Between 2001 and 2009 there was a 21% increase in the prevalence of type 1 diabetes (T1D) in people under age 20.1–2 As young adults, ages 18 to 25, transition to greater independence in college, a shortened sleep duration is a reality; due to studying late hours, socializing with friends, etc. Since disrupted or shortened sleep may occur in young adults, impaired insulin sensitivity among those with T1D is concerning. Little information is available regarding sleep habits in young adults diagnosed with T1D or the impact of poor sleep on glucose management.

### INTRODUCTION
- Between 2001 and 2009 there was a 21% increase in the prevalence of type 1 diabetes (T1D) in people under age 20.
- As young adults, ages 18 to 25, transition to greater independence in college, a shortened sleep duration is a reality; due to studying late hours, socializing with friends, etc.
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- Little information is available regarding sleep habits in young adults diagnosed with T1D or the impact of poor sleep on glucose management.

### MEASUREMENTS
- **Hemoglobin A1C:** Average of blood sugar control over 2-3 months
- **Sleep:** The Adolescent Sleep, Caffeine Intake, and Technology Use Questionnaire
  - Validated in adolescents and young adults3
  - 36-item self-administered questionnaire, 10-15 minutes to complete5
  - 3 concept instrument that measures intake of caffeinated drinks, use of nighttime media related technology, and sleep behaviors1
- **Resilience:** Resilience Scale (RS14)
  - 14-item scale Likert scale format, 2-4 minutes to complete1,4
  - Scores of 73 or < is considered low versus 91 or > is high
  - Greater the score, greater his/her resilience in response to an event1,4
  - Internal consistency reliability r = .934,5

### PURPOSE/RESEARCH QUESTIONS
- **Purpose:** To describe sleep patterns of young adults with T1D as well as the relationship to glucose management and resilience.
- **RQ 1:** What is the relationship between hemoglobin A1C and: a.) Sleep, b.) daytime napping, c.) resilience, and d.) caffeine intake among those with type 1 diabetes 18-25 years of age in college and living on campus?
- **RQ 2:** What is the effect of a.) decreased sleep duration, b.) daytime napping, c.) low resilience, and d.) high caffeine intake on a hemoglobin A1C of those with type 1 diabetes 18-25 years of age in college and living on campus?

### METHODS
- Descriptive, cross-sectional research design using an Internet based survey
- Research Electronic Data Capture (REDCap)
- Professionally managed, secure, web based, HIPAA compliant environment for building and managing web-based projects
- Institutional Review Board approval from the University of Delaware

### SAMPLE/DATA COLLECTION
- Young adults ages 18-25 years old
- Currently enrolled in college/university and living on campus
- Have a T1D diagnosis
- Sampling technique: snowballing, Facebook posts, College Diabetes Network newsletter
- Remuneration: $10 electronic gift card

### ANALYSIS
- SAS® 9.4 and a priori significance level of p = 0.05.
- Descriptive statistics: demographic, DV, and IVs of interest
- All measures will be correlated with diabetes management (hemoglobin A1C) using a Pearson correlation
- Regression models will be built with Hemoglobin A1C as DV

### PRELIMINARY RESULTS
- 71% of the sample use an insulin pump for diabetes management
- The sample consisted mostly of females (75%), Caucasian (90%), and Non-Hispanic (95%)
- Improved sleep during the week was related to improved resilience (r = -0.249, p = 0.02)
- Insulin Pump Evolution

### CONCLUSION
- Young adults with T1D are sleeping less than the National Sleep Foundation recommendations during the school or work week
- Preliminary analysis demonstrates an association between sleep and resilience: Sleep potentially improves mental outlook that helps young adults cope with the demands of their chronic illness
- The nurse can play a key role in educating young adults with T1D on healthy lifestyle focused on proper sleep, nutrition, and physical activity