Diabetes Foot Care
It’ s Time for Preventive Action

Why focus on Prevention?

Because the consequences are devastating

- Pain
- Ulceration
- Amputation
- Death

Acknowledgement

- I would like to acknowledge that we are on the traditional lands, referred to as Treaty 6, Treaty 7 and Treaty 8 : the home of many Indigenous Peoples
  - Blackfoot, Cree, Dene, Saulteaux, Ojibwe, Stoney Nakota Sioux , T'suu Tina
  - Métis Nation of Alberta and the Métis Settlements
- All people here are beneficiaries of this peace and friendship treaty
- We respect the Treaties and acknowledge the harms and mistakes of the past
- We dedicate ourselves to move forward in partnership with Indigenous communities in a spirit of reconciliation and collaboration

Every 30 **seconds** a limb is lost!
Are you able to take **60 seconds**
to assess the foot of
a person with Diabetes

Objectives

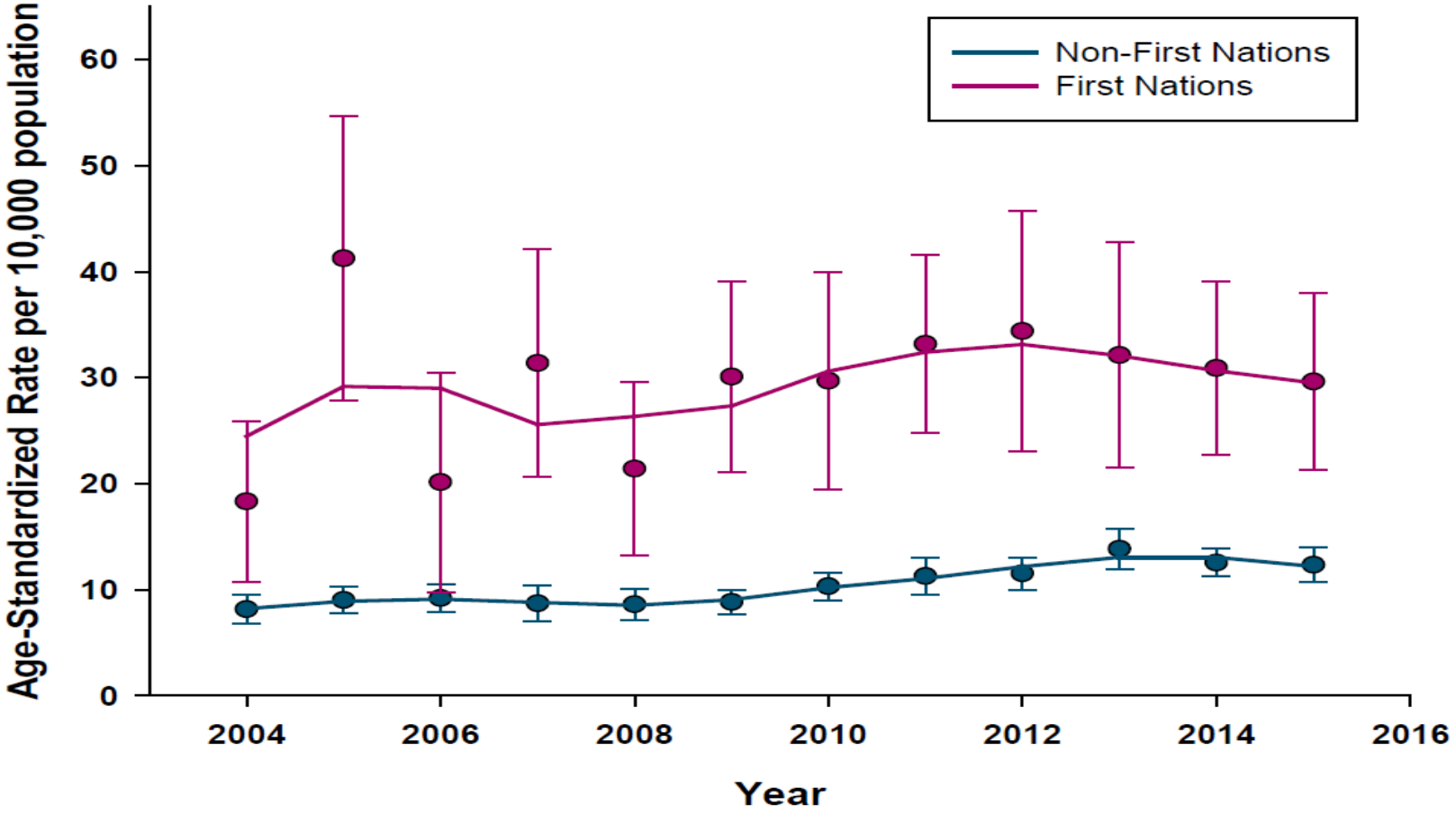
At the end of the session the learners will:

1. Review the impact diabetes has on the feet
2. Discuss the value of completing a foot screen
3. Work through a comprehensive foot screen using the Diabetes Foot Screening Tool
4. Identify level of risk for developing a diabetic foot ulcer from outcomes of the foot screen findings

What we know

- Diabetes is a chronic debilitating disease of epidemic proportions
- Approximately 11 million Canadians have diabetes
- Every three minutes another person is diagnosed
- Diabetes rates are 3–5 times higher in the indigenous population
- Diabetes reduces lifespan by 5–15 years
- Worldwide, every 30 sec, a limb is lost to diabetes
- Huge human and economic costs
- Foot ulceration affects an estimated 15%–25% of people with diabetes in their lifetime

Amputation Rates in Indigenous populations vs Non- Indeginous



A1C's don't tell the whole story

Prior Year	Hb A1C	Diabetic Foot Ulcers	Lower Limb Amputations
	<7%	34%	34%
	7.1%-8.5%	30%	27%
	8.6%-10.0%	18%	20%
	10.1%+	18%	19%
Year Of	**Hb A1C**	**Diabetic Foot Ulcers**	**Lower Limb Amputations**
	<7%	36%	40%
	7.1%-8.5%	31%	28%
	8.6%-10.0%	18%	18%
	10.1%	15%	14%

Diabetic Foot

A constellation of physical findings and medical complications in the foot, arising as a consequence of:

- Impaired sensation due to diabetic neuropathy
- Impaired blood supply due to concurrent peripheral vascular disease
- Impaired wound healing and secondary infections due to relative immunosuppression

Ulcers and Amputations

- People with diabetes have a 15% to 25% lifetime chance of developing a foot ulcer
- 50% to 70% recurrence rate – **Ulcer in remission**
- One third of diabetic foot ulcers result in some form of amputation
- Most amputations are preceded by a foot ulcer

