The Nebraska Diabetes Consensus Guidelines 2012

The Nebraska Health and Human Services System has developed and distributed the Nebraska Diabetes Consensus Guidelines of Diabetes Care for both adult and pediatric patients to health professionals throughout the State since 1999. These guidelines were developed in conjunction with multiple primary and specialty care physicians, diabetes educators, and representatives of major managed care plans in the State of Nebraska and were based on the American Diabetes Association's (ADA) Standards of Care.

After implementation of the guidelines by physicians, diabetes educators and insurance plans, some revisions were indicated. Also, the ADA Guidelines have been updated annually – latest changes were published in Diabetes Care, Volume 35, Supplement, January 1, 2012 – which changes some of the indicator goals. These changes have been incorporated in the attached revised Nebraska Diabetes Consensus Guidelines.

We have placed the guidelines in several formats as flow sheets that can be used in patient charts for documenting results. All of these may be copied or revised to better serve your needs. An electronic copy can be obtained from our website at http://www.dhhs.ne.gov/diabetes. The goals of developing the Consensus Guidelines and the flow sheets are:

- To reach agreement on a consistent set of guidelines suggested for use in the management of diabetes in Nebraska; and

- To increase awareness that good blood glucose control can lead to decreased complications, decreased hospitalizations, and improved quantity and quality of life for people with diabetes.

In addition to the guidelines flow sheets, we have enclosed a summary of the ADA's testing criteria, as well as information and charts on foot, eye, and dental examinations which we hope you will find useful. Again, these may be copied or modified to meet your needs.

We hope these guidelines will be useful to you. They are available on the Nebraska Diabetes Prevention and Control Program's website at: http://www.dhhs.ne.gov/diabetes. If you have any questions or concerns, or would like information on other diabetes materials that are available, please contact the Nebraska Diabetes Prevention and Control Program of the Department of Health and Human Services at 1-800-745-9311 and ask for the Diabetes Section or e-mail dhhs.diabetes@nebraska.gov.

Department of Health & Human Services
DHHS
NEBRASKA

The Nebraska Diabetes Consensus Guidelines

The following are the authors of the Nebraska Diabetes Consensus Guidelines and represent dedicated individuals and organizations committed to improving diabetes care in Nebraska. The Nebraska Diabetes Prevention and Control Program wishes to thank them for giving of their time and expertise to help with this project.

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An Overview of Self-Management Education for Adults and Children with Diabetes

1. Lifestyle Review

A number of lifestyle behaviors and situations including tobacco use, use of alcohol and street drugs, stress, depression and unplanned pregnancies can affect immediate and long-term outcomes of diabetes. Patients should be instructed regarding tobacco use prevention and cessation, effects and risks of alcohol and/or street drugs, and the effects and management of stress/depression. Women of childbearing age from adolescence to menopause must be adequately informed of pre-pregnancy planning with optimum control of blood glucose before and during pregnancy. This would include instruction regarding options for birth control.

2. Physical Activity

Physical activity has a key role in the management of diabetes and must be integrated into the overall plan of care. Physical activity has important physiologic and metabolic benefits for people with both Type 1 and Type 2 diabetes. Cardiovascular fitness and psychological well-being also improve with increased physical activity. In persons with Type 2 diabetes and insulin resistance, physical activity will increase sensitivity to insulin. People with diabetes should be advised to perform at least 150 minutes a week of moderate intensity aerobic physical activity (50%-70% of maximum heart rate). In the absence of contraindications, they should also be encouraged to perform resistance training three times per week. Self-monitoring of blood glucose is essential to avoid hypoglycemia as well as a motivator for continuing the effort. Special attention is needed to design an exercise program that takes into consideration the person's special needs and the type of exercise that is practical for that individual. Prior to starting an exercise program, patients should have an assessment of cardiovascular risk and evaluation for previously undiagnosed hypertension, retinopathy, neuropathy, nephropathy and lower extremity pathology. Patients should be taught how to recognize symptoms that indicate they should stop exercising and/or consult a health care provider.

3. Tobacco Use

Patients should be instructed regarding tobacco use and cessation using the 5 A's Method of Ask, Advise, Access, Assist and Arrange.

- *ASK – about their tobacco use*
- *ADVISE – users to quit*
- *ASSESS – readiness to quit*
- *ASSIST – patients in making a quit plan including 1-800-QuitNow, Nebraska's toll free, 24-hour tobacco cessation quitline.*
- *ARRANGE – follow-up; Examples: If the patient shows readiness to quit health care provider faxes referral to the quitline:* www.dhhs.ne.gov/tfn/ces/hcp.htm
  OR: Refers to a community cessation programs, where available
  www.dhhs.ne.gov/tfn/ces/NETobaccoCessationPrograms.pdf

4. Sick Day Management and Urine Ketone Testing

Patients need to know how to manage their diabetes during an episodic illness to prevent extreme hyperglycemia and maintain hydration and nutrition. Patients with Type 1 diabetes

should be instructed on how to prevent or detect ketoacidosis with frequent blood glucose monitoring and urine ketone testing. Some people benefit from instruction on how to give additional insulin when blood glucose levels are increasing to prevent hospitalization and when it is appropriate to their care. All people with diabetes should be taught when to call their health care provider during an illness and when to go to the emergency department.

5. Medication Administration

Instruction includes the action and side effects of insulin and diabetes medications. The exact dosage and administration schedule should be written out clearly and provided as a resource for the patient. The administration schedule should be tailored to the patient's daily work hours, and school, exercise and meal schedules. Instruction in insulin administration includes accuracy in the technique of drawing up and injecting the dose, rotation of injection sites, rotation of injection areas (i.e., abdomen to thigh) and storage of insulin at home and away. Any use of insulin adjustment schedules should be carefully explained and written out for the patient. Patients should be taught to record the doses of both insulin and oral agents in the blood glucose record book. Metformin should be considered as the first line drug of choice used with children and adults that have Type 2 diabetes, unless contraindicated. There is an acceptable liquid formation of Metformin (Riomet) available. (Ref. Diabetes Care, Volume 33, Supplement 1, January 2010, p. S20.) (For a list of currently approved diabetes medications, see Working Together to Manage Diabetes: Diabetes Medications Supplement, 2007 by the National Diabetes Education Program at http://ndep.nih.gov/

6. Monitoring Blood Glucose Control

Blood glucose testing and recording of results give individuals an active role in their health care and encourage responsibility. Self-blood glucose monitoring is essential to management of diabetes and must be emphasized as such. The monitoring system must be easy to use, easily portable, accurate and reliable. The frequency and timing of testing varies depending on the treatment regimen. The patient who is treated with dietary changes and exercise can use blood glucose test results as immediate feedback regarding the effects of their efforts. Positive feedback can reinforce those efforts and increase self-motivation. Patients should be given goals in writing for the blood glucose results. Recording of the results should be documented in a patient record book to enable the patient and health care provider to look at trends, recognize successes and assess the effectiveness of the medication changes. Patients should understand the use of A1C monitoring and the specific goal in diabetes management. They should know their A1C goal and current results.

7. Hypoglycemia Treatment

Instruction about hypoglycemia includes recognition of symptoms, level of blood glucose, treatment and prevention. Symptoms of hypoglycemia vary between individuals; patients should use blood glucose testing to determine the actual meaning of symptoms. The plan for treatment should include options for the fast-acting sugar source and the follow-up snacks, what to carry with them and how to prevent hypoglycemia (i.e., regular meals and snacks, testing as often as needed, particularly before exercise, or increased physical activity). Patients' family and friends should be taught the symptoms to look for and how to recognize when the person needs assistance. Hypoglycemia unawareness can be a complication of the body's response to chronic low blood sugar levels. People who develop hypoglycemia may not recognize its signs or symptoms. Frequency and severity of low blood glucose episodes should be monitored and treatment should not be delayed. Patients on insulin need to have glucagon injections available

and their families and friends should be taught to administer the drug when necessary. Schools should provide for administration of glucagon in the event of severe hypoglycemia at school. Instruction should include effects of beta-blockers on symptoms of hypoglycemia.

8. Nutrition Management

A consultation with a dietitian is the most effective method of promoting good nutrition in the management of diabetes. Individualized nutrition recommendations and instruction must take into consideration lifestyle, ethnic differences, metabolic needs and metabolic control (lipids, blood glucose, and weight management). The nutrition plan must be integrated into the overall diabetes management plan through a multi-disciplinary approach. There are numerous strategies and teaching or education tools that can be used to implement the plan and achieve the glucose, lipid and nutrition goals. An individualized approach is recommended.

