THE DETAILS OF DIABETES CARE

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THE GOALS OF DIABETES MANAGEMENT ARE TO REDUCE THE SYMPTOMS OF DIABETES, TO REDUCE THE DEVELOPMENT/PROGRESSION OF COMPLICATIONS AND AND TO ENABLE THE PATIENT WITH DIABETES TO MAINTAIN BOTH QUALITY OF LIFE AND LIFE EXPECTANCY.

OBJECTIVES:

• REVIEW NATIONAL GUIDELINES FOR PREVENTION AND TREATMENT (ADA STANDARDS OF CARE GUIDELINES 2017).

• IMPLEMENT PREVENTIVE CARE STRATEGIES INTO THESE PLANS FOR BOTH PRIMARY AND SECONDARY PREVENTION.

• ACKNOWLEDGE THE IMPORTANCE OF CONTINUED EDUCATION ABOUT DISEASE PROCESSES AND COMPLICATIONS THROUGHOUT THE LIFESPAN. BE ABLE TO PROVIDE CULTURALLY SENSITIVE EDUCATION TO PATIENTS AND THEIR FAMILIES IN A MANNER AND ON A LEVEL THEY UNDERSTAND.
U.S. DIABETES PREVALENCE

29 Million

9.3% of the US population:
Diagnosed: 21 million
Undiagnosed: 8.1 million

- Diabetes kills 1 person every 3 minutes
  - 7th leading cause of death
- Someone diagnosed every 40 seconds
- 15 years less life expectancy
- Afflicts over 177 million worldwide
  - 300 million by 2025
- Leading cause of kidney failure, adult blindness and non-traumatic limb amputation
DEMOGRAPHICS BY EDUCATION AND INCOME

EDUCATION

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
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<tbody>
<tr>
<td>High School or less</td>
<td>47</td>
<td>50</td>
</tr>
<tr>
<td>College</td>
<td>51</td>
<td>48</td>
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</table>

% incidence within total sample

INCOME LEVEL

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
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<tbody>
<tr>
<td>&lt; $35K</td>
<td>32</td>
<td>54</td>
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<tr>
<td>$35K - $75K</td>
<td>37</td>
<td>26</td>
</tr>
<tr>
<td>&gt; $100K</td>
<td>19</td>
<td>9</td>
</tr>
</tbody>
</table>

% incidence within total sample

Roper Starch Worldwide, 2002
WHERE DO PATIENTS WITH DIABETES ACCESS CARE?

“What type of healthcare professional do you normally visit for your diabetes care?”

Roper Starch Worldwide, 2002
RELATIVE RISK OF PROGRESSION OF DIABETIC COMPLICATIONS

Patient/Disease Features

Risk of hypoglycemia/drug adverse effects
Disease Duration
Life expectancy
Relevant comorbidities
Established vascular complications
Patient attitude & expected treatment efforts
Resources & support system

<table>
<thead>
<tr>
<th>Patient/Disease Features</th>
<th>more stringent</th>
<th>A1C 7%</th>
<th>less stringent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk of hypoglycemia/drug adverse effects</td>
<td>low</td>
<td>high</td>
<td></td>
</tr>
<tr>
<td>newly diagnosed</td>
<td>long-standing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disease Duration</td>
<td>long</td>
<td>short</td>
<td></td>
</tr>
<tr>
<td>long-standing</td>
<td>short</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life expectancy</td>
<td>absent</td>
<td>Few/mild</td>
<td></td>
</tr>
<tr>
<td>established vascular complications</td>
<td>absent</td>
<td>Few/mild</td>
<td></td>
</tr>
<tr>
<td>Few/mild</td>
<td>severe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relevant comorbidities</td>
<td>absent</td>
<td>Few/mild</td>
<td></td>
</tr>
<tr>
<td>Few/mild</td>
<td>severe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient attitude &amp; expected treatment efforts</td>
<td>highly motivated, adherent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>less motivated, nonadherent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resources &amp; support system</td>
<td>readily available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>limited</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

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CRITERIA FOR THE DIAGNOSIS OF DIABETES

Fasting plasma glucose (FPG) ≥ 126 mg/dL

OR

2-h plasma glucose ≥ 200 mg/dL during an OGTT

OR

A1C ≥ 6.5%

OR

Classic diabetes symptoms + random plasma glucose ≥ 200 mg/dL

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TARGETS OF DIABETES MANAGEMENT

• NEAR-NORMAL GLYCEMIA
  o A1C LESS THAN 6.5%
  o POST-PRANDIAL: <140 MG/DL

• AVOID SHORT-TERM CRISIS
  o HYPOGLYCEMIA
  o HYPERGLYCEMIA
  o DKA

• MINIMIZE LONG-TERM COMPLICATIONS

• IMPROVE QUALITY OF LIFE

RISK FACTORS FOR PREDIABETES AND DM2

- A1C >5.7%
- FIRST DEGREE RELATIVE WITH DM
- HIGH RISK RACE:
  - AA, LATINO, NATIVE AMERICAN, ASIAN, PACIFIC ISLANDER
- WOMEN WITH HX OF GDM
- HX OF CVD

- DX OF HTN
- HDL <35MG/DL AND/OR TG >250MG/DL
- WOMAN WITH PCOS
- PHYSICAL INACTIVITY
- SIGNS OF INSULIN RESISTENCE:
  - OBESITY, ACANTHOSIS NIGRICANS
SCREENING FOR PREDIABETES WITH AN ASSESSMENT OF RISK FACTORS SHOULD BE CONSIDERED IN ASYMPTOMATIC ADULTS. B

TESTING SHOULD BEGIN AT AGE 45 FOR ALL PEOPLE. B

CONSIDER TESTING FOR PREDIABETES IN ASYMPTOMATIC ADULTS OF ANY AGE W/ BMI ≥25 KG/M2 WHO HAVE 1 OR MORE RISK FACTORS FOR DIABETES. B

IF TESTS ARE NORMAL, REPEAT AT A MINIMUM OF 3-YEAR INTERVALS. C
PREDIABETES

• FASTING PLASMA GLUCOSE AND A1C ARE EQUALLY APPROPRIATE FOR PREDIABETES TESTING. B

• IN PATIENTS WITH PREDIABETES, IDENTIFY AND TREAT OTHER CVD RISK FACTORS. B

• CONSIDER PREDIABETES TESTING IN OVERWEIGHT CHILDREN WITH 2 OR MORE DIABETES RISK FACTORS. E

FASTING GLUCOSE 100–125 MG/DL OR
RANDOM GLUCOSE 140–199 MG/DL OR
A1C 5.7–6.4%

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COMPREHENSIVE DIABETES EVALUATION

MEDICAL HISTORY:

