**219.5** INTELLECTUAL FUNCTION AND CEREBRAL BLOOD FLOW IN NORMAL AGING AND DEMENTIA. W. A. Dickinson, R. W. Butler*, and J. H. Halsey*. Department of Neurology, School of Medicine, University of Alabama in Birmingham, Birmingham, AL 35294.

The normal aging process has long been associated with a gradual decline in intellectual abilities. A premature, or unusually rapid progressive loss of intellectual abilities is generally considered diagnostic of a dementing process. Changes in cerebral vasculature and decline in cerebral blood flow rates (rCBF) have been associated with both the normal aging process and dementing processes. Relationships between rCBF and age, rCBF and measured intelligence, and measured intelligence and age were examined in this study.

The non-invasive 133-Xenon inhalation method of measuring regional cerebral blood flow was used in the following study to measure regional rates of cortical gray matter blood flow in groups of young normal subjects (19-32 years), aged normal subjects (55-83 years), and patients diagnosed as suffering from a dementing process (39-75 years). The level of intellectual functioning of all subjects and patients was measured by the Weschler Adult Intelligence Scale (WAIS).

Significant negative correlations were found between age and rCBF ($r = -0.66$, $p < .001$) and between WAIS scores and rCBF ($r = -0.67$, $p < .001$) across all subjects and patients. Young normals, aged normals, and dementia groups were found to significantly differ from each other ($p < .05$) on rCBF and on WAIS scores.

Results of this study support the contentions that intellectual functioning and cerebral blood flow gradually decline with age, that intellectual and cerebral blood flow losses are greater in demented patients than their age matched normal controls, and that losses in intellectual functions and decreases in cerebral blood flow are related to one another in both normal and pathologic conditions. In addition, the results of this study suggest that the noninvasive 133-Xenon inhalation method of measuring regional cerebral blood flow may prove useful as a diagnostic tool in dementia.

**219.6** DISCRIMINATION OF SCHIZOPHRENICS WITH AND WITHOUT BRAIN DAMAGE USING THE LURIA-NEBRASKA NEUROPSYCHOLOGICAL BATTERY. A. E. Puente, Dept. of Psychology, Northeast Fl. State Hosp., Macclenny, Fl., 32063, C. Sanders* and N. Lund*, Dept. of Psychology, Univ. of North Fl., Jacksonville, Fl.

Examined the differentiation of schizophrenics with and without brain damage using the Luria-Nebraska Neuropsychology Battery (Purisch, A.D., Golden, C.J., & Hammeke, T.A., J. Consult. Clinical Psychology, 46: 1266, 1978).

Subjects included 40 inpatients at a state hospital. Of these, 17 were diagnosed by a psychiatrist and psychologist as and had a history of schizophrenia. Subjects for this group were excluded if there was a history of seizures, alcoholism, substance abuse, head trauma, or other signs of organicity. The remaining 23 patients were similarly diagnosed as schizophrenics and had a confirmed neurological diagnosis on the basis of a medical examination by a physician and/or had a history of brain damage as documented by such tests as CAT scan, EEG, or X-ray. Since patients were tested exclusively for this investigation and were not part of a clinical referral, consent forms were obtained by the test administrator who was blind to their condition.

Chi squares computed on the scores of the 282 items revealed that schizophrenics without brain damage performed significantly ($p \leq .05$) better on 106 of the measures. Differences between groups on the 14 summary scales were determined using t tests and analyses of variance. Schizophrenics without brain damage performed significantly ($p \leq .01$) on all the scales.

These results indicate that the Luria-Nebraska Battery reliably discriminates between schizophrenics with and without brain damage using 38% of the individual items and the 14 summary scales. Preliminary results also suggest the possibility of developing an abbreviated version of this standardized test.