The background is a gradient of dark blue and purple. On the left side, there are several concentric circles and a large circular scale with numerical markings from 140 to 260. The scale has tick marks and some numbers are highlighted in a lighter color. There are also some dashed lines and arrows pointing in different directions, creating a sense of movement and complexity.

DIABETES IN INDIVIDUALS WITH ID/DD

RISK FACTORS, SCREENING AND PREVENTION

The background is a dark blue gradient with a subtle pattern of white dots. On the left side, there are several concentric circles and a large circular scale with numerical markings from 140 to 260. Some of the circles have arrows indicating a clockwise direction.

MARIA KANSAS DEVINE MD, FAAFP, CPE
FAMILY PHYSICIAN

RECENTLY RETIRED CHIEF MEDICAL OFFICER
CENTER FOR DISABILITY SERVICES

COURSE OBJECTIVES

- Be aware of the difference between Type 1 and Type 2 Diabetes
- Identify risk factors for Diabetes Type 2
- Identify additional risk factors for DM Type 2 for persons with Developmental Disability
- Identify current diabetes screening recommendations

DIABETES OVERVIEW

- Diabetes Type 1- formerly known as childhood onset diabetes
 - Autoimmune disease
 - Sometimes triggered by acute viral infection
 - Evidence of increased risk in children with autism and down syndrome
 - Possible genetic link
 - Usually presents as an acute serious illness with weight loss, weakness and urinary frequency
 - Often diagnosed with acute hospitalization

DIABETES OVERVIEW

- **Diabetes Type 2**-formerly called Adult Onset Diabetes
 - Much more common in the population in general especially with age
 - Genetic predisposition
 - Connected with increased BMI
 - On the rise at younger ages
 - May be asymptomatic for years before diagnosis in the absence of screening
 - Symptoms can include increased thirst, increased urination and nighttime urination
 - End organ damage- eye disease, kidney injury, vascular disease including Coronary Artery Disease is often present at diagnosis by symptom alone.

MODIFIABLE RISK FACTORS

- Elevated BMI and Obesity
- Inactive lifestyle
- Physical limitations which may limit activity
- Sleep disturbances
- Food Selectivity

MODIFIABLE RISK FACTORS

- Family/Caregiver relationship to food
 - Use as reward/activity
 - Family obesity
 - Fear of inadequate nutrition
- Medication side effects
 - Antipsychotic medications
 - especially Clozapine, Olanzapine, Quetiapine and Risperidone

NON (OR LESS)-MODIFIABLE RISK FACTORS

- Family History of Diabetes “ Can’t choose your Relatives”
- Personal History of Gestational Diabetes
- Food insecurity
- Food deserts
- Housing insecurity

DIABETES IN ID/DD

- Down Syndrome
 - DM2 occurs up to 4 times more often in adults younger than 30 compared to neurotypical individuals
 - Genetic susceptibility linked to Chromosome 21
 - Occurs twice as often in individuals greater than 30
- Autism
 - Some research suggests increased risk of DM Type 1 and Type 2 related to genetic predisposition- estimates up to 57% higher risk of developing diabetes compared to people without autism,
 - 64% greater type 1
 - 146% higher risk for type 2

OTHER STATS

- According to research people with DD have as much as a 2-3 times higher rate of diabetes , approximately 1 out of 6, up to 1 out of 4
- May be 2-3 x more likely to be hospitalized with diabetes related conditions
- Rates of adherence to diabetic goals and screening may be as low as 25%

GENERAL SCREENING GUIDELINES

- All asymptomatic adults 45 and over with normal weight should be screened **every 3 years** with a **normal** screen (HgbA1c < 5.7)
- Annual screening for lipids, and diabetes recommended for all persons on anti-psychotic medication
- All Adults age 35-70 and older with overweight or obesity
- All individuals age 10-35 with overweight and obesity and at least one risk factor

GENERAL SCREENING GUIDELINES

- Risk Factors
 - Family history of diabetes
 - Overweight or Obesity
 - Physical Inactivity
 - High Blood pressure
 - High Cholesterol
 - Personal history of Gestational Diabetes
 - Coronary Artery Disease
 - Fatty Liver
 - Polycystic Ovary Syndrome
 - Certain Ethnicities
 - Native American, Native Alaskan, African American, Hispanic American, Asian American

