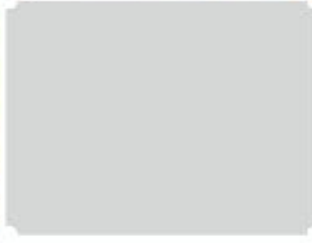
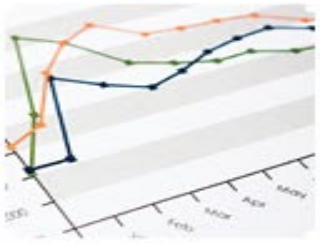




Rural Health Outreach Program

November 14th, 2023



Agenda

- CME/CEU credit
- HRSA Outreach Program – Western Oklahoma Wellness – Sandra Burchill, OFMQ
- Diabetes Update 2023 – Heidi Macha
- Questions & Closing

This activity has been planned and implemented in accordance with the Accreditation Requirements and Policies of the Oklahoma State Medical Association (OSMA). OFMQ is accredited by the OSMA to provide continuing medical education for physicians.

OFMQ designates this live internet activity series for a maximum of 1.0 AMA PRA Category 1 Credits™. Each individual event in the series is designated for 1.0 5 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.



Continuing Medical Education

Learners Bill of Rights

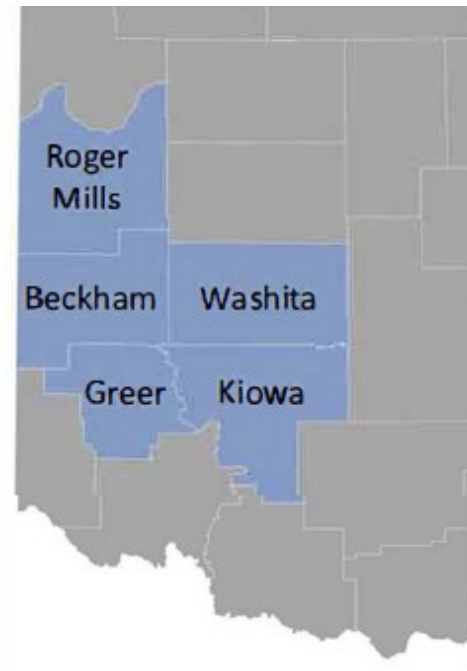
- OFMQ recognizes that you are a life-long learner who has chosen to engage in continuing medical education to identify or fill a gap in knowledge, skill, or performance. As part of our duty to you as a learner, you have the right to expect that your continuing medical education experience with OFMQ includes:
 - Content that:
 - promotes improvements or quality in healthcare;
 - is valid, reliable, and accurate;
 - offers balanced presentations that are free of commercial bias for or against a product/service;
 - is vetted through a process that resolves any conflicts of interests of planners, teachers, or authors;
 - is driven and based on learning needs, not commercial interests;
 - addresses the stated objectives or purpose; and
 - is evaluated for its effectiveness in meeting the identified educational need.
 - A learning environment that:
 - supports learners' ability to meet their individual needs;
 - respects and attends to any special needs of the learners;
 - respects the diversity of groups of learners; and
 - is free of promotional, commercial, and/or sales activities.
 - Disclosure of:
 - Relevant financial relationships planners, teachers, and authors have with commercial interests related to the content of the activity; and
 - commercial support (funding or in-kind resources) of the activity.

Continuing Education Credit

- For CME/CE credit:
 - An evaluation survey will be sent out after the presentation. A completed survey is required for credit.

About WOW

- Western Oklahoma Wellness (WOW) is a program to advance rural healthcare through increased access to care, education, and opportunities to reduce the onset of diabetes and other chronic conditions.
- Counties We Work In:
 - Beckham
 - Greer
 - Kiowa
 - Washita
 - Roger Mills



Funded Through HRSA

- We Work With:
 - **ONIE Project**: The Oklahoma Nutrition Information and Education (ONIE) Project promotes healthy living through innovative and creative strategies for communities, families and individuals.
 - **SWOSU Rural Health Center**: The RHC develops programs for community-based healthcare services collaborating with local pharmacies and hospitals for the advancement of the health and well-being of the medically underserved population in Oklahoma.
 - **Community Partners**: County-Specific Health Departments, State Health Department, OSU Extension, Town of Granite, Mangum Regional Hospital, Elkview General Hospital, Cordell Memorial Hospital, Roger Mills Hospital, City of Elk City
- WOW is funded through the HRSA Rural Health Care Outreach Services Program, Grant No. D04RH40277



Heidi Macha, Pharm.D., BCACP

Dr. Heidi Macha joined Southwestern Oklahoma State University College of Pharmacy as a Rural Health Clinic Pharmacist in August of 2023. Dr. Macha received her Pharm.D. from SWOSU College of Pharmacy in 2007 and then completed a PGY1 residency at Saint Francis Hospital in Tulsa, Oklahoma. Dr. Macha is a Board-Certified Ambulatory Care Pharmacist. She previously served as a Clinical Pharmacist specializing in Diabetes Management at Oklahoma Heart Hospital in Oklahoma City, OK.