Nutrition Management

The 2010 Dietary Guidelines for Americans recommends two overarching concepts which apply to the nutrition management of diabetes: 1) maintain calorie balance over time to achieve and sustain a healthy weight, and 2) focus on consuming nutrient-dense foods and beverages. Monitoring carbohydrates, whether by carbohydrate counting, choices, or experience-based estimation, remains a key strategy in achieving glycemic control. Eating smaller portions and limiting foods high in added sugars – cakes, candy, cookies, fruit-flavored drinks, soda), saturated fats and trans fats – fried foods, fatty cuts of meat, whole milk/dairy products, solid fats – is recommended.

A healthy eating pattern for those with diabetes includes eating a variety of fruits and vegetables every day, especially dark green and orange veggies, and beans and peas – lentils, black beans, pinto beans – fat-free or low fat milk/milk products, whole grains, and lean meats. The mix of carbohydrate, protein, and fat may be adjusted to meet the metabolic goals and individual preferences of the person with diabetes. An eating plan, such as Dietary Approaches to Stop Hypertension (DASH) is recommended to lower high blood pressure. If adults with diabetes choose to use alcohol, they should limit intake to a moderate amount – one drink per day or less for adult women and two drinks per day or less for adult men – and should take extra precautions to prevent hypoglycemia.

Nutrition management should also include a consultation with a dietitian for the most effective method of promoting good nutrition in the management of diabetes. Individualized nutrition recommendations and instruction must take into consideration lifestyle, ethnic differences, metabolic needs and metabolic control – lipids, blood glucose, and weight management. The nutrition plan must be integrated into the overall diabetes management plan through a multi-disciplinary approach. There are numerous strategies and teaching or education tools that can be used to implement the plan and achieve the glucose, lipid and nutrition goals. An individualized approach is recommended.

Body Weight Management

Weight loss is recommended for all overweight or obese individuals who have or are at risk for diabetes. Most people newly diagnosed with Type 2 diabetes are overweight. Excess weight, particularly in the abdomen, makes it difficult for cells to respond to insulin, resulting in high blood glucose. Often, people with Type 2 diabetes are able to lower their blood glucose by losing weight and increasing physical activity. Losing weight also helps lower the risk for other health problems that especially affect people with diabetes, such as cardiovascular disease. A large study, called the Diabetes Prevention Program, showed that people at high risk for

diabetes can prevent or delay the onset of the disease by losing 5% to 7%of their weight, if they are overweight — that's 10 to 14 pounds for a 200-pound person.

Body Mass Index (BMI) should be used as a screening tool to identify weight status in adults. Body Mass Index (BMI) is a number calculated from a person's weight and height. BMI is a fairly reliable indicator of body fatness for most people. BMI does not measure body fat directly, but research has shown that BMI correlates to direct measures of body fat, such as underwater weighing and dual energy x-ray absorptiometry (DXA). BMI can be considered an alternative for direct measures of body fat.

The standard weight status categories associated with BMI ranges for adults are shown in the following table.

BMI	Weight Status
Below 18.5	Underweight
18.5 – 24.9	Normal
25.0 – 29.9	Overweight
30.0 and Above	Obese

In addition to BMI, measuring waist circumference is a useful tool to screen for possible health risks associated with overweight and obesity. Abdominal fat is associated with a greater risk for heart disease and Type 2 diabetes. Risk increased for women with a waist size greater than 35 inches and 40 inches for men.

For weight loss, either low-carbohydrate, low-fat calorie-restricted, or Mediterranean diets may be effective in the short-term – up to two years. For patients on low-carbohydrate diets, monitor lipid profiles, renal function, and protein intake (in those with nephropathy), and adjust hypoglycemic therapy as needed. Physical activity and behavior modification are important components of weight loss programs and are most helpful in maintenance of weight loss.

9. Foot Care

The goal of instructing a patient in daily foot care is the identification and prevention of foot problems that could lead to amputation. Most important is the daily inspection for problems and when to seek help from a health care professional. Other topics include appropriate footwear, management of minor foot problems, benefits of extra depth shoes, and the dangers of soaking feet, hot water bottles and heating pads. Additional information includes the avoidance of foot trauma and tobacco use cessation. Presence and degree of neuropathy, presence of peripheral vascular disease, and the implications for foot care. They should be instructed to remove their shoes and stockings and have their feet examined at each visit.

10. Eye Care

Early detection and treatment of diabetic retinopathy is essential to preventing blindness in persons with diabetes. Diabetic retinopathy is the most frequent cause of new cases of blindness among adult's ages 20 to 74 years. The longer a person has diabetes, the more likely they are to develop diabetic retinopathy, particularly if the diabetes is poorly controlled.

Knowledge of the presence of retinopathy is one more piece of evidence for the Primary Care Physician to utilize in the overall management of the diabetic patient.

The American Diabetes Association (ADA) recommends a dilated retinal eye examination by an ophthalmologist or optometrist as an annual standard of care for persons with diabetes. The ADA (2010) states that that high-quality mydriactic fundus photographs can detect most, but not all, clinically significant diabetic retinopathy if performed by a trained ophthalmic photographer and interpreted by a trained eye care provider. While retinal photography may serve as a screening tool for retinopathy, it is not a substitute for a comprehensive eye exam, which should be performed at least initially and at intervals thereafter as recommended by an eye care professional.

Screening for Adults
Type 1: *ADA (200910* - Initial dilated and comprehensive exam within five years after onset with annual follow-up dilated exams. *American Academy of Ophthalmology* - Five years after onset and annually thereafter.

Type 2: ADA (2010) - Initial exam at the time of diagnosis, with annual follow-up dilated exams.

Screening for Children
American Diabetes Association:
The first ophthalmologic examination (ADA, 2010) should be obtained once the child is ≥ 10 years of age and has had diabetes for three to five years. The examination should include a dilated fundus examination. After the initial examination, annual routine follow-up is generally recommended. Less frequent examinations may be acceptable on the advice of an eye care professional. Although retinopathy most commonly occurs after the onset of puberty and after five to 10 years of diabetes duration, it has been reported in prepubertal children and with diabetes duration of only one to two years. Referrals should be made to eye care professionals with expertise in diabetic retinopathy, an understanding of the risk for retinopathy in the pediatric population, and experience of counseling the pediatric patient and family on the importance of early prevention/intervention.

American Academy of Pediatrics recommendations:
Screening in children three to five years after diagnosis if less than nine years old and annually thereafter.

Pediatric Endocrinologist recommendations:
Screening in children with a dilated retinal exam the first year after diagnosis, and not annually until adolescence or after puberty, but based on clinical judgment for each individual.

Further studies are warranted in the area of screening for youth. The frequency of exams may be determined based on the mutual findings of the primary care physician and eye care provider.

More frequent exams (than above recommendations) for both adults and children may be necessary based upon clinical findings. Regular eye examinations also allow for early diagnosis and treatment of other conditions affecting those with diabetes.

11. Dental Care

Diabetes patients must maintain a rigorous oral self-care regimen to minimize oral health problems that may complicate glycemic control since the mouth is the first part of the digestive process. Regular visits (generally twice a year) to their dentist for a dental examination and dental prophylaxis and necessary radiographs are recommended to achieve an optimal oral health status. This rate of dental visitation is dependent on the patient's oral health status. Regular brushing and flossing are essential to keep the teeth and gums healthy. Denture cleaning tablets should be used daily or dentures should be soaked nightly in diluted bleach (1 ounce of bleach in 4 cups of water). A history of stroke or musculoskeletal disorders might necessitate the use of other mechanical or electric dental devices to accomplish optimal goals of oral health.

12. **Nephropathy Screening**

Diabetic nephropathy occurs in 20%-40% of patients with diabetes and is the single leading cause of End Stage Renal Disease. Annual screening for microalbuminuria is recommended. Either a spot urine for microalbumin/creatinine ratio or a 24-hour urine test for microalbumin is acceptable. Treatment with an Angiotensin Converting Enzyme (ACE) Inhibitor should be considered for Type 1 patients with any degree of microalbuminuria and for Type 2 patients with microalbuminuria. ARB's (angiotensin receptor blocker) may be used alternatively where the patient experiences intolerance to or hyperkalemia from ACE-I therapy. Annual testing should be continued after ACE or ARB therapy in order to monitor effectiveness and titrate dosage of medication. Patients with Glomerular Filtration Rate of <60 ml/min should be referred to a nephrologist. Measure serum creatine at least annually in all adults with diabetes regardless of the degree of urine albumin excretion. The serum creatine should be used to estimate GFR and stage the level of chronic kidney disease (CKD), if present.

