



**National Diabetes Education Program**

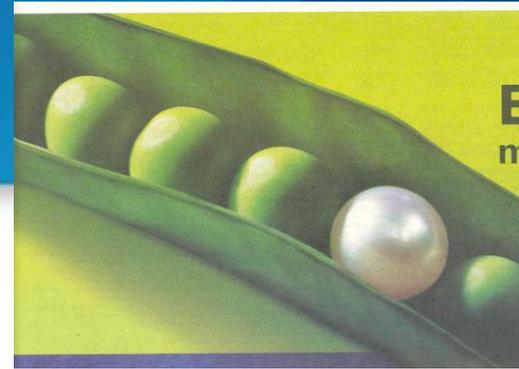
A program of the National Institutes of Health and the Centers for Disease Control and Prevention

## **Team Care: Working Together to Manage Diabetes**

### **Pharmacists, Podiatrists, Optometrists, and Dentists: PPOD + Others**

**Pamela Allweiss, MD, MPH**  
**Medical Officer**  
**Division of Diabetes Translation**  
**Centers for Disease Control and Prevention**  
**[pca8@cdc.gov](mailto:pca8@cdc.gov)**

**The findings and conclusions in this webinar are those of the presenters and do not necessarily represent the official position of the Centers for Disease Control and Prevention.**



## What Is PPOD?

**A workgroup formed by the National Diabetes Education Program: a joint program sponsored by Centers for Disease Control and Prevention (CDC) and National Institutes of Health (NIH). Involves many federal, state, and private sector agency partners.**

**PPOD is a collaborative team approach that:**

- Engages many health care providers who treat patients with diabetes.
- Reinforces consistent diabetes messages across four disciplines:
  - Pharmacy
  - Podiatry
  - Optometry
  - Dentistry





# A PPOD Provider May Be the First to See a Person Having a New Problem

- Patients may consult a PPOD provider about new symptoms that may be diabetes-related before consulting with a primary care provider.
- Regular communication provides an opportunity to keep diabetes on the patient's radar screen.





## **PPOD providers can:**

- **Recognize signs of diabetes and systemic concerns across all PPOD areas.**
- **Reinforce the importance of annual screenings and healthy habits.**
- **Educate patients about diabetes.**
- **Encourage self-management.**
- **Provide treatment.**
- **Give consistent messages, recognize early danger signs, and promote the team approach**





# **Key Message to Prevent Diabetes Complications: Control the ABCs**

- **A1c: Blood glucose control**
- **B: Blood pressure control**
- **C: Cholesterol (Blood lipid) control**
- **S: Smoking (and use of other tobacco products) cessation (and don't start)**
- **Preventive care practices for eyes, kidneys, feet, teeth, and gums**



## Benefits to Patients

- Access to integrated diabetes care across specialty and primary care areas.
- Regular communication among your team of health care providers.
- Strong focus on preventive care.





## Resources for Providers: Working Together to Manage Diabetes Monograph

- Offers an overview of team approach to care.
- Includes details for each PPOD specialty area on:
  - Current data and trends
  - Common diabetes-related complications
  - Assessment techniques
  - Key warning signs
  - Patient education information
- Serves as a “cross-education” resource, **not** a comprehensive guide to subspecialty care.
- <https://www.cdc.gov/diabetes/ndep/toolkits/ppod.html>



# Working Together to Manage Diabetes: Considerations

- Guide provides a “quick course” on each specialty and its relation to diabetes.
- Each section is written for providers OUTSIDE of the specialty to read.
- Your own specialty section may seem “simplistic.”
- The goal of the PPOD Guide is to relay consistent messages across the disciplines.



**National Diabetes Education Program**

A program of the National Institutes of Health and the Centers for Disease Control and Prevention

# PPOD Specialty Sections



What PPOD Specialists Want Other Members of the Team to Know About Their Specialties



# Diabetes Complications: Overview

- The risk of periodontal disease is two to three times higher in adults with diabetes.
  - About one third of people with diabetes have severe periodontal disease.
- 60%–70% of people with diabetes have mild to severe nervous system damage.
  - Almost 30% of people ages 40 and over with diabetes have impaired sensation in their feet.
- Diabetes is the leading cause of new cases of blindness among adults ages 20–74 years.



# Medication Therapy Management and Diabetes



More than:

- 50% of patients with chronic disorders do not take medication properly.
- 60% of people with diabetes do not have their blood glucose in goal range.





