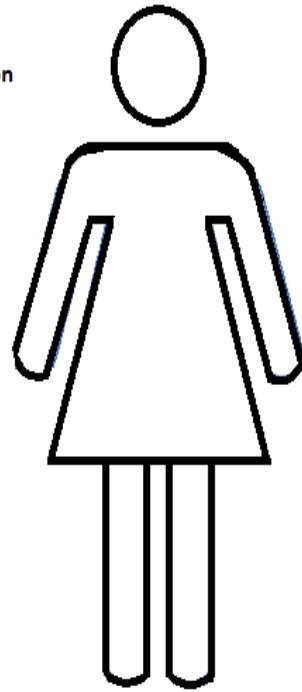


# ECT in Sweden

Women, 55 years old  
with severe depression



A treatment course of 7 ECT

Anesthetized with Tiopenthal

Current: 800 mA  
Pulse width: 0.5 ms  
Frequency: 70 Hz  
Duration: 7.5 s

Charge: 358 mC

Right unilateral electrode placement

Seizure duration (EEG): 36 s

50 hospitals with ECT capacity

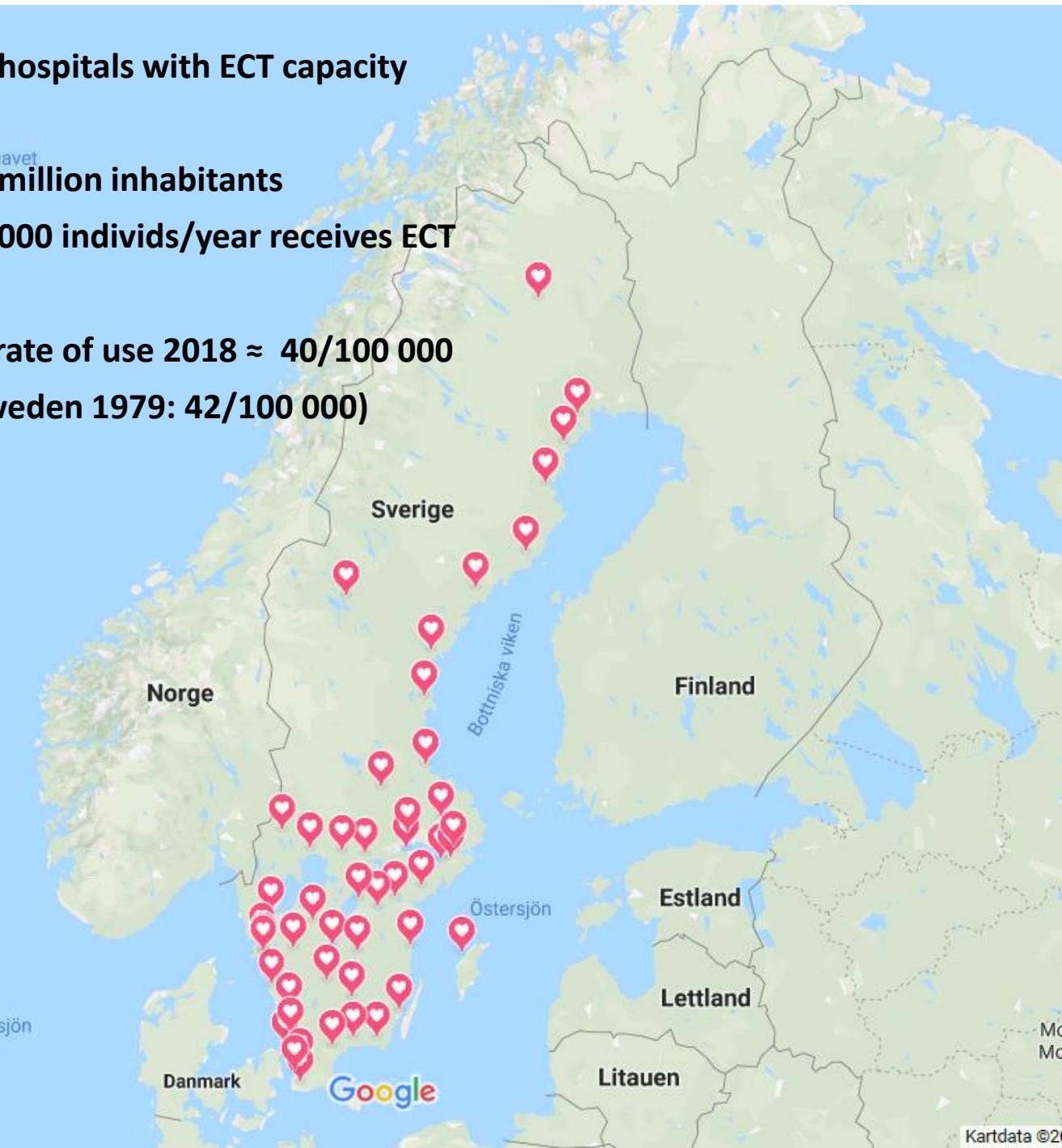
Norska havet

10 million inhabitants

≈ 4000 individs/year receives ECT

→ rate of use 2018 ≈ 40/100 000

(Sweden 1979: 42/100 000)



- Verbal consent
- Nurses and nursing assistants involved in delivering ECT

# Sweden 1955

*"The campaign against diseases part 9:  
Fragmentation in the depth of human – the mystery of insanity"*



Doktor Einar Österman, chef för Sidsjöns sjukhus i Sandviken. Han framhåller tematmentsfullt sinnessjukvårdenas nödläge. För förläkare och platsbrist för patienterna. Hans egen arbetsdag slutar kl. 3 på nätterna. Ge oss mer pengar, väädjar Österman till statsmakterna.



Docent Gunnar Lundquist, överläkare vid Långbro sjukhus i Stockholm, en av våra modernast orienterade psykiatritiker.

JOTO: HERNRIED

Rund på Beckomberga sjukhus med fr. v. dr. Blomqvist, docent Cronholm, syster "Nymy" och kurator Lindberger.



