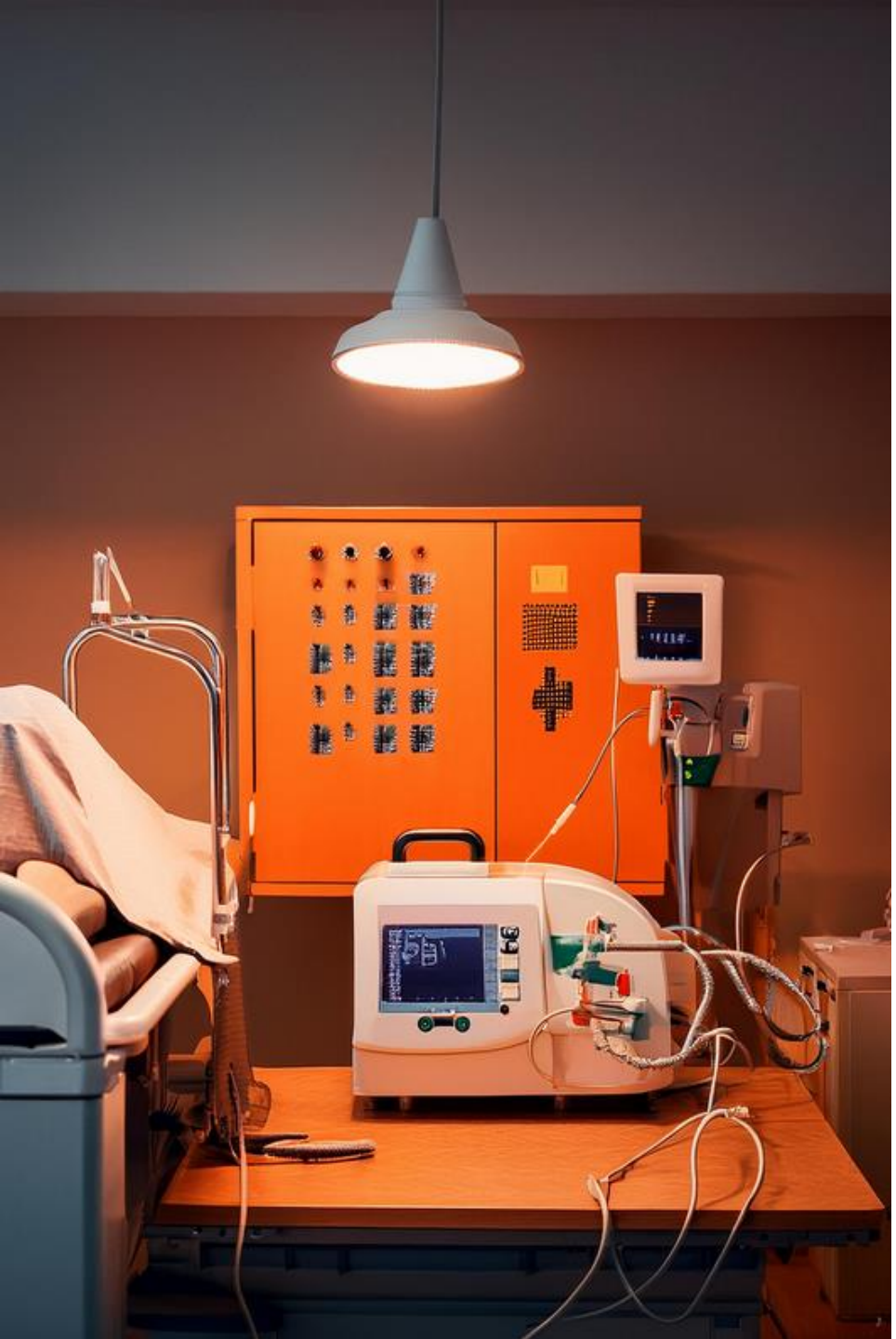


Here to Stay?

Prof. Alexander Sartorius

Head, ECT Supervision and Research
Head, Research Group Translational Imaging
Department of Psychiatry and Psychotherapy
Central Institute of Mental Health (CIMH)
Medical Faculty Mannheim, University of Heidelberg
E-Mail: alexander.sartorius@zi-mannheim.de

content

- Short history of ECT
- Stigma
- Decline
- Core
- Competitors
- Efficacy – safety – tolerability
- WHO

History of Convulsive Therapies

- Meduna systematically investigated in the early 1930s

  strychnine, caffeine, absinthe, and later on

camphor and

pentylenetetrazole (cardiazole)

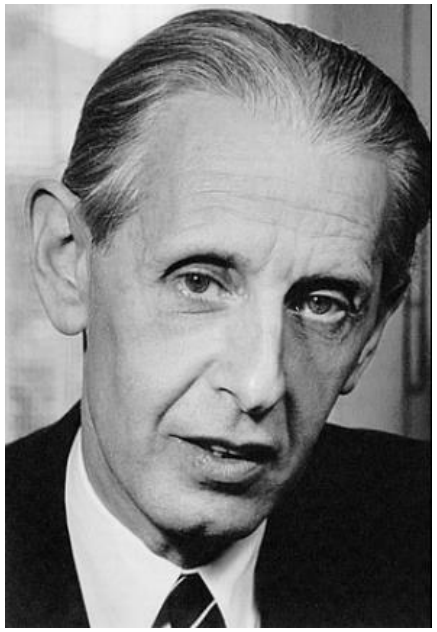
„Die Konvulsionstherapie der Schizophrenie“

1927 Nobel Prize for malaria treatment of neurosyphilis (v. Jauregg)

1927 Insulin shock therapy by Sakel

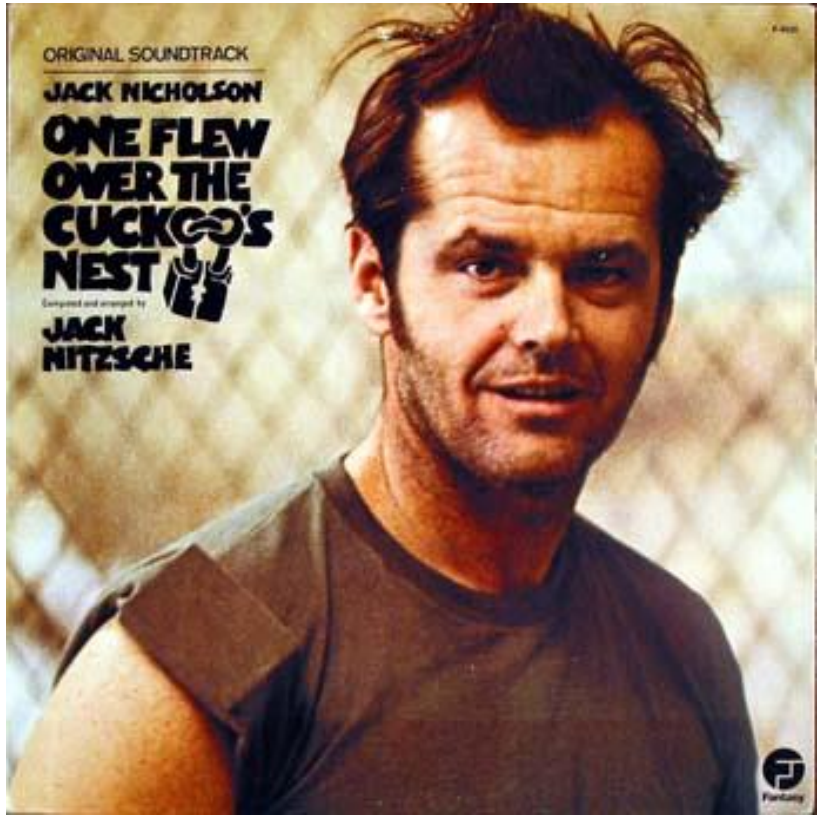
History of electroconvulsive therapy

- 1934 animal experiments by Chiauzzi
- 1937 improved by Bini
- 1938 Cerletti and Bini: first clinical application
- 1941 first ambulatory ECT in the USA by Kalinowsky



History of electroconvulsive therapy

- since 1940: introduction by Kalinowsky in the USA
- 1950s and 60s: introduction of first antidepressants and antipsychotics
- until the early 1970s, significant abuse in American state hospitals
- since 1970 ECT in the focus of antipsychiatric movements