Diabetes Update 2023

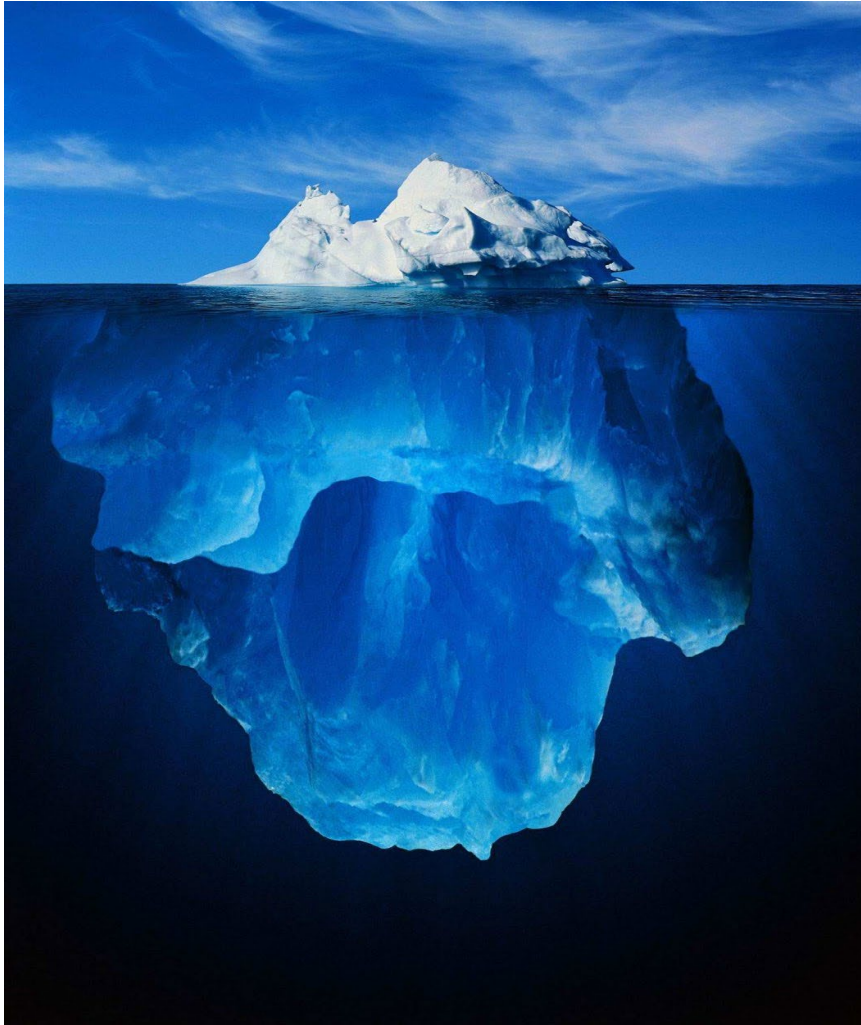
Aimee Henderson, PharmD, BC-ADM, CDCES

Heidi Macha, PharmD, BCACP

Objectives

- ▶ Discuss screening recommendations for pre-diabetes and type 2 diabetes
- ▶ List laboratory values that represent diagnostic criteria and treatment goals
- ▶ Describe the metabolic defects targeted by diabetes medications
- ▶ Identify resources available to help those with pre-diabetes and diabetes

Burden of Diabetes



Diabetes

- 37.3 million people in U.S.
- 390,000 in Oklahoma or 13%
- **1 in 8 of *Your Patients***
- 1 out of 5 do not know
- 27,300 diagnosed each year in Oklahoma

Prediabetes

- 96 million in U.S.
- 1,040,000 in Oklahoma
- **1 in 3 of *Your Patients***
- 8 out of 10 do not know

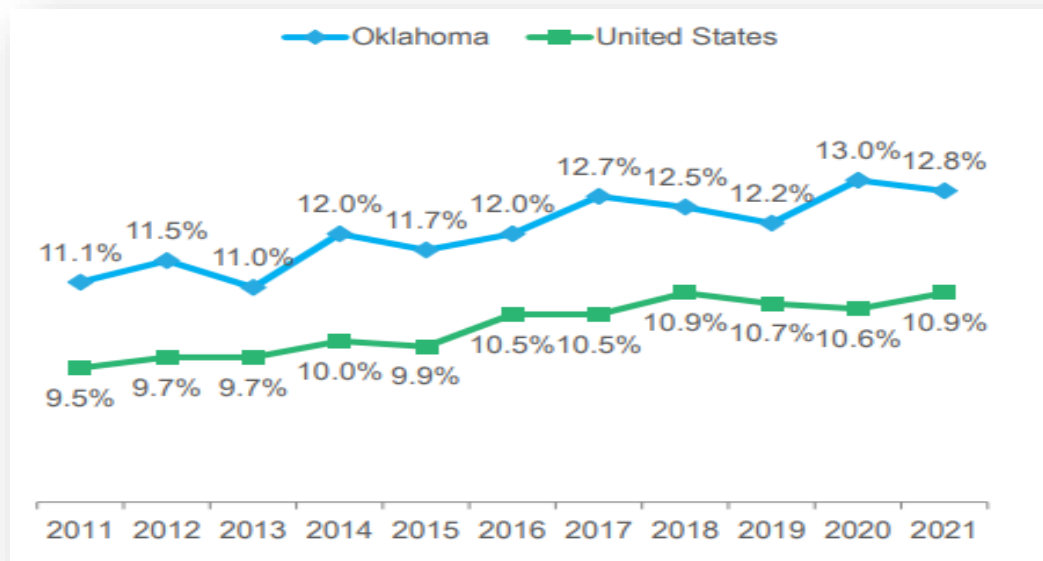
DIABETES LANDSCAPE IN OKLAHOMA



Over 390,000 Oklahoma adults reported having been diagnosed with diabetes* in 2021



That's about 1 out of every 8 adults



In 2021, Oklahoma had the

9th

highest diabetes prevalence
in the nation

* Type 2 diabetes accounts for 90% to 95% of all diabetes cases
Source: Oklahoma State Department of Health (OSDH), Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 6 2021, on Oklahoma Statistics on Health Available for Everyone (OK2SHARE). Accessed at <http://www.health.ok.gov/ok2share>

Primary Risk Factors for Pre-Diabetes and Type 2 Diabetes

- Age ≥ 45 years
- Family history of T2D
- Being overweight or obese (BMI ≥ 23 kg/m² for Asian Americans or all other races ≥ 25 kg/m²)
- High risk race/ethnicity (Asian, African American, Hispanic, Native American, Latino/Hispanic-American or Pacific Islanders)
- Sedentary lifestyle
- Previously identified impaired glucose tolerance, impaired fasting glucose, and/or metabolic syndrome
- History of gestational diabetes mellitus or delivery of a baby weighing more than 9 lbs.

Long-Term Benefits of Early Detection

↓ all-cause mortality and
risk of MI after 10 to 20
years

↓ progression to diabetes
if interventions are made
when identified as having
prediabetes

Screening Recommendations

	ADA*	AACE*	USPSTF*
Age	Age 35 and older with one or more risk factor. May start younger if high risk.	45 years or older	Non-pregnant adults ages 35-70 who are overweight or obese, earlier if risk factors present
Risk factors	Family history, race/ethnicity, HIV, HTN, CVD, PCOS,	Family history, overweight or obese, HTN, CVD, pre-diabetes, dyslipidemia race/ethnicity, HTN, GDM, high-risk medication use,	Older age, family history, history of GDM, PCOS, race/ethnicity
Screening interval	3 years unless prediabetes and history of gestational diabetes screen yearly	3 years unless 2 or more risk factors consider annually	3 years

HTN- hypertension
 CVD- cardiovascular disease
 PCOS- polycystic ovarian syndrome
 GDM- gestational diabetes mellitus
 HIV- human immunodeficiency virus

*ADA= American Diabetes Association
 *AACE= American Association of Clinical Endrocrinology
 *USPSTF= United State Preventative Services Task Force

Type 2 Diabetes in Youth

- ▶ Incidence has increased over past 20 years with an estimated 5,000 new cases per year
 - ▶ CDC estimates that 1 in 5 adolescents (ages 12-18) have prediabetes
- ▶ Youth with diabetes tend to be from racial/ethnic minority groups, have low socioeconomic status, and often experience multiple psychosocial stressors.
- ▶ Current pharmacologic treatment options are limited to three classes of drugs: insulin, metformin, and, in those ≥ 10 years of age with no contraindications, GLP-1 receptor agonists (Liraglutide, Exenatide, Dulaglutide) indicated for use in youth.

American Diabetes Association Professional Practice Committee. (2022). Children and adolescents: *Standards of Medical Care in Diabetes—2022*. *Diabetes Care* 2022;45(Suppl. 1):S208-S231

Berman, C., Vidmar, A. Chao, L. (2023) 'Glucagon-like Peptide-1 Receptor Agonists for the Treatment of Type 2 Diabetes in Youth.' *Diabetes Reviews in Endocrinology*. 2023;19(1):38-45



Screening For Diabetes in Youth

- ▶ Overweight (≥ 85 th percentile) or obesity (≥ 95 th percentile) and have one or more additional risk factors:
 - ▶ Maternal history of diabetes or GDM during the child's gestation
 - ▶ Family history of type 2 diabetes in first- or second-degree relative
 - ▶ Race/ethnicity (Native American, African American, Latino, Asian American, Pacific Islander)
 - ▶ Signs of insulin resistance or conditions associated with insulin resistance (acanthosis nigricans, hypertension, dyslipidemia, polycystic ovary syndrome)
- ▶ If tests are normal, repeat testing at a minimum of 3-year intervals, or more frequently if BMI is increasing or risk factor profile deteriorating.

