Maintenance ECT and Post ECT Relapse Prevention: Best Practice Guidelines

Clinical Practice Recommendations for Continuation and Maintenance Electroconvulsive Therapy for Depression

Outcomes From a Review of the Evidence and a Consensus Workshop Held in Australia in May 2017

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Based on a review of best available evidence, and expert consensus, at the Maintenance ECT Workshop with Prof. Charles Kellner at the RANZCP Congress, 2017

Maintenance ECT

Some definitions

- Step-down ECT is a protocol of gradually reducing frequency of ECT immediately following an index course of ECT – e.g. weekly, then fortnightly then monthly
- Continuation ECT is technically ECT given after an episode of depression to *prevent relapse of that same episode*. It usually lasts for up to 6/12
- Maintenance ECT is technically ongoing outpatient ECT given to prevent *recurrence of a new episode* of depression. It can last for years, maybe indefinitely.
- The cut-off between the two (at about 6/12) is arbitrary and the two terms are often used interchangeably, as both are used for post-ECT prophylaxis for depression

General Principles

- Some form of post-ECT prophylaxis against relapse of depression is required after every successful course of ECT. This should include antidepressant medication +/- lithium +/- maintenance ECT
- This should also include psycho-social interventions and psychotherapy as indicated. There is evidence that CBT, when added to medication +/- mECT, can reduce post-ECT relapse prevention
- These guidelines will be suitable for most clinical situations, but clinical judgment and assessment of each individual patient should always occur
- In all decisions with ECT, consultation with the patient and their carers is central to the decision and patient preference should always be taken into account

Post ECT Prophylaxis After First Course of ECT
(assuming ECT leads to remission, or at the least, response)

- The minimum is prescription of an antidepressant medication for ongoing relapse prevention, (+/- psychotherapy)
- Which antidepressant?
  - If there is one that has been most effective in the past for that patient, choose that one
  - Choose one that has been, or is likely to be, well tolerated, as the patient may need to take it for a long period
  - If they haven't been on any AD in the past (unlikely) choose venlafaxine (this has the best direct evidence of post-ECT prophylaxis outside of TCAs)
  - If no ADs have been effective, including venlafaxine, but haven't had a TCA, and it is safe to do so, and can be tolerated, choose nortriptyline (this has the best direct evidence for post-ECT prophylaxis of all TCAs)

Post ECT Prophylaxis After First Course of ECT
(assuming ECT leads to remission, or at the least, response)

When should you consider adding lithium augmentation to the antidepressant?

The evidence suggests lithium, as an augmenting agent combined with antidepressants, has a special role in post-ECT prophylaxis. Consider adding lithium if:

- The Hx suggests treatment refractory depression, e.g. There has been a history of frequent relapses on antidepressant monotherapy (including AD combinations) and lithium has not been tried before.
- The patient has a bipolar disorder.
- If there is a history suggesting bipolar spectrum (past hypomania, cyclothymia, frequent depressive swings as opposed to chronic depression, family history of BPAD, mixed affective features or "atypical" features such as hypersomnia, increased appetite, psychomotor agitation, restless energy etc.
- If there has been prominent suicidal ideation or risk during the depressive episode.
- If depression has improved after ECT but is not in remission at the end of course.
- Lithium is tolerated and the patient will comply with monitoring
- Note: Lithium is usually used in combination with an antidepressant. However, lithium monotherapy may be appropriate in specific circumstances, such as in bipolar patients with a history of mood switching from antidepressants.

Post ECT Prophylaxis After First Course of ECT
(assuming ECT leads to remission, or at the least, response)

- Provide medication prophylaxis for how long?
  - At least 12-24 months (limited evidence beyond this) but probably longer, esp. if:
    - The history is of chronic depression, or frequently relapsing episodes of depression
    - The history is of treatment refractory depression
    - The history is of relapse when medication was ceased in the past
    - The risks during the recent episode of depression were very high (such that safety would be an issue if depression did recur)
  - It may need to be indefinite prophylaxis

Post ECT Prophylaxis After First Course of ECT
(assuming ECT leads to remission, or at the least, response)

- Is there a role for maintenance ECT after the first index course?
  - For most people, mECT is not indicated after the first course of ECT: try medication as first line after first index course of ECT
  - However, one may consider mECT if:
    - past response to medication was poor (including trials of TCA, SNRI and lithium) and relapses on medication have been frequent
    - The response to ECT was particularly impressive, e.g. the patient has obtained full remission, not just response
    - The patient expresses a clear desire for mECT as an option
    - mECT is a safe option for this patient

Post ECT Prophylaxis After the Second or Subsequent Course of ECT

Pharmacotherapy, without mECT, may still the best option

- This can still be considered after a second episode of depression requiring ECT, if:
  - The interval between episodes was long (> 2 years)
  - There is an antidepressant known to work for that patient (i.e. the relapse was caused by non-adherence, rather than treatment resistance)
  - The patient had significant cognitive side effects to ECT (although one should consider strategies to reduce this, e.g. UB pulse width, RUL placement)
  - The patient is reluctant to consent to further ECT
  - The patient does not meet criteria for outpatient/day patient ECT (e.g. lives alone and can't be observed by a responsible adult)

