Diabetes: Part II

Self-Management

Objectives

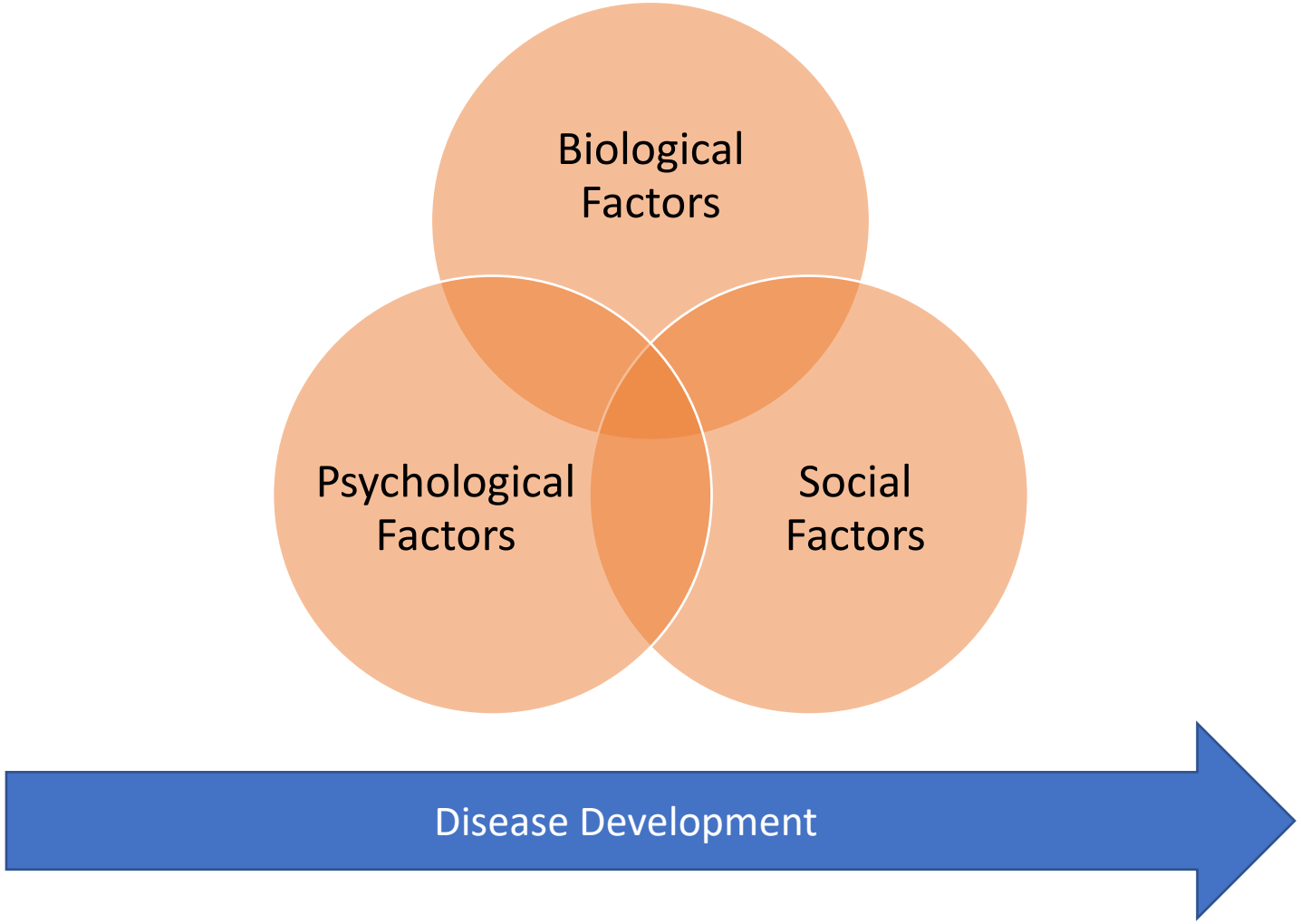
At the conclusion of this presentation, the participant will be able to:

1. Identify biopsychosocial factors associated with a diagnosis of type 2 diabetes mellitus.
2. Describe the recommended approaches to ongoing medical care and self-management for patients with type 2 diabetes mellitus.
3. Coach a patient on an evidence-based approach to self-monitoring of blood glucose.
4. List resources patients can access to further support their journey with type 2 diabetes mellitus.

Biopsychosocial Factors

Overview

Biopsychosocial Model



Engel, George L. The need for a new medical model: a challenge for biomedicine. (PDF). *Science*. 1977;196(4286):129–36.Avaiable from: https://globalization.anthro-seminars.net/wp-content/uploads/2016/11/Need-for-a-New-Medical-Model-A-Challenge-for-Biomedicine.pdf. Accessed April 7, 2020.