DIABETES SCREENING FOR SPECIAL POPULATIONS

- Down Syndrome

- Screen persons with DS AND Obesity every 2-3 years starting at **age 21** or earlier if other risk factors exist
- Screen person with DS and healthy weight every 1-3 years after **age 30** or earlier if other risk factors exist
 - (Global Down Syndrome Foundation, JAMA, October 20, 2020:324(1543-1556)

- Autism

- No specific guidelines for diabetic screening other than general guideline
- Screening in adulthood using HgbA1c
 - Age 35 -70 who are overweight or obese every 3 years
 - All adults age 45 or older every 3 years
 - (United States Preventative Services Taskforce)

A WORD ABOUT PREDIABETES

- Diabetes is defined as HgbA1c > 6.5
- Prediabetes is define as HgbA1c from 5.7-6.4
- Normal HgbA1c less than 5.7
- REVERSIBLE
- Prediabetes does not mean inevitable Diabetes but
 - Approximately 70% of people with prediabetes will progress to diabetes in 10 years
 - REVERSIBLE with low glycemic diet, weight reduction- as little as 10% of bodyweight, and regular activity
 - People with pre-diabetes should be screened annually for progression.

WHAT CAN WE DO?

- Diet matters
 - Broaden food repertoires
 - Avoid using treats as rewards, activities and incentives
 - Encourage healthy choices
 - Encourage activity
 - Activity alone generally does not cause weight loss without diet modification.

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DIABETES: RISK FACTORS AND PREVENTION THROUGH EDUCATION, DIET AND ACTIVITY

BETHANY MELLO, MS OTR/L

CENTER FOR DISABILITY SERVICES

Pre-test question: **How many times should you present a new food in order
determine acceptance?**

IDENTIFYING PICKY EATING

- ARFID = avoidant/restrictive food intake disorder
 - Persistent failure to meet appropriate nutritional and/or energy needs that lead to avoidant or restrictive food intake.
- Pediatric Feeding Disorder- impaired oral intake that is not age-appropriate and is associated with:

Medical- aspirations, cardiorespiratory	Nutritional- malnutrition
Feeding Skills- textures, positioning	Psychosocial-avoidance, caregiver mgmt.

PFD PROFESSIONALS BY DOMAIN

PFD is complex and typically requires several subspecialists working together. Refer early and refer often across the four domains of PFD.

Medical

Primary Care Physician, Developmental Pediatrician, Pediatric Surgeon, Allergist/Immunologist, Cardiologist, Dentist, Endocrinologist, Gastroenterologist, Geneticist, Neurologist, Nurse Practitioner, Otolaryngologist (ENT), Pulmonologist, Radiologist

Nutrition

Registered Dietitian Nutritionist (RDN)

Feeding Skill

Occupational Therapist, Speech Language Pathologist

Psychosocial

Psychologist, Behavior Analyst, Counselor, Social Worker

HOW TO PROMOTE A BALANCED DIET INCLUDING LOW GLYCEMIC FOODS

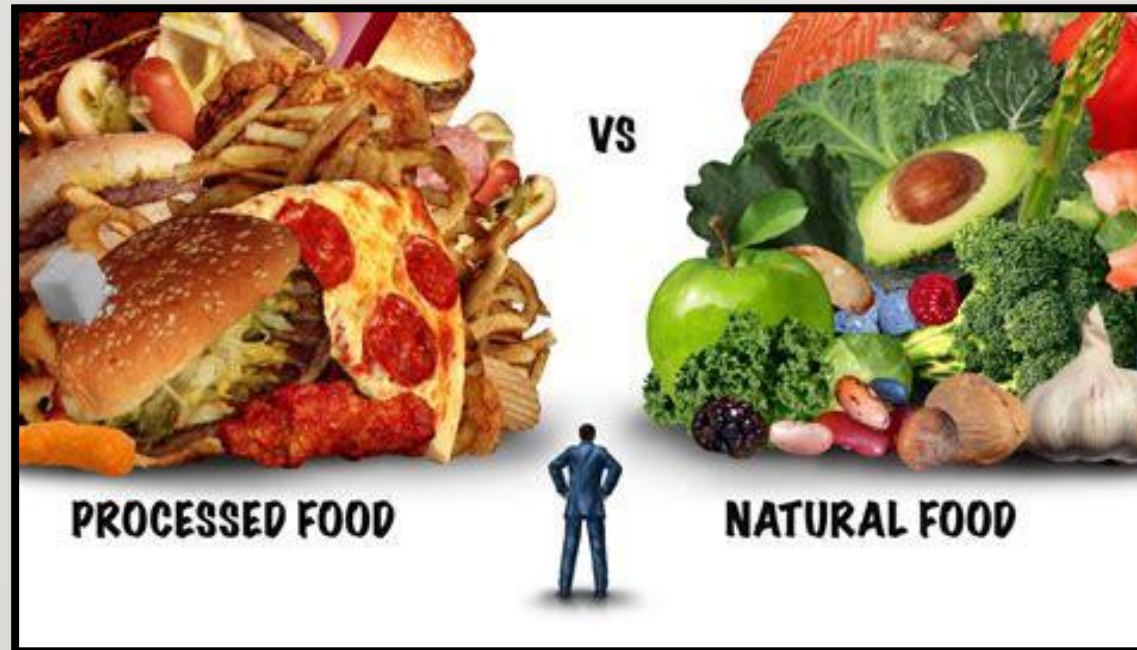
- Ideal foods in a low glycemic diet:
 - Most fruits
 - Most vegetables with preference for greens
 - Whole or minimally processed grains
 - Nuts
 - Eggs, meats
 - Dairy

