

# Treatment Guideline for the Use of ECT

Electroconvulsive Therapy has been in continuous use for more than 60 years. The clinical literature establishing its efficacy in specific disorders is among the most substantial for any medical procedure. The decision to recommend the use ECT derives from a risk/benefit analysis for the specific patient. This analysis considers the diagnosis of the patient and the severity of the presenting illness, the patient's treatment history, the anticipated speed of action and efficacy of ECT, the medical risks and anticipated adverse side effects. These factors should be considered against the likely speed of action, efficacy, and medical risks of alternative treatments in making a determination to use ECT. These Guidelines are taken from the APA Guidelines published in November 2000, which should be reviewed for further details.

## Indications for Use

Primary Use: ECT is a major treatment in psychiatry with well-defined indications. It should not be reserved for use only as a "last resort". The likely speed and efficacy of ECT are factors that influence its use as a primary intervention. Particularly in major depression and acute mania, substantial clinical improvement often occurs soon after the start of ECT. When a rapid or a higher probability of response is needed, as when patients are severely medically ill or at risk to harm themselves or others, primary use of ECT should be considered. Other considerations for the first-line use of ECT involve the patient's medical status, treatment history, and treatment preference.

Secondary Use: The most common use of ECT is with patients who have not responded to other treatments. During the course of pharmacotherapy, lack of clinical response, intolerance of side effects, deterioration in the psychiatric condition, or the appearance of suicidality are reasons to consider the use of ECT.

## Major Diagnostic Considerations

Major Depression  
Mania  
Schizophrenia and Related Psychotic Disorders

ECT is usually considered for psychotic patients who have not responded to trials of medications. The best response to ECT in this population is noted when the duration of illness from initial onset is short; when psychotic symptoms in the present episode have an abrupt or recent onset; with catatonia present; or when there has been a favorable response to ECT in the past.

## Medical Conditions Associated with Substantial Risk

There are no absolute medical contraindications to ECT. It is more pertinent to think in terms of degree of risk relative to potential benefits of ECT.

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There are some specific conditions that may be associated with substantially increased risk. These are:

1. Unstable or severe cardiovascular conditions such as recent myocardial infarction, congestive heart failure, and severe valvular cardiac disease.
2. Aneurysm or vascular malformation that might be susceptible to rupture with increased blood pressure.
3. Increased intracranial pressure, as may occur with some brain tumors or other space-occupying lesions.
4. Recent cerebral infarction.
5. Pulmonary conditions such as severe chronic obstructive pulmonary disease, asthma, or pneumonia.
6. Anesthetic risk rated as ASA level 4 or 5.

## **Use of ECT in Special Populations**

### **Concurrent Medical Illness**

1. The decision to administer ECT should include consideration of the anticipated effects of the patient's medical status, including present medical treatments, upon the risks and benefits of ECT.
2. The pre-ECT evaluation of medical conditions should include lab tests and specialist consultation when indicated to minimize potential adverse side effects.
3. The existence and implications of conditions associated with significantly increased risk should be taken into account during the informed consent process.
4. The ECT procedure should be modified when indicated to lower morbidity or augment efficacy. Such modifications may include changing ECT technique, altering pharmacologic regimes, administering ECT in a different hospital or clinic location, and utilizing additional medical specialists or monitoring procedures.

### **Elderly**

1. ECT may be used with elderly regardless of age. Efficacy does not diminish with age, and may be enhanced. Clinical experience suggests that among the elderly, ECT may have less risk of complications than some forms of pharmacotherapy.
2. Dosages of medications for pre-ECT may need to be modified based on the physiological changes associated with aging.
3. ECT stimulus intensity should be selected with an awareness that seizure threshold generally increases with age.
4. Decisions regarding ECT should be guided by the possibility that ECT-induced cognitive dysfunction may be greater in elderly adult patients. ECT technique should be modified to minimize adverse cognitive effects when necessary.

## **Pregnancy**

1. ECT may be used in all three trimesters of pregnancy.
2. Obstetric consultation should be obtained prior to ECT.
3. The risks of anesthetic agents to the fetus are likely to be less than those of pharmacologic alternatives. Nonetheless, potential teratogenic effects and neonatal toxicities should be discussed in the informed consent process.
4. When the gestational age is over 10 weeks, noninvasive monitoring of fetal heart rate should be done before and after each ECT treatment.
5. If the pregnancy is high risk or near term, the presence of an obstetrician and/or additional monitoring may be indicated at the time of ECT treatment.
6. At facilities administering ECT to pregnant women, resources for managing obstetrical and neonatal emergencies should be readily accessible.

## **Children and Adolescents**

ECT is a psychiatric intervention rarely indicated in the treatment of adolescents. ECT should be considered as an option for a seriously ill adolescent who has failed to respond to other treatment efforts. There is very limited data or clinical experience in the use of ECT in preadolescent children, and its use in this population should be carefully considered.

1. ECT should be discussed in detail with both parents and patient during the informed consent process, clarifying risks and benefits involved in the treatment.
2. A second opinion should be obtained from a psychiatrist who is knowledgeable about ECT and not directly responsible for the treatment of the patient. This second opinion should concur with the recommendation for ECT prior to proceeding.
3. Qualified personnel experienced in treating children and adolescents should administer anesthesia.