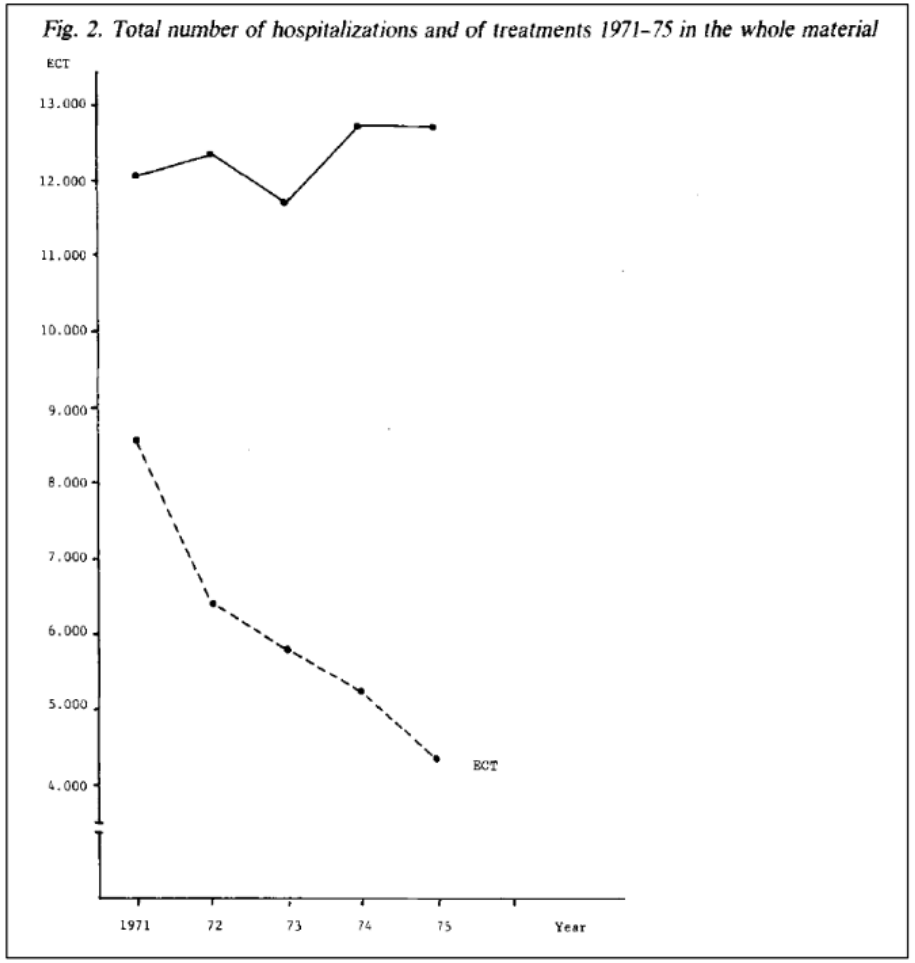


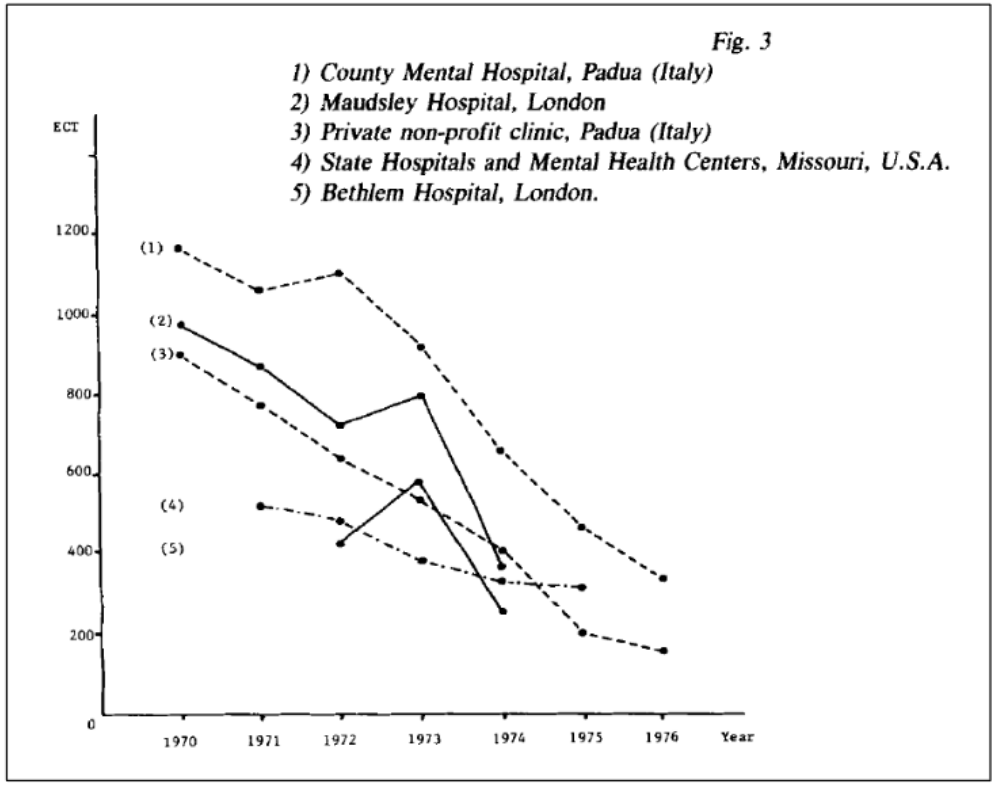
1962 Ken Kesey:
„One Flew Over the Cuckoo's Nest“

… now replaced by countless Netflix series

Sweden 1966-1975 – decline in use

d`Elia, Frederiksen. Nordic J Psychiatry 1979 vol 33 issue 1.
Elektrokonvulsiv terapi i Sverige III. Utveckling under decenniet 1966-1975 i Göteborg och Bohuslän.





Pia Nordanskog, NACT meeting in Tallinn 2018:
“ECT – 80 Years of Experience”

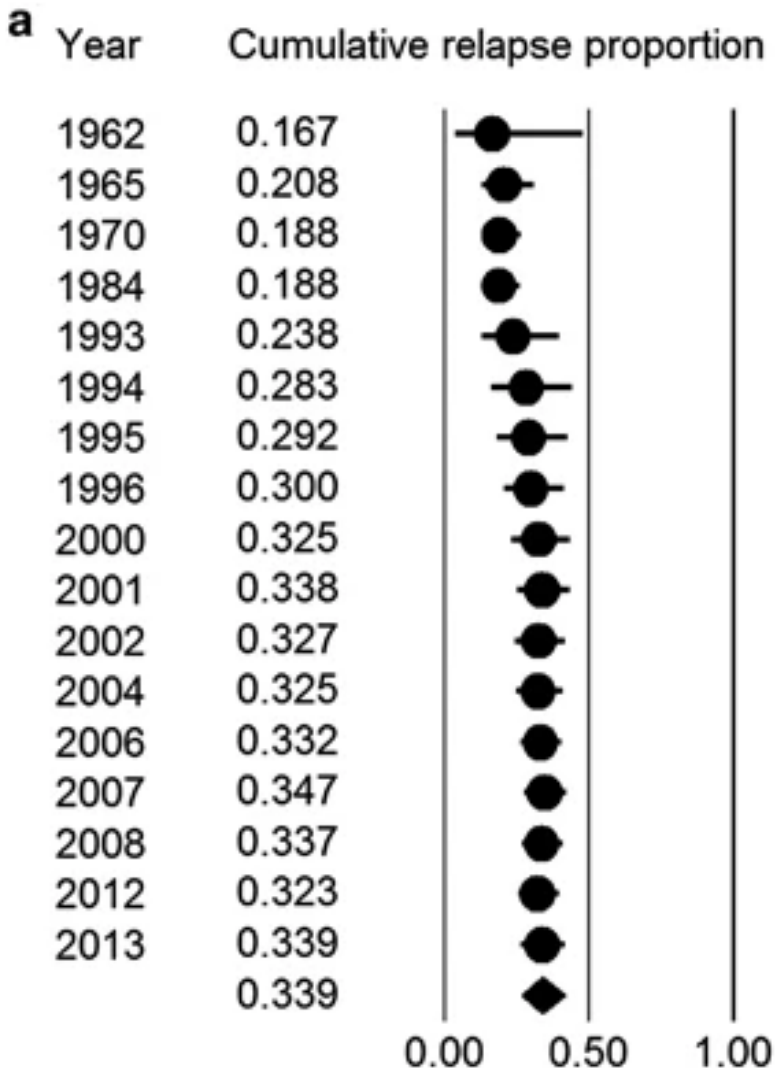
The authors hypotheses of possible causes:

1. Improvement of specificity of affective disorders leads to better specificity of the indication for ECT
   - Both due to expanding research related to affective disorders and to the tendency to relate psychological and sociological factors a greater pathogenic relevance, and thereby a logical and rational restriction in the use for ECT in endogenous depression
2. Early and adequate treatment with antidepressants have reduced the population of patients in need for ECT
3. The view of ECT in media and the negative opinion that have arisen from this might have caused a non-logical and regrettable restriction in the use of ECT.

d`Elia, Frederiksen. Nordic J Psychiatry 1979 vol 33 issue 1.
Elektrokonvulsiv terapi i Sverige III. Utveckling under decenniet 1966-1975 i Göteborg och Bohuslän.

Pia Nordanskog, NACT meeting in Tallinn 2018:
"ECT – 80 Years of Experience"

relapse rates: getting worse?



Outcomes at 6 months following ECT.

Panel (a) shows a cumulative meta-analysis of relapse rates at 6 months following ECT across all eligible studies from 1962 onwards.

⇒ Change of study populations ?
⇒ Same accounts for drug tx.

Jelovac A, Kolshus E, McLoughlin DM. Relapse following successful electroconvulsive therapy for major depression: a meta-analysis. Neuropsychopharmacology. 2013 Nov;38(12):2467-74.

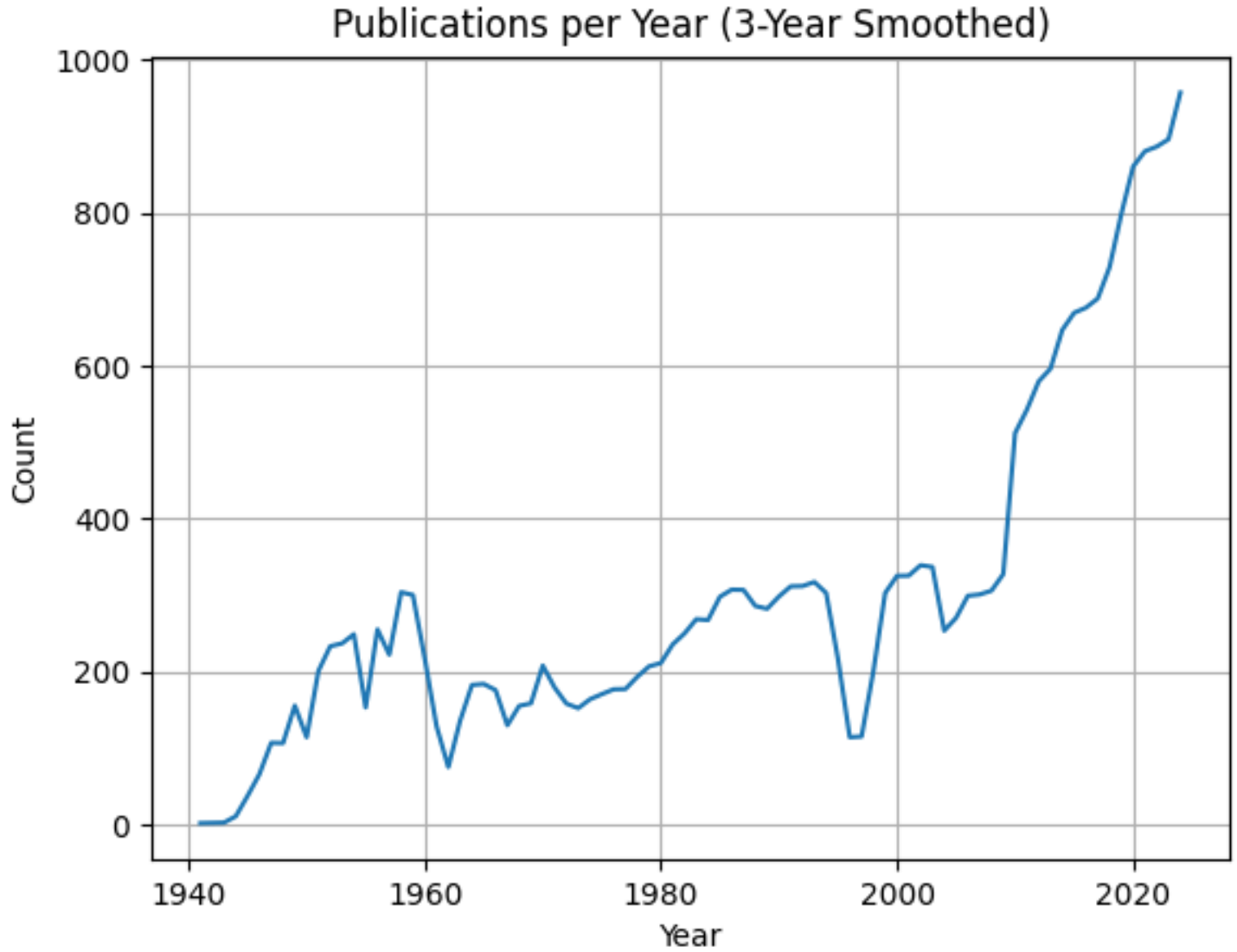
Max Fink: “What was learned: studies by the consortium for research in ECT (CORE) 1997-2011.”

Summation

- Continuation treatments, either continuation electroconvulsive therapy (ECT) or combined nortriptyline and lithium, sustain 6-month remission rates equally after successful courses of ECT in depressed patients. ✅
- Unipolar and bipolar depressive mood disordered patients are relieved equally by ECT. ✅
- ECT with bitemporal electrode placement is more efficient than treatment with right unilateral placement.
- Seizure threshold determinations to determine electricity dosing are neither necessary nor useful for effective ECT.
- ECT rapidly relieves active suicide risk. ✅

Historical Note:
The CORE study was funded by NIMH in 1997 in four facilities in a study programme titled: ‘Continuation ECT vs. Pharmacotherapy: Efficacy and Safety’. The initial CORE collaborators were Max Fink (Stony Brook University, New York), Charles Kellner (Medical University, Charleston SC), Teri Rummans (Mayo Clinic, Rochester MN) and John Rush (University of Texas, Dallas TX).

Acta Psychiatr Scand. 2014 Jun;129(6):417-26.
doi: 10.1111/acps.12251. Epub 2014 Feb 12.