# Medication Therapy Management and Diabetes Complications

Medication-related complications can include:

- Serious illness, long-term disability, death
- Inability to achieve desired results
- Inefficient use of money



## Role of Pharmacists

Pharmacists are unique members of the health care team because:

- Patients often see their pharmacist ***seven times more often*** than their doctor.
- Pharmacists are often available all day and into evenings and weekends—with no appointment needed.



## Role of Pharmacists (cont.)

- Monitor drug regimens.
- Work with patients to develop a plan to reduce risk of side effects and drug interactions.
- Advise patients on how to take medications properly.
- Provide other information to help control diabetes.
- Communicate with health care team.



# Key Questions to Ask Your Patients About Medication Therapy Management

**Patients should be referred to a pharmacist if the answers to these questions are “no” or “unsure”:**

- Do you have a list of all your medicines, vitamins, and supplements?
- Do you know the reason why you take each medicine?
- Have you reported any side effects from your medicines to your pharmacist?



## Example: PPOD in Action

- 40-year-old woman notices blurry vision and asks her pharmacist about reading glasses.
- Pharmacist discovers that patient was diagnosed with diabetes last year but did not return for follow-up appointment.
- Pharmacist advises that changes in vision may be a sign of diabetes, not a need for reading glasses.
- Pharmacist arranges primary care visit and eye care visit for follow-up.
- Pharmacist also refers her to the NDEP website at [www.cdc.gov/diabetes/ndep](http://www.cdc.gov/diabetes/ndep) for more materials.



# Foot Health and Diabetes

- More than 60% of nontraumatic lower-limb amputations occur in people with diabetes.
- Patients with diabetes are 15–26 times more likely to have an amputation than patients without diabetes.
- Up to 20% of diabetes patients who participate in routine foot care will have a treatable foot care problem.



# Foot Exams

Annual comprehensive exams:

- Help determine risk for developing foot complications.
- Educate high-risk patients on how to properly care for their feet.
- Prevent low-risk patients from becoming high-risk.





# Key Questions to Ask Your Patients About Foot Health

**Patients should be referred to a podiatrist if the answers to these questions are “no” or “unsure”:**

- Do you get a full foot exam by a podiatrist at least once a year?
- Do you know how diabetes can affect your feet?
- Do you know how to check your feet every day?



## Example: PPOD in Action

- A 70-year-old man consults a podiatrist because of corns on his feet, which he says have caused him not to walk much.
- The podiatrist explains that regular exercise has many benefits, including diabetes prevention and management.
- The podiatrist shares the PPOD fact sheet for patients, *Diabetes and You: Your Feet Matter!*, and points out the website and toll-free number for more resources.





# Eye Health

- 11% of U.S. adults with diabetes have a form of visual impairment.
- Adults with visual function loss are at least 90% more likely to have depression than those without visual function loss.



CDC. National diabetes fact sheet: National estimates and general information on diabetes and prediabetes in the United States, 2011. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2011. Available at <http://www.cdc.gov/diabetes/pubs/factsheet11.htm>.  
Zhang, X, Bullard, KM, Cotch, MF, et al. Association between depression and functional vision loss in persons 20 years of age or older in the United States, NHANES 2005–2008. *JAMA Ophthalmol.* 2013; 131(5): 573–81. Doi: 10.1001/jama.ophthalmol.2013.2597. Available at <http://archophth.jamanetwork.com/mobile/article.aspx?articleid=1660943>.



# Eye Exams

Annual comprehensive vision evaluations with a dilated retinal examination:

- Educate high-risk patients on how to care for and monitor their eye health.
- Prevent low-risk patients from becoming high-risk.



# Key Questions to Ask Your Patients About Eye Health

**Patients should be referred to an optometrist if the answers to these questions are “no” or “unsure”:**

- Do you get a full eye exam with dilated pupils at least once a year?
- Do you know how diabetes can affect your eyes?
- Do you know what to do if you have vision changes?



## Example: PPOD in Action

- A 45-year-old African American woman brings her mother for her annual comprehensive diabetes eye exam.
- The eye care provider asks if she has ever considered that she, too, is at risk for developing type 2 diabetes.
- The provider gives the woman *NDEP's Am I At Risk?* brochure and points out the NDEP website and toll-free number for more information and resources.
- The provider suggests the woman make a follow-up appointment with her own primary care provider.



# Oral Health and Diabetes

- 85% of patients with type 2 diabetes report that they have received no information on the association between diabetes and oral health.
- Periodontal disease has been associated with poor glycemic control.
- Tobacco use and poor nutrition are risk factors for compromised oral health.



## Oral Health Exams

- Encourage regular (annual or more frequent) oral examinations.
- Educate patients about:
  - The link between diabetes and oral health.
  - Self-management skills to properly care for teeth.
- Prevent low-risk patients from becoming high-risk.