• AGE AT ONSET OF DM2
• EATING PATTERNS, WEIGHT HISTORY, NUTRITION EDUCATION
• SLEEP PATTERN, PHYSICAL ACTIVITY
• COMMON COMORBIDITIES AND DENTAL DISEASE
• SCREEN FOR BARRIERS TO SELF-MANAGEMENT, MED ADHERENCE

• DIABETES EDUCATION
• PREVIOUS TREATMENT REGIMENS AND RESPONSE TO THERAPY WITH A1C AND FSBS RECORDS.
• DKA FREQUENCY, SEVERITY, AND CAUSE
• HYPOGLYCEMIA FREQUENCY & CAUSES
LABORATORY EVALUATION:

• A1C, IF RESULTS NOT AVAILABLE WITHIN PAST 3 MONTHS

• IF NOT PERFORMED/AVAILABLE WITHIN PAST YEAR:
  • FASTING LIPID PROFILE
  • LIVER FUNCTION TESTS
  • SPOT URINARY ALBUMIN-TO-CREATININE RATIO
  • SERUM CREATININE AND GFR
  • THYROID-STIMULATING HORMONE
• PROVIDE ROUTINE VACCINATIONS FOR CHILDREN AND ADULTS WITH DIABETES PER AGE-SPECIFIC CDC RECOMMENDATIONS. C

• ADMINISTER HEPATITIS B VACCINE TO UNVACCINATED ADULTS WITH DIABETES AGED 19-59 YEARS. C

CDC.GOV/VACCINES
<table>
<thead>
<tr>
<th>COMMON COMORBIDITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• AUTOIMMUNE DISEASES</td>
</tr>
<tr>
<td>• CANCER</td>
</tr>
<tr>
<td>• COGNITIVE IMPAIRMENT/DEMENTIA</td>
</tr>
<tr>
<td>• FATTY LIVER DISEASE</td>
</tr>
<tr>
<td>• FRACTURES</td>
</tr>
<tr>
<td>• HIV</td>
</tr>
<tr>
<td>• LOW TESTOSTERONE (MEN)</td>
</tr>
<tr>
<td>• OBSTRUCTIVE SLEEP APNEA</td>
</tr>
<tr>
<td>• PERIODONTAL DISEASE</td>
</tr>
<tr>
<td>• PSYCHOSOCIAL DISORDERS</td>
</tr>
<tr>
<td>• HEARING IMPAIRMENT</td>
</tr>
</tbody>
</table>
NUTRITION

- INDIVIDUAL MNT PROGRAM IS RECOMMENDED FOR ALL PEOPLE WITH DIABETES. A

- FOR PEOPLE ON FLEXIBLE INSULIN DOSING, EDUCATION ON CARB COUNTING CAN IMPROVE GLYCEMIC CONTROL. A

- FOR PEOPLE ON FIXED INSULIN DOSING, A CONSISTENT PATTERN OF CARB INTAKE CAN RESULT IN BETTER GLYCEMIC CONTROL AND LESS RISK OF HYPOGLYCEMIA. B

- BECAUSE DIABETES MNT CAN RESULT IN COST SAVINGS B AND IMPROVED OUTCOMES A, MNT SHOULD BE REIMBURSED BY PAYORS. E
### GLUCOSE MONITORING

#### FSBS TESTING
- **Patients on multiple-dose insulin (MDI) or insulin pump therapy** should check FSBS:
  - **Prior to meals and snacks**
  - **At bedtime**
  - **When they suspect low blood glucose**
  - **After treating low blood glucose until they are normoglycemic**
  - **Prior to critical tasks such as driving and exercise**
  - **Occasionally postprandially**

#### A1C TESTING
- **A1C at least every 6 months** in patients that meet treatment goals and have stable glycemic control.
- **A1C every 91 days** in patients whose therapy has changed or who are not meeting glycemic goals.
- **Use of point-of-care testing provides the opportunity for more timely treatment changes.**

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Table 1. Chart showing how average daily average plasma blood glucose levels compare to 2-3 month A1C test results.
## OBESITY TREATMENT

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Body Mass Index Category (kg/m$^2$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diet, physical activity &amp; behavioral therapy</td>
<td>25.0-26.9</td>
</tr>
<tr>
<td>Pharmacotherapy</td>
<td>X</td>
</tr>
<tr>
<td>Metabolic surgery</td>
<td>X</td>
</tr>
</tbody>
</table>

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Complications-Centric Model for Care of the Overweight/Obese Patient

**STEP 1**
**EVALUATION FOR COMPLICATIONS AND STAGING**

**CARDIOMETABOLIC DISEASE**
- **NO COMPLICATIONS**
  - BMI 25–26.9, or BMI ≥ 27

**BIOMECHANICAL COMPLICATIONS**
- **BMI ≥ 27 WITH COMPLICATIONS**
  - Stage Severity of Complications
    - LOW
    - MEDIUM
    - HIGH

**STEP 2**
**SELECT:**
- Therapeutic targets for improvement in complications
- Treatment modality
- Treatment intensity for weight loss based on staging

**Lifestyle Modification:**
- MD/RD counseling; web/remote program; structured multidisciplinary program

**Medical Therapy:**
- Phentermine; orlistat; lorcaserin; phentermine/topiramate ER; naltrexone/bupropion; liraglutide

**Surgical Therapy (BMI ≥ 35):**
- Lap band; gastric sleeve; gastric bypass

**STEP 3**
If therapeutic targets for improvements in complications not met, intensify lifestyle and/or medical and/or surgical treatment modalities for greater weight loss

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CARDIOVASCULAR DISEASE

- CVD IS LEADING CAUSE OF MORBIDITY & MORTALITY FOR THOSE WITH DIABETES
- LARGEST CONTRIBUTOR OF DIRECT/INDIRECT COSTS
- CONTROL INDIVIDUAL CARDIOVASCULAR RISK FACTORS TO PREVENT/SLOW CVD IN PEOPLE WITH DIABETES
- ASSESS ALL PATIENTS WITH DIABETES FOR CARDIOVASCULAR RISK FACTORS
HYPERTENSION

• COMMON COMORBIDITY

• PREVALENCE DEPENDS ON DIABETES TYPE, AGE, BMI, ETHNICITY

• MAJOR RISK FACTOR FOR ASCVD & MICROVASCULAR COMPLICATIONS

• IN DM1-
  • HTN OFTEN RESULTS FROM UNDERLYING KIDNEY DISEASE

• IN DM2-
  • HTN COEXISTS WITH OTHER CARDIOMETABOLIC RISK FACTORS

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HYPERTENSION

SYSTOLIC TARGETS:
• SHOULD BE TREATED TO A SYSTOLIC BLOOD PRESSURE GOAL OF <140 MMHG.

