

IMPAIRED GLUCOSE TOLERANCE AND HYPERINSULINAEMIA IN
ADOLESCENT AUSTRALIAN ABORIGINESM. GRACEY, K. WHITE*, R.M. SPARGO**, R.M. SMITH***,
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Hyperinsulinaemic diabetes mellitus (non-insulin dependent diabetes mellitus, NIDDM) is very prevalent in certain groups of aboriginal peoples whose patterns of living and diets have changed over recent years. This is so for Australian Aborigines who have changed from a hunter-gatherer lifestyle to become largely sedentary and to now have a Westernized dietary pattern. In the Kimberley region of Western Australia up to 18% of Aboriginal adults have NIDDM (O'Dea et al. 1982) compared with less than 3% in white Australians. A temporary return to hunting, food gathering and traditional diet can reverse the biochemical abnormalities in affected persons (O'Dea 1984).

In an attempt to detect these biochemical abnormalities before adult life in this high-risk group, we investigated 100 apparently healthy children and adolescents aged 7-18 years in four remote Aboriginal communities in the Kimberley. Blood samples were taken from fasting subjects for determination of glucose, insulin, C-peptide and a comprehensive lipid profile; samples were then taken 60 minutes and 120 minutes after an oral glucose load. At least eight subjects (8%) had hyperinsulinaemia (plasma insulin 51-204mU) including four (aged 13,14,15 and 18 years) with frankly diabetic glucose tolerance curves; 21 of these 24 subjects were females. None of the affected subjects was less than 11 years of age. The mean Body Mass Index (BMI = wt/ht²) of the 14 affected children aged 11-14 years was 19.1 (range = 13.6-33.6) and of the 10 subjects aged 15 years and over was 22 (range = 16-32).

These data show that hyperinsulinaemia is very prevalent in adolescent Aborigines in the Kimberley and that 4 out of 100 apparently healthy subjects investigated seem to have biochemical diabetes, not necessarily associated with being overweight or obese. We hypothesize that this is due to genetic predisposition and precipitating dietary factors. Earlier detection of markers of NIDDM may help prevent development of overt diabetes and its long-term complications.

O'DEA, K. (1984). *Diabetes* 33: 596.

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