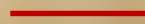




FUSA WHAT TO EXPECT..



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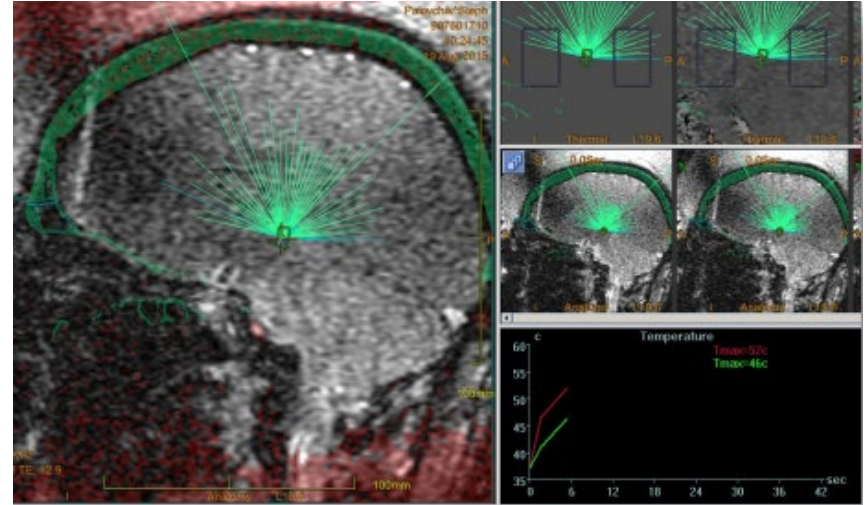


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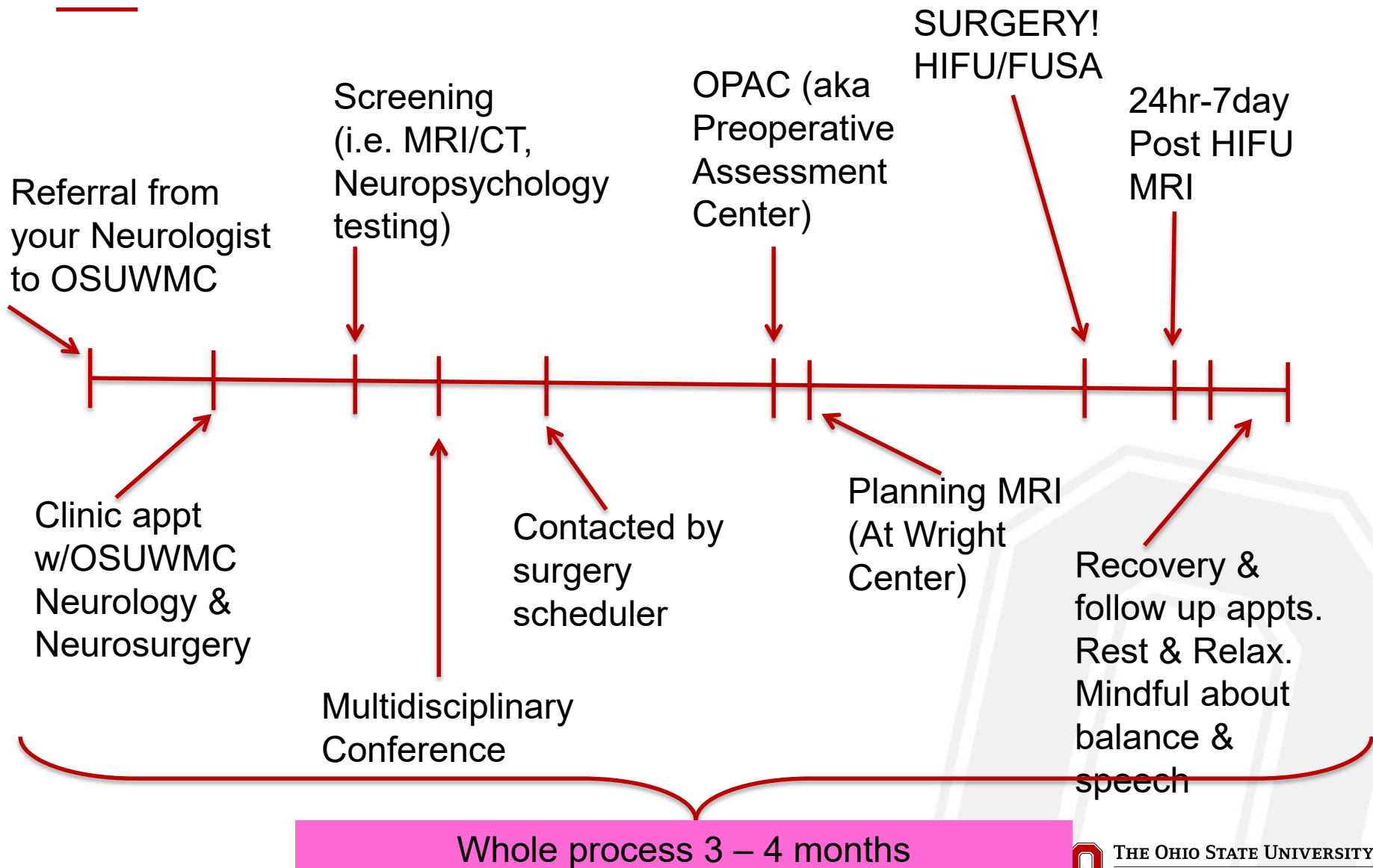
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FUSA (Focused Ultrasound Ablation)

- Ablate brain regions with abnormal activity
- Why some patients may prefer it?
 - Incisionless
 - Immediate effects
 - No implanted hardware
 - No battery replacement
 - Single surgery
- FDA approved for the treatment of:
 - Essential tremor
 - Tremor dominant Parkinson's Disease



Expected Timeline...