DIASTOLIC TARGETS:
• SHOULD BE TREATED TO A DIASTOLIC BLOOD PRESSURE <90 MMHG.

LOWER SYSTOLIC TARGETS, SUCH AS <130 MMHG, MAY BE APPROPRIATE FOR INDIVIDUALS AT HIGH RISK OF CVD, IF THEY CAN BE ACHIEVED WITHOUT OTHER RISKS.
HYPERTENSION

• PATIENTS WITH BP >120/80
  o ADVISED ON LIFESTYLE CHANGES TO REDUCE BP. B

• PATIENTS WITH CONFIRMED BP >140/90
  o LIFESTYLE THERAPY AND INITIATION AND TITRATION OF PHARMACOLOGICAL THERAPY. A

• PATIENTS WITH >160/100MMHG
  o LIFESTYLE THERAPY INCLUDING WEIGHT LOSS, DASH-STYLE DIET, INCREASED PHYSICAL ACTIVITY AND INITIATION OF TWO DRUGS. A
HYPERTENSION

• TREATMENT FOR HYPERTENSION SHOULD INCLUDE: A
  o ACE INHIBITOR
  o ANGIOTENSIN II RECEPTOR BLOCKER (ARB)
  o THIAZIDE-LIKE DIURETIC
  o DIHYDROPYRIDINE CALCIUM CHANNEL BLOCKERS

• AN ACE OR ARB IS THE RECOMMENDED FIRST-LINE TREATMENT FOR HTN IN PATIENTS WITH DM AND:
  o URINARY ALB:CR RATIO ≥300 MG/G A OR 30–299 MG/G CREATININE. B

  o IF USING ACES, ARBS OR DIURETICS, MONITOR SERUM CREATININE/GFR & POTASSIUM LEVELS. B

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ANTIPLATELET AGENTS

• CONSIDER ASPIRIN THERAPY (75–162 MG/DAY) C AS A PRIMARY PREVENTION STRATEGY IN THOSE WITH DIABETES AT INCREASED CARDIOVASCULAR RISK

  • AGE ≥50 YEARS WITH ONE ADDITIONAL MAJOR RISK FACTOR: FHX OF PREMATURE ASCVD, HYPERTENSION, SMOKING, DYSLIPIDEMIA, ALBUMINURIA

• USE ASPIRIN THERAPY (75–162 MG/DAY) AS SECONDARY PREVENTION IN THOSE WITH DIABETES AND HISTORY OF ASCVD. A

• FOR PATIENTS W/ ASCVD & ASPIRIN ALLERGY, CLOPIDOGREL (75 MG/DAY) SHOULD BE USED. B

• DUAL ANTIPLATELET THERAPY IS REASONABLE FOR UP TO A YEAR AFTER AN ACUTE CORONARY SYNDROME. B
CORONARY HEART DISEASE

• IN PATIENTS WITH KNOWN ASCVD, USE ASPIRIN AND STATIN THERAPY (IF NOT CONTRAINDICATED) A AND CONSIDER ACE INHIBITOR THERAPY C TO REDUCE RISK OF CARDIOVASCULAR EVENTS.

• IN PATIENTS WITH A PRIOR MI, B-BLOCKERS SHOULD BE CONTINUED FOR AT LEAST 2 YEARS AFTER THE EVENT. B

• IN PATIENTS WITH SYMPTOMATIC HEART FAILURE, TZDS SHOULD NOT BE USED. A

• IN DM2 PATIENTS WITH STABLE CHF, METFORMIN CAN BE USED IF RENAL FUNCTION IS NORMAL BUT AVOID IN UNSTABLE OR HOSPITALIZED PATIENTS WITH CHF. B

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LIPID MANAGEMENT

• IN ADULTS NOT TAKING STATINS, A SCREENING LIPID PROFILE IS REASONABLE: E
  o AT DIABETES DIAGNOSIS
  o AT THE INITIAL MEDICAL EVALUATION
  o AND EVERY 5 YEARS
  o AT INITIATION OF STATIN THERAPY AND PERIODICALLY

• TO IMPROVE LIPID PROFILE, RECOMMEND LIFESTYLE MODIFICATION: A
  o WEIGHT LOSS
  o REDUCTION OF SATURATED FAT, TRANS FAT, CHOLESTEROL INTAKE
  o INCREASE OF Ω-3 FATTY ACIDS AND FIBER
  o INCREASED PHYSICAL ACTIVITY

• INTENSIFY LIFESTYLE THERAPY & OPTIMIZE GLYCEMIC CONTROL FOR PATIENTS WITH: C
  o TRIGLYCERIDE LEVELS ≥150 MG/DL
    AND/OR
  o HDL CHOLESTEROL <40 MG/DL IN MEN AND <50 MG/DL IN WOMEN

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LIPID MANAGEMENT

• ADJUST STATIN THERAPY BASED ON PATIENT RESPONSE (E.G., SIDE EFFECTS, TOLERABILITY, LDL CHOLESTEROL LEVELS).  

• EZETIMIBE + MODERATE INTENSITY STATIN THERAPY PROVIDES ADD’L CV BENEFIT;
  • PATIENTS WITH A RECENT ACUTE CORONARY SYNDROME W/ LDL ≥ 50MG/DL  
  • PATIENTS WITH A HISTORY OF ASCVD WHO CAN’T TOLERATE HIGH-INTENSITY STATIN THERAPY.  

• COMBINATION THERAPY (STATIN/FIBRATE) DOESN’T IMPROVE ASCVD OUTCOMES AND IS GENERALLY NOT RECOMMENDED. 
  • CONSIDER THERAPY WITH STATIN AND FENOFIBRATE FOR MEN WITH BOTH TRIGS ≥204 MG/DL AND HDL ≤34 MG/DL.  

• COMBINATION THERAPY (STATIN/NIACIN) HASN’T DEMONSTRATED ADDITIONAL CV BENEFIT OVER STATINS ALONE, MAY RAISE RISK OF STROKE & IS NOT GENERALLY RECOMMENDED. 

