

# Modern ECT

*Advances, Perceptions, and How It Is Used Today*

- 01 Three cases — TRD, interrupted maintenance, post-cancer psychotic depression
- 02 Modern ECT foundations and indications
- 03 2024–2025 research updates
- 04 Referral and concurrent care

# Financial Relationships

**I have a financial relationship with or interest in a commercial interest connected with this presentation.**

Cottonwood Creek Behavioral Hospital is the local ECT center. I perform ECT through that clinic and receive a stipend from Cottonwood Creek. The stipend is not connected to referrals or to the volume of ECT treatment provided.

# What You Should Take Away

01

## Recognize the Role of Modern ECT

Identify when ECT is first-line or evidence-based, and when to actively consider it rather than reserve it.

02

## Frame Risks and Benefits Accurately

Describe the actual risk profile, the treatment experience, and the misperceptions that delay referral.

03

## Determine Eligibility

Apply the physical, social, and psychiatric criteria that define a reasonable ECT candidate.

04

## Refer and Co-Manage

Use the referral pathway and understand how ECT interacts with concurrent medications and therapy.

# A 35-Year-Old Father, Husband, and CAD Designer

*Recurrent severe MDD without psychotic features. Failed multiple medication trials. Eight months into ECT — the case against framing ECT as a last resort.*

**Diagnosis** Major depressive disorder, recurrent, severe (F33.2)

**Treatment resistance** Failure of multiple adequate pharmacotherapy trials

**Baseline PHQ-9** 14 (moderate)

**Medical history** Migraines, gastric sleeve, hypogonadism on testosterone, chronic back pain

**Social** Lives with wife and two young children; wife actively engaged as collateral reporter

# The Numbers

*Three metrics that anchor utilization review and demonstrate the response trajectory.*

**14 → 7**

PHQ-9

*≈ 50% reduction*

**32**

Treatments over 8 months

*Oct 2025 – May 2026*

**F33.2**



**F33.41**

Diagnostic transition

*severe → partial remission*

# How the Patient Described the Change

*Functional and emotional change in the patient's own language. The metric that tells you the treatment is actually working.*

*“I am more engaged with the kids. I almost feel like I am slowly waking up from some long, dark sleep.”*

*“This is the first thing that has ever changed my depression symptoms so that I feel better.”*

# What the Wife Reported

*Collateral reporting provided a parallel record of recovery that the symptom scale alone would not have captured.*

***“I have ‘MY’ husband back.”***

*“To see him making time up with the kids and be especially involved this holiday weekend was magical.”*

# Memory Difficulty Is Real and Manageable

*The primary side effect was memory difficulty. Notable here: the case used the more potent (and more cognitively impactful) placements — bifrontal initially, then bitemporal before symptoms substantially improved. Cognitive cost was managed through spacing and education, not through choosing a lighter placement.*

01

## Bifrontal → Bitemporal

Started bifrontal; transitioned to bitemporal before substantial symptom improvement. The more potent placement was the change point — not a reason to avoid escalation when needed.

02

## Strategic Spacing

Treatments stretched as response consolidated — weekly to every 3 weeks to monthly. Spacing was the primary cognitive-recovery lever.

03

## Family Education

Some gaps reflect the period of severe depression itself, not solely ECT — a critical reframe for the patient and spouse.

# A 55-Year-Old With Prior Beneficial ECT

*Twenty prior psychiatric hospitalizations, including two state-hospital stays. Approximately twenty ECT treatments across courses in 2020, 2022, and through July 2023, with documented benefit.*

## PSYCHIATRIC

### Clinical Picture

Recurrent depression, anxiety, intermittent auditory and visual hallucinations

No history of suicide attempts

Tardive dyskinesia (valbenazine without benefit)

## MEDICAL

### Medical Comorbidities

Hypertension — controlled on Azor

Type 2 diabetes — A1c 6.9

OSA — stable on CPAP

EKG: NSR with RBBB

# The Clinical Trajectory After Payer Cutoff

*Treatment was discontinued abruptly when the payer denied further sessions. The patient decompensated rapidly along a predictable trajectory.*

- Severe worsening of depression
- Self-medication with alcohol, Thorazine, OTC diphenhydramine, and benzodiazepines
- Marked psychomotor retardation — employer described him as “zombie-like and lethargic”
- Stabilization required months of outpatient support and weaning of self-medications

***The denial did not save the system money. It produced a worse and more expensive trajectory.***

# What This Case Teaches

## TEACHING 01

### **Maintenance Is Not Optional**

Up to 84% relapse within 6 months without continuation (Sackeim et al., JAMA, 2001). Acute ECT produces remission; maintenance preserves it.

## TEACHING 02

### **Payers Are a Clinical Variable**

An insurance denial here produced predictable decompensation. Pre-emptive UM documentation is part of clinical care.

## TEACHING 03

### **Benzodiazepines: Time, Don't Stop**

Hold for 12+ hours before treatment to lower seizure threshold. Resume on non-treatment days.