When to consider adding Maintenance ECT to the relapse prevention strategy

- ILLNESS SUITABILITY FACTORS
  - A history of episodic, severe, recurrent major depressive episodes
  - When there has been a demonstrated relapse on maintenance pharmacotherapy, despite adherence, indicating a clinically significant degree of treatment resistance
  - Both bipolar and unipolar depressive disorders are suitable
  - Other illness indications, e.g. neuropsychiatric disorders, schizophrenia, may be suitable, although the evidence for mECT outside of depression is much more sparse
- ECT SUITABILITY FACTORS
  - Not routinely after the first ECT course. Usually after a second or subsequent successful course of Index ECT
  - When there has been a robust, demonstrated response to the most recent index course of ECT, especially if remission achieved
  - When the cognitive side effects to ECT were relatively well tolerated

When to consider adding Maintenance ECT to the relapse prevention strategy

- PATIENT SUITABILITY FACTORS
  - The patient expresses a preference for mECT and is willing to provide informed consent to maintenance ECT
  - The patient can be treated as an outpatient/day patient (most services)
    - Someone to drive them in and pick them up (they can't drive for 24 hours afterward)
    - There is a responsible adult to be with them for the rest of that day and overnight (a requirement for all Day Patient anaesthesia)
  - The patient will be regularly monitored by a treating psychiatrist
  - The patient is medically well enough to receive ongoing ECT and anaesthesia for ECT
  - Age per se is not a barrier to mECT. However, for patients with limited cognitive reserves, such as early or comorbid dementia, caution should be exercised and cognition monitored closely if mECT is to be provided

When is Maintenance ECT less suitable as a maintenance option?

- The ongoing depressive symptoms are more of a chronic, persistent dysthymic type than an episodic recurrent major depression
- There has been a poor or limited response to index ECT
- There are significant medical comorbidities that make further regular ECT relatively unsafe
- The patient does not have a treating psychiatrist to regularly monitor them
- Cognitive side effect burden is unacceptably high, or there are other tolerability problems with ECT
- If there are prominent comorbidities such as personality, substance use etc. that are the significant perpetuating factors underlying the treatment resistance
- There are difficulties providing ECT as an outpatient e.g. lives alone, remotely etc.

Best Practice Maintenance ECT protocol

CONCLUDING THE INDEX ECT COURSE

- The index course should conclude when the patient achieves remission, or when response plateaus, or if the patient withdraws consent
- Ideally, courses of ECT should be concluded with a form of tapering off the ECT frequency e.g.
  - If the index course was 3x/week, give 2 ECT in the second-last week and 1 - 2 further ECT sessions, a week apart. There may be an option to give these as an outpatient, after discharge
  - This can then be followed by either maintenance ECT or a medication-only relapse prevention strategy (or both)
  - However, local service and resourcing issues (e.g. LOS considerations, and patient preference) may necessitate a more abrupt cessation

Best Practice Maintenance ECT protocol

OUTPATIENT VS INPATIENT MAINTENANCE ECT

- In most circumstances, mECT should be given as an *outpatient* or *day patient* procedure
  - This is usually more cost effective than an inpatient/overnight stay
  - This is more feasible in services where there is pressure on limited inpatient beds
  - This is less disruptive for consumers
  - It is also possible to give part, or even all, of an index course as an out/day patient, provided adequate monitoring and supervision is available
  - If ECT is delivered to out/day patients, the service needs to have an appropriately private waiting area for outpatients prior to ECT and also a private area for recovery following ECT
- However, there may be situations where a service may need to provide an overnight admission to patients receiving mECT e.g.
  - If the patient lives in a remote area and has no alternative accommodation available near the hospital and would not be able to receive mECT without an overnight admission
  - Due to medical comorbidities, there is a need for close medical monitoring after ECT
  - If they are not suitable for a day patient anaesthetic (e.g. lives alone)

Best Practice Maintenance ECT protocol

MAINTENANCE ECT COMBINED WITH MEDICATION

- In most cases, mECT should be given in combination with an antidepressant/medication strategy (as this has the best evidence)
  - See the slide about choosing a medication. A well-tolerated antidepressant with proven effectiveness in that patient should be used, with lithium augmentation added if there is a history of treatment resistance or frequent relapses on medication only
  - Lithium can increase confusion with ECT, but this is mostly in index courses 3x weekly, not mECT courses delivered less frequently. If using mECT + lithium together, monitor cognition closely. Maybe hold lithium for 24/24 prior to ECT, or at least halve the dose. Also, ensure adequate hydration during ECT, possible with IV fluids if available
  - Monotherapy with Maintenance ECT can be considered if:
    - Tolerance to medication was poor, or;
    - Medication has had minimal efficacy in that patient, and;
    - There has been a strongly positive response to ECT, and;
    - The patient expresses a preference for monotherapy