• STATIN THERAPY IS CONTRAINDICATED IN PREGNANCY.
## STATIN TREATMENT

<table>
<thead>
<tr>
<th>Age</th>
<th>Risk Factors</th>
<th>Statin Intensity*</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;40 years</td>
<td>None, ASCVD risk factor(s), ASCVD</td>
<td>None, Moderate or high, High</td>
</tr>
<tr>
<td>40–75 years</td>
<td>None, ASCVD risk factors, ACS &amp; LDL ≥50 or in patients with history of ASCVD who can’t tolerate high dose statin</td>
<td>Moderate, High, Moderate + ezetimibe (Zetia)</td>
</tr>
<tr>
<td>&gt;75 years</td>
<td>None, ASCVD risk factors, ASCVD, ACS &amp; LDL ≥50 or in patients with history of ASCVD who can’t tolerate high dose statin</td>
<td>Moderate, Moderate or high, High, Moderate + ezetimibe (Zetia)</td>
</tr>
</tbody>
</table>

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HIGH- AND MODERATE-INTENSITY STATIN THERAPY

**MODERATE-INTENSITY STATIN THERAPY**
LOWERS LDL BY 30 - <50%

- ATORVASTATIN 10-20 MG
- ROSUVASTATIN 5-10 MG
- SIMVASTATIN 20-40 MG
- PRAVASTATIN 40-80 MG
- LOVASTATIN 40 MG
- FLUVASTATIN XL 80 MG
- PITAVASTATIN 2-4 MG

**HIGH-INTENSITY STATIN THERAPY**
LOWERS LDL BY ≥50%

- ATORVASTATIN 40-80 MG
- ROSUVASTATIN 20-40 MG

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DIABETIC KIDNEY DISEASE

• TIGHT GLUCOSE CONTROL TO REDUCE RISK/SLOW PROGRESSION OF DIABETIC KIDNEY DISEASE. A

• TIGHT BP CONTROL TO REDUCE RISK/SLOW PROGRESSION OF DIABETIC KIDNEY DISEASE. A

• DIETARY PROTEIN INTAKE SHOULD BE: B
  
  o ~0.8 G/KG BODY WEIGHT PER DAY FOR PEOPLE WITH NON-DIALYSIS DIABETIC KIDNEY DISEASE.
  
  o HIGHER LEVELS OF DIETARY PROTEIN SHOULD BE CONSIDERED FOR PATIENTS ON DIALYSIS.

• IN NONPREGNANT PATIENTS WITH DIABETES AND HYPERTENSION, AN ACE INHIBITOR OR ARB IS RECOMMENDED FOR THOSE WITH:
  
  o MODESTLY ELEVATED URINARY ALBUMIN EXCRETION (30–299 MG/G CREATININE). B
  
  o URINARY ALBUMIN EXCRETION ≥300 MG/G CREATININE AND/OR EGFR <60. A
DIABETIC KIDNEY DISEASE

- **When ACE inhibitors, ARBs or diuretics are used**, monitor serum creatinine & potassium levels \(^E\) and consider monitoring urine CR in patients with albuminuria to assess treatment response & progression of diabetic kidney disease. \(^E\)

- **An ACE inhibitor or ARB isn’t recommended for primary prevention of diabetic kidney disease** in patients with diabetes with normal BP, normal urine creatinine & normal GFR. \(^B\)

- **When GFR is <60**, evaluate and manage potential complications of CKD. \(^E\)

- **When GFR <30**, refer for evaluation for renal replacement treatment. \(^A\)

- **Refer to a physician experienced in the care of DKD for:** \(^B\)
  - Difficult management issues
  - Rapidly progressing kidney disease

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## MANAGEMENT OF CKD IN DIABETES

<table>
<thead>
<tr>
<th>GFR</th>
<th>RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>All patients</td>
<td>Yearly measurement of creatinine, urinary albumin excretion, potassium</td>
</tr>
<tr>
<td>45-60</td>
<td>Referral to a nephrologist if possibility for nondiabetic kidney disease exists</td>
</tr>
<tr>
<td></td>
<td>Consider dose adjustment of medications</td>
</tr>
<tr>
<td></td>
<td>Monitor eGFR every 6 months</td>
</tr>
<tr>
<td>30-44</td>
<td>Monitor electrolytes, bicarbonate, hemoglobin, calcium, phosphorus, parathyroid hormone at least yearly</td>
</tr>
<tr>
<td></td>
<td>Assure vitamin D sufficiency</td>
</tr>
<tr>
<td></td>
<td>Consider bone density testing</td>
</tr>
<tr>
<td>&lt;30</td>
<td>Referral for dietary counselling</td>
</tr>
<tr>
<td></td>
<td>Monitor eGFR every 3 months</td>
</tr>
<tr>
<td></td>
<td>Monitor electrolytes, bicarbonate, calcium, phosphorus, parathyroid hormone, hemoglobin, albumin weight every 3–6 months</td>
</tr>
<tr>
<td></td>
<td>Consider need for dose adjustment of medications</td>
</tr>
<tr>
<td>&lt;30</td>
<td>Referral to nephrologist</td>
</tr>
</tbody>
</table>

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**DIABETIC RETINOPATHY**

- Tighten glycemic control and BP to reduce the risk/slow the progression of retinopathy. 

- Initial dilated eye examination by MD/DO/OD at the time of diabetes diagnosis.

- If no evidence of retinopathy for 1+ annual eye exam, every 2 years may be considered.

- Retinal photography may serve as a screening tool for retinopathy, but is not a substitute for a comprehensive eye exam.

- Refer patients with macular edema or retinopathy to an ophthalmologist experienced in management/treatment of diabetic retinopathy.

- Retinopathy is not a contraindication to aspirin therapy for cardioprotection, as it does not increase the risk of retinal hemorrhage.
DIABETIC NEUROPATHY

• EARLY RECOGNITION & MANAGEMENT IS IMPORTANT BECAUSE:
  o RECOGNITION & TREATMENT MAY IMPROVE SYMPTOMS AND IMPROVE QUALITY-OF-LIFE

• ASSESS ALL PATIENTS AT DX AND AT LEAST ANNUALLY. B

• ASSESSMENT SHOULD INCLUDE HISTORY & 10G MONOFILAMENT TESTING AND VIBRATION SENSATION. B

• SYMPTOMS OF AUTONOMIC NEUROPATHY SHOULD BE ASSESSED IN PATIENTS WITH MICROVASCULAR & NEUROPATHIC COMPLICATIONS.

