



By **Nicholas Bakalar**

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Electroconvulsive therapy, or ECT, can be effective for the treatment of major depression and is just as safe as antidepressant drugs combined with psychotherapy, a large new study concludes.

The procedure, once referred to as electroshock therapy, has a controversial and largely unfavorable history. This was partly due to inaccurate portrayals in popular books and films like “One Flew Over the Cuckoo’s Nest,” and partly the result of real problems with the earliest versions of the procedure, which used strong electrical currents and no anesthesia.

Today, ECT is performed under general anesthesia, and the doctor, working with an anesthesiologist and a nurse, applies a weak electric current to the brain (usually about 0.8 amperes at 120 volts) for one to six seconds. This causes a seizure inside the brain, but because of the anesthesia, the patient does not experience muscular contractions. The seizure leads to brain changes that relieve symptoms of depression and certain other mental illnesses. Usually, doctors administer a series of ECT treatments over a period of days or weeks.

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The only painful part of the procedure is the insertion of an intravenous line before anesthesia. There can be side effects afterward, including temporary memory loss, confusion or transitory headaches and muscle aches. Doctors debate whether ECT can cause long-term memory problems distinct from the memory problems that can be caused by depression itself.

For this [new study, published in Lancet Psychiatry](#), Canadian researchers used the records of 10,016 adults whose depression was severe enough that they spent three or more days in the hospital. Half of them had received ECT, while the other half were treated with drugs and psychotherapy. Their average age was 57, and about two-thirds were women. The researchers tracked how each group fared in the 30 days after they were discharged from the hospital.

The study carefully matched patients with controls, adjusting for more than 75 factors, including sociodemographic characteristics, medication use, other medical diseases, behavioral and cognitive status, and the use of psychiatric and other health services. This thorough methodology helped overcome some of the limitations of previous studies.

ECT did not seem to increase the risk of serious medical problems, including circulatory, respiratory or genitourinary issues that require a hospital stay, or deaths that were not a result of suicide. In the 30 days after discharge, 105 of the ECT patients had a serious medical problem, compared with 135 among the controls, a statistically insignificant difference. The researchers did not track minor medical problems treated in outpatient settings. Suicides were rare in both groups, but were significantly lower in those treated with ECT.

“This is an interesting and well-performed study,” said Dr. Martin Balslev Jorgensen, a professor of psychiatry at the University of Copenhagen who has published widely on ECT but was not involved in this study. “Since ECT is surrounded by lots of negative opinions, we need all the help we can get from real-life research.”

Dr. Jacob P. Feigal, the medical director of the ECT program at Duke who also had no part in the work, said the study could be helpful in talking to people for whom the best treatment is ECT but who have fears about complications. “As a clinician,” he said, “this helps me frame the argument. It contributes a really important element to the discussion about the risk of doing ECT compared to the risk of not doing it in people with severe depression.”

Dr. Jorgensen said this study shows that patients don’t have to worry about medical complications and can focus on the real problems of ECT: that you have to be anesthetized, and that after several treatments you may have some loss of memory in the time leading up to and during ECT.

Dr. Irving M. Reti, a professor of psychiatry and director of the brain stimulation program at Johns Hopkins who was not involved in the report, said that it is “an important, substantial study” that adds to the literature showing that ECT is safe. “This puts it in a medical context — thousands of patients with no significant medical complications.”

The lead author of the study, Dr. Tyler S. Kaster, a brain stimulation fellow at the University of Toronto, agreed that ECT has risks, but, he said, so does major depression, which can lead to serious problems — among them, cardiovascular disease, dementia, substance use and suicide. Deciding to undergo ECT is a “complex and serious decision,” he said. “The hope in this study is that it provides important information that allows patients, their loved ones and their doctors to understand the risks and make a decision they are comfortable with.”