What to expect during focused ultrasound ablation?



Patient Prep

The patient's head is shaved so nothing interferes with the ultrasound beams. After local numbing medication is applied, a frame is secured to their head.



Planning

During the treatment, the patient is awake and lies inside the MRI scanner. MR images are taken to plan the treatment.



Target Verification

Light doses of energy are applied to accurately pinpoint the target and assess tremor improvement and identify any potential side effects.



Treatment

High energy is applied to create a small ablation, or burn to provide long-term therapeutic effect, reducing the hand tremor.

FUSA (Focused Ultrasound Ablation)

- Non-invasive therapeutic technique that uses non-ionizing ultrasonic waves to heat tissue
- PRO
 - No incision
 - Lower rate of serious adverse events
 - No risk of hardware failure
 - No risk of infection
 - Single surgery
 - Fully conscious – lightly sedated
 - MRI – No problem
- CON
 - You can't troubleshoot a FUSA/HIFU problem aka NO modulation
 - Potential for off target ablation
 - Can only be unilateral (*at this time)



Surgical Considerations & Delays...

- Uncontrolled hypertension or diabetic (A1c < 7%)
- Body habitus (< 300 #)
- Skull density (HIFU only)
- MRI incompatible pacemaker or other devices
- Not able to stop anticoagulants
 - Cardiac stents
 - Pulmonary emboli
 - Atrial fibrillation
 - DVT's
- Poor social support
- Poor mental health (uncontrolled depression, anxiety, etc.)
- Smoker
- Hematologic abnormalities (coagulopathies, low WBC, anemia)
- Poor dentition

Pre/Intra Op...

- No anticoagulants 7-10 days prior to surgery
 - i.e. multivitamins that include vitamin E, NSAIDs, ibuprofen, naproxen- Alleve, omega 3, garlic, ginko biloba, chondroitin, glucosamine, Aspirin
- Nothing to eat or drink after midnight
- No TREMOR/PD MEDICATIONS 12 hours prior to surgery
- Chlorhexidine shower night before and morning of surgery
- ENTIRE HEAD SHAVED the morning of surgery
- Frame attached to the head
 - HIFU will include a frame and cooling helmet
- On occasion catheter placed in the bladder & arterial line placed in the wrist
- Awake for procedure with possibility of light sedation/pain management
- Active Participant during the surgery
 - The team will be testing tremor response during the procedure with similar activities that were performed during the clinic visit i.e. writing name, spirals, sealed cup of water

FUSA Post Op...

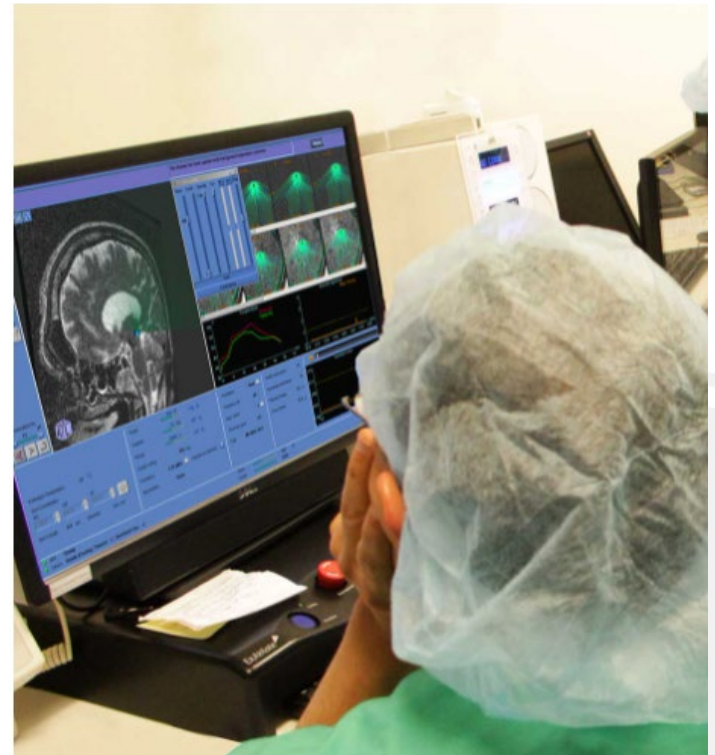
- Activity restrictions
 - AVOID lifting over 5 pounds for 2 weeks, do not push or pull
 - AVOID bending over to pick up objects for 2 weeks
 - DO NOT engage in light activities for 2 weeks (i.e. light housework)
 - DO NOT engage in heavy activities for 4 weeks (i.e. jogging, swimming, or physical education classes, mowing the grass).
 - DO NOT drive for 4 weeks
 - The overall goal is to avoid any activity that will prevent your wounds from healing properly
 - No flying for 7 days
 - We recommend that you **rest and relax** during the first 2 weeks after surgery and avoid an strenuous activity
 - You may gradually increase your activity 2 weeks after surgery
- Good diet to promote healing i.e. PROTEIN

Post Op FUSA Expectations & Risks...

- 50 – 70% Reduction of tremor
- Ataxia or impaired balance or coordination (especially if existed prior to surgery)
- Dysarthria – weakness in the muscles used for speech which often causes slowed or slurred speech or word finding difficulty
- Swallowing difficulty
- Relearn to use/trust your hand movements

**Subsides over the following days to months

**These may be worse if you have any of these at baseline



Thank You



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