Publications per Year (3-Year Smoothed)
Count
Year
0
200
400
600
800
1000
1940
1960
1980
2000
2020

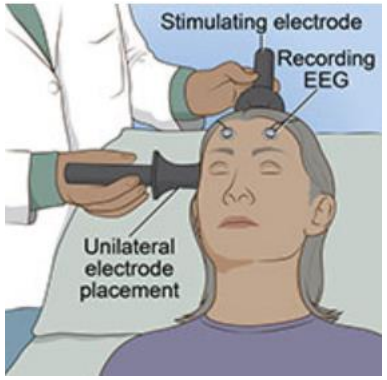
Pubmed 2026

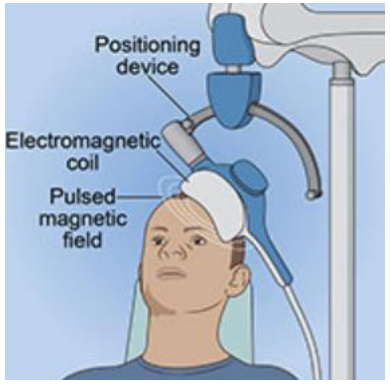
Electroconvulsive Therapy and Its New Competitors

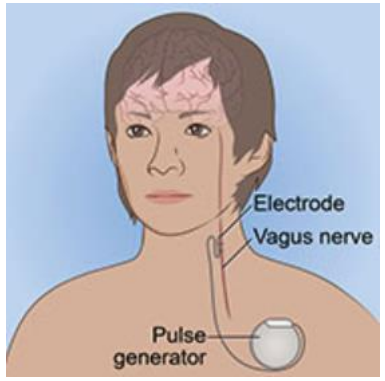
ECT Remains the Gold Standard

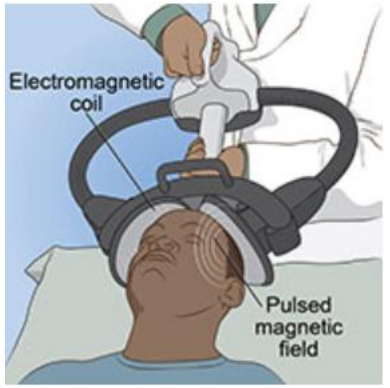
David Zilles-Wegner, MD, Charles H. Kellner, MD,† and Alexander Sartorius, MD‡§*

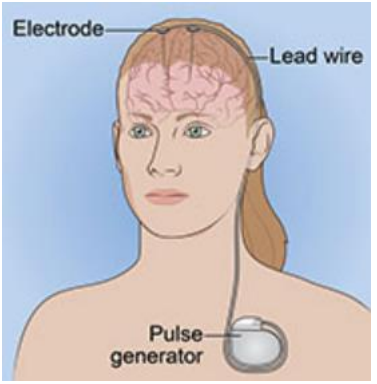
Some of the Competitors …











approved **experimental**

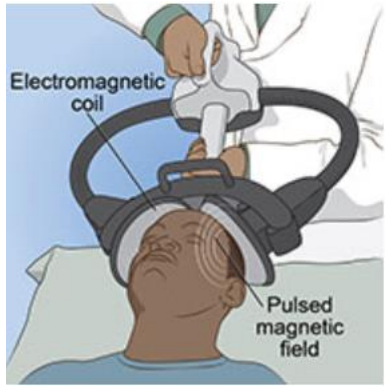
https://www.nimh.nih.gov/health/topics/brain-stimulation-therapies/brain-stimulation-therapies

Magnet Seizure Therapy (MST): investigational

	Electroconvulsive therapy (n=119)	Magnetic seizure therapy (n=117)
Age, years	45·5 (14·8)	44·5 (13·8)
Sex		
Female	65 (55%)	70 (60%)
Male	54 (45%)	47 (40%)
Years education	16·9 (3·8)	16·6 (3·7)
Left-handed	13 (10·9)	17 (14·5)
Race		
American Indian or Alaska native	0	0
Asian	7 (6%)	12 (10%)
Black or African American	4 (3%)	2 (2%)
White	95 (80%)	100 (85%)
More than one race	5 (4%)	1 (1%)
Other	7 (6%)	1 (1%)
Unknown or not reported	1 (1%)	1 (1%)
Baseline HRSD-24	28·8 (5·4)	29·4 (5·0)
Baseline BSI-A	9·6 (5·6)	9·0 (5·3)
Baseline SSI	8·2 (7·4)	9·0 (6·8)
Baseline Q-LES-Q	32·9 (7·1)	33·1 (6·0)
Baseline AMT total memories	9·2 (1·24)	9·0 (1·8)
Baseline MoCA	26·0 (2·8)	26·1 (2·5)
Baseline CGI-S (scale 1–7)		
Not at all to mildly ill (1–3)	0	0
Moderately ill (4)	14 (12%)	10 (9%)
Markedly ill (5)	77 (65%)	62 (53%)
Severely ill (6)	28 (24%)	44 (38%)
Among the most extremely ill (7)	0	1 (1%)
Episode duration, months		
1–6 months	22 (18%)	23 (20%)
7–12 months	18 (15%)	22 (19%)
13–24 months	26 (22%)	25 (21%)
More than 24 months	52 (44%)	47 (40%)
Missing	2 (<1%)	0
History of prior electroconvulsive therapy	15 (13%)	16 (14%)
Anxiety comorbidity	60 (50%)	58 (50%)
Benzodiazepine during treatment	58 (49%)	71 (61%)
Inpatient at treatment start	18 (15%)	23 (20%)

Again:

- non-psychotic MDD
- RUL-BP ECT
- 11,7 ECT-Sessions vs. 14,2 MST sessions
- Remission 27,8% (ECT) vs. 22,5% (MST)

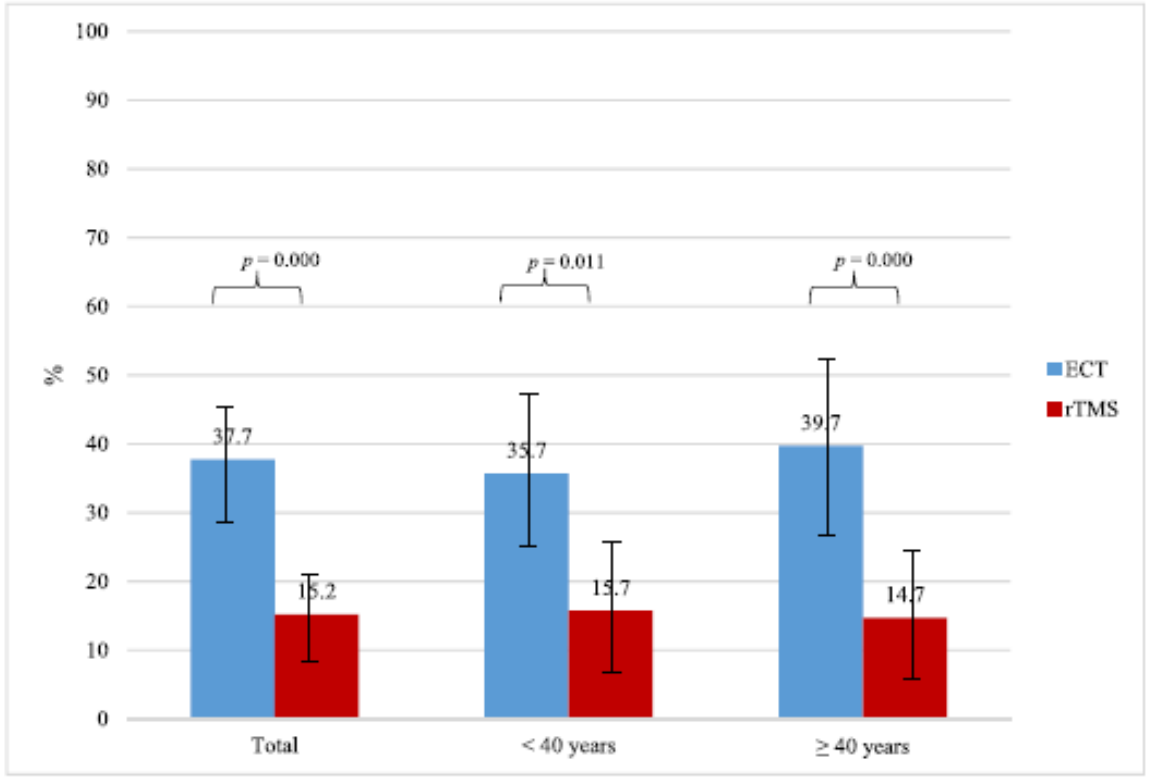


www.thelancet.com/psychiatry Vol 13 May 2026

Confirmatory efficacy and safety trial of magnetic seizure therapy versus right unilateral ultra-brief electroconvulsive therapy in depression (CREST–MST): a randomised, double-blind, non-inferiority trial in Canada and the USA

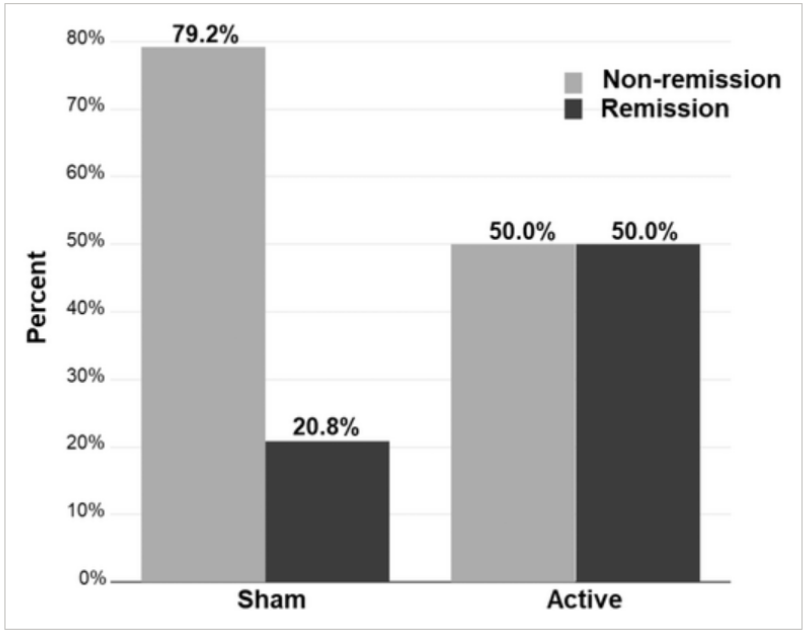
Daniel M Blumberger, Shawn M McClintock, Kevin E Thorpe, Carol A Tamminga, Karen Foley, Mustafa M Husain, Tyler S Kaster, Yuliya Knyahnytska, Daphne Voineskos, Kala J Bailey, Joshua J Hubreqsen, Cory R Weissman, Zafiris J Daskalakis

Repetitive transcranial Magnetic Stimulation (rTMS)



