APOLIPOPROTEIN E GENOTYPES AND ALZHEIMER DISEASE IN TWO BLACK POPULATION GROUPS

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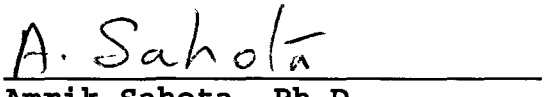

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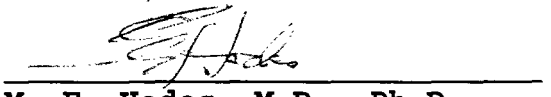

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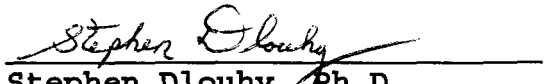

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SUMMARY

In order to evaluate the role of apolipoprotein E (ApoE) genotypes and environmental factors in the development of late-onset Alzheimer disease (AD), we have determined ApoE genotypes in two black population groups of West African origin (one from Indianapolis, Indiana and the other from Ibadan, Nigeria). A procedure for ApoE genotyping from dry blood spots was developed.

The study shows that the e4 allele of ApoE is a risk factor for the development of late-onset AD in the American black population; the e4 allele frequency was 37.2% in the probable AD group compared with 16.7% in the control group ($P<0.001$). But, the association between the e4 allele and AD was lacking in the Nigeria population; the e4 allele frequency in AD cases was 17.7% compared with 20.5% in the control group ($P>0.5$).

One explanation for these results is that environmental factors may modify the expression of e4 allele to accelerate (in Indianapolis) or retard (in Ibadan) the development of AD, since these two populations with a presumed common genetic background live in different social environments. An alternative explanation is that another gene for AD might have been introduced into the American black population through the white population as is believed to be the case for Huntington disease.

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