## **Adverse Side Effects**

### **Cardiovascular Complications**

The electrocardiogram and vital signs should be monitored during each ECT treatment to detect hypertension and arrhythmias.

### **Prolonged Seizures**

### **Prolonged Apnea**

### **Systemic Side Effects**

Headache and nausea are the most common systemic side effects of ECT.

### **Treatment Emergent Mania**

Instances in which patients switch from depressive states into hypomania or mania during a course of ECT should be identified, and a determination made regarding the need to continue or suspend further ECT treatment.

### **Cognitive Dysfunction**

Orientation and memory function should be assessed prior to each ECT and periodically throughout the ECT course to monitor the presence of ECT-related cognitive dysfunction. Based on the severity of the cognitive side effects, the physician administering ECT should consider alteration of the ECT technique and reconsideration of medications the patient is taking.

## **Use of Medical and Psychotropic Medications During ECT**

All medications should be reviewed as part of the pre-ECT evaluation. In general, it is advisable to discontinue or reduce the dose of most psychotropic agents prior to ECT, although this should not prevent the institution of ECT treatment in a timely fashion. This is especially true for medications that may increase morbidity or decrease efficacy of ECT (i.e. benzodiazepines and most sedative hypnotics, anticonvulsants, lithium). Patients on antidepressants may continue the course of therapy, as co-administration of moderate doses of antidepressant is unlikely to contribute substantially to morbidity. There may even be a synergistic effect with the co-administration of antipsychotic medication and ECT.

The medications administered before ECT on treatment days should be clearly specified.

## **Procedure for ECT**

### **Pre-ECT Evaluation**

Although components of the evaluation for ECT will vary on a case-by-case basis, each facility should have a minimal set of procedures to be undertaken in all cases. These include:

1. Psychiatric history and examination to determine the indication for ECT, including previous response to ECT if pertinent.
2. A medical evaluation to define risk factors
3. An evaluation by an individual privileged to administer ECT with a note in the clinical record summarizing the indications and potential risks for the specific patient.
4. Anesthetic evaluation, addressing the nature and extent of the anesthetic risk.
5. Informed consent-policies and procedures should be developed to assure proper informed consent, including when, how, and from whom the consent is to be obtained.

6. Appropriate laboratory and diagnostic tests including a hematocrit, serum potassium, and EKG. Consideration should be given to performing a pregnancy test in women of childbearing age prior to the first ECT.

### **ECT Treatment Team**

The treatment team should consist of at least a psychiatrist privileged to provide ECT, an anesthetist, and a recovery nurse.

### **Determination of Inpatient or Outpatient Setting**

An index ECT course may be administered on either an inpatient or outpatient basis. The determination of the location of ECT will depend on a number of factors, including patient preference, and should be viewed as a dynamic ongoing process throughout the ECT course. In making this decision, the same indications, relative contraindications, consent requirements, and components of the pre-ECT evaluation hold for both inpatient and ambulatory ECT:

1. The inpatient setting should be used whenever the patient's psychiatric condition precludes safe and effective management on an outpatient basis.
2. For consideration of ambulatory ECT, there must be available an identified support system to assist in compliance with the treatment protocols and the ability to provide transportation.
3. There should be an ongoing assessment of the patient's ability to change treatment settings as appropriate. After an index series of ECT, and the patient indicates a stable response to ECT, consideration of transfer to ambulatory ECT should be undertaken. There should be an assessment of potential risks, medical and psychiatric, and the availability of a support system as noted above. The patient should be carefully evaluated after each treatment for the ability to proceed with the course of ECT in a given setting.

### **Frequency and Number of Treatments**

ECT is most commonly performed at a schedule of three times per week. Some practitioners may use increased frequencies of ECT to speed the recovery, particularly in cases of severe symptom presentation; however, prolonged use of daily treatments is usually associated with increased cognitive impairments. There is no justification for the use of more intense regimens. A reduction in the frequency of treatment should be considered if severe cognitive dysfunction or delirium develops.

1. The total number of treatments administered should be a function of both the degree and rate of clinical improvement and the severity of the cognitive adverse side effects.
2. The evaluation of the response should focus on the target symptoms, with assessment made between each treatment.
3. The treatment course should terminate as soon as it is evident that maximal improvement has been reached. While the typical ECT course in patients with a mood disorder is between 6-12 treatments, some patients manifest complete remission after only a few treatments. Other patients may not show substantial clinical improvement until they have received 10 or more treatments.
4. In the absence of significant clinical improvement after 6-10 treatments, the indication for continued ECT should be reassessed. Consideration may be given to modification of the ECT technique, the use of medications to potentiate the clinical response, or discontinuation of the ECT.
5. There is no evidence that repeated courses of ECT lead to permanent structural damage, or that a maximum limit on lifetime number of treatments with ECT is appropriate.

## **Management of Post-ECT Course**

Continuation therapy, typically consisting of psychotropic medications or ECT, is indicated for virtually all patients.

### **Maintenance Pharmacotherapy**

The choice of agent should be determined by the underlying illness, a consideration of side effects, and response history to medication treatment.

### **Maintenance ECT**

Maintenance ECT should be administered at the minimum frequency compatible with sustained remission, often at 1-3 week intervals. The need for continued maintenance ECT should be reassessed at least every three months.