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Metabolism

L-DOPA AND RBC ENZYMES Previous reports have indicated that after prolonged L-dopa therapy patients have a diminution in the activity of enzymes, mediating catecholamine synthesis (e.g., tyrosine hydroxylase, aromatic L-amino-acid decarboxylase), and, conversely, an increase in monoamine oxidase, one of the enzymes mediating catecholamine degradation. This paper reports diminished activity of COMT (catechol-O-methyltransferase), an enzyme important in the degradation of catecholamines, in the erythrocytes of patients chronically treated with L-dopa. A group of eight patients had a 40 per cent reduction in OMT activity compared with a control group of nine subjects. COMT activity began to be significantly reduced by the third week of treatment. The reduction seemed related to duration of therapy rather than total daily dose. The authors postulate three mechanisms: 1) diminished synthesis of COMT; 2) increased degradation; 3) inhibition of the enzyme. They feel that their data were most compatible with increased degradation of COMT. (Weiss, J. L., Cohn, C. K., and Chase, T. N.: Reduction of Catechol-O-methyltransferase Activity by Chronic L-Dopa Therapy, Nature 234: 218-219, 1971.)