

Mental Health Collaborative Care Summit: Navigating Key Tasks and Roles

JUNE 14, 2024

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- ▶ This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of MedChi, The Maryland State Medical Society (MedChi) and the Maryland Health Care Commission (MHCC). MedChi is accredited by the ACCME to provide continuing medical education for physicians
- ▶ MedChi designates this virtual online educational activity for a maximum of *1 AMA PRA Category 1 Credits™*
- ▶ Physicians should claim only the credit commensurate with the extent of their participation in the activity
- ▶ The planners and reviewers for this activity have reported no relevant financial relationships to disclose
- ▶ The presenters have reported no relevant relationships to disclose

Learning Objectives



- ▶ Identify treatment approaches in a mental health collaborative care model
- ▶ Recognize approaches for crafting an effective treatment strategy within a collaborative mental health care framework
- ▶ Learn techniques for defining the roles of primary care and specialists as part of a mental health collaborative care team



AGENDA

- I. **Gene Ransom**, *MedChi*, Opening Remarks
- II. **Melanie Cavaliere**, *MHCC*, Overview of Maryland Landscape and MHCC Practice Transformation Activities
- III. **Idris Leppla, MD**, Subject Matter Expert
- IV. **Coleen Shrepfer, MD**, *Gladstone Psychiatry and Wellness*, Practice Perspective
- V. **Bhawana Bahethi MD**, *Dr. Bahethi Internal Medicine*, Practice Perspective
- VI. **Hogan Pesaniello, MD**, Private Practice Perspective
- VII. Q&A





Gene Ransom

CEO

MedChi, The Maryland
State Medical Society
(MedChi)



Snapshot of Maryland

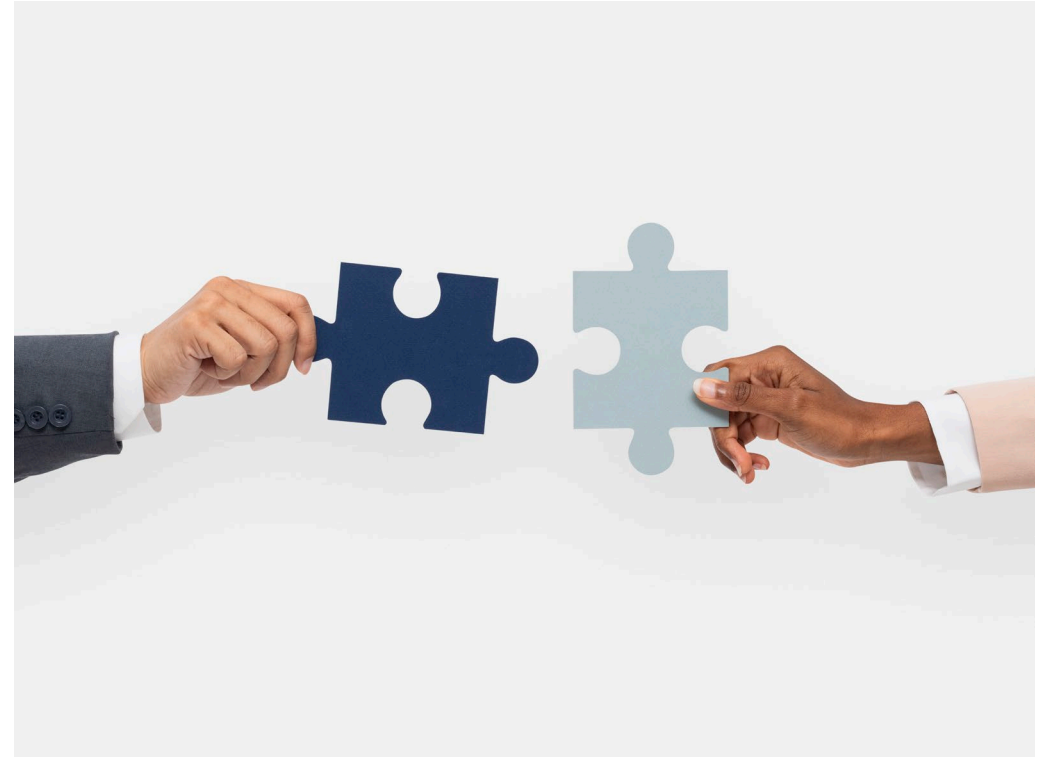


- ▶ 6.18 million people (Source: [United States Census Bureau](#))
- ▶ 16.9% of population is age 65 and over (Source: [United States Census Bureau](#))





Advancing Practice Transformation



Background



- ▶ Advancing practice transformation has been an MHCC strategic priority for more than a decade
- ▶ Maryland law tasked MHCC with implementation and management of the Maryland Multi-Payor PCMH Program from 2011 through 2016
- ▶ The MHCC, MedChi, and the University of Maryland School of Medicine Department of Family and Community Medicine partnered with the New Jersey Innovation Institute to complete practice transformation activities in Maryland as part of the federal Transforming Clinical Practice Initiative from 2015 to 2019
- ▶ The MHCC has contributed to planning and policy development for the Maryland Primary Care Program since its inception in 2017

Health Equity Practice Roundtable



- ▶ The MHCC convened a Health Equity Practice Roundtable (Roundtable) in March 2022 with representatives from advanced care delivery practices to identify challenges and opportunities for practices seeking to address key health equity concerns in their communities
- ▶ The goal of the Roundtable was to advance health equity in ambulatory practices in Maryland through the development of practice resources informed by Roundtable feedback
- ▶ Feedback from the Roundtable informed a Health Equity Symposium in March 2023 focused on strategies for identifying patterns of need in the community, building referral networks for services related to social needs, and connecting patients to resources
- ▶ More information about the Roundtable is available at:
mhcc.maryland.gov/mhcc/pages/apc/apc_icd/apc_icd_learning_networks.aspx

Advancing Practice Transformation

Program Overview



- ▶ In June 2021, MedChi CTO was competitively awarded a grant to complete transformation activities
- ▶ A crucial role of MedChi CTO is providing practice coaching on specific transformation topics and approaches, such as quality improvement and tools to help sequence and manage change essential to succeed in a value-based care model
- ▶ Program milestones:
 - Milestone 1 – Readiness Assessment
 - Milestone 2 – Workflow Redesign
 - Milestone 3 – Training
- ▶ Approximately 45 practices completed the program in June 2023
- ▶ An additional 27 practices are projected to complete Round 2 by June 2024

Learning Network Events



- ▶ The MHCC convenes peer learning network events in collaboration with local and national health care leaders on topics such as health equity, advanced care delivery, and practice transformation
- ▶ More information on learning network events is available at:
mhcc.maryland.gov/mhcc/Pages/apc/apc_icd/apc_icd_learning_networks.aspx



Advanced Care Delivery Events



- ▶ Prior events available on the [Learning Network](#) include:



Health Equity Symposium

March 2023

Challenges around addressing health equity issues are discussed during this symposium, which was convened in collaboration with the Health Services Cost Review Commission and MedChi, The Maryland State Medical Society. Discussions focus on strategies for identifying patterns of need in the community, building referral networks for services related to social needs, and connecting patients to resources.

[Watch Now](#) [Download Slides](#)



THE EVOLVING ROLE OF SOCIAL WORKERS IN TEAM-BASED ADVANCED CARE DELIVERY

November 2023

A social worker and medical director share how the role of social workers in team-based models is evolving. The presentation includes information about why some advanced care delivery practices employ in-house social workers and demonstrate how advanced care delivery practices share social worker resources.

[Watch Now](#) [Download Slides](#)



Idris Leppla, MD

Attending Psychiatrist,
Johns Hopkins Bayview
Medical Center

Whack-A-Mole: Navigating the Pitfalls of Primary Care Psychiatry

Idris Leppla, MD

Johns Hopkins Bayview
Baltimore, MD





Disclosure: Idris Leppla, MD

With respect to the following presentation, in the 24 months prior to this declaration there has been no financial relationship of any kind between the party listed above and any ACCME-defined ineligible company which could be considered a conflict of interest.



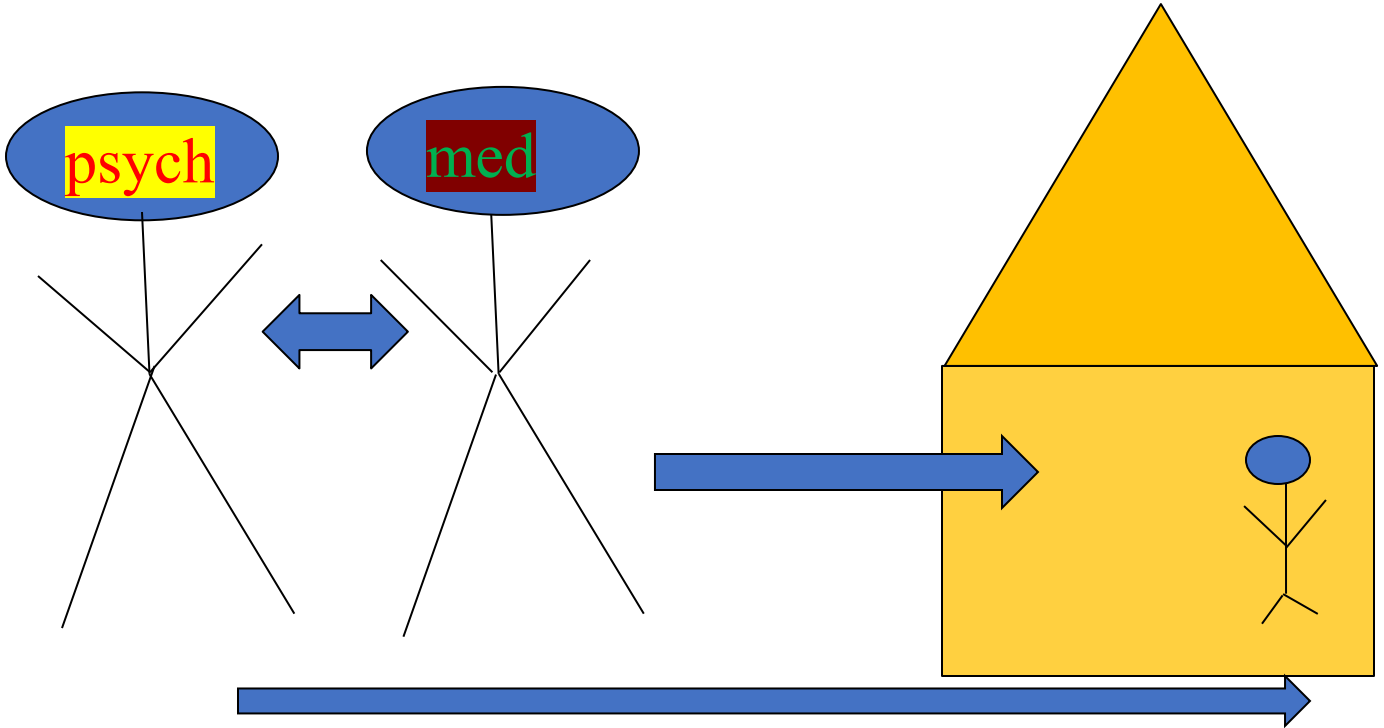
Objectives

- Discuss Johns Hopkins Model for collaborative care in the outpatient setting
- Illustrate the model with instructive cases
- Point out some difficulties in managing these patients
- Conclusion: it is the model or the patients that make this process difficult?



What is collaborative care?

- Collocated





Best Practices of Collaborative Care

- Population based
- Registry based
- Tracked individual patients



Comparing Collaborative Care to Usual Care

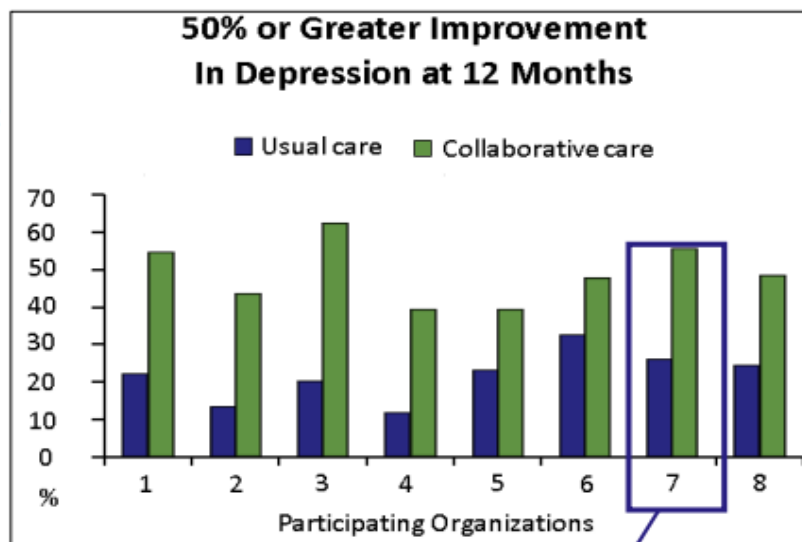
The IMPACT (Improving Mood: Providing Access to Collaborative Treatment) trial focused on depressed, older adults. Half were randomly assigned to receive the depression treatment usually offered by participating clinics and half were randomly assigned to receive collaborative care. Collaborative care more than doubled the effectiveness of depression treatment and reduced total healthcare costs at the same time (JAMA, 2002).

Usual care

50% of study patients used antidepressants at the time of enrollment, but were still significantly depressed.

70% of usual care patients received medication therapy from their PCP and/or a referral to specialty behavioral health.

Only 20% of patients showed significant improvements after one year, which matches national data for depression treatment in primary care.



As part of *usual care* patients at organization #7 were offered psychotherapy from Master's level clinicians co-located within the primary care clinic.

