

Facebook Q&A on Electroconvulsive Therapy

The following is a summary of NIMH's Q&A on electroconvulsive therapy (ECT), which was conducted on March 17, 2016 with expert [Sarah Lisanby, M.D.](#) This summary includes all NIMH posts and responses to questions during the Q&A. [View the Q&A in its entirety.](#)

NIMH: Welcome and thanks for joining the National Institute of Mental Health (NIMH) today for a Q&A on electroconvulsive therapy (ECT). Before we begin, we strongly encourage you to read the information below.

We will be answering your questions for the next hour until 5 p.m. ET. Please respect others and stay on the topic of ECT. While NIMH encourages you all to share your thoughts and experiences, we reserve the right to remove any comments that are inconsistent with our policy. NIMH does not permit vulgar, profane, or abusive language; personal attacks of any kind; inappropriate religious, sexual, political, or racial references; unsupported accusations. We reserve the right to block repeat offenders of our policy. You may view the policy in full here: <http://on.fb.me/1KZm1CI>

Please also note that NIMH is a U.S. federal research agency. We cannot provide specific medical advice or practitioner referrals. Learn more about NIMH: <http://www.nimh.nih.gov/about/index.shtml>. If you need medical advice, or a second opinion, please consult your healthcare provider. Here are some other resources that you may find helpful: <http://1.usa.gov/1STW9yH>

We have NIMH expert Sarah Lisanby, M.D. answering your ECT questions today. Dr. Lisanby is one of the leading researchers in the area of neuromodulatory interventions for treating major depression, serving as a principal investigator on studies that range from basic research through clinical trials. Dr. Lisanby joined NIMH last year as the director of the Division of Translational Research. Learn more about Dr. Lisanby: <http://1.usa.gov/1FXxpi2>

ECT is a type of neuromodulation therapy, which is used to treat severe, treatment-resistant depression, as well as other serious mental disorders. Neuromodulatory therapies involve stimulating the brain with electricity, magnetic fields, or other forms of energy. In the case of ECT, electricity is applied to the scalp to induce a therapeutic seizure in a patient who is under anesthesia. The person remains under constant medical monitoring by an anesthesiologist and a psychiatrist, as well as nursing staff, throughout the procedure. The decision to use ECT depends on several factors, including the severity and duration of the patient's illness, the likelihood that alternative treatments would be effective, the side effects of alternative treatments, the patient's preference, and a weighing of the risks and benefits. ECT is typically reserved for use after medications have been tried and were found to be unsuccessful, but it can also be used earlier in the course of illness in severe life-threatening situations such as suicidal ideation, catatonia, and psychotic depression, for example.

ECT is recognized by the American Psychiatric Association as “a safe and effective

evidence-based medical treatment. ECT is endorsed by the APA when administered by properly qualified psychiatrists for appropriately selected patients.” Read APA’s statement on ECT: <http://bit.ly/21vAMXd>

It is important to appreciate that ECT is not “one size fits all.” There are many different types and dosages of ECT, each of which have distinct effects.

Q: What is the definition of the word "neuromodulation"? What is it that you are modulating in the neurones?

NIMH: Neuromodulation tools, such as ECT and transcranial magnetic stimulation (TMS), use electric fields to change the functioning of circuits in the brain. The brain can be thought of as an electrical organ. Action potentials, which are the fundamental components of neuronal activity, are electrical events caused by the flow of ions through channels in the cell membrane. Neuromodulation tools like ECT and TMS can induce action potentials and trigger neurons to fire.

NIMH: Depression is a leading cause of disability worldwide, and a leading cause of suicide (<http://1.usa.gov/2214OCP>). Suicide rates in the U.S. have not declined, despite the availability of antidepressant medications and evidence-based psychosocial interventions. Of major concern, recent data suggest suicide rates may be on the rise (<http://1.usa.gov/1MoYNs8>). Therefore, there is a need for other effective treatments for major depression and ECT is often the best hope. Although major depression is one of the most common mental disorders in the U.S. (<http://1.usa.gov/22oT9iU>), some patients don’t respond to the most commonly used treatments such as antidepressants and evidence-based psychotherapies. Data from the Sequenced Treatment Alternatives to Relieve Depression (STAR-D) clinical trial indicate that, despite an adequate course of first-line antidepressant treatment, nearly 50% of those who suffer from major depression will experience no response or only a partial response to medication.

For more on the research please check out these studies:
<http://www.ncbi.nlm.nih.gov/pubmed/16390886>
<http://www.ncbi.nlm.nih.gov/pubmed/12706951>

Q: If you have an ECT procedure are you more likely to need it again?

