DIABETES GOES TO COLLEGE:
Update on DM in the College Student
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TYPE 1 DIABETES FOR 24 YEARS.

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ALL SPEAKERS: NO CONFLICTS OF INTEREST TO DISCLOSE.
OBJECTIVES

1. Identify best practices in achieving the healthy transition of a student with DM from home to college health service care.
2. Review 3 components of individual care plans for students with DM.
3. Outline the elements essential to DM management.
4. Discuss the challenges faced by students with diabetes as they adjust to life on campus.
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THE PLAN FOR TODAY

► BRIEF REVIEW OF DIABETES MELLITUS-pathophysiology, treatment options, etc

► QUESTIONS AND ISSUES SPECIFIC TO COLLEGE STUDENTS WITH DM- INTERACTIVE DISCUSSION

► ?CASE PRESENTATION(S)- YOURS, MINE AND OURS!
Diabetes Goes to College

What is Diabetes?
Type 1 Diabetes Mellitus

- ~1,000,000 Americans
- Destruction of pancreatic beta cells
- Failure to produce insulin:
  - Autoimmune
  - Beta cell toxins
  - Idiopathic
Pathophysiology of Type 1 Diabetes

Autoimmune Destruction of \( \beta \) Cells

Lack of Insulin

Unrestrained Lipolysis

Ketone Formation
Medications for the Treatment of Type 1 Diabetes

**Insulin**

(oral agents not indicated)
Type 2 Diabetes Mellitus

- ~29 Million Americans
- arises because of insulin resistance and *relative* insulin deficiency
- beta cell destruction is *not* an early pathologic feature
Pathophysiology of Type 2 Diabetes

Insulin Resistance
at level of muscle and other tissues

Relative β Cell Insufficiency
Insulin levels can be Low, Normal, or High

Elevated Hepatic Glucose Output
Figure 1. Summary of the metabolic abnormalities in NIDDM that contribute to the hyperglycemia. Increased hepatic glucose production, impaired insulin secretion, and insulin resistance due to receptor and postreceptor defects all combine to generate the hyperglycemic state.
The Route to Hyperglycemia in Type 2 Diabetes

- Impaired Insulin Secretion
- Increased Hepatic Glucose Output
- Gastrointestinal Absorption
- Insulin Resistance

HYPERGLYCEMIA
Pathogenesis of Hyperglycemia in Type 2 Diabetes Mellitus

- Impaired Insulin Secretion
  - Sulfonylureas
- Gastrointestinal Absorption
  - Alpha-glucosidase inhibitors
- Increased Hepatic Glucose Output
  - Metformin
- Insulin Resistance
  - Thiazolidinediones (Glitazones)

Hyperglycemia
Insulin Levels in Individuals without Diabetes
REFERENCES


- College-bound: Preparing to Take your Diabetes Away From Home: [http://www.joslin.org/info/college_boundPreparing_to_take_your_diabetes_away_from_home.html](http://www.joslin.org/info/college_boundPreparing_to_take_your_diabetes_away_from_home.html)


- Albany Medical Center Goodman Diabetes Service DM educational links: [www.amc.edu/Patient/services/endocrinology/diabetes_education.cfm](http://www.amc.edu/Patient/services/endocrinology/diabetes_education.cfm)
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STUDENT SPECIFIC DM ISSUES

- Should I let housing/residential life know about my diabetes before I arrive? What about the health center?

- What supplies should I bring with me? And how much?

- What about storing my insulin and needles? Locked? Fridge?

- How will I dispose of needles in my dorm room?
STUDENT SPECIFIC DM ISSUES (cont)


- What about partying?

- What if I go low (have hypoglycemia) in the middle of the night?
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HEALTH CENTER SPECIFIC DM ISSUES

- Should every student with DM be “flagged”?

- Should students with DM establish with endocrinologist in the college area?

- Should we obtain FSBG (finger stick blood glucose) every time a diabetic student comes into health center? How about urine for ketones?
CASE PRESENTATION

► 25 yo female c/o urinary frequency with irritation and small voids x 2 -3 days.
► She denies vaginal d/c, itching or burning.
► No prior UTI.
► She denies nausea, vomiting, fever, chills, abd or back pain.
► Denies ST, cough or other URI sx.
CASE PRESENTATION (cont)

- Diabetes since age 11 and wears a pump.
- Checks her FSBG approx. 6-7 x/day
- Recently FSBG’s running in low 200’s.
- Denies h/o DKA (diabetic ketoacidosis) except may when first diagnosed.
- Believes she’s been drinking enough fluids today.
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CASE PRESENTATION (cont)

PE/LABS:
Well appearing in NAD, Temp: 98.1
BP: 116/80, P: 115, BMI: 22.7
Abd: nl BS, soft, nontender, no masses, no CVA tenderness, pump in place with no surrounding erythema at site of insertion

- Urine dip: Spec Grav: 1.025, large ketones, other neg
- Fingerstick BG: 216 (ate lunch 2 h ago)
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CASE PRESENTATION (cont)

ASSESSMENT: ?? UTI/ DM

PLAN:
- Urine culture sent out
- Macrobid 100 mg bid x 5 days
- Increase fluids, monitor ketones, FSBG
- Follow up appt tomorrow- recheck urine then
CASE PRESENTATION (cont)

Follow up visit – Pt continues to have slight urinary sx. She reports no ketones in urine last night and FSBS was below 200.

PE: well appearing, T: 98.3, P: 99, BP: 133/71

Labs: FSBG: 222, Urine: SG- 1.010, Glu +, Ket neg
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CASE PRESENTATION (cont)

PLAN:
- Pt advised to cont. Macrobid till urine cx returns
- Advised to establish with Endo in area
- Follow up as needed (will call with culture results)

ADDENDUM: Urine cx = negative growth
Pt was notified and reports cont intermittent sx- sugars “OK”.
advised Endo ASAP
Supporting the young adult with diabetes: Understanding the unique needs of this population and resources available to both students and providers.
RESOURCES FOR YOU

- Information on how to become a faculty advisor to your campus CDN Chapter
- Diabetes Cheat Sheet for Professors
- Order CDN brochures
- Sample email to students with diabetes on campus
- Legal rights of students with diabetes on campus

Collegediabetesnetwork.org/content/campus-health
RESOURCES FOR YOUR STUDENTS

- Information and resources to start a chapter on campus
- Scholarship Information
- Job/Internship Openings
- Preparing for College Checklist
- How to talk to friends and roommates about diabetes in college
- Drinking and Diabetes
- Sick Days with Type 1

Collegediabetesnetwork.org
CDN’S MODEL

1. THE TOOLS

2. THE NETWORK

3. THE ECOSYSTEM

Clinicians

Campus Health

YOUNG ADULT

Parents

Friends

Campus Faculty

Clinicians

Campus Health

YOUNG ADULT

Parents

Friends

Campus Faculty
CHAPITERS

Support networks on campus created and run by students

Chapters provide:

- A safety net of people to call
- A way to meet other students juggling school and diabetes
- A place to share tips and get acquainted with local resources
- A chance to take a leadership role
- An opportunity for community outreach
- Access to the latest diabetes technology
- Invitations to events on campus
CHAPTER RESOURCES

We provide chapters with:

- Chapter Webpage
- Chapter Email Address
- Personal support from CDN’s Program Director
- Materials
  - Chapter Toolkit – instructions on how to create and run a sustainable chapter
  - Includes templates, instructions, documents, brochures, flyers, forms
Stay in Touch!

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