Risk Assessment for Pre-diabetes

- ▶ Prediabetes Risk Test can be used to determine risk of developing diabetes. Assessment for prediabetes can be billed to most insurance plans.

Prediabetes Risk Test



1. How old are you? Write your score in the boxes below

Younger than 40 years (0 points)

40-49 years (1 point)

50-59 years (2 points)

60 years or older (3 points)

2. Are you a man or a woman?

Men (1 point) Woman (0 points)

3. If you are a woman, have you ever been diagnosed with gestational diabetes?

Yes (1 point) No (0 points)

4. Do you have a mother, father, sister, or brother with diabetes?

Yes (1 point) No (0 points)

5. Have you ever been diagnosed with high blood pressure?

Yes (1 point) No (0 points)

6. Are you physically active?

Yes (0 points) No (1 point)

7. What is your weight category?

(See chart at right)

Total score:

Height	Weight (lbs.)		
4'10"	119-142	143-190	191+
4'11"	124-147	148-197	198+
5'0"	128-152	153-203	204+
5'1"	132-157	158-210	211+
5'2"	136-163	164-217	218+
5'3"	141-168	169-224	225+
5'4"	145-173	174-231	232+
5'5"	150-179	180-239	240+
5'6"	155-185	186-246	247+
5'7"	159-190	191-254	255+
5'8"	164-196	197-261	262+
5'9"	169-202	203-269	270+
5'10"	174-208	209-277	278+
5'11"	179-214	215-285	286+
6'0"	184-220	221-293	294+
6'1"	189-226	227-301	302+
6'2"	194-232	233-310	311+
6'3"	200-239	240-318	319+
6'4"	205-245	246-327	328+
	1 Point	2 Points	3 Points

You weigh less than the 1 Point column (0 points)

Adapted from Bang et al., Am J Trans Med 15:1775-182, 2009. Original algorithm was validated without gestational diabetes as part of the model.

If you scored 5 or higher

You are at increased risk for having prediabetes and are at high risk for type 2 diabetes. However, only your doctor can tell for sure if you have type 2 diabetes or prediabetes, a condition in which blood sugar levels are higher than normal but not high enough yet to be diagnosed as type 2 diabetes. Talk to your doctor to see if additional testing is needed.

If you are African American, Hispanic/Latino American, American Indian/Alaska Native, Asian American, or Pacific Islander, you are at higher risk for prediabetes and type 2 diabetes. Also, if you are Asian American, you are at increased risk for type 2 diabetes at a lower weight (about 15 pounds lower than weights in the 1 Point column). Talk to your doctor to see if you should have your blood sugar tested.

You can reduce your risk for type 2 diabetes

Find out how you can reverse prediabetes and prevent or delay type 2 diabetes through a CDC-recognized lifestyle change program at <https://www.cdc.gov/diabetes/prevention/lifestyle-program>.



Diagnosis

Diabetes

- A1C $\geq 6.5\%$
- FPG ≥ 126 mg/dL
- 75g-OGTT ≥ 200 mg/dL

Prediabetes

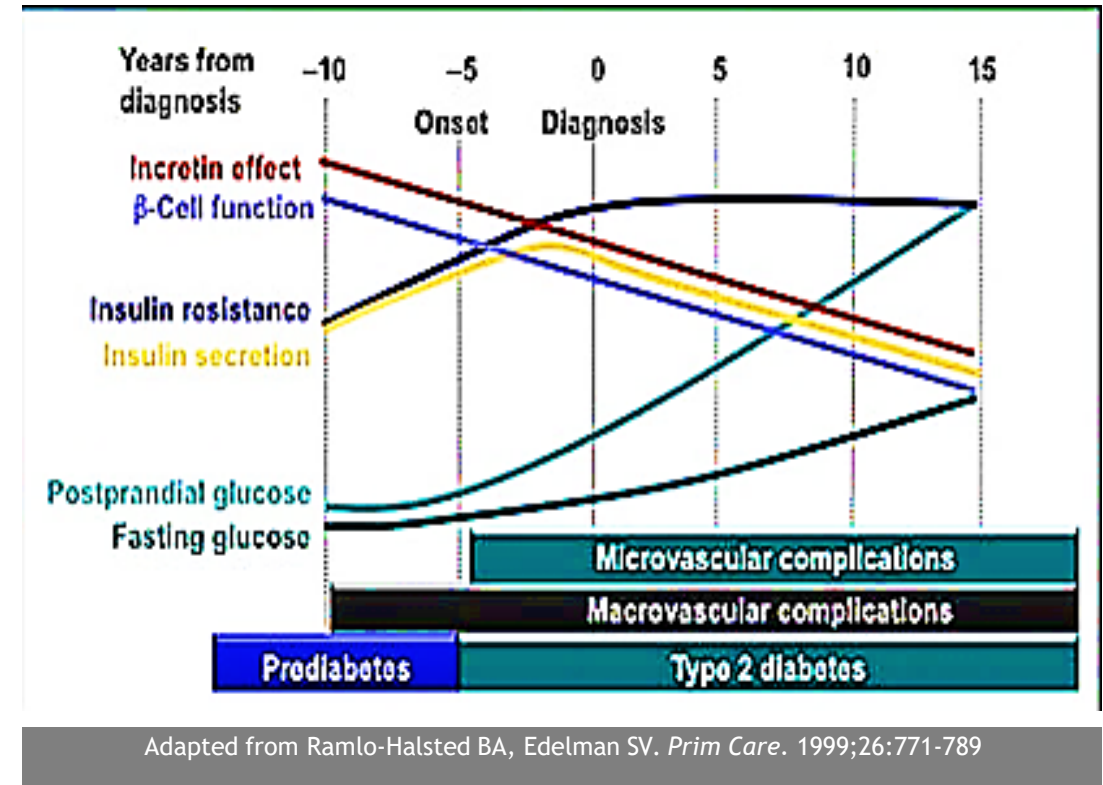
- A1C 5.7-6.4%
- FPG 100-125 mg/dL
- 75g-OGTT 140-199 mg/dL

Normal

- A1C $< 5.7\%$
- FPG < 100 mg/dL
- 75g-OGTT < 140 mg/dL

Importance of Early Diagnosis

- ▶ It is estimated that glucose dysregulation begins up to 10 years before diagnosis
- ▶ Approximately 25% of patients newly diagnosed with type 2 diabetes have at least 1 microvascular complication by diagnosis.



Goals for Glycemic Control

	ADA	AACE
A1C (%)	<7 Can be modified to <6.5% or <8% based on individual patient characteristics	≤6.5 Individualize goals for patients based on factors such as age, comorbid conditions, risk of hypoglycemia
Fasting/preprandial glucose	80-130 mg/dL	<110 mg/dL
Peak postprandial glucose	<180 mg/dL	<140 mg/dL ^a

^a2-hour postprandial.