85% of foot ulcers can be prevented by completing a foot screen and providing interventions to address the identified risk factors

Key elements to prevention

- Screen for foot complications
- Identify individuals at risk
- Identify patient risk factors
- Engage in timely and appropriate referrals
- Develop comprehensive care plans
- Measure change

The Evidence

Foot Screening

- a key component of multidisciplinary care
- is best practice however is the least utilized recommendation
- < 50% of all Canadian adults with diabetes report having had a screen in the past year
- of those screened a validated or standardized tool is not used

Making the Case for Foot Screening

- it is best practice and a vital component of overall diabetic care
- can prevent foot ulcers
- decreased incidence of LL and foot amputation
- easy to do
- falls within scope of practice
- improves outcomes
- no expensive equipment
- only takes about 60 seconds to complete

Use of a standardized tool supports

- a consistent approach to risk recognition
- provides a framework for care
- allows for comparison between assessments
- outcome measurement
- communication between sites of service
- potential data collection / trends

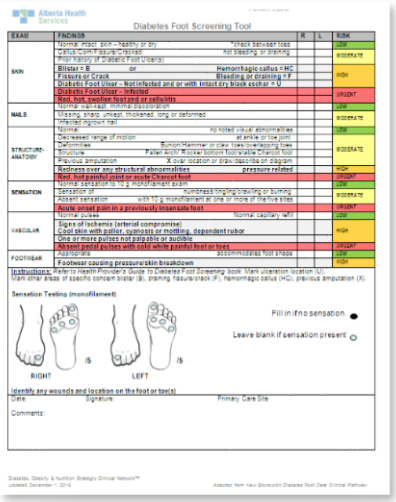
Alberta Solution

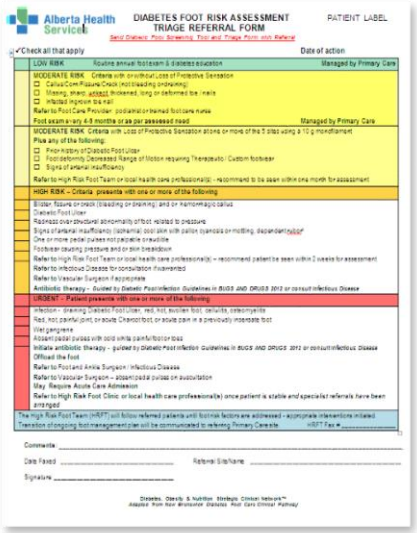
The DFCC Pathway

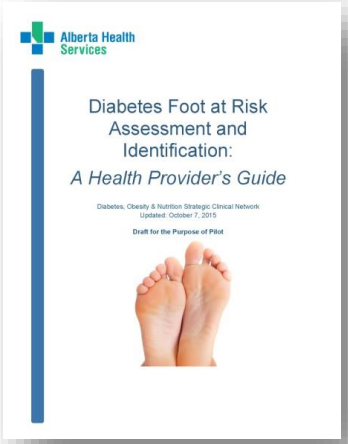
- includes a **foot screening tool**
  - identifies level of risk
  - patient centered risk factors for ulceration
- includes a **triage referral form**
  - identifies what interventions are needed based on the findings if the foot screen
- **patient resource materials**

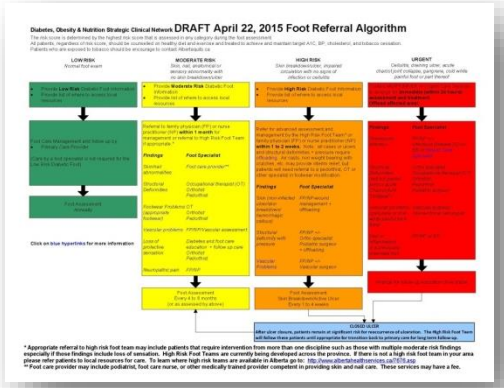
***** Development of High risk Foot Teams *****

Tools & resources: Diabetes foot care









Provider Resources:

- Diabetes Foot Risk Assessment Form
- Diabetes Foot Risk Assessment Triage Referral Form
- Diabetes Foot Referral Algorithm
- Health Provider's Guide Booklet

Patient Resource:

- Foot Care for People with Diabetes Booklet
- Single sheet handouts

The DFCC Pathway

- Prevention lens
- Standardizes practice
- Guides the foot screening assessment
- Identifies risks and level of risk
- Cues timely appropriate referrals
- Improves access to services
- Supports a collaborative environment and enhanced communication across sites of service

The Role of the HCP

- Appreciate the value of foot screening
- Develop your skill set
  - to perform a monofilament test
  - locate pedal pulses
  - identify s/s PAD
- Educate your patients
  - why screening is so important
  - how often is needs to be performed
  - come prepared to expose their feet

Screening Parameters

1. Skin
2. Nails
3. Structure of the foot
4. Sensation testing - LOPS
5. Vascular Assessment - PAD
6. Footwear

Alberta Health Services

Patient Label

Diabetes Foot Screening Tool

EXAM	FINDINGS		R	L	RISK
SKIN	Normal intact skin – healthy or dry	*check in between toes			LOW
	Callus/Corn/Fissure/Crack	not bleeding or draining			MODERATE
	Prior history of Diabetic Foot Ulcer(s)	ulcer in remission			
	Blister = B or	Hemorrhagic callus = HC			HIGH
	Fissure or Crack	Bleeding or draining = F			
	Diabetic Foot Ulcer – Not infected and/or	with intact dry black eschar = U			
	Infected Diabetic Foot Ulcer or wet gangrene				URGENT
NAILS	Normal well-kept with minimal discoloration				LOW
	Missing, sharp, unkept, thickened, long or deformed				MODERATE
	Infected ingrown nail				
STRUCTURE ANATOMY	Normal	no noted visual abnormalities			LOW
	Decreased range of motion	at ankle or toe joint			MODERATE
	Deformities	Bunion/Hammer or claw toes/overlapping toes			
	Structure	Fallen Arch/ Rocker bottom foot/stable Charcot foot			
	Previous amputation	**X** over location or draw/describe on diagram			
	Redness over any structural deformities	pressure related			HIGH
	Red, hot painful joint or acute Charcot foot				URGENT
SENSATION Testing for LOPS	Normal sensation using 10 g monofilament at the 5 predetermined sites				LOW
	Sensation of numbness/tingling/throbbing/burning				MODERATE
	Absent or altered sensation at one or more of the five sites				
	Acute onset of pain in a previously insensate foot				URGENT
VASCULAR Testing for Arterial Compromise	Normal pulses	normal capillary refill			LOW
	Signs of Ischemia (PAD) Cool skin with pallor, cyanosis or mottling, and/or dependent rubor				HIGH
	One or more pulses not palpable or audible (Doppler)				
	Absent pedal pulses with cold white painful foot or toes				URGENT
FOOTWEAR	Appropriate accommodates foot shape				LOW
	Inadequate Footwear				MODERATE
	Inappropriate Footwear causing pressure/skin breakdown				HIGH

Instructions: *Refer to Health Provider's Guide to Diabetes Foot Screening*

Mark ulceration location (U). Mark other areas of specific concern: blister (B), draining fissure/crack (F), hemorrhagic callus (HC), and previous amputation (X).