NIMH: Typically ECT is given 3 times per week for a series of 2-4 weeks in the acute course. After a person achieves remission from their depression, it is important for them to go on a maintenance therapy to prevent relapse. Maintenance can be done using a combination of medications, and in some cases ECT can be continued on a maintenance schedule in combination with medication to help prevent relapse.

Q: Have there been any longitudinal studies targeting cognitive effects of ECT?

NIMH: The effects of ECT on cognition have been carefully studied, including follow up assessments up to 6 months after the treatment course was completed. For example, studies have found that the degree of memory loss was much less when the person received right unilateral ECT than bilateral ECT. Also, studies have found that the degree of memory loss for autobiographical memories (which are memories for your own life events) was less than memory loss for events of an impersonal nature. To learn more, see for example: <http://www.ncbi.nlm.nih.gov/pubmed/?term=lisanby+maddox>

Q: I had ECT in 2007 and after three treatments combined with Venlafaxine, it sent me into a mania (my first and only) with psychotic tendencies. I have never ever been so suicidal as I was after this. I'm glad I survived, I almost died from ECT. Since then I've been struggling with PTSD and cognitive impairment and I haven't been able to continue my studies and have been on disability since.

This experience put me on the search for other people with the same experience and I have now gathered around 200 people in support groups on Facebook, mostly people from Sweden and the United States but also from Great Britain and other places around the world. And the groups are constantly growing.

What do you want to say to us? And to our families? We whose lives have been shattered?

NIMH: Thank you for sharing your personal story and for joining this discussion. As with other antidepressant treatments, ECT has a risk of inducing mania. Unlike other antidepressants, however, ECT is also effective in treating mania. When mania occurs in response to ECT the typical approach is to stop the ECT and treat the mania with medications.

Q: What are the major barriers for patients trying to access ECT? Are there specific ways that NIMH supports research about understanding and overcoming the major barriers?

NIMH: Major barriers for patients accessing ECT include stigma, sensationalized and medically inaccurate portrayals in the media, and lack of information about treatment options and about the facts regarding the risks and benefits of ECT. These myths can result in people suffering in silence when help is available.

Q: How do you explain the lack of scientific research on damage from ECT, and the lack of demand to do this research when there is obviously a huge percentage of patients that get memory and cognitive damage from ECT?

I know a lot of psychiatrists claim that the damages people are describing come from their diagnose, but when a patient that has been diagnosed Bipolar for ten years, has photographic memory even from periods highly influenced by drugs, alcohol and depression or mania, ends up loosing all their memories from pre ECT, as well as ending up with no short term memory at all, and near dementia after a few ECT sessions, you can not dismiss the facts.

You can not dismiss the fact when autopsy of former ECT patients show scar tissue in the brain from micro hemorrhages and scar tissue on the heart from minor heart attacks that this has nothing to do with ECT, or is their diagnose as well?

NIMH: Research shows that ECT does not cause measurable brain damage. Major depression itself is associated with impairments in memory and changes in structure and function of key regions of the brain. The extent of injury due to depression is more marked with the duration of depression, the amount of time the depression is untreated, and the number of prior episodes of depression. For more on this research, check out these studies:

<http://www.ncbi.nlm.nih.gov/pubmed/18515903>

<http://www.ncbi.nlm.nih.gov/pubmed/12900317>

<http://www.ncbi.nlm.nih.gov/pubmed/15177085>

<http://www.ncbi.nlm.nih.gov/pubmed/18191459>

Studies have directly measured the effects of modern forms of ECT on brain structure and have found no evidence of brain damage. For more on this research, check out these studies:

<http://www.ncbi.nlm.nih.gov/pubmed/19782728>

<http://www.ncbi.nlm.nih.gov/pubmed/17548979>

<http://www.ncbi.nlm.nih.gov/pubmed/14992989>

<http://www.ncbi.nlm.nih.gov/pubmed/8010381>

Studies have also demonstrated that ECT reverses some of the detrimental effects that depression has on the brain, by boosting neurotropic factors (chemical signals that promote the healthy functioning and plasticity of neurons) and increasing neurogenesis (the birth of new neurons in the brain). For more on this research, check out these studies:

<http://www.ncbi.nlm.nih.gov/pubmed/25842202>

<http://www.ncbi.nlm.nih.gov/pubmed/17475797>

<http://www.ncbi.nlm.nih.gov/pubmed/24967107>

Q: Dear Dr. Lisanby, have you had any experience with ECT on patients with mania? Could you share same thoughts on that topic. Also, is the effect of ECT on bipolar depression comparable to the one on major depression? Thank you.