Biologic Factors

Genetics

- Individuals with a family history in any first-degree relative have a two- to three-fold increased risk
- Five- to six-fold increase in risk for those with both a maternal and paternal history

Comorbidities

- Hypertension, obesity, dyslipidemia, and Atherosclerotic Cardiovascular Disease (ASCVD) are commonly present in patients with type 2 Diabetes Mellitus (DM)
- Patients with type 2 DM are at risk of developing hearing impairment, sleep apnea, fatty liver disease, periodontal disease, cognitive impairment, depression, anxiety, and additional disorders over time

Robertson RP. Risk factors for type 2 diabetes mellitus. In: UpToDate, Mulder JE (Ed), UpToDate, Waltham, MA, 2020.
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Psychological and Social/Economic Factors

Psychological	Social/Economic
• Depression is twice as common in patients with type 2 DM as it is in those without • Diabetes-related distress has been shown to result in poorer outcomes	• Insurance coverage and access to care may influence the timing of diagnosis (e.g., early or later in disease course) • If cost is a barrier, less efficacious therapies may be selected • Things like neighborhood have been shown to correlate to risk for the development of diabetes

Roy T, Lloyd C. Epidemiology of Depression and Diabetes: A Systematic Review. J Affect Disord. 2012;142:S8-21.
Robertson RP. Risk factors for type 2 diabetes mellitus. In: UpToDate, Mulder JE (Ed), UpToDate, Waltham, MA, 2020.
Powers MA, et al. Diabetes Self-management Education and Support in Type 2 Diabetes: A Joint Position Statement of the American Diabetes Association, the AmericanAssociation of Diabetes Educators, and the Academy of Nutrition and Dietetics. Diabetes Care. 2015;38:1372-82.

General Approach to Medical Care
The Planned Visit

- Ongoing evaluation is necessary to identify and address diabetes-related complications

Every Visit	Every 3-6 Months	Annually
• History and physical exam • Blood pressure • Visual inspection of the feet	• A1C	• Dilated eye exam • Fasting lipids • Urinary albumin-to-creatinine ratio • Dental exam • Comprehensive foot exam

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Let's Talk Model Approaches

- Team-Based Care
- Patient Centered Care
- Patient Centered Team-Based Care

Team-Based Approach
Medical Care

Provider Team: A group of primary care practice personnel who identify as members of a team and who work together to provide care for a panel of patients

- Medical Assistant
- Provider
- Clinical Nurse
- Nurse Practitioner
- Physician Assistant
- Nurse Care Manager
- Pharmacist
- Behavioral Care Manager
- Social Worker
- Dietician
- Non-clinical staff
  - Receptionist
  - Peer Counselor
  - Community Health Worker

Creating Patient-centered Team-based Primary Care. White Paper. Agency for Healthcare Research and Quality. Available from: https://pcmh.ahrq.gov/sites/default/files/attachments/creating-patient-centered-team-based-primary-care-white-paper.pdf. Last Updated March 2016. Accessed November 2020.

Patient Centered Care Team

- Customized teams that form to provide care for, and include, individual patients
- These teams may include some or all members of the provider team, depending on the patient's needs at that time and the constellations of clinicians and staff in different practices
- They always include the patient in the role that he or she prefers

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Patient-Centered Team-Based Care

An approach to planning and delivering care that:

- The practice views as developing good relationships with patients as a key component of high-quality care
- Actively seeks and appropriately responds to patients' preferences and values
- Works to support patients in achieving their health goals

