



TYPE 1 DIABETES

for

EMERGING ADULTS

[ages 18-25]

A HEALTH
LITERACY GUIDE
BY RORY MCDERMOTT



HOW TO

PASS

ADULTHOOD WITH A

FAILED

PANCREAS



TABLE OF CONTENTS

Before you get started, you should know: Type 1 Diabetes is **manageable**.

Unfortunately, it gets easily confused with its counterpart, Type 2 Diabetes. This guide walks through the intricacies of daily Type 1 diabetic life for **emerging adults** - young people aged 18-25. **Resources, support groups, and need-to-know** information help you live the life you want *without the confusion.*

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STUDY GUIDE

IT'S NOT FOR AN EXAM, JUST REAL LIFE

TERMS YOU SHOULD KNOW

- **A1C:** A VALUE (%) MEASURING BLOOD SUGAR LEVELS OVER 90 DAYS
- **PANCREAS:** DIGESTIVE ORGAN
(DIABETES OCCURS WHEN THE PANCREAS STOPS PRODUCING INSULIN)
- **INSULIN:** HORMONE, BREAKS DOWN & REGULATES SUGAR IN THE BLOOD
- **CARBOHYDRATES (CARBS):** SUGARS, STARCH, & FIBER

9.2%

**AVERAGE A1C FOR 19 YEAR OLDS
TOO HIGH, HIGHEST OF ANY AGE¹**
NON-DIABETICS SHOULD BE < 5.7, HEALTHY DIABETIC < 6.5

TYPE 1 vs. TYPE 2

DIAGNOSIS AGE

BORN WITH OR
DURING
CHILDHOOD

OVER TIME,
MIDDLE TO LATE
ADULTHOOD

CAUSES

GENETICS,
ENVIRONMENT

OBESITY,
HIGH SUGAR INTAKE

PANCREAS

CELLS STOP
WORKING DUE TO
IMMUNE SYSTEM

CELLS STOP
WORKING DUE TO
OVERUSE²

COMMON SYMPTOMS

THIRST

FREQUENT URINATION

LOW ENERGY

BLURRED VISION

DRY SKIN

WEIGHT LOSS³

INSULIN

TYPE 1 DIABETICS TAKE INSULIN
REGULARLY AT MEALS AND
THROUGHOUT THE DAY³



PUMP SYRINGE/PEN²
DELIVERY METHODS

DAY
TO
DAY
LIFE

CHECK BLOOD SUGAR THROUGHOUT THE DAY WITH:



GLUCOMETER²



**CONTINUOUS GLUCOSE
MONITOR (CGM)⁴**

Nutrition Facts	
Serving Size 1 Cup (288g)	
Amount Per Serving	
Calories	110
Total Fat 13g	20%
Total Carbohydrate 31g	10%
Sugars 5g	10%

**COUNT
CARBOHYDRATES**

(AVERAGE DIET HAS
250 CARBS/DAY)⁵

**A HEALTHY DIET AND EXERCISE ARE GREAT
WAYS TO IMPROVE DIABETES CARE &
OVERALL HEALTH⁴**



¹ Miller et al. (2015)

² American Association of Clinical Endocrinology

³ CDC (2021)

⁴ JDRF

⁵ Mayo Clinic Staff (2020)



ONLINE RESOURCES

Click on the logos for links to these resources



JDRF

The Juvenile Diabetes Research Foundation (JDRF) is the leading non-profit organization for Type 1 Diabetes Research. This link goes to their resources page, which includes a section for adults and newly-diagnosed individuals.



College Diabetes Network

CDN is a non-profit that helps students connect with other Type 1 Diabetics at their school. They provide resources, leadership, and jobs to high schoolers, parents, and college faculty. See if your school is one of 259 that has a chapter!



Tandem

Tandem's t:slim X2 insulin pump is a leading innovator in the technology. It features a touch-screen system that can also connect with a CGM to give or stop insulin when needed. It is great for young people, especially on the technical side.