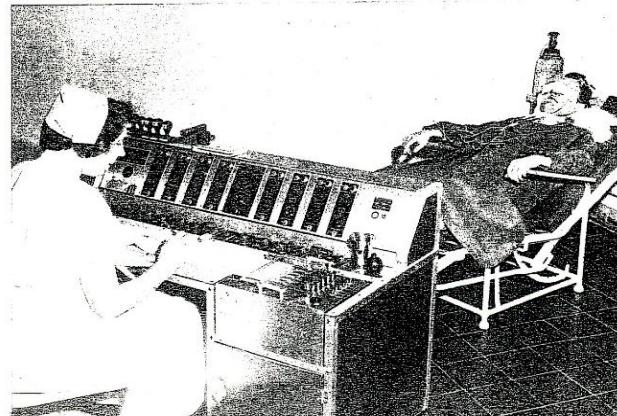
8



Elektroconvokbehandling vid Sidsjöns sjukhus. Man vidtar alla säkerhetsåtgärder för att patienten inte skall skadas. I regel leder behandlingen till hälsa.

## Fälttäget mot sjukdom. IX

Elektroencefalogram (EEG) är ett viktigt hjälpmittel när det gäller att fastställa hjärnårdbrott efter t. ex. olycksfall. Hjärnan producerar elektricitet, ett faktum som kauske inte är känt för alla, och EEG mäter spänningsvariationerna.



# Sweden 1961-1963

## CRONHOLM B, OTTOSSON JO.

### Therapeutic action, technique and memory



Experimental studies of the therapeutic action of electroconvulsive therapy in endogenous depression.  
The role of the electrical stimulation and of the seizure studied by variation of stimulus intensity and modification by lidocaine of seizure discharge.

Acta Psychiatr Scand Suppl. 1960;35(145):69-101.

"Countershock" in electroconvulsive therapy. Influence on retrograde amnesia.

Arch Gen Psychiatry. 1961 Mar;4:254-8.

Memory functions in endogenous depression before and after electroconvulsive therapy.

Arch Gen Psychiatry. 1961 Aug;5:193-9.

The experience of memory function after electroconvulsive therapy.