Collaborative care

On average, *twice* as many patients significantly improved. The difference was statistically significant in all eight healthcare settings.

Why?

- Patient-Centered Team Care
- Population-Based Care
- Measurement-Based Treatment to Target
- Evidence-Based Care
- Accountable Care

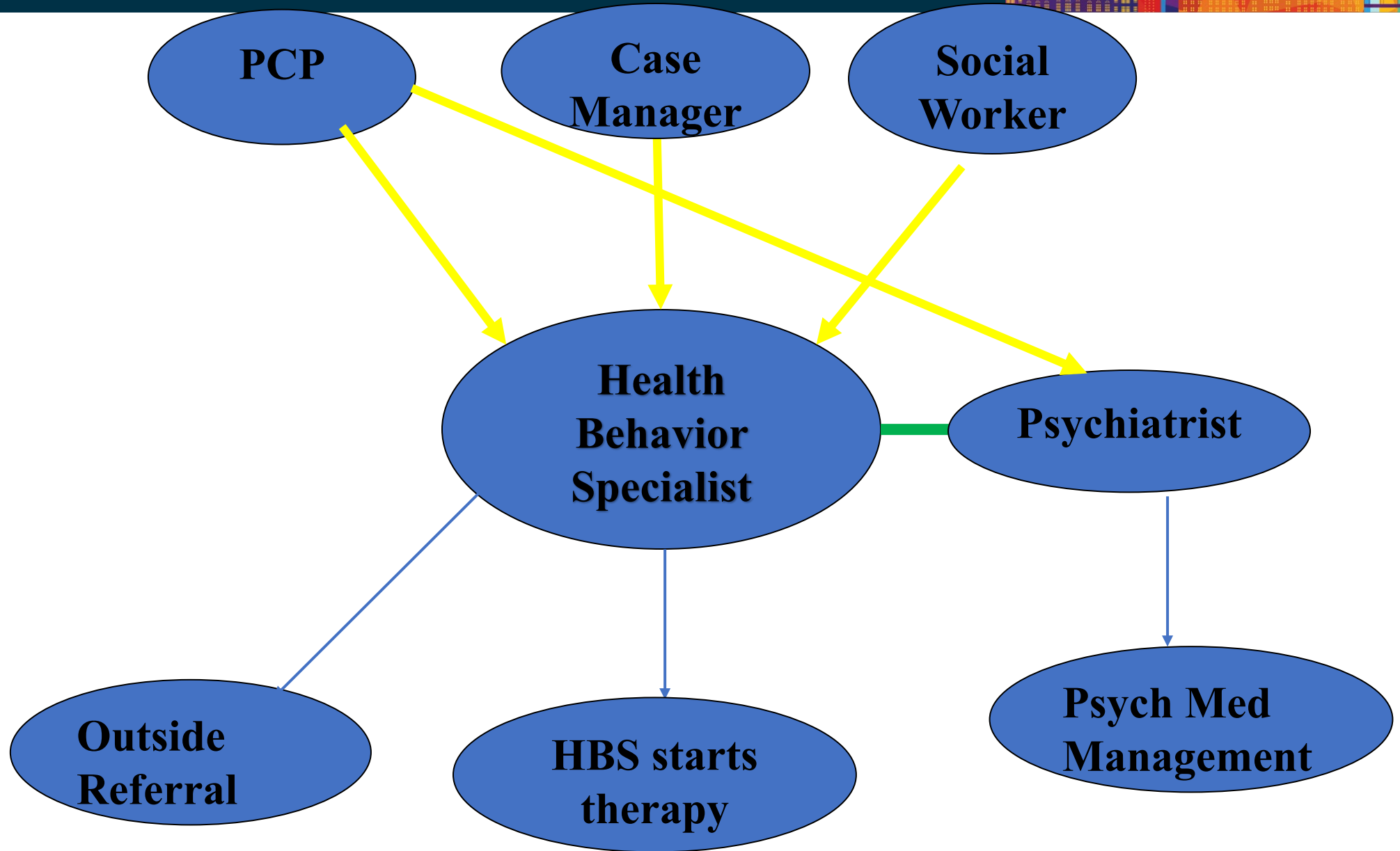




CMS

MDPCP

JMAP





Referral Process

- Referral Process: PCP/Case Manager/SW alerts site Health Behavior Specialist (HBS) that a consultation is needed
- HBS triages consult and decides
 - Outside referral for very complex patients
 - HBS initiates psychotherapy and psychiatrist involvement PRN
 - HBS immediately involves psychiatrist



Case 1: Paranoid ideation and resistance to care

- 64 Korean-American Female who complained to her primary care provider of sharp leg "zapping" pain that she believed was coming from her husband for the past two years.
- The patient had verbal outbursts towards her husband, and in one instance, he pushed her, leading to an ED visit.
- Her husband started living in the locked basement of their 4-bedroom home because he was afraid that she would hurt him and he did not want to hurt her.



Pitfalls

- Delay in Diagnosis
- Lack of Patient Involvement
- Splitting of the Staff
- Lack of infrastructure for ongoing psychiatric care



Case 2: Neglect Case and Schizoid Personality

- 71 F who lived alone, was unemployed, had no children, and has never married.
- Faced eviction from her house due to foreclosure due to years of unpaid bills.
- Her primary care doctor and office case manager have had difficulty contacting her. She did not answer several outreach phone calls from our service. It took several months for us to meet due to missed appointments and difficulty being contacted.



Pitfalls

- Provider Characteristics: feelings of helplessness
- Patient characteristics: resistance to care



Illness Anxiety Case

- 52 year old woman s/p heart attack in 2010. Ever since her heart attack, she has ruminating thoughts related to her health, catastrophizing and fear of getting sick. Every time she experiences any little sensation in her body, she becomes worried that this represents a terrible medical condition and she worries that she will have to go to the hospital again. Prior to her heart attack, she worked Baltimore City School District as a secretary and she loved working full time and then she would come home, cook, and take care of her 3 children. She misses the way she used to be. Now she receives disability from the school district because she was told that she cannot work. She tries to get up and do a little cleaning around the house but even then she might pull a muscle in her back and feel frustrated and as though she needs to rest.



Management

- PCP referred to HBS
- HBS initiated therapy with patient and formulated diagnosis
- At the same time, HBS asked me to see patient to optimize med management
- Patient started on Citalopram and reassured PCP that PRN alprazolam could be used
- Ultimately patient referred to self-help group



Panic Disorder Case

- The patient is a 74 year old man with a history of a cerebellar stroke in Sept 2022 who was referred to psychiatry from his PCP due to many emergency room visits for what is typically diagnosed as a panic attack. Patient says that he was prescribed a medication for this but it made him feel worse (sertraline). He was also given meclizine for vertigo since his stroke, but this does not help either and just makes him feel worse. He described the way he felt when he got his stroke as, "all of a sudden, I could not talk." Patient describes having a cerebellar stroke in 2022 - feeling as though he could not speak.



Recent ED visits

- 3/4 - elevated BP reading at home, returned to normal by ED visit, took a xanax before he came in to ED
- 2/28 - headache, chills
- 2/10 - chief complaint nausea

- 18 ED visits since September



Formulation

- 74 year old man with almost monthly ED visits for a variety of complaints in the past year (headaches, vertigo, chills) who was referred to psychiatry by his PCP due to panic attacks and anxiety. Patient has a variety of medical problems that make him prone to panic attacks -- he had a stroke in the past year and he has consistent worries that any new symptoms may represent a stroke. He wants to be reassured that he is not having another stroke. Additionally, he has had multiple accidents and concussions and is worried about traumatic brain injury. This mix of anxiety and real medical illness makes him especially prone to seeking reassurance at the ED.



Diagnoses

- Illness Anxiety Disorder; Panic attacks; Alcohol use disorder in remission
- Medical Co-morbidities: history of cerebellar stroke (9/22), HTN,
- Psychosocial stressors: lives alone

- Treatment: *Client is a 74 year old male, who was here at the clinic after being referred by his primary care doctor. He was not **quite sure about why he was referred or that this was a mental health clinic.** Once it was explained, he made it clear that he no longer wanted to be on medication. At this time, **he does not feel he needs therapy,** but would consider later.*
 - *Therapy notes from Luminis Health*



Treatment

- One recommendation for somatic symptom disorder is to create standing appts with these patients every 2 weeks and tell them to "collect" all their somatic issues until they meet with you regularly. This requires a lot of work on the PCP part but may ease anxiety and save ED visits.



Last visit

- He was able to do some body work and differentiate panic attacks
- Panic attack: uncomfortable, heart racing
- Stroke: loss eye sight temporarily, voice loss during
- Therapy for panic disorder = Hope for less ED visits



Benzodiazepine Case

- 77 M “on valium since I was 12” presents to psychiatry after PCP stopped valium 1.5 years ago
- Per PCP notes, patient was stopped because he was getting >90 MME (morphine equivalents) of oxycodone by pain management and there is a risk of respiratory depression when opioids and benzodiazepines are combined
- Since he was taken off valium, he reports going to the hospital “countless times” for “increased BP”, “the shakes”, “panic attacks”
- Went to a psychiatrist and tried the following medications per Rx History
- Rx History: citalopram, duloxetine, escitalopram, fluoxetine, mirtazapine – he does not remember if any helped and said that he got “nauseas”
- Right now, he wants help for “irritability”, “being a shut-in” – “I haven’t gone hunting and fishing with my family”, and “sleep – I can’t sleep more than a wink”



PROS	CONS
Valium will likely alleviate his symptoms of irritability and insomnia	If you start him on it, what prescriber will continue it next?
He'll like me and I can get done with the appointment quicker rather than him yelling about me not prescribing valium	What if he abuses it? (He assures you that he never abused drugs and you see no evidence of escalation of dosage)
Maybe he will have a higher Quality of Life?	What about respiratory depression with oxycodone?



Thoughts/conclusions

- These challenges may not be specific to collaborative care – for example, the virtual environment of COVID made accurate diagnosis more difficult.
- Primary care psychiatric patients may be even *sicker* than patients in a psychiatric setting because these patients do not have the insight that they even need psychiatry.
- On top of this, PCP offices do not have the specific expertise/infrastructure to give LAIs and other complex psychiatric treatments.
- Is it the model or the patients?
- The success of the collaborative care for the patient depends on the relationship between the PCP and psychiatrist.
- If you have the infrastructure for collaborative care (registries, measurements), it can work



Coleen Shrepfer, MD

Senior Medical Director,
Gladstone Psychiatry and
Wellness

Gladstone Psychiatry and Wellness: Collaborative Care in the Outpatient Setting

Coleen M. Schrepfer, MD, FAPA

Senior Medical Director

June 14, 2024

Gladstone Psychiatry and Wellness Collaborative Care

Objectives:

- ▶ Review Why the Collaborative Care Model (CoCM)
- ▶ Describe Gladstone Psychiatry Services
- ▶ Gladstone's Collaborative Model

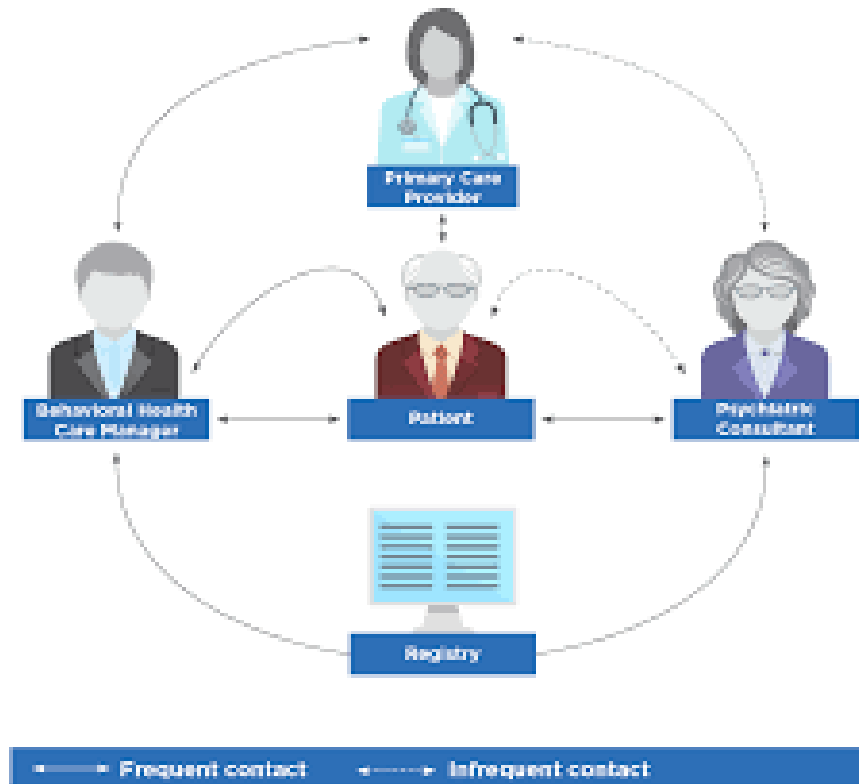
Questions:

- ▶ List 3 benefits of implementing the CoCM?
- ▶ Who is involved in the delivery of the CoCM?
- ▶ What is an evidenced based resource for implementing a CoCM?

