supplements**
- **Acupuncture**
- **Sleep Deprivation**
- **HBOT**
- **Vagal Nerve Stimulation**
- **rTMS**
- **Light therapy**
- **Irlen Lenses**
- **Neurofeedback**
- **CES**

7 Types of CAM

1. **Mind-Body Interventions** - biofeedback, relaxation therapies, meditation, body-oriented exercises (yoga, t'ai chi), hypnosis, and imagery
2. **Bioelectromagnetic Therapies** - ECT, rTMS, Vagal nerve stimulation
3. **Alternative Systems of Medical Practice** - acupuncture, homeopathy

7 Types of CAM

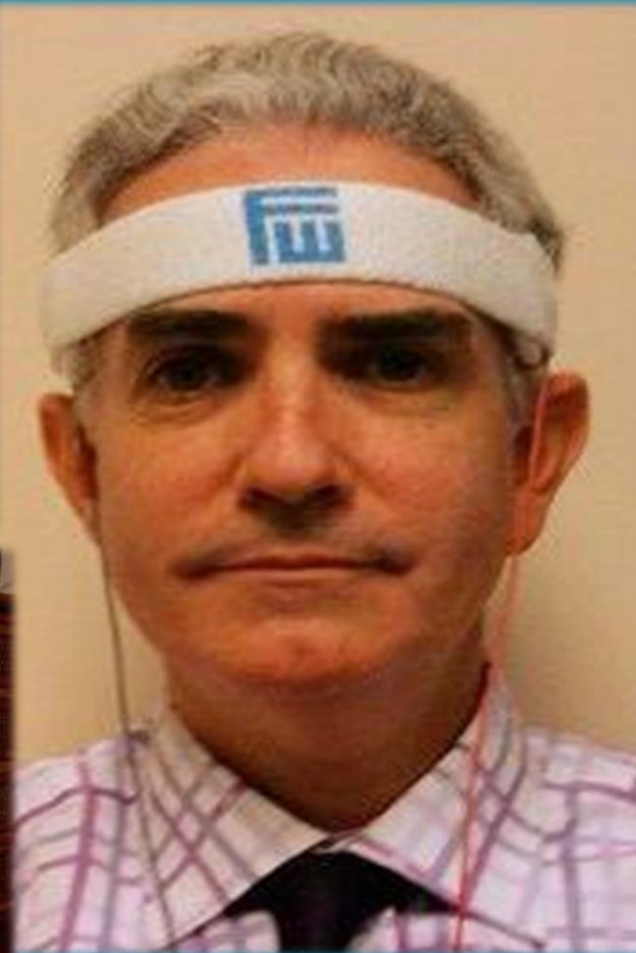
4. **Pharmacologic and Biologic Treatments** – light therapy, sleep deprivation, Irlen lenses, HBOT
5. **Manual Healing Methods** – osteopathy, chiropractic, PT, massage
6. **Herbal Medicine** - plants and extracts
7. **Diet and Nutrition** - vitamin E for blood clot and stroke prevention, folic acid for neural tube defect prevention, and the ketogenic diet for epilepsy

Bio-Electro-Magnetic Therapies

Cranial Electrotherapy Stimulation (CES)

- **Depression, anxiety, pain, insomnia**
- **Modern devices use < 1 mA low-frequency (0.5Hz) biphasic currents applied with electrodes attach to head or ear lobes**
- **Average treatment is 20-60 minutes**
- **Daily treatments are recommended during the first 1-3 weeks of CES therapy**

Cranial Electrotherapy Stimulation (CES)





rTMS

- **Repetitive transcranial magnetic stimulation (rTMS)**
- **Helpful in resistant depression**
- **Helpful in post stroke depression**
- **FDA approved**

What is TMS Used For?