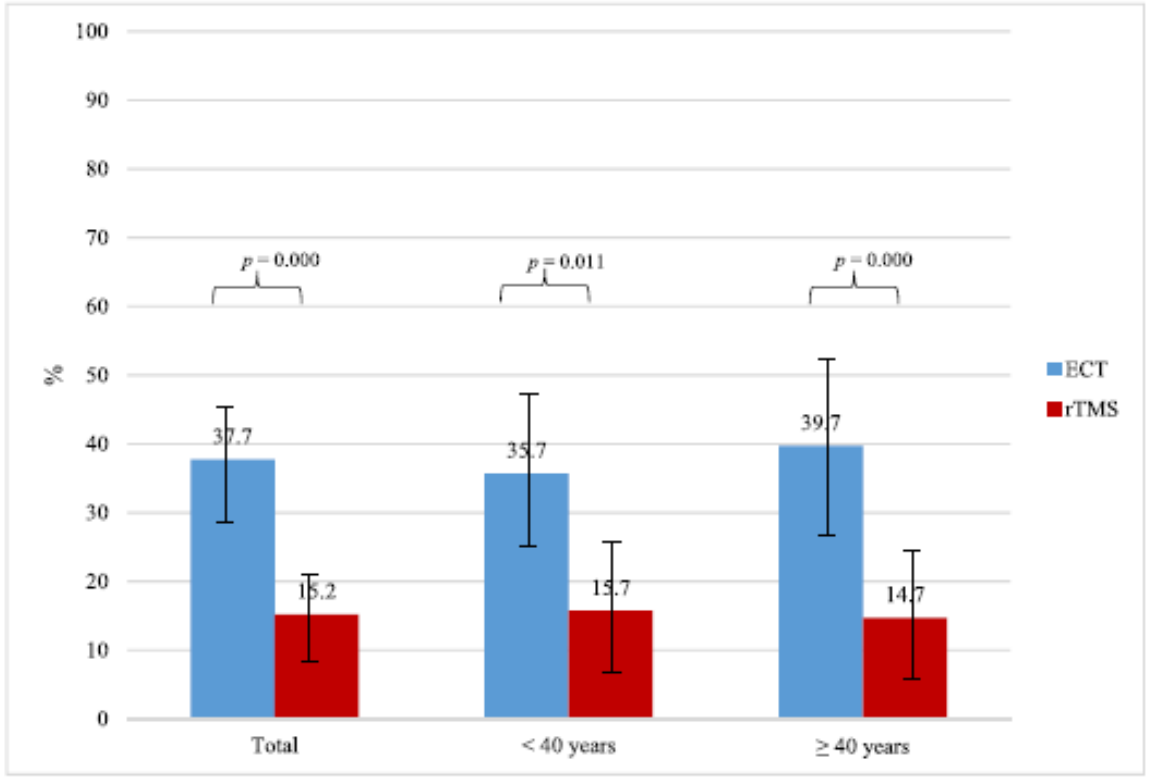
Strandberg P, Nordenskjöld A, Bodén R, Ekman CJ, Lundberg J, Popiolek K. Electroconvulsive Therapy Versus Repetitive Transcranial Magnetic Stimulation in Patients With a Depressive Episode: A Register-Based Study. J ECT. 2024 Jun 1;40(2):88-95. doi: 10.1097/YCT.0000000000000971. Epub 2023 Nov 29. PMID: 38048154.

accelerated … 10x /d



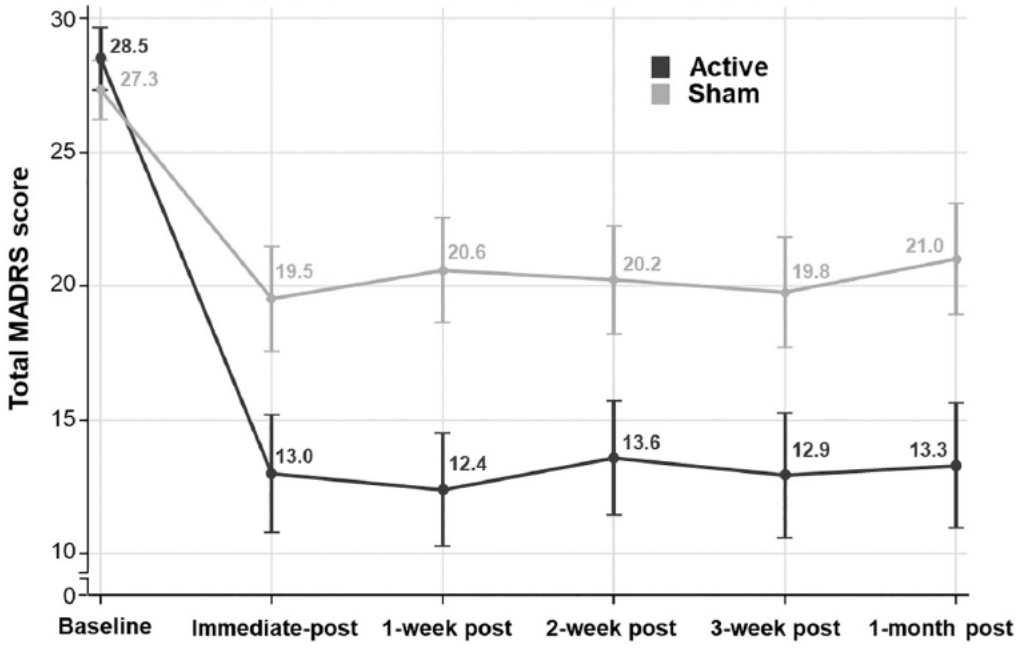
Kratter IH, Austelle CW, … Williams NR. Stanford neuromodulation therapy for treatment-resistant depression: a randomized controlled trial confirming efficacy, and an EEG study providing insight into mechanism of action and a potentially predictive biomarker of efficacy. World Psychiatry. 2026 Feb;25(1):105-116. doi: 10.1002/wps.70032. PMID: 41536095; PMCID: PMC12805067.

Repetitive transcranial Magnetic Stimulation (rTMS)



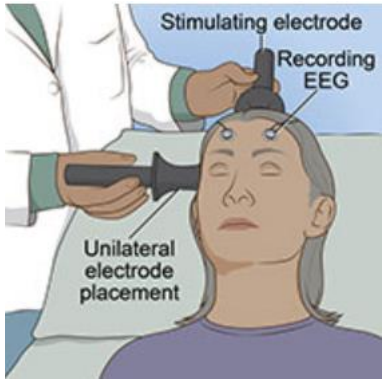
Strandberg P, Nordenskjöld A, Bodén R, Ekman CJ, Lundberg J, Popiolek K. Electroconvulsive Therapy Versus Repetitive Transcranial Magnetic Stimulation in Patients With a Depressive Episode: A Register-Based Study. J ECT. 2024 Jun 1;40(2):88-95. doi: 10.1097/YCT.0000000000000971. Epub 2023 Nov 29. PMID: 38048154.

accelerated … 10x /d

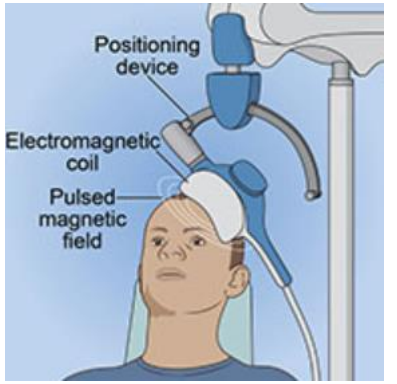


Kratter IH, Austelle CW, … Williams NR. Stanford neuromodulation therapy for treatment-resistant depression: a randomized controlled trial confirming efficacy, and an EEG study providing insight into mechanism of action and a potentially predictive biomarker of efficacy. World Psychiatry. 2026 Feb;25(1):105-116. doi: 10.1002/wps.70032. PMID: 41536095; PMCID: PMC12805067.

Repetitive transcranial Magnetic Stimulation (rTMS)



	ECT	rTMS (iTBS)
MADRS-score	> 30	> 20
Age	Older better	> 18
Psychotic symptoms	Yes please!	No!
Substance use disorder	OK	No
Bipolar disorder	Yes	Perhaps not?
Suicidality	Yes	OK
Pregnancy	OK	Not yet?
Epilepsy	OK	No



Much better: listen to next talk by **Marco Hirnstein**

Ketamine and ECT:

plus **ECT** → **story of talk in Riga…**

alternating with **ECT** → **might act a little faster …**

versus **ECT** → **Ask Pouya !**

Ketamine

A Response rates in the overall population

Study	Ketamine Events	Ketamine Total	ECT Events	ECT Total	Weight	RD	95% CI
Sharma 2020	8	12	13	13	14.7%	−0.33	[−0.61; −0.06]
Kheirabadi 2019	2	10	6	12	10.6%	−0.30	[−0.68; 0.08]
Kheirabadi 2020	5	27	5	12	12.9%	−0.23	[−0.55; 0.08]
Ekstrand 2022	54	95	65	91	22.3%	−0.15	[−0.28; −0.01]
Anand 2023	99	195	70	169	24.0%	0.09	[−0.01; 0.20]
Ghasemi 2014	9	9	8	9	15.5%	0.11	[−0.15; 0.37]
Total (95% CI)	**177**	**348**	**167**	**306**	**100.0%**	**−0.10**	**[−0.26; 0.05]**

Heterogeneity: $Tau^2 = 0.0241$; $Chi^2 = 17.71$, df = 5 (P < 0.01); $I^2 = 72\%$
Test for overall effect: Z = −1.29 (P = 0.198)

Risk Difference MH, Random, 95% CI

−0.6 −0.4 −0.2 0 0.2 0.4 0.6
Favors ECT Favors Ketamine

B Response rates among inpatients

Study	Ketamine Events	Ketamine Total	ECT Events	ECT Total	Weight	RD	95% CI
Sharma 2020	8	12	13	13	14.5%	−0.33	[−0.61; −0.06]
Kheirabad 2019	2	10	6	12	8.7%	−0.30	[−0.68; 0.08]
Kheirabad 2020	5	27	5	12	11.7%	−0.23	[−0.55; 0.08]
Ekstrand 2022	54	95	65	91	35.8%	−0.15	[−0.28; −0.01]
Anand 2023	12	23	13	21	13.3%	−0.10	[−0.39; 0.19]
Ghasemi 2014	9	9	8	9	16.0%	0.11	[−0.15; 0.37]
Total (95% CI)	**90**	**176**	**110**	**158**	**100.0%**	**−0.15**	**[−0.27; −0.03]**

Heterogeneity: $Tau^2 = 0.0054$; $Chi^2 = 6.64$, df = 5 (P = 0.25); $I^2 = 25\%$
Test for overall effect: Z = −2.46 (P = 0.014)

Risk Difference MH, Random, 95% CI

−0.6 −0.4 −0.2 0 0.2 0.4 0.6
Favors ECT Favors Ketamine

A Changes in depression scores in the overall population

Study	Ketamine Mean	Ketamine SD	Ketamine Total	ECT Mean	ECT SD	ECT Total	Weight	SMD	95% CI
Anand 2023	−15.30	9.7750	195	−13.10	9.1269	170	57.6%	−0.23	[−0.44; −0.03]
Ghasemi 2014	−20.67	5.4200	9	−21.88	5.8500	9	2.9%	0.20	[−0.72; 1.13]
Ekstrand 2022	−16.10	12.0000	95	−22.40	11.4000	91	28.6%	0.54	[0.24; 0.83]
Kheirabadi 2020	−9.26	3.9201	27	−12.33	5.0300	12	5.0%	0.70	[0.00; 1.40]
Sharma 2020	−14.50	4.3800	12	−21.19	5.8400	13	3.2%	1.25	[0.38; 2.12]
Kheirabadi 2019	−7.70	2.9500	10	−12.50	3.5000	12	2.7%	1.41	[0.46; 2.37]
Total (95% CI)			**348**			**307**	**—**	**0.56**	**[0.05; 1.06]**

Heterogeneity: $Tau^2 = 0.2869$; $Chi^2 = 35.01$, df = 5 (P < 0.01); $I^2 = 86\%$
Test for overall effect: Z = 2.15 (P = 0.031)

Std. Mean Difference IV, Random, 95% CI

−2 −1 0 1 2
Favors Ketamine Favors ECT

B Changes in depression scores among inpatients

Study	Ketamine Mean	Ketamine SD	Ketamine Total	ECT Mean	ECT SD	ECT Total	Weight	SMD	95% CI
Ghasemi 2014	−20.67	5.4200	9	−21.88	5.8500	9	6.7%	0.20	[−0.72; 1.13]
Ekstrand 2022	−16.10	12.0000	95	−22.40	11.4000	91	67.5%	0.54	[0.24; 0.83]
Kheirabadi 2020	−9.26	3.9201	27	−12.33	5.0300	12	11.8%	0.70	[0.00; 1.40]
Sharma 2020	−14.50	4.3800	12	−21.19	5.8400	13	7.6%	1.25	[0.38; 2.12]
Kheirabadi 2019	−7.70	2.9500	10	−12.50	3.5000	12	6.3%	1.41	[0.46; 2.37]
Total (95% CI)			**153**			**137**	**—**	**0.71**	**[0.38; 1.04]**

Heterogeneity: $Tau^2 = 0.0366$; $Chi^2 = 5.75$, df = 4 (P = 0.22); $I^2 = 30\%$
Test for overall effect: Z = 4.18 (P < 0.001)

Std. Mean Difference IV, Random, 95% CI

−2 −1 0 1 2
Favors Ketamine Favors ECT

Petrucci ABC, Fernandes JVA, Reis IA, da Silva GHS, Recla BMF, de Mendonça JC, Pedro VCS, D'Assunção LEN, Valiengo LDCL. Ketamine versus electroconvulsive therapy for major depressive episode: An updated systematic review and non-inferiority meta-analysis. Psychiatry Res. 2024 Sep;339:115994. doi: 10.1016/j.psychres.2024.115994. Epub 2024 May 31. PMID: 38865906.