Best Practice Maintenance ECT protocol

ELECTRODE PLACEMENT AND STIMULUS DOSE

- In most cases, use the same placement (RUL, BF, BL) and pulse width (UB, 0.5, 1.0) that worked with index course.
  - However, if the patient has not achieved full remission with the index course, this may be a reason to use a potentially more powerful form of ECT (e.g. bilateral instead of unilateral , 1 msec pulse width instead of ultrabrief) for maintenance, as cognitive side effects will be less with mECT performed less frequently than for an index course
  - On the other hand, if the patient has experienced significant cognitive side effects in the index course, it may be reasonable to use a relatively cognitively sparing form of ECT, such as ultrabrief instead of 1 msec PW, unilateral instead of bilateral
- Start with the same dose that was used for last treatment of index course
  - However, be prepared to re-titrate the threshold after 2-3 months, and adjust dose accordingly, as the threshold may go down with the less frequent mECT

Best Practice Maintenance ECT protocol

FREQUENCY OF MAINTENANCE ECT SESSIONS

- After a taper from the index course, if used, usually step-down further to fortnightly. From here, there is choice to do mECT in either of the following ways:
  - at a fixed frequency (e.g. monthly),
  - Using gradually increasing intervals (e.g. to 3 weekly to monthly to 2 monthly to even 3 monthly). This may be done over a period of 6-12 months
  - providing rescue ECT treatments based on early signs of relapse, rather than at a pre-determined frequency
- It is preferable to use a gradually decreasing frequency rather than a fixed frequency when commencing mECT for the 1st time, so as to find the lowest frequency at which the patient can remain well. However, for a patient who has been on mECT for some time, a fixed frequency may be used if experience has shown this to be optimum for that patient
- After a taper period, using rescue ECT sessions based on monitoring of depression symptoms, and providing ECT sessions only if/when there are early signs of relapse, is an evidence based option. However, in a clinical service this may be less practicable/feasible

Best Practice Maintenance ECT protocol

CLINICALLY INDICATED FREQUENCY VARIANCE AND END OF COURSE DECISIONS

- Whatever frequency protocol is used, there should always be the capacity to adjust this frequency of mECT based on clinical progress. At early signs of relapse or partial relapse, one should consider increasing the frequency of mECT, or provide rescue ECT sessions
- An attempt should be made to attempt to space intervals out further if the patient remains well for a sustained period of time
- Also, periodically, if the patient has maintained remission for a relatively long duration (for that patient), an attempt should be made to withdraw the mECT, and monitor progress closely, reinstituting mECT at early signs of relapse if necessary
- If the mECT fails to prevent relapse any better than pharmacotherapy monotherapy had, then it should be considered a failed relapse prevention strategy and ceased
- Some patients may not be able to remain well with intervals beyond monthly mECT. Some may not get beyond fortnightly
- M-ECT may be required indefinitely in some people. The evidence supports the consensus that there are no adverse cumulative cognitive side effects to ECT given to a person over their lifetime

Best Practice Maintenance ECT protocol

NEED FOR REGULAR REVIEW BY A TREATING PSYCHIATRIST

- This should be as often as clinically indicated, but no less often than every 3 months (i.e. the duration of each consent).
- Ideally, review would occur before every mECT session. However, this might not be possible in some services (e.g. if the mECT is fortnightly). However, the treating psychiatrist must be prepared to review the patient if the ECT service requests they do so.
- The treating psychiatrist should provide regular reports to, and liaison with, the ECT service (via the ECT director or coordinator) about clinical progress
- The treating psychiatrist should make decisions about mECT frequency based on ongoing assessment of clinical progress, in consultation with the ECT psychiatrist if the treating psychiatrist seeks advice or a second opinion
- Any requests for changes in prescription (e.g. mECT frequency, change in placement, dose or PW etc.) should be communicated in writing (e.g. email) to the ECT service
- The treating psychiatrist is responsible for renewing informed consent.

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MONITORING OF CLINICAL PROGRESS

- The treating psychiatrist is responsible for monitoring progress, including cognitive side effects. This includes standard clinical care and monitoring, but may involve rating scales. Suggested monitoring includes:
  - Clinical assessment of depression. Rating a CGI is an option at each review.
  - Use of a depression scale (MADRS or HAM-D) can be useful, especially at signs of early relapse. In any case, a formal rating once every 6 or 12 months is prudent
  - A quality of life scale (e.g. Q-LES-SF) can also be useful to document maintenance of improved function with mECT, e.g. once every 6 or 12 months
  - A cognitive screen (e.g. MOCA), can also be useful, again every 6 or 12 months, but more frequently if side effects emerge (or the patient is on lithium)
  - Autobiographical memory scales are available. The CAMI (SF) takes about 20-30 mins and you need to do a pre-ECT baseline. Alternatively, enquire about retrograde and autobiographical memories regularly, and document subjective description of memory.
    - Subjective AM scales can be useful, as they don't need a baseline and if patients experience subjective AM deficits, it can influence whether or not they refuse consent to ECT later on