Gladstone Psychiatry and Wellness Collaborative Care

Research:

- ▶ 2000-2010- Many Randomized Controlled Studies (>90) demonstrating effectiveness of collaborative care
- ▶ 2010 Present—implementation strategies and effective models for the different settings (CoCM)



Gladstone Psychiatry and Wellness Collaborative Care

- ▶ Benefits of the Collaborative Care Model :
 - ▶ Improve public health outcomes
 - ▶ Reduce total cost of care
 - ▶ Improve provider satisfaction, improve productivity
 - ▶ Improve patient satisfaction with overall care
 - ▶ Reduce health disparities and stigma

- ▶ Unitzer et al. 2002, 2008

Gladstone Psychiatry and Wellness Collaborative Care

- ▶ **Time to Remission for Depression with Collaborative Care Management (CCM) in Primary Care**
- ▶ Garrison et al 2016, J Am Board Fam Med.2016 Jan-Feb;29(1):10-7.
 - ▶ 7340 patients diagnosed with depression/dysthymia were cared for at 4 outpatient primary care clinics, from March 2008 through June 2013
 - ▶ Median time to remission was 86 days (95% confidence interval [CI], 81-91 days) for the CCM group versus 614 days (95% CI, 565-692 days) for the UC group
 - ▶ **Conclusions:** This study demonstrated that patients enrolled in CCM have a faster rate of remission and a shorter duration of PDSs than patients choosing UC.

Gladstone Psychiatry and Wellness Collaborative Care

Gold Standard for Collaborative Care:

- ▶ Center of Excellence- AIMS Center - University of Washington, Psychiatry and Behavioral Sciences (2004- present)
- ▶ <https://aims.uw.edu/collaborative-care/>
- ▶ 2017- Medicare Established 99- Codes for Collaborative Care
- ▶ Average time to implementation 3-12 months depending on size of the system

Gladstone Psychiatry and Wellness Collaborative Care

- ▶ Gladstone Psychiatry and Wellness
 - ▶ Largest Outpatient Psychiatric Group in Maryland accepting insurance
 - ▶ 5 locations- Baltimore, Hunt Valley, Columbia, Bethesda, Frederick
 - ▶ Accept commercial insurance- CareFirst, AETNA, Cigna, UnitedHealthcare, EHP, (Not Medicaid, Not Medicare)
 - ▶ Providers: Psychiatrist, Nurse Practitioner, Psychologist, Therapist
 - ▶ 30 Psychiatrists and Nurse Practitioners, 22 Therapists, 12 DBT therapists...and growing
 - ▶ Clinical Leadership in Addictions, Women's Health, LGBTQI+, Child and Adolescent, Crisis Mgmt, Eating D/O
 - ▶ Telehealth and In-person appointments
 - ▶ Evaluations within 3 weeks

Gladstone Psychiatry and Wellness Collaborative Care

Services Offered:

- ▶ DBT - adult, adolescent and child (CareFirst Only)
- ▶ Individual therapy for all commercial insurances listed earlier
- ▶ Medication management for all commercial insurances listed earlier
- ▶ Advanced Diagnostic Screening for adults (not neuropsychiatric testing)
- ▶ Psychedelic assisted Psychotherapy Program
 - ▶ Ketamine Assisted Psychotherapy (KAP) Fall 2024
 - ▶ MDMA Assisted Psychotherapy - possible FDA approval 2025
- ▶ TMS July 2024- (SAINT Protocol Approval, Summer 2024)

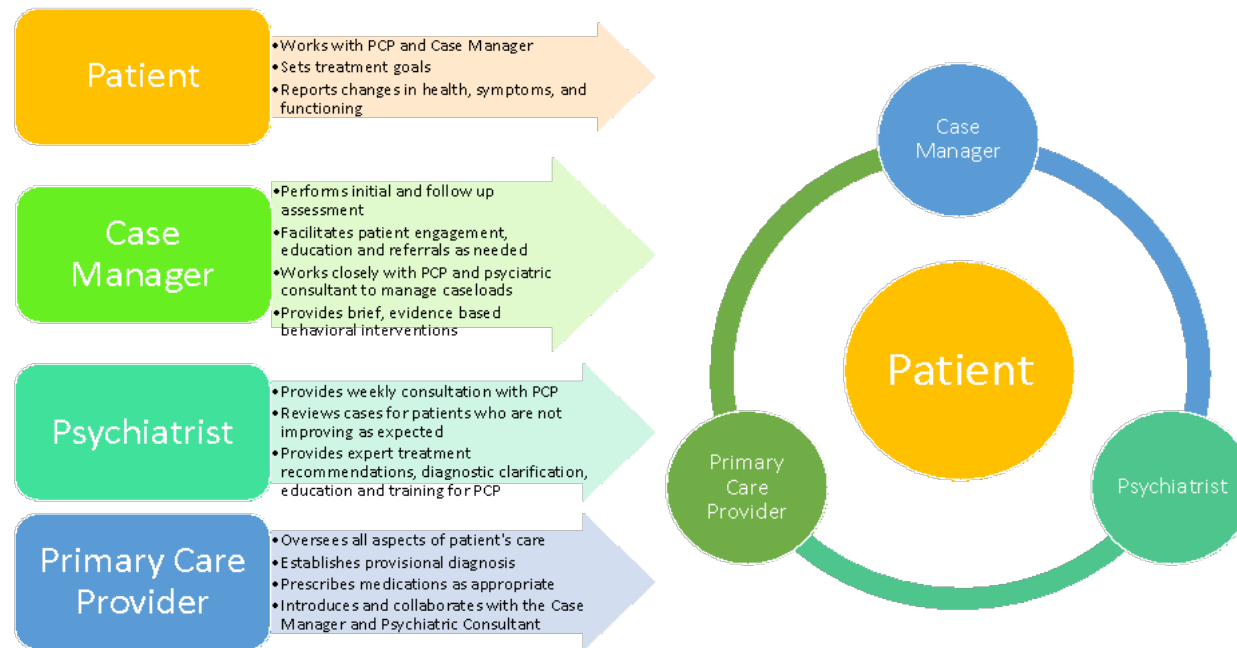
Gladstone Psychiatry and Wellness Collaborative Care

- ▶ Collaborative Care at Gladstone Psychiatry - Present
 - ▶ Pediatric Office- Frederick monthly video conferences- Case reviews
 - ▶ Primary Care Office- Timonium monthly video conferences- Case reviews
 - ▶ Outpatient Oncology Practice- monthly video conferences- Case reviews

- ▶ Future Goals for Gladstone's CoCM: Case management

Gladstone Psychiatry and Wellness Collaborative Care

Collaborative Care Model at Gladstone Psychiatry & Wellness



1. 8 MD, 14 NP
2. No double-booking appointments! Patients are seen in 30-minute increments instead of the standard 15 minutes. New patient availability within a week.
3. Experts in child/adolescents, women's mental health, eating disorders, crisis and de-escalation, LGBTQIA, substance use
4. Case management services
5. Successful collaboration with a pilot practice in Frederick in 2023

Gladstone Psychiatry and Wellness Collaborative Care:

▶ FIVE LOCATIONS:

- ▶ **Hunt Valley:** Address: 11350 McCormick Rd., Building III, Suite 600, Hunt Valley, MD 21031, Main Phone: 443-708-5856, Fax: 443-353-5701. Office Manager: Terrell Watkins, terrell.watkins@gladstonepsych.com , Extension: 303
- ▶ **Frederick:** Address: 50 Carroll Creek Way, Suite 320, Frederick, MD 21701, Main Phone: 443-708-5856, Fax: 443-291-2808 Office Manager: Cassie Johnson, cassie.johnson@gladstonepsych.com , Extension: 104
- ▶ **Columbia:** Address: 9841 Broken Land Parkway, Suite 211, Columbia, MD 21046, Main Phone: 443-708-5856, Fax: 240-708-4153 Office Manager: Ebony Ellis, ebony.ellis@gladstonepsych.com , Extension: 160
- ▶ **Bethesda:** Address: 4416 East West Highway, Suite 310, Bethesda, MD 20814, Main Phone: 443-708-5856, Fax: 240-396-6485, Office Manager: Jarieu Barrie, jarieu.barrie@gladstonepsych.com , Extension: 403
- ▶ **Baltimore (Mt. Washington/Sulgrave):** Address: 1501 Sulgrave Avenue, Suite 200, Baltimore, MD 21209, Main Phone: 443-708-5856, Fax: 667-212-5095, Office Manager: Lesa Lai, lesa.lai@gladstonepsych.com , Extension: 106

Gladstone Psychiatry and Wellness Collaborative Care:

- ▶ <https://www.gladstonepsych.com/>
- ▶ Phone 443-708-5856
- ▶ Fax 667-212-5095
- ▶ Psychologytoday.com
- ▶ Instagram- <https://www.instagram.com/gladstonepsychiatry/>
- ▶ Facebook - <https://www.facebook.com/GladstonePsychiatry/>
- ▶ Blog- <https://www.gladstonepsych.com/blog/>

Thank you for your kind attention.



Bhawna Bahethi, MD

Primary Care Perspective,
Dr. Bahethi Internal
Medicine



Questions to Consider

- ▶ Mental and Physical Health- What is the connection?
- ▶ What is this costing us (monetarily and in patient outcomes)?
- ▶ How do we meet the needs of our patient?

Role: Primary Care Provider



Tasks

- ▶ IDENTIFIES patients with behavioral health needs (ex. screening during Annual Wellness Visit)
- ▶ CONFIRMS patient agrees to services and completes any required consents for referral as applicable
- ▶ REFERS patient to behavioral health support team

Role: Behavioral Health Specialist (BHS)

Team (social workers, outreach specialists, etc.)



Tasks

- ▶ OUTREACHES patient to assess needs and helps identify appropriate level of care for services
- ▶ ENGAGES patient into treatment and develops a treatment plan to address psychiatric diagnoses
- ▶ PROVIDES appropriate services such as psychotherapy or referral to psychiatrist for medication management and/or community resources to manage social needs impacting behavioral health
- ▶ COLLABORATES with PCP to update on patient's progress, needs, treatment plan and status of services



Case Study 1

Patient 1: Female patient in 70s navigating grief and significant stress

- ▶ PCP screens and refers patient to behavioral health specialist team (BHS)
- ▶ Patient has regular psychotherapy appointments focused on building coping skills
- ▶ BHS informs PCP of patient's progressive memory and confusion concerns; PCP refers patient for additional follow up and evaluation by neurologist; BHS also refers patient to community programs that may help patient manage daily stressors
- ▶ Patient expresses satisfaction with care and demonstrates progress with treatment goals; patient is more effectively managing stress



Case Study 2

Patient 2: Male patient in 70s navigating depression and stress due to caregiving demands

- ▶ PCP screens and refers patient to behavioral health specialist team
- ▶ Patient is maintaining psychotherapy appointments to build coping skills and was supported through subsequent grief and loss
- ▶ Patient is demonstrating progress with identifying goals and interests beyond caregiving as he more effectively copes with stressors; patient is now more focused on self-care and progressing with his physical health goals (ex. exercise and weight loss)
- ▶ Ongoing behavioral health treatment plan shared with PCP



Hogan Pesaniello, MD

Private Practice Psychiatry



Neurofeedback and Biofeedback in the Treatment of Stress-Related Conditions

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- Johns Hopkins Medical School, Psychiatry,
- Board Certified, NBPAS, Psychiatry
- BCIA certified, neurofeedback
- Providing: psychiatric evaluation, psychotherapy, biofeedback, neurofeedback



Questions: What might be the impact of integrating NF and BF


- Optimizing HRV in anxious and stressed patients? (Heart Rate Variability Training)
- Improving hand-warming ability or resolving over-breathing in anxious and stressed patients?
- Addressing cold hands and overbreathing w BF: temperature training/capnometry/respirometry
- Improving patients ability to activate their prefrontal cortex? (pirHEG Neurofeedback)

...into primary care /collaborative care!!!



My Goal

- Add BF and NF to your toolbox in treating stress related conditions
- Inspire and assist in developing innovative models for the inclusion of BF and NF in centralized ways for our communities and healthcare



Innovation in healthcare: time-tested, safe alternatives based on learning

Neurofeedback and Biofeedback directly affect the
brain and body physiology


These treatments are not new.
(Efficacy established in 1970's)

The INNOVATION would be actually providing it
well and early in medical care.



Why Use Neurofeedback and Biofeedback?

- Advised to “de-prescribe” w/ aging and pregnancy, medically ill, children
- Advised to avoid polypharmacy.
- Advised to avoid CNS depressants in the Elderly
- Minimal options for TBI
- Need for wellness approaches to chronic conditions – BESIDES silver bullets
- Yet, what new non-invasive and relatively inexpensive options do we have besides new stimulation technologies?



A safe alternative when medications are limited or undesirable

- Potent in chronic stress- related conditions
(Where studies show “silver bullet – medication alone options – don’t work well)
- Broad benefits in both wellness
AND symptom-focused tx
- Adjunct to medications , often a reasonable non-medication alternative, might taper meds
- Useful in medication intolerant or non-responders



LOW STIGMA: due to BROAD uses in Wellness and Performance.....

Empowering!

Patients train to improve their own brain and body. Early studies of Ritalin vs NF: generally gains are sustained and continue to grow after tx ended. (Patients can “graduate”)

Performance:

“secret weapon” for athletes, students, performers, high achievers in the workplace

Prevention/Parenting:

improved stress mgmt. epigenetics, reduced impulsivity -> (dec. recidivism, prison and substance use), Anger/conflict management

Landmark Publication: by Brain Futures

- Brain Futures is an advocacy project by the **Mental Health Association of Maryland**, the second oldest mental health advocacy organization in the nation
- Published in 2021 a comprehensive NF research update and analysis:
- Neurofeedback: An efficacious Treatment for Behavioral Health



The Kennedy Forum, 2015

led by Patrick Kennedy, former congressman

BRIEF: New Technologies for Improving Behavioral Health: a National Call for Accelerating the Use of New Methods for Assessing and Treating Mental Health and Substance Use Disorders

Re biofeedback, neurofeedback, Qeeg:

“The primary barriers to the adoption of biofeedback are lack of awareness by practitioners and a lack of access to biofeedback devices.”