Pre-Diabetes and Type 2 Diabetes Treatment Considerations

Pre-Diabetes

Pharmacological Interventions

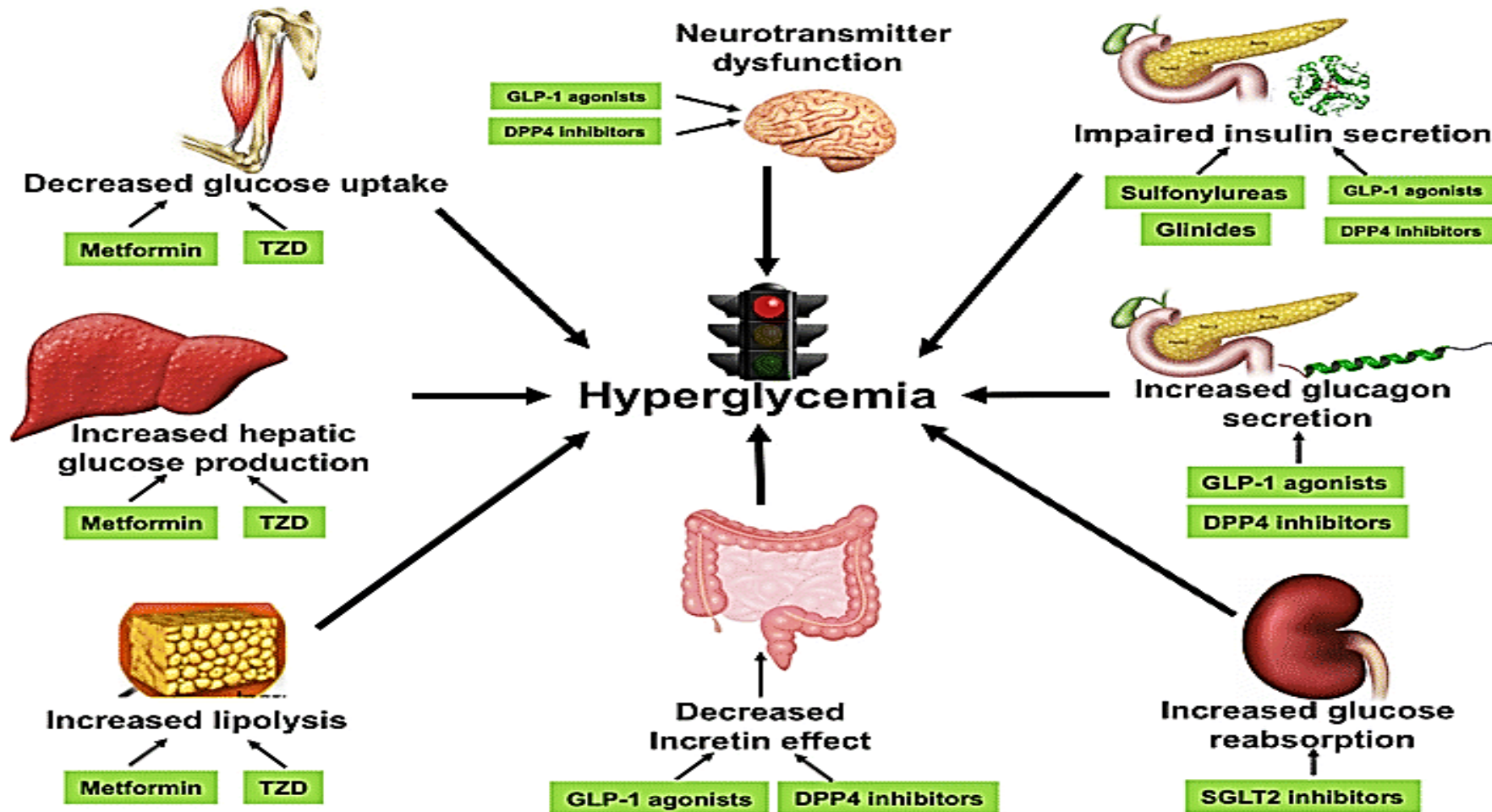
- Metformin
 - BMI ≥ 35 kg/m²
 - <60 years of age
 - Women with history of GDM



Screenings

- Annual glucose monitoring
- Vitamin B12 levels if prolonged Metformin use
- Hypertension
- Dyslipidemia

Defects Related to Type 2 Diabetes



ADA Diabetes Treatment Guidelines

Patient without ASCVD or CKD

First Line Therapy depends on co-morbidities, patient-centered treatment factors (cost and access), and management needs and generally includes metformin and comprehensive lifestyle changes

Minimize Hypoglycemia

DPP-4i, GLP-1 RA,
SGLT2i, TZD

If A1c > target

Incorporate additional agents based on above factors

Cost and Access

Lower cost insulins
Sulfonylureas
TZD

To avoid therapeutic inertia
reassess and modify treatment
every 3 to 6 months

Minimize weight gain and
promote weight loss

GLP-1 RA with efficacy
for weight loss

OR

SGLT2i

TZD: thiazolidinedione
SU: sulfonylurea
GLP-1 RA: glucagon like peptide 1 receptor agonist
SGLT2i: sodium-glucose cotransporter 2 inhibitor
DPP4i: dipeptidyl peptidase 4 inhibitor

ADA Treatment Guidelines

Patient with ASCVD or CKD

First Line Therapy depends on co-morbidities, patient-centered treatment factors (cost and access), and generally includes metformin and comprehensive lifestyle changes

ASCVD

GLP-1RA or
SGLT2i with CVD
benefit

If A1c > target

SGLT2i OR GLP-1 RA
TZD

HF

SGLT2i with proven
benefit in HF
Avoid TZDs in HF

CKD

SGLT2i

If not tolerated

GLP-1RA

*ASCVD- Atherosclerotic Cardiovascular Disease

*HF- Heart Failure

*CKD- Chronic Kidney Disease

AACE Treatment Guidelines

Recommended lifestyle therapy and ongoing glucose monitoring (CGM preferred)

Regardless of glycemic control, ASCVD,CKD, or HF start GLP-1RA or SGLT2i

A1c < 7.5%

- Monotherapy
 - Metformin
 - GLP-1RA
 - SGLT2i

A1c 7.6 - 9.0%

- Dual therapy
- Triple therapy if still not at goal
 - Prefer GLP-1RA, DPP4i or SGLT2i

A1c > 10.0%

- No symptoms
 - Dual or triple therapy
- Symptoms
 - Basal Insulin +/- GLP-1 RA

Therapy should be adjusted every 3 months until goal achieved

Drug Selection Considerations for Type 2 Diabetes

Efficacy- A1c lowering

Effect on fasting and postprandial glucose

Mechanism of action

Route of administration

Ease of use

Contraindications- renal or hepatic failure

Other comorbid conditions

Effect on weight

Adverse effects

Risk of hypoglycemia

Likely adherence

Cost

Patient preference

Metformin

Efficacy	High; 1-1.5%	
Mechanism of Action	Decreases hepatic glucose production, decreases intestinal absorption of glucose, and improves insulin sensitivity	
Hypoglycemia	No	
Weight Change	Neutral (potential for modest loss)	
Cost	Low	
CV Effects	ASCVD	Potential Benefit
	CHF	Neutral
Renal Effects	Progression of DKD	Neutral
	Dosing/Use Considerations	CI with eGFR <30 mL/min B12 deficiency, GI side effects