Best Practice Maintenance ECT protocol

OTHER CONSIDERATIONS

- Some services use a separate day for mECT (e.g. Tuesday/Thursday, or Wednesday if index courses are given 2x/week). Availability of resources, such as access to anaesthetists, will influence this
- A good ECT nurse/coordinator is invaluable. They can liaise between treating psychiatrist and ECT psychiatrist, and ensure appropriate monitoring is done and consents up to date.
- Anaesthetic review
  - It may be appropriate to regularly schedule a review by an anaesthetist, e.g. every 6 – 12 months
- It may be appropriate to schedule a formal review of the patient's progress and ongoing need for mECT every 1–2 years, comprising a review/assessment/2nd opinion by an ECT credentialed psychiatrist (different to the treating psychiatrist),
- A GP should monitor ongoing physical health. Blood tests and ECG should be checked every few months. CT head scan, CXR etc. should be repeated if there are specific indications, and maybe every few years as a routine.
- Involvement of family and carers should occur with the treating psychiatrist and ECT service. The patient and their family need to know about the need for a responsible adult to be present, and a prohibition from driving, for 24 hours after mECT.

The Prescribed Psychiatric Treatment Panel

- Formulated under the MHA to review certain cases of ECT
  - Comprises 4 psychiatrists (3 ECT psychiatrists + CP), consumer member, carer member, ethicist, lawyer
- Triggers:
  - 3 or more ECT consents in 12 months
  - 2 or more emergency consents in 12 months
- The 1st trigger captures maintenance ECT (which need 4 consents per year)
- If you are requested to provide a report for mECT patient:
  - Complete the proforma report form
  - Asks for details of what type of ECT has been provided
  - Summarise acute ECT courses and reasons for mECT
  - Focus on clinical progress with mECT – efficacy and side effects
  - Always include psychosocial information and carer/consumer perspectives (the community members on the Panel in particular look for this)
  - Use recovery-oriented language (important for consumer and carer representatives)
  - No need to include copies of rating scales, ECT records, consent forms, GP letters
- The PPTP is not critical or punitive. No need to fear a request. So far, no case of inappropriate mECT detected!

Some AM rating scales

Columbia Autobiographical Memory Interview (short form)

Part 1: Family member

You will begin this section by asking the subject to name a relative about whom five questions will be asked. If several relatives are mentioned, ask regarding the relative with whom the subject has the most <u>frequent</u> contact. If the subject has no relative, ask regarding his/her closest friend.

NOTE: At POST and 1/12 FU, if the name recalled is different than the name given at pre-ECT, remind the subject of the original name and relation and proceed with questions 1-5.

I am going to ask you some questions about a family member:

1. *What is the first and last name of the relative who is the most important to you but who does not live with you?*
2. *What is his/her relation to you?*
3. *What is the month and day of his/her birthday?*
4. *What was his/her age when you entered hospital?*
5. *What was his/her complete address when you entered hospital? NB: Record number, street & appt, city, state, post-code*
6. *What was his/her phone number with area code when you entered hospital?*
7. *List the full names of the people who were living with your relative when you entered hospital*

	Answer at Pre-ECT	Pre-ECT Response	Score	Post ECT Response	Score	1/12 FU Response	Score
1. Name provided							
2. Relationship							
3. Date of birth							
4. Age							
5. Address							
6. Phone number							
7. House mates							
		Pre-ECT Total Score		Post ECT Total Score		1 Mo F/U Total Score	

Some AM rating scales

Columbia Autobiographical Memory Interview (short form)

Part 2: Travel

You will begin this section by asking the subject to recall the LAST major trip that he/she took before commencing this course of ECT. If the subject has never travelled farther than 100km, ask regarding the most recent overnight trip away from home.

NOTE: At POST and 1/12 FU, if the trip recalled is different than the trip given at pre-ECT, remind the subject of the original trip and date and proceed with questions 1-5.

I am going to ask you some questions about the last major trip you took before entering hospital/commenced last ECT course?:

1. *Where did you go on your last overnight trip of 100km or more away from home?*
2. *In what month and year did you take this trip?*
3. *Counting the days you spent travelling, how many days were you away?*
4. *What is the full name of the hotel, or person with whom you stayed, during the majority of the trip?*
5. *List the full names of the people who went with you on this trip*
6. *What was the main reason for taking the trip?*
7. *What did you most enjoy about the trip?*

	Answer at Pre-ECT	Pre-ECT Response	Score	Post ECT Response	Score	1/12 FU Response	Score
8. Destination							
9. Month & Year of trip							
10. Days							
11. Name of hotel/person							
12. Names of people							
13. Main reason							
14. Most enjoy							
		Pre-ECT Total Score		Post ECT Total Score		1 Mo F/U Total Score	

Some AM rating scales

Columbia Autobiographical Memory Interview (short form)

Part 3: New Year's Eve

NOTE: At POST and 1/12 FU, if the year recalled is different than the year given at baseline, remind the subject of the original year, and proceed with questions 1-5.