Evidence-Based Practice in Biofeedback and Neurofeedback

- 4th edition published 2023, Khazan et.al.
- Lev 3: Probably Efficacious: many stress-related, TBI, concussion, diabetes, fibromyalgia, insomnia, immune fxn
- Level 4 Efficacious: pediatric and adult headache, anxiety, cerebral palsy, stroke, chronic Pain, epilepsy, hypertension, irritable bowel syndrome, PTSD, Raynaud's dz, TMJ,
- Level 5 Efficacious and Specific: ADHD, Panic, asthma, depression, diabetes (glycemic control), erectile dysfunction, incontinence (adult men and women),
- Note: Most psychiatric polypharmacy is practiced at lowest levels of evidence!



Stress Regulation

Good Performance

Of

Brain and Body

How are these activities reflect self regulation?



Coordination, Timing, Accuracy



Fitness: Strength of response, reliability, resilience, endurance!

- Pic of a
and cat



urning

Good performance requires
a well regulated brain and body!

Coordination

Timing

Memory

Perception

Attention

Learning

Accurate Responses

And most of this is entirely unconscious,
highly learned through experience!

Our brain has many networks juggling information AND interacting with our Autonomic System



Improving Health Outcomes

What happens
when areas of the brain (or autonomic system)
have underdeveloped or problematic regulation?
Or
poor connectivity/poor coordination with other areas?

This is inefficient, not yet well regulated!





Our brain and autonomic system regulates:

- Attention
- Behavior
- Mood
- Headaches/migraines
- Anxiety
- Response time
- Timing, timing, timing
- Impulsivity
- Self-talk
- Obsessive thoughts
- Anger
- Empathy
- Sleep
- Perception of pain



Neurofeedback and Peripheral Biofeedback:

Like adding a tail to a Kite

A Centerboard to a Sailboat

Training wheels on a Bike

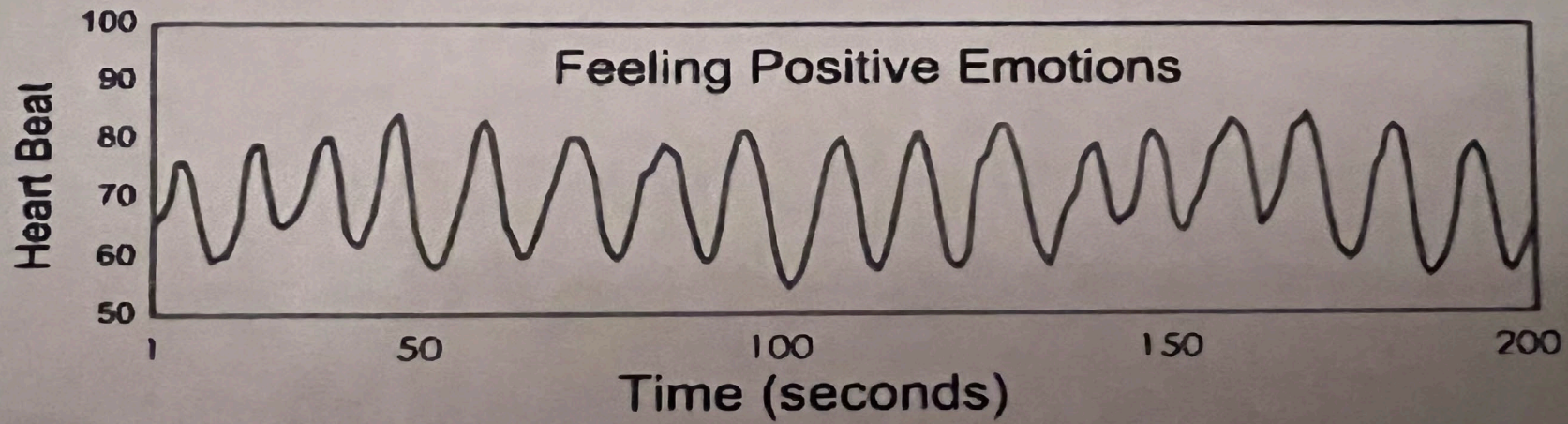
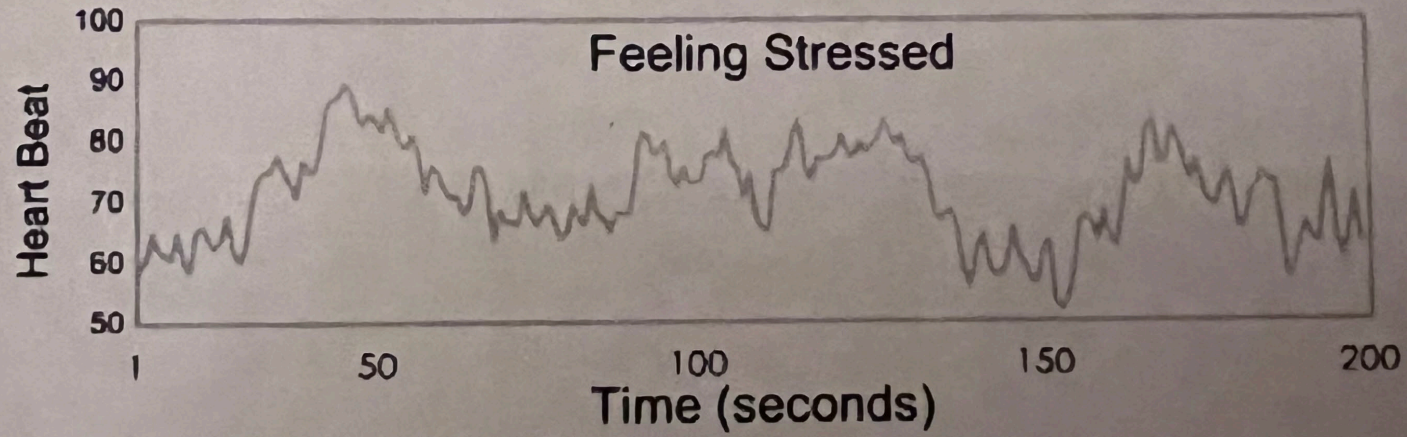
And is like

Fitness: Lifting weights/Exercise



Ex: Significance of HRV in Cardiology is well established

- Fetal HR : first indicator of distress during labor
- Predicts development of hypertension in the healthy
- HRV predicts survival after heart attack
- Low HRV predicts higher risk sudden death in general population
- Better predictor of long term CV health than blood pressure, cholesterol levels, resting heart rate in healthy individuals



Examples of other peripheral biofeedback modalities

Respirometry with Capnometry

- Overbreathing underlies panic, anxiety
- Creates autonomic dysregulation, chemical imbalances
- Capnometry ensures correct end-tidal CO₂
- Breath training, low and slow at optimum resonant frequency helps optimize HRV

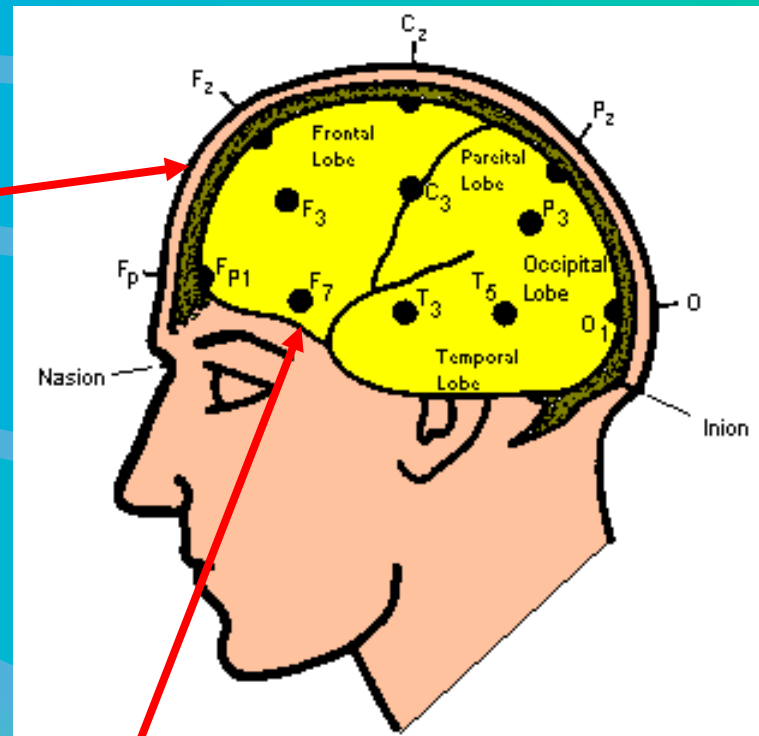
Temperature training/hand and foot warming

- Powerful in bringing down blood pressure, especially early on in hypertensive patients
- Generally used after assessing physiological parameters utilizing a stress and relaxation assessment

Pre-frontal cortex

Executive Functions

Attention, organization, planning, inhibition of impulsivity, focus on task at hand, ability to learn from experience, regulates the other lobes, and regulates mood.



Emotional inhibition,
speech

Many DISORDERS are assoc. with EXCESSIVE RATE and MAGNITUDE of RESPONSE to RELATIVELY BENIGN STIMULI

- **ADHD** “a bird flies by and I lost track of what the teacher is saying”
- **MIGRAINE (and sometimes post-concussive sx)** “ I see blinking lights, or I’m hungry, or I eat cheese, or have poor sleep... and I’m done”
- **ANGER (rage)** “the least thing ticks me off”
- **ANXIETY** “ when I see/remember/think.....I panic”
- **DEPRESSION (sometimes)** “...I’m so easily discouraged by little disappointments”

think: Train the PreFrontal Cortex!



What IS Biofeedback?

Biofeedback is based on LEARNING

- COLLECT a body measure (EEG or infrared measures from brain, HR, EKG, hand temp.)
- FEEDBACK: show the level of body signal back to the person through beeps or visuals
- The participant LEARNS to control the signal through unconscious means, just by noticing and intending, guided by coaching from a clinician or technician, parent or other helper

The learning translates into improved function in that physiological system



Sensors measure a physiologic process:

- heart rate
- respiratory rate
- muscle tension
- skin conductance
- skin temperature
 - Eeg
- Infrared production



Provide feedback

AUDIO

VISUAL

TACTILE

When you become aware of your own brain activity – you can change it.



What I use in my practice:

Neurofeedback:

EEG NF: both Traditional EEG neurofeedback
and four channel coherence EEG NF

pirHEG NF: using a wellness NF device.

Peripheral Biofeedback, using wellness
devices:

HRV

Hand-warming

BF and NF target specific physiological activity in the brain and body

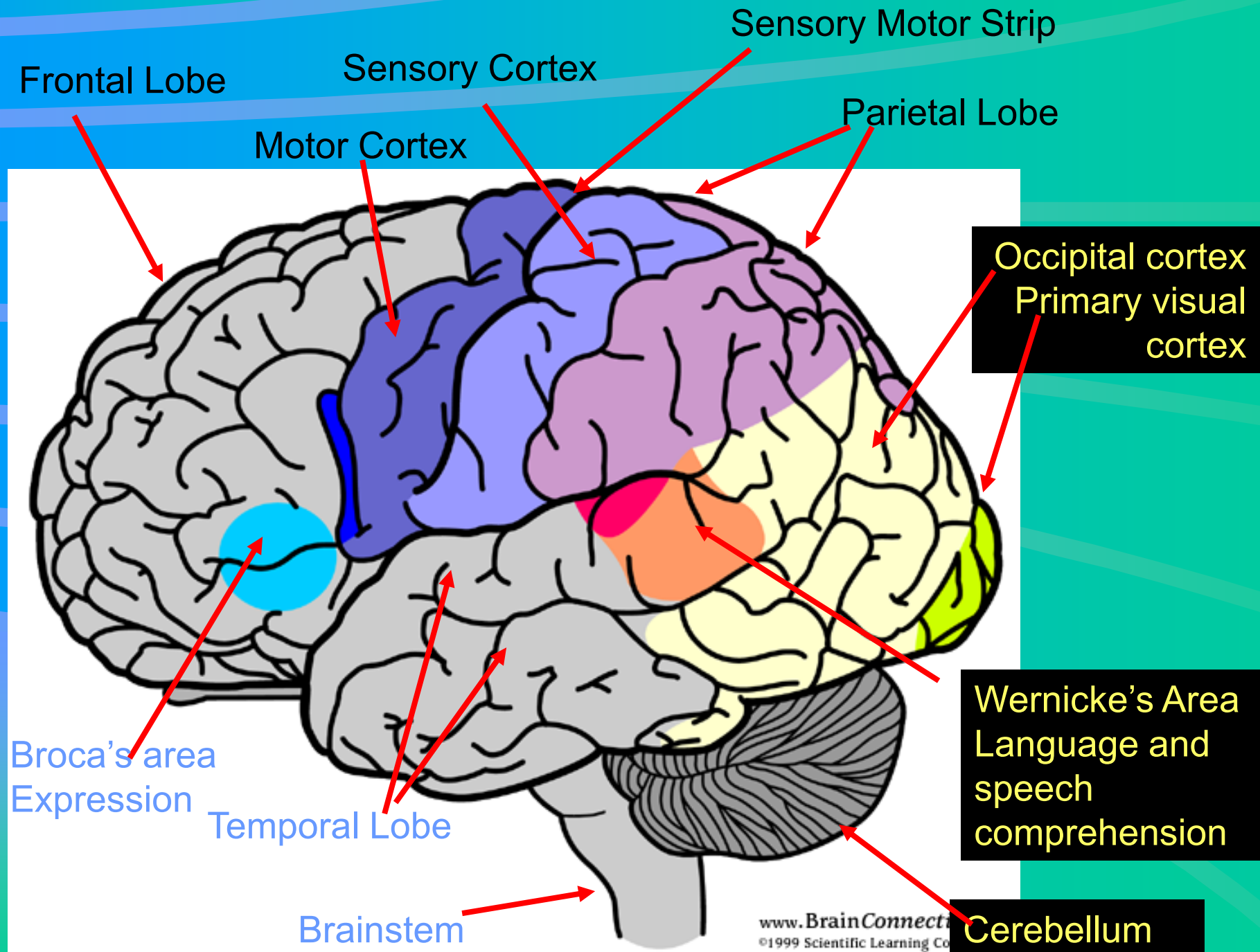
When an area
or network of the brain or autonomic
system
is better regulated:

the functions associated with that area of
the brain and body improve!