# Key Questions to Ask Your Patients About Oral Health

**Patients should be referred to a dentist if the answers to these questions are “no” or “unsure”:**

- Do you visit your dental provider at least once a year for a full mouth exam?
- Do you know how diabetes can affect your teeth and gums?
- Do you know the early signs of tooth, mouth, and gum problems?



## Example: PPOD in Action



- A dental patient is scheduled for a procedure, but she doesn't understand how to manage the timing of her insulin injections.
- The dentist arranges a pharmacy consultation for the patient.
- The patient and pharmacist develop an individualized medication schedule together.





# PPOD Resources for Consumers

- Created a general diabetes PPOD fact sheet for patients.
- Pilot tested with patients.
- Reviewed content for health literacy.
- Developed four new fact sheets—one for each PPOD specialty area:

Healthy Teeth Matter

Healthy Feet Matter

Healthy Eyes Matter

All Medicines Matter

<https://www.cdc.gov/diabetes/ndep/toolkits/ppod.html>



**Diabetes Head to Toe Checklist Examination Report**  
Your organization's name here \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_

**Patient Information:**  
Name: \_\_\_\_\_ DOB: \_\_\_\_\_  
Diabetes:  Type 1  Type 2  Gestational  Prediabetes **HbA1c Goal:**  < 6 months  > 6 months  Unknown

**Duration of Diabetes (in years):** \_\_\_\_\_ **Current Diabetes Therapy:**  Insulin  Oral Hypoglycemic  Diet Control  None  
Results of Last Finger-stick blood glucose reading (per patient):  N/A  Patient reports under control  Yes  No  
Dietary Counseling:  Yes  No  Type of diet: \_\_\_\_\_

<b>MEDICINES</b>	<b>Date:</b> _____ Patient has a written med list <input type="checkbox"/> Yes <input type="checkbox"/> No OTC Meds Used (if none) <input type="checkbox"/> <input type="checkbox"/> No Herbal Meds Used (if none) <input type="checkbox"/> <input type="checkbox"/> No Pharmacist reviewed med(s) date: _____ Patient has Rx for (provide reason if not) Aspirin <input type="checkbox"/> Yes <input type="checkbox"/> No Cholesterol med <input type="checkbox"/> Yes <input type="checkbox"/> No ACE inh or ARB <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Reports Side Effects to Meds?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe _____ Reports hypoglycemia event? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe _____ Does patient know their current: A1C? <input type="checkbox"/> Yes <input type="checkbox"/> No Goal A1C <input type="checkbox"/> Yes <input type="checkbox"/> No LDL? <input type="checkbox"/> Yes <input type="checkbox"/> No Goal LDL? <input type="checkbox"/> Yes <input type="checkbox"/> No BP? <input type="checkbox"/> Yes <input type="checkbox"/> No Goal BP? <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Home Glucose Monitoring Frequency:</b> <input type="checkbox"/> once daily <input type="checkbox"/> twice daily <input type="checkbox"/> 3-4 times daily <input type="checkbox"/> Other: _____ If on insulin, list current dose: _____ List dosing time: _____
	<b>Date:</b> _____ Risk factors in addition to diabetes: Smoking status (circle all that apply) Never _____ Former _____ Current _____ Writing To Out _____ Assessments: (w/ date for all) Urine albumin to creatinine ratio: _____ Serum creatinine and estimated GFR: _____ Potassium _____ Hemoglobin _____	<b>History of myocardial infarction, heart failure or stroke:</b> Heart or brain testing (e.g. stress test, echo, angiogram, CT scan, ultrasound, MRI): _____ History of dialysis or kidney transplant: _____ Kidney tests (ultrasound, CT scan, Angiogram): _____	
<b>HOOT/HEALTHY/SAFE/FEET</b>	<b>Date:</b> _____ Current ulcer or history of a foot ulcer? <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Foot Exam: Skin, Hair, and Nail Condition:</b> Is the skin thin, fragile, shiny and hairless? <input type="checkbox"/> Yes <input type="checkbox"/> No Are the nails thick, too long, ingrown, or infected with fungal disease? <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Warts/Moles/Skin Lesions:</b> Warts <input type="checkbox"/> Molluscum <input type="checkbox"/> Dermatitis <input type="checkbox"/> Toxodermites <input type="checkbox"/> Bunions (Hallux Valgus) <input type="checkbox"/> Charcot foot <input type="checkbox"/> Foot drop <input type="checkbox"/> Prominent Metatarsal Heads	<b>Pedal Pulses:</b> "P" for present or "A" for absent Pulse: Right Left, Right Dorsalis pedis Left, Right _____ <b>Risk Categorization:</b> check appropriate box. <input type="checkbox"/> Low Risk Patient All of the following: <input type="checkbox"/> Intact protective sensation <input type="checkbox"/> High Risk Patient <input type="checkbox"/> Pedal pulses present <input type="checkbox"/> Absent pedal pulses <input type="checkbox"/> Intact protective sensation <input type="checkbox"/> Loss of protective sensation <input type="checkbox"/> No prior foot ulcer <input type="checkbox"/> Foot deformity <input type="checkbox"/> No amputation <input type="checkbox"/> History of foot ulcer <input type="checkbox"/> Prior amputation	
	<b>Date:</b> _____ <b>Visual Acuity (best corrected):</b> Right: _____ Left: _____ <b>Intraocular Pressure:</b> Right: _____ Left: _____ <input type="checkbox"/> Dilated Fundus Exam Performed Diagnosis: _____ No Diabetic retinopathy? <input type="checkbox"/> Yes <input type="checkbox"/> No Non-proliferative Diabetic Retinopathy? <input type="checkbox"/> Yes <input type="checkbox"/> No Proliferative Diabetic Retinopathy? <input type="checkbox"/> Yes <input type="checkbox"/> No Clinically Significant Macular Edema? <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Plan:</b> <input type="checkbox"/> Monitor Only <input type="checkbox"/> Repeat Dilated Exam in _____ months <input type="checkbox"/> Additional Testing/Treatment Recommended	
<b>EYES</b>	<b>Date:</b> _____ <b>Examination Findings:</b> Intraoral/Extraoral: _____ Xeroderma _____ Parodontal Health (abscesses, gingivitis, periodontitis): _____ Fungal Infection: _____ Functional testing, swelling, and concerns: _____ Parotid gland changes: _____ Additional Testing/Treatment Recommended: _____ Refer to Specialist: _____	<b>Re-evaluate in:</b> _____ months	
	<b>MONTH</b>	<b>Re-evaluate in:</b> _____ months Patient education/discussion <input type="checkbox"/> Information pamphlet given <input type="checkbox"/>	