# A 65-Year-Old With No Prior Psychiatric History

*Severe psychotic depression developed after completion of treatment for large B-cell lymphoma, now in full remission. The case for not delaying ECT when the presentation is life-threatening.*

## PRESENTATION

### Clinical Presentation

MDD, recurrent, severe, with psychotic features (F33.3)  
Paranoia, hypersomnolence, near-mutism  
Failure to thrive — feeding tube placed  
Suicide attempt by oxycodone overdose

## RESISTANCE

### Treatment Resistance

Four hospitalizations over six months  
Failed 12+ psychotropics — SSRIs, SNRIs, atypicals, antipsychotics, benzodiazepines  
Minimal to no response to pharmacotherapy

# Bifrontal Index ECT — Dramatic Recovery

*Twenty-four bifrontal treatments. PHQ-9 from 27 to the 5-9 range. From near-mutism to conversant and functionally recovered. Transitioned to maintenance ECT.*

27 → 5-9

PHQ-9 across 24 treatments

*severe → remission range*

## TEACHING POINT

### Why ECT Was First-Line Here

Psychotic depression response rates: ~80-90% with ECT vs. 30-40% with pharmacotherapy alone

Failure to thrive and active suicidality made delay clinically untenable

Maintenance ECT instituted to prevent the relapse trajectory seen in Case 2

# Modern ECT Is Not the ECT of Public Imagination

*Stimulus waveform and dosing have transformed since the era depicted in film and inherited cultural memory. The procedure in current clinical practice is materially different — and the modern data reflect a modern intervention.*

## Sine Wave

Original stimulus. Higher cognitive burden. Largely obsolete in modern practice.

## Brief Pulse

Pulse width ~0.5 ms. Today's standard for bilateral and most right unilateral protocols.

## Ultra-Brief Pulse

Pulse width <0.5 ms. Reduces cognitive cost, but recent meta-analysis shows pooled remission rate of 32.2% with high-dose right unilateral.

# Potency and Cognitive Risk Rise Together

*Choice of electrode placement is a deliberate trade-off, not a default. Three placements, ordered by both efficacy and cognitive cost.*

**Right Unilateral < Bifrontal < Bitemporal**

Potency increases →

*Cognitive impairment risk increases →*

# Depression and Mania

*Rasmussen at Mayo: "If patients are impaired enough to require inpatient admission, then ECT is indicated." (Rasmussen, The Practice of ECT: A Brief Guide, Cambridge, 2009)*

## DEPRESSION

### **60-80% response in TRD**

First-line for MDD with psychotic features, catatonia, or urgent need for response.

50-60% remission rates. No established threshold for how many adequate antidepressant trials must fail first.

## MANIA

### **80% substantial response**

ECT is at least as effective in mania as in depression.

Pharmacologic monotherapy reaches 40-60%; combination antipsychotic + lithium or anticonvulsant adds 20%. ECT exceeds both.

# Catatonia and Schizophrenia

*Two indications where ECT response rates are exceptional — and where delay is the documented failure mode.*

## CATATONIA

**>80% response — highest in psychiatry**

First-line for malignant catatonia, NMS, and catatonia refractory or partially responsive to benzodiazepines.

Acute, severe, psychotic mood disorder predicts good response.

## SCHIZOPHRENIA

**50% response in clozapine-resistant disease**

RCT in clozapine-resistant schizophrenia: 50% of patients receiving ECT plus clozapine achieved  $\geq 40\%$  BPRS psychotic-subscale reduction, vs. 0% on clozapine alone.

Cognitive outcomes improved significantly post-ECT.

# What a Patient Actually Goes Through

*Brief anesthesia, muscle relaxation, an EEG-monitored seizure of seconds. Under ten minutes in the suite.*

1

## Night Before

NPO from evening prior. Threshold-raising agents held.

2

## Pre-Procedure

IV placement. Brief vitals. Awake until the suite.

3

## Anesthesia

Light general anesthesia with muscle relaxation.

4

## Stimulus

Under anesthesia <10 min. EEG-monitored seizure.

5

## After

Objective change typically after 4-7 treatments.

# What the Clearance Process Considers

*ECT produces predictable physiologic effects. Clearance is a collaborative decision involving primary care and anesthesia.*

## PHYSIOLOGY

### Physiologic Effects to Anticipate

Catecholamine release → tachycardia and hypertension, then bradycardia

Increased cerebral blood flow → can raise intracranial pressure

Brief tonic-clonic seizure activity, mitigated by muscle relaxant

# Relative — Not Absolute

*None of these preclude ECT outright. Several are operational rather than physiologic. Address what is addressable.*

- Cardiac or respiratory instability
- BMI > 45
- MI or CVA within the last 30 days
- Unstable housing
- Insufficient social support or transportation
- No outpatient psychiatrist for concurrent care

# Memory — What Is Affected and What Recovers

*Cognitive cost is the most common reason patients refuse ECT. Be honest about it without catastrophizing.*

## Anterograde Memory

New learning impaired immediately post-treatment. Group mean scores return to baseline within ~14 days.

