Eating Disorders and Diabulimia in Type 1 Diabetics

Diabulimia is an eating disorder in those with Type 1 Diabetes where individuals intentionally misuse insulin for weight control including: decreasing the prescribed dose of insulin, omitting insulin entirely, delaying the appropriate dose, or manipulating the insulin itself to render it inactive.

Contributing Factors to the Development of Diabulimia

- Weight gain associated with insulin treatment.³
  - Diabetes management conveys an increased risk of weight gain (an average of 10.45 lbs more in intensive treatment cohort) and this weight is difficult to lose.¹⁴
  - Comprehensive diabetes management may also inadvertently contribute to an increased risk of eating disorders in some individuals because **intensive insulin therapy is associated with weight gain.⁷**
- Reduction of weight at the beginning of the disease followed by rapid increase often with additional weight gain due to insulin therapy.\textsuperscript{6,10}

- Some patients associate initial weight gain with insulin administration once treatment of diabetes is initiated following diagnosis.\textsuperscript{22}

- Adolescent girls and adult women with type 1 diabetes, on average, have significantly higher BMI values than their nondiabetic cohorts.\textsuperscript{5,8,13}

- Insulin is an anabolic/storage hormone encouraging fat storage.

**Emphasis on Food**

- Necessary emphasis on food and dietary restraint (including carbohydrate counting and meal planning) that creates an unhealthy focus on food, numbers and control.\textsuperscript{3,5}

- Obsession with food as diabetes treatment focuses on food, eating behaviours, regular exercise, frequent blood sugar monitoring, and signs of hypoglycemia.\textsuperscript{22}

- Constant, conscious awareness of food portion size and caloric or carbohydrate content.\textsuperscript{14}

**Emotional demands of chronic illness**

- Increased risk of eating disorders in women with type 1 diabetes may be related to the complex and constant requirements of diabetes management and to the influence of living with a chronic medical condition.\textsuperscript{7}

- Psychological and emotional effects of having to manage a chronic medical condition with anxiety and depression common with both type 1 and an eating disorder diagnosis.\textsuperscript{3}

- Increased stress of managing diabetes as a result of powerlessness and negative social perceptions is associated with greater eating disorder concerns.\textsuperscript{20}

**Emotional States**

- Momentary increases in anxiety/nervousness and guilt/disgust with self before eating increased the odds of restricting insulin at the upcoming meal.\textsuperscript{17}

- Depressed mood, low self-esteem, and excessive focus on the weight issue and appearance have been shown to predict disordered eating.\textsuperscript{2,6,18}

- Individuals who reported greater-than-average negative affect were more likely to restrict insulin.\textsuperscript{17}
• **Need for control** (with a disease that is not completely controllable)
  
  o May manipulate insulin as a way to **take back control** of their diabetes and regain a feeling of command.\(^{22}\)
  
  o Fear of hypoglycemia (as treatment [for hypoglycemia] involves further eating).\(^{14}\)
  
  o Insulin restriction was more likely when individuals reported that they **broke a dietary rule** (e.g., “no desserts”).\(^{17}\)

• **Need for perfection**
  
  o Frustration and a sense of failure.\(^{14}\)
  
  o Unrealistic and perfectionistic expectations (from self, family, providers) about blood glucose patterns.\(^{14}\)

• **Other factors**
  
  o Developmental effects of a chronic medical condition on **body image and self-concept**.\(^{5}\)
  
  o Some patients have an **eating disorder that is present prior to the diagnoses** of diabetes.\(^{22}\)
  
  o Lower regularity of meals increases the chances of the emergence of abnormal eating patterns in people with diabetes.\(^{16}\)
  
  o Altered reward-processing system regulated by dopamine.\(^{26}\)
  
  o Structural and functional differences in the orbitofrontal cortex or other brain regions.\(^{26}\)
  
  o Comorbid mental health illnesses including depression and anxiety.\(^{20}\)
  
  o Comorbid physical health conditions. (see information on **Celiac Sprue** below)
  
  o Factors **other than patient behavior** including adequacy of medical management, duration of diabetes, weight gain, poverty, and access to care.\(^{27}\)
**Prevalence**

- Eating Disorders are almost **two and a half times more likely** among diabetic girls with type 1 diabetes.\(^\text{12}\)

- 40% of 15-30 year old females with type 1 diabetes omit insulin for weight loss purposes.\(^\text{1}\)

- Females with type 1 diabetes are more likely to exhibit **2 or more disturbed eating behaviours** than their peers.\(^\text{14}\)

**Possible Consequences**

- **Risk of death** for one with diabulimia is 17-fold compared to type 1 diabetes alone and 7-fold compared to anorexia nervosa alone.\(^\text{3}\)

- Rate of onset and later progression of severity of both microvascular disease and peripheral nerve damage is greatly accelerated.\(^\text{3}\)

- Being severely malnourished can cause **changes to the brain and cognition** – many of which can return to normal after a person begins eating again.\(^\text{26}\)

- Lipodystrophy at injection site, diabetic ketoacidosis, and hospitalization are significantly more common in those with type 1 diabetes and eating disorders. Duration of hospital stays were also significantly longer.\(^\text{24}\)

**Screening**

- These behaviours **persist and increase** in severity over time. Once entrenched, the cycle of diabulimia (see above) can be difficult to treat.\(^\text{14}\)