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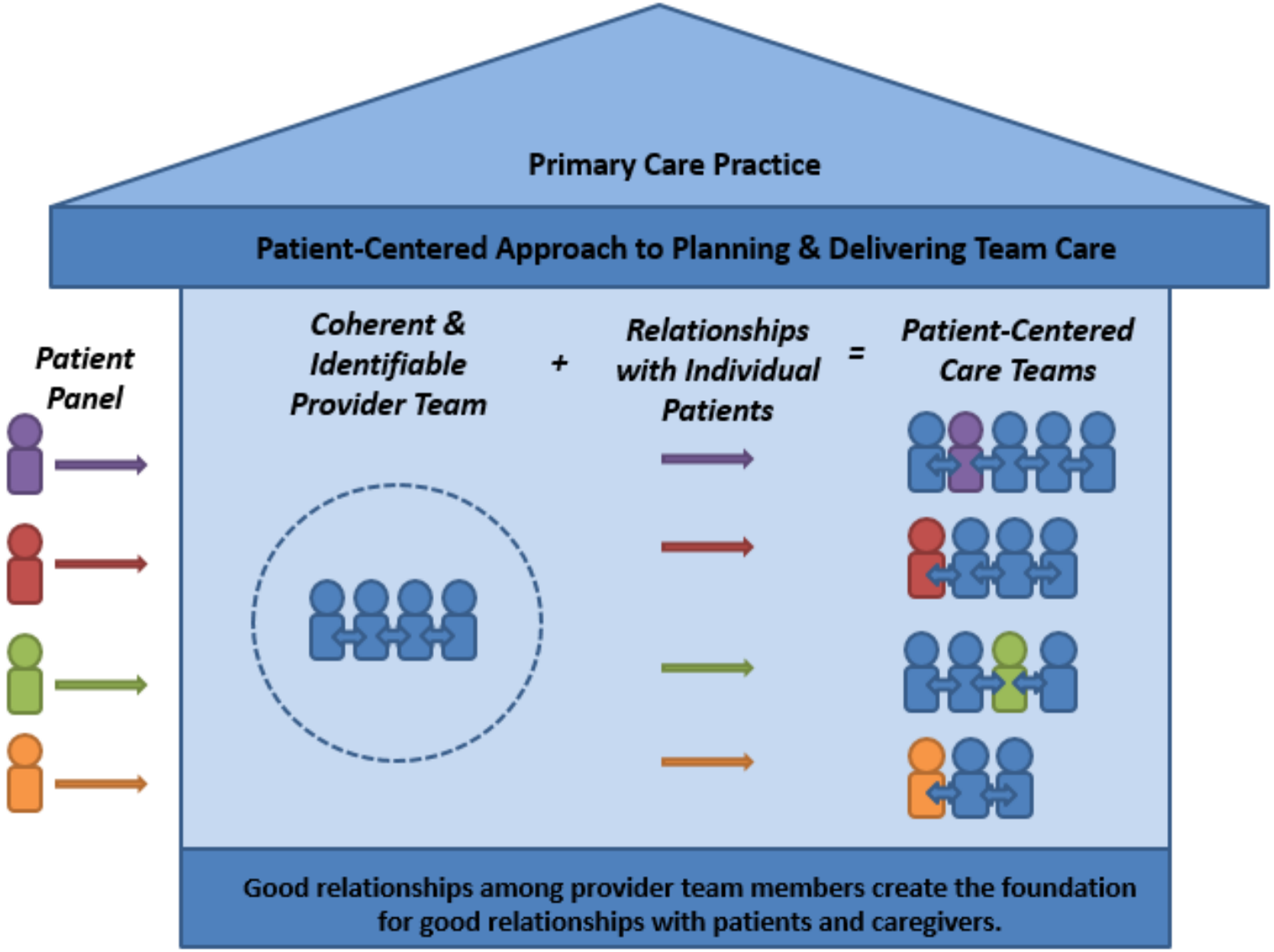