But:
Braithwaite R, Jelovac A, Kellner CH, Sartorius A, Sienaert P, McLoughlin DM. Ketamine versus ECT for major depression: flawed evidence base. Lancet Psychiatry. 2026 Mar;13(3):180-182. doi: 10.1016/S2215-0366(25)00300-1

Psilocybin

At week 6 (primary end point), treatment response did not differ significantly between groups;
8 of 47 (17.0%) after psilocybin, 25 mg, classified as responders;
6 of 48 (12.5%) after psilocybin, 5 mg, classified as responders; and
5 of 47 (10.6%) after nicotinamide classified as responders

Table 2. Primary and Secondary Efficacy Results of the Hamilton Depression Rating Scale (HAMD17) and Beck Depression Inventory II (BDI-II) (While-Receiving-Treatment Population) Treatment Phase I[a] (continued)

End points: treatment phase 1	Psilocybin, 25 mg	Psilocybin, 5 mg	Nicotinamide
Remission at day 1, No./total No. (%)	10/47 (21.3)	4/48 (8.3)	4/47 (8.5)
Remission at week 1, No./total No. (%)	6/47 (12.8)	6/48 (12.5)	2/47 (4.3)
Remission at week 6, No./total No. (%)	6/47 (12.8)	2/48 (4.2)	1/47 (2.1)

Mertens LJ, Koslowski M, Betzler F, Brand M, Evens R, Kärtner L, Jungaberle A, Jungaberle H, Majic T, Schmitz CN, Ströhle A, Scharf D, Spangemacher M, Wolff M, Assadi Z, Bahri S, Becher L, Färber LV, Kirchen N, Kulakova E, Kunz L, Meijer A, Rohrmoser B, Wellek S, Berger MM, Gründer G.
Efficacy and Safety of Psilocybin in Treatment-Resistant Major Depression: The EPISODE Randomized Clinical Trial.
JAMA Psychiatry. 2026 Mar 18:e260132. doi: 10.1001/jamapsychiatry.2026.0132. Epub ahead of print. PMID: 41848690; PMCID: PMC13000742.


ECT IS NOT WORRIED!
Lagging Behind...
Still the Champ!
ALTERNATIVE TREATMENTS
MST
VNS
rTMS
KETAMINE
PSILOCYBIN
tDCS
#1 ECT
No Real Competition!

Efficacy – safety – tolerability

The NEW ENGLAND JOURNAL of MEDICINE

REVIEW ARTICLE

Allan H. Ropper, M.D., *Editor*

Electroconvulsive Therapy

Randall T. Espinoza, M.D., and Charles H. Kellner, M.D.

Efficacy – safety – tolerability

TABLE 2. Randomized Controlled Trials of ECT Versus Simulated ECT

Trial	D	Var	W(%)	OR	[OR-	-OR]
Ulett et al[12]	0.454	0.460	0.19	1.575	0.417	5.953
Brill et al[13]	1.341	0.678	0.15	3.824	0.761	19.204
Harris and Robin[14]	2.833	5.124	0.03	17.000	0.201	1437.8
Fahy et al[16]	1.326	0.759	0.14	3.765	0.683	20.773
Lambourn and Gill[20]	0.000	0.515	0.17	1.000	0.245	4.084
West[21]	4.456	1.993	0.07	86.100	5.409	1370.5
Brandon et al[22]	0.771	0.216	0.26	2.162	0.870	5.374

D, size of the treatment effect; Var, variance of D; W%, relative weight as a percentage; OR, odds ratio.

TABLE 3. Randomized Controlled Trials of ECT Versus Placebo

Trial	D	Var	W(%)	OR	[OR-	-OR]
Kiloh et al[15]	4.200	0.748	0.26	66.667	12.229	363.42
Greenblatt et al[18]	1.317	0.191	0.37	3.733	1.586	8.778
Med Research Council[19]	1.891	0.211	0.37	6.628	2.695	16.300

D, size of the treatment effect; Var, variance of D; W%, relative weight as a percentage; OR, odds ratio.

Pagnin D, de Queiroz V, Pini S, Cassano GB.
Efficacy of ECT in depression: a meta-analytic review.
J ECT. 2004 Mar;20(1):13-20.

TABLE 7. Randomized Controlled Trials of ECT Versus Antidepressants

Trial	D	Var	W(%)	OR	[OR-	-OR]
Kristiansen[30]	0.121	0.122	0.14	1.129	0.570	2.237
De Carolis et al[31]	0.715	0.035	0.19	2.045	1.414	2.957
Bratfos and Haug[32]	1.711	0.064	0.17	5.534	3.371	9.082
Avery and Winokur[33]	1.028	0.094	0.15	2.796	1.533	5.099
Coryell[34]	2.700	1.327	0.03	14.875	1.555	142.26
Homan et al[35]	1.495	0.121	0.14	4.459	2.253	8.825
Black et al[36]	0.895	0.027	0.20	2.448	1.776	3.376

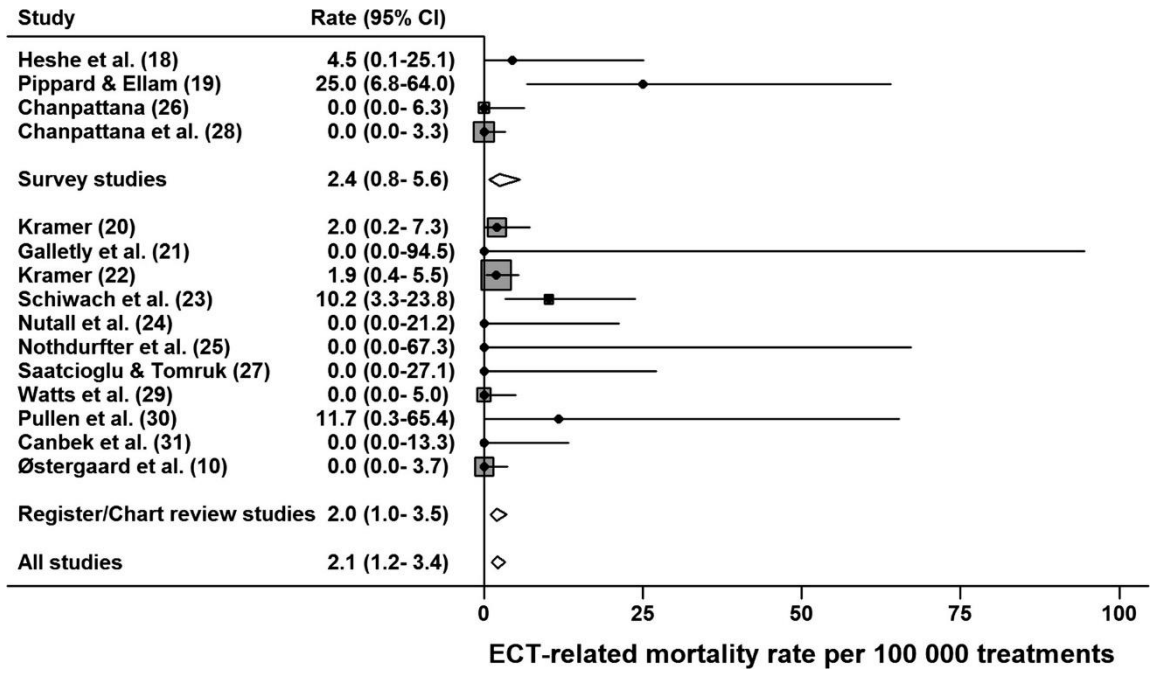
D, size of the treatment effect; Var, variance of D; W%, relative weight as a percentage; OR, odds ratio.

TABLE 4. Nonrandomized Controlled Trials of ECT Versus Antidepressants

Trial	D	Var	W(%)	OR	[OR-	-OR]
Bruce et al[24]	1.224	1.216	0.03	3.400	0.391	29.542
Harris and Robin[14]	2.833	5.124	0.01	17.000	0.201	1437.8
Kiloh et al[15]	1.859	0.501	0.07	6.414	1.602	25.681
Robin and Harris[25]	3.170	1.154	0.03	23.819	2.901	195.60
Fahy et al[16]	0.174	0.528	0.06	1.190	0.286	4.949
Wilson et al[17]	0.000	2.211	0.02	1.000	0.054	18.443
Huntchinson et al[23]	1.142	0.383	0.09	3.133	0.931	10.549
Greenblatt et al[18]	1.501	0.109	0.30	4.485	2.346	8.574
Med Research Council[19]	1.413	0.166	0.20	4.107	1.848	9.127
Gangdahar et al[26]	0.323	0.648	0.05	1.381	0.285	6.695
Dinan and Barry[27]	0.304	0.612	0.05	1.356	0.292	6.286
Folkerts et al[28]	1.818	0.492	0.07	6.158	1.558	24.341
Janakiramaiah et al[29]	1.460	1.194	0.03	4.307	0.505	36.694

D, size of the treatment effect; Var, variance of D; W%, relative weight as a percentage; OR, odds ratio.

Efficacy – safety – tolerability



It is also worth noting that the ECT-related mortality rate of 2.1 per 100 000 treatments calculated in this study is significantly lower than the 4 per 100 000 treatments reported previously in the selective review by Abrams in 1997.

Thus, it appears that the ECT-related mortality rate has decreased over time.

