ABSTRACT

TITLE:	A Comparison of Glycosylated Hemoglobin and Fasting Blood Glucose as Indicators of Insulin Resistance in Native American Students
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ABSTRACT: Fasting blood glucose and percentage of glycosylated hemoglobin (HbA1c) are two known predictors of insulin resistance (IR). Although the incidence of diabetes is high in most Native American populations, IR indicators have not been studied. I examined fasting glucose and HbA1c in NA college students and their BMI-matched Caucasian (CA) peers. Fasting blood glucose was determined along with percent fat and waist-to-hip ratio. A whole blood sample from each subject was analyzed for percent HbA1c using the Diazyme Direct Enzymatic HbA1c Assay. Differences in HbA1c between matched NA and CA, as well as the correlations between HbA1c, body fat % and fasting blood glucose were determined. The trend shows a higher % HbA1c in the NA population than in the CA population, (6.26 + 0.85 and 4.96 + 0.95%, respectively), but the averages were not significantly different ($p = 0.15$). Interestingly, HbA1c was negatively correlated with fasting glucose in both NA and CA ($r = -0.14$ and -0.04, respectively), and with % body fat in NA ($r = -0.065$), but was positively correlated in CA ($r = 0.298$). These correlations were not significant. There was a small positive correlation between % dietary carbohydrates and % HbA1c in NA ($r = .172$). That correlation is not significant; However there was a significant negative correlation between % dietary carbohydrates and % HbA1c in CA ($r = -.664$). These results indicate that in our small sample, HbA1c did not differ in NA college students and their CA peers but there are interesting avenues for further research.