

Preliminary Report on Injection of "¹⁴C-Labeled Trans-3-Methyl-2-Hexenoic Acid into Schizophrenic Patients and Controls

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the sweat of schizophrenic patients in 1960, by Smith and Sines¹, and the identification of the odorous substance as **trans-3-methyl-2-hexenoic acid (TMHA)** in 1969, by Smith, Thompson, and Koster², research has been directed toward the discovery of a metabolic defect which would lead to a better understanding of the illness called schizophrenia. Toward this end, 10 microcuries of ¹⁴C-labeled TMHA (Figure 1) was administered intravenously to three schizophrenic patients and three normal control subjects (Table 1), and blood samples were drawn five, 15, 30, 60 and 120 minutes later. Expired air was monitored for ¹⁴CO₂ activity in the breath for 2¹/₂ hours. Urine and sweat were obtained. The disappearance of ¹⁴C radioactivity from serum is shown in Figure 2. At the end of two hours, the level of radioactivity had decreased to 30 percent of the five-minute level. There was no significant difference between the decay of radioactivity in the serum of schizophrenic patients and controls. The radioactivity that appeared in the urine and sweat of both groups was primarily in the form of complex molecules and has not yet been fully analyzed.

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Since the demonstration of a peculiar odor in

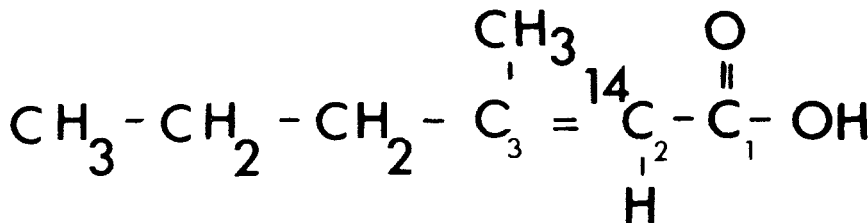
References

1. SMITH, K., and SINES, J- O.: Demonstration of a peculiar odor in the sweat of schizophrenic patients. A.M.A. Arch, of Gen. Psychiat. 2:184-188, 1960
2. SMITH, K., THOMPSON, C.F., and KOSTER, H. D.: Identification of odorous substance in schizophrenic sweat. Science

166: 398-399, 1969.

The author wishes to acknowledge the research support of the Schizophrenia Research Program of the Supreme Council 33rd A A Scottish Rite, Northern Masonic Jurisdiction

¹⁴C-labeled trans-3-methyl-2-hexenoic acid was prepared by Joseph Rabinowitz, Ph.D., Chief, Radioisotope Research, Veterans Administration Hospital, Philadelphia, Pennsylvania 19104



TRANS - 3 - METHYL - 2 - HEXENOIC ACID

FIGURE 1

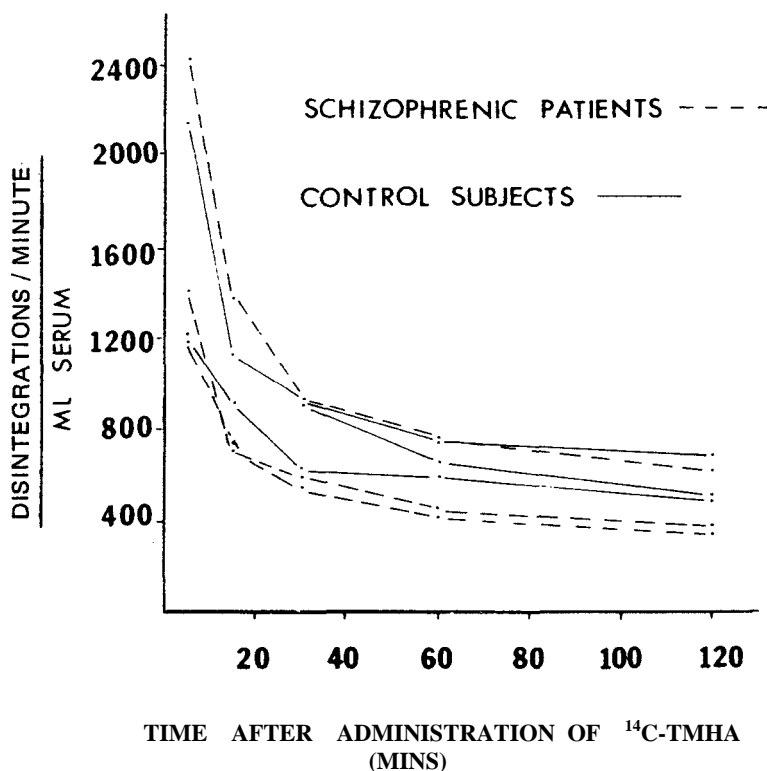


FIGURE 2

The disappearance of radioactivity from the serum of schizophrenic patients and normal subjects. Tenjji ci of ¹⁴C-TMHA was administered intravenously and blood samples were drawn. The ¹⁴C-activity in 1 milliliter of serum from each sample was determined.

ORTHOMOLECULAR PSYCHIATRY Table 1.

Age	Sex	Race	"Odor"
Duration of Illness (Years)			

Patient		Symptoms	Diagnosis A.P.A. Criteria	Medication
E.H. 50 F W + 31		Silly, mannerisms, auditory hallucinations	Schizophrenia, hebephrenic type	Navane, Artane
R.S. 54 M W + 15		Persecutory delusions, wrote to President about communist plot	Schizophrenia, paranoid type	Thorazine, Artane, Prolixin enanthate
P.O. 46 M W + 27		Negativism, mannerisms, rigidity	Schizophrenia, catatonic type lobotomy	Haldol, Multivitamins, Dilantin, Phenobarbital
Control				
K.S. 48FW--		-----	-----	Dilantin
A.B. 44FW--		-----	-----	-----
J.H. 45MW--		-----	-----	-----