Sensation Testing (monofilament)

RIGHT LEFT

Identify any wounds and location on the foot or toe(s)

Fill in if no sensation ●

Leave blank if sensation present ○

Date: _____ Signature: _____

Primary Care Site _____

Comments: _____

_____

Adapted from New Brunswick Diabetes Foot Care Clinical Pathway

DIABETES FOOT RISK ASSESSMENT
TRIAGE REFERRAL FORM

Patient Label

Send Diabetic Foot Screening Tool and Triage Form with Referral

✔Check all that apply

Date of Screening and Triage _____

LOW RISK Routine annual foot exam & diabetes education — **Managed by Primary Care**

MODERATE RISK Criteria - with or without Loss of Protective Sensation and any of the following

- ☐ Callus/Corn/Fissure/Crack -not bleeding or draining
- ☐ Inadequate foot care - missing, sharp, unkept, thickened, long or deformed toe nails
- ☐ Inadequate foot wear
- ☐ Infected ingrown toe nail
- ☐ Sensation of numbness/tingling/throbbing/burning

Refer to Foot Care Provider: podiatrist or trained foot care nurse — **Managed by Primary Care**

Foot exam every 4-6 months or as per assessed need

MODERATE RISK Criteria - Loss of Protective Sensation at one or more of 5 identifed sites **PLUS** any of the following

- ☐ Prior history of Diabetic Foot Ulcer (ulcer in remission) and or amputation
- ☐ Decreased range of motion at ankle or toe joint
- ☐ Foot Deformities
- ☐ Altered structure
- ☐ Inadequat foot wear requiring therapeutic/custom footwear — **Managed by High Risk Foot Team**

Refer to High Risk Foot Team or local health care professional - recommended patient be seen within **one month** of referral

HIGH RISK – Criteria presents with one or more of the following

- ☐ Blister, fissure or crack (bleeding or draining) and or hemorrhagic callus
- ☐ Diabetic Foot Ulcer
- ☐ Redness over structural deformity of the foot /toes related to pressure
- ☐ Signs of arterial insufficiency (PAD; ischemia) cool skin with pallor, cyanosis or mottling, dependent rubor
- ☐ One or more pedal pulses not palpable or audible
- ☐ Inappropriate footwear causing pressure and/or skin breakdown

Refer to High Risk Foot Team or local health care professional(s) – recommend patient be seen **within 2 weeks** of referral

Refer to Infectious Disease for consultation if warranted

Refer to Vascular Surgeon if appropriate

Antibiotic therapy - *Guided by Diabetic Foot Infection Guidelines in BUGS AND DRUGS 2012 or consult Infectious Disease*

URGENT - Patient presents with one or more of the following

- ☐ Infection - draining Diabetic Foot Ulcer and /or wet gangrene
- ☐ Red, hot, painful joint, or acute Charcot foot
- ☐ Acute onset of pain in a previously insensate foot
- ☐ Absent pedal pulses with cold white painful foot or toes

Primary Provider Initiates antibiotic therapy *guided by Diabetic Foot Infection Guidelines in BUGS AND DRUGS 2012 and/or consult Infectious Disease*

Offloads the affected foot

Refers to the appropriate health care provider based on the patient assessment findings ie Foot and Ankle Surgeon or Vascular Surgeon if absent pedal pulses on auscultation

May Require Acute Care Admission

***Refer to High Risk Foot Clinic** *once patient is stable* and specialist referrals have been arranged

The High Risk Foot Team will follow all referred patients until foot related risk factors have been addressed and appropriate interventions initiated. Transition of ongoing foot management plan will be communicated to referring Primary Care site.

Comments: _____

Date Faxed _____ Name of Referral Site _____

Signature & Discipline: _____

Diabetes Foot Care Referral Process Guidelines

Risk score: determined by the highest risk score that is assessed in any category during the foot screening
All patients, regardless of risk score, should be counselled on healthy diet and exercise and treated to achieve and maintain target A1C, BP, cholesterol, and tobacco cessation. Patients who are exposed to tobacco should be encourage to contact Albertaquits.ca

LOW RISK
Normal foot exam

- Provide **Low Risk** Information
- Inform where to access local resources

Foot Care Management and follow up by:
- Primary Care Provider

(Care by a foot specialist is not required for the Low Risk Diabetes Foot)

Foot Screen Assessment
Annually

MODERATE RISK
Skin, nail, anatomical or sensory abnormality with no skin breakdown/ulcer

- Provide **Moderate Risk** Informationon
- Inform where to access local resources

Referral to family physician (FP) or nurse practitioner (NP) **within 1 month** for management or referral to High Risk Foot Team* if appropriate

Findings	*Foot Specialist*
Skin/nail abnormalities	*Foot care provider***
Structural Deformities or Inadequate/ Inappropriate footwear	*Occupational therapist (OT) Orthotist Pedorthist*
Vascular concerns	*FP/NP/Vascular assessment*
Loss of protective sensation (LOPS)	*Diabetes and foot care education Orthotist Pedorthist*
Neuropathic pain	*FP/NP*

Foot Screen Assessment
Every 4 to 6 months
(or as assessed by above)

HIGH RISK
Skin breakdown/ulcer, impaired circulation with no signs of infection or cellulitis

- Provide **High Risk** Information
- Inform where to access local resources

Refer to a High Risk Foot Team* or local resources **within 1 to 2 weeks.** Note: all cases or ulcers and structural deformities + pressure require offloading. Air casts, non weight bearing with crutches, etc. may provide interim relief, but patients will need referral to a Orthotist, OT or other specialist in footwear modification.