13. Hypertension (High Blood Pressure)

Blood pressure should be measured at every diabetes-related visit. Hypertension (blood pressure at or above 140/90) affects the majority of patients with diabetes. Hypertension is a major risk factor for heart attack and stroke, as well as diabetic complications such as retinopathy and nephropathy. Randomized clinical trials have demonstrated reduced risk for these conditions when the blood pressure is lowered below 130/80. Many different medications may be used to treat hypertension. Most patients with diabetes will need to take at least two medications in order to achieve blood pressures below 130/80. Almost all patients with diabetes and hypertension should be treated with a medication regimen that includes either an angiotension-converting enzyme inhibitor ("ACE") or an angiotensin receptor blocker ("ARB"), as these agents have been shown to reduce the risk of complications more than other classes of medications. ACE inhibitors and ARBs are contraindicated during pregnancy. Diuretics, beta-blockers, and calcium channel blockers are also beneficial for patients with diabetes and hypertension. In addition to medications, lifestyle modifications can help lower blood pressure. These modifications include increased consumption of fruits, vegetables, and low-fat dairy products; DASH diet; reduced intake of sodium and alcohol; increased physical activity; weight loss (when indicated); and quitting tobacco use.

14 Dyslipidemia

Cardiovascular disease is the major cause of morbidity and mortality for persons with diabetes. Hypertension and dyslipidemia are risk factors for cardiovascular disease and diabetes itself is an independent risk factor.

Patients should be educated in lipid management to prevent/manage CVD. A discussion of risk factors and symptomology of CVAs and MIs should be included. An annual fasting lipid panel is recommended and may be repeated upon MD recommendations. Goals for lipid management should be taught in education classes and at clinic visits. Baseline EKG/cardiac stress testing may be recommended.

Statins are the preferred drug of choice for elevated LDL levels in adults, unless contraindicated. Hypertriglyceridemia may warrant therapy with lifestyle and pharmacologic therapy such as fibric acid derivatives or niacin. Aspirin therapy should be considered as a primary prevention strategy for those at increased risk for CVD. A discussion of medication actions and side effects should be presented with education.

Lifestyle modifications would focus on healthy eating guidelines, moderation of alcohol intake, regular physical activity, smoking cessation and weight reduction.

15. **Diagnosis of Increased Risk for Diabetes and Prevention/Delay of Type 2 Diabetes** *(ADA Diabetes Care Vol. 35, Supp. 1 2012)*

Hyperglycemia not sufficient to meet the diagnostic criteria for diabetes is categorized as either impaired fasting glucose (IFG) or impaired glucose tolerance (IGT), depending on whether it is identified through the fasting plasma glucose (FPG) or the oral glucose tolerance test (OGTT):

- IFG = FPG 100 mg/dl (5.6 mmol/l) to 125 mg/dl (6.9 mmol/l)
- IGT = 2-h plasma glucose 140 mg/dl (7.8 mmol/l) to 199 mg/dl (11.0 mmol/l)
- A1C = 5.7 – 6.4 %

IFG and IGT are categories of increased risk for diabetes. Both categories are risk factors for future diabetes and for cardiovascular disease (CVD).

Prevention/delay of Type 2 diabetes:

- Patients with IGT or IFG should be given counseling on weight loss of 5% to 10% of body weight, as well as on increasing physical activity to at least 150 minutes per week of moderate activity such as walking.
- Follow-up counseling appears to be important for success.
- Based on potential cost savings of diabetes prevention, such counseling should be covered by third-party payors.
- In addition to lifestyle counseling, metformin may be considered in those who are at very high risk (combined IFG and IGT plus other risk factors) and who are obese and under 60 years of age. Monitoring for the development of diabetes in those with pre-diabetes should be performed every year.

16. *Aspirin Therapy*
(ADA Diabetes Care Vol. 35, Supp. 1 2012)

Consider aspirin therapy (75–162 mg/day) as a primary prevention strategy in those with Type 1 or Type 2 diabetes at increased cardiovascular risk (10-year risk>10%). This includes most men >50 years of age or women >60 years of age who have at least one additional major risk factor (family history of CVD, hypertension, smoking, dyslipidemia or albuminuria. Aspirin should not be recommended for CVD prevention for adults with diabetes at low CVD risk (10-year CVD risk <5%, such as in men <50 years of age and women <60 years of age, with no major additional CVD risk factors), since the potential adverse effects from bleeding likely offset the potential benefits. In patients in these age-groups with multiple other risk factors (e.g. 10-year risk 5% to10%), clinical judgment is required. Use aspirin therapy (75-162 mg/day) as a secondary prevention strategy in those with diabetes with a history of CVD. For patients with CVD and documented aspirin allergy, clopidogrel (75 mg/day should be used. Combination therapy with aspirin (75-162 mg/day) and clopidogrel (75 mg/day) is reasonable for up to a year after an acute coronary syndrome.

Guidelines of Medical Care for Adult Patients with Diabetes (1) ***(Rev. 07/2012) (Previous editions are obsolete.)***

The Nebraska Diabetes Consensus Guidelines Task Force recommends these guidelines be adapted into the clinician's practice.

Patient Name: _____ Date of Birth: _____/___/___ Year of Diagnosis: _____

Attended Diabetes Self-Management Classes: Yes ___ No ___ If yes, When/Where: _____

Follow-up Education with CDE/RD: Yes ___ No ___ If yes, When/Where: _____

Complications: _____

Indicators	Frequency*	Goals *(1)*	Date/Results	Date/Results	Date/Results	Date/Results
Weight or BMI (2)		Desirable wt: __				
Blood Pressure	Every Visit	<130/80 mm Hg				
Foot Exam/Pulses (3)	Every Visit					
Skin/injection Sites	Every Visit					
Blood Glucose	Every Visit					
Review of Self-Blood Glucose Monitoring Record (70-130 mg/dl premeals; 100-140 mg/dl at bedtime)	Every Visit	Fill in Goal for this patient.				
Discuss Lifestyle Management - Tobacco Use Status Using/Doesn't Use Cessation if using - Physical Activity - Assess	Every Visit					
Review/Update Current Meds	Every Visit					
Consider daily aspirin use	Every Visit	81-162 mg/day				
Consider Ace Inhibitors (4)	Every Visit	ACEI/ARB				
Consider Statins	Every Visit					
A1C (Hemoglobin A1C)		<7% (5)				
- insulin treated	Quarterly					
- non-insulin treated	2-4 times/yr or as needed					
Referred for Dental Exam	Bi-annual	Exam Date /Dentist:				
Annual Exam/History Update	Yearly					
Abdominal Exam	Yearly					
Neurological Exam/Depression Screening	Yearly					
Cardiac Assessment/Pulses	Yearly					
Thyroid Assessment (6)	Yearly					
Referred for Dilated Eye Exam(7)	Yearly	Exam Date/ Physician:	Macular Edema: Yes___ No___ Severity of retinopathy, if present:			
Total Cholesterol (8)	Yearly	<200 mg/dl				
HDL-C (8)	Yearly	>50 mg/dl females >40 mg/dl males				
Triglycerides (8)	Yearly	<150 mg/dl				
Calculated or Measured LDL Assessment (8)(9)	Yearly	<100 mg/dl				
Random spot urine for albumin/creatinine ratio (10)	Yearly	<30 ug/mg creatinine				
Annual Renal Screen to include serum creatinine (11)	Yearly	GFR >60 ml/min per 1.73 m²				
Influenza Vaccine	Yearly	Date/location:				
Pneumococcal Vaccination (12)	(12)	Date/location:				

(1) Based on American Diabetes Association: Standards of Medical Care for Patients With Diabetes Mellitus. Diabetes Care 35 (Suppl. 1): January 2012.
(2) Healthy BMI: 18.5-24.9; underweight BMI: less than 18.5; overweight BMI: 25.0-29.9; obese BMI: 30 or more.
(3) Annual comprehensive foot exam.
(4) Ace inhibitors, ARBs and statins are contraindicated during pregnancy.
(5) ADA recommends <6% or as close to normal as possible for selected individuals without significant hypoglycemia (SII
(6) Thyroid function tests when indicated.
(7) Type 1– ADA annually within five years after onset w/annual follow-up dilated exams; Type 2 annually.
(8) Lipid profile, annually. If within normal limits, the clinician may consider obtaining less frequently.
(9) 2004 National Cholesterol Education Program (NCEP) clinical practice guidelines recommend treating to <70 mg/dL. Adult Treatment Panel (ATP) III goal is <100 for high-risk patients and <70 for very high-risk patients. ADA Guidelines suggest <100 for all; consider statins >40 years of age with total cholesterol >130 mg/dl and goal <70 mg/dl with known heart disease or multiple risk factors. If LDL goal not reached w/max tolerable statin therapy, 40% drop from baseline is acceptable.
(10) Type 1 - Five years after diagnosis, then annually at adolescence; Type 2 - at diagnosis.
(11) ADA recommends measuring at least annually for estimation of glomerular filtration rate (GFR) in all adults with diabetes regardless of degree of urine albumin excretion. Serum creatinine alone should not be used as a measure of kidney function but to estimate GFR using MDRD equation and stage the level of CKD.
(12) Centers for Disease Control & Prev. Guidelines: Once and repeat after age 65 if more than five years after last vaccination. (MMWR Vol. 56(41): Q1-Q4.