SGLT2 Inhibitors

Efficacy	Intermediate; 0.5-1%	
Mechanism of Action	Reduces reabsorption of glucose and lowers renal threshold of glucose by inhibiting SGLT2 transporter in proximal renal tubules	
Hypoglycemia	No	
Weight Change	<i>Loss</i>	
Cost	High	
CV Effects	ASCVD	Benefit: canagliflozin, empagliflozin
	CHF	Benefit: canagliflozin, empagliflozin, dapagliflozin
Renal Effects	Progression of DKD	Benefit: canagliflozin, empagliflozin, dapagliflozin
	Dosing/Use Considerations	Renal dose adjustment required (cana, dapa, empa, and ertugliflozin)
Concerns	FDA Black Box: Risk of amputation (canagliflozin), risk of DKA(rare), genitourinary infections (fungal and bacterial), volume depletion, not recommended for women planning to become pregnant	

GLP-1 RA

Efficacy	High; 1-1.5%	
Mechanism of Action	Increases glucose-dependent insulin secretion, decrease inappropriate glucagon secretion, increase B-cell growth, slows gastric emptying, and decreases food intake	
Hypoglycemia	No	
Weight Change	Loss	
Cost	High	
CV Effects	ASCVD	Neutral: lixisenatide, exenatide ER, oral semaglutide Benefit: liraglutide, subcut. semaglutide, dulaglutide
	CHF	Neutral
Renal Effects	Progression of DKD	Benefit: liraglutide, semaglutide, dulaglutide
	Dosing/Use Considerations	Renal dose adjustment required for lixisenatide and exenatide. Avoid the use of semaglutide in those with existing retinopathy.
Considerations	FDA Black Box: Risk of thyroid C-cell tumors: liraglutide, dulaglutide, exenatide ER, avoid in gastroparesis, GI side effects, pancreatitis risk	

GIP* and GLP-1 Receptor Agonists

Efficacy	Very High; 1.5-2%	
Mechanism of Action	Increases glucose-dependent insulin secretion, decreased inappropriate glucagon secretion, and slows gastric emptying	
Hypoglycemia	No	
Weight Change	Loss	
Cost	High	
CV Effects	ASCVD	Still being studied
	CHF	Still being studied
Renal Effects	Progression of DKD	Neutral
	Dosing/Use Considerations Only product available at this time: <u>Tirzepatide</u>	<ul style="list-style-type: none"> Starting dose 2.5mg once weekly increase every 4 weeks up to maximum of 15 mg weekly No renal adjustment needed
Considerations	May reduce efficacy of oral hormonal contraceptives Risk of thyroid C-cell tumors, avoid in gastroparesis	

*glucose-dependent insulintropic polypeptide (GIP) and glucagon-like peptide-1 (GLP-1) receptor agonist

DPP-4 Inhibitors

Efficacy	Intermediate; 0.5-1%	
Mechanism of Action	Inhibits DPP-4 enzyme to increase insulin synthesis and decrease glucagon secretion	
Hypoglycemia	No	
Weight Change	Neutral	
Cost	High	
CV Effects	ASCVD	Neutral
	CHF	<i>Potential risk: saxagliptin</i>
Renal Effects	Progression of DKD	Neutral
	Dosing/Use Considerations	Renal dose adjustment required (sitagliptin, saxagliptin, alogliptin); can be used in renal impairment.
Considerations	Potential risk of acute pancreatitis	

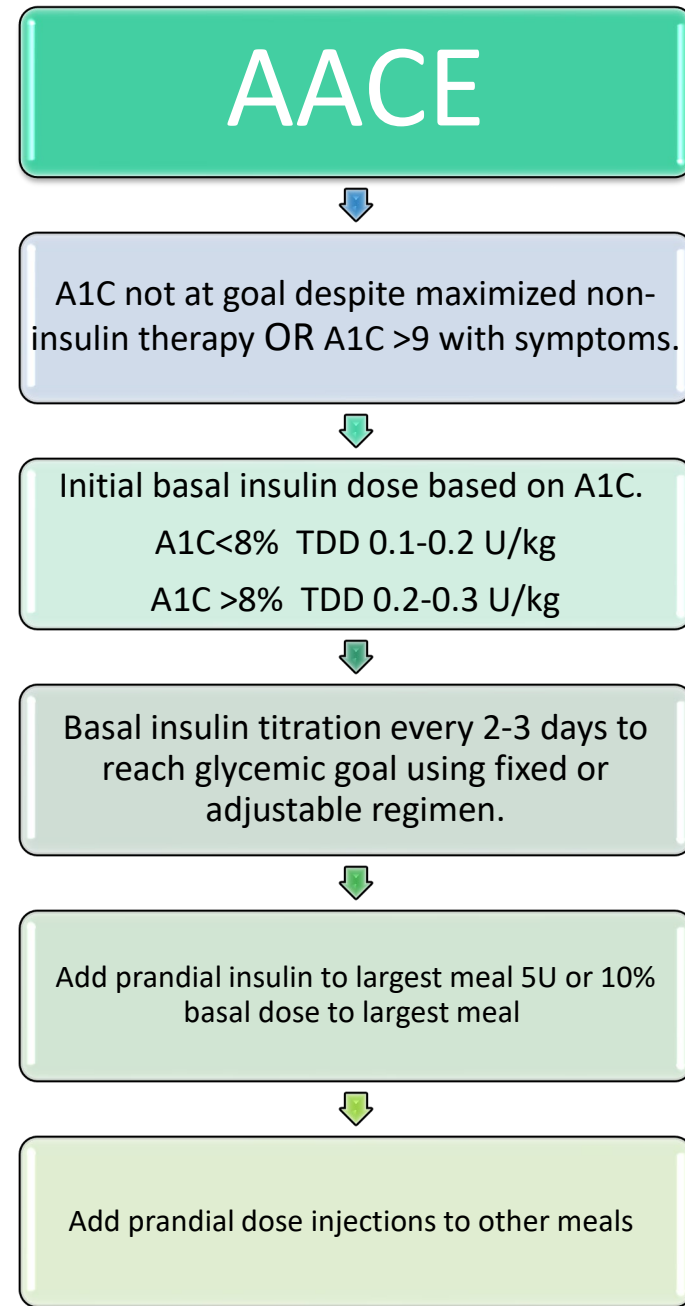
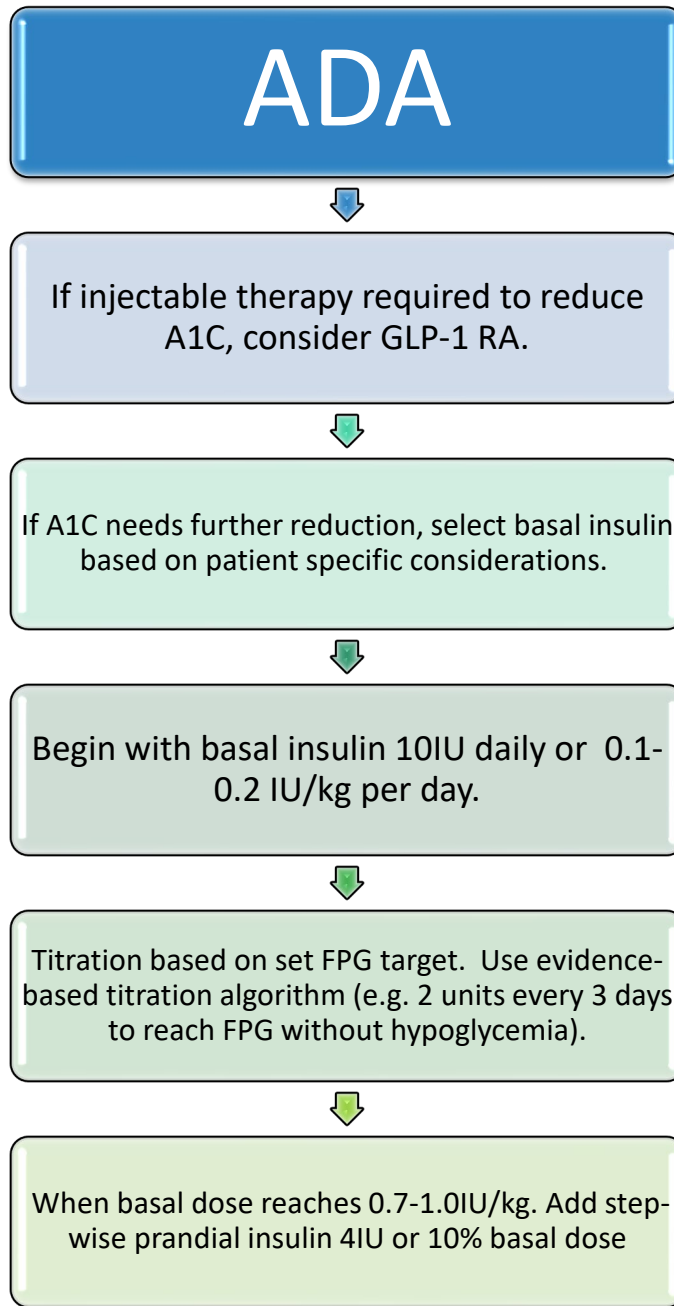
Thiazolidinediones (TZD)