- **Depression – only FDA approved indication**
- **Alcohol, Marijuana, Cocaine Addiction**
- **OCD**
- **Migraines**
- **Pain**
- **Insomnia**
- **Parkinson's Disease**
- **Tinnitus**
- **Stroke**

Pharmacologic and Biologic Treatments

Sleep Deprivation and Depression

- **Ebert, 1994, n = 20, responders with increased anterior cingulate activity**
- **Goodwin, 1993, n = 28, responders with higher anterior cingulate perfusion, normalized after sleep deprivation.**
- **Wu, 1999, PET, n = 36, high pretreatment activity and decreases in activity after treatment in medial prefrontal cortex**

Lights and Seasonal Affective Disorder

- **Vasile, 1997, n = 10, increased overall activity in responders but not in nonresponders**



Irlen Lenses

Irlen Syndrome: Scotopic Sensitivity Syndrome

- **Light sensitive, bothered by glare, sunlight, headlights or streetlights**
- **With bright or fluorescent lights become tired, headaches, mood changes, restless, unfocused.**
- **Trouble reading words that are on white, glossy paper.**



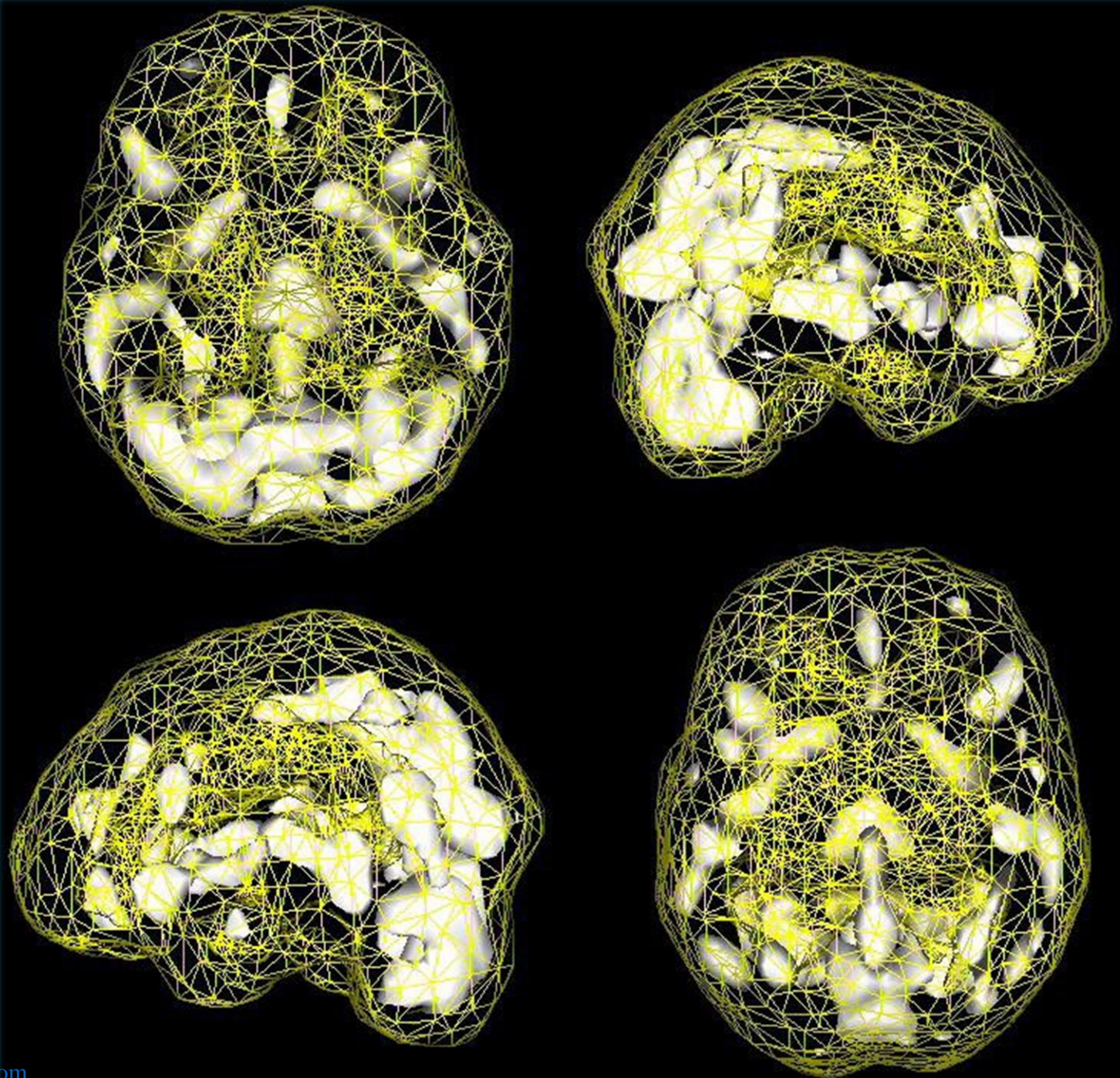


Irlen Syndrome:

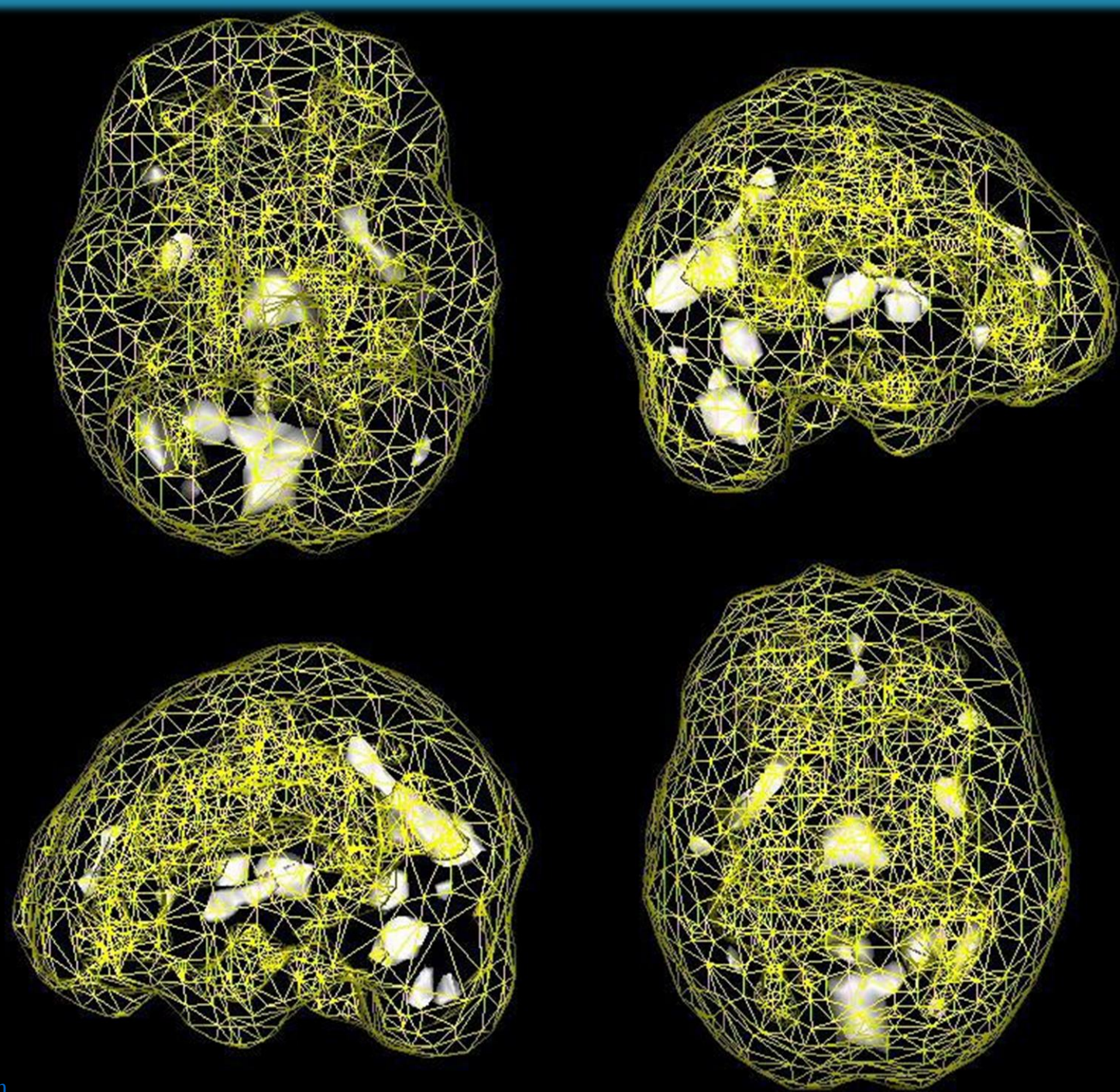
Scotopic Sensivity Syndrome

- **Words/letters shift, shake, blur, move, run together, disappear or become difficult to perceive when reading.**
- **Feels tense, tired, sleepy, or even get headaches with reading**
- **Problems judging distance and have difficulty with such things as escalators, stairs, ball sports, or driving.**

Scotopic Sensitivity



Scotopic Sensitivity with Irlen Lenses



A person is lying inside a hyperbaric oxygen chamber. The chamber is a large, cylindrical metal container with a circular opening at the top. The person is lying on a bed inside the chamber, and their head is positioned near the opening. The chamber has various pipes and controls visible on the exterior. The entire image is overlaid with a semi-transparent blue filter.

Hyperbaric Oxygen Treatment (HBOT)

MM

- **Age at TX: 4 Yrs.**
- **DX: CP – Developmental Delay; Dx @ 6 Mo**
- **Time to TX: 3 ½ Yrs.**
- **# treatments 150**
- **Results:**
 - Cognitive ↑, Gross Motor ↑, Spasticity ↑**
 - Vocalization ↑, Interaction**

