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Studies with Niacin and LSD

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R ESEARCH PSYCHIATRISTS no longer need apologize for either the words "model psychosis" or for the use of these interesting drugs to produce psychologic changes. There have been many objections hurled at the research psychiatrist because he has played around with these drugs. Some of the objections I consider frivolous, some of them I consider very serious and constructive.

An example of the frivolous type of objection is the statement that LSD produces a toxic psychosis. If you heard Doctor Hoch, you will understand that it does not produce a disorientation, nor a decrease in consciousness, nor memory loss. So it is not, by definition, a toxic psychosis.

A serious objection has been the statement that the majority of subjects who have taken LSD noted predominantly visual phenomena, and that very few schizophrenics show the same degree of visual change. This is a serious criticism against the LSD experience as a representative of real schizophrenia. It is true that in a small group of acute, very excited schizophrenics we do find changes that are practically indistinguishable from LSD. We have taken a verbatim recording of the LSD interview and of a schizophrenic interview, and we have given the interviews to eminent psychiatrists, to see if they could distinguish them; they were not able to do so.

However, we have been trying to modify the LSD experience. You have heard Doctor Hoch discuss some of the compounds, amytal and dexadrine compounds; and Doctor Himwich briefly referred to his use of Frenquel. We have been working with nicotinic acid, or niacin, vitamin B₃; and we find that the vitamin, when given in adequate dosages, produces a remarkable modifying action on the LSD psychosis. We have run two types of experiments. In the first we have given the subject 100 γ of LSD; at the height of the experience we injected intravenously 200 mg. of nicotinic acid. Our experience has been that, within a matter of two to five minutes, almost all of the LSD phenomena disappeared, and the subject claimed that he was entirely normal.

The most striking example was that of a very serious psychologist, who, under the influence of LSD merely sat and giggled for two hours. When we subjected him to a T.A.T. test, all he could find were race horses in it. We gave him the nicotinic acid and five minutes later he became quite sober and normal; the rest of the afternoon he got to work and did some psychological problems that he had been putting off for the past two months. He claimed that he was entirely normal, although I don't think that he was. The rest of the afternoon he still had recurring waves of slight perceptual changes.

This is the most typical example of this type of experiment. We have done the reverse type of experiment where we premedicated the subjects with niacin for three days, with a dose of three grams per day; then on the test day the subject was given 100 γ of LSD. With this type of experience the phenomena occurred much later—it took more than the usual fifteen minutes to half hour, usually about an hour before any change occurred. With this type of medication the niacin appears to prevent most of the perceptual changes from occurring. In this type of change, which we think is also a type of psychosis, the subject is able to describe with great clarity his experiences. He is not overwhelmed by the perceptual disturbances, and he is able to delve into himself to describe exactly what he is experiencing. The chief changes are in the areas of feelings of unreality and depersonalization. One of our subjects felt that he was seven beings at one time, that he was looking down in never ending spirals at this poor real world in which we are living.

Now, these two types of experiments have raised very interesting questions. I cannot explain chemically why giving the niacin before LSD produces a certain type of change, and giving the niacin after LSD produces another type of change. It has occurred to me that when a subject is experiencing the real LSD phenomena and he is brought back to normal, that he compares himself to the state he was in previously; a state he considers normal. Whereas, in the other type of experiment where the subject has not experienced the vivid perceptual changes, he then becomes aware of the changes that he is experiencing in relevance to the previous state.

We don't feel that the niacin normalizes the LSD subject, although it certainly does so in the areas of perception. If you will permit me to split the changes into the neurological and psychiatric, it appears that niacin prevents most of the neurological changes, the autonomic changes; yet permits many of the psychiatric changes to run their course.