Br J Psychiatry. 1963 Mar;109:251-8.

Reliability and validity of a memory test battery.

Acta Psychiatr Scand. 1963;39:218-34.

Ultrabrief stimulus technique in electroconvulsive therapy. I. Influence on retrograde amnesia of treatments with the elther es electroshock apparatus, siemens konvulsator iii and of lidocaine-modified treatment.

J Nerv Ment Dis. 1963 Aug;137:117-23.

Ultrabrief stimulus technique in electroconvulsive therapy. II. Comparative studies of therapeutic effects and memory disturbances in treatment of endogenous depression with the elther es electroshock apparatus and siemens konvulsator iii.

J Nerv Ment Dis. 1963 Sep;137:268-76.

# 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.

Fig. 2. Total number of hospitalizations and of treatments 1971-75 in the whole material

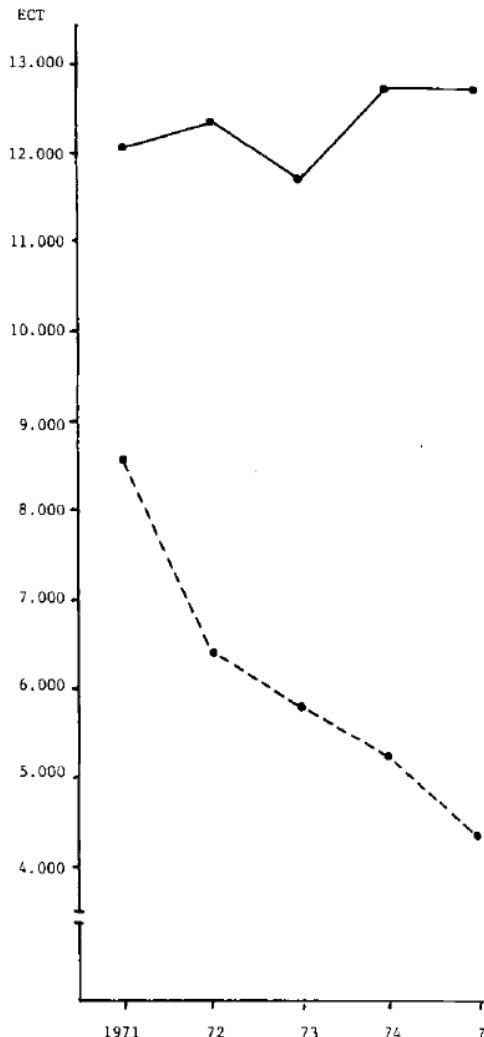
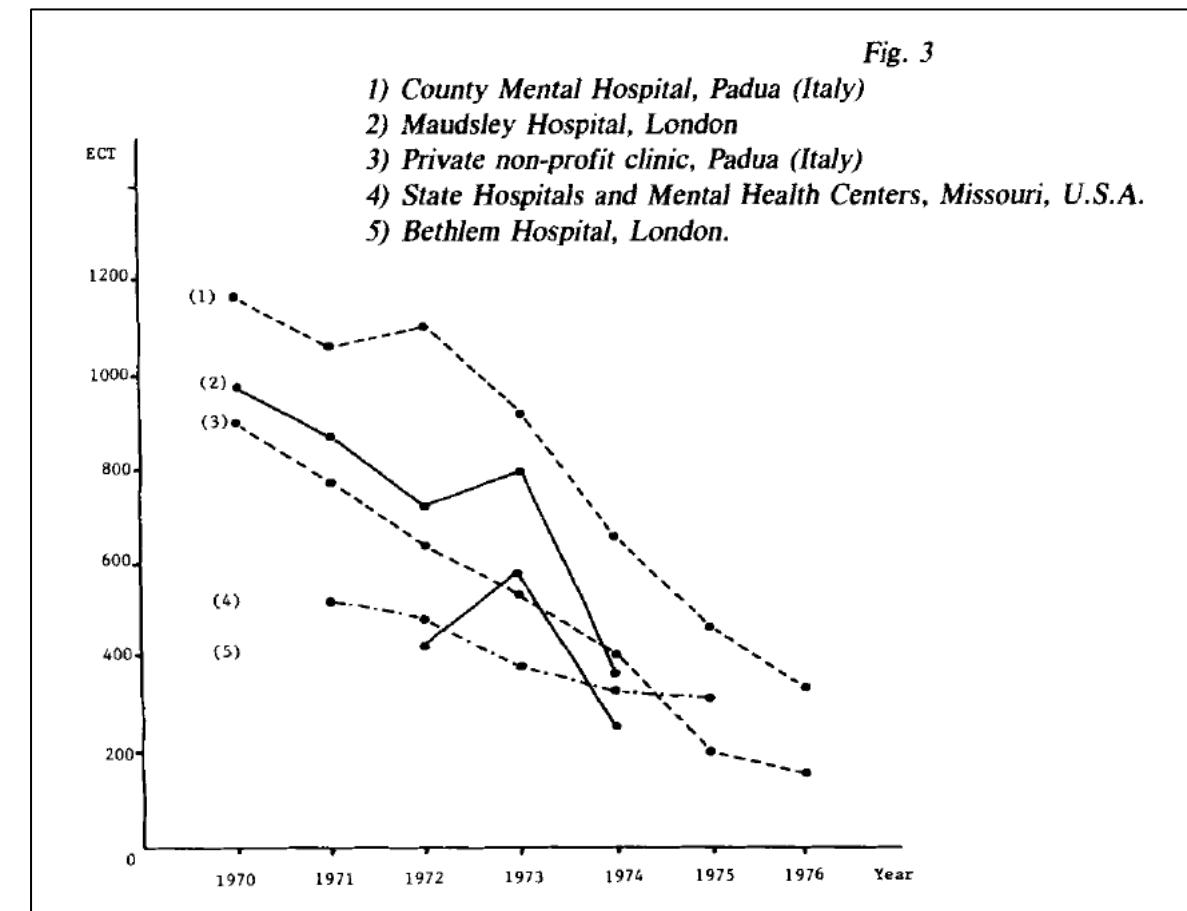