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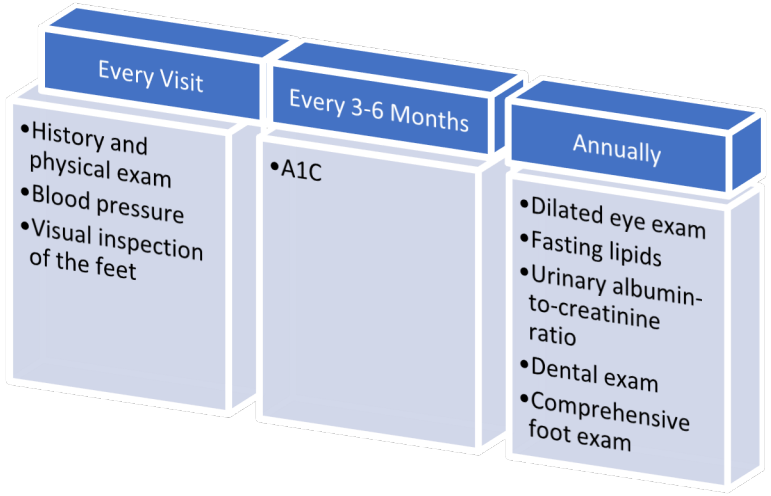
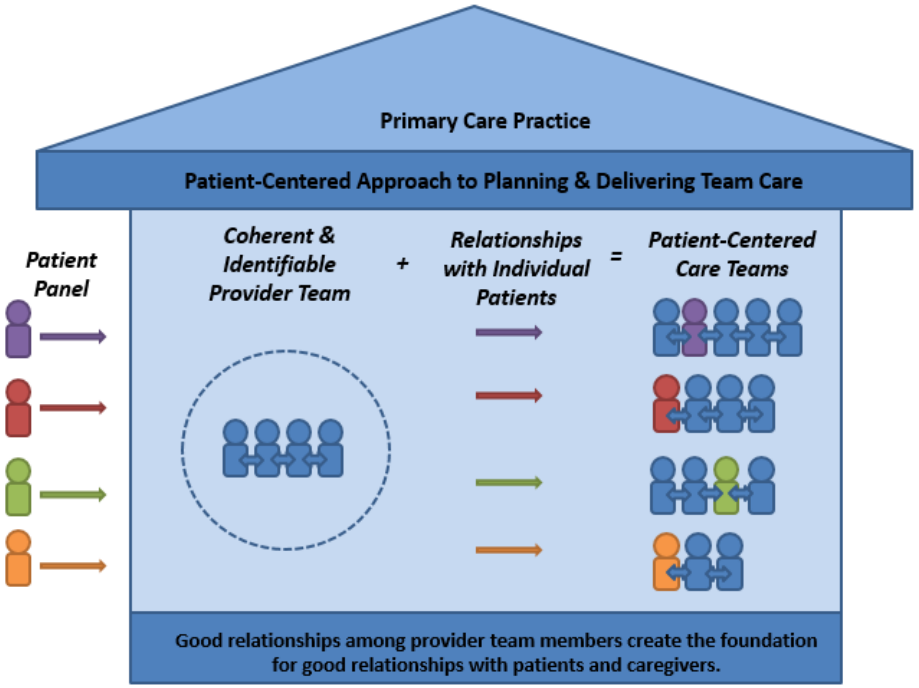
All-Encompassing Road Map

Evidence-based combined with patient-centered team-based care

- Matching the team member with the patient needs
- Incorporating patient self-management





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Patient Case-Judy Toody

- 65-year old white woman with a BMI of 42
- History of Diabetes Type 2 for 5 years. Treated with Metformin for 4 years. When her A1C increased to 8.5 she was started on Lantus. Judy has not been taking Metformin consistently since then.
- Comorbidities of heart failure, hypertension, hyperlipidemia and depression.
- Current findings-A1c=10.7, B/P=165/90, LDL =254
- Current PHQ=2
- Lives alone
- Transportation issues, sister helps when she can

Patient-Centered Team-Based Care Promotes Self-Management

Teams engage patients as partners in care, build relationships, and invite and respond to the needs and preferences patients express with skills of:

- Communication, motivational interviewing, and active listening
- Viewing patients as resourceful partners in care, and engaging in shared decision-making
- Providing culturally competent care

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Self-Management Approach Initiating the Visit

Before we get started, what would you like to cover in our time together?

Use active listening

- Show the patient that you care
- Establish trust in a health care professional/patient relationship
- Lessen your chance of erroneous treatment/decision-making based on your own assumptions (clarify the plan - did I get it right?)
- Increase the chance that you'll procure pertinent information

Our Knowledge: Diabetic Retinopathy

- Major cause of morbidity in patients with diabetes
- Early detection is critical
  - Most patients do not develop symptoms until the very late stages
  - Progression can be rapid
  - Can allow for intervention with surgical and subsequent avoidance of severe visual loss
- Risk factors
  - Primary: duration of diabetes and level of glycemic control
  - Additional: hypertension, presence of other microvascular complications (e.g., nephropathy, neuropathy), and dyslipidemia
- Screening routine
  - First screening at time of diagnosis
  - Yearly thereafter if retinopathy is present (more frequent screening may be necessary for abnormal findings)
  - Every 2 years if no evidence of retinopathy

McCulloch DK. Diabetic retinopathy: Screening. In: UpToDate, Mulder JE (Ed), UpToDate, Waltham, MA, 2020.

Patient-Centered Team-Based Self-Management Approach

- Ask: I have some information about diabetes and the importance of regular eye exams. Would it be o.k. if I shared this with you?

- Provide: (risk & safety, followed by patient desire and ability)
  - Your diabetes can affect your vision. The best defense we have is looking for signs of problems early and often. The best way to do this is having you see an eye doctor to look for a condition called retinopathy. If you have retinopathy and we find it early, there are treatments to slow vision loss.

- Ask: Now that I've shared this, what questions do you have?