Better regulation = Improved performance

- Better attention, more alert
- Calm focus
- Better control over behavior and emotions
- Increased resilience to stress
- Improved function of that brain area
(Cognitive, motor, attention, mood)



Therapist and client/game screen



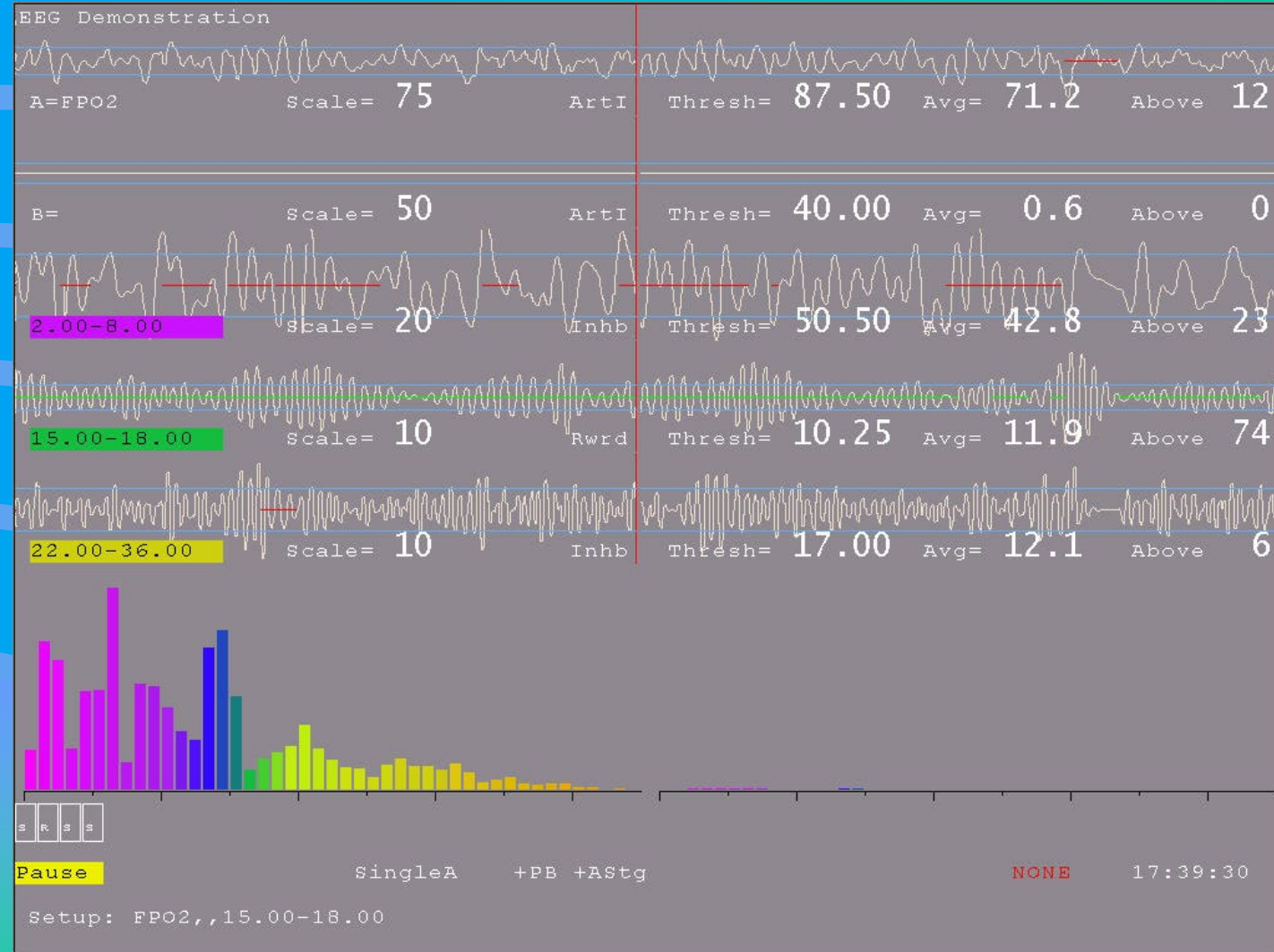
The Therapist Screen

Raw

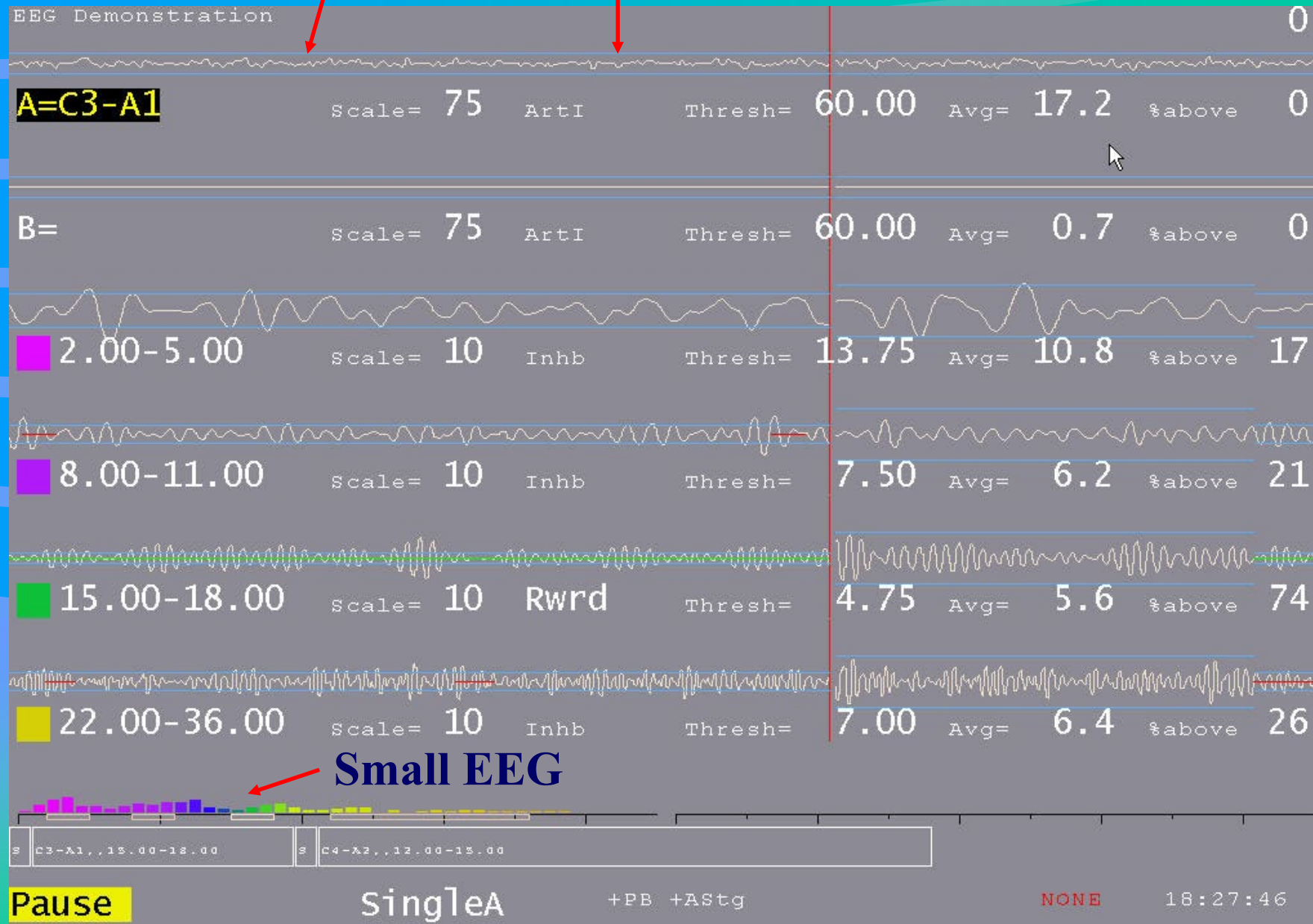
Inhibit

Reward

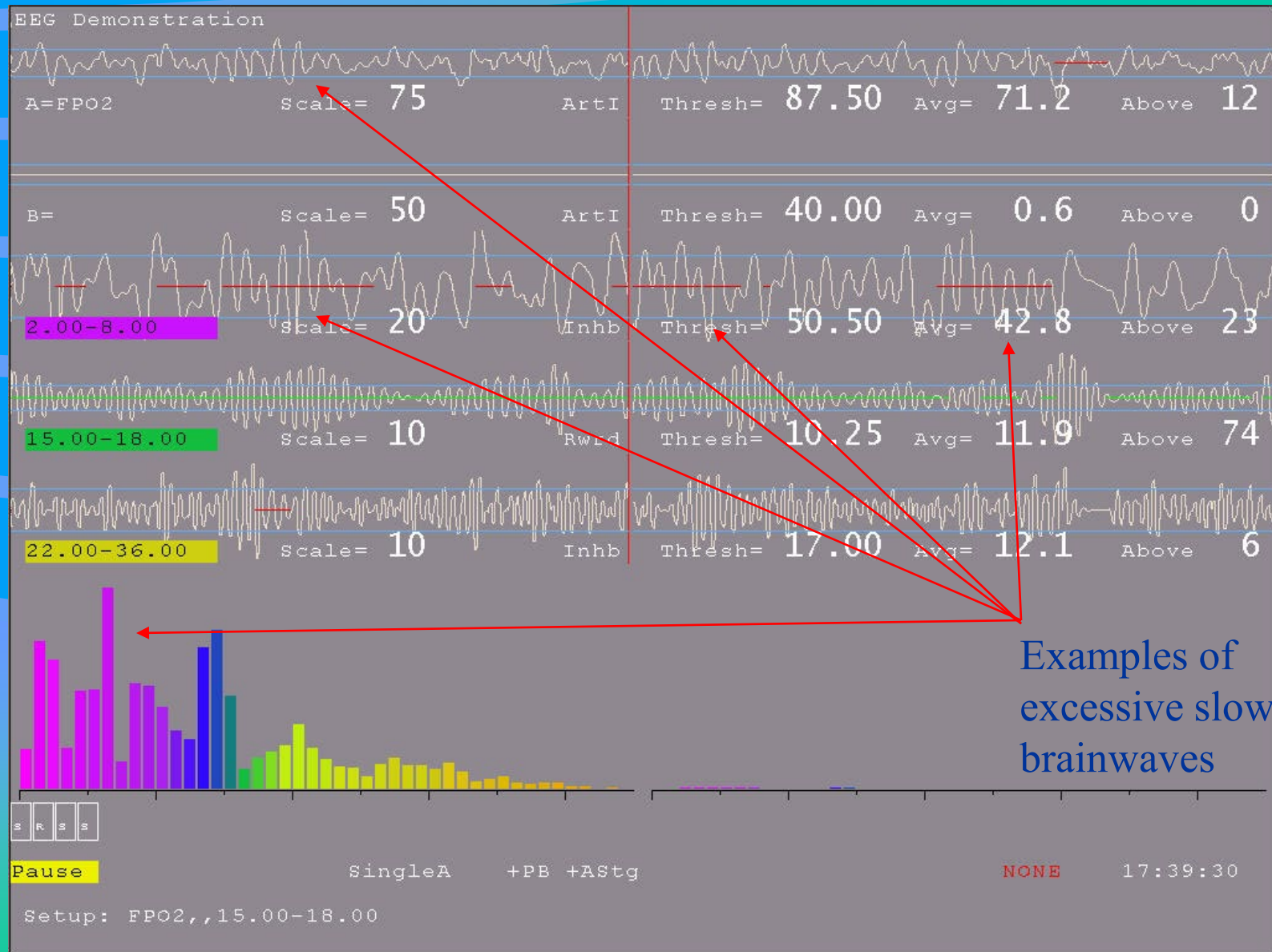
Inhibit



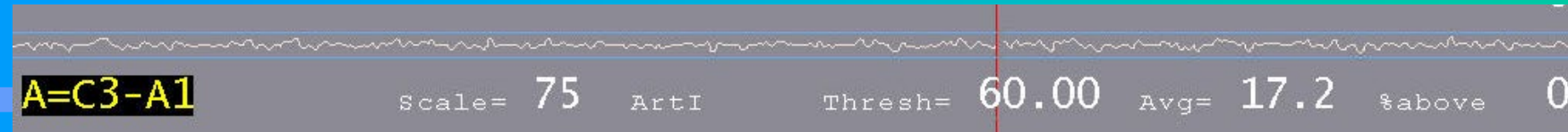
A normal looking EEG is small in height



Reducing excessive (tall) slow brain waves helps the brain function better

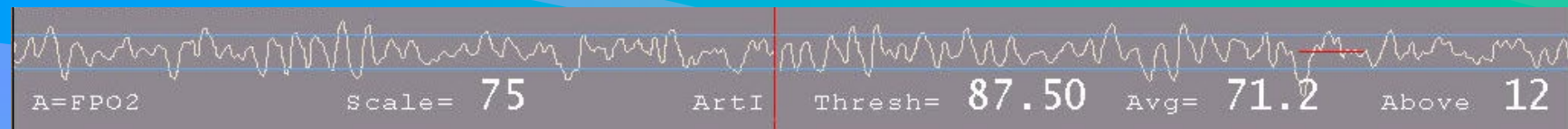


Normal EEG (smaller)