• OPTIMIZE GLUCOSE CONTROL TO PREVENT OR DELAY THE DEVELOPMENT OF NEUROPATHY AND TO SLOW PROGRESSION. B

• EITHER PREGABALIN OR DULOXETINE ARE RECOMMENDED AS INITIAL PHARMACOLOGIC TREATMENTS FOR NEUROPATHIC PAIN IN DIABETES. A
FOOT CARE

- PERFORM A COMPREHENSIVE FOOT EVALUATION ANNUALLY TO IDENTIFY RISK FACTORS FOR ULCERS & AMPUTATIONS. B
  - ALL PATIENTS WITH DIABETES SHOULD HAVE THEIR FEET INSPECTED AT EVERY VISIT. C
- PATIENTS WITH SYMPTOMS OF CLAUDICATION, DECREASED, OR ABSENT PEDAL PULSES SHOULD BE REFERRED FOR ABI & FURTHER VASCULAR ASSESSMENT. C
- REFER PATIENTS WHO SMOKE OR WHO HAVE HX OF LOWER-EXTREMITY COMPLICATIONS, LOSS OF PROTECTIVE SENSATION, STRUCTURAL ABNORMALITIES OR PAD TO FOOT CARE SPECIALISTS FOR ONGOING PREVENTIVE CARE AND LIFELONG SURVEILLANCE. C
- THE USE OF THERAPEUTIC FOOTWEAR IS RECOMMENDED FOR PATIENTS WITH HIGH-RISK FEET. B
- PROVIDE GENERAL FOOT SELF-CARE EDUCATION TO ALL PATIENTS WITH DIABETES. B
- A MULTIDISCIPLINARY APPROACH IS RECOMMENDED FOR INDIVIDUALS WITH FOOT ULCERS AND HIGH-RISK FEET. B

American Diabetes Association. Diabetes Care 2017 Jan; 40 (1)
TO PERFORM THE 10-G MONOFILAMENT TEST, PLACE THE DEVICE PERPENDICULAR TO THE SKIN; APPLY PRESSURE UNTIL MONOFILAMENT BUCKLES.

- HOLD IN PLACE FOR 1 SECOND & RELEASE.

- THE MONOFILAMENT TEST SHOULD BE PERFORMED AT THE HIGHLIGHTED SITES WHILE THE PATIENT’S EYES ARE CLOSED.
OLDER ADULTS WITH DIABETES

• 26% OF PATIENTS AGED >65 HAVE DIABETES.

• RISK FOR POLYPHARMACY, COGNITIVE IMPAIRMENT, URINARY INCONTINENCE, FALLS & PAIN.

• OLDER ADULTS WITH DM SHOULD BE CONSIDERED A HIGH-PRIORITY POPULATION FOR DEPRESSION SCREENING AND TREATMENT. B

• CONSIDER DIABETES EDUCATION FOR LONG-TERM CARE FACILITY STAFF. E

• OVERALL COMFORT, PREVENTION OF DISTRESSING SYMPTOMS & PRESERVATION OF QUALITY OF LIFE ARE PRIMARY GOALS FOR DIABETES MANAGEMENT AT THE END OF LIFE. E

ADA Standards of Medical Care in Diabetes. Older adults. Diabetes Care 2017; 40 (Suppl. 1)
RECOMMENDATIONS: OLDER ADULTS

- FUNCTIONAL, COGNITIVELY INTACT OLDER ADULTS WITH SIGNIFICANT LIFE EXPECTANCY SHOULD RECEIVE DIABETES CARE USING GOALS DEVELOPED FOR YOUNGER ADULTS. C

- GLYCEMIC GOALS FOR SOME OLDER ADULTS MIGHT BE RELAXED BUT HYPERGLYCEMIA LEADING TO SYMPTOMS OR RISK OF ACUTE HYPERGLYCEMIC COMPLICATIONS SHOULD BE AVOIDED IN ALL PATIENTS. C

- HYPOGLYCEMIA SHOULD BE AVOIDED IN OLDER ADULTS WITH DIABETES. IT SHOULD BE SCREENED FOR AND MANAGED BY ADJUSTING GLYCEMIC TARGETS AND PHARMACOLOGIC INTERVENTIONS. B

- TREATMENT OF HTN IS INDICATED IN MOST OLDER ADULTS C

- LIPID-LOWERING AND ASPIRIN THERAPY MAY BENEFIT THOSE WITH SIGNIFICANT LIFE EXPECTANCY. E
WHEN PALLIATIVE CARE IS NEEDED, STRICT BP CONTROL MAY NOT BE NECESSARY AND WITHDRAWAL OF THERAPY MAY BE APPROPRIATE. E

SCREENING FOR COMPLICATIONS SHOULD BE INDIVIDUALIZED, BUT ATTENTION SHOULD BE PAID TO COMPLICATIONS THAT WOULD LEAD TO FUNCTIONAL IMPAIRMENT. C

SCREENING FOR GERIATRIC SYNDROMES MAY BE APPROPRIATE IN OLDER ADULTS WITH LIMITATIONS IN BASIC AND INSTRUMENTAL ACTIVITIES OF DAILY LIVING. C

ANNUAL SCREENING FOR EARLY DETECTION OF MILD COGNITIVE IMPAIRMENT OR DEMENTIA IS INDICATED FOR ADULTS 65 YEARS OF AGE OR OLDER. B
DM AND OCCUPATIONAL HAZARDS

• COMMERCIAL DRIVERS AT HIGH RISK FOR DEVELOPING T2D
  • SCREEN AS APPROPRIATE
  • ENCOURAGE HEALTHY LIFESTYLE CHANGE

• BE AWARE OF MANAGEMENT REQUIREMENTS AND USE AGENTS WITH REDUCED RISK OF HYPOGLYCEMIA IN PATIENTS WITH OCCUPATIONS THAT COULD PUT OTHERS AT RISK:
  • COMMERCIAL DRIVERS
  • PILOTS
  • ANESTHESIOLOGISTS
  • COMMERCIAL OR RECREATIONAL DIVERS
INTEGRATING PREVENTATIVE CARE

FIGURE OUT HOW TO DO IT...

Preventive screenings:
» Breast cancer
» Colorectal cancer
» Prostate cancer
» Cervical cancer
APP FOR CLINICIANS

- THE ELECTRONIC PREVENTIVE SERVICES SELECTOR (EPSS) IS AN APP DESIGNED TO HELP PRIMARY CARE CLINICIANS IDENTIFY THE USPSTF APPROPRIATE SCREENING FOR THEIR PATIENTS.
- SEARCH BY SPECIFIC PATIENT CHARACTERISTICS: AGE, SEX, BEHAVIORAL RISK FACTORS.
- SEARCH AND BROWSE THE USPSTF RECOMMENDATIONS.
- INTERNET CONNECTION ONLY REQUIRED FOR DATABASE UPDATE.
- BOOKMARK ANY RECOMMENDATIONS OR TOPICS FOR LATER VIEWING.
- SAVE SEARCH FEATURE PROVIDES QUICK ACCESS TO THE ROUTINELY VIEWED RECOMMENDATIONS.
- PRINT OR EMAIL RECOMMENDATIONS OR SAVED SEARCH RESULTS.
- EPSS RECOMMENDATIONS RX: PRINT OR EMAIL PATIENT SPECIFIC CUSTOMIZED RECOMMENDATIONS.
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<td><strong>A Resource Screening for a Behavioral Health Assessment is due. Has a form been completed and discussed? If Yes, document now.</strong></td>
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• In the USA, it is estimated >90 million people have basic or lower literacy skills and more than 110 million have poor mathematical skills.