Our Knowledge: Foot Examination

- Careful inspection can significantly reduce morbidity associated with foot problems due to vascular and neurologic diseases that are common in diabetes
- Routinely (e.g., every visit) evaluate for:
  - Nail care
  - Trauma due to poorly fitting footwear
  - Fungal infection
  - Callus formation
- A more comprehensive exam should be performed annually in order to identify risk factors for ulcers or amputation
  - Inspection
  - Pedal pulse assessment
  - Test for loss of sensation
- Referral for identified problems will be dependent on the capacity of the primary care office as well as resources available locally
  - If appropriate and possible, referral should be made to a clinical with expertise in diabetic foot care (e.g., podiatrist, diabetes foot clinic, etc.)
- Patient should perform a self assessment daily

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Patient-Centered Team-Based Self-Management Approach

- Establishing patient knowledge base: I'm not sure if we've reviewed the importance of regular foot exams in the past.
- Ask an open-ended question: What are some of your ideas on foot exams?
- Fill in knowledge deficits with permission: I have some additional information I'd like to share. Would that be o.k.?
- Provide: (risk & safety, followed by patient desire and ability)
  - Foot exams help us find early signs of small blood vessel problems and nerve damage that are common for someone with diabetes. The best defense we have is looking for signs of problems early and often. The best way to do this is having you take your socks and shoes off for the doctor to look at your feet for any problems.
  - It's also best to have you or a family member also look at your feet. Some of the things we would look for are cuts or sores that do not heal, nails with an unusual color, thick, cracked or have an odor.
  - If you have any of these symptoms and we find it early, there are treatments to decrease the chance of infection and more challenging complications.
- Ask: Now that I've shared this, what are your thoughts on foot exams?

Our Knowledge: Diabetic Nephropathy

- Increased levels of protein in the urine (albumin-to-creatinine ratio) is the earliest way to detect diabetic nephropathy
- Screening should occur annually
  - Positive results should be confirmed with multiple subsequent tests due to the large number of false positive results that can occur
- Several effective therapy options exist for patients diagnosed with diabetic nephropathy
  - ACE inhibitors
  - ARBs
  - SGLT-2 inhibitors

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Our Knowledge: Vaccinations

- Patients with diabetes may be at higher risk of infection and subsequent serious illness
- Influenza annually
  - High-dose formulation for patients 65 years of age and older
- Pneumococcal, tetanus/diphtheria, and herpes zoster based on CDC guidelines
- Consider hepatitis B, based on patient age and risk

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“ABCs” of Diabetes Control

A1C

Blood pressure

LDL **C**holesterol

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Delahanty LM. Nutritional considerations in type 2 diabetes mellitus. In: UpToDate, Mulder JE (Ed), UpToDate, Waltham, MA, 2020.

ABC's, Treat-to-Target, Self-Management

Between visits

- Review the patient's risk and safety
  - New or changes in medications, ER visits, high and low blood sugars/blood pressure and how they were managed
- Review the patient's progress with ABC's
  - PHQ if co-morbidity of depression
  - Blood sugars and/or A1C
  - Blood pressure if co-morbid hypertension
  - Cholesterol LDL – dietary and medication changes progress
- Treat-to-Target
  - Review the trends
    - Improving – continue the plan and great work (affirm the patient's progress)
    - No improvements or worsening – care conference with the provider review options to add or change in the care plan
- Self-Management
  - Review the progress of the patient's 1 or 2 plans to improve their health (the goal they set in their self management plan)
  - What's working? What's not working?
  - Next steps for follow up, adjusting the plan, making a new plan

Our Knowledge: Non-Pharmacologic Therapy

Lifestyle areas patients may consider for self-management action planning

- Components

Dietary modification	Exercise	Weight reduction

- Benefits
  - Reduced risk for the development of sleep apnea
  - Improvement in mobility and quality of life
  - Decreased need for glucose-lowering and blood pressure medications
  - Improved liver function