Dexcom

Dexcom produces one of the best continuous glucose monitors. Their website has information about their products and CGMs. All patients including emerging adults report life-changing results that eliminates regular finger pokes.



American Diabetes Association (ADA)

ADA is the go-to organization for information and advocacy. This link is their home page for Type 1 Diabetes. They provide highly reliable and researched information in addition to advocacy for rights, mental health, and treatment costs.



NIH-NIDDK

The National Institute of Health's organization focused on diabetes has great resources for research and statistics in the United States. If you are looking for credible information backed by science, check out their website!

Having Type 1 Diabetes can be **tough**.

It's why adults with Type 1 Diabetes face higher rates of mental health concerns, and your mental health affects your diabetes health.

Care is **bigger** than the physical treatment of diabetes; it includes emotional, spiritual, and relational health.

Support groups provide a different kind of care.

- Form friendships with peers who know what its like.
- Hear tips and encouragement
- **A place to be yourself**

It can be hard to talk about diabetes with your friends and lonely when you don't know anyone else who has it. A support group can solve those problems, and they want you to join!

JOIN A SUPPORT GROUP!

**Click on group name to view websites*

IN-PERSON

UNIVERSITY OF IOWA COLLEGE DIABETES NETWORK CHAPTER

Hear the ins and outs of being a CDN chapter and connect with Type 1 Diabetic students at the U of Iowa!

CONTACT: Molly McCain
Fill out [this form link](#) to contact

Meeting Time & Location: Varies;
events are organized by the group
with details posted on social media



ONLINE

BEYOND TYPE 1 COMMUNITY

<https://community.beyondtype1.org/>

This group uses group messaging for questions, a place to share stories or experiences, and peer support.

TO JOIN: Click on the "Request to Join" button on the webpage and provide your information.



TOP 10 STRATEGIES for TYPE 1 DIABETES as an EMERGING ADULT

● PRACTICE SELF-MANAGEMENT AS EARLY AS POSSIBLE⁶ ●

● Check blood sugars, use pump, even order supplies by learning from your parents and then doing it yourself ●

MAKE A LIST OF SUPPLIES YOU NEED AT SCHOOL⁷

Things to include: insulin pump sites, CGM sites, cartridges, insulin vials, needles, alcohol swabs, glucagon pen, & more

TELL ROOMMATE(S) ABOUT YOUR DIABETES & HOW THEY CAN HELP⁸

Most schools require a roommate form to facilitate discussion over living arrangements. It's a great time to share your diabetes, the supplies you brought, and ask if they have questions. You'll mostly manage on your own but it's nice for them to know!

● WORK WITH ACCOMMODATIONS OFFICE & TELL PROFESSORS ON THE FIRST DAY⁸ ●

● Schools have an accommodations office for students to describe their health concerns and outline arrangements for any needs they have. Professors and administrators help make these possible so that you can succeed! ●

MAKE A DIET PLAN WITH A CAMPUS DIETITIAN⁸

Many campuses offer dietary services. Dietitians provide expertise as you establish your diet of new foods & environments.

SCHEDULE EXERCISE & DIABETES CARE IN A PLANNER/ONLINE CALENDAR⁷

These daily activities are best prioritized when they are in your schedule with classes, study time, etc.

● GIVE INSULIN BEFORE LEAVING FOR THE DINING HALL⁷ ●

● This will help prevent highs following meals, which is a common bad habit for diabetics. ●

EMBRACE TECHNOLOGIES (CGM, PUMP) THAT SAVE TIME & IMPROVE HEALTH⁹

Go online for information (see online resources page) and ask your doctor at your next appointment about your options.

● ASK YOUR DIABETES PROVIDER ABOUT THE FUTURE TRANSITION TO ADULT CARE¹⁰ ●

● Youth under 18 see a pediatric diabetes provider. During emerging adulthood, patients shift to an adult provider. This transition can be stressful and hard to navigate. Your current provider can help! ●

USE CAMPUS/COMMUNITY MENTAL HEALTH RESOURCES¹¹

Your college transition is trickier than most. Diabetes doesn't have to stop you! Look up your school/nearest counseling center; their job is to provide a space to support you.