How to implement this with a picky eater?



HOW TO PROMOTE A BALANCED DIET

- Fresh vs pre-packaged foods



MAKING SLOW CHANGES

1. Identify a starting point

2. Make small changes to current favorites

- Food chaining- concept where you introduce new foods with safe foods
- “Researchers in a study of 3,022 infants found that many caregivers were not aware that their infants and toddlers needed as many as 8-15 exposures to a particular food before they gained acceptance of that food”.



MAKING SLOW CHANGES

3. Begin introducing something new regularly

4. Create healthy eating habits as part of routine



VS



CASE STUDY

- 5 y/o female, dx with Autism
- Attending a special education private preschool
- Not eating any school lunch
- Parent is sending in Wendy's chicken nuggets for her lunch daily



RESOURCES

- Feeding Matters.org
 - Find clinicians
 - Resources for family support, family mentor program, assistance programs
 - Spanish materials for signs/symptoms of pediatric feeding disorder, mealtime struggles, flyers
 - Trainings & conferences

Feedingmatters.org - Resources & support - Provider Directory

The screenshot shows a web form titled "FIND SERVICES OR A PROVIDER" with the instruction "Complete one or more of the options below." The form is divided into two main sections. The left section, "Find a Provider Nearest to Me:", includes a text input field for "City, State or Zip Code" and a "Distance:" dropdown menu. Below these is a blue "Search" button. The right section, "ADDITIONAL FILTERS (SEARCH TO SEE UPDATED RESULTS)", contains a "Feeding Services Offered:" list with checkboxes for: Early Intervention, Outpatient: Once a week or less (overnight stay not required), Telehealth, In-Home, Infant Feeding Therapy, Intensive Outpatient: Once or more per day for several days/week, Intensive Inpatient: More than once a day for several days, and MD or Group of MDs with routine office visits. At the bottom of this section is a link for "Preferred Specialists (select all that apply):". A version number "1.0.2" is visible in the bottom right corner.

FIND SERVICES OR A PROVIDER
Complete one or more of the options below.

Find a Provider Nearest to Me:

City, State or Zip Code

Distance:

▼

Search

ADDITIONAL FILTERS (SEARCH TO SEE UPDATED RESULTS)

Feeding Services Offered:

- ☐ Early Intervention
- ☐ Outpatient: Once a week or less (overnight stay not required)
- ☐ Telehealth
- ☐ In-Home
- ☐ Infant Feeding Therapy
- ☐ Intensive Outpatient: Once or more per day for several days/week
- ☐ Intensive Inpatient: More than once a day for several days
- ☐ MD or Group of MDs with routine office visits

Preferred Specialists (select all that apply): ▶

Version number: 1.0.2

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Community Collaborative Diabetes Education Lessons

DEVELOPED BY:

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Richard Fishwick - Special Olympics NY Athlete Leader & Health Messenger
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Shirley Madewell - NYSDOH Disability & Health Program, Program Manager
Rhonda Rosenberg - NYSDOH Disability & Health Program, Health Program Coordinator and ADAC, NYS National DPP Quality Specialist
Leah Webster - Registered Dietitian
Heather Whitney - Diabetes Advocate