I am going to ask you some questions about last New Year's Eve:

1. *What is the year of the last New Years Eve before you entered hospital/commenced last ECT course? NB: If different, remind subject of original year given at pre-ECT*
2. *List the full names of the people you were with that evening*
3. *Where did you eat dinner that evening?*
4. *Where did you go that night?*
5. *What did you do there?*
6. *What did you do at midnight?*

	Answer at Pre-ECT	Pre-ECT Response	Score	Post ECT Response	Score	1/12 FU Response	Score
14. Year							
15. Names of persons with							
16. Dinner							
17. Where go?							
18. Do there?							
14. Midnight?							
		Pre-ECT Total Score		Post ECT Total Score		1 Mo F/U Total Score	

Some AM rating scales

Columbia Autobiographical Memory Interview (short form)

Part 4: Birthday

NOTE: At POST and 1/12 FU, if the age recalled is different than the age given at pre-ECT, remind the subject of the original age, and proceed with questions 1-5.

I am going to ask you some questions about your birthday:

1. *What is the date of your birth?*
2. *What age did you turn on your last birthday before you entered hospital/commenced last ECT course?*
3. *List the full names of the people who helped you celebrate on your last birthday*
4. *Where did you celebrate your birthday?*
5. *What did you do there?*
6. *From whom did you receive gifts?*
7. *What did you receive?*

	Answer at Pre-ECT	Pre-ECT Response	Score	Post ECT Response	Score	1/12 FU Response	Score
19. Birth date							
20. Age							
21. Names of persons							
22. Where?							
23. What do?							
24. From whom receive gifts?							
25. Gifts received							
		Pre-ECT Total Score		Post ECT Total Score		1 Mo F/U Total Score	

Some AM rating scales

Columbia Autobiographical Memory Interview (short form)

Part 5: Employment

You will begin this section by asking the subject to recall the LAST job that he/she held before commencing this course of ECT. If the subject has never been formally employed, ask about volunteer work or the job of his/her spouse. If the subject is self-employed, ask him/her to recall the last job held before becoming self-employed.

NOTE: At POST and 1/12 FU, if the job recalled is different than the job given at pre-ECT, remind the subject of the original job, and proceed with questions 1-5.

I am going to ask you some questions about your most recent employment before you entered hospital/commenced last ECT course:

1. *What was the name of the company or organisation with which you were affiliated?*
2. *In what month and year did you last work for this employer?*
3. *What was your job title at this job?*
4. *What was the first and last name of your supervisor?*
5. *What was the complete address of the building where you worked? NB: Record number and street, city, state, post-code*
6. *What was your phone number with area code at this job?*
7. *In what month and year did you first start working for this employer?*

	Answer at Pre-ECT	Pre-ECT Response	Score	Post ECT Response	Score	1/12 FU Response	Score
25. Company							
26. Month & year							
27. Job title							
28. Supervisor's name							
29. Address?							
30. Phone #?							
25. Month & year							
		Pre-ECT Total Score		Post ECT Total Score		1 Mo F/U Total Score	

Some AM rating scales

Columbia Autobiographical Memory Interview (short form)

Part 6: Physical

You will begin this section by asking the subject to recall the MOST RECENT physical illness for which he/she consulted a Doctor, before commencing this course of ECT. If the subject's most recent doctor's visit was for a check-up, ask him/her to recall the most recent visit that involved a physical complaint.

NOTE: At POST and 1/12 FU, if the illness recalled is different than the job given at pre-ECT, remind the subject of the original illness, and proceed with questions 1-5.

I am going to ask you some questions about the last time you consulted a Doctor about a physical complaint or illness before you entered hospital/commenced last ECT course:

1. *What did you go to see a Dr about/ what were your complaints?*
2. *In what month and year did you the consultation take place?*
3. *What was the first and last name of the Dr you saw at this appointment?*
4. *What was the name and address of the building or hospital where you saw this Dr? NB: Record name of building/hospital, number, street, city, state, post code.*
5. *On what floor of this building or hospital was your appointment?*
6. *What treatments or medications were prescribed for you?*
7. *In what month and year did you first notice your symptoms?*

	Answer at baseline	Baseline Response	Score	Post ECT Response	Score	1/12 FU Response	Score
31. Complaint							
32. Month & year							
33. Dr's name							
34. Dr's address							
35. Floor							
36. Treatments or meds							
25. Month & year							
		Pre-ECT Total Score		Post ECT Total Score		1 Mo F/U Total Score	

Some AM rating scales

Kopelman Autobiographical Memory Interview

BRIEF AUTOBIOGRAPHICAL MEMORY SCALE FOR ECT

Adapted from Kopelman MD, Wilson BA, Baddeley AD. The autobiographical memory interview: a new assessment of autobiographical and personal semantic memory in amnesic patients. J Clin Exp Neuropsychol 1989; 11: 724±44.