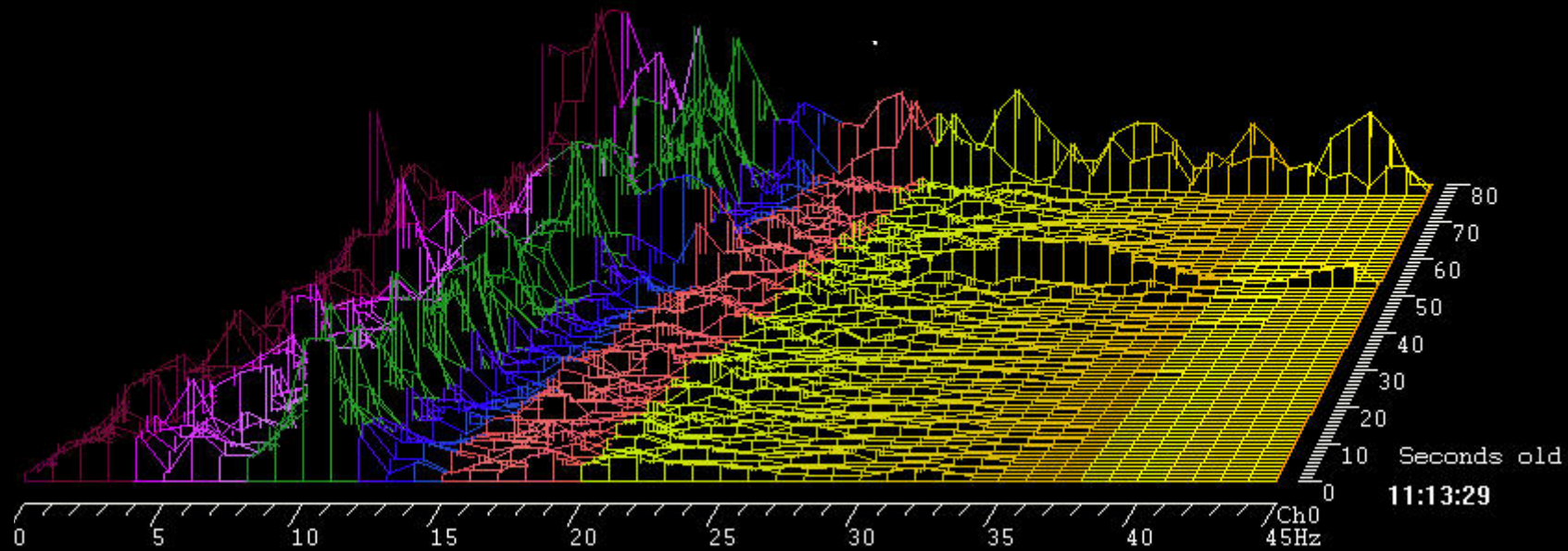
Your brain is more “in tune” - more alert, focused, calm, efficient

Excessive slow EEG (bigger)

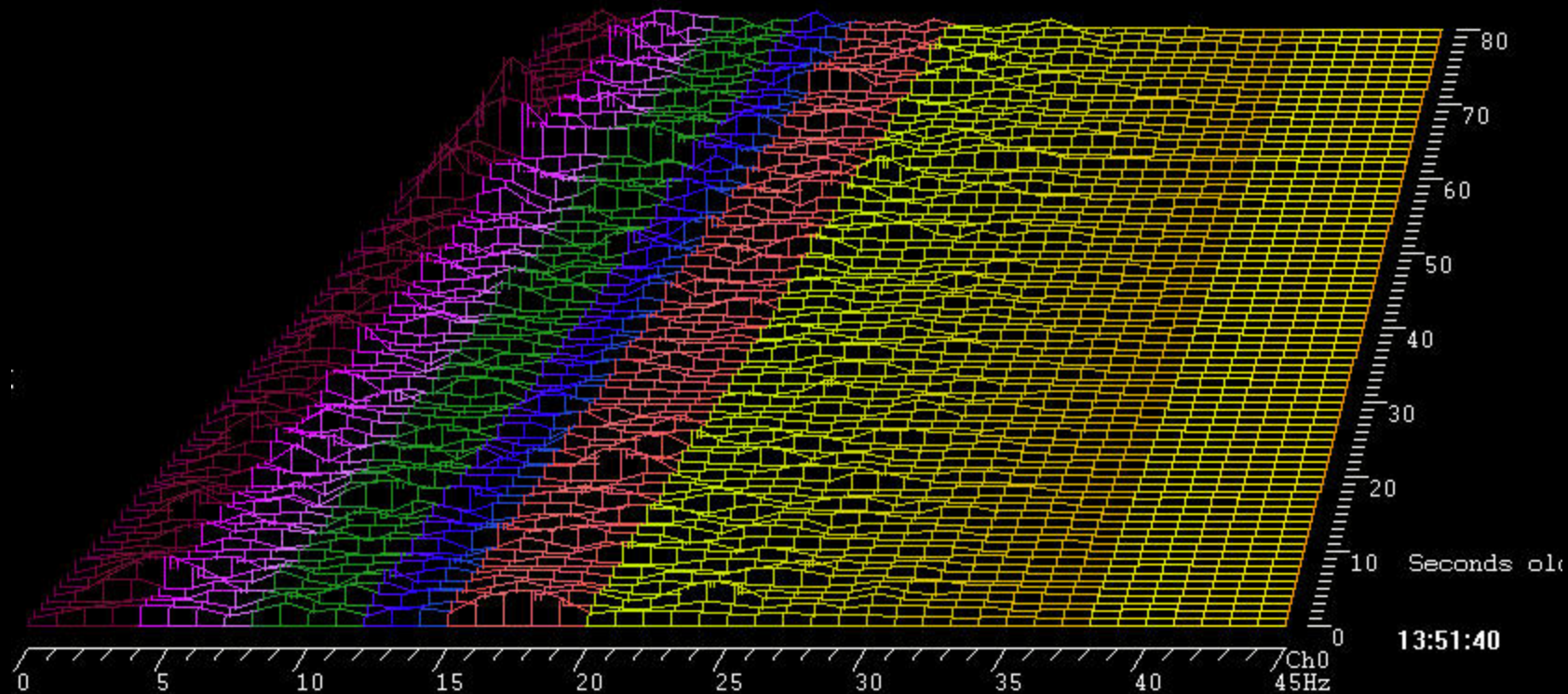


Causes you to work harder - brain is less efficient; harder to control and regulate emotion & behavior

**A disregulated brain often has
too much slow activity.**



This brain is alert and awake. In EEG terms, smaller means more activated, better functioning.



Space Race



pirHEG Trains

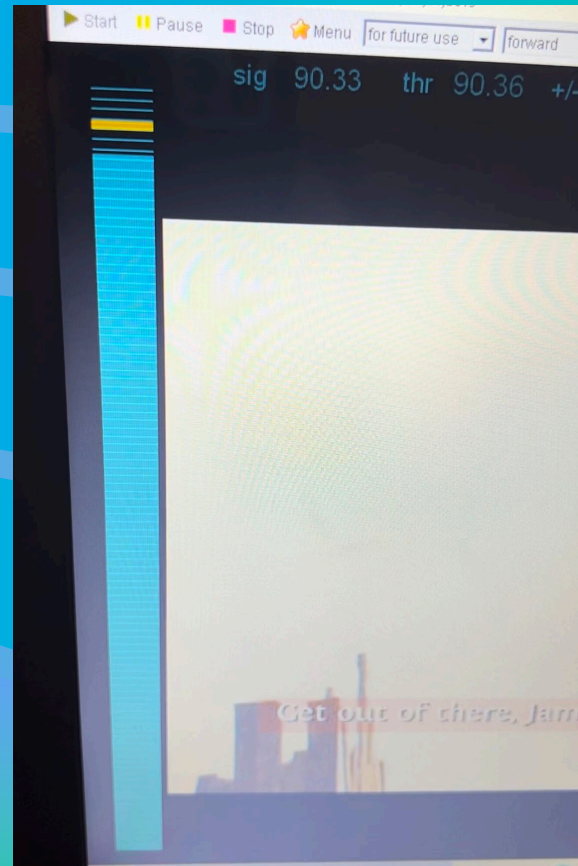
Prefrontal Cortex Dominance

- Teaching a person to improve their ability to more efficiently activate prefrontal cortex dominance and to do so with endurance can improve symptoms characterized by:
- **EXCESSIVE RATE AND MAGNITUDE OF RESPONSE TO RELATIVELY BENIGN STIMULI**

The patient enjoys the movie till “Pause” then switches into “attending to feedback.”



The pirHEG movie pauses and feedback bar appears:



ANOTHER SURPRISE:

INFRARED IMAGES:

Shared by permission from a SUNY Pediatric Grand Rounds presentation:

NORMAL INFRARED IMAGE
(37yo female)



DEPRESSION

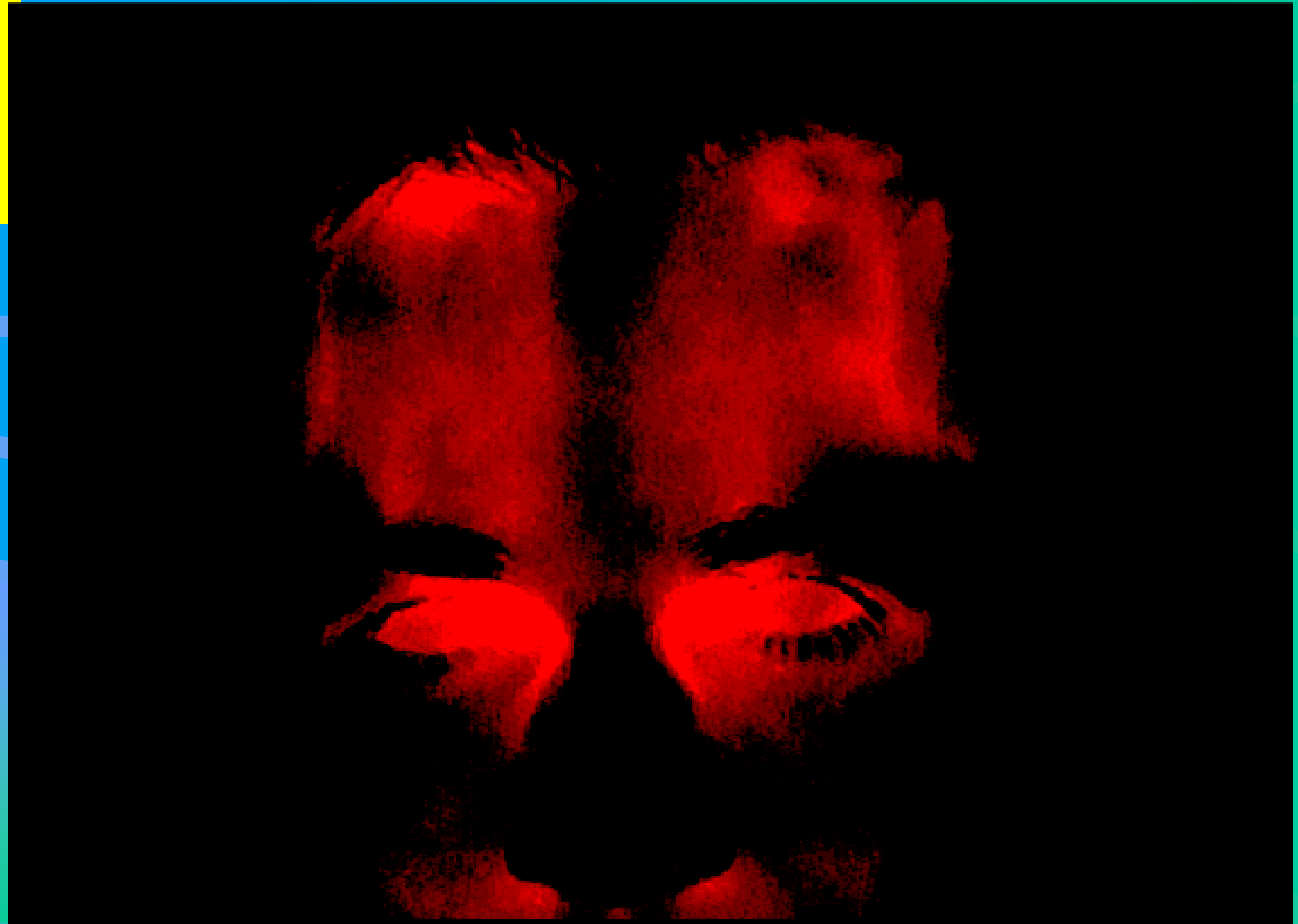
**22yo male,
periodic
suicidal
depression
. Did not
tell me
about it on
intake.
Baseline
for first
session.**