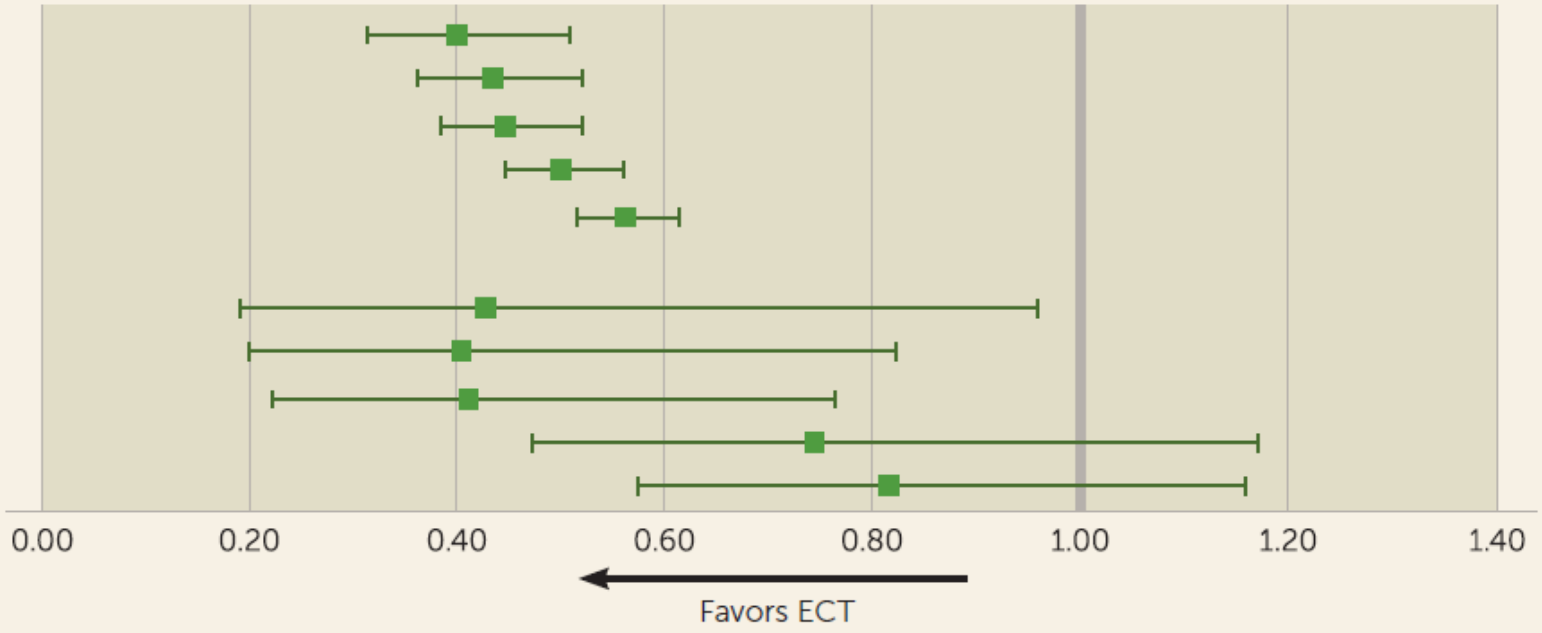
This notion is further supported by the fact that in the nine studies from this review that were published after 2001 (covering **414 747** treatments), only one ECT-related death was reported.

Tørring N, Sanghani SN, Petrides G, Kellner CH, Østergaard SD. The mortality rate of electroconvulsive therapy: a systematic review and pooled analysis. Acta Psychiatr Scand. 2017 May;135(5):388-397. doi: 10.1111/acps.12721. Epub 2017 Mar 23. PMID: 28332236.

Efficacy – safety – tolerability

B. Patients Who Received a Therapeutic ECT Course

All cause mortality	HR (95% CI)
30 days	0.40 (0.31–0.51)
60 days	0.43 (0.36–0.52)
90 days	0.45 (0.38–0.52)
180 days	0.50 (0.45–0.56)
365 days	0.56 (0.52–0.61)
Suicide death	
30 days	0.43 (0.19–0.96)
60 days	0.40 (0.20–0.82)
90 days	0.41 (0.22–0.76)
180 days	0.74 (0.47–1.17)
365 days	0.82 (0.58–1.16)



[a] Subjects are exact-matched on age, gender, Elixhauser comorbidity index, suicide attempt in previous year, psychiatric hospitalization in previous year, and principal hospital diagnosis; models are adjusted for race, rural-urban setting, year of hospitalization, median income of zip code, and psychotropic medications prescribed in the previous year. A therapeutic course is defined as having five or more ECT sessions within 30 days.

Rhee TG, Sint K, Olfson M, Gerhard T, H Busch S, Wilkinson ST. Association of ECT With Risks of All-Cause Mortality and Suicide in Older Medicare Patients. Am J Psychiatry. 2021 Sep 10

Efficacy – safety – tolerability

Background: Electroconvulsive therapy (ECT) is the most acutely effective treatment for depression, but is limited by cognitive side effects. However, research on their persistence, severity, and pattern is inconsistent. We aimed to quantify ECT-associated cognitive changes, specify their pattern, and determine progression.
Methods: MEDLINE, EMBASE, PsycArticles, PsychINFO, PsychLIT, and reference lists were systematically searched through January 2009. We included all independent, within-subjects design studies of depressed patients receiving ECT where cognition was assessed using standardized tests. Main outcome was change in performance after ECT relative to pretreatment scores with respect to delay between finishing ECT and cognitive testing. We explored potential moderators' influence, e.g., electrode placement, stimulus waveform.
Results: Twenty-four cognitive variables (84 studies, 2981 patients) were meta-analyzed. No standardized retrograde amnesia tests were identified. Significant decreases in cognitive performance were observed 0 to 3 days after ECT in 72% of variables: effect sizes (ES) ranging from -1.10 (95% confidence interval [CI], -1.53 to -.67) to -.21 (95% CI, -.40 to .01). Four to 15 days post-ECT, all but one CI included zero or showed positive ES. No negative ES were observed after 15 days, with 57% of variables showing positive ES, ranging from .35 (95% CI, .07-.63) to .75 (95% CI, .43-1.08). Moderators did not influence cognitive outcomes after 3 days post-ECT.

Conclusions:
Cognitive abnormalities associated with ECT are mainly limited to the first 3 days posttreatment. Pretreatment functioning levels are subsequently recovered.
After 15 days, processing speed, working memory, anterograde memory, and some aspects of executive function improve beyond baseline levels.

Semkovska M, McLoughlin DM. Objective cognitive performance associated with electroconvulsive therapy for depression: a systematic review and meta-analysis. Biol Psychiatry. 2010 Sep 15;68(6):568-77. doi: 10.1016/j.biopsych.2010.06.009. Epub 2010 Jul 31.

Efficacy – safety – acceptability

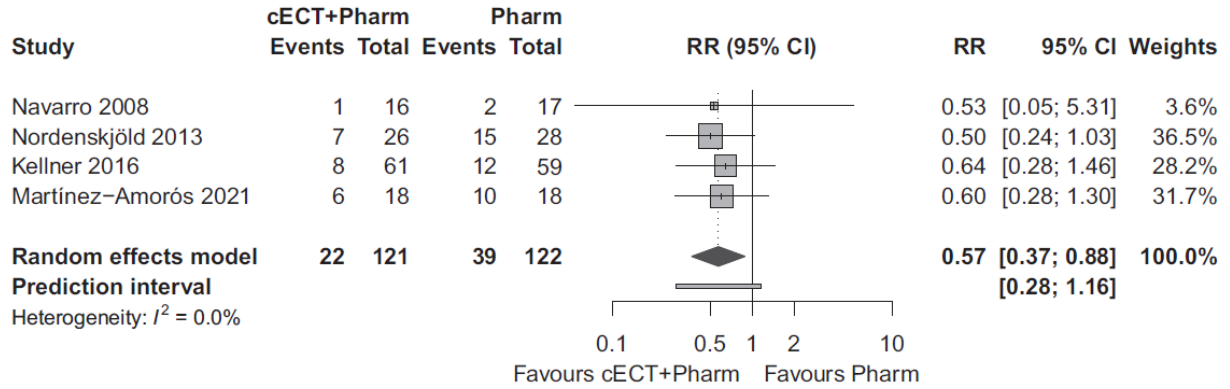


Figure 2. Efficacy of cECT and pharmacotherapy combination versus pharmacotherapy alone in 6-month relapse prevention.

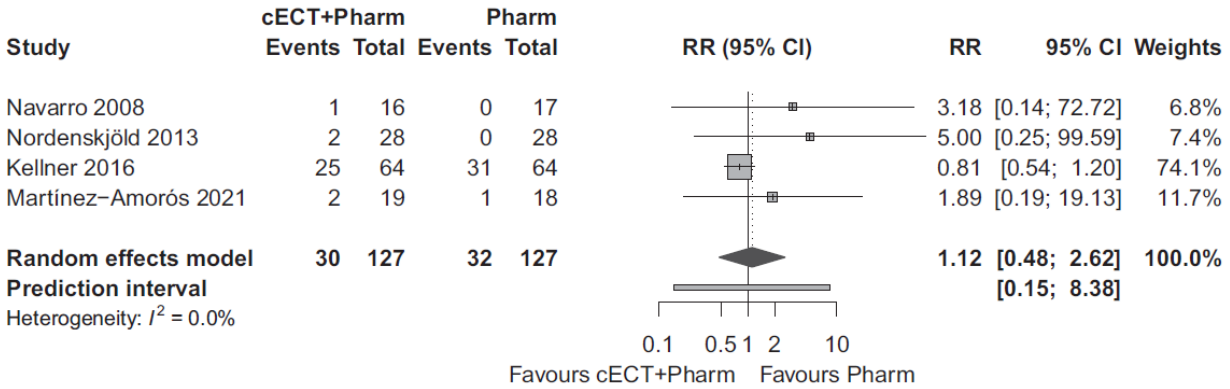


Figure 3. Acceptability of cECT and pharmacotherapy combination versus pharmacotherapy alone.

Jelovac A, Braithwaite R, Kellner CH, McLoughlin DM. Continuation electroconvulsive therapy combined with pharmacotherapy for depression relapse prevention: A systematic review and meta-analysis. Psychol Med. 2025 Aug 28;55:e251. doi: 10.1017/S0033291725101608.

Mortality and Depression

Death causes	n	Sample size for depression group/comparison group	RR (95% CI)	I^2 (%)
All causes	128	7,410,593/2,797,649,150	**2.10 (1.87-2.35)**	99.87
Natural causes	58	15,706,165/2,115,890,845	**1.63 (1.51-1.75)**	99.59
Unnatural causes	49	5,159,404/1,677,640,085	**5.81 (4.55-7.43)**	99.77
Suicide	44	2,687,171/1,487,047,309	**9.89 (7.59-12.88)**	99.59
Non-suicide unnatural causes	15	2,712,694/569,661,047	**2.06 (1.70-2.50)**	96.87
Accidents	8	994,802/462,323,299	**2.19 (1.38-3.47)**	98.81
Neurological diseases	6	2,104,035/16,994,013	**2.28 (1.81-2.88)**	96.20
Respiratory diseases	14	1,679,058/442,741,489	**2.34 (1.94-2.83)**	99.02
Endocrine diseases	5	1,764,197/121,544,138	**2.01 (1.34-3.01)**	99.36
Diabetes mellitus	3	1,700,885/113,086,772	**1.82 (1.12-2.96)**	99.58
Infectious diseases	7	1,210,291/19,795,495	**1.65 (1.21-2.24)**	96.41
Gastrointestinal diseases	9	2,928,690/1,400,830,974	**1.64 (1.25-2.15)**	98.42
Liver diseases	4	1,145,866/19,621,608	1.49 (0.98-2.27)	98.62
Cardiovascular diseases	36	3,849,896/844,677,849	**1.47 (1.35-1.60)**	98.89
Genitourinary diseases	6	1,866,232/565,557,974	**1.45 (1.19-1.76)**	93.95
Cancers	25	2,518,185/567,911,595	**1.35 (1.20-1.52)**	98.84
Cerebrovascular diseases	10	1,515,008/362,275,370	**1.27 (1.10-1.47)**	95.34
COVID-19	6	1981,456/26,917,222	1.13 (0.94-1.35)	95.68

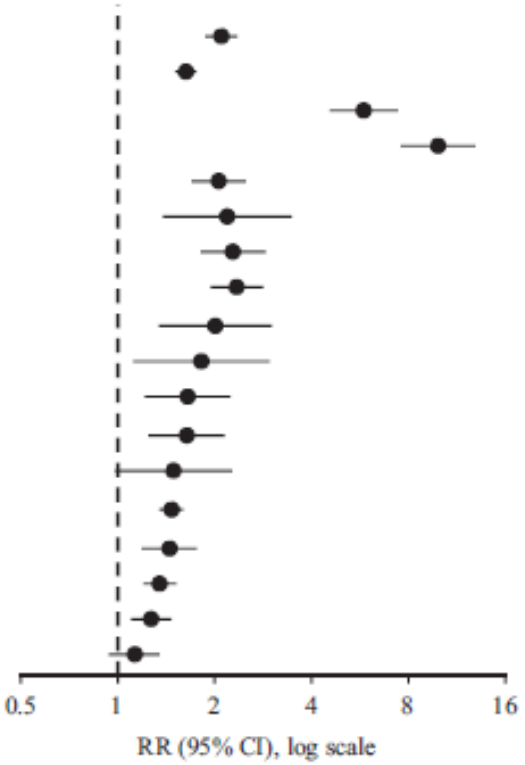


Figure 2 All-cause and cause-specific mortality risk in people with depression versus no depression/general population. RR – relative risk, COVID-19 – coronavirus 19 disease. Significant values are highlighted in bold prints.

