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Scientists Can Predict Psychotic Illness in up to 80 Percent of High-Risk Youth

Youth who are going to develop psychosis can be identified before their illness becomes full-blown 35 percent of the time if they meet widely accepted criteria for risk, but that figure rises to 65 to 80 percent if they have certain combinations of risk factors, the largest study of its kind has shown. Knowing what these combinations are can help scientists predict who is likely to develop the illnesses within two to three years with the same accuracy that other kinds of risk factors can predict major medical diseases, such as diabetes.

Plans for studies to confirm the results, a necessary step before the findings can be considered for use with patients in health-care settings, are underway.

The research was conducted in youth with a median age of 16 and was funded primarily by the National Institute of Mental Health (NIMH), part of the National Institutes of Health. Results were published in the January 7, 2008, issue of the *Archives of General Psychiatry*, by lead researchers Tyrone D. Cannon, Ph.D., of the University of California Los Angeles, and Robert Heinssen, Ph.D., of NIMH, with colleagues from seven other research facilities.

The combinations of factors that predicted psychosis included:

- deteriorating social functioning (for example, spending increasing amounts of time alone in one's room, doing nothing);
- a family history of psychosis combined with recent decline in ability to function (such as a drop in grades not explained by other factors or an unexplained withdrawal from extracurricular school activities);
- increase in unusual thoughts (such as thinking that strangers' conversations are about oneself);
- increase in suspicion/paranoia (such as suspicion of being followed); and past or current drug abuse.

“When teens have a dive in grades or drop out of the school band, and it happens against a backdrop of family history of schizophrenia and recent troubling changes in perception – like hearing nondistinct buzzing or crackling sounds, or seeing fleeting images that disappear with a second glance – more often than not it indicates that psychosis is fairly imminent,” Cannon said.

If participants had an unrealistic belief that they were being followed, for example, but could be shown that their troubling thoughts were unfounded, the researchers considered them as having a risk factor, but not yet psychosis. But if the participants' sense of being followed became unshakable, despite evidence to the contrary, or became disabling, the researchers considered them as having crossed a threshold to psychosis.

Research shows that intervention during the early stages of psychosis improves outcomes, but it is not yet clear if even earlier intervention, before a psychotic illness develops, is effective.

“Having this more accurate ability to measure who’s likely to develop psychosis will be a great asset. Identifying young people in need of intervention is crucial, but the results of this research can help us do more than that. It can eventually help us determine the most effective time to intervene,” said NIMH Director Thomas R. Insel, M.D.

Researchers from the facilities that conducted the study used similar criteria and techniques to evaluate 291 high-risk youth, about three times as many as had been evaluated in any previous study of this kind. In addition to being smaller, earlier studies had used different criteria and measuring techniques from one another, which clouded the picture and resulted in only moderate accuracy in predicting psychotic illness.

In this study, a total of 35 percent of participants with at least one risk factor developed a psychotic illness within the 30-month study timeframe. However, when researchers broke the data down further, they found that the youth who had two or three additional risk factors developed psychosis at a rate of 68 to 80 percent, depending on which risk factors were combined.

A separate group of 134 healthy people with no known risk factors for psychosis served as a control group, for comparison. None of them developed a psychotic illness.

Researchers also found that the youth who progressed to a psychotic disorder tended to do so relatively quickly. Twenty-two percent developed psychosis within the first year of follow-up, an additional 11 percent by the end of the second year, and 3 percent more by two-and-a-half years (adding up to the total percentage of people – 35 percent – who developed psychosis in this study).

“The message here is that once we identify people as being high risk, we have a very good chance of knowing whether or not they’re likely to develop a serious mental disorder like schizophrenia and that, if they do, it will happen fairly quickly. That’s such a critical window of opportunity for getting them the help they need,” said Heinssen.

The investigators who conducted the study are part of a consortium of nine research centers, the North American Prodromal Longitudinal Study (NAPLS), whose goal is to improve the accuracy of predicting psychosis. The consortium is funded by NIMH, which also provides administrative leadership.

In addition to Cannon and Heinssen, scientists who participated in the research included Kristin Cadenhead, M.D., University of California San Diego; Barbara Cornblatt, Ph.D., Zucker Hillside Hospital; Scott W. Woods, M.D., Yale University; Jean Addington, Ph.D., University of Toronto; Elaine Walker, Ph.D., Emory University; Larry J. Seidman, Ph.D., Harvard Medical School; Diana Perkins, M.D., University of North Carolina; Ming Tsuang, M.D., University of California San Diego; and Thomas McGlashan, M.D., Yale University.

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Reference: Cannon TD, Cadenhead K, Cornblatt B, Woods SW, Addington J, Walker E, Seidman LJ, Perkins D, Tsuang M, McGlashan T, Heinssen R. Prediction of Psychosis in High Risk Youth: A Multi-Site Longitudinal Study in North America. Archives of General Psychiatry. January 7, 2008.

LINK: <http://www.nimh.nih.gov/science-news/2008/scientists-can-predict-psychotic-illness-in-up-to-80-percent-of-high-risk-youth.shtml>