## Autobiographical Memory

Retrograde amnesia is the most consistent finding. Usually resolves within 3 months. The most patient-meaningful deficit.

## Executive Function

Guo et al., 2024 meta-analysis: favorable long-term effects on executive function and processing speed (SMD = 0.52).

# The ECCA Tool

*The recommended instrument for serial cognitive monitoring during a course of ECT.*

## ECCA

ElectroConvulsive therapy Cognitive Assessment

*More sensitive to ECT-specific deficits than the MMSE or MoCA.*

# The Standard Has Been Refreshed

*The first revision since 2001. More than 1,100 new literature citations. The APA Task Force document is the regulatory anchor referenced by hospitals, payers, and accreditors.*

## **FDA 2018 Reclassification**

Reflects the FDA final rule restricting Class II ECT to specific indications.

## **Updated Stimulus and Electrode Guidance**

Revised dosing parameters reflecting two decades of comparative data.

## **Measurement-Based Cognitive Monitoring**

New chapter framework for detecting and managing adverse cognitive effects.

## **Expanded Relapse Prevention**

Continuation and maintenance ECT guidance now incorporates PRIDE and CORE findings.

# ECT Reduces Death by Suicide and All-Cause Mortality

*The single most consequential finding for community referrers. Mortality signal survives confounding-by-indication.*

**34%**

reduction in death by suicide

OR 0.66 (95% CI 0.50-0.88)

**30%**

reduction in all-cause mortality

OR 0.70 (95% CI 0.62-0.79)

*Odermatt et al., Neuroscience Applied, 2025. Meta-analysis: 17,890 ECT patients vs. 25,367 controls.*

# ELEKT-D Follow-Ups Sharpen the Distinction

*Secondary analyses do not collapse the difference between ECT and ketamine. They sharpen it.*

## WHO BENEFITS

### **Ketamine – Outpatient TRD**

Reasonable for outpatients with moderately severe TRD. Cognitive sparing relative to ECT in the short term.

## WHO BENEFITS

### **ECT – Severe Presentations**

Inpatients, very severe presentations, psychotic features, melancholia, catatonia. The choice when delay carries clinical risk.

# How the Cognitive Gap Between ECT and Ketamine Narrows

*Kumpf et al. tracked cognition at multiple timepoints in the ELEKT-D cohort. The pattern is consistent: a real short-term cost with ECT, then meaningful recovery as responders move out of acute treatment.*

## WEEK 3

### End of Acute Treatment

ECT recipients performed significantly worse than ketamine recipients on every cognitive task assessed ( $p < 0.001$  across measures).

This is the gap that frames informed-consent conversations.

## MONTHS 1-6

### 1, 3, and 6-Month Follow-Up

Among responders, cognitive differences between ECT and ketamine narrow substantially over the follow-up period.

The acute deficit is not the steady state. Most of it lifts once the depression itself lifts and treatments stop.

# Don't Hold on Benzodiazepines — Refer

*Modern response rates to ECT for catatonia are 80–100%, including after benzodiazepine non-response.*

## *The “Hidden Delay”*

Escalating lorazepam doses while ECT consultation is deferred is now the documented failure mode.

*Treat catatonia as a psychiatric emergency, not a slow-titrate condition.*

# Higher Response, Lower Adverse Events

*Frailty alone is not a contraindication. It is often the reason ECT is the right answer.*

## EVIDENCE

### What the 2025 Cohort Showed

Response rates in patients aged 85 and older are significantly higher than in younger controls.

Fewer deaths and adverse events requiring hospitalization compared to depressed oldest-old not receiving ECT.

Extends the PRIDE continuation lineage into a population community providers reflexively assume is too frail.

# Coordinating Treatment During a Course

*ECT does not replace the outpatient relationship. The referring clinician remains primary throughout the course.*

**Pharmacotherapy** Continues under the referring psychiatrist; the ECT team coordinates

**Therapy** Individual and group continue — participation on treatment days is discouraged

**Hold 12+ hours pre-treatment** Benzodiazepines, gabapentin, zolpidem, valproate, lamotrigine, carbamazepine

# How Referring Providers Can Help

*The referring provider's role does not end with the referral. Active observation through the course matters.*

- Track timing of side effects — do they cluster on treatment days?
- Notice and reflect back changes. Patients often miss their own improvement.
- Facilitate communication between patient and ECT team via ROI when useful.
- *One bad day is a bad day. Two is a hard week. Three or more is a trend — call.*

# Making a Referral to Cottonwood Creek

## REFERRAL FAX

**208-922-7184**

## WHAT TO INCLUDE

Recent H&P  
Recent psychiatric evaluation  
Current medication list  
Recent labs and/or EKG  
CCBH ECT referral form

## GENERAL INQUIRIES

Phone

**208-202-4491**

Email

[boiectnurse@havenllc.com](mailto:boiectnurse@havenllc.com)

*Same-day consultation available for urgent presentations.*

DISCUSSION

**Questions, cases, and  
disagreements welcome.**

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# Guidelines and Foundational Reviews

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# Cognitive Outcomes and Monitoring

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