BASIC SELF-MANAGEMENT EDUCATION
ROUTINE VISITS - ADULT PATIENTS

	Date	Comments – Update Annually for All
Lifestyle review: Tobacco use, alcohol use, stress, depression, birth control, pre-pregnancy counseling, physical activity)		
Sick day management and Urine ketone testing		
Medication administration		
Self blood glucose monitoring		
Hypoglycemia treatment		
Nutrition management		
Foot care (Separate sheet)		
Eye care (separate sheet)		
Dental Care (separate sheet)		
Nephropathy		
Neuropathy		
Dyslipidemia		
Hypertension (high blood pressure)		
Formal Self-Management Diabetes Education		

ALTERNATE FORMAT **GUIDELINES OF MEDICAL CARE FOR ADULT PATIENTS WITH DIABETES *(1) (Rev. 07/2012)***

Suggested guidelines to be adapted into clinician's practice recommended by: Nebraska Diabetes Consensus Guidelines Task Force.
Patient Name: _____ Date of Birth: ___/___/___ Year of Diagnosis _____
Attended Diabetes Self-Management Classes: Yes ___ No ___ If yes, When/Where: _____
Follow-up Education with CDE/RD: Yes ___ No ___ If yes, When/Where: _____
Tobacco Use Status: Uses ____ _ Doesn't Use _____
Complications: _____ Height: _____

EVERY VISIT

DATE	WEIGHT Or BMI *(2)*	BP	BG LOG	CURRENT MEDS	FOOT EXAM *(3)*	SKIN	TOBACCO USE
GOAL ***(1)***	_____	<130/80	70-130 fasting 100-140 at bedtime	Review/update	Skin/Sensation/ Vascular	Injection sites if on insulin	Discuss if still using
Consider daily aspirin use			**81-162 mg.**				
Consider ACE inhibitors (4)			ACEI/ARB				
Consider Statins							
A1C (Hemoglobin A1C) Quarterly			<7%)***(5)***				
Dental Exam Twice/Year			Date & Dentist				

ANNUAL EXAM & TESTS

History Update:		**Total Cholesterol** <200 mg/dl **(6)**		**Random spot urine for albumin/creatinine ratio or 24-hr urine for micro albumin goal**: <30 ug/mg ***(8)***	
Abdominal Exam:		**HDL** >40 mg/dl M >50 mg/dl F **(6)**		**Annual Renal Screen to include serum creatinine goal:** GFR >60 ml/min/1.73 m² **(9)**	
				Thyroid Assessment (***10)***	
Neurological Exam/ Depression Screen:		**Triglycerides** <150 mg/dl **(6)**		**Referral for dilated eye exam *(11)***	Macular Edema: Yes___ No ___ Severity of retinopathy if present:
Cardiac Exam & Pulses:		**LDL** <100 mg/dl **(6)(7)**		**Influenza Vaccine**	
				Pneumococcal Vaccination *(12)* (Date Given)	

1. Based on American Diabetes Association: Standards of Medical Care for Patients with Diabetes Mellitus. Diabetes Care 35 (Supp. 1), January 2012.
2. Healthy BMI: 18.5-24.9; underweight BMI: less than 18.5; overweight BMI: 25.0-29.9; obese BMI: 30 or more.
3. Annual comprehensive foot exam recommended.
4. Ace inhibitors, ARBS and statins are contraindicated during pregnancy.
5. ADA recommends <6% or as close to normal as possible without significant hypoglycemia (SII);
6. Lipid profile, annually. If within normal limits, the clinician may consider obtaining less frequently.
7. 2004 National Cholesterol Education Program (NCEP) clinical practice guidelines recommend treating to <70 mg/dL. Adult Treatment Panel (ATP) III goal is <100 for high-risk patients and <70 for very high-risk patients. ADA Guidelines suggest <100 for all; consider statins >40 years of age with total cholesterol >130 mg/dl and goal <70 mg/dl with known heart disease or multiple risk factors. If LDL goal not reached w/max tolerable statin therapy, 40% drop from baseline is acceptable.
8. Type 1 – Five years after diagnosis, then annually at adolescence. Type 2 - at diagnosis..
9. ADA recommends measuring at least annually for estimation of glomerular filtration rate (GFR) in all adults with diabetes regardless of degree of urine albumin excretion. Serum creatinine alone should not be used as a measure of kidney function but to estimate GFR using MDRD equation and stage the level of CKD.
10. Thyroid function tests when indicated.
11. Type 1-ADA annually within 5 yrs after onset with annual follow-up dilated exams; Type 2-annually.
12. Centers for Disease Control & Prevention Guidelines: once and repeat after 65 years of age if more than five years after last vaccination. (MMWR Vol. 56(41): Q1-Q4.

Guidelines of Medical Care for Adult Patients with Diabetes (1) *(Rev. 07/2012) (Previous editions obsolete.)*

These are guidelines to be adapted into the clinician's practice recommended by the Nebraska Diabetes Consensus Guidelines Task Force.

Patient Name: _____ Date of Birth: ___/___/___ Year of Diagnosis: _____

Attended Diabetes Self-Management Classes: Yes ___ No ___ If yes, When/Where: _____

Follow-up Education with CDE/RD: Yes ___ No ___ If yes, When/Where: _____

Complications: _____

Frequency may be every **diabetes-related visit – to be determined by physician*

EVERY VISIT, QUARTERLY OR BI-ANNUALLY								
Indicators	**Frequency***	**Goals *(1)***	**Date/Results**	**Date/Results**	**Date/Results**	**Date/Results**	**Date/Results**	**Date/Results**
Weight or BMI (2)		Desirable wt: ____						
Blood Pressure	Every Visit	<130/80 mm Hg						
Foot Exam/Pulses (3)	Every Visit							
Skin/injection Sites	Every Visit							
Blood Glucose	Every Visit							
Review of Self-Blood Glucose Monitoring Record (70-130 mg/dl premeals; 100-140 mg/dl at bedtime)	Every Visit	Fill in Goal for this patient.						
Review/Update Current Meds	Every Visit							
Discuss Lifestyle Management - Tobacco Use Status Using/Doesn't Use Cessation if using - Physical Activity – Assess	Every Visit							
Consider daily aspirin use	Every Visit	81-162 mg/day Aspirin						
Consider Ace inhibitors (4)								
A1C (Hemoglobin A1C)		<7% (5)						
-insulin treated	Quarterly							
-non-insulin treated	2-4 times/ year, or as needed							
Referred for Dental Exam	Bi-Annual	Exam Date/Dentist:						

Yearly or One-Time			
Indicators	**Frequency***	**Goals (1)**	**Date/Results**
Annual Exam/History Update	Yearly		
Abdominal Exam	Yearly		
Neurological Exam/Depression Screening	Yearly		
Cardiac Assessment/Pulses	Yearly		
Thyroid Assessment (6)	Yearly		
Referred for Dilated Eye Exam (7)	Yearly	Exam Date/ Physician:	Macular Edema: Yes___ No___ Severity of Retinopathy, if present:
Total Cholesterol (8)	Yearly	<200 mg/dl	
HDL-C (8)	Yearly	>50 mg/dl females >40 mg/dl males	
Triglycerides (8)	Yearly	<150 mg/dl	
Calculated or Measured LDL Assessment (8)(9)	Yearly	<100 mg/dl	
Random spot urine for albumin /creatinine ratio (10)	Yearly	<30 ug/mg creatinine	
Annual Renal Screen to include serum creatinine (11)	Yearly	GFR >60 ml/min/1.73 m²	
Influenza Vaccine	Yearly	Date/location:	
Pneumococcal Vaccination (12)	(12)	Date/location:	