Patient's Name: _____

UR No _____

Patient's age and DOB: _____

At baseline testing pre-ECT ask all of the questions from each category. Record the answers for those questions that have been successfully and confidently answered and place a tick in the column for these questions. The number of ticks is the baseline score. When retesting, only ask the questions confidently answered at baseline and record if the patient answers them with the same or similar answer (with a tick) or not (with a cross). The total score at retest is thus relative to the score at baseline. The absolute baseline score is not relevant – it is the change from baseline at retest that counts. The lower the score, the greater the autobiographical memory impairment.	Baseline (pre-ECT)						
CHILDHOOD	Date	Date	Date	Date	Date	Date	Date
What city or town did you grow up in? If the answer is Adelaide, ask which suburb, and record that as the answer?							
What was the address of the house you spent most time growing up in?							
What was the name of the High School you attended? If this cannot be answered, ask for the name of the Primary school attended.							
When you were a child, what was the name of your favourite aunt, uncle, or grandparent?							
Where did you go for your most memorable holiday when you were a child?							
How old were you when you went there?							
What was the most famous and memorable event from the news that you can recall from your childhood?							
How old were you when this happened?							
ADULTHOOD (except last 12 months)							
What age were you when you first got married? If never married, what was the name of the boyfriend or girlfriend with whom you had the longest relationship?							
Where did you go on your honeymoon? If never married, how did you spend the last holiday that was more than 1 year ago?							
What was your first paid job?							
For how many weeks, months or years did you work in that job?							
How old were you when your first child was born? If no children, what age were you when you first moved out of home?							
In what suburb did you live after you first got married? If never married, in what suburb did you live when you first moved out of home?							
For how many years did you live in that house?							
LAST 12 MONTHS up to the PRESENT							
How did you spend last Christmas Day?							
How did you spend the weekend before you came into hospital?							
What is the make of the car you currently drive?							
What is the name of one of your neighbours?							
What did you do to celebrate your husband/wife/child's last birthday?							
What was the name of the best film you saw in the last year? If no films seen, your favourite TV program over the last year?							
TOTAL							
Name of person completing the test on each occasion:							

Some AM rating scales

Squire Subjective Memory Questionnaire

Squire Subjective Memory Questionnaire

For each item please tick the appropriate box.

1. **Compared to before I began to feel bad and came to hospital, my ability to recall things that happened during my childhood is…**

Worse than before — Same as before — Better than before

- 4	- 3	- 2	- 1	0	+ 1	+ 2	+ 3	+ 4
☐	☐	☐	☐	☐	☐	☐	☐	☐

2. **Compared to before I began to feel bad and came to hospital, my ability to search through my mind and recall names or memories I know are there is…**

Worse than before — Same as before — Better than before

- 4	- 3	- 2	- 1	0	+ 1	+ 2	+ 3	+ 4
☐	☐	☐	☐	☐	☐	☐	☐	☐

3. **Compared to before I began to feel bad and came to hospital, my ability to recall things that happened a few months ago is…**

Worse than before — Same as before — Better than before

- 4	- 3	- 2	- 1	0	+ 1	+ 2	+ 3	+ 4
☐	☐	☐	☐	☐	☐	☐	☐	☐

4. **Compared to before I began to feel bad and came to hospital, the tendency for a past memory to be "on the tip of my tongue," but not available to me is…**

Worse than before — Same as before — Better than before

- 4	- 3	- 2	- 1	0	+ 1	+ 2	+ 3	+ 4
☐	☐	☐	☐	☐	☐	☐	☐	☐

5. **Compared to before I began to feel bad and came to hospital, my ability to remember things that have happened more than a year ago is…**

Worse than before — Same as before — Better than before

- 4	- 3	- 2	- 1	0	+ 1	+ 2	+ 3	+ 4
☐	☐	☐	☐	☐	☐	☐	☐	☐

SCORING

Add up all of the scores indicated by the patient

FINAL SCORE = _____

–20 to –17	severe impairment in memory
–16 to –13	marked impairment in memory
–12 to –9	moderate impairment in memory
–8 to –5	mild impairment in memory
–4 to +4	minimal to no change in memory
+5 to +10	mild improvement in memory
+11 to +15	moderate improvement in memory
+16 to +20	marked improvement in memory

Reference

Squire LR, Wetzel CD, Slater PC. Memory complaints after electroconvulsive therapy: assessment with a new self-rating instrument. *Biol Psychiatry* 1979; 4: 791–801

Some AM rating scales

Palombo Subjective Autobiographical Memory Questionnaire

Subjective Autobiographical Memory Scale (SAM) – 10 Item version

Palombo D et al (2012) The survey of autobiographical memory (SAM): A novel measure of trait mnemonics in everyday life. Cortex (2012), http://dx.doi.org/10.1016/j.cortex.2012.06.023

Please indicate the strength of your agreement with each of the following statements by circling the most appropriate response.