Efficacy	High; 1-1.5%	
Mechanism of Action	Improves target cell response to insulin or insulin sensitivity	
Hypoglycemia	No	
Weight Change	Gain	
Cost	Low	
CV Effects	ASCVD	Potential Benefit: pioglitazone
	CHF	<i>Increased risk</i>
Renal Effects	Progression of DKD	Neutral
	Dosing/Use Considerations	<ul style="list-style-type: none"> • No dosage adjustment required • Generally not recommended in renal impairment due to potential fluid retention
Considerations	<ul style="list-style-type: none"> • FDA Black Box: CHF (pioglitazone, rosiglitazone) • Fluid retention (edema, heart failure) • Risk of bone fractures • Bladder cancer (pioglitazone) 	

Sulfonylureas

Efficacy	High; 1-1.5%	
Mechanism of Action	Stimulates insulin release from the pancreatic beta cells, reduces glucose output from liver, increases insulin sensitivity	
Hypoglycemia	Yes	
Weight Change	Gain	
Cost	Low	
CV Effects	ASCVD	Neutral
	CHF	Neutral
Renal Effects	Progression of DKD	Neutral
	Dosing/Use Considerations	<ul style="list-style-type: none"> • Glyburide: not recommended • Glipizide and glimepiride: initiate conservatively to avoid hypoglycemia
Considerations	FDA Special Warning on increased risk of CV mortality based on studies of an older SU (tolbutamide) ,high risk medication in ages over 65	

Initiating Insulin



Check Fingersticks or Not?

Reasons to Use

- ▶ Improve patient awareness of effects of lifestyle habits (e.g., food, exercise)
- ▶ Identify variability of glucose levels
- ▶ Safety for patients who use insulin
- ▶ Aid in treating to target
- ▶ Help patients recognize episodes of hypoglycemia

Factors to Consider

- ▶ Cost
- ▶ Patient motivation
- ▶ How will results be used?

Continuous Glucose Monitoring (CGM)



Freestyle Libre 2 and Libre 3	Dexcom G6 and G7
<ul style="list-style-type: none">▶ Placement on back of upper arm▶ Change sensor every 14 days▶ ASA and vitamin C can interfere with readings▶ Has high and low alarms▶ Measures glucose every 15 minutes	<ul style="list-style-type: none">▶ Placement on abdomen (G6) or back of upper arm (G7)▶ Change sensor every 10 days▶ Hydroxyurea and high dose APAP can interfere with readings▶ Has high and low alarms▶ Measure glucose every 5 minutes



Comprehensive Care Needs for Diabetes

Blood pressure at each visit

B12 level if on metformin

Dental exam every 6 months

Depression screening annually

Diabetes-self management education and support at diagnosis then annually

Dilated eye exam annually

Comprehensive foot exam annually

Annual influenza vaccine

Pneumococcal vaccine

Hepatitis B vaccine

Serum creatinine

Urine test for albumin to creatinine ratio annually

A1c every 6 months if at goal or every 3 months if not

Lipid panel annually

Medical nutrition therapy at diagnosis then annually

Other Resources for Your Patients with Diabetes or Pre-diabetes

- ▶ National Diabetes Prevention Program
- ▶ Diabetes Self-management Education and Support Services
- ▶ Medical Nutrition Therapy

Diabetes Prevention Program Structure

12 month program delivering a minimum of 22 sessions of a CDC-approved curriculum.

Sessions delivered by a lifestyle coach trained by one of the nine CDC-approved organizations.

National Diabetes Prevention Program

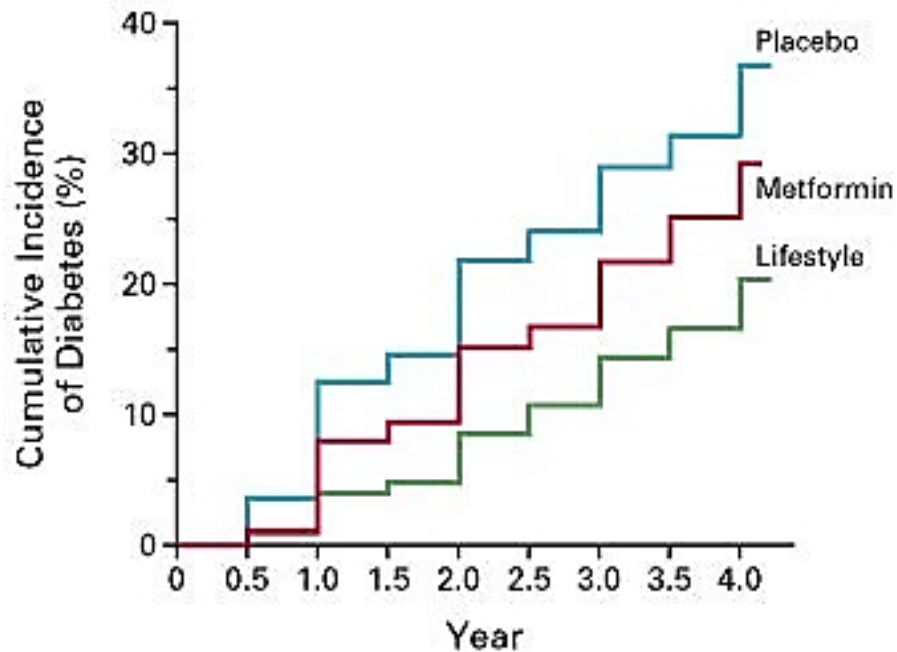
Data submission to the CDC every 6 months to obtain and maintain recognition status.

