

Fulton County Diabetic Risk Factors

Andrei Froehling M3
RSP

University of Illinois College of Medicine at Peoria

Introduction/Background

• Diabetes Mellitus type II was reported to affect 29.1 million Americans in 2012 according to the American Diabetes Association (9.3% of population). Millions more are at risk and considered pre-diabetic. The purpose of this study is to focus on modifiable risk factors that are within patients' control to adjust their average glucose levels. The intent of this study is to establish and compare the degree of importance of said risk factors.

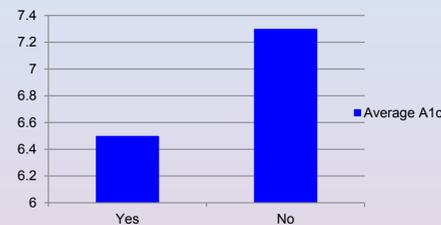
Methods

- Data was collected with a distributed survey
- 95 subjects completed the survey
- Criteria require the test subject be: A type II Diabetic, in the age range of 18-75, not pregnant and have at least 1 previous hemoglobin A1c value
- Records of up to 4 most recent HA1c levels were recorded
- Number and names of medications were recorded
- Classification of controlled versus uncontrolled A1c was based off of age, participants aged 18-45 were deemed to have "controlled" A1c values if they were 7.0 or lower, ages 46-75 had "controlled" values if A1c was 8.0 or lower
- The answers of the 11 question survey were compared against the HA1c values and medications

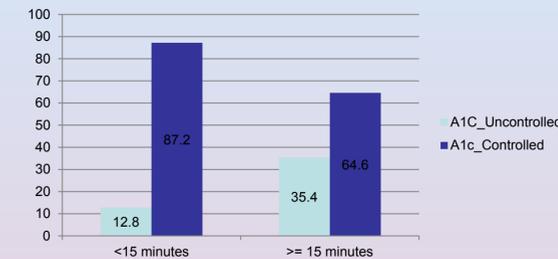
Results

- People who checked their glucose levels daily were seen to have a statistically significant better ($p < .0193$) A1c than those who did not.
- People who required little or no glucose modulating medications were found to have better ($p < .0001$) A1c values than those requiring more medications.
- Diabetics who smoked were found to have better A1c averages (6.84 A1c) than non-smokers (7.20), but this was not found to be statistically significant ($p < 0.3645$)
- Diabetics who drank more than 3 alcoholic beverages per day on average had, on average, better A1c values than those seen in diabetics who drank fewer than 3 alcoholic beverages a day ($p < 0.2141$)
- Participants who walked fewer than 15 minutes per day were more likely to have a controlled A1c value than an uncontrolled A1c ($p < 0.01$).

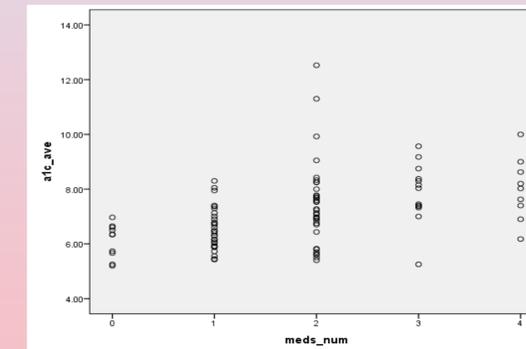
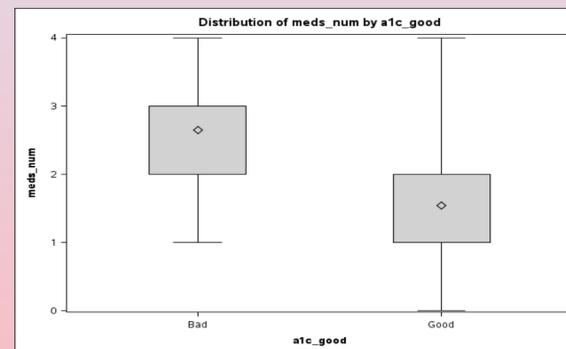
Average A1c in daily glucose checks



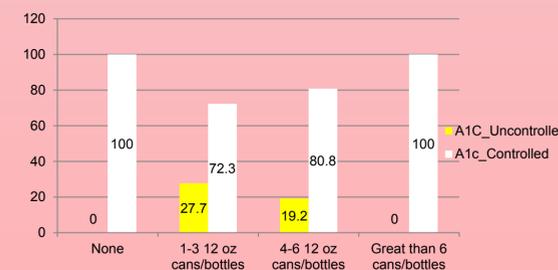
How much time do you spend walking each day?



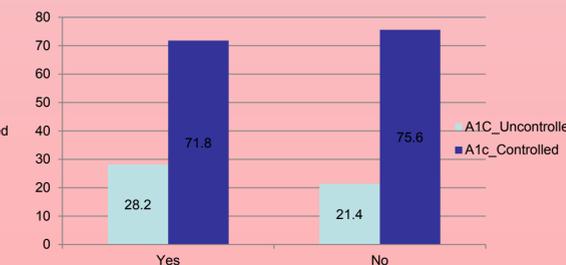
Association between number of medications and average A1c values



How many sugary beverages do you drink a day?



Do you eat a low carbohydrate diet?



Conclusions

- The results show that people suffering from type II Diabetes Mellitus would benefit from checking their glucose levels daily as this has been associated with better overall A1c control. This is likely more relevant to patients that administer different insulin formulations (Glargine, lispro, NPH, regular insulin), because they are able to adjust and micromanage their medication dosage.
- While the results regarding the effects smoking and alcohol have on glucose control were statistically insignificant they do warrant further research. Of the 13 subjects that smoke, 12 were deemed by the set criteria to have "good" A1c control. Of those 12, 6 had average A1c's lower than 6.4%.
- The participants that required the addition of more glucose modifying medications were more likely to have poor glucose control. This most likely represents the population that was unable to attain control by means of diet and other non-medication factors, or those unwilling to comply with said non-medication factors.
- Overall the average glucose control of the Fulton County type II diabetic population was well controlled. This does however only apply to DMII patients that come to the clinic.
- A larger population size is needed for more conclusive results.

References

- Stratton et al. UKPDS 35, BMJ;2000;321;405
- Nathan. DCCT & EDIC, NEJM;1993;329;14
- "Statistics About Diabetes," American Diabetes Association, last modified February 1st 2016, <http://www.diabetes.org/diabetes-basics/statistics/>