Findings	*Foot Specialist*
Skin (non-infected ulcer/skin breakdown/ hemorrhagic callous)	*FP/NP-wound management + offloading*
Structural deformity with pressure	*FP/NP +/- Orthopedic specialist Podiatric physician + offloading*
Vascular Concerns	*FP/NP +/- Vascular surgeon*

Foot Screen Assessment
Every 1 to 4 weeks

URGENT
Cellulitis, draining ulcer, acute charcot joint collapse, gangrene, cold white painful foot or part thereof

Contact MD/FP/NP/ER or Urgent Care Services to arrange for **immediate (within 24 hours) assessment and treatment.**
Offload affected area

Findings	*Foot Specialist*
Skin/wound Infection	*FP/NP +/- Infectious Disease (ID) or ER or Wound Care specialist*
Structural Deformities (red hot painful joint or acute Charcot joint "collapse")	*Orthopedic specialist Occupational therapist (OT) Orthotist Pedorthist Podiatric physician*
Vascular concerns (gangrene or cold white painful foot/ toes)	*Vascular surgeon/ Interventional radiologist*
Pain or inflammation in a previously insensate foot	*FP/NP or ER*

Arrange for follow-up education once stable

CLOSED ULCER (Ulcer in Remission)
After ulcer closure, patients remain at significant risk for recurrence of ulceration. The High Risk Foot Team will follow these patients until appropriate for transition back to Primary Care for long term follow-up.

***Referral to a High Risk Foot Team may include interventions from several disciplines. If there is not a High Risk Foot Team in your area refer patients to local resources for care.**
**** Foot care provider may include podiatric physician, foot care nurse, or other medically trained provider competent in providing skin and nail care. These services may have a fee.**

SAM Autonomic

Clinical Assessment

- Dry scaly skin caused by lack of hydration
- Inspect between the toes (open areas fissures)
- Loss of hair growth
- Thickened toenails
- Fissure cracks –heel area
- Fungal nails

Skin

Findings

1. Normal intact
   - healthy or dry
2. Callus/corn/fissure /crack
   - No bleeding or draining
3. Prior Hx of DFU (ulcer in remission)
4. Blister (B) or Hemorrhagic Callus (HC)
5. Fissure or Crack
   - Bleeding or Draining
6. Diabetic Foot Ulcer
   - Not infected
   - May have intact dry eschar
7. Diabetic Foot Ulcer (U)
   - Infected
   - Dry gangrene

Level of Risk

1. **Low Risk** Managed in primary care

2-3 **Moderate Risk**

Managed by PCN c referrals to appropriate health care professional

* LOPS – HRFT

4-5-6 **High Risk** Managed by High Risk Foot Team

7. **Urgent** Acute / Urgent Care

SKIN

AUTONOMIC NEUROPATHY





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Wound Measuring Guide
Discard after single use
Use with Restore™ Wou
Hollister® Wound Drain
Patient Name
See other side for inch scale

Alberta Health Services

Patient Label

Diabetes Foot Screening Tool

EXAM	FINDINGS		R	L	RISK
SKIN	Normal intact skin – healthy or dry	*check in between toes			LOW
	Callus/Corn/Fissure/Crack	not bleeding or draining			MODERATE
	Prior history of Diabetic Foot Ulcer(s)	ulcer in remission			
	Blister = B or	Hemorrhagic callus = HC			HIGH
	Fissure or Crack	Bleeding or draining = F			
	Diabetic Foot Ulcer – Not infected and/or	with intact dry black eschar = U			
	Infected Diabetic Foot Ulcer or wet gangrene				*URGENT*
NAILS	Normal well-kept with minimal discoloration				LOW
	Missing, sharp, unkept, thickened, long or deformed				MODERATE
	Infected ingrown nail				
STRUCTURE ANATOMY	Normal	no noted visual abnormalities			LOW
	Decreased range of motion	at ankle or toe joint			MODERATE
	Deformities	Bunion/Hammer or claw toes/overlapping toes			
	Structure	Fallen Arch/ Rocker bottom foot/stable Charcot foot			
	Previous amputation	X over location or draw/describe on diagram			
	Redness over any structural deformities	pressure related			HIGH
	Red, hot painful joint or acute Charcot foot				*URGENT*
SENSATION Testing for LOPS	Normal sensation using 10 g monofilament at the 5 predetermined sites				LOW
	Sensation of numbness/tingling/throbbing/burning				MODERATE
	Absent or altered sensation at one or more of the five sites				
	Acute onset of pain in a previously insensate foot				*URGENT*
VASCULAR Testing for Arterial Compromise	Normal pulses	normal capillary refill			LOW
	Signs of Ischemia (PAD) Cool skin with pallor, cyanosis or mottling, and/or dependent rubor				HIGH
	One or more pulses not palpable or audible (Doppler)				
	Absent pedal pulses with cold white painful foot or toes				*URGENT*
FOOTWEAR	Appropriate accommodates foot shape				LOW
	Inadequate Footwear				MODERATE
	Inappropriate Footwear causing pressure/skin breakdown				HIGH

Instructions: *Refer to Health Provider's Guide to Diabetes Foot Screening*

Mark ulceration location (U). Mark other areas of specific concern: blister (B), draining fissure/crack (F), hemorrhagic callus (HC), and previous amputation (X).

Sensation Testing (monofilament)

RIGHT LEFT

Fill in if no sensation ●

Leave blank if sensation present ○

Identify any wounds and location on the foot or toe(s)

Date: _____ Signature: _____

Primary Care Site _____

Comments: _____

_____

Adapted from New Brunswick Diabetes Foot Care Clinical Pathway

Nails

Findings	Level of Risk
1. Normal well kept	1. Low
2. Missing /sharp/unkept thickened / long / deformed	2. **Moderate**
3. Infected / ingrown	3. **Moderate**

Nail Assessment:

- missing
- long
- thickened
- discolored
- sharp


SCIENCE PHOTO LIBRARY

SAM Motor

- Deformities
- Limited toe joint mobility
- Callus
- Claw toes
- Hammer toes
- Charcot
- Muscle weakness

Clinical Assessment

- Gait assessment
- Range of motion

Any deformity of the foot should be referred to a specialist (podiatrist/chiropodist) for further evaluation

STRUCTURE/ANATOMY General shape of the foot

Findings

1. Normal
2. Decreased ROM (ankle toe joint) * observe gait
3. Deformities
   - Bunion/Hammer or Claws toes Overlapping toes
4. Structure
   - Fallen arch /Rocker bottom/ Stable Charcot
5. Previous amputation
   - Place X over location
6. Redness over any structural deformity

Level of Risk

1	Low
2-5	**Moderate**
6	High

Structure - Hammer Toes

Claw Toes

Structure
Bunion & overlapping toes

Neuropathy – SAM

Sensory

Clinical

- Numbness
- Tingling
- Crawling
- Burning sensation

- Is there …….
  - Loss of Protective Sensation (LOPS)
  - New **pain** in an insensate foot