- According to the American Diabetes Association, **all persons with diabetes should be evaluated at the initial visit and on a period basis going forward even if there is no patient-specific indication**. In addition, evaluation is indicated during major disease and life transitions, including the onset of complications, significant changes in treatment, or life circumstances. And providers should consider asking whether there are new or different barriers to treatment and self-management, such as feeling overwhelmed or stressed by diabetes or other life stressors.\(^\text{27}\)

- Screening for disordered eating behaviors including elevated HbA1c, dieting frequency, reduced quality of life, less diabetes self-confidence, worsened diabetes management, and body dissatisfaction **should be part of clinical routine**, and early assistance recommended to prevent deterioration.\(^\text{11}\)

- Screening for disordered eating behaviors is recommended to be done at diagnosis and during quarterly endocrine visits for care of adolescents and young adults with diabetes,
and it is important for primary care providers to be aware of disordered eating behavior and work collaboratively with endocrine team and may assist with arranging mental health counseling.¹⁰

- **Early diagnosis is crucial** in view of prognosis and the development of complications. Physicians dealing with diabetes should always consider poor compliance shown as poor glycemic control, weight fluctuations, recurrent episodes of hypoglycemia and diabetic ketoacidosis as the possibility of co-occurrence of diabetes and eating disorders. The interview should also focus on the incidence of typical symptoms of eating disorders such as dietary restrictions or eating excessive amounts of food, denial of weighing, counting calories, use of laxatives, induced vomiting, excessive physical activity, or excessive focus on their appearance and weight.²¹

**Treatment**

- To be effective, a strong non-judgmental, trusting relationship between the individual and their health professionals is required.⁴

- The goal of provider-patient communication should be to **empower the person with diabetes without blaming them for “noncompliance”** when the outcomes of self-management are not optimal.²⁷
  - Note: Noncompliance denotes a passive, obedient role for persons with diabetes in “following doctor’s orders” that is at odds with the active role they are asked to take in directing the day-to-day planning, monitoring, evaluation, and problem-solving involved in diabetes self-management.²⁷

- **Acknowledge even small improvements in glycemic control.**²⁵

- Avoidance of emphasis on weight loss.²⁵

- Allow patients to express their negative feelings about diabetes and their own goals for diabetes treatment without being judgmental.²⁵

- Social relationships and a strong sense of community are important for recovery, in particular relationships where the individual does not feel judged on the basis of their disorder but feels understood, accepted and perceives their issues are taken seriously by their social networks.¹⁵

- **High self-efficacy** toward diabetes care-related tasks lowers risky behavior overall, which, in turn, predicted better metabolic and health outcomes, including depression, anxiety, and stress.²⁰

- Recovery groups provide social support, meaning, purpose, and a behavioral guide and provides the individual with specific goals and motivations that offer a sense of purpose post-transition into recovery.¹⁵
Barriers to Treatment

- The comorbidity of eating disorders with type 1 diabetes represents a notoriously difficult combination to treat effectively, which may be further complicated by the presence of other psychiatric diagnoses.¹

- This demographic does not respond well to standard treatment for eating disorders, and even when there appears to be an improvement in psychological well-being, this does not relate to an improvement in glucose management.²

- Other barriers to change include
  - High levels of interpersonal distrust, lower self-esteem, and more body dissatisfaction before treatment.⁹
  - Providers dismissal of healthcare professionals including lack of professional knowledge and training.¹⁵

- Family may have a negative impact on recovery in that dysfunctional family relationships could contribute to the development of the disorder but also that family members can reinforce disordered behaviors due to the value placed on weight loss.¹⁵

Diabetic Diet is a Myth

- The American Diabetes Association says
  - A healthy meal plan for people with diabetes is generally the same as a healthy diet for ANYONE.²⁸
  - Current medical nutrition therapy guidelines promote flexible and healthy eating patterns personalized to the individual rather than defining a wide range of behaviors as dietary “nonadherence.”²⁷

- Joslin Diabetes Center says
  - people with diabetes can eat the same foods as the rest of their family.²⁹
  - “The ‘diabetes diet’ is not something that people with type 1 or type 2 should be following. That just simply isn’t how meal planning works today for patients with diabetes.”²⁹
Celiac Disease and Eating Disorders:

- Eating disorders appear to be more frequent in young celiac women.\(^{19}\)

- Two types of disordered eating in celiac disease: a binge eating type and a restrictive type.\(^{23}\)
  - Binge eating behaviours in celiac disease may be related to non-celiac disease specific factors such as the distress associated with dietary-controlled illness.\(^{23}\)

Resources:

- We Are Diabetes (support organization for type 1 diabetics with eating disorders)  

- National Eating Disorder Association (NEDA)  
  [http://www.nationaleatingdisorders.org/diabulimia-5](http://www.nationaleatingdisorders.org/diabulimia-5)

- The Atlantic  

- The New York Times Well Blog  

- Psychology Today  

- Joslin Diabetes Center  
  [http://www.joslin.org/info/Eating_Disorders_Diabulimia_in_Type_1_Diabetes.html](http://www.joslin.org/info/Eating_Disorders_Diabulimia_in_Type_1_Diabetes.html)
Understanding the severity of eating disorders:

Using the Strunkard Scale to assess body image, the patient indicates what they perceive as their current shape and their ideal shape. Those with eating disorders tend to overestimate their current size and underestimate a healthy size.

Men's average BMI for each figure-number

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Women's average BMI for each figure-number

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Citations