(1) Based on American Diabetes Association: Standards of Medical Care for Patients With Diabetes Mellitus. Diabetes Care 35 (Suppl. 1): January 2012.
(2) Healthy BMI: 18.5-24.9; underweight BMI: less than 18.5; overweight BMI: 25.0-29.9; obese BMI: 30 or more.
(3) Annual comprehensive foot exam.
(4) Ace Inhibitors, ARBs and statins are contraindicated during pregnancy.
(5) ADA recommends <6% or as close to normal as possible without significant hypoglycemia (SII).
(6) Thyroid function tests when indicated.
(7) Type 1 – ADA annually within five years after onset with annual follow-up dilated exams. Type 2 – annually.
(8) Lipid profile, annually. If within normal limits, the clinician may consider obtaining less frequently.
(9) 2004 National Cholesterol Education Program (NCEP) clinical practice guidelines recommend treating to <70 mg/dL. Adult Treatment Panel (ATP) III goal is <100 for high-risk patients and <70 for very high-risk patients. ADA Guidelines suggest <100 mg/dl for all; consider statins >40 years of age with total cholesterol >130 mg/dl and goal >70 mg/dl with known heart disease or multiple risk factors. If LDL goal not reached w/max tolerable statin therapy, 40% drop from baseline is acceptable.
(10) Type 1 – Five years after diagnosis, then annually at adolescence; Type 2 – at diagnosis.
(11) ADA recommends measuring at least annually for estimation of glomerular filtration rate (GFR) in all adults with diabetes regardless of degree of urine albumin excretion. Serum creatinine alone should not be used as a measure of kidney function but to estimate GFR using MDRD equation and state the level of CKD.
(12) Centers for Disease Control & Prevention Guidelines: once and repeat after 65 years of age if more than five years after last vaccination. (MMWR Vol. 56(41): Q1-Q4.

BASIC SELF-MANAGEMENT EDUCATION – ROUTINE VISITS – ADULT PATIENTS

	Date	Comments – Update Yearly for All
Lifestyle review: (tobacco use, alcohol use, stress, depression, birth control, pre-pregnancy counseling, physical activity)		
Sick day management & Urine ketone testing		
Medication Administration		
Self blood glucose monitoring		
Hypoglycemia treatment		
Nutrition management		
Foot care Separate sheet)		
Eye care (separate sheet)		
Dental Care (separate sheet)		
Nephropathy		
Neuropathy		
Hypertension (high blood pressure)		
Dyslipidemia		
Formal Self-Management Diabetes Education		

Guidelines of Medical Care for Pediatric Patients with Diabetes (1) *(Rev. 07/2012) (Previous editions obsolete.)*

These are guidelines to be adapted into the clinician's practice recommended by Nebraska Diabetes Consensus Guidelines Taskforce
Patient Name: _____ Date of Birth: ___/___/___ Year of Diagnosis: _____
Attended Diabetes Self-Management Classes: Yes ___ No ___ If yes, When/Where: _____ _____
Complications: _____

Frequency may be every **diabetes-related visit – to be determined by physician*

Indicators	Frequency*	Goals (1)	Date/Results	Date/Results	Date/Results	Date/Results
Height	Every Visit					
Weight or BMI	Every Visit					
Tanner Stage	Yearly					
Blood Pressure	Every Visit	Age specific guidelines				
Foot Exam/Pulses (2)	Every Visit					
Skin/injection Sites	Every Visit					
Blood Glucose	Every Visit					
Review of Self-Blood Glucose Monitoring Record	Every Visit	Age specific guidelines (3)				
Review/Update Current Meds	Every Visit					
Discuss Lifestyle Management - Tobacco Use Status Using/Doesn't Use Cessation if using - Physical Activity	Every Visit					
A1c (Hemoglobin A1c)	Every Three Months	0-6 yrs <8.5 6-12 yrs <8 13-19 yrs <7.5				
Referred for Dental Exam	Bi-annual	Exam Date/ Dentist:				
Annual Exam/History Update	Yearly					
Abdominal Exam	Yearly					
Neurological Exam/Depression Screening	Yearly					
Cardiac Assessment/Pulses	Yearly					
Thyroid Assessment (4)	Yearly					
Referred for Dilated Eye Exam (5)	Yearly	Exam Date/Physician:				
Total Cholesterol (6)	Yearly	<170 mg/dl				
HDL-C (6)	Yearly					
Triglycerides (6)	Yearly					
Calculated or Measured LDL Assessment (6)	Yearly	<100 mg/dl (6)				
Random spot urine for albumin /creatinine ratio (7)	Yearly	<30 ug/mg creatinine				
Influenza Vaccine	Yearly	Date/location:				
Pneumococcal Vaccination(8)	(8)	Date/location:				
Celiac Disease (9)						

(1) Based on American Diabetes Assoc. Standards of Medical Care for Patients W/ Diabetes Mellitus. *Diabetes Care 35 (Suppl. 1): Jan 2012*.
(2) Annual comprehensive foot exam.
(3) Daytime: <5 years. 100-200; >5 yrs. 70-150 or as determined by physician; nighttime: <5 years. 150-200; >5 yrs. 120-180 or as determined by physician.
(4) Thyroid function tests annually with Type 1; Type 2, at time of diagnosis and as indicated.
(5) ADA: once child is $\geq$ 10 years old & has had diabetes for three to five years; annual follow-up. AAP: three to five years after diagnosis if >9 years old and annually the Pediatric Endocrinologist: dilated eye exam first year after diagnosis; not annually until adolescence or after puberty.
(6) Perform a fasting lipid panel on all children >2 years at the time of diagnosis (after glucose control has been established); if values are within normal levels and family is not a concern, follow-up is recommended at 5-year intervals thereafter. (Nebraska Diabetes Consensus Guidelines Task Force recommendation.
(7) Annual screening once child is 10 years of age. (Nebraska Diabetes Consensus Guidelines Task Force recommendation.)
(8) Centers for Disease Control & Prevention Guidelines.
(9) Patients with Type 1 diabetes should be screened for Celiac disease. Children with positive antibodies should be referred to a gastroenterologist for evaluation. Child confirmed celiac disease should have consultation with a dietitian and placed on a gluten-free diet.

BASIC SELF-MANAGEMENT EDUCATION – ROUTINE VISITS PEDIATRIC PATIENTS

	Date	Comments – Update Yearly for All
Lifestyle review: (tobacco, alcohol, stress, depression, birth control, pre-pregnancy counseling, physical activity)		
Sick day management & Urine ketone testing		
Medication administration		
Self blood glucose monitoring		
Hypoglycemia treatment		80-180 mg/dl pre-meals; ≤200 mg/dl at bedtime
Nutrition management		
Foot care (separate sheet)		
Eye Care (separate sheet)		
Dental Care (separate sheet)		
Nephropathy		
Neuropathy		
Hypertension (high blood pressure)		
Dyslipidemia		
Formal Self-Management Diabetes Education		

Guidelines of Medical Care for Pediatric Patients with Diabetes (1) *(Rev. 07/2012) (Previous editions obsolete.)*

These are guidelines to be adapted into the clinician's practice recommended by the Nebraska Diabetes Consensus Guidelines

Patient Name: _____ Date of Birth: ___/___/___ Year of Diagnosis: _____

Attended Diabetes Self-Management Classes: Yes ___ No ___ If yes, When/Where: _____

Follow-up Education with CDE/RD: Yes ___ No ___ If yes, When/Where: _____

Complications: _____

Frequency may be every **diabetes-related visit – to be determined by physician*

Every Visit								
Indicators	**Frequency***	**Goals *(1)***	**Date/ Results**	**Date/ Results**	**Date/ Results**	**Date/ Results**	**Date/ Results**	**Date/ Results**
Height	Every Visit							
Weight or BMI	Every Visit	Weight or BMI						
Tanner Stage	Yearly							
Blood Pressure	Every Visit	Age specific guidelines						
Foot Exam/Pulses (2)	Every Visit							
Skin/injection Sites	Every Visit							
Blood Glucose	Every Visit							
Review of Self-Blood Glucose Monitoring Record	Every Visit	Age specific guidelines (3)						
Review/Update Current Meds	Every Visit							
Discuss Lifestyle Management - Tobacco Use Status Using/Doesn't Use Cessation if using - Physical Activity - Assess	Every Visit							
A1c (Hemoglobin A1c)	Every 3 Months	0-6 yrs <8.5 6-12 yrs <8 13-19 yrs <7.5						