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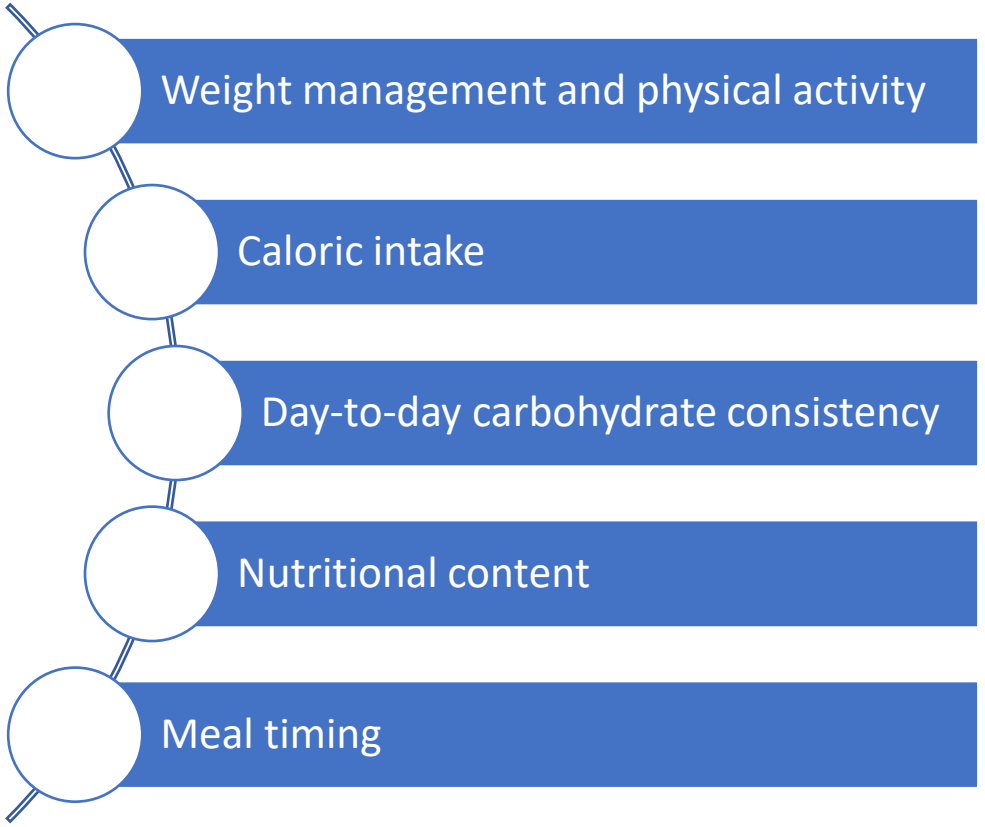
Our Knowledge: Dietary Modification

- Medical nutrition therapy (MNT)
  - Refers to the process of tailoring a dietary plan for a patient with diabetes, based on medical, lifestyle, and personal factors
- For overweight or obese patients, evidence states an emphasis should be placed on weight reduction
- For patients not in need of weight reduction, the emphasis should be placed on weight maintenance, consistency in carbohydrate intake, and balanced nutritional content
- A registered dietician can be helpful in developing and monitoring a nutrition plan for a patient with type 2 diabetes
- The emphasis should be on tailoring the “nutrition prescription” to the patient’s preferences and lifestyle

Five Components of MNT



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Our Knowledge: Weight Reduction

- Benefits
  - weight loss induced improvement in glycemic control is associated with partial correction of insulin resistance and impaired insulin secretion
- Pharmacologic therapy is not generally recommended as primary therapy
- Surgery may benefit patients in whom other modalities have failed

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Our Knowledge: Exercise

- Benefits
  - Improved glycemic control due to increased responsiveness to insulin
  - Can delay the progression of impaired glucose tolerance to over diabetes
- Recommendations
  - Decrease sedentary time
  - Perform 30-60 minutes of moderate-intensity aerobic activity (40-60% VO_2 max) on most days
    - ≥ 150 minutes per week, spread over at least three days per week
    - No more than two consecutive days without exercise
  - Physically fit individuals may opt for shorter-duration intensive exercise
  - Resistance training (free weights or weight machines) at least twice per week

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ADA Recommendations
Self-Management Education and Support

- All patients newly diagnosed with diabetes should receive comprehensive diabetes self-management education that includes individualized instruction specific to:
  - Nutrition
  - Physical activity
  - Optimizing metabolic control
  - Preventing complications
- Benefits of education and support programs
  - Studies show a small but statistically significant reduction in A1C (0.5-1%) as compared to patients not enrolled
  - Reductions in hospital admissions, readmissions, and estimated lifetime healthcare costs
  - Reductions in the development or advancement of diabetes-related complications
  - Improved quality of life and lifestyle behaviors
  - Decreased risk of diabetes-related distress and depress

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ADA View
Self-Management Education and Support

- There are four critical times to assess, provide, and adjust diabetes self-management education and support
  - At diagnosis
  - Annual assessment of education, nutrition, and emotional needs
  - When new complicating factors influence self-management
  - When transitions in care occur

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Self Management Education and Support

- Guiding principles
  - Engagement
  - Information sharing
  - Psychosocial and behavioral support
  - Integration with other therapies
  - Coordination of care across specialty care, facility-based care, and community organizations