Detecting LOPS

Ability or Inability to feel Protective Sensation

Findings	Level of Risk
1. Normal sensation – Can sense / feel all testing sites	1. Low
2. Sensation of – Numbness – Tingling – Throbbing – Burning	2. Moderate / High
3. Acute onset of pain in a previous insensate foot	3. Urgent

Sensation

Monofilament Testing

- Semmes – Weinstein 5.07 monofilament (10gm)
- Loss of protective sensation = absent sensation at one or more sites
- 4-5 sites tested

Semmes-Weinstein Monofilament Testing

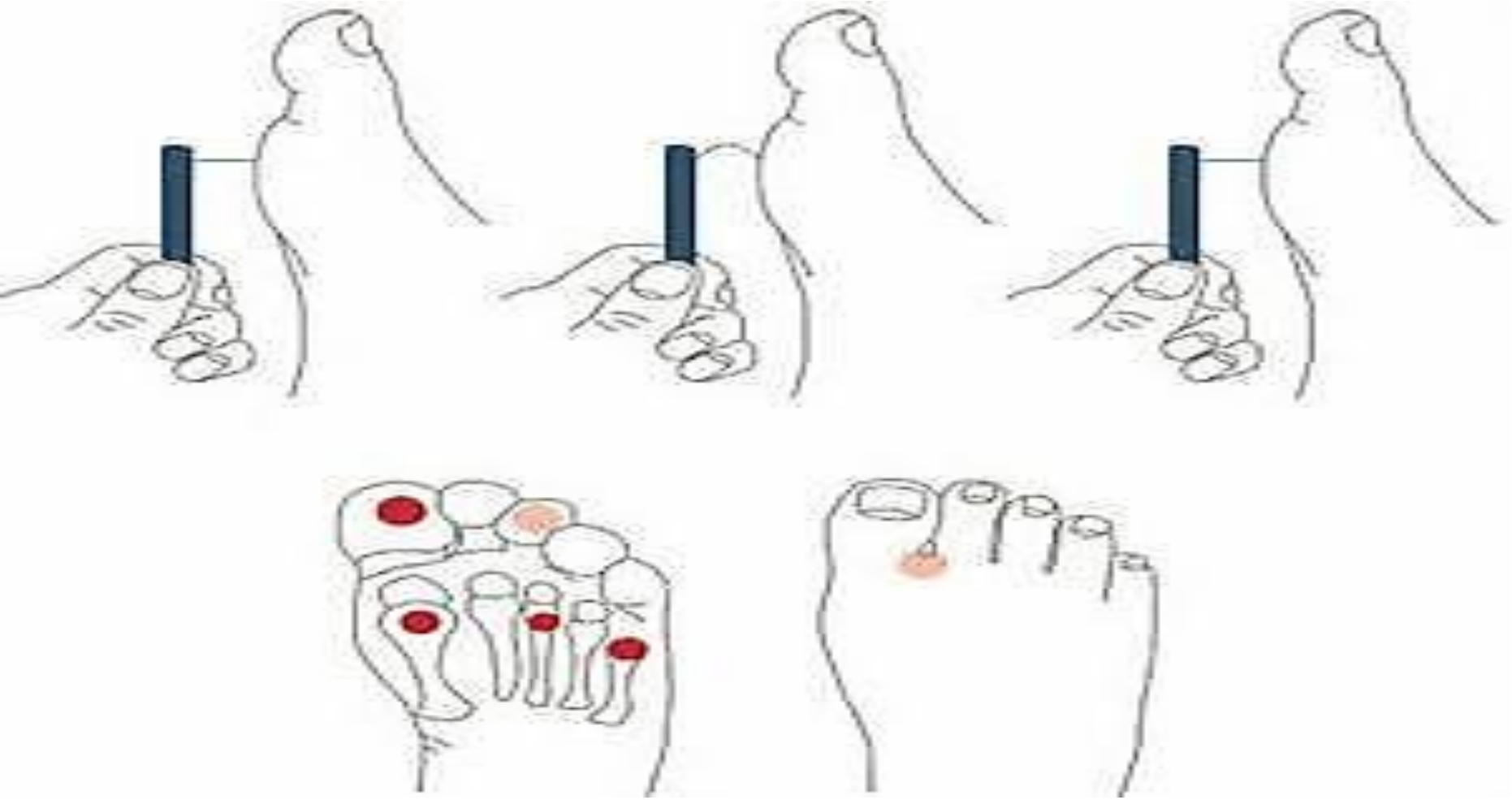
Prepare the person:

- ❑ show individual the monofilament
- ❑ place tip on arm
- ❑ close eyes

Procedure

- ❑ hold the monofilament perpendicular to the skin
- ❑ gently push the monofilament until it bends against the skin
- ❑ hold position for 1-3 seconds
- ❑ ask person to indicate when (and where) they feel the touch

Assessing the presence of protective sensation



Key Points

- Apply monofilament to intact skin
- Avoid calluses, ulcerated or scarred areas
- Do not use a rapid or tapping movement
- Sites
  - Dorsum - Great toe
  - Plantar - 4 sites

**Presence of LOPS

five times more likely to develop a foot ulcer

Vascular Peripheral Artery Disease PAD

Findings

1. Normal Pulses
2. Signs of Ischemia (PAD)
   - Cool skin
   - pallor cyanosis/mottling
   - dependent rubor

3. One or more pulses not palpable or audible (Doppler)

Level of Risk

1. **Low**
2. **High**
3. **High**

Footwear

- Foot injuries can occur from
  - constant or repetitive pressure from tight shoes over bony prominences
  - 55% of ulcers are attributed to pressure from footwear
  - foreign objects in the shoe
  - friction an shearing forces

Foot Wear

Findings

1. Appropriate
   - accommodates the foot shape
   - no pressure areas or blisters
   - no callus or corns
2. Inadequate
3. Inappropriate

Level of Risk

1. Low
2. Moderate
3. High

Footwear Assessment

Inadequate

- small / tight
- too loose
- worn out
- wear patterns
- corns callus

Reuire

***Off the shelf / orthotics**

Inappropriate footwear

- causing pressure
- skin breakdown e.g. blisters

***Require**

- **Orthotics**
- **Therapeutic**
- **Custom**

Pressure Redistribution

Air cast Walker

Healing Sandal

Custom Foot bed

Therapeutic shoes

Case Study

Mary

- Type II diabetes in good control
- 72 years old
- Sees her physician annually
- Has never had a foot screen