Recognition status dependent on consistently meeting weight loss and attendance requirements.

“Standards and Operating Procedures.” *Centers for Disease Control and Prevention Diabetes Prevention Recognition Program*. 1 March 2018, www.cdc.gov/diabetes/prevention/recognition.

Centers for Disease Control and Prevention. <https://www.cdc.gov/diabetes/prevention/lifestyle-program/staffing-training.html>. Accessed October 9, 2018.

NDPP Efficacy

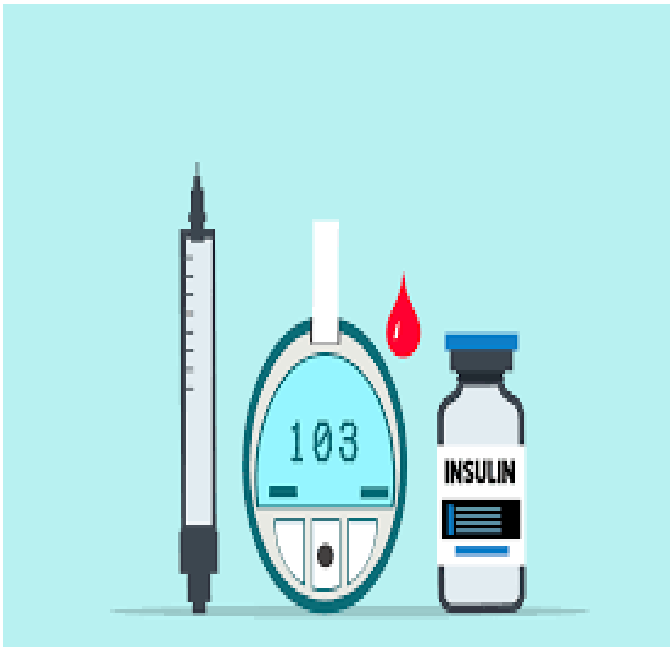


Cuts the risk for type 2 diabetes in half.

Twice as effective as Metformin in preventing type 2 diabetes.

The initial NDPP cohorts have been followed for over 15 years making it one of the longest research efforts on lifestyle change programs to ever take place.

Diabetes Self-Management Education and Support Services (DSMES)



- ▶ Provides an evidence-based foundation to empower people with diabetes to navigate self-management decisions and activities
- ▶ For all person with diabetes
 - ▶ Type 1
 - ▶ Type 2
 - ▶ Gestational
- ▶ Persons with diabetes manage 99% of their care

What We Do in DSMES Sessions?

Learn basic information

- Pathophysiology of diabetes and treatment options
- Medication Use
- Preventing, detecting and treating acute and chronic complications

Understand how to use devices

- Blood glucose meters
- Insulin pens
- Insulin pumps
- Continuous glucose monitors
- Monitoring including pattern management

Adopt healthy eating and physical activity habits

- Nutrition education (food groups, how food affects glucose)
- Meal planning
- Weight loss strategies
- Physical activity

Ongoing support and coping

- Resources for ongoing support
- Coping with chronic illness
- Preventative Care Plan (immunizations, exams, screenings, lab tests)
- Problem solving

DSMES Benefits



Each 1% reduction in A1c reduces risk of complications by 40%



Reduces number of hospitalizations, length of stay, and inpatient costs



Improves control of blood glucose, blood pressure and cholesterol levels



Lowers health costs by 5.7% over those that do not attend

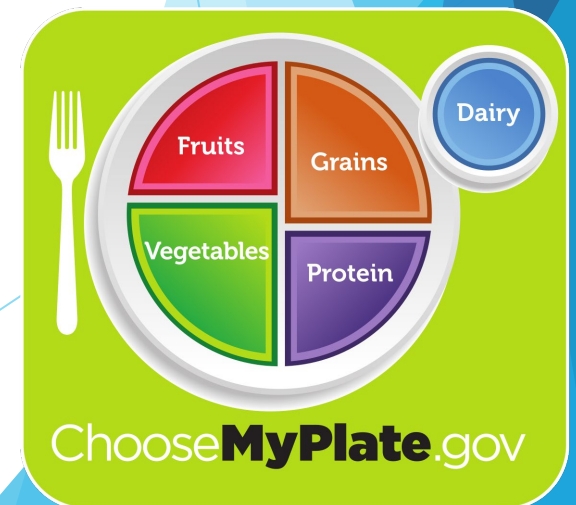
Education Versus Medication

DSMES vs Metformin		
Criteria	Benefits Rating	
	DSMES	Metformin
A1c reduction	0.6%-1.0%	1.0%
Hypoglycemia risk	Low	Low
Body weight	Neutral/Loss	Neutral/Loss
Side effects	None	Gastrointestinal
Cost	Low/Savings	Low
Psychosocial benefits	High	N/A

- Powers, Margaret, et al. "Diabetes Self-management Education and Support in Type 2 Diabetes: A Joint Position Statement of the American Diabetes Association, the American Association of Diabetes Educators, and the Academy of Nutrition and Dietetics." *Diabetes Care*, vol. 38, no. 7, July 2015, pp. 1372-1382, <https://doi.org/10.2337/dc15-0730>.
- *National Diabetes Statistics Report, 2017. Estimates of Diabetes and Its Burden in the United States*. National Center for Chronic Disease Prevention and Health Promotion, 2017, pp. 1-20.
- Powers, Margaret, et al. "2016 Health Care & Education Presidential Address: If DSME Were a Pill, Would You Prescribe It?" *Diabetes Care*, vol. 39, no. 12, Dec 2016, pp. 2101-2107, DOI: 10.2337/dc16-2085.

Medical Nutrition Therapy (MNT)

- ▶ Nutrition therapy plays an integral role in overall diabetes management
- ▶ MNT delivered by a registered dietitian is associated with A1C decreases of 1.0-1.9% for people with type 1 diabetes and 0.3-2.0% for people with type 2 diabetes.
- ▶ MNT is an intensive, focused, and comprehensive nutrition therapy service
 - ▶ Involves in-depth individualized nutrition assessment.
 - ▶ Relies heavily on follow-up to provide repeated reinforcement to aid with behavior change.
 - ▶ Establishes goals, a care plan, and interventions.



When to Refer to DSMES and MNT

Four Key Time Points

Diagnosis

Annually

Complications

Transitions of Care

The American Diabetes Association recommends that all people with diabetes should participate in diabetes self-management education and receive the support needed to facilitate the knowledge, decision-making, and skills mastery necessary for diabetes self-care.