**End of
first
session.
Feeling
much
better.**

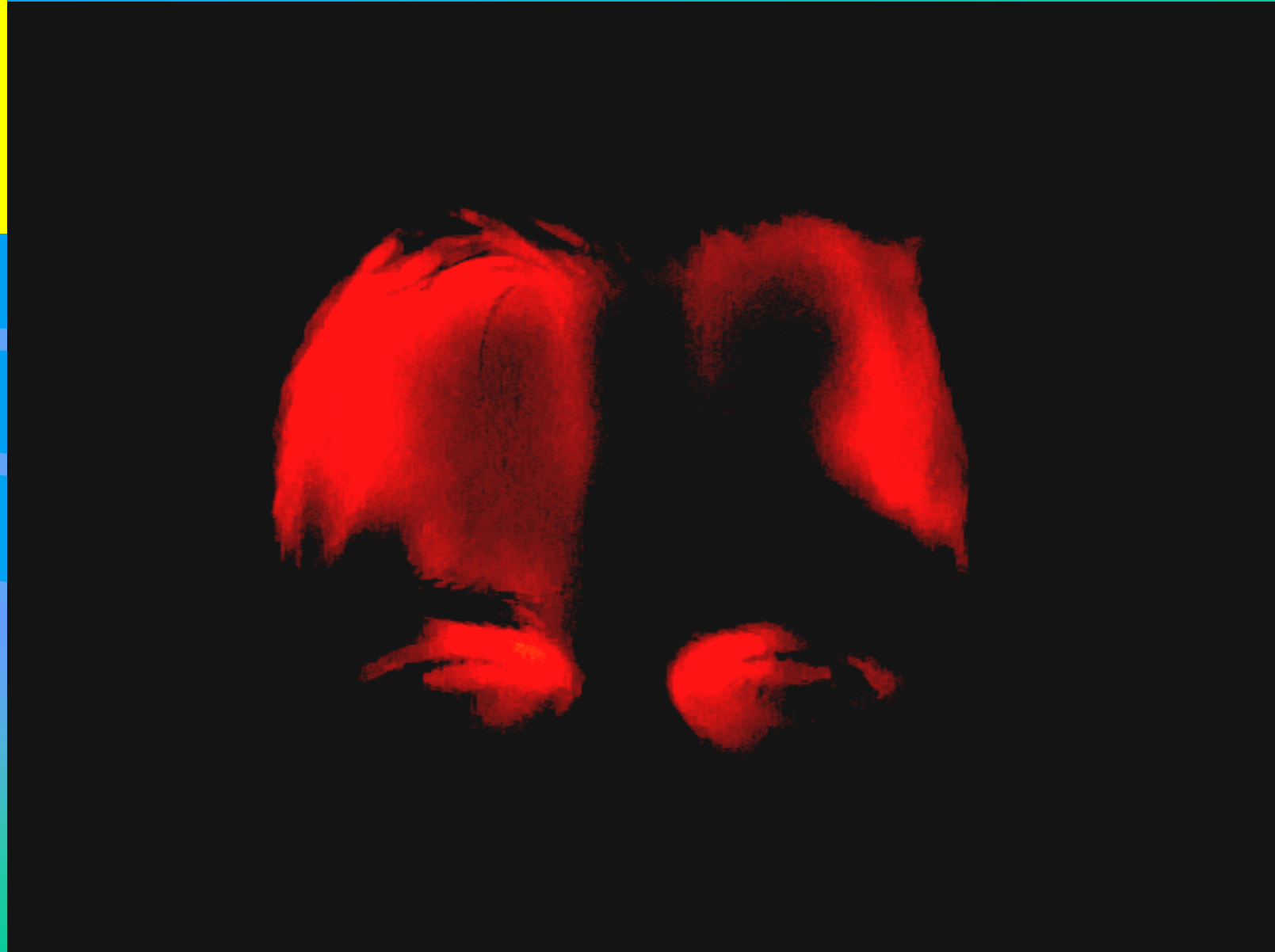
DEPRESSION





**Baseline,
second
session,
one
week
later.**

DEPRESSION





**End of
second
session,
one
week
later.**

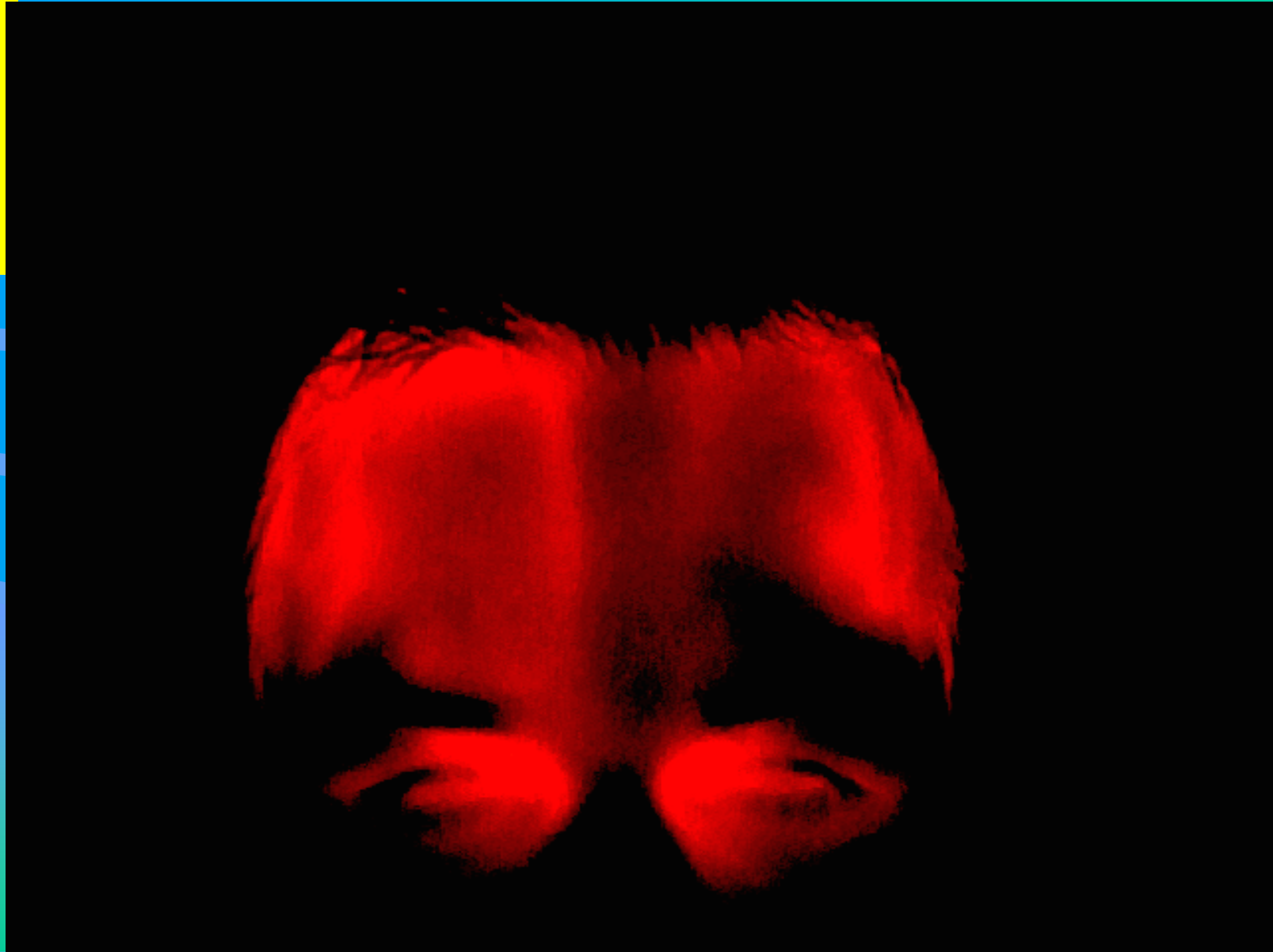
DEPRESSION





**Baseline,
third
session,
two weeks
later.
Progressive
lifting of
depression.**

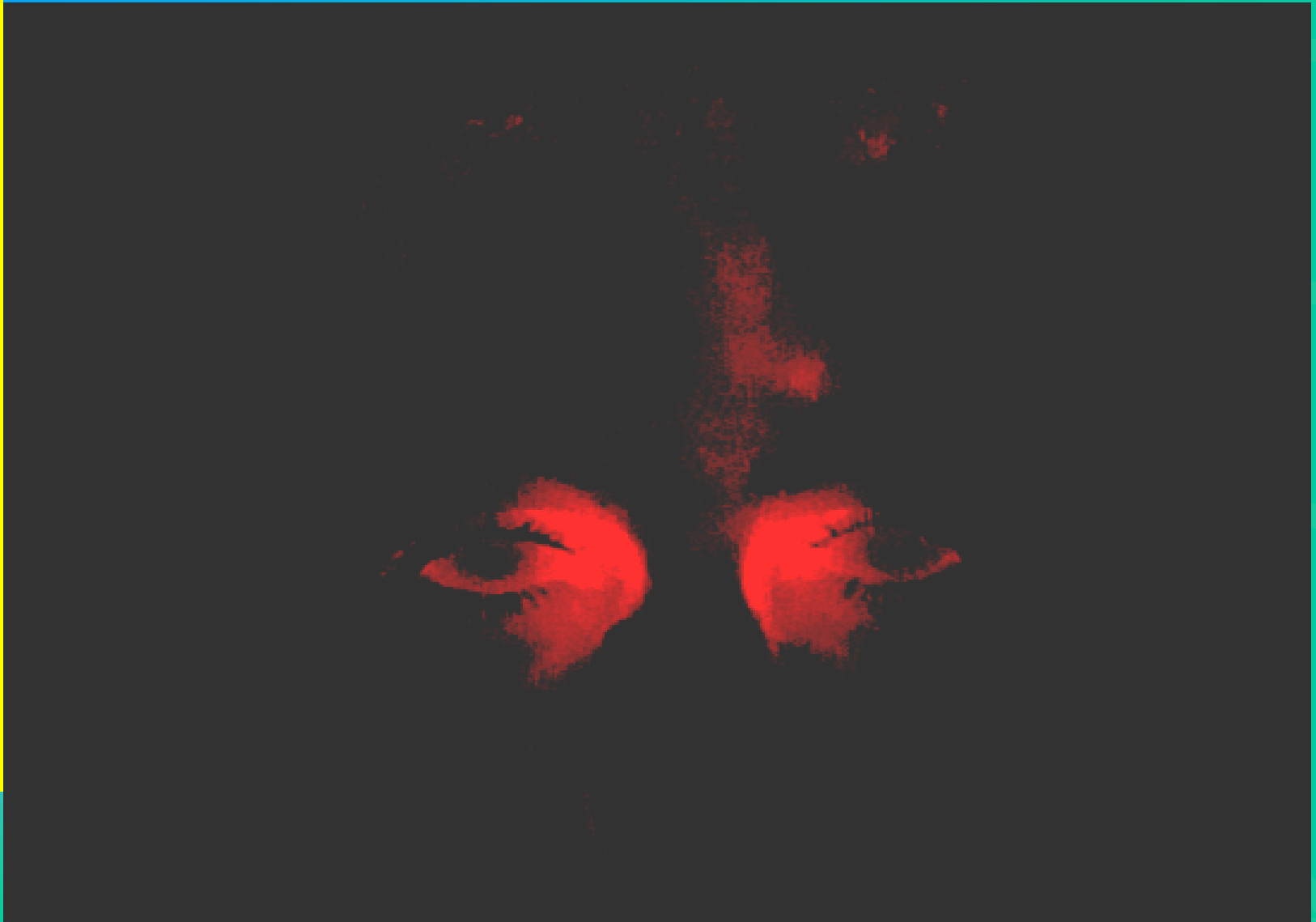
DEPRESSION





**17yo
female,
severe
anxiety,
occasion
ally
rising to
panic.
Images
from 6
sessions.
Baseline
image,
first
session.**

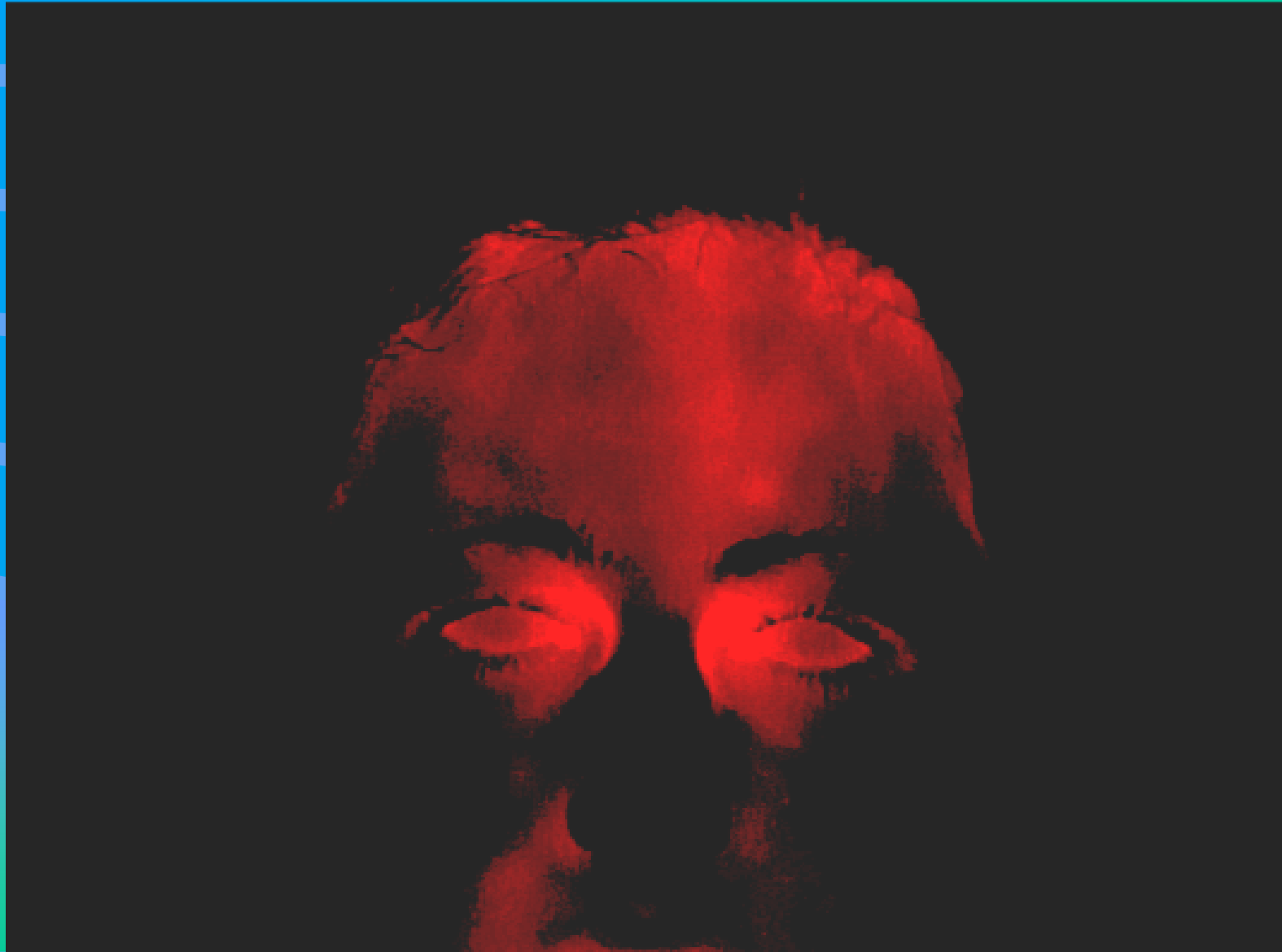
ANXIETY





**17yo
female,
severe
anxiety,
occasion
ally
rising to
panic.
End of
first
session.**

ANXIETY

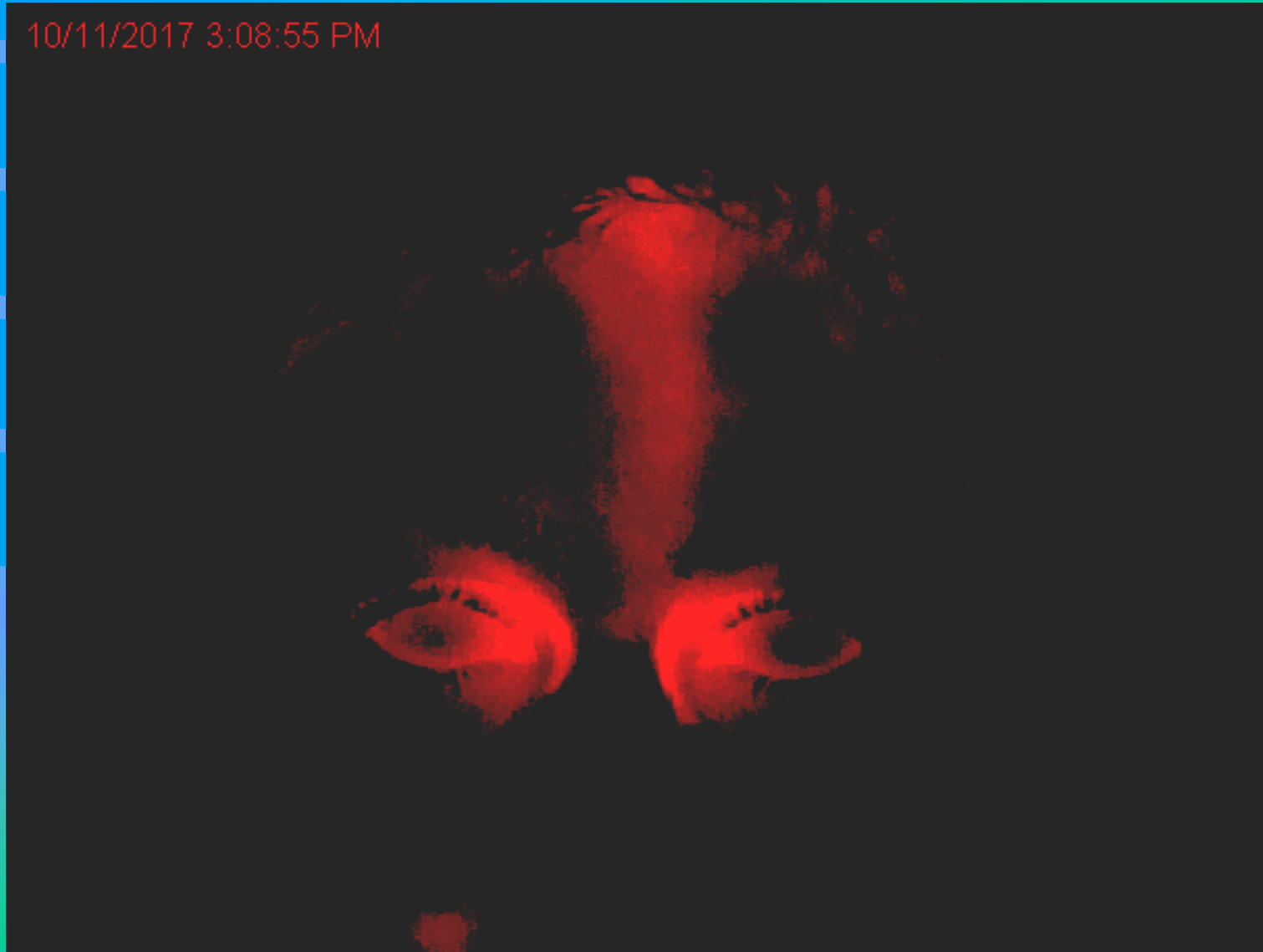




**17yo
female,
severe
anxiety,
occasion
ally
rising to
panic.
Baseline
of
second
session
one
week
later.**

ANXIETY

10/11/2017 3:08:55 PM





**17yo
female,
severe
anxiety,
occasion
ally
rising to
panic.
Baseline
for fifth
session.**

ANXIETY

10/31/2017 6:08:36 PM





How is it that neurofeedback can affect such a broad spectrum of brain function?

- Anxiety Disorders
- Panic Attacks
- Migraines
- Mood disorders
- OCD
- Rage
- Improved task performance
- Improved emotional and affect regulation
- Conduct Disorder, ODD
- Tics, Tourette Syndrome
- Pain

How can NF have broad application to so many problems?

Remember:

NF targets brain regulation in specific areas
or specific networks.



Peripheral Biofeedback

Wellness Devices:

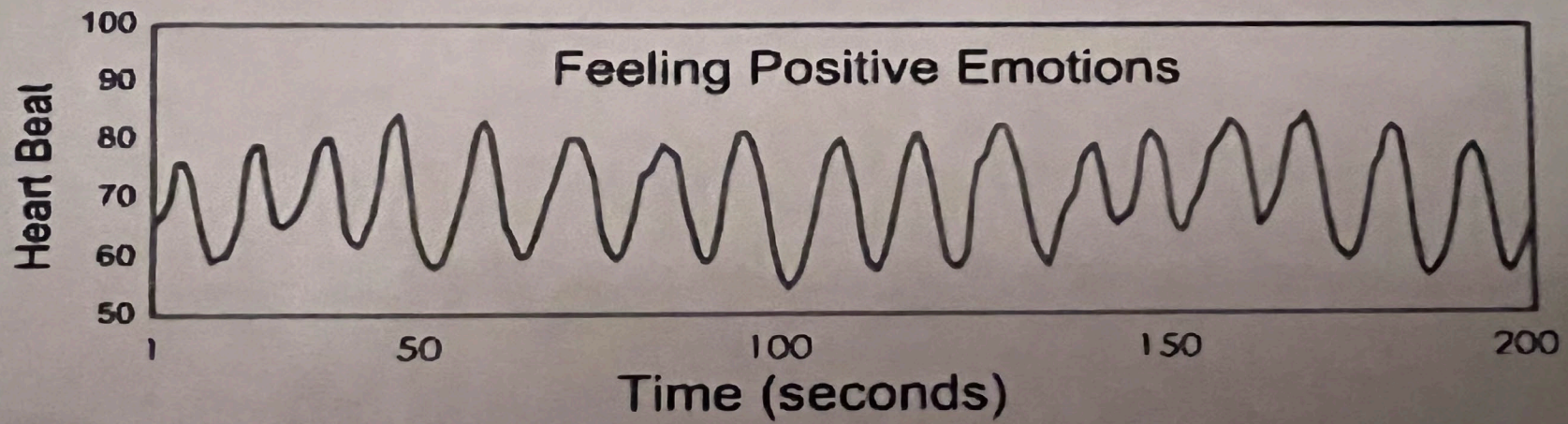
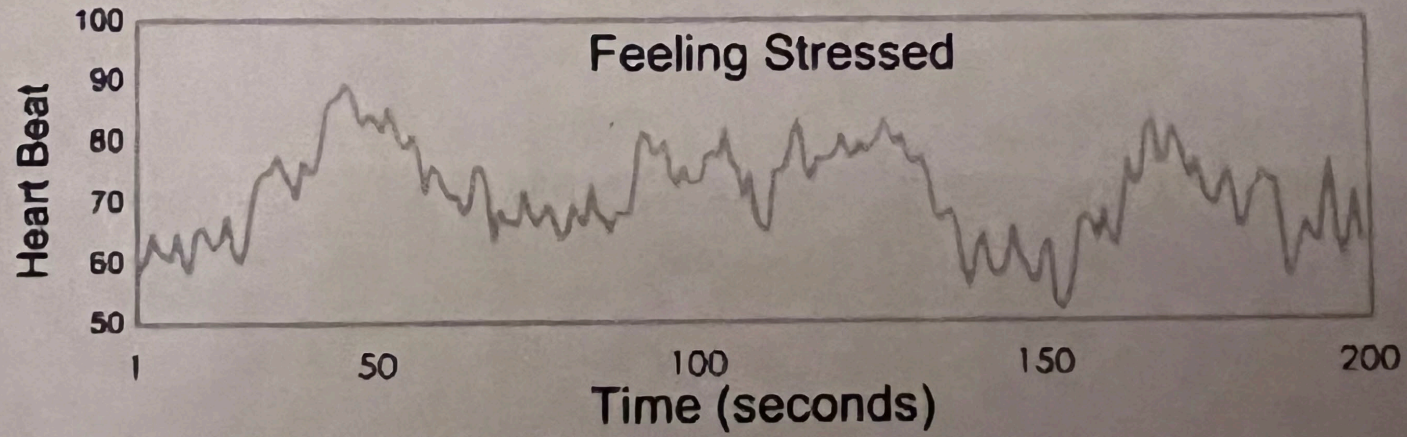
for

Heart Rate Variability

and

Temperature Training/Hand-warming

Eyes OPEN relaxation



HRV biofeedback w/wellness home-based tools VS full clinical system with respirometer, capnometry

- Can be one to three to 10 session wellness intervention in the office,
- then patients can practice at home
- 5-10 minutes of HRV weekly -- even without home unit, some patients can make gains and show improvement in self regulation week to week. Others need more practice and coaching.