⁶ Campbell et al. (2019) ⁷ Making the leap from Type 1 teen to adult (2021)

⁸ College Diabetes Network ⁹ American Diabetes Association (2021)

¹⁰ Peters et al. (2011) ¹¹ de Groot et al. (2016)

AN EXPERT'S TAKE



Mary Greeley
MEDICAL CENTER

Sarah Haveman RD, LD, CDCES Diabetes Educator
Mary Greeley Medical Center Ames, IA

Haveman has years of experience working with Type 1 Diabetic emerging adults. She communicates with patients through personal connection. She provides information, resources and, being in a college town, she has worked with many students.

The following is a summary of her advice to emerging adults.

MISCONCEPTIONS

- **"You ate too much sugar"**
- **"Don't eat anything white"**
- **"Is that the bad one?"**
- **"It's your fault"**

These are **inaccurate** and can affect

- **mental health**
- **how we interact with Type 1 Diabetics**

APPROACH/MENTALITY

Different depending on personality

- **Survival skills** at diagnosis
- **Internalization**
- **Type A's** want to do it perfectly
- Some are **bitter**
- **Deniabetes** - those who struggle to accept diagnosis

Open communication is key.

**TO FAMILY
& FRIENDS**

Empower Encourage

Ask how you can be there for your loved one

EMERGING ADULTS

- **Learning how to manage on your own**
- A college diagnosis = **huge stressor**
Learning an unexpected disease + fitting into a busy lifestyle
- Emerging adults start to take it seriously
 - Result: **Burnout** is real

Tips

1. Talk to your roommate
2. Get accommodations

Resources

see hyperlinks

- College Diabetes Network (CDN)
- T1D Exchange
- diaTribe - news, information, Q&As
- Connect with your doctor, medical staff, educators like her!

ADVICE

**Improvement
over
Perfection**

- Focus on something **small & realistic**
- **Set goals** for tomorrow & the future
- Take it step by step
- Most importantly, **save room for grace**

**Patience
with
Family**

- Tension with parents is **normal**
- She offers to be the middle man, but stresses that "**choices are for you, not your mom.**"

"I try to give more support than advice."