• Overall, only 12% of adults have proficient levels of health literacy.

• A low level of health literacy is common among patients with diabetes mellitus, with estimates ranging from 15 to 40% depending upon the population sampled.

• The CDC identifies 18.8 million people in the United States as having diabetes. If 88% of them have health literacy deficiencies, then 16 million Americans will have problems managing their diabetes, especially if they take insulin.
99% of Americans can read BUT only 12% are health literate.

Half of adults can't understand a vaccination chart. 1 in 2 adults can't read a drug label.

http://westminsterclinic.org/home/programs/health-advocacy/health-literacy-training
HEALTH LITERACY

• RECENTLY, THERE IS EMPHASIS THAT HEALTH LITERACY REPRESENTS NOT ONLY THE SKILLS NEEDED BY AN INDIVIDUAL TO PROCESS HEALTH-RELATED INFORMATION, BUT ALSO THE DEMANDS OF THE HEALTH SYSTEM FOR DELIVERY OF INFORMATION OR INSTRUCTIONS.

• HEALTH LITERACY IS ONE OF THE STRONGEST PREDICTORS OF HEALTH STATUS—STRONGER THAN INCOME, EMPLOYMENT, EDUCATION AND RACIAL OR ETHNIC GROUP.

• LITERACY INCLUDES SKILLS RELATED TO
  • PRINT INFORMATION (READING AND WRITING)
  • ORAL COMMUNICATION (SPEAKING AND LISTENING)
  • NUMERACY
  • ATTENTION TO CULTURAL RELEVANCE
HEALTH LITERACY AND NUMERACY DEFINED

• HEALTH LITERACY IS THE CAPACITY TO OBTAIN, COMMUNICATE, PROCESS AND UNDERSTAND BASIC HEALTH INFORMATION AND SERVICES TO MAKE APPROPRIATE HEALTH DECISIONS.

• HEALTH NUMERACY DESCRIBES THE SKILLS AND ABILITY TO UNDERSTAND AND USE NUMBERS REQUIRED TO SUCCESSFULLY EXECUTE MANY HEALTH-RELATED TASKS, INCLUDING:
  • CALCULATING MEDICATION DOSING INTERVALS AND CORRECTION SCALES FOR INSULIN.
  • INTERPRETING MEDICATION INSTRUCTIONS AND FOOD LABELS.
  • DETERMINING INSULIN-TO-CARBOHYDRATE RATIOS.
  • DECIPHERING CHARTS (SUCH AS FOR GROWTH AND BODY MASS INDEX).
  • WEIGHING THE RISKS AND BENEFITS NEEDED TO MAKE INFORMED DECISIONS RELATED TO HEALTHCARE, SUCH AS APPROPRIATE A1C TARGET RANGES BASED ON COMORBIDITIES AND AGE.
Individual capacity

- Reading fluency
  - Prose
  - Quantitative
  - Document

- Prior knowledge
  - Vocabulary
  - Conceptual knowledge of health and healthcare

Health-related print literacy
Ability to understand written health information

Health-related oral literacy
Ability to orally communicate about health

Complexity and difficulty of printed messages

Other factors
- Culture and norms
- Barriers to change

New knowledge, positive attitudes, greater self-efficacy, behavior change

Improved health outcomes

Complexity and difficulty of spoken messages
HEALTH LITERACY

• PROBLEMS WITH HEALTH NUMERACY CAN HAVE A LARGE IMPACT ON DIET MANAGEMENT AND NUTRITION AS WELL AS ON A1C CONTROL.
  • PATIENTS CONSUMED MORE CALORIES FROM CARBOHYDRATES THAN PROTEIN OR FATS.
  • MORE LIKELY TO ESTIMATE PORTION SIZE INCORRECTLY AND MISINTERPRET FOOD LABELS.

• IN SUMMARY, LOW HEALTH LITERACY LEADS TO MULTIPLE STRAINS ON THE HEALTHCARE SYSTEM AS WELL AS FOR PATIENTS
  • INCLUDING MEDICATION ERRORS MISSED APPOINTMENTS
  • ADVERSE MEDICAL OUTCOMES LOWER PATIENT SATISFACTION.

• FOR PATIENTS WITH DIABETES, A CHRONIC DISEASE REQUIRING DAILY SELF-MANAGEMENT, IT’S IMPERATIVE TO ASSESS FOR LIMITED LITERACY AND NUMERACY SKILLS AND ADJUST INTERVENTIONS APPROPRIATELY.
HEALTH LITERACY RED FLAGS

• PATIENTS OFTEN MAKE EXCUSES WHEN ASKED TO READ OR FILL OUT FORMS
  • “I DON’T HAVE MY GLASSES”
  • “I’M TOO TIRED TO READ”
  • “I’LL READ THIS WHEN I GET HOME”

• POOR READERS OFTEN BRING TEXT CLOSER TO THEIR EYES OR POINT TO THE TEXT WITH A FINGER WHILE READING.

• PATIENTS PROVIDE AN INCOMPLETE MEDICAL HISTORY OR CHECK ALL ITEMS AS “NO” TO AVOID FOLLOW-UP QUESTIONS.

• POOR READERS OFTEN MISS APPOINTMENTS AND MAKE MEDICATION ERRORS.
HEALTH LITERACY RED FLAGS

• Patients with low health literacy become skilled at listening.

• To identify their medications, they look at the pills for color, size, and shape because they can’t read the labels.

• Patients may appear nervous, confused, frustrated, or even indifferent.

• They may withdraw or avoid situations where complex learning is required.

• Patients often give incorrect answers when questioned about what they’ve read.
A You ate one and a half cups from the food labeled below. How many grams of carbohydrate did you eat?

Nutrition facts
Serving size: 3/4 cup
Servings per container: 10

Amount per serving
Calories: 150
Total fat: 7 g
Total carbohydrates: 18 g
Dietary fiber: 3 g
Sugars: 3 g
Total protein: 3 g

Answer: 36 g

B You test your blood sugar three times a day. You purchase a prescription of 50 strips on 5 March. Of the dates below, by when will you need to buy new strips?

- 21 March
- 21 April
- 21 May
- 21 June

Answer: 21 March

C You are given the following instructions: “take one unit of insulin for every 7 g of carbohydrate you eat.” How much insulin do you take:

- when you eat 98 g at supper?

Answer: 14 units
COMMUNICATION TIPS

• USE PLAIN LANGUAGE (AVOID MEDICAL JARGON).

• USE CONCRETE AND SPECIFIC PHRASES.

• KEEP COMMUNICATION SIMPLE AND FOCUS ON ACTION STEPS.
  • AVOID COMPLICATED EXPLANATIONS AND PATHOPHYSIOLOGY

• USE ACTIVE VOICE; FOR EXAMPLE:
  • “TAKE THIS INSULIN DAILY.”
  • “CARRY GLUCOSE TABLETS FOR LOW BLOOD SUGAR.”