# PPOD Multidisciplinary Patient Care Checklist

- Promotes increased collaboration among all members of the health care team.
- Documents key exam measures for sharing with providers and patients.

During pilot test of checklist, 74.3% of providers stated they were likely to change their practice to more of a team approach.

**Diabetes Head to Toe Checklist Examination Report**  
Your organization's name here

<b>From:</b> _____		<b>To:</b> _____	
<b>Patient Information:</b>			
<b>Name:</b> _____		<b>DOB:</b> _____	
<b>Diabetes:</b> <input type="checkbox"/> Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Gestational <input type="checkbox"/> Prediabetes		<b>HbA1c Goal:</b> _____ <input type="checkbox"/> < 6 months <input type="checkbox"/> >= 6 months <input type="checkbox"/> Unknown	
<b>Duration of Diabetes (in years):</b> _____		<b>Current Diabetes Therapy:</b> <input type="checkbox"/> Insulin <input type="checkbox"/> Oral Hypoglycemic <input type="checkbox"/> Diet Control <input type="checkbox"/> None	
Results of Last Finger-stick blood glucose reading (per patient): _____ Patient reports under control <input type="checkbox"/> Yes <input type="checkbox"/> No			
Dietary Counseling <input type="checkbox"/> Yes <input type="checkbox"/> No Type of Diet: _____			
<b>MEDICINES</b>	<b>Date:</b> _____ Patient has a written med list <input type="checkbox"/> Yes <input type="checkbox"/> No OTC Meds Used: (if none: <input type="checkbox"/> ) Herbal Meds Used: (if none: <input type="checkbox"/> Pharmacist reviewed meds on (date): _____ Patient has Rx for: (provide reason if "no") Aspirin <input type="checkbox"/> Yes <input type="checkbox"/> No Cholesterol med <input type="checkbox"/> Yes <input type="checkbox"/> No ACE Inh or ARB <input type="checkbox"/> Yes <input type="checkbox"/> No	Reports Side Effects to Meds <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: Reports hypoglycemia events? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: Does patient know their current: A1c? <input type="checkbox"/> Yes <input type="checkbox"/> No Goal A1c? <input type="checkbox"/> Yes <input type="checkbox"/> No LDL? <input type="checkbox"/> Yes <input type="checkbox"/> No Goal LDL? <input type="checkbox"/> Yes <input type="checkbox"/> No BP? <input type="checkbox"/> Yes <input type="checkbox"/> No Goal BP? <input type="checkbox"/> Yes <input type="checkbox"/> No	Home Glucose Monitoring Frequency: <input type="checkbox"/> once daily <input type="checkbox"/> twice daily <input type="checkbox"/> 3-4 times daily <input type="checkbox"/> Other: _____ If on insulin, list current dose: List dosing times: _____
	<b>Date:</b> _____ Risk factors in addition to diabetes: (give dates for all) Blood Pressure: Goal: _____ Measured: _____ Total, LDL, and HDL cholesterol, triglycerides: (LDL goal and measured values for all)	Smoking status: (circle all that apply) Never Former Current Willing To Quit Assessments: (give dates for all) Urine albumin-to-creatinine ratio: _____ Serum creatinine and estimated GFR: _____ Potassium: _____ Hemoglobin: _____	History of myocardial infarction, heart failure, or stroke: _____ Heart or brain testing (e.g. stress test, echo, angiogram, CT scan, ultrasound, MRI): _____ History of dialysis or kidney transplant: Kidney tests (ultrasound, CT Scan, Angiogram): _____