Self Management Education and Support

- At diagnosis
  - Explore current knowledge, health beliefs, cultural influences, physical limitations, family support, financial status, medical history, literacy, etc.
    - Use this information to determine what content to provide and how
  - Review Options
    - Personal strategies to address psychosocial issues and concerns and promote health and behavior change
    - Risk reduction through smoking cessation, foot care, etc
    - Nutrition
    - Preventing, recognizing/detecting, and treating acute and chronic complications
    - Goals for physical activity
    - Self Monitoring Blood Glucose (SMBG)
    - Medication therapy

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Self Management Education and Support

- Annually
  - Review and reinforce
  - Emphasize prevention of complications and improved quality of life
  - Discuss adaptability
  - Support sustainment of initial behavior changes
  - Recognize and support the ongoing burden of living with diabetes

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Self Management Education and Support

- Complicating factors
  - Emphasize self-care skills in an effort to delay the progression of diabetes and the onset of new complications
  - Provide or refer for emotional support for diabetes-related distress and depression
  - Develop and support personal strategies for behavior change and healthy coping
  - Assist with accommodation of sensory or physical limitations or new self-management demands
  - Promote health and behavior change

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Self Management Education and Support

- Transitions
  - Identify the need to modify the previous plan to support new and evolving needs
  - Evaluate current caregiver/significant other involvement and facilitate education and support when appropriate
  - Provide support for challenges associated with usual activity level and function, health beliefs and feelings of well being
  - Maximize quality of life and emotional support

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Self-Care to Optimize Glycemic Control

- Lifestyle modification
- Medication
- Self-monitoring of blood glucose (SMBG)

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SMBG

- Useful for patients taking insulin and/or other medications that increase the risk for hypoglycemia
- Generally unnecessary in patient who are treated with lifestyle modification alone or who take medications unlikely to cause hypoglycemia
  - May be useful during illness or if the patient experiences symptoms of hyper or hypoglycemia
- May be useful as a component of a patient education strategy that stresses the effects of diet, physical activity, and medication on blood glucose levels

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SMBG

- Frequency of monitoring varies based on the patient's glycemic target, current therapy, and individual needs
  - If insulin doses are adjusted throughout the day, based on glucose levels and timing/content of meals, testing four times daily (before meals and at bedtime) may be optimal
  - If the patient only takes basal insulin and the dose is adjusted based on glucose levels, the patient should test at least once daily
  - Continuous glucose monitoring (CGM) may be an option for select patients who inject multiple times per day, especially if the patient experiences frequent hypoglycemia or hypoglycemia unawareness

Weinstock RS. Self-monitoring of glucose in management of nonpregnant adults with diabetes mellitus. In: UpToDate, Mulder JE (Ed), UpToDate, Waltham, MA, 2020.

SMBG

- Blood glucose meter accuracy can be less than optimal
  - Can be of particular concern during episodes of hypoglycemia or in patients with poor peripheral tissue perfusion
  - Request that the patient bring their meter to each visit and consider an accuracy check against a meter with known accuracy
- Glucose test strips may have considerable batch-to-batch variation
- Consistency in the site for testing is important
- Encourage patients to store their test strips appropriately

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Patient Case Demonstration

- Assessment
- Care Planning

Care Management Comprehensive Assessment

- **Current Status:**
- **Greatest Concern:**
- **What is the patients hope for their health?**
- **Understanding of diagnosis (s):**

Year(s) of hospital admission for diabetes: _____ _____ _____
Effect on:
Eyes (retinopathy)
Nerves (decreased sensation in feet)
Burning night pain in feet
Kidneys (renal insufficiency)
Proteinuria or microalbuminuria

- **Diabetes**
- Current Management
- Specialist_____
- Monitoring blood sugar at home: _____ time(s) per day
- Glucometer
-
- Low reading in past week_____
- High reading in past week_____
- Average fasting reading in past week_____
-
- Previous Management None□
- Reason for stopping or not starting
- Medicine _____ _____

- Pertinent History:
- Other Providers:
- Medication Review:

Self Management Action Plan

SELF-MANAGEMENT ACTION PLAN

Patient Name:		**Date:**
Staff Name:	**Staff Role:**	**Staff Contact Info:**
Goal: *What is something you WANT to work on?* 1. 2.		
Goal Description: *What am I going to do?*		
How:		
Where:		
When:		**Frequency:**
How ready am I to work on this goal? (Circle number below) Not Ready 1 2 3 4 5 6 7 8 9 10 Very Ready		
Challenges: *What are barriers that could get in the way & how will I overcome them?* 1. 2. 3.		