Fig. 3

- 1) County Mental Hospital, Padua (Italy)
- 2) Maudsley Hospital, London
- 3) Private non-profit clinic, Padua (Italy)
- 4) State Hospitals and Mental Health Centers, Missouri, U.S.A.
- 5) Bethlem Hospital, London.



# 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.

# The Swedish contribution to the field of knowledge in ECT continuous during 70's, 80's and 90's...

- Unilateral electrode placement- d'Elia placement
- Memory, efficacy and treatment techniques
- Enhancement techniques
- Pharmacological combinations
- Clinical surveys of the use as well as guidelines and ethics in ECT

Comparison of unilateral dominant and non-dominant ECT on verbal and non-verbal memory. d'Elia G, Lorentzson S, Raotma H, Widepalm K. Acta Psychiatr Scand. 1976

The antidepressant efficacy of high-dose nondominant long-distance parietotemporal and bitemporal electroconvulsive therapy. Lamy S, Bergsholm P, d'Elia G. Convuls Ther. 1994

Evaluation of the combination of tryptophan and ECT in the treatment of depression. I. Clinical analysis. D'Elia G, Lehmann J, Raotma H. Acta Psychiatr Scand. 1977

Benzodiazepines and effectiveness of ECT. D'Elia G. Br J Psychiatry. 1982

Electroconvulsive therapy in Sweden. Frederiksen SO, D'Elia G. Br J Psychiatry. 1979

Corticotropin, cortisol and beta-endorphin responses to the human corticotropin-releasing hormone during melancholia and after unilateral electroconvulsive therapy. Dored G, Stefansson S, d'Elia G, Kågedal B, Karlberg E, Ekman R. Acta Psychiatr Scand. 1990

Ethics of Electroconvulsive Therapy. Ottosson JO. Convuls Ther. 1992;8(4):233-236.