- Sarah Haveman

5 PEER-REVIEWED JOURNAL ARTICLES

Resources

- American Diabetes Association. (2021). 7. Diabetes technology: Standards of medical care in diabetes – 2021. *Diabetes Care*, 44(Supplement 1), S85-S99. https://care.diabetesjournals.org/content/44/Supplement_1/S85
- This article is the 7th section of the current *Standards of Medical Care in Diabetes*. It presents overarching current medical advice for all kinds of diabetes. Specifically, this section reviews relevant technologies used in medical treatment and daily self-management. Experts at the American Diabetes Association research latest trends and offer their advice based on results found in other articles, which they present as well. Improved glucose levels and A1C were achieved through blood sugar checkers and continuous glucose monitors (CGMs). Also, lifestyle differences created positive and negative outcomes with insulin pens compared to pumps, and exciting developments in combining monitors and insulin delivery plus applications. Emerging adults can learn from the sections covering adults as well as older youth, and more broadly, their high literacy of technology makes them well suited for these life-changing technologies.
- Campbell, M. S., Wang, J., Cheng, Y., Cogen, F. R., Streisand, R., & Monaghan, M. (2019). Diabetes-specific family conflict and responsibility among emerging adults with type 1 diabetes. *Journal of Family Psychology*, 33(7), 788-796. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6776682/>
- From a psychology perspective, this article examined the interactions between parents/guardians and emerging adults with Type 1 Diabetes. Specifically, conflicts were investigated to determine if these issues were related with diabetic health information like A1C levels and overall self-management. Researchers provided questionnaires to high school seniors as they graduated and then pursued post-secondary opportunities, and the questions related to arguments, taking initiative in the individual's care, and glucose levels. While the researchers did not find too much conflict among families, they did notice correlations between high parent responsibility, increased conflict, and "worse glycemic control". They also found some differences between genders, parent-emerging adult perception of conflict, and the use of technologies, indicating these differences have unique factors at play. The findings suggest more self-initiative of diabetes care as a teenager led to a better transition during the emerging adult age period. Emerging adults can be healthier and happier individuals if they take steps early to manage their care themselves instead of a parental figure being the primary caregiver.
- de Groot, M., Golden, S. H., & Wagner, J. (2016). Psychological conditions in adults with diabetes. *American Psychologist*, 71(7), 552-562. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5061033/>
- Having diabetes presents many possible psychological effects on those who live with the chronic condition. This article researches relevant literature on these effects and examines how they impact diabetes treatment. Researchers looked at current literature and their findings in four major areas of mental health: depression, anxiety, disordered eating behaviors, and severe mental illness. Having one or more of these conditions related to more diabetic complications and worse health outcomes, making the subject very relevant to all diabetics. Building off the last point, mental health concerns rise during the emerging adult population as individuals live independently for the first time and make major life decisions. Further, the ongoing pandemic is worsening mental health in all age groups.
- Miller, K. M., Foster, N. C., Beck, R. W., Bergenstal, R. M., DuBose, S. N., DiMeglio, L. A., Maahs, D. M., & Tamborlane, W. V. (2015). Current state of type 1 diabetes treatment in the U.S.: Updated data from the T1D Exchange Clinic registry. *Diabetes Care*, 38(6), 971-978. <https://care.diabetesjournals.org/content/38/6/971>
- With new technologies being introduced to Type 1 Diabetics, this article looked at how these technologies are being received and implemented by patients. The research included thousands of participants and was conducted at their medical appointments. Questionnaires were given about glucose statistics, insulin pump and continuous glucose monitor usage, and complications like diabetic ketoacidosis. A very alarming result found declines in A1C control across the population as they became familiar and perhaps desensitized to having diabetes. This result was largely caused by 13-25 year olds, who experienced a spike in levels (peaking around 9.2%) compared to most adults 30 and older (settling around 7.5%). Results were loosely related to technology use, suggesting these could be used effectively. More importantly, we need to promote and educate healthier habits among emerging adults to improve the concerning results.
- Peters, A., Laffel, L., & American Diabetes Association Transitions Working Group. (2011). Diabetes care for emerging adults: Recommendations for transition from pediatric to adult diabetes care systems. *Diabetes Care*, 34(11), 2477-2485. <https://care.diabetesjournals.org/content/34/11/2477>
- Researchers with the American Diabetes Association Transitions Working Group looked to investigate existing literature and other organization suggestions on how to navigate from pediatric to adult diabetes care. They noted considerable gaps in research in the subject but still found meaningful contributions. Of those areas, they went in depth on eight points of concern: pediatric and adult care differences, controlling glucose levels, loss of follow-up care, acute issues, psychosocial concerns, reproductive health, substance abuse, and chronic complications. Concerns for emerging adults were consistent with theorized issues as research indicated blood sugar concerns, how to self-manage in an environment away from home, and lifestyle issues like psychological concerns and reproductive health. These specific concerns affect emerging adults more than most age groups. Emerging adults can learn from the suggestions of self-management and reference the list towards the end of the article.

ALL OTHER SOURCES

Resources

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- Mayo Clinic Staff. (2020, April 17). Carbohydrates: How carbs fit into a healthy diet. Mayo Clinic. <https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/carbohydrates/art-20045705>
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- Type 1 Diabetes Treatments. (n.d.). JDRF. Retrieved December 7, 2021, from <https://www.jdrf.org/t1d-resources/about/treatment/>
- University of Iowa CDN chapter. (n.d.). College Diabetes Network. Retrieved December 11, 2021, from <https://collegediabetesnetwork.org/university-iowa-cdn-chapter>
- What you need to know about diabetes. (n.d.). American Association of Clinical Endocrinology. Retrieved December 7, 2021, from <https://www.aace.com/disease-and-conditions/diabetes/what-you-need-know-about-diabetes>