

**MARK A. FRYE:** Hello. I'm Dr. Mark Frye, and I wanted to tell you about a patient of mine from the Mayo Clinic Depression Center. At the Depression Center at Mayo, we really focus on how to best individualize treatment selection for patients who struggle with treatment-resistant depression and bipolar disorder. It's an exciting time, because we're really starting to think and test out how pharmacogenomics may help best individualize treatment selections.

So this is a young man who was a barber at a local town just outside of Rochester. Bipolar type 1 disorder, very stable, excellent antimanic prophylaxis with lithium with a blood level about 0.6 millimol per liter, but really struggling with the depressive phase of illness. Had tried a number of strategies, and ultimately, went to work with an antidepressant. Started a selective serotonin reuptake inhibitor and missed his outpatient follow-up appointment two weeks later.

Long story made short, speaking with the family, that prescription, that antidepressant, made him manic. While this is not a frequent event, it is one with potentially disastrous consequences, and we really struggle with how to prevent these episodes from ever occurring, really underscoring the morbidity of depression.

So in the Depression Center, we've really looked at, what are these risk factors for switching from depression into mania? A couple of years ago, our group published in *The American Journal* clinical risk factors associated with the switch process or an antidepressant-induced manic episode, if you will. You can see from our teaching slide that a number of clinical correlates have been identified or associated with this switch process.

At Mayo Clinic, with our ability to work with the Center for Individualized Medicine, we've really focused on potential areas of genetic variation. And one that has had a lot of interest in the literature has been the serotonin transporter. So our group looked at whether or not the short allele or the S allele of the serotonin transporter was in fact associated with antidepressant-induced manic episodes.

This has been an interesting and a controversial topic for the last number of years. Our work that's under review for publication that we'll be presenting at the acute care conference this October in Las Vegas did not show a statistically significant trend of the S allele and antidepressant-induced mania. But our meta analysis in the recent edition of the Mayo literature, which you see in this teaching slide, does suggest that there might be something there.

Moreover, we really feel that the time to study pharmacogenomics and its implication as to how we might best individualize clinical practice is here. So a number of studies that we have at Mayo Clinic are really looking at genetic variation and how that might impact clinical practice, and we're doing that with a number of clinical trials that are currently underway at the Mayo Clinic Depression Center. Again, my name's Dr. mark Frye from the Mayo Clinic. Thank you for watching.