Use and misuse of electroconvulsive treatment. Ottosson JO. Biol Psychiatry. 1985

Evidence-based electroconvulsive therapy. Ottosson JO, Odeberg H. Acta Psychiatr Scand. 2012

In the first decade of the 21<sup>st</sup> century, focus turns to the search for the mechanism of action



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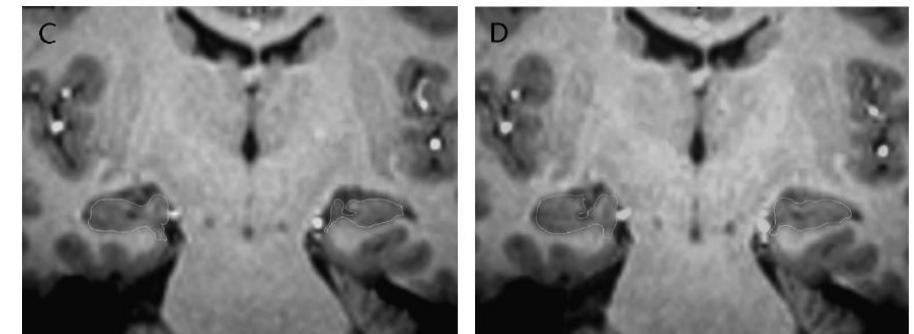
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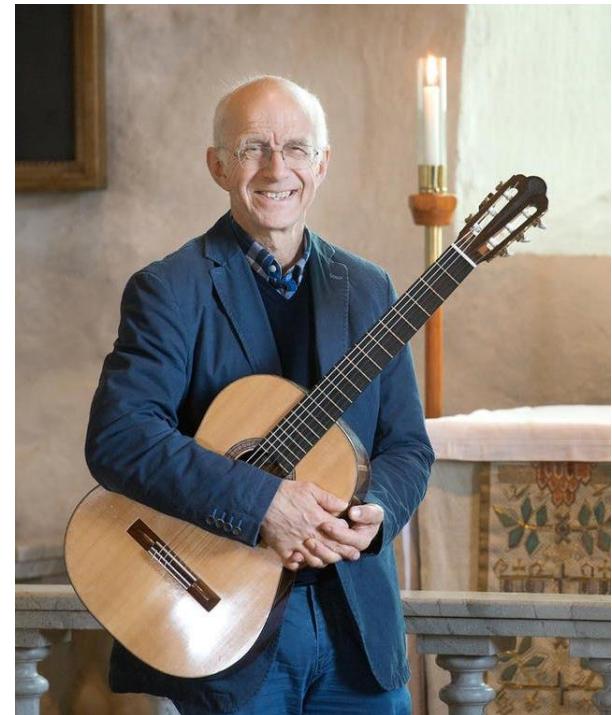
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# But the 21<sup>th</sup> also brought important clinical developmental aspects for the use of ECT in Sweden



Uppsala  
UNIVERSITY

Doctoral Dissertation

Electroconvulsive therapy for depression

AXEL NORDENSKJÖLD  
Medical Science

Oxford Studies in Medicine 83,  
December 2013

# And media still helps us keeping up the professional competence and "spirit"



**Swedish TV autumn 2009: “Patients receiving ECT risks permanent memory disturbances. This has been known by the doctors, but the patients have not been told.”**

*National clinical guidelines for ECT.*  
Swedish psychiatric association.  
2014



*Memory disturbances and ECT.*  
Report from National Board of Health.  
2016



*National guidelines related to guidance and management in the treatment of depression and anxiety.* National Board of Health. 2016



Detta visar data i registret

77 %

av alla som behandlades med ECT under 2016 blev symptomförbättrade vid behandlingens avslut.

[Se mer statistik >](#)

46 %

av alla patienter som behandlades med ECT för depression under 2016 blev symptomfria vid behandlingens avslut.  
[Se mer statistik >](#)

16 %

av alla patienter som behandlades med ECT under 2016 upplevde försämrat minne vid behandlingens avslut.  
[Se mer statistik >](#)

## Kvalitetsregister ECT Årsrapport 2016



<https://ect.registercentrum.se/>

## Kvalitetsregister ECT

Start > Forskning > Publikationer

### Publikationer

#### ORIGINALPUBLIKATIONER

Vetenskapliga publikationer

Rundgren S, Brus O, Bave U, Landén M, Lundberg J, Nordanskog P, Nordenskjöld, A. [Improvement of postpartum depression and psychosis after electroconvulsive therapy - a population-based study with a matched comparison group](#) J Affective Disorders. 2018 Apr 9.