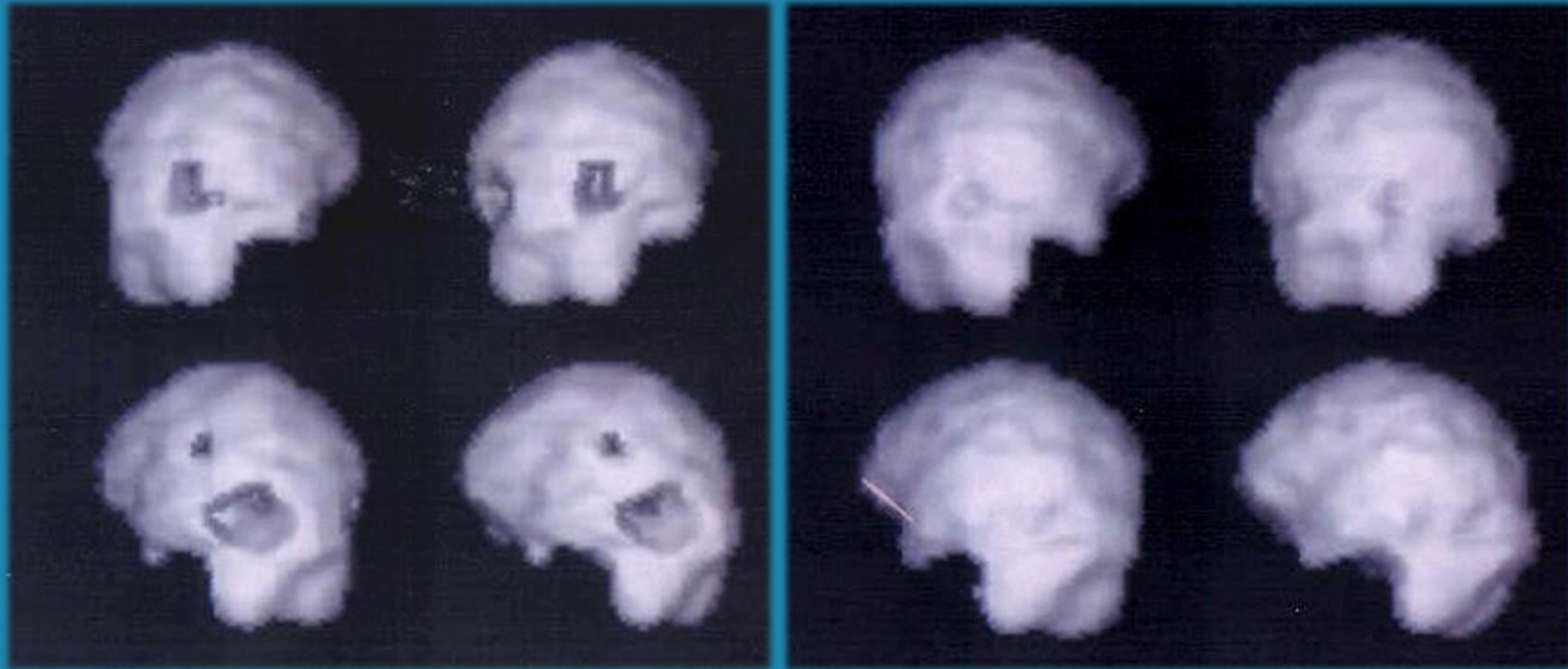
MM – Pre & Post



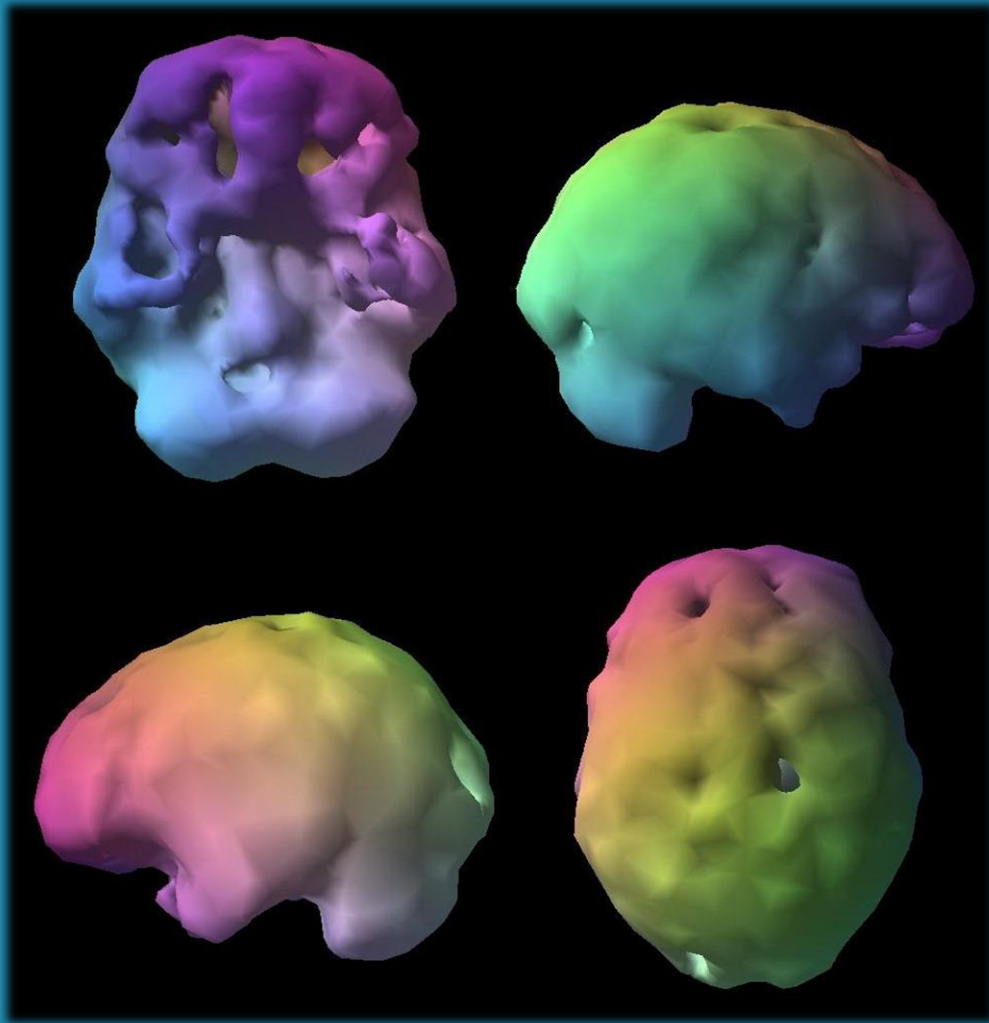
A Most Unusual Case of TBI

- **Age: 41**
- **Totally Blind, indirect lightning strike**
- **Time to Treatment: 5 Weeks**
- **Famous clinic stated patient never see again**
- **@59 HBOT patient saw shadows**
- **@73 HBOT vision was 20/25**
- **Working full-time – no further Rx required**

