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The Effects of daily diabetina tea consumption on glycosylated hemoglobin, fasting glucose and lipid levels, and body mass index in normoglycemic individuals

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The Effects of Daily Diabetina Tea Consumption on Glycosylated Hemoglobin, Fasting Glucose, Lipid Levels and Body Mass Index in Normoglycemic Individuals.

Type 2 diabetes mellitus is a chronic disease responsible for high levels of morbidity and mortality in the United States, especially among some ethnic minority populations. Diabetina tea, a commercially-available herbal blend tea, is a well known herbal remedy for high blood sugar among Hispanic American diabetics. This study will examine the effect of twice-daily unsweetened Diabetina tea consumption over an 8 week period on glucose (sugar) and lipid (fat) metabolism. Potential effects of Diabetina tea consumption on glucose metabolism will be measured by glycosylated hemoglobin (HbA1c) and fasting glucose tests, while the potential effects of Diabetina tea consumption on lipid metabolism will be measured by fasting blood lipid levels, in addition to body mass index (BMI) and waist circumference (WC) measurements.
The Effects of Daily Diabetina Tea Consumption on Glycosylated Hemoglobin, Fasting Glucose and Lipid Levels, and Body Mass Index in Normoglycemic Individuals

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Abstract
Type 2 diabetes mellitus is a chronic disease responsible for high levels of morbidity and mortality in the United States, especially among some ethnic minority populations. Diabetina tea, a commercially-available herbal blend tea, is a well-known herbal remedy for high blood sugar among Hispanic American diabetics. The use of Diabetina has been cited in peer-reviewed journal articles, such as the use as an additional pharmacological for insulin-dependent diabetes mellitus in south "Texas" (Noel et al., 1997).

This study examines the effect of twice-daily unsweetened Diabetina tea consumption over an 8-week period on glucose (sugar) and lipid (fat) metabolism. Potential effects of Diabetina tea consumption on glucose metabolism will be measured by glycosylated hemoglobin (HbA1c) and fasting glucose tests, while the potential effects of Diabetina tea consumption on lipid metabolism will be measured by fasting blood lipid (fat) levels, in addition to body mass index (BMI) and waist circumference (WC) measurements.

Methods
Twenty healthy subjects between the ages of 18 and 34 are recruited from the university campus population. Prospective study participants are invited to attend a group (n=10) orientation in the UNLV Nutrition, Metabolism, and Anthropometry Lab. Only participants who drink any type of coffee or tea are occasionally (once per week or less) are asked to complete one final study qualification step: a fingerstick blood sample for a glycosylated hemoglobin (HbA1c) test. HbA1c tests measure a person's average blood glucose over the preceding 8 to 12 weeks. Glycosylated hemoglobin is assayed using a bench top Bayer DCA 2000 Analyzer (COBAS, Roche). Each participant's HbA1c test results become available in 10 minutes. Only study participants who have HbA1c blood sugar levels in the non-impaired, healthy range (<6%), are allowed to continue in the study.

Once a participant's <6.0% HbA1c level has been confirmed, they are scheduled to return to the lab within one week to provide a fasting (no food in the previous 10 hours) fingerstick blood sample. This second fingerstick sample consists of 100 microliters (0.1 cc or approximately 5 or 6 drops) of whole blood, which is assayed for fasting blood glucose and blood lipids. Fasting glucose and lipid levels are assayed using an ABL 800 Blood Glucose Meter (IL, Deerfield, IL). Participants are also measured for standing height (rigid tape measure), weight (electronic scale), and waist circumference (WC) (flexible tape measure).

At this point, participants are randomly assigned to two of three groups: one group of 10 participants are provided with enough of Diabetina tea to consume two (and only two) cups (approximately 8 oz each) of unsweetened tea per day for the next 8 weeks; the other group of 10 participants receive enough unsweetened green tea to consume two (and only two) cups of unsweetened tea per day for the next 8 weeks; the other group of 10 participants receive enough unsweetened green tea to consume two (and only two) cups of unsweetened tea per day for the next 8 weeks. At this double-blind study visit, study researchers randomly assign which group the participants should receive. Participants are asked to refrain from all other tea consumption during the study and to note their daily (study) tea consumption — including any missed days — on a calendar.

After 8 weeks (study midpoint), participants are scheduled to return to the lab in a fasted state to repeat the HbA1c, fasting glucose/lipid tests and anthropometric (BMI/WC) tests/measurements. At this time, participants are once again provided with enough tea (either Diabetina or green tea — whichever they did not receive during the previous 6 week period) to consume two cups of unsweetened tea per day for an additional 8 weeks.

Eight weeks later (16 weeks into the study) participants are once again scheduled to return to the lab in a fasted state to be tested/measured as before. Upon completion of the study, HbA1c data, fasting glucose and lipid levels will be analyzed to determine if HbA1c glucose levels, fasting glucose and/or lipid levels significantly differ after participants began consuming tea (a daily basis, and/or whether or not lab values differed significantly based on the type of tea being consumed. Participants' anthropometric data (BMI/WC) will be analyzed to determine if any significant weight-loss occurred over the period of 16 weeks of participation. Statistical analyses will be performed using SPSS 11.5.

Discussion
Due to the 16-week time table of this research project, as well as the complexities which accompany conducting human research, no data has been analyzed to date. However, we are working proactively toward results.

The deliverable outcomes of this research include the publication of important medical and nutritional anthropological information in the form of peer-reviewed manuscripts in appropriate anthropological and scientific journals. Additionally, this research may potentially be presented at national conferences, such as those held by the American Anthropological Association and the Society for Medical Anthropology.

Literature Cited

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