SPECIAL OLYMPICS NEW YORK DIABETES EDUCATION LESSONS

Taylor Mead - Senior Director of Health Programs
Matthew Graham - Athlete Leader & Health Messenger

DIABETES COMMUNITY COLLABORATIVE:

The Community Collaborative allows Special Olympics NY to bring together a variety of voices to work to envision, and hopefully implement, solutions within our state to improve health outcomes for people with ID. Although the ID population is three to five times as likely to develop type 2 diabetes as the general population, there are still very few resources for those with ID and their caregivers/supporters. By working together, we hope to increase and normalize the inclusion of people with ID in mainstream health care and health promotion services and activities, and better access to programs and resources regarding diabetes prevention and management. All people with intellectual disabilities should have the opportunity to be as healthy as possible, and that starts with inclusive healthcare.



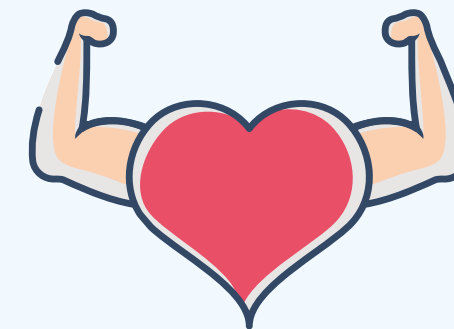
Coaches play an integral role in developing athletes into strong competitors, but athletes can't compete if they aren't healthy!

People with IDD are three to five times more likely to develop type 2 diabetes than the general population.



Support your athletes in being their healthiest selves by educating them on type 2 diabetes prevention & management strategies through our 6 lesson program!

Each lesson was created to be easily plugged into practice and takes 10 minutes or less to complete!



Lesson 1: *What is Diabetes?*

Lesson 4: *Symptoms*

Lesson 2: *Physical Activity*


Lesson 5: *Taking Charge of Your Health*

Lesson 3: *Nutrition*

Lesson 6: *Diabetes Risk Test*

DIABETES EDUCATION LESSONS:

- Curriculum consists of 6 different lessons to be run by coaches, one at each practice over the course of 6 weeks.
- The lessons only take 5 - 10 minutes to complete, and each coach will have a binder with all materials (Coach script and athlete activity sheets) to make things very easy to implement.
- Each lesson provides information about a different important health topic that contributes to preventing/managing diabetes - There also is a short activity each lesson, which can be completed as a group at practice, or can also be assigned for athletes to complete at home before the next practice.



SPECIAL OLYMPICS NEW YORK COMMUNITY COLLABORATIVE

DIABETES EDUCATION: LESSON 1

COACH RESOURCE

What is Diabetes?

Overview: The goal of Lesson 1 is to teach SONY athletes about how diabetes can affect a person's body, who can be impacted by diabetes and the differences between Type 1, Type 2, and Pre-Diabetes.

Speak to athletes about the topics below (5 minutes):

QUESTION TO ATHLETES: RAISE YOUR HAND IF YOU'VE HEARD OF DIABETES. DOES ANYONE KNOW WHAT DIABETES IS?

1. WHAT IS DIABETES?

- Diabetes is a disease that causes your body to not use food effectively - **It is not contagious**, you can be at risk for developing diabetes over time due to your genetics or environment.
- Insulin is a hormone that helps turn food into energy- Insulin is limited or not present at all in people with diabetes
- People with diabetes are less able to convert sugar into energy
- This can be a very dangerous condition!

QUESTION TO ATHLETES: DOES ANYONE KNOW THE TWO TYPES OF DIABETES?

2. THE TWO TYPES OF DIABETES

- **TYPE 1 DIABETES**
 - The body does not make enough insulin
 - People with Type 1 diabetes use additional insulin to make up for their body not producing it
 - Cannot be prevented and can develop at any age, though usually occurs in childhood - Not caused by the athlete
- **TYPE 2 DIABETES**
 - The body makes insulin, but the body does not respond to it correctly
 - More common than type 1
 - People use medication, lifestyle adjustments or insulin to manage their type 2 diabetes

QUESTION TO ATHLETES: WHAT IS PREDIABETES?

- **PREDIABETES**
 - Blood sugar levels are higher than normal
 - Present in more 1 in 3 American adults
 - Pre-diabetes may progress to type 2 diabetes when there is an extreme buildup of sugar in the blood due to limited insulin
 - You can prevent or delay pre-diabetes from developing into type 2 by maintaining a healthy weight, increasing physical activity, taking medication (as directed by a doctor), maintaining a healthy balanced diet and managing stress.