Mary's findings - Skin

- ✓ Dry
- ✓ Corns
- ✓ Callus under 5th met head
  - No DFU or HX of same

Alberta Health Services

Patient Label

Diabetes Foot Screening Tool

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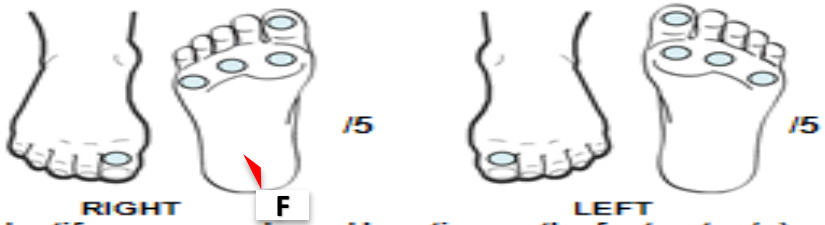

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Leave blank if sensation present ○

Identify any wounds and location on the foot or toe(s)

Date: _____ Signature: _____

Primary Care Site _____

Comments: _____

_____

Adapted from New Brunswick Diabetes Foot Care Clinical Pathway

Mary's Nails

Normal – No

Missing – No

✓ **sharp unkempt long deformed**

Ingrown – No

Infected ingrown – No

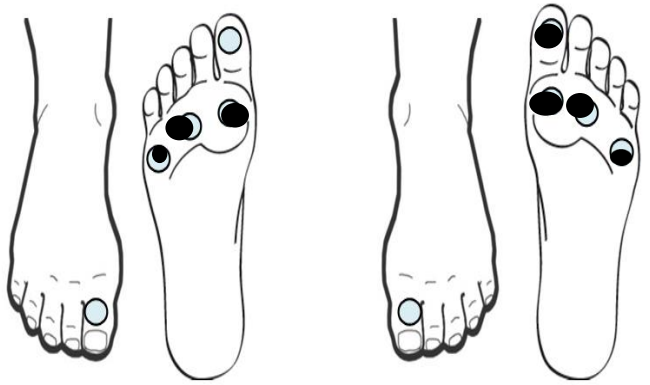
Moderate Risk

Mary's Foot Structure

- Normal – No
- ✓ Decreased Range of motion ankle or toe joints
- ✓ Deformities
  - ✓ Bunion, overlapping toes
- ✓ Redness over structure abnormality – bunion
- ▪ No Previous Amputation

Risk High

Mary's Findings: Sensation



Sensation Testing (monofilament)

Fill in if no sensation

Leave blank if sensation present

Rt – 3:5 Left 4:5

Level of Risk – Moderate

Alberta Health Services

Patient Label

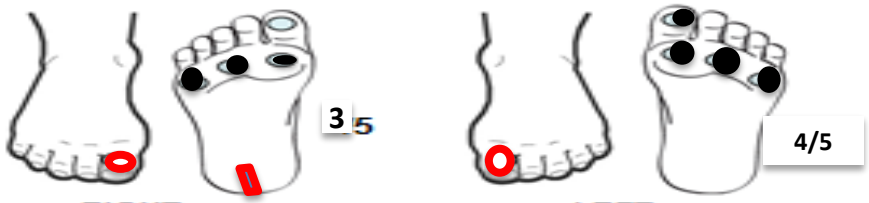
Diabetes Foot Screening Tool

EXAM	FINDINGS		R	L	RISK
SKIN	Normal intact skin – healthy or dry	*check in between toes			LOW
	Callus/Corn/Fissure/Crack	not bleeding or draining	X	X	MODERATE
	Prior history of Diabetic Foot Ulcer(s)	ulcer in remission			
	Blister = B or	Hemorrhagic callus = HC			HIGH
	Fissure or Crack	Bleeding or draining = F			
	Diabetic Foot Ulcer – Not infected and/or	with intact dry black eschar = U			
	Infected Diabetic Foot Ulcer or wet gangrene				URGENT
NAILS	Normal well-kept with minimal discoloration				LOW
	Missing, sharp, unkept, thickened, long or deformed		X	X	MODERATE
	Infected ingrown nail				
STRUCTURE ANATOMY	Normal	no noted visual abnormalities			LOW
	Decreased range of motion	at ankle or toe joint			MODERATE
	Deformities	Bunion/Hammer or claw toes/overlapping toes	X	X	
	Structure	Fallen Arch/ Rocker bottom foot/stable Charcot foot			
	Previous amputation	X over location or draw/describe on diagram			
	Redness over any structural deformities	pressure related	X		HIGH
	Red, hot painful joint or acute Charcot foot				URGENT
SENSATION Testing for LOPS	Normal sensation using 10 g monofilament at the 5 predetermined sites				LOW
	Sensation of numbness/tingling/throbbing/burning				MODERATE
	Absent or altered sensation at one or more of the five sites		X	X	
	Acute onset of pain in a previously insensate foot				URGENT
VASCULAR Testing for Arterial Compromise	Normal pulses	normal capillary refill			LOW
	Signs of Ischemia (PAD) Cool skin with pallor, cyanosis or mottling, and/or dependent rubor				HIGH
	One or more pulses not palpable or audible (Doppler)				
	Absent pedal pulses with cold white painful foot or toes				URGENT
FOOTWEAR	Appropriate accommodates foot shape				LOW
	Inadequate Footwear				MODERATE
	Inappropriate Footwear causing pressure/skin breakdown				HIGH

Instructions: *Refer to Health Provider's Guide to Diabetes Foot Screening*

Mark ulceration location (U). Mark other areas of specific concern: blister (B), draining fissure/crack (F), hemorrhagic callus (HC), and previous amputation (X).

Sensation Testing (monofilament)



RIGHT LEFT

Identify any wounds and location on the foot or toe(s)

Fill in if no sensation ●

Leave blank if sensation present ○

Date: _____ Signature: _____

Primary Care Site _____

Comments: _____

_____

Adapted from New Brunswick Diabetes Foot Care Clinical Pathway

Mary's Findings: Vascular

Pale cool foot
Pulses not palpable

Level of Risk – High

Mary's findings: Footwear

Are these shoes appropriate ?