References

- ▶ Centers for Disease Control and Prevention. National Diabetes Statistics Report website. <https://www.cdc.gov/diabetes/data/statistics-report/index.html>. Accessed [3/7/2022].
- ▶ American Diabetes Association. <http://www.diabetes.org/assets/pdfs/advocacy/state-fact-sheets/oklahoma-state-fact-sheet.pdf>. Accessed march 7, 2022.
- ▶ Centers for Disease Control and Prevention. (2020). *Behavioral Risk Factor Surveillance System*. Available at <https://www.cdc.gov/brfss/brfssprevalence/index.html>
- ▶ Oklahoma State Department of Health, Center for Health Statistics, Health Care Information. (2020). *Behavioral Risk Factor Surveillance System* Available at <http://www.health.ok.gov/ok2share>
- ▶ Handelsman Y, Bloomgarden ZT, Grunberger G, et al. American Association of Clinical Endocrinologists and American College of Endocrinology Clinical practice guidelines for developing a diabetes mellitus comprehensive care plan—2015. *Endocr Pract*. 2015;21(suppl 1):1-87.
- ▶ US Preventive Services Task Force. Screening for Prediabetes and Type 2 Diabetes: US Preventive Services Task Force Recommendation Statement. *JAMA*. 2021;326(8):736–743. doi:10.1001/jama.2021.12531
- ▶ American Diabetes Association Professional Practice Committee. 2. Classification and diagnosis of diabetes: *Standards of Medical Care in Diabetes—2022*. *Diabetes Care* 2022;45(Suppl. 1):S17–S38
- ▶ American Diabetes Association Professional Practice Committee. 14. Children and adolescents: *Standards of Medical Care in Diabetes—2022*. *Diabetes Care* 2022;45(Suppl. 1):S208–S231
- ▶ Sagesaka H, Sato Y, Someya Y, Tamura Y, Shimodaira M, Miyakoshi T, Hirabayashi K, Koike H, Yamashita K, Watada H, Aizawa T. Type 2 Diabetes: When Does It Start? *J Endocr Soc*. 2018 Apr 18;2(5):476-484. doi: 10.1210/js.2018-00071. PMID: 29732459; PMCID: PMC59324
- ▶ The Diabetes Control and Complications Trial Research Group. The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. *N Engl J Med*. 1993;329:977-986.76.
- ▶ Schwartz,ss, Epstein S, Corkey BE, et al. A unified pathophysiological construct of diabetes and its complications
- ▶ *Diabetes Care* 2020 Jan; 43(Supplement 1): S98-S110. <https://doi.org/10.2337/dc20-S009>. Accessed March 31, 2020.
- ▶ William T. Cefalu, Sanjay Kaul, Hertz C. et al; Cardiovascular Outcomes Trials in Type 2 Diabetes: Where Do We Go From Here? Reflections From a Diabetes Care Editors' Expert Forum. *Diabetes Care* 1 January 2018; 41 (1): 14–31. <https://doi.org/10.2337/dci17-0057>
- ▶ Coward, K. Overbasalization: Addressing Hesitancy in Treatment Intensification Beyond Basal Insulin. *Clinical.DiabetesJournals.org*. <https://dx.doi.org/10.2337/cd19-0061>. Accessed October 12, 2020.
- ▶ "Standards and Operating Procedures." *Centers for Disease Control and Prevention Diabetes Prevention Recognition Program*. 1 March 2018, www.cdc.gov/diabetes/prevention/recognition.
- ▶ Centers for Disease Control and Prevention. <https://www.cdc.gov/diabetes/prevention/lifestyle-program/staffing-training.html>. Accessed October 9, 2018.
- ▶ Knowler, William, et al. "Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin." *New England Journal of Medicine*, vol. 346, 2002, pp. 393-403, DOI: 10.1056/NEJMoa012512.
- ▶ Beck J, Greenwood D, et al. "2017 National Standards for Diabetes Self-Management Education and Support." *The Diabetes Educator* 43, no. 5 (2017): 449-464.
- ▶ Powers, Margaret, et al. "Diabetes Self-management Education and Support in Type 2 Diabetes: A Joint Position Statement of the American Diabetes Association, the American Association of Diabetes Educators, and the Academy of Nutrition and Dietetics." *Diabetes Care*, vol. 38, no. 7, July 2015, pp. 1372-1382, <https://doi.org/10.2337/dc15-0730>.
- ▶ *National Diabetes Statistics Report, 2017. Estimates of Diabetes and Its Burden in the United States*. National Center for Chronic Disease Prevention and Health Promotion, 2017, pp. 1–20.
- ▶ Powers, Margaret, et al. "2016 Health Care & Education Presidential Address: If DSME Were a Pill, Would You Prescribe It?" *Diabetes Care*, vol. 39, no. 12, Dec 2016, pp. 2101-2107, DOI: 10.2337/dc16-2085.
- ▶ *Diabetes Care* December 2021, Vol.45, S60-S82. doi:<https://doi.org/10.2337/dc22-S005>
- ▶ CDC. (2021, February). *Medical Nutrition Therapy toolkit*. Retrieved from Centers for Disease Control and Prevention: <https://www.cdc.gov/diabetes/dsmes-toolkit/reimbursement/medical-nutrition-therapy.html>
- ▶ Kellie Rodriguez, Donna Ryan, Jane K. Dickinson, Victor Phan; Improving Quality Outcomes: The Value of Diabetes Care and Education Specialists. *Clin Diabetes* 1 July 2022; 40 (3): 356-365. <https://doi.org/10.2337/cd21-0089>
- ▶ Jody Davis, Amy Hess Fischl, Joni Beck, Lillian Browning, Amy Carter, Jo Ellen Condon, Michelle Dennison, Terri Francis, Peter J. Hughes, Stephen Jaime, Ka Hei Karen Lau, Teresa McArthur, Karen McAvoy, Michelle Magee, Olivia Newby, Stephen W. Ponder, Uzma Quraishi, Kelly Rawlings, Julia Socke, Michelle Stancil, Sacha Uelmen, Suzanne Villalobos; 2022 National Standards for Diabetes Self-Management Education and Support. *Diabetes Care* 1 February 2022; 45 (2): 484-494. <https://doi.org/10.2337/dc21-2396>

Questions?

Heidi Macha, PharmD, BCACP

Phone 580-774-6041

Email-heidi.macha@swosu.edu

Upcoming WOW Events

- **Nov 14th:** World Diabetes Day FREE CME/CEU
- **Nov 16th:** Rural Health Day Art Competition - Washita County, Cordell Memorial Hospital
- **Jan 18th:** Exercise & Cooking Demos - Beckham County, Elk City
- **Feb 7th:** Roger Mills County Community Health Fair
- Quarterly consortium meetings (*4th Thursday of the 1st month of each quarter*)
 - Jan 25th, 2024
 - April 25th, 2024
 - July 25th, 2024
 - Oct 24th, 2024



For more information on WOW and how to join our consortium:

Jayme Noble – jnoble@ofmq.com

Visit: <https://www.ofmq.com/>

WOW page: <https://www.ofmq.com/wow>