- There is much more in the realm of peripheral neurofeedback that can apply in the clinic setting, .



Ear sensor for HRV, plugs into cell phone for home training.



Hand-warming Device, another wellness tool for relaxation





Handwarming and HRV

- Key is to educate
- Help them observe with interest but detachment
- NOTICE the FEEDBACK
- EYES OPEN
- Teach them to practice when conditions are good!
- (Like sports, don't expect performance if the only practice is during games.)



Hand-warming (coaching) and home practice

- Eyes OPEN
- Dominant hand first
- Middle finger
- Relaxation skills
- Include HRV skills
- IMAGINING the FEELING of warmth
- All four “paws”
- Ask them to graph their progress
- Longer practice
- DETACHED observation of feedback
- “Trust your body is working on it”
- All the feedback is good!

Tip Sheet

- ♥ Heart Focus
- ♥ Heart Breathing
- ♥ Heart Feeling

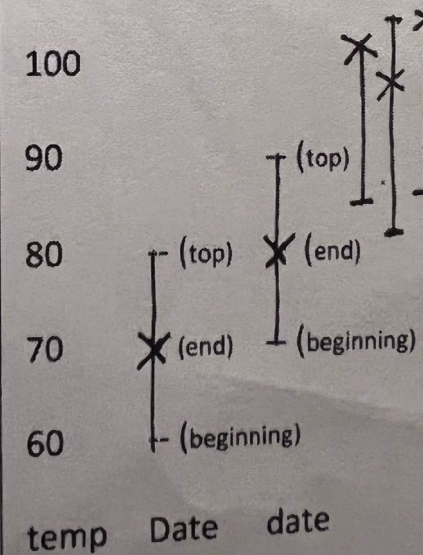
Breath:

- About 10-12 second cycle in & out
- Slow, soft, quiet flow... u can extend out-breath
- Practice 3-5 minutes often eyes open

Handwarming Temp Chart:

- Graph the beginning Temp
- Graph the top temp
- ✕ Graph the end temp with an X

Example:





Learning based treatment:

Practice, Practice, Practice!

Eventually, with enough “lessons and learning”

- more awareness about level of physiological arousal begins to occur.

Then,

- More ability to adjust arousal on command
- AND the baseline improves
- AND there is more unconscious flexibility and adaptability: resilience

Take Home

Neurofeedback and Biofeedback are safe and relevant to prevention and early intervention in wellness and medicine

- **Potent** tools for improved self-regulation of mood and attention, brain injury recovery, optimum performance as well as reducing psychiatric sx
- **Ability to TARGET** brain regions and specific brain activity or autonomic (stress response) fxn.
- **established** medical and wellness treatments: evidence-based, efficacious and safe



Q & A





THANK YOU



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