Yearly			
Indicators	**Frequency***	**Goals (1)**	**Date/Results**
Abdominal Exam	Yearly		
Neurological Exam/Depression Screening	Yearly		
Cardiac Assessment/Pulses	Yearly		
Thyroid Assessment (4)	Yearly		
Referred for Dilated Eye Exam (5)	Yearly	Exam Date/ Physician:	
Total Cholesterol (6)	Yearly	<170 mg/dl	
HDL-C (6)	Yearly		
Triglycerides (6)	Yearly		
Calculated or Measured LDL Assessment (6)	Yearly	<100 mg/dl (6)	
Random spot urine for albumin /creatinine ratio (7)	Yearly	<30 ug/mg creatinine	
Influenza Vaccine	Yearly	Date/location:	
Pneumococcal Vaccination (8)	(8)	Date/Location:	
Celiac Disease (9)			

(1) Based on American Diabetes Association: Standards of Medical Care for Patients With Diabetes Mellitus. *Diabetes Care 35 (Supp. 1): January 2012*.
(2) Annual comprehensive foot exam.
(3) Daytime: <5 years. 100-200; >5 years, 70-150 or as determined by physician; nighttime: <5 years, 150-200; >5 years, 120-180 or as determined by physician.
(4) Type 1 Thyroid function tests annually; Type 2, at time of diagnosis and as indicated.
(5) ADA: once child is ≥ 10 years old & has had diabetes for three to five years; annual follow-up. AAP: three to five years after diagnosis if >9 years old and annually thereafter. Pediatric Endocrinologist: dilated eye exam first year after diagnosis; not annually until adolescence or after puberty.
(6) Perform a fasting lipid panel on all children >2 years at the time of diagnosis (after glucose control has been established); if values are within normal levels and family history is not a concern, follow-up is recommended at five-year intervals thereafter. (Nebraska Diabetes Consensus Guidelines Task Force recommendation.)
(7) Annual screening once child is 10 years of age. (Nebraska Diabetes Consensus Guidelines Task Force recommendation.)
(8) Centers for Disease Control and Prevention Guidelines.
(9) Patients with Type 1 diabetes should be screened for Celiac disease. Children with positive antibodies should be referred to a gastroenterologist for evaluation. Children with confirmed celiac disease should have consultation with a dietitian and placed on a gluten-free diet.

BASIC SELF-MANAGEMENT EDUCATION – ROUTINE VISITS - PEDIATRIC PATIENTS

	Date	Comments – Update Yearly for All
Lifestyle review: **(**tobacco, alcohol, stress, depression, birth control, pre-pregnancy counseling, physical activity)		
Sick day management & Urine ketone testing		
Medication administration		
Self blood glucose monitoring		
Hypoglycemia treatment		80-180 mg/dl pre-meals; ≤200 mg/dl at bedtime
Nutrition management		
Foot care (separate sheet)		
Eye care (separate sheet)		
Dental Care (separate sheet)		
Nephropathy		
Neuropathy		
Hypertension (high blood pressure)		
Dyslipidemia		
Formal Self-Management Diabetes Education		

Summary of
AMERICAN DIABETES ASSOCIATION'S CRITERIA FOR TESTING FOR DIABETES IN ASYMPTOMATIC INDIVIDUALS

ADULTS

Testing should be considered in all adults who are overweight (BMI≥ 25 kg/m²*) and have additional risk factors. **(See Table 1)**

***May not be correct for all ethnic groups.**

Table 1 Risk Factors for Type 2 Diabetes in Adults
Have a first-degree relative with diabetes (i.e., parents or siblings)
Physical inactivity
High-Risk Race/ethnicity (e.g., African American, Latino, Native American, Asian American and Pacific Islander)
Women diagnosed with GDM or delivery of a baby weighing > 9 lbs
Hypertension (≥ 140/90 mmHg or on therapy for hypertension)
HDL cholesterol level <35 mg/dl (0.90 mmol/l) and/or triglyceride level >250 mg/dl (2.82 mmol/l)
Women with polycystic ovarian syndrome (PCOS)
A1C ≥5.7%, IGT or IFG on previous testing
Other clinical conditions associated with insulin resistance (e.g., severe obesity and acanthosis nigricans)
History of cardio vascular disease (CVD)

*At-risk BMI may be lower in some ethnic groups

In the absence of the above criteria, testing for pre-diabetes and diabetes should begin at age 45 years.
If results are normal, testing should be repeated at least at three-year intervals, with consideration of more frequent testing depending on initial results and risk status.

CHILDREN AND ADOLESCENTS

Testing should be considered for overweight children (see *Table 2*) starting at age 10 years (or at the onset of puberty if it occurs at a younger age) ***and*** have any two of the risk factors listed in *Table 3.* Repeat testing every two years. Fasting Plasma Glucose Preferred Test.

Table 2 Definitions of Overweight for Children & Adolescents
1. BMI >85th percentile for age and sex, or
2. Weight for height >85th percentile, or
3. Weight >120% of ideal (50th percentile) for height.

Table 3 Risk Factors for Type 2 Diabetes in Children and Adolescents
1. Family history of Type 2 diabetes in first- or second-degree relative
2. Race/ethnicity (e.g., African American, Latino, Native American, Asian American and Pacific Islander)
3. Signs of insulin resistance or conditions associated with insulin resistance (acanthosis nigricans, polycystic ovary syndrome, or small-for-gestational-age birth weight, hypertension or dsylipidemia).
4. Maternal history of diabetes or Gestational Diabetes during the child's gestation.

NOTE: Clinical judgment should be used to test for diabetes in high-risk patients who do not meet these criteria.

Diabetes Care, Volume 35, Supplement 1, January 2012

Summary of
AMERICAN DIABETES ASSOCIATION
CRITERIA FOR THE DIAGNOSIS OF DIABETES

1. A1C ≥6.5%. The test should be performed in a laboratory using a method that is NGSP certified and standardized to the DCCT assay. *

   OR

2. FPG ≥126 mg/dl (7.0 mmol/l). Fasting is defined as no caloric intake for at least eight hours. *

   OR

3. Two-hour plasma glucose ≥200 mg.dl (11.1 mmol/l) during an OGTT. The test should be performed as described by the World Health Organization, using a glucose load containing the equivalent of 76g anhydrous glucose dissolved in water. *

   OR

4. In a patient with classic symptoms of hyperglycemia or hyperglycemic crisis, a random plasma glucose ≥200 mg/dl (11.1 mmol/l).

   *In the absence of unequivocal hyperglycemia, criteria 1- 3 should be confirmed by repeat testing.

Diabetes Care, Volume 35, Supp. 1, January 2012

A consensus statement and algorithm for the initiation and adjustment of therapy can be found in Diabetes Care, Volume 35, Number 1, January 2012, page 193.

Diabetes Prevention & Control Program
Nebraska Health & Human Services
PO Box 95026
Lincoln, NE 68509
1-800-745-9311

Diabetes Foot Exam Report

Foot

Amputation is one of the most common and feared complications of diabetes mellitus. Many times this unfortunate complication can be prevented. With the current team-approach prevention programs, amputation rates have fallen significantly. All patients should have routine foot evaluation by a primary care provider or specialist and should perform daily foot care and assessments.

Diabetic foot evaluation

Basic foot evaluation should be performed at each medical visit. It is recommended that the patient remove his/her shoes and socks prior to evaluation. This facilitates examination and serves as a reminder to the patient of the importance of foot health. Inappropriate footwear is a contributory factor in the development of foot ulceration, the patient's shoes should be inspected. If pathology is noted or significant risk factors exist, a referral to a specialist – podiatric, vascular or orthopaedic surgeon – is recommended for a comprehensive examination.

Basic

The basic examination includes a visual and tactile evaluation of the lower extremity vascular status and a monofilament screening for peripheral neuropathy. The provider should also visually inspect for musculoskeletal deformities and dermatologic pathologies. See the attached form for further details.

Comprehensive

The comprehensive examination includes a thorough evaluation of vascular, neurologic, musculoskeletal and dermatologic systems. This is generally used for an annual examination or evaluation by a specialist. See the attached form for further details.