Chan JKN, Solmi M, Lo HKY, Chan MWY, Choo LLT, Lai ETH, Wong CSM, Correll CU, Chang WC. All-cause and cause-specific mortality in people with depression: a large-scale systematic review and meta-analysis of relative risk and aggravating or attenuating factors, including antidepressant treatment. World Psychiatry. 2025 Oct;24(3):404-421

Mortality and Depression: ECT !

Comparison	n	Sample size for treatment group/comparison group	RR (95% CI)
All-cause mortality			
Any AD vs. no AD	16	636,340/688,746	**0.79 (0.68-0.93)**
SSRIs vs. no AD	11	495,609/299,141	0.94 (0.79-1.12)
SNRIs vs. no AD	6	212,573/376,193	**0.81 (0.65-0.99)**
TCAs vs. no AD	9	90,002/386,376	1.03 (0.81-1.31)
ECT vs. no ECT	6	25,841/51,876	**0.73 (0.66-0.82)**
All-cause mortality (samples matched for comorbid conditions)			
Any AD vs. no AD	9	271,358/287,621	**0.69 (0.59-0.81)**
SSRIs vs. no AD	4	90,504/80,173	**0.75 (0.61-0.92)**
SNRIs vs. no AD	4	29,428/184,232	**0.74 (0.57-0.96)**
TCAs vs. no AD	4	27,058/194,879	**0.78 (0.69-0.87)**
Natural-cause mortality			
Any AD vs. no AD	3	26,823/131,053	1.09 (0.99-1.20)
SSRIs vs. no AD	2	10,814/21,842	1.04 (0.90-1.20)
SNRIs vs. no AD	2	1,417/23,957	0.98 (0.86-1.13)
TCAs vs. no AD	2	12,024/22,121	0.92 (0.69-1.22)
ECT vs. no ECT	4	15,558/34,467	**0.76 (0.59-0.97)**
Suicide			
Any AD vs. no AD	3	330,772/211,728	1.13 (0.78-1.64)
ECT vs. no ECT	4	5,393/15,498	**0.67 (0.53-0.85)**

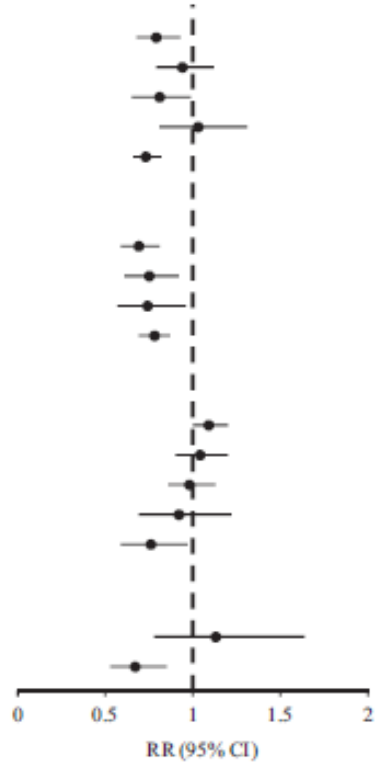


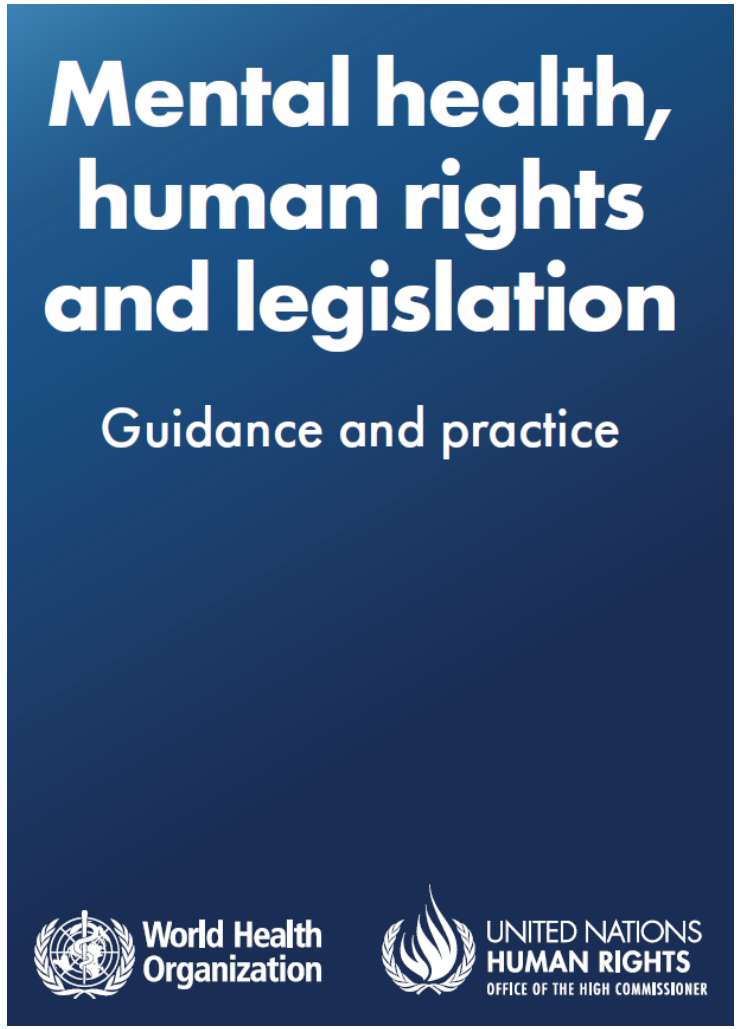
Figure 5 Risk of mortality associated with antidepressant (AD) treatment and electroconvulsive therapy (ECT) in patients with depression. RR – relative risk, SSRIs – selective serotonin reuptake inhibitors, SNRIs – serotonin and noradrenaline reuptake inhibitors, TCAs – tricyclic antidepressants. Significant values are highlighted in bold prints.

Chan JKN, Solmi M, Lo HKY, Chan MWY, Choo LLT, Lai ETH, Wong CSM, Correll CU, Chang WC. All-cause and cause-specific mortality in people with depression: a large-scale systematic review and meta-analysis of relative risk and aggravating or attenuating factors, including antidepressant treatment. World Psychiatry. 2025 Oct;24(3):404-421

WHO cares ?

European Forum for Electroconvulsive Therapy
12th annual meeting EFFECT, 2019 Budapest

WHO guidance



2023

2025

Foreword

This Guidance on mental health policy and strategic action plans provides countries with a comprehensive pathway to mental health policy reform. This is in line with an increasing consensus on the importance of embracing rights-based, person-centered, and recovery-oriented approaches that emphasize autonomy and dignity, while also engaging people with lived experience in planning and decision-making.

Our collective vision is for a world where mental health is integrated into primary health care, and where services are accessible, respectful, and empowering. Mental health planning should also take into account the social and structural factors such as poverty, housing, education, and employment, as well as the negative impact of stigma, discrimination, and other systemic barriers. Addressing these interconnected issues is fundamental to achieving holistic and sustainable outcomes. Collaboration across sectors is essential to implement equitable and effective community-based services.

This publication is a testament to the invaluable contributions of people with lived experience, whose voices and insights are central to this transformative agenda. It is their stories, resilience, and advocacy that underpin the urgency of this work and inspire us towards a more inclusive and compassionate world. This Guidance is a vital resource for policymakers, practitioners, and advocates alike, providing practical and actionable strategies to accelerate progress, while helping to protect the rights and dignity of those seeking care.

Dr Tedros Adhanom Ghebreyesus
Director-General
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WHO guidance on ECT

Oversight bodies should ensure "that major, **invasive** or **irreversible** interventions (for example, psychosurgery, **electroconvulsive therapy**) are not practiced, or are only permitted with free and informed consent".

"In countries where electroconvulsive therapy (ECT) is used, this intervention **must only be administered with the written or documented, free and informed consent** of the person concerned."

"ECT without informed consent can constitute **torture** or illtreatment."

"**Prohibit harmful practices in mental health care, such as electroconvulsive therapy in childhood and adolescence**."

"**Using ECT for children is not recommended and should be prohibited through legislation**."

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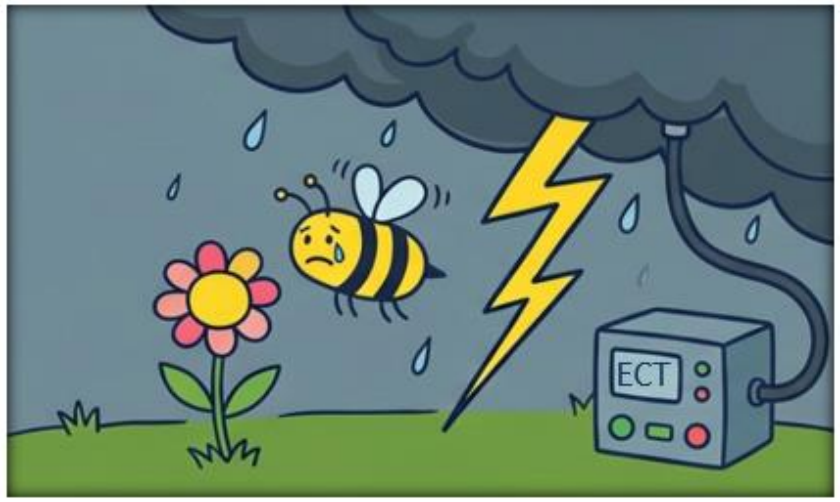

Guidance on mental health policy and strategic action plans

Module 2. Key reform areas, directives, strategies, and actions for mental health policy and strategic action plans

WHO vadis?

Prof. Dr. med. Andreas Reif, Frankfurt am Main

"Psychotropic drugs are often believed to correct so-called brain abnormalities or biochemical imbalances, and their benefits are assumed to outweigh the risks.
However, there is growing evidence they can cause long-term harm." (S. 94).

Wenn man nun annimmt, dass psychische Erkrankungen ganz überwiegend „sozial und strukturell" (was immer Letzteres heißen mag) determiniert sind (siehe Seite 44 oder 86 des Dokuments), dann kommt man leicht zu der Überzeugung, dass soziale Maßnahmen das Mittel der Wahl sind und biologische Therapieverfahren wenig helfen. Diese Sichtweise dominiert denn auch die Handreichung; Patienten sollen natürlich „holistisch" behandelt werden – das Wort kommt 21-mal in der Guidance vor, ohne dass klar wird, was das nun meinen mag. Empfohlen als Interventionen werden jedenfalls unter anderem Yoga, „positive affect therapy", Leselerntrainings, und zu guter Letzt „cash transfer" – Geldüberweisungen (S. 91). Dies mag alles als hilfreich empfunden werden, aber man möchte schon gern belastbare Studien dazu sehen.

Die zitierte Referenz für die obige Behauptung? Ein Artikel von J. Read mit dem Titel "*The experiences of 585 people when they tried to withdraw from antipsychotic drugs*" (Addictive Behaviors Reports. 2022;15). Wenn es sich unserer Leserschaft erschließt, wie das eine zum anderen passe, man möge es mich wissen lassen. Aber diese Referenz führt tief in das Literaturverzeichnis: Man hätte sich ja nun gewünscht, dass eine so hochrangige Veröffentlichung sich auf den besten Stand des Wissens bezieht – Metaanalysen der Kollegen Leucht oder Cipriani, beispielsweise, oder aktuelle hochrangige Leitlinien von APA, NICE oder AWMF. Aber Fehlanzeige. Was man stattdessen findet, ist eine vollkommen selektive und gebiaste Auswahl der Literatur, u. a. von J. Moncrieff und Apologeten. Die ganze Guidance blüht also auf dem Boden der Antipsychiatrie.