Popolek K, Brus O, Elvin T, Landén M, Lundberg J, Nordanskog P, Nordenskjöld A. [Rehospitalization and suicide following electroconvulsive therapy for bipolar depression-A population-based register study](#) J Affective Disorders. 2018 Jan;226:146-154. Available online 2017 September 25.

Brus O, Cao Y, Gustafsson E, Hultén M, Landén M, Lundberg J, Nordanskog P, Nordenskjöld A. [Self-assessed remission rates after electroconvulsive therapy of depressive disorders](#) European Psychiatry 2017 Sept;45:156-160.

Holm J, Brus O, Båve U, Landén M, Lundberg J, Nordanskog P, von Knorring L, Nordenskjöld A. [Improvement of cycloid psychosis following electroconvulsive therapy](#). Nord J Psychiatry. 2017 Apr 3.

Brus O, Nordanskog P, Båve U, Cao Y, Hammar Å, Landén M, Lundberg J, Nordenskjöld A. [Subjective Memory Immediately Following Electroconvulsive Therapy](#). J ECT. 2017 Jun;33(2):96-103.

#### FORSKNING

Pågående forskning

Publikationer

Forska på registerdata

<https://ect.registercentrum.se/>

***Improvement of postpartum depression and psychosis after electroconvulsive therapy – a population based study with a matched comparison group***

Rundgren S, Brus O, Bave U, Landen M, Lundberg J, Nordanskog P, Nordenskjöld, A.. J Affective Disorders 2018

***Rehospitalization and suicide following electroconvulsive therapy for bipolar depression- A population-based register study.***

Holm J, Brus O, Båve U, Landen M, Lundberg J, Nordanskog P, von Knorring L, Nordenskjöld A. Nord J Psych. 2017

***Improvement of cycloid psychosis following electroconvulsive therapy.***

Popolek K, Brus O, Elvin T, Landén M, Lundberg J, Nordanskog P, Nordenskjöld A. J Affective Disorders 2018

***Continuation electroconvulsive therapy with pharmacotherapy versus pharmacotherapy alone for prevention of relapse of depression: a randomized controlled trial.*** Nordenskjöld A, von Knorring L, Ljung T, Carlborg A, Brus O, Engström I. J ECT 2013

***Predictors of regained occupational functioning after electroconvulsive therapy (ECT) in patients with major depressive disorder – a population based study.*** Nordenskjöld A, von Knorring L, Brus O, Engström I. Nord J Psychiatry 2013

***Self-assessed remission rates after electroconvulsive therapy of depressive disorders.*** Brus O, Cao Y, Gustafsson E, Hultén M, Landen M, Lundberg J, Nordanskog P, Nordenskjöld A. European Psychiatry 2017

***Subjective Memory Immediately Following Electroconvulsive Therapy.***

Brus O, Nordanskog P, Båve U, Cao Y, Hammar Å, Landén M, Lundberg J, Nordenskjöld A. J ECT 2017

***Electroconvulsive Therapy in Sweden 2013: Data From the National Quality Register for ECT.*** Nordanskog P, Hultén M, Landén M, Lundberg J, von Knorring L, Nordenskjöld A. J ECT. 2015

***Predictors of short-term responder rate of Electroconvulsive therapy in depressive disorders – a population based study.*** Nordenskjöld A, von Knorring L, Engström I. BMC Psychiatry 2012

***Predictors of time to relapse/recurrence after electroconvulsive therapy in patients with major depressive disorder: a population based study.*** Nordenskjöld A, von Knorring L, Engström I. Depress Res Treat. 2011

***Rehospitalization rate after continued electroconvulsive therapy – a retrospective chart review of patients with severe depression.*** Nordenskjöld A, von Knorring L, Engström I. Nord J Psychiatry. 2011

# Thank you!