• PROVIDE MULTIPLE COMMUNICATION FORMS: PRINTED, VERBAL, AND VISUAL, WHICH INCLUDE HANDS-ON LEARNING WITH A REAL SYRINGE AND NEEDLE OR VIDEO INFORMATION.

• CONFIRM THAT THE PATIENT UNDERSTANDS THE TEACHING.

• ENCOURAGE QUESTIONS.
TEACH-BACK METHOD

• MAKE SURE TO CONFIRM PATIENT COMPREHENSION.

• THE TEACH-BACK METHOD ENCOURAGES PATIENTS TO USE THEIR OWN WORDS TO DESCRIBE WHAT THEY'VE LEARNED.

• AHRQ STATES THREE BENEFITS TO USING THE TEACH-BACK METHOD:
  • IT IMPROVES PATIENT UNDERSTANDING AND ADHERENCE.
  • IT DECREASES CALL BACKS AND CANCELLED APPOINTMENTS.
  • IT IMPROVES PATIENT SATISFACTION AND OUTCOMES.

• A GOOD WAY TO ENLIST PATIENT FEEDBACK MIGHT BE TO ASK SOMETHING LIKE THIS: “TO MAKE SURE I EXPLAINED HOW TO TREAT A LOW BLOOD SUGAR THE RIGHT WAY, CAN YOU TELL ME IN YOUR OWN WORDS HOW YOU'D DESCRIBE THIS TO A FAMILY MEMBER?”
HEALTH LITERACY

- Remember basic health literacy rules apply to printed instructions as well.
- Multiple programs are online to assess the reading grade level of printed materials and determine appropriate formats.
  - The Diabetes Literacy and Numeracy Education Toolkit (DLNET) - Materials to facilitate diabetes education and management in patients with low literacy and numeracy skills
- A simple practical rule is to keep all words to one or two syllables when speaking or providing printed instructions.
- Educational material should be clear and uncluttered.
- Sentences should be short, with headings and subheadings to break up the text.
HEALTH LITERACY

• EXAMPLES OF CREATIVE SOLUTIONS AND RESOURCES INCLUDE:
  • USING PILL CARDS WITH PICTURES
  • DIAGRAMS CREATED FOR PATIENTS
  • FREE ONLINE INSTRUCTIONAL VIDEOS SUCH AS THOSE PROVIDED BY MANUFACTURERS OF GLUCOMETERS AND INSULIN PENS. (SEE EXAMPLE OF A SIMPLE PILL CARD.)

• TRY TO INCLUDE FAMILY MEMBERS OR OTHER COMMUNITY SUPPORT HELP AND RESOURCES.

• FOR PATIENTS WITH LIMITED NUMERACY SKILLS, USE A PICTURE SHOWING A PLATE WITH A HEALTHY MEAL INSTEAD OF TEACHING CARBOHYDRATE COUNTING.
PART 14
INSULIN FOR SET DOSE PLUS CORRECTION

How Much Insulin Do I Take?

My long lasting insulin is ____________________
   (Brand Name)
My short lasting insulin is ____________________
   (Brand Name)

Before Breakfast:
1. Take _____ units of _____(long lasting insulin at _____ am)
2. Test blood sugar
3. If blood sugar is below 70, eat 4 glucose tablets
   If blood sugar is _____ to _____ take _____ units of _____(short lasting insulin)
   If blood sugar is _____ to _____ take _____ units of _____(short lasting insulin)
   If blood sugar is _____ to _____ take _____ units of _____(short lasting insulin)
   If blood sugar is over _____ take _____ units of _____(short lasting insulin)

Before Lunch:
1. Test blood sugar
2. If blood sugar is below 70, eat 4 glucose tablets
   If blood sugar is _____ to _____ take _____ units of _____(short lasting insulin)
   If blood sugar is _____ to _____ take _____ units of _____(short lasting insulin)
   If blood sugar is _____ to _____ take _____ units of _____(short lasting insulin)
   If blood sugar is over _____ take _____ units of _____(short lasting insulin)

At Bedtime:
1. Take _____ units of _____(long lasting insulin)
2. Test blood sugar
3. If blood sugar is below 70, eat 4 glucose tablets
   If blood sugar is _____ to _____ take _____ units of _____(short lasting insulin)
   If blood sugar is _____ to _____ take _____ units of _____(short lasting insulin)
   If blood sugar is _____ to _____ take _____ units of _____(short lasting insulin)
   If blood sugar is over _____ take _____ units of _____(short lasting insulin)
Follow this guide to organize information for the pill card.

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Important Information, in Simple Terms</th>
<th>Incorporating This Information into a Pill Card</th>
<th>Possible Graphics Used</th>
</tr>
</thead>
</table>
| Simvastatin 20mg | - Take 1 pill at night  
- For cholesterol | - Picture of one pill at night/bedtime (shown by moon) | - Night/bedtime |
| Furosemide 20mg | - Take 2 pills in the morning and 2 pills in the evening  
- For fluid | - Picture of two pills in the morning (shown by rising sun) and two pills in the evening (shown by setting sun) | - Morning  
- Evening |
| Insulin | - Inject 24 units before breakfast and 12 units before dinner  
- For diabetes (sugar) | - Picture of syringe in the morning (shown by rising sun) and evening (shown by setting sun)  
- Picture of bag of sugar | - Syringe  
- Sugar  
- Morning  
- Evening |

My Healthy Plate can be used as a teaching tool for nutrition.

ChooseMyPlate.gov

PART 3

HOW TO FOLLOW MY EXERCISE PLAN

Why should I exercise?
- Exercise is good for diabetes
- Exercise helps lower blood sugar
- Exercise can help you lose weight
- Exercise can help you feel better

What kind of exercise will I do?
- Walk
- Ride a bike
- Dance
- Swim
- Other

When will I exercise?
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday
______ Minutes a day _______ days a week.

Write down the minutes you exercised in your log book.

Sometimes exercise can lower blood sugar too much.
To prevent low blood sugar I should:
- No need to change anything
- Eat an extra snack before I exercise
- Take less insulin
- Test blood sugar

DATE OF PLAN

PART 11

SET DOSE INSULIN

How Much Insulin Do I Take?