Psychopharmakotherapie, Band 32, August 2025, Heft 4

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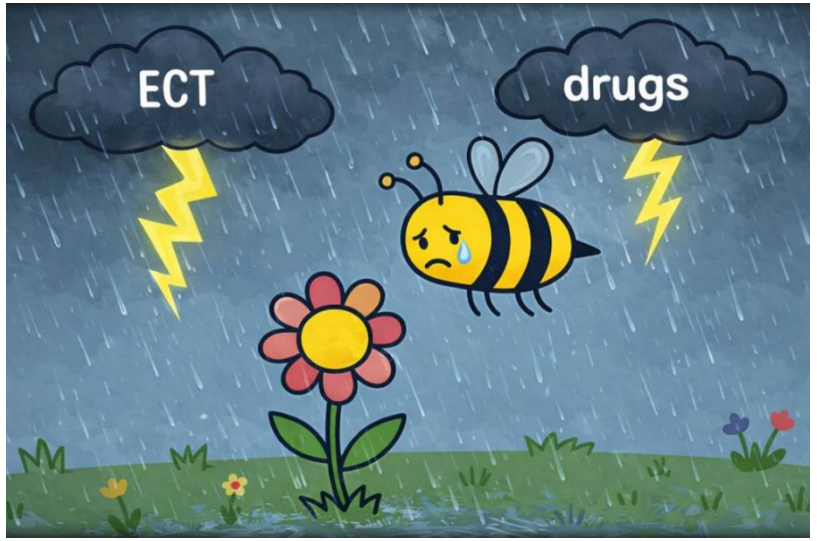

Psychopharmakotherapie, Band 32, August 2025, Heft 4

WHO guidance 2025 – 2 commentaries:

Cooper JJ, Kellner CH, Gligorovic PV, Weiner RD, Prudic J, Kirov G, Braithwaite R.
Electroconvulsive therapy saves lives- an evidence-based response to WHO.
Lancet Psychiatry. 2025 Aug;12(8):547-548.

Funk M, Drew N, Pathare S, Vasquez Encalada A, McGovern P, Hancock SP, **Read J.**
Electroconvulsive therapy: reaffirming the case for caution, consent, and rights.
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Dear Dr Sartorius,

Thank you for your enquiry. We published the comment by Cooper and colleagues in response to the WHO report and gave Funk and colleagues the right to reply. We have now closed this correspondence.

Regards,
Joan

Joan Marsh MA PhD
Editor in Chief
The Lancet Psychiatry

WHO guidance

Der Nervenarzt

Electroconvulsive therapy and the WHO: patients and professionals deserve expertise and facts, not ideology

David Zilles-Wegner[1] · Alexander Sartorius[2]

[1] Klinik für Psychiatrie und Psychotherapie, Universitätsmedizin Göttingen, Georg-August-Universität, Göttingen, Germany

[2] Klinik für Psychiatrie und Psychotherapie, Zentralinstitut für Seelische Gesundheit, Mannheim, Germany

2025 Aug 25.
doi: 10.1007/s00115-025-01891-x. Online ahead of print.

„This (WHO) document mentions a member of the Citizens Commission on Human Rights (CCHR) under “External contributors.” According to the Bavarian State Office for the Protection of the Constitution (Bayerisches Landesamt für Verfassungsschutz), the CCHR is a front organization of Scientology, and psychiatrists and psychologists are the focus of CCHR’s targeted antipsychiatry campaigns“

WHO guidance:

Joint statement by the World Psychiatric Association, the American Psychiatric Association, the European Psychiatric Association, and the Global Expert Task Force on ECT on the portrayal of electroconvulsive therapy in the WHO Guidance on Mental Health Policy and Strategic Action Plans

David Zilles-Wegner, Danuta Wasserman, Thomas G Schulze, Oliver Pogarell, Theresa Miskimen, Mark H Rapaport, Paul Summergrad, Andrea Fiorillo, Celso Arango, the Global Expert Task Force on ECT, and Alexander Sartorius*

Lancet Psychiatry. 2026 Mar 31:S2215-0366(26)00059-3.
doi: 10.1016/S2215-0366(26)00059-3.

Global Expert Task Force on ECT
Radwa Said Abdelazim Elfeqi (Cairo, Egypt), Chittaranjan Andrade (Bangalore, India), Pia Baldinger-Melich (Vienna, Austria), Daniel M Blumberger (Toronto, ON, Canada), Richard Braithwaite (Brighton, UK), Annette Brühl (Basel, Switzerland), Özge Canbek (Istanbul, Turkey), Worrawat Chanpattana (Bangkok, Thailand), Joseph J Cooper (Chicago, IL, USA), Wiesław J Cubała (Gdańsk, Poland), Jonas Eberhard (Lund, Sweden), Randall T Espinoza (Seattle, WA, USA), Gábor Gazdag (Budapest, Hungary), Neera Ghaziuddin (Ann Arbor, MI, USA), Shane Gill (Adelaide, SA, Australia), Predrag Gligorovic (Winston-Salem, NC, USA), Salam Hussein (Perth, WA, Australia), Kaija Järventausta (Tampere, Finland), Anders Jørgensen (Copenhagen, Denmark), Martin Balslev Jørgensen (Copenhagen, Denmark), Tyler S Kaster (Toronto, ON, Canada), Charles H Kellner (Charleston, SC, USA), George Kirov (Cardiff, UK), Soili Marianne Lehto (Oslo, Norway), Colleen Loo (Sydney, NSW, Australia), James Luccarelli (Boston, MA, USA), Daniel Maixner (Ann Arbor, MI, USA), Declan McLoughlin (Dublin, Ireland), Pouya Movahed Rad (Lund, Sweden), Juliet Nakku (Kampala, Uganda), Axel Nordenskjöld (Örebro, Sweden), Merete Nordentoft (Copenhagen, Denmark), Tarek A Okasha (Cairo, Egypt), Søren Dinesen Østergaard (Aarhus, Denmark), Elaine Loureiro Pereira-Soares (Rio De Janeiro, Brazil), Georgios Petrides (Elizabeth, NJ, USA), Pascal Sienaert (Leuven, Belgium), Akihiro Takamiya (Tokyo, Japan; New York, NY, USA), Jagadisha Thirthalli (Bangalore, India), Phern-Chern Tor (Singapore, Singapore), Lee Wachtel (Baltimore, MD, USA).

WHO guidance.

Medscape Medical News

Experts Push Back on WHO's 'Misleading' Portrayal of Electroconvulsive Therapy

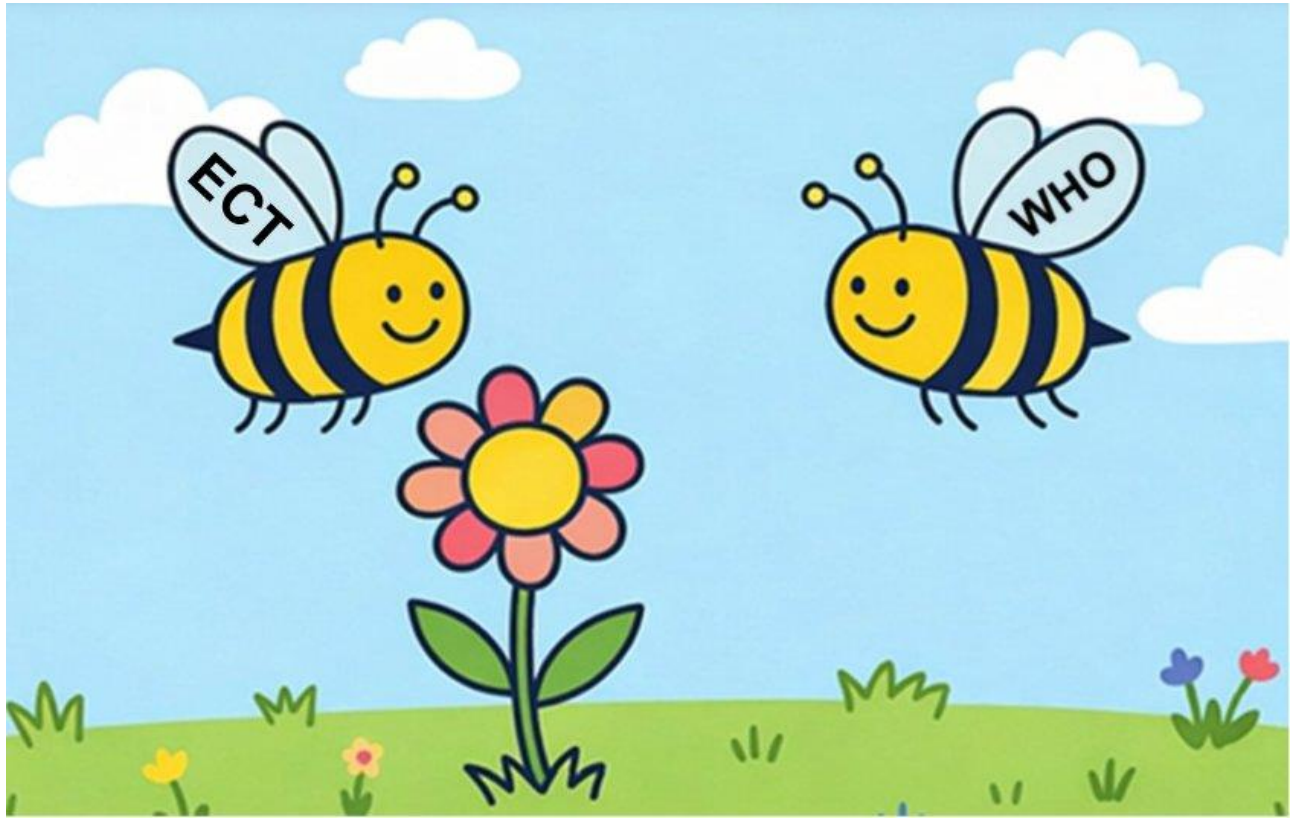
Megan Brooks
April 03, 2026

Mark George, MD, who was not an author on the statement, agreed. The WHO guidance "misrepresents modern ECT and how it should be used in practice," said George, a distinguished professor of psychiatry, radiology, and neuroscience and director of the Brain Stimulation Division, Medical University of South Carolina in Charleston, South Carolina.

"The WHO document has thrown the baby out with the bathwater. That is, in their attempt to make sure patients are informed and give consent for care, they have misstated facts about ECT," George told *Medscape Medical News*.

In a statement to *Medscape Medical News*, the WHO noted that the organization reviews available evidence periodically.

"Combining scientific evidence with human rights aspects is essential in any medical practice and especially so in psychiatry, given its history," the statement said. "WHO is looking forward to update available evidence and consult with people with lived experience and psychiatric associations alike."



https://www.medscape.com/viewarticle/experts-push-back-whos-misleading-portrayal-2026a1000a6s?ecd=a2a

Elisabeth Burgunder

Suna Su Aksay

Sebastian Karl

sowie:

Franziska Putschögl
Jonathan Reinwald
Angela Zapp
Moritz Spangemacher
Anton Deicher
Lana Said
Caroline Schröder
Shrabon Insan

Jan Malte Bumb
Laura Kranaster
Kent-Tjorben Böttcher
Eva Lamadé
Gerrit Breitfelder
Bruno Pedraz

Sina Edinger und Petra Mychajluk

Thanks for your attention !