✓ **Causing pressure areas**

Level of Risk – High

Alberta Health Services

Patient Label

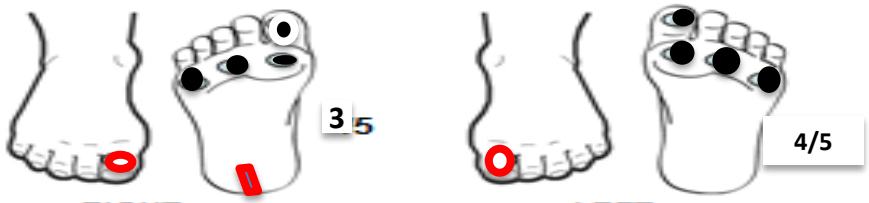
Diabetes Foot Screening Tool

EXAM	FINDINGS		R	L	RISK
SKIN	Normal intact skin – healthy or dry	*check in between toes			LOW
	Callus/Corn/Fissure/Crack	not bleeding or draining	X	X	MODERATE
	Prior history of Diabetic Foot Ulcer(s)	ulcer in remission			
	Blister = B or	Hemorrhagic callus = HC			HIGH
	Fissure or Crack	Bleeding or draining = F			
	Diabetic Foot Ulcer – Not infected and/or	with intact dry black eschar = U			
	Infected Diabetic Foot Ulcer or wet gangrene				URGENT
NAILS	Normal well-kept with minimal discoloration				LOW
	Missing, sharp, unkept, thickened, long or deformed		X	X	MODERATE
	Infected ingrown nail				
STRUCTURE ANATOMY	Normal	no noted visual abnormalities			LOW
	Decreased range of motion	at ankle or toe joint			MODERATE
	Deformities	Bunion/Hammer or claw toes/overlapping toes	X	X	
	Structure	Fallen Arch/ Rocker bottom foot/stable Charcot foot			
	Previous amputation	X over location or draw/describe on diagram			
	Redness over any structural deformities	pressure related	X		HIGH
	Red, hot painful joint or acute Charcot foot				URGENT
SENSATION Testing for LOPS	Normal sensation using 10 g monofilament at the 5 predetermined sites				LOW
	Sensation of numbness/tingling/throbbing/burning				MODERATE
	Absent or altered sensation at one or more of the five sites		X	X	
	Acute onset of pain in a previously insensate foot				URGENT
VASCULAR Testing for Arterial Compromise	Normal pulses	normal capillary refill			LOW
	Signs of Ischemia (PAD) Cool skin with pallor, cyanosis or mottling, and/or dependent rubor				HIGH
	One or more pulses not palpable or audible (Doppler)		X	X	
	Absent pedal pulses with cold white painful foot or toes				URGENT
FOOTWEAR	Appropriate accommodates foot shape				LOW
	Inadequate Footwear				MODERATE
	Inappropriate Footwear causing pressure/skin breakdown		X	X	HIGH

Instructions: *Refer to Health Provider's Guide to Diabetes Foot Screening*

Mark ulceration location (U). Mark other areas of specific concern: blister (B), draining fissure/crack (F), hemorrhagic callus (HC), and previous amputation (X).

Sensation Testing (monofilament)



RIGHT LEFT

Fill in if no sensation

Leave blank if sensation present

Identify any wounds and location on the foot or toe(s)

Date: _____ Signature: _____

Primary Care Site _____

Comments: _____

_____

Adapted from New Brunswick Diabetes Foot Care Clinical Pathway

DIABETES FOOT RISK ASSESSMENT
TRIAGE REFERRAL FORM

Patient Label

Send Diabetic Foot Screening Tool and Triage Form with Referral

✔Check all that apply

Date of Screening and Triage _____

LOW RISK Routine annual foot exam & diabetes education — **Managed by Primary Care**

MODERATE RISK Criteria - with or without Loss of Protective Sensation and any of the following

- ☐ Callus/Corn/Fissure/Crack -not bleeding or draining
- ☐ Inadequate foot care - missing, sharp, unkept, thickened, long or deformed toe nails
- ☐ Inadequate foot wear
- ☐ Infected ingrown toe nail
- ☐ Sensation of numbness/tingling/throbbing/burning

Refer to Foot Care Provider: podiatrist or trained foot care nurse — **Managed by Primary Care**

Foot exam every 4-6 months or as per assessed need

MODERATE RISK Criteria - Loss of Protective Sensation at one or more of 5 identifed sites **PLUS** any of the following

- ☐ Prior history of Diabetic Foot Ulcer (ulcer in remission) and or amputation
- ☐ Decreased range of motion at ankle or toe joint
- ☐ Foot Deformities
- ☐ Altered structure
- ☐ Inadequat foot wear requiring therapeutic/custom footwear

Managed by High Risk Foot Team

Refer to High Risk Foot Team or local health care professional - recommended patient be seen within **one month** of referral

HIGH RISK – Criteria presents with one or more of the following

- ☐ Blister, fissure or crack (bleeding or draining) and or hemorrhagic callus
- ☐ Diabetic Foot Ulcer
- ☐ Redness over structural deformity of the foot /toes related to pressure
- ☐ Signs of arterial insufficiency (PAD; ischemia) cool skin with pallor, cyanosis or mottling, dependent rubor
- ☐ One or more pedal pulses not palpable or audible
- ☐ Inappropriate footwear causing pressure and/or skin breakdown

Refer to High Risk Foot Team or local health care professional(s) – recommend patient be seen **within 2 weeks** of referral

Refer to Infectious Disease for consultation if warranted

Refer to Vascular Surgeon if appropriate

Antibiotic therapy - *Guided by Diabetic Foot Infection Guidelines in BUGS AND DRUGS 2012 or consult Infectious Disease*

URGENT - Patient presents with one or more of the following

- ☐ Infection - draining Diabetic Foot Ulcer and /or wet gangrene
- ☐ Red, hot, painful joint, or acute Charcot foot
- ☐ Acute onset of pain in a previously insensate foot
- ☐ Absent pedal pulses with cold white painful foot or toes

Primary Provider Initiates antibiotic therapy *guided by Diabetic Foot Infection Guidelines in BUGS AND DRUGS 2012 and/or consult Infectious Disease*

Offloads the affected foot

Refers to the appropriate health care provider based on the patient assessment findings ie Foot and Ankle Surgeon or Vascular Surgeon if absent pedal pulses on auscultation

May Require Acute Care Admission

***Refer to High Risk Foot Clinic** *once patient is stable* and specialist referrals have been arranged

The High Risk Foot Team will follow all referred patients until foot related risk factors have been addressed and appropriate interventions initiated. Transition of ongoing foot management plan will be communicated to referring Primary Care site.