Name_____

_____

Date:_____

1. Specific events are difficult for me to recall

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE SOMEWHAT	NEITHER AGREE NOR DISAGREE	AGREE SOMEWHAT	STRONGLY AGREE

2. When I remember events, in general I can recall objects that were in the environment

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE SOMEWHAT	NEITHER AGREE NOR DISAGREE	AGREE SOMEWHAT	STRONGLY AGREE

3. When I remember events, I remember a lot of details

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE SOMEWHAT	NEITHER AGREE NOR DISAGREE	AGREE SOMEWHAT	STRONGLY AGREE

4. I can easily remember the names of famous people (sports figures, politicians, celebrities)

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE SOMEWHAT	NEITHER AGREE NOR DISAGREE	AGREE SOMEWHAT	STRONGLY AGREE

5. I am very good at remembering information about people that I know (e.g., the names of a co-worker's children, their personalities, places friends have visited etc.)

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE SOMEWHAT	NEITHER AGREE NOR DISAGREE	AGREE SOMEWHAT	STRONGLY AGREE

6. In general, my ability to navigate is better than most of my family/friends

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE SOMEWHAT	NEITHER AGREE NOR DISAGREE	AGREE SOMEWHAT	STRONGLY AGREE

7. After I have visited an area, it is easy for me to find my way around the second time I visit

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE SOMEWHAT	NEITHER AGREE NOR DISAGREE	AGREE SOMEWHAT	STRONGLY AGREE

8. I get lost easily, even in familiar areas

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE SOMEWHAT	NEITHER AGREE NOR DISAGREE	AGREE SOMEWHAT	STRONGLY AGREE

9. When I imagine an event in the future, the event generates vivid mental images that are specific in time and place

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE SOMEWHAT	NEITHER AGREE NOR DISAGREE	AGREE SOMEWHAT	STRONGLY AGREE

10. When I imagine an event in the future, I can picture images (e.g., people, objects, etc.)

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE SOMEWHAT	NEITHER AGREE NOR DISAGREE	AGREE SOMEWHAT	STRONGLY AGREE

Subjective Autobiographical Memory Scale (SAM) – 10 Item version

SCORING

					SCORE
Question 1 (reverse scoring)	1 = 12	2 = 9	3 = 6	4 = 3	5 = 0	☐
Question 2	1 = 0	2 = 3	3 = 6	4 = 9	5 = 12	☐
Question 3	1 = 0	2 = 3	3 = 6	4 = 9	5 = 12	☐
Question 4	1 = 0	2 = 3	3 = 6	4 = 9	5 = 12	☐
Question 5	1 = 0	2 = 3	3 = 6	4 = 9	5 = 12	☐
Question 6	1 = 0	2 = 2	3 = 4	4 = 6	5 = 8	☐
Question 7	1 = 0	2 = 2	3 = 4	4 = 6	5 = 8	☐
Question 8 (reverse scoring)	1 = 8	2 = 6	3 = 4	4 = 2	5 = 0	☐
Question 9	1 = 0	2 = 2	3 = 4	4 = 6	5 = 8	☐
Question 10	1 = 0	2 = 2	3 = 4	4 = 6	5 = 8	☐

TOTAL SCORE (out of 100) ☐

Some AM rating scales

Tiller Subjective Assessment of Memory Impairment

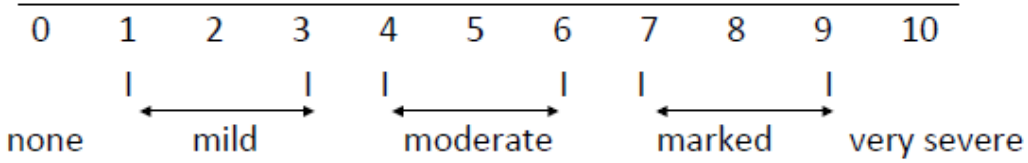
Rated by the consumer

Subject Assessment of Memory Impairment (SAMI)

Please complete both items

MEMORY PROBLEMS ITEM

Circle one number that best describes your memory problems.