ADA Risk Classification

Risk category	Definition	Treatment recommendations	Suggested follow-up
0	No LOPS*, No PAD*, No deformity	Patient education including advice on appropriate footwear.	Annually (by generalist and/or specialist)
1	LOPS* ± deformity	Consider prescriptive or accommodative footwear. Consider prophylactic surgery if deformity is not able to be safely accommodated in shoes. Continue patient education.	Every 3–6 months (by generalist or specialist)
2	PAD* ± LOPS	Consider prescriptive or accommodative footwear. Consider vascular consultation.	Every 2–3 months (by specialist)

3	History of ulcer or amputation	Same as category 1. Consider vascular consultation if PAD present.	Every 1–2 months (by specialist)

* Loss of protective sensation (LOPS), Peripheral arterial disease (PAD)

Routine care

Routine care such as nail and callous debridement is recommend by a physician if the patient is a greater than or equal to a category one risk.

Self-assessment and education

The goal of instructing a patient in daily foot care is the identification and prevention of foot problems that could lead to amputation. Most important is the daily inspection for problems and when to seek help from a health care professional. Patients may also benefit from daily application of skin cream or lotion. This serves as a daily tactile evaluation of the foot and also prevents xerosis in patients with autonomic peripheral neuropathy.
Other topics include appropriate footwear, management of minor foot problems, benefits of extra depth shoes, and the dangers of soaking feet, hot water bottles and heating pads. Additional information includes the avoidance of foot trauma and tobacco use cessation. Presence and degree of neuropathy, presence of peripheral vascular disease, and the implications for foot care. They should be instructed to remove their shoes and stockings and have their feet examined at each visit.

Reference

Boulton AJ, et al. Comprehensive foot examination and risk assessment: a report of the task force of the foot care interest group of the American Diabetes Association, with endorsement by the American Association of Clinical Endocrinologists. Diabetes Care. 2008 Aug;31(8):1679-85.

Basic Foot Examination

Patient: _____ Date: _____ ID: _____

Primary care physician:_____ Last seen: _____

Medical History

Type of DM:
- ☐ Type I
- ☐ Type II orally controlled
- ☐ Type II insulin dependent
- ☐ Gestational

Duration of DM:

History of amputation:
☐ N ☐ Y

History of ulceration
☐ N ☐ Y

Past Medical History:
- ☐ Peripheral Neuropathy
- ☐ Nephropathy
- ☐ Retinopathy
- ☐ Vascular Disease
- ☐ Hypertension
- ☐ Dyslipidemia
- ☐ Heart Disease
- ☐ Stroke
- ☐ Amputation
- ☐ Other:

Tobacco Use:
☐ No ☐ Yes
How much: How long:

1. Any change in the foot or feet since the last evaluation?
☐ No ☐ Yes
2. Current ulcer or history of a foot ulcer?
☐ No ☐ Yes
3. Is there pain in the calf muscles when walking that is relieved by rest?
☐ No ☐ Yes

Physical Exam

Dermatologic examination:

1. Are the nails thick, elongated, or ingrown?
☐ No ☐ Yes
2. Are there calluses or fissures?
☐ No ☐ Yes
3. Is there maceration or open lesions in the web space?
☐ No ☐ Yes
4. Is there redness or warmth?
☐ No ☐ Yes

Musculoskeletal examination:

1. Are deformities present?
☐ Bunion
☐ Hammertoes
☐ Prominent metatarsals
☐ Collapsed arch
☐ Previous amputation

Footwear assessment:

1. Does the patient wear appropriate shoes?
☐ No ☐ Yes

Neurologic examination

10-gram Monofilament

R: /6

L: /6

Vascular examination

1. Is pedal hair growth present?
☐ No ☐ Yes
2. Are pedal pulses present?
☐ No ☐ Yes

Dorsalis Pedis R: /4 L: /4
Posterior Tibial R: /4 L: /4

Assessment

American Diabetes Association Classification
- ☐ 0: No complications
- ☐ 1: Loss of protective sensation + deformity/callus
- ☐ 2: Loss of protective sensation + PVD
- ☐ 3: History of ulceration or amputation

Management Plan

Self-management Education:
- ☐ Patient education for preventive foot care
- ☐ Provide or refer for smoking cessation counseling
- ☐ Provide general diabetes information such as HgA1C recommendations

Referral:
- ☐ Primary Care Physician
- ☐ Podiatric surgeon
- ☐ Vascular surgeon
- ☐ Endocrinologist
- ☐ Nephrologists
- ☐ Diabetes Educator
- ☐ Nutritional Educator

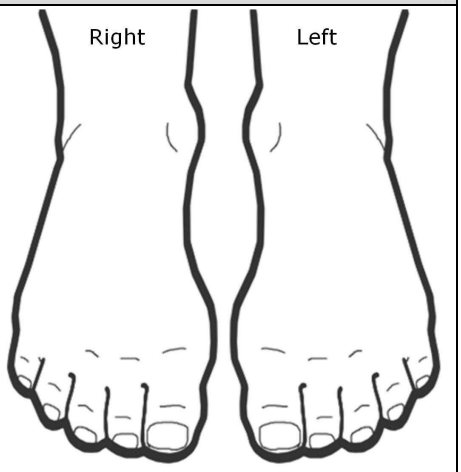
Signature: _____

Date: _____

Comprehensive Foot Examination

Patient: _____ Date: _____ ID: _____

Primary care physician: _____ Last seen: _____

Medical History		
Type of DM: ☐ Type I ☐ Type II orally controlled ☐ Type II insulin dependent ☐ Gestational Duration of DM: History of amputation: ☐ N ☐ Y History of ulceration ☐ N ☐ Y	Past Medical History: ☐ Peripheral Neuropathy ☐ Nephropathy ☐ Retinopathy ☐ Vascular Disease ☐ Hypertension ☐ Dyslipidemia ☐ Heart Disease ☐ Stroke ☐ Amputation ☐ Other:	Tobacco Use: ☐ No ☐ Yes How much: How long: 1. Any change in the foot or feet since the last evaluation? ☐ No ☐ Yes 2. Current ulcer or history of a foot ulcer? ☐ No ☐ Yes 3. Is there pain in the calf muscles when walking that is relieved by rest? ☐ No ☐ Yes
Physical Exam		
Dermatologic examination: 1. Are the nails thick, elongated, or ingrown? ☐ No ☐ Yes 2. Is the skin thin, fragile, or shiny? ☐ No ☐ Yes 3. Is the foot or ankle swollen? ☐ No ☐ Yes 4. Are there calluses or fissures? ☐ No ☐ Yes 5. Is there maceration or open lesions in the web space? ☐ No ☐ Yes 6. Is there redness or warmth? ☐ No ☐ Yes	**Musculoskeletal examination:** 1. Are digital deformities present? ☐ No ☐ Yes 2. Are bunion deformities present? ☐ No ☐ Yes 3. Are the metatarsal heads prominent? ☐ No ☐ Yes 4. Is there at least 5° of ankle dorsiflexion? ☐ No ☐ Yes 5. Is there at least 45° of 1st metatarsophalangeal ROM? ☐ No ☐ Yes 6. Is there a Charcot deformity? ☐ No ☐ Yes	 Mark dorsal lesions or deformities

Neurologic examination
I:Intact, D:Diminished, A:Absent

10-gram

Monofilament

R:

L:

Vibration (128Hz turning fork)
R: L:

Achilles reflex
R: L:

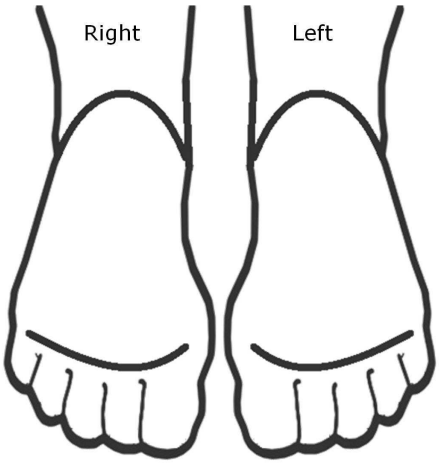
Michigan Neuropathy Index

R: /5 **L:** /5

Total ≥ 2.5=Peripheral Neuropathy

Points:
Intact=0,Diminished=0.5,Absent=1

Deformity=1
Callus, Ulcer or history of ulcer=1



Mark plantar lesions or deformities

Vascular examination
1. Is pedal hair growth present?
☐ No ☐ Yes
2. Are varicosities present?
☐ No ☐ Yes
3. Are pedal pulses present?
☐ No ☐ Yes

Dorsalis Pedis R: /4 L: /4

Posterior Tibial R: /4 L: /4

Education assessment:
1. Has the patient had prior foot care education?
☐ No ☐ Yes
2. Can the patient demonstrate appropriate self-care?
☐ No ☐ Yes

Footwear assessment:
1. Does the patient wear appropriate shoes?
☐ No ☐ Yes
2. Does the patient wear inserts/orthotics?
☐ No ☐ Yes

Assessment

American Diabetes Association Classification

- ☐ 0: No complications
- ☐ 1: Loss of protective sensation + deformity or callus
- ☐ 2: Loss of protective sensation + vascular disease
- ☐ 3: History of ulceration or amputation

Management Plan

Self-management Education:
If previously provided, please list date below.