<b>FEET</b>	<b>Date:</b> _____ Current ulcer or history of a foot ulcer? <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Foot Exam: Skin, Hair, and Nail Condition</b> Is the skin thin, fragile, shiny and hairless? <input type="checkbox"/> Yes <input type="checkbox"/> No Are the nails thick, too long, ingrown, or infected with fungal disease? <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Pedal Pulses - "P"</b> for present or "A" for absent Posterior tibial Left: _____ Right: _____ Dorsalis pedis Left: _____ Right: _____ <b>Risk Categorization</b> check appropriate box. <b>Low Risk Patient</b> <input type="checkbox"/> <b>High Risk Patient</b> <input type="checkbox"/> All of the following: <input type="checkbox"/> One or more of the following: <input type="checkbox"/> Intact protective sensation <input type="checkbox"/> Loss of protective sensation <input type="checkbox"/> Pedal pulses present <input type="checkbox"/> Absent pedal pulses <input type="checkbox"/> No deformity <input type="checkbox"/> Foot deformity <input type="checkbox"/> No prior foot ulcer <input type="checkbox"/> History of foot ulcer <input type="checkbox"/> No amputation <input type="checkbox"/> Prior amputation	
	<b>Note Musculoskeletal Deformities</b> <input type="checkbox"/> Toe deformities <input type="checkbox"/> Bunions (Hallus Valgus) <input type="checkbox"/> Charcot foot <input type="checkbox"/> Foot drop <input type="checkbox"/> Prominent Metatarsal Heads		
<b>EYES</b>	<b>Date:</b> _____ <b>Visual Acuity (best corrected)</b> Right: _____ Left: _____ Intraocular Pressure Right: _____ Left: _____ <input type="checkbox"/> Dilated Fundus Exam Performed	Plan: <input type="checkbox"/> Monitor Only <input type="checkbox"/> Repeat Dilated Exam in _____ months <input type="checkbox"/> Additional Testing/Treatment Recommended:	
	Diagnosis: No Diabetic Retinopathy <input type="checkbox"/> Yes <input type="checkbox"/> No Non-Proliferative Diabetic Retinopathy <input type="checkbox"/> Yes <input type="checkbox"/> No	Proliferative Diabetic Retinopathy <input type="checkbox"/> Yes <input type="checkbox"/> No Clinically Significant Macular Edema <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>MOUTH</b>	<b>Examination Findings</b>		
	Intraoral/Extraoral: Caries: Periodontal (health, abscesses, gingivitis, periodontitis): Functional (eating, swallowing, etc) concerns: Additional Testing/Treatment Recommended: Refer to Specialist: _____	Xerostomia: Fungal infection: Parotid gland changes: Re-evaluate in _____ month(s)	
<b>Management:</b>			
<input type="checkbox"/> Follow-up: _____ months		<input type="checkbox"/> Patient education/discussion	
<input type="checkbox"/> Referral To: _____		<input type="checkbox"/> Information pamphlet given	



# Practice True Multidisciplinary Team Care!

- **Collaborate** with other health care providers, including podiatrists, pharmacists, optometrists, and dentists, primary care physicians, nurse practitioners, diabetes educators, physician assistants, and community health workers AND audiologists.
- **Network** with local associations and local chapters of national associations.
- Consider creating a **local PPOD coalition** in your state or community.
- **Tailor and use PPOD materials** for patients in your practice and providers in your coalition.



**National Diabetes Education Program**

A program of the National Institutes of Health and the Centers for Disease Control and Prevention

# **So how do we start involving the audiology world?**