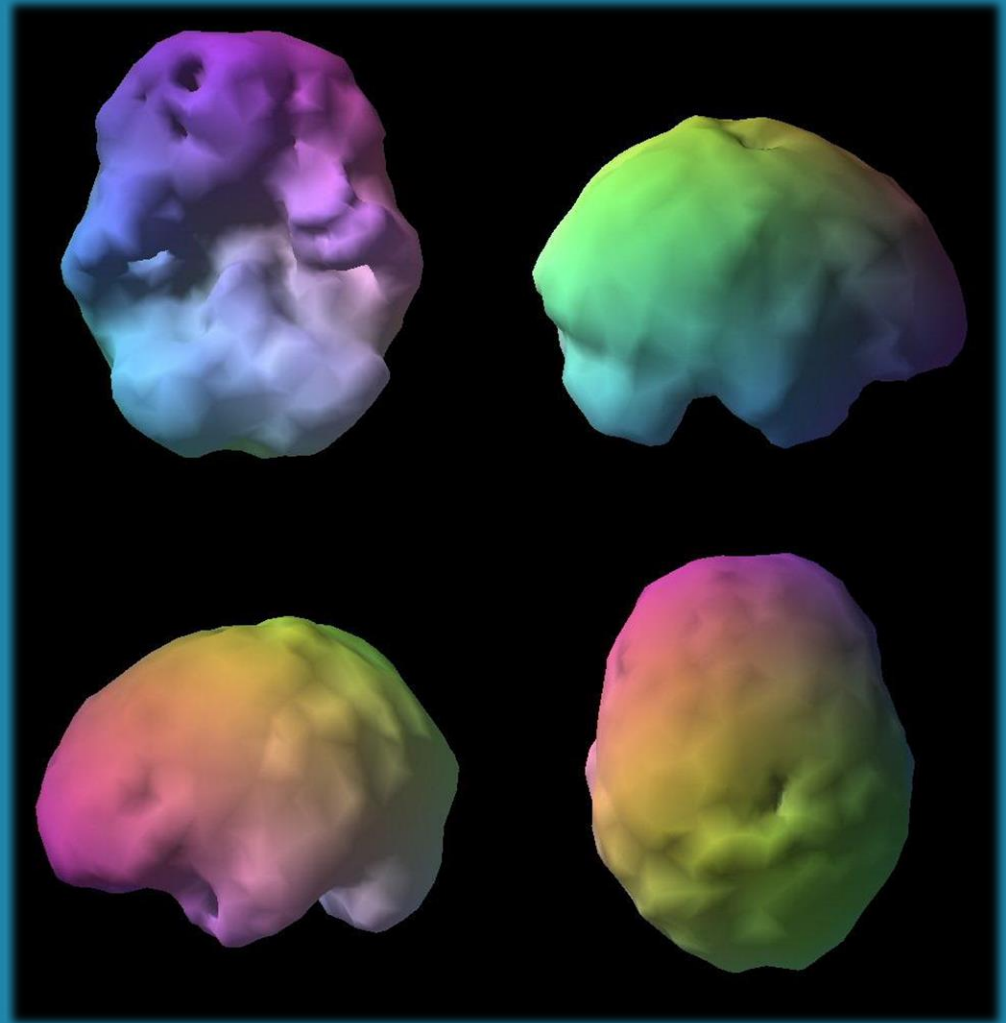
CT Pre & Post



HBOT Plus Supplements

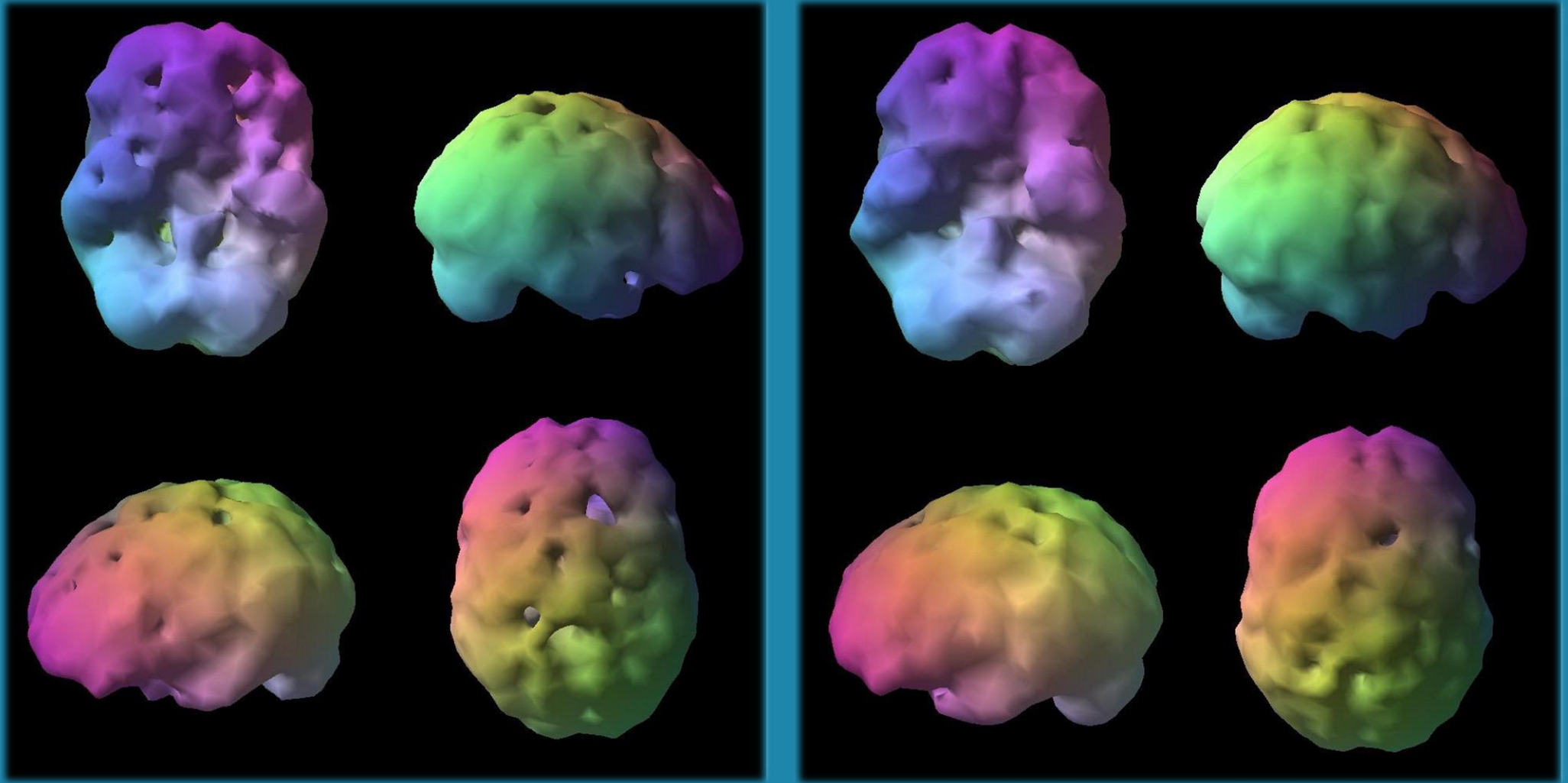


Before



After 18 mos

Before and After



Supplements Plus 40 Sessions of HBOT