QUESTION TO ATHLETES: WHO CAN GET DIABETES?

3. RISK FACTORS FOR DIABETES


- Children or adults!
- Being overweight increases your chances of getting diabetes
- Diabetes is more common in African American, American Indian and Asian American populations
- People with a family history of diabetes have a greater chance of developing diabetes
- A diet high in fat, calories and added sugar can increase your chances of developing prediabetes or type 2 diabetes

QUESTION TO ATHLETES: AS AN ATHLETE, WHY DO YOU THINK YOU SHOULD CARE ABOUT DIABETES?

To be the best athlete you can be, you need to keep your body healthy. Developing diabetes can cause many health issues that could prevent you from playing your sport. Staying active, eating nutritious foods and taking care of your body can decrease your chances of getting diabetes.

DIABETES IS NOT SOMETHING TO BE SCARED OF, ITS SOMETHING TO BE AWARE OF!

GIVE ATHLETES A CHANCE TO ASK QUESTIONS!



SPECIAL OLYMPICS NEW YORK COMMUNITY COLLABORATIVE

DIABETES EDUCATION: LESSON 2 ACTIVITY

The goal of this activity is to identify hobbies or habits that you do on a daily basis that do not involve movement and identify ways in which to make them more active. You will also identify reasons why being active is important!

Identify a hobby/habit in in your life that is NOT active:

Ideas: watching tv, playing video games, scrolling social media, sitting all day, etc.

List three ways you can make this hobby/habit more active:

1. _____

2. _____

3. _____

Highlight the option that you want to try first!

I will do this active hobby: _____

Ideas: everytime I watch tv, once a day, 3 times a day, etc.

**Make sure your goal is something you can do successfully!*

If you think your goal may be too hard, start with a different goal that you think you can achieve and add to it if it becomes too easy!

What are three benefits of living a more active lifestyle:

1. _____

2. _____

3. _____

PLEASE REACH OUT TO HEALTH@NYSO.ORG WITH ANY QUESTIONS!

ATHLETE HEALTH MESSENGER FEEDBACK - MATTHEW GRAHAM

- Special Olympics New York Athlete, Athlete Leader and Health Messenger
- Due to family history and higher risk, had knowledge of diabetes
- Many SO athletes do not know much about diabetes - It's very important to give them this information, tie it into the day to day
- Lesson feedback and most important information
 - Defining diabetes
 - Physical Activity - tie into being an athlete, activity allows for all abilities to participate
 - Nutrition page is a little overwhelming, but the activity is engaging
 - Emergency contact and family history activities

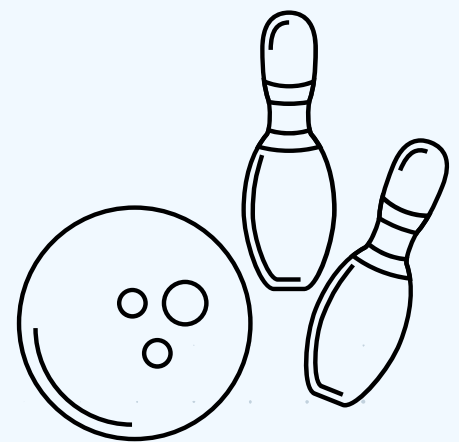


COACH FEEDBACK

- Volleyball (Hudson Valley), Bowling (North Country), Basketball (Capital), Bowling (Capital)
- Swimming (Genesee), Unified Basketball (Genesee), Basketball (Western)
- 150+ Athletes
- 8 years old to 80 years old!

“The lessons have been very easy to go over with our athletes and I do feel that many are benefitting from this information and have started to talk about and initiate some things that they can do differently, such as drinking more water, increasing exercise, and eating more fruits and vegetables. A few appear to be making the connection between exercise and managing blood sugar...it's nice to have our athletes hear it from another source—especially Special Olympics. **Most take being an athlete very seriously and have been receptive to trying new things to improve help make them better athletes.**”

“A suggestion would be to have more pictures to help explain the information, as we have so many who cannot read or have communication impairments—limited ability to communicate in sign language makes it challenging to ensure that the information is being received and understood well.”





ACCESS DIABETES EDUCATION LESSONS

SCAN QR CODE OR REACH OUT TO
HEALTH@NYSO.ORG