- ☐ Patient education for preventive foot care
  Date:
- ☐ Provide or refer for smoking cessation counseling
  Date:
- ☐ Provide general diabetes information such as HgA1C recommendations
  Date:

Footwear Recommendations:

- ☐ None
- ☐ Athletic shoes
- ☐ Extra-depth shoes
- ☐ Custom inserts/orthotics
- ☐ Custom molded shoes
- ☐ Double upright brace
- ☐ Charcot Restraint Orthotic Walker (CROW)

Diagnostic Studies: ☐ Non-invasive vascular study ☐ Epidermal nerve fiber density biopsy ☐ Toenail biopsy ☐ Serum lab test ☐ Hemoglobin A1C ☐ Creatinine level ☐ Vitamin D3 level ☐ C-reactive protein ☐ Erythrocyte Sedimentation Rate (ESR)	**Referral:** ☐ Primary Care Physician ☐ Podiatric surgeon ☐ Vascular surgeon ☐ Endocrinologist ☐ Nephrologists ☐ Diabetes Educator ☐ Nutritional Educator ☐ Other:
Follow up	
Date:	Level 0: Annual examination Level 1: 3-6 months Level 2 and 3: 3 months

Signature: _____

Date: _____

Diabetes Eye Exam Report

The Nebraska Diabetes Guidelines Task Force recommended including a suggested Diabetes Eye Exam Report in the annual guidelines mailing. Several formats were considered and all have merits but the enclosed form was selected as an example for health care professionals to consider for their patients with diabetes. As with all of our flow sheets and health care forms, this may be altered to fit your individual program and copied as needed. Additional copies can be requested from the Diabetes Prevention and Control Program, PO Box 95026, Lincoln, NE 68509, phone: 1-800-745-9311 or e-mail to dhhs.diabetes@nebraska.gov.

It is suggested that the primary care physician give this form to patient to take with them when they receive their annual dilated eye exam. The examining ophthalmologist or optometrist would complete the form and send or fax it to the patient's primary care physician.

This is part of the Task Force's effort to ensure that people with diabetes receive complete, consistent care for their diabetes that meets the minimum ADA guidelines. Your consideration of using this form, as well as the other enclosed suggested forms, will aid in our efforts to improve the standards of care in Nebraska for all people with diabetes.

Important background rationale to consider:

- Diabetic retinopathy is the most frequent cause of new cases of blindness among adults aged 20-74 years.*
- The longer a person has diabetes, the more likely they are to develop diabetic retinopathy, particularly if the diabetes is poorly controlled.
- Knowledge of the presence of retinopathy is a useful tool for the primary care physician in the overall management of diabetes.

The American Diabetes Association recommends a dilated retinal eye examination as an annual standard of care for persons with diabetes:*

- Under age 10: Based on clinical judgment
- Type 1: Within five years of diagnosis
- Type 2: At time of diagnosis of diabetes; annually thereafter. In known pregnancy, dilated eye exam every trimester.

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Diabetes Eye Exam Report

TO: _____ **Clinic/Office:** _____
Address: _____
Phone: _____ **Fax:** _____

Patient Name: _____ DOB: _____

Visual Acuity: _____ R _____ L Intraocular Pressure _____ R _____ L

Retinal Examination Findings:

_____ No retinopathy or past retinopathy and should be examined in one year.
_____ Needs no laser now, but should return in _____ months because of risk of developing diabetic macular edema (DME) or high risk of proliferative diabetic retinopathy (PDR)
_____ Diabetic macular edema requiring focal laser photocoagulation
_____ High risk proliferative diabetic retinopathy or iris neovascularization requiring panretinal photocoagulation
_____ Tractional retinal detachment or vitreous hemorrhage requiring vitrectomy

Other Ocular Conditions:

_____ Not applicable

Cataracts:

_____ Does interfere with activities of daily living
_____ Does not interfere with activities of daily living
_____ Not applicable

Glaucoma:

_____ Controlled
_____ Sub-optimally controlled
_____ Not applicable

Plan of Treatment: Follow-up _____ weeks/months

_____ Refer to Retina Specialist OR:

(check appropriate treatment plan) (Circle right eye "R" or left eye "L" or both)

_____	Fluorescein angiogram	R	L	B
_____	Panretinal laser photocoagulation	R	L	B
_____	Focal laser photocoagulation	R	L	B
_____	Vitrectomy	R	L	B
_____	Cataract Surgery	R	L	B
_____	Other:			

Eye Care Provider (M.D. or O.D.)

Print Name: _____ Signature: _____ Date: _____

_____ _____ _____
Clinic/Office Name Phone Fax

I give permission to release this information to my Physician _____
Patient Signature

Dental Care Guidelines

Self-care
Diabetes patients must maintain a rigorous oral self-care regimen to minimize oral health problems that may complicate glycemic control since the mouth is the first part of the digestive process. Regular visits (generally twice a year) to their dentist for a dental examination and dental prophylaxis and necessary radiographs are recommended to achieve an optimal oral health status. This rate of dental visitation is dependent on the patient's oral health status. Regular brushing and flossing are essential to keep the teeth and gums healthy. A history of stroke or musculoskeletal disorders might necessitate the use of other mechanical or electric dental devices to accomplish optimal goals of oral health.

Dental Problems
The major oral health complications of diabetes are: periodontal disease, salivary gland disorders, oral soft tissue infections, and possibly caries (dental decay). The quality and extent of these problems are largely dependent on the level of glycemic control, the age of the patient, prior history and length of time of medical or dental problems, and the dental IQ or self-efficacy of the patient. Furthermore, medications may by themselves cause oral health problems such as gingival hyperplasia and xerostomia. Aggressive management of these dental problems and optimal oral self-care by the patient is necessary to minimize the impact on glycemic control and the patient's quality of life.

Medical Complications
Bone, thyroid, gastrointestinal, musculoskeletal, cognitive, and psychosocial complications and some of the therapeutic regimens all have varying oral health implications. Both bone and thyroid metabolic disturbances have oral health implications. Gastrointestinal problems such as GERD may cause enamel erosion. Musculoskeletal changes and tooth loss will affect the ability to masticate and patients will shift their diets to softer foods. Cognitive problems will influence the ability of the patient to comprehend the caregiver's instructions and provide self-care. Bulimia will cause enamel erosion and dental decay. These problems have been shown to worsen the oral condition. Patients with these conditions should be asked about their oral health status and encouraged to seek dental preventative care.

Denture Care
Many patients that wear dentures feel that once their teeth are gone there is no need to seek further dental care. This could not be further from the truth. Individuals with dentures normally lose chewing function by over 50%. These patients need yearly oral examinations. This includes evaluating the oral structures for soft tissue infections, denture sores, and an oral cancer screening examination. Members of the Diabetes Care Team should ask these patients to remove their dentures to assess fit and function and whether prompt dental referral is needed. Debris, calculus, broken teeth or acrylic base cracks are some indicators that there is a problem. Worn or loose dentures or those that are over five years old should be replaced. Some loose dentures can be relined or rebased to improve the fit if the teeth if they are in good shape. A self-care regimen of daily tissue scrubs using a washcloth and toothpaste maintains the underlying gum tissue in good health. The dentures should be removed nightly, cleaned using a denture brush and toothpaste, and stored in water. Denture cleaning tablets should be used daily or dentures should be soaked nightly in diluted bleach (1 ounce of bleach in 4 cups of water) to disinfect dentures. Denture cleaning tablets may be used 2-3 times a week. Coffee, tea, and tobacco use tend to heavily stain a denture. Dentures can also accumulate plaque and calculus. *Candida* infections may be due to a combination of a poor fitting prosthesis or poor host immune response. Treatment of *Candida* involving a prosthesis should include soaking the prosthesis in Nystatin solution daily and the use of the rinse orally (swish and swallow) or if it persists utilize Diflucan. Ensuring that a denture has an optimal fit and comfort will help the patient improve glycemic control and achieve the goals of medical nutrition therapy.