IMPACT OF COGNITIVE ADVERSE EVENTS ITEM

Circle one number between **0** and **5**

5 = Symptoms radically change or prevent normal work or social activities

4 = Symptoms markedly interfere with normal work or social activities

3 = Symptoms interfere with normal work or social activities to a moderate degree

2 = Symptoms interfere with normal work or social activities in minor ways

1 = Symptoms mild, but not interfering with normal work or social activities

0 = No complaints, normal activity

SCORING

Memory Problems Item

Score the number circled by the consumer _____

Impact of Cognitive Events Item

Multiply the score circled by the consumer by **2** _____

TOTAL SCORE (add both items together) _____

Score of 0 – 2 = minimal to no cognitive impairment

Score of 3 – 7 = mild cognitive impairment

Score of 8 – 12 = moderate cognitive impairment

Score of 13 – 17 = marked cognitive impairment

Score of 18 – 20 = severe cognitive impairment

Selected articles on mECT (including those used in this review)

Prof. Kellner's Studies on Maintenance ECT

1. Kellner et al, "*Continuation Electroconvulsive Therapy vs Pharmacotherapy for Relapse Prevention in Major Depression*" Arch Gen Psychiatry (2006) 63: 1337-1344

2. Kellner et al, *"Right Unilateral Ultrabrief Pulse ECT in Geriatric Depression: Phase 1 of the PRIDE Study"* Am J Psychiatry (2016) 173: 1101-1109

3. Kellner et al, *"A Novel Strategy for Continuation ECT in Geriatric Depression: Phase 2 of the PRIDE Study"* Am J Psychiatry (2016) 173: 1101-1109

Selected articles on mECT (including those used in this review)

Systematic Reviews and Meta-analyses

4. Petrides, Tobias, Kellner, Rudorfer, *"Continuation and Maintenance Electroconvulsive Therapy for Mood Disorders: Review of the Literature"*, Neuropsychobiology (2011) 64: 129-140

5. Jelovac, Kolshus, McLoughlin, *"Relapse Following Successful Electroconvulsive Therapy for Major Depression: A Meta-Analaysis"*, Neuropsychopharmacology (2013) 38: 2467-2474

6. Brown, Lee, Scott, Cummings *"Efficacy of Continuation/Maintenance Electroconvulsive Therapy for the Prevention of Recurrence of a Major Depressive Episode in Adults With Unipolar Depression: A Systematic Review"* JECT (2014) 30: 195-202

7. Rasmussen *"Lithium for Post-Electroconvulsive Therapy Depressive Relapse Prevention: A Consideration of the Evidence"* JECT (2015) 31: 87-90

Selected articles on mECT (including those used in this review)

Original Studies on Maintenance ECT

8. Shelef et al, *"Acute Electroconvulsive Therapy Followed by Maintenance Electroconvulsive Therapy Decreases Hospital Re-Admission Rates of Older Patients With Severe Mental Illness"*, JECT (2015) 31: 125-128

9. Pina et al, *"Maintenance Electroconvulsive Therapy in Severe Bipolar Disorder: A Retrospective Chart Review:* JECT (2016) 32; 23-28

10. Sutor et al: "*Clinical Challenges in Maintenance Electroconvulsive Therapy for Older Patients With Medical Comorbidity" A Case Series"* JECT (2016) 67-69

11. Mota et al, "*Mirror-Image Study of Maintenance Electroconvulsive Therapy"* JECT (2016) 32: 119-121

Selected articles on mECT (including those used in this review)

Original Studies on pharmacotherapy (+/- mECT) for post-ECT relapse prevention

12. Sackeim et al. *"Continuation pharmacotherapy in the prevention of relapse following electroconvulsive therapy: A randomized trial"* JAMA. (2001) 285:1299–1307

13. Prudic J, Haskett RF, McCall WV, et al. "*Pharmacological strategies in the prevention of relapse after electroconvulsive therapy"* J ECT. 2013;29:3–12

14. Nordenskjold A, von Knorring L, Ljung T, et al. *"Continuation electroconvulsive therapy with pharmacotherapy versus pharmacotherapy alone for prevention of relapse of depression"* J ECT (2013) 29:86–92

15. Aitku et al: *"Improving Relapse Prevention After Successful Electroconvulsive Therapy For Patients With Severe Depression: Completed Audit Cycle Involving 102 Full Electroconvulsive Therapy Courses in West Sussex, United Kingdom"* JECT (2015) 31: 34-36

Selected articles on mECT (including those used in this review)

Original Studies on psychotherapy for post-ECT relapse prevention and on cumulative cognitive side effects in ECT

16. Fenton et al, *"Can Cognitive Behavioural Therapy Reduce Relapse Rates of Depression After ECT? A Preliminary Study"* JECT (2006), 22: 196-198

17. Brakemeier et al, *"Cognitive-Behavioural Therapy as Continuation Treatment to Sustain Response After Electroconvulsive Therapy in Depression: A Randomized Controlled Trial"*, Biol Psychiatry (2014) 76: 194-202

18. Wilkinson et al. "*Computer-Assisted Cognitive Behaviour Therapy to Prevent Relapse Following Electroconvulsive Therapy" JECT (2017) 33: 52-57*

19. Kirov et al: *"Evaluation of cumulative cognitive deficits from electroconvulsive therapy"* Br J Psychiatry (2016) 208: 266-270