My long lasting insulin is: ________
(Brand Name)

My short lasting insulin is: ________
(Brand Name)

Before Breakfast:
Take ___ units of ___ insulin before breakfast (long lasting insulin)
Take ___ units of ___ insulin before breakfast (short lasting insulin)

Before Lunch:
Take ___ units of ___ insulin right before lunch (short lasting insulin)

Before Supper:
Take ___ units of ___ insulin before supper (long lasting insulin)
Take ___ units of ___ insulin right before supper (short lasting insulin)

At Bedtime:
Take ___ units of ___ insulin at bedtime (long lasting insulin)
Take ___ units of ___ insulin at bedtime (short lasting insulin)
4 STEPS TO MANAGE YOUR DIABETES FOR LIFE

1. LEARN ABOUT DIABETES.
   TYPES OF DM, MEMBERS OF HEALTHCARE TEAM, ONLINE EDUCATION FROM NDEP

2. KNOW YOUR DIABETES ABCS.
   AIC, BLOOD PRESSURE, CHOLESTEROL

3. LEARN HOW TO LIVE WITH DIABETES.
   COPE, EAT WELL, BE ACTIVE, QUIT SMOKING

4. GET ROUTINE CARE TO STAY HEALTHY.
   ROUTINE VISITS, LABS
CULTURAL DIFFERENCES

• DIABETES DISPROPORTIONATELY AFFECTS AFRICAN AMERICANS, HISPANICS, ASIAN AND PACIFIC ISLANDERS, AMERICAN INDIANS, AND ALASKAN NATIVES.

• BY THE YEAR 2050:
  • ASIAN POPULATION IS ESTIMATED TO INCREASE BY 212.9%
  • HISPANICS BY 187.9%
  • AFRICAN AMERICANS BY 71.3%
  • CAUCASIAN BY 32.4%

• DIABETES PREVALENCE AMONG THESE GROUPS IS:
  • 12.6% IN AFRICAN AMERICANS
  • 11.8% IN HISPANICS
  • 8.4% IN ASIAN AMERICANS
  • 7.1% IN WHITES.
CULTURAL DIFFERENCES
CONTRIBUTING TO CULTURAL NORMS

- GENETIC PREDISPOSITION
- FAMILY HISTORY
- IMPROPER DIET
- LIMITED PHYSICAL ACTIVITY
- SOCIOECONOMIC POSITION
- ACCESS TO OVERALL QUALITY HEALTH CARE

- ROLE OF THE ENVIRONMENT
  - PHYSICAL (RESTAURANTS SERVING HEALTHY FOODS, WALKING TRAILS, SAFE NEIGHBORHOODS)
  - SOCIAL (FAMILIES, WORKPLACES, SOCIAL SUPPORT)
CULTURAL SENSITIVITY

• Develop cultural humility by continually reassessing our intentional and unintentional processes of racism, classism, homophobia and sexism. Acknowledge and accept responsibility to identify strategies to eliminate personal biases that can influence interactions with ethnic groups other than your own.

• Practice active listening to permit identification of what is meaningful to patients.

• Become familiar with cultural variations in families, health beliefs, socioeconomic status, residential settings and work that enhance or undermine good diabetes management.

• Respect and understand how your patient views himself or herself.

• Ensure that patients receive effective, understandable and respectful care provided in a manner compatible with their cultural health beliefs, practices and preferred language.
Table 1

Cultural Dietary Assessment Questions

How strongly does the patient affiliate with his or her ethnic group?

What does the patient typically eat (24-hour recall or food diary)? How does he or she prepare foods? When and how often does the patient eat? Where does he or she eat meals and with whom?

What challenges to dietary change does the patient identify?

Does socioeconomic status affect the patient’s food choices?

Where does the patient purchase food? Is there a supermarket in the neighborhood and how does the patient get there?

Does the patient have enough time and equipment to prepare the foods he or she likes?

What meanings does the patient assign to food?

What influence does the patient’s family, customs, cultural activities, religious or spiritual activities, social activities or holidays have on dietary intake? Does the patient avoid any foods for cultural or religious reasons?

What are the patient’s dietary goals (short term and long term) and what behavior changes are feasible?

Table 3

Culturally Appropriate Resources

Resources for Providers


DiabetesPro, the American Diabetes Association website for healthcare professionals. http://professional.diabetes.org


Resources for Patients


Soul Food Pyramid and other information available from Heben Nutrition Consultants Inc. www.soulfoodpyramid.org/catalog/product_info.php?products_id=139&oe$=53cedfaa31cc66a8370e5b6194827d


American Diabetes Association Standards of Care

Intended for clinicians, dietitians, and educators. Includes the ADA standards for diagnosing and treating diabetes; nutrition recommendations and principles; and guidelines on managing diabetes, its complications, and comorbidities in various settings. Designed to provide easy navigation of the comprehensive publication.

Note: The app does not include the most recent (2017) version of the ADA Standards of Care. The most recent update of the app includes the 2012 ADA guidelines and recommendations.

American Diabetes Association Standards of Care

Platform: iOS
Cost: $2.99
Developed by the American Association of Clinical Endocrinologists (AACE) and the American College of Endocrinology (ACE), this app provides information on the comprehensive management of T2DM. Intended to provide a practical guide that considers the whole patient, his or her spectrum of risks and complications, and evidence-based approaches to treatment. Updated in 2016.

AACE Type 2 Diabetes Management Algorithm 2016

Glycemic Control Algorithm

- Few adverse events or possible benefits
- Use the website

Platform: iOS
Cost: $2.99
In addition to calculating BMI, this app can estimate the risk of developing weight-related diseases and uses the Harris-Benedict equation to calculate basal metabolic rate and total daily exercise expenditure.

It provides treatment recommendations based on BMI and presence or absence of comorbidities. It also has an algorithm for examination, treatment planning, goal setting, and monitoring.

The app includes appropriate treatment plans for obese patients, including diet, physical activity, behavior therapy, pharmacotherapy, and surgery.

**BMI Calculator by Epocrates**

Platform: iOS, Android
Cost: $Free, but requires Epocrates account
OnTrack Diabetes is a comprehensive diabetes management app for patients with features that allow detailed information sharing with clinicians. It tracks daily, weekly, and monthly blood glucose levels, as well as A1c, medication, food, weight, and exercise. It can generate a wide range of graphs and other data reports. Also has patient reminders to encourage compliance, as well as personalized meal plans and diabetes-friendly recipes.

**OnTrack Diabetes**

**Platform:** Android  
**Cost:** Free

Designed by a Certified Diabetes Educator, featured by Apple as the “Best App For Diabetics,” and the top diabetes app by AppPicker.
IN SUMMARY…

- Diabetes recommendations are ever changing, try to keep up.
- Provide care that accounts for health literacy and cultural preferences for your patients.
- Realize you cannot do it alone, engage your health team members to help.
DIABETES MAY BE DRIVEN FROM THE SYSTEM BY GOOD WHISKEY, SAYS SCIENTIST

Two or Three Ounces a Day in Severe Cases Will Eliminate Troublesome Sugar From System.