Comments: _____

Date Faxed _____ Name of Referral Site _____

Signature & Discipline: _____

Interventions - Referrals

- Skin Care – urea based cream - PCN / Home Care
- Nail Care – Podiatrist vs nail care nurse
- Structure - Candidate for podiatric surgery?
- Sensation – LOPS present **
- Vascular compromise – PAD Candidate for vascular surgery
- Inadequate footwear - requires better shoes wide toe box with space for orthotics or
- she may require Custom shoes to accommodate her bunion and foot deformities – Orthotist

Education - local resource : PCN HC Diabetic Educator

- **self assessment of feet daily**
- **foot care / foot wear**
- **early reporting of changes**

Education & Communication

- Nurses are in a pivotal position to provide and reinforce health education
  - Patient education and reinforcement at each patient visit
  - Provide patient teaching material focused on level of risk identified by the foot screening
- A coordinated approach, communication and collaboration is needed as managing Diabetes involves many disciplines

PRACTICE PEARLS

- The “level of risk” and patient specific risk factors for ulceration can be identified by screening the foot
- Increased foot ulcer risk is associated with previous amputations, previous ulcers, peripheral vascular disease or neuropathy- LOPS
- Screening coupled with intervention planning supports comprehensive care planning

Developing Your Practice

- Become familiar with Diabetic Foot Best Practice Guidelines
  - AHS Wound Care Guidelines
  - RNAO
  - Wounds Canada
  - Diabetes Canada
- Translate the evidence into your practice
- Develop your skills
- Tailor interventions to local resources and cultural framework

Community

- It takes a team to support a person with diabetes
- Be mindful of traditional ways and cultures
- Develop relationships within and external
- Establish services
- Provide education, education materials
- Empower your patient

Patient Empowerment

- Need to understand and appreciate
  - their level of risk
  - their risk factors

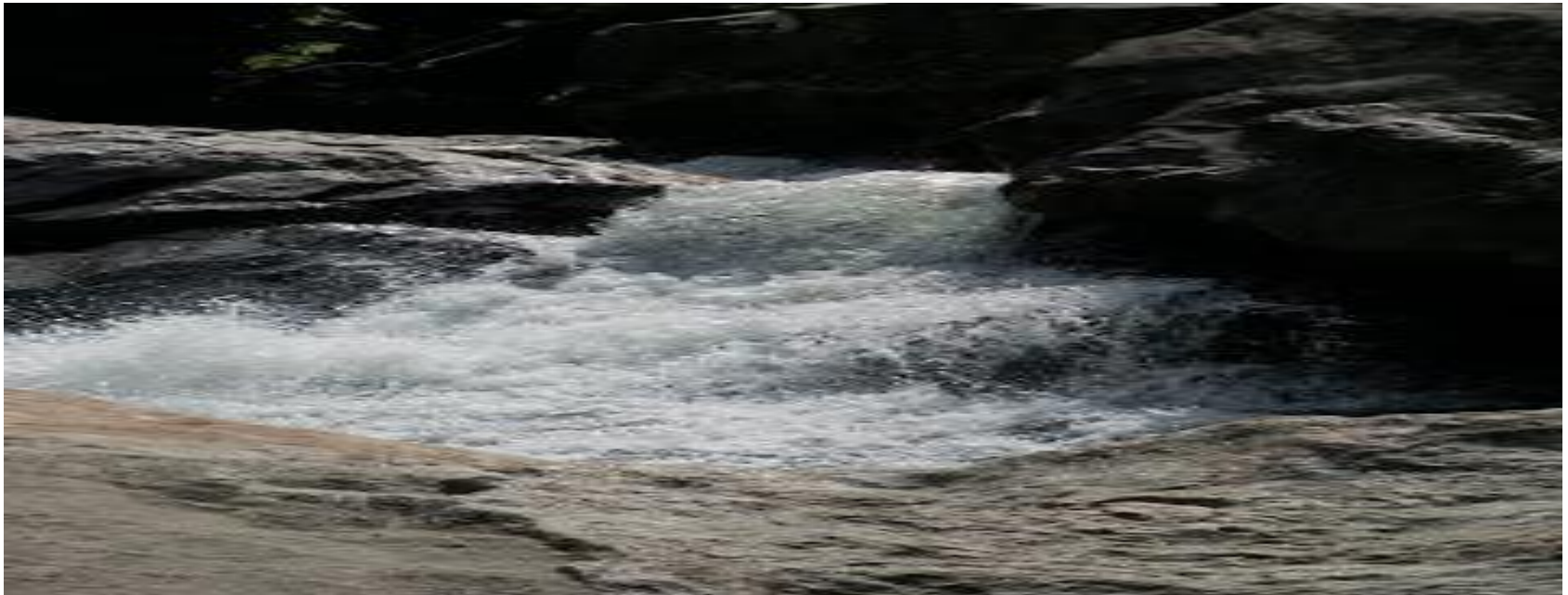
  to make informed decisions
- The importance of
  - wearing proper footwear / offloading devices when up and ambulating
  - wearing socks when wearing shoes
  - checking shoes before putting them on
  - checking their feet daily
- When to access medical care

Summary

- DFU's and amputations can be *prevented*
- DFCCP provides a comprehensive package:
  - supports a person centered as well as a team based approach
  - preventative model
- You can make a significant difference in the quality of life of persons with diabetes by including foot screening into your pract

Journey to Change

- balanced holistic approach from patient assessment, care planning to evaluating outcomes of care
- identify resources and delivery capacities
- support cross-cultural communication and collaboration between health care systems and agencies
- include an aboriginal healer on treatment teams when possible



Conclusions

- People with diabetes must be empowered to take responsibility for their foot health and deserve access to knowledgeable healthcare professionals
- As health care professionals become familiar with Best Practice guidelines and recommendations
- Move forward into action – translated those guidelines into your practice
- Start by incorporating regular diabetic foot screening using a standardized and if possible a validated tool

Resources

1. **Proper Shoe Fit:** https://www.woundscanada.ca/docman/public/diabetes-healthy-feet-and-you/780-proper-shoe-fit-english/file
2. **Wounds Canada**
   I. **https://www.woundscanada.ca/health-care-professional**
   II. **https://www.woundscanada.ca/docman/public/health-care-professional/bpr-workshop/560-bpr-prevention-and-management-of-diabetic-foot-ulcers/file**
3. **Diabetic Foot Canada e-Journal** **http://www.diabeticfootcanadajournal.ca**
4. **Diabetes Canada**
   I. **http://www.diabetes.ca/**
   II. **http://guidelines.diabetes.ca/healthcareprovidert tools**
5. **RNAO BP Guidelines**
   1. **Reducing Foot Complications for people with Diabetes**
   2. **RNO Best Practice Guidelines for Diabetic Foot Assessment and Management update 2016**
6. **Diabetes in Canada: Facts and figures from a public health perspective: http://www.phac-aspc.gc.ca/cd-mc/publications/diabetes-diabete/facts-figures-faits-chiffres-2011/highlights-saillants-eng.php#chp1**
7. **Canadian Diabetes Association www.diabetes.ca**
8. **Diabetes Obesity Nutrition Strategic Clinical Network http://www.albertahealthservices.ca/10321.asp**

Practice points

Background

- Indigenous people in any country are more likely than non-Indigenous people to be disadvantaged and marginalized, and have a higher incidence of chronic disease such