Patient Case Demonstration

- Implementation
  - Follow up
  - Monitoring

When to Refer to a Specialist

- Controversial topic, with studies comparing care provided by specialists and generalists showing conflicting results
- Dependent on resources and expertise available in a given geography/community
  - In some areas, specialty practices take on the responsibility of providing primary care services in addition to specialty services
- Decision to refer or not could depend on patient complexity, primary care capacity, and the presence or absence of complications
- Patients in need of insulin therapy should be managed by, or in consultation with, an endocrinologist when possible

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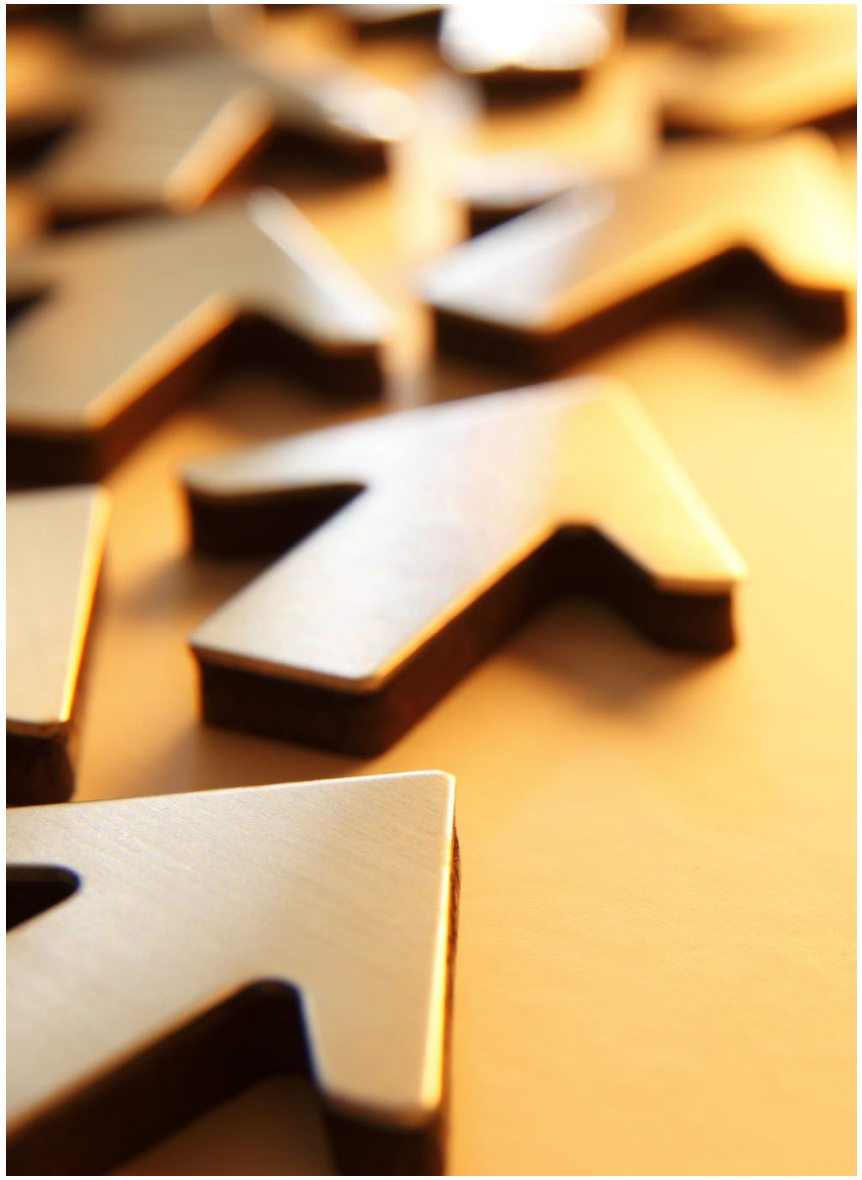
Patient Case Demonstration

- Evaluation and Follow-Up
- Case Closure



Resources for Patients

- American Diabetes Association
  - Diabetes Food Hub
  - Blog
- Centers for Disease Control and Prevention
  - Fact Sheets
- Association of Diabetes Care & Education Specialists

Thank you

- If you have questions on this topic, please contact:
  - MiCCSI at www.miccsi.org or
  - Sue Vos at sue.vos@miccsi.org

- To receive credit please complete the evaluation
- Once the evaluation is completed, you will be directed to a link that has the certificate of completion
  - Save the certificate to electronically to a file on your computer or make a printed copy before closing the page. (Please note the certificate will not have your name on it. You can insert your name in the space provided and save the signed certificate if preferred to have a certificate with your name).