NIMH: Research supports that ECT has acute beneficial effects on treating mania in patients with bipolar disorder. This is especially useful when mania does not respond adequately to medications. Severe mania can put a person at significant risk and there is often a need for rapid improvement. ECT can be helpful when other pharmacological approaches have not been effective, or have not worked rapidly enough.

Q: I'm planning on entering a DBT group soon and starting ECT treatment in April. Will ECT have a negative effect on the DBT skills I'm learning? Such as a possible conflict with memory problems?

NIMH: ECT can affect learning and memory during the acute course of treatment, when a person is receiving 3 ECT treatments per week. During the acute course of ECT, we do see anterograde amnesia, which is the loss of ability to lay down new memories. This could affect a person's ability to benefit from a newly started therapy. We typically advise people to wait until after the acute course of treatment is completed before starting a new therapy. Anterograde amnesia typically recovers soon after the ECT course is completed.

Q: I know someone that has to have ECT every four to six weeks in order to maintain stability from depression. Is there any others that have to have this many treatments and this often? He has been doing this for five years and we are worried about long term use for him. What are the side effects and can this be a continuous therapeutic treatment for him. He is only 31.

NIMH: Maintenance ECT can be highly effective in sustaining remission after a person completes an acute course of ECT. Maintenance treatments usually start 2/week, then 1/week, and then every other week, and ultimately once a month. Some patients continue to have monthly ECT maintenance sessions for a period of months to years. When ECT is given at this frequency, the side effects are less than during an acute course. We conducted a study of a woman who received a total of 91 ECT treatments in her lifetime, and her brain showed no evidence of damage. For more information, see: <http://www.ncbi.nlm.nih.gov/pubmed/17548979>

Q: Does insurance pay for this treatment and if so where can we go for treatment in New Jersey. Thank you this is for a family member with deep depression and medicine has not helped.

NIMH: Most major insurers cover ECT. For example, Medicare and Medicaid typically cover ECT. The International Society for ECT and Neuromodulation has a "Find a Provider" link. See: <https://www.isen-ect.org/resources-for-patients>

Q: Also, I'm curious about the actual "strength" of the electrical shock (voltage, I guess?). Is there a kind of measurement used to determine how much of a shock will induce a therapeutic-length seizure?

NIMH: The amount of stimulation is individualized using a seizure threshold titration procedure. In the seizure threshold titration, stimulation trains of increasing numbers of pulses are given until a seizure is induced. In this way, the doctor can determine the threshold for inducing the seizure in each individual patient. Then, the treatment dosage in subsequent sessions is based on this threshold. Studies have shown that the dosage relative to seizure threshold is a powerful determinant of efficacy and side effects. For example, see: <http://www.ncbi.nlm.nih.gov/pubmed/19756236>

Q: Or how do you explain that the number of seniors in the US getting ECT treatment explodes by 75% compared to people under senior age?

NIMH: Depression is a leading cause of disability across the age span, including in seniors. In addition, there is a peak in suicide rates in the later decades of life. Suicide risk is one of the major indications for using ECT. Medical evidence shows that ECT is highly effective in seniors. In some cases, older patients may experience treatment-interfering side effects from medications, which is another reason that ECT may be used in this age group. In fact, increased age is one of the predictors of good response to ECT.

Q: Does ECT affect your memory going forward?

NIMH: In the short term, ECT causes anterograde amnesia (loss of ability to form new memories) that typically resolves soon (days to weeks) after ECT is completed. ECT also has a risk of retrograde amnesia (loss of memories in the past). Retrograde amnesia can persist for a variable amount of time after the treatment course is finished. The speed of recovery of retrograde memory depends on a number of factors. Recovery of retrograde memory is faster in the case of right unilateral ECT, and in the case of ultra-brief pulse ECT.

Q: Is ECT equally effective for BP1 and BP2?

NIMH: ECT has been found to be effective for depression in the context of both bipolar 1 and bipolar 2 disorders. In fact, some studies suggest that bipolar patients may respond faster to ECT than unipolar patients. See for example:
<http://www.ncbi.nlm.nih.gov/pubmed/11333069>

Q: I began experiencing signs of dementia following ECT in my early 20s. My doctors refused to believe me or provide any testing. I was eventually able to get testing 10 years later that confirmed brain damage. It was later determined that I was misdiagnosed and my depression symptoms were treatable. I suffered greatly during those 10 years because of this new hidden disability denial that anything was wrong. It is almost impossible to get rehabilitative help because everyone has been trained to believe that ECT doesn't do that. My question: why is before and after testing not provided or even recommended? Why does the APA spend more time trying to explain away people like me instead of help us?

NIMH: The American Psychiatric Association Task Force Recommendations for Treatment, Training, and Privileging on ECT recommends that orientation and memory function should be assessed prior to ECT and periodically throughout the ECT course (page 76, *The Practice of Electroconvulsive Therapy: Recommendations for Treatment, Training, and Privileging (A Task Force Report of the American Psychiatric Association)*, Second Edition, 2001).

Q: How many people are subjected to electroshock without their willing and informed consent or over their objections?

NIMH: In the U.S., ECT is never administered without consent by either the patient or a surrogate decision-maker for incapacitated patients. The APA Task Force on ECT has clear recommendations for this consent process, which includes provision of adequate information to a competent patient and the absence of coercion. The quality of the interactions between patient and physician is emphasized, especially as consent for ECT is an ongoing process.

Q: There are many people who still react with horror when they hear anything about ECT. Would you please help to dispel some of the concerns that people have about the procedure itself? Also, it would be helpful if you could address the real benefits of ECT as many people focus on the negative.

NIMH: It can be difficult for people to access medically accurate information on the web, and differentiate it from misinformation or sensationalized portrayals in the media. Reliable resources to learn about the medical risks and benefits of ECT include the American Psychiatric Association fact sheet on ECT (<http://www.psychiatry.org/patients-families/ect>) and also the American Psychiatric Association position statement on ECT (<http://bit.ly/21vAMXd>). Medical evidence supports that ECT is the most effective and fastest acting treatment currently available today for severe depression. ECT often works even when medications fail. It can be life-saving in severe situations such as suicidal ideation and catatonia.

Q: Please explain why every effort is made to prevent seizures in those afflicted with a seizure disorder as it is known to cause brain damage left untreated, however ECT is safe?

NIMH: In the case of epilepsy, seizures occur spontaneously and are caused by hyperexcitable circuits in the brain that generate pathological activity that can over time cause damage. In the case of ECT, the seizures are triggered using electrical fields applied to the brain. A seizure triggered by an applied electrical field has different effects than seizures spontaneously occurring in epilepsy. There is no evidence to my knowledge that ECT induces epilepsy, or spontaneous seizures.

NIMH: FAQ's on ECT

Q: How often does a patient receive ECT treatments?

NIMH: How often a patient receives ECT treatments should be based on a patient's individual needs and medical situation, and under a mental health professional's care. The number of treatments may vary for each patient, so please consult with your doctor. In the U.S., ECT treatments are usually administered three times weekly for approximately 6 to 12 treatments during the acute course, depending on the severity of the patient's symptoms and the rapidity of the response.

Q: How much does ECT cost?

NIMH: The cost of ECT may vary for each patient, but the APA has estimated the cost of ECT to be approximately \$800 to \$1,000 for each treatment in a series; this cost includes the professional fees of the psychiatrist and the anesthesiologist, as well as the cost of the use of the facility, equipment, and supplies.

Q: Can you continue taking medications while getting ECT treatments?

NIMH: Continuing to take medications while getting ECT treatments should be based on a patient's individual needs and medical situation, and under a mental health professional's care, so it is important that you consult with your doctor first. Some medications (e.g., lithium, theophylline, and medications with anticonvulsant action) can interact with ECT, and they should be tapered or discontinued under medical supervision before ECT is initiated. Clinical experience suggests that at least some antidepressant medications may be used safely during treatment, and such an approach may reduce the risk of a relapse of depression after treatment is completed.

Q: Are you awake and conscious during ECT?

NIMH: No. ECT is performed while the patient is asleep and unconscious, under general anesthesia; therefore, all patients must undergo a full evaluation by an anesthesiologist, including an assessment of the risk associated with anesthesia, before the start of ECT. Oxygen is given throughout the procedure, and vital signs are carefully monitored.

NIMH: Misconceptions about ECT

Myth: ECT is obsolete and rarely used nowadays.

Fact: ECT is widely used today and is essential for the management of severe and often treatment-refractory psychiatric disorders. Approximately 100,000 people in the U.S. and over 1,000,000 worldwide are treated annually.

Myth: ECT is done to get doctors rich.

Fact: Actually, insurance payments for ECT to psychiatrists are relatively low as compared with other psychiatric services. Hospitals often cannot meet the costs of providing ECT, especially under Medicare and Medicaid reimbursement. For these reasons and others, ECT is not available in some communities in the U.S.

NIMH: For clinical research studies on ECT recruiting near you, please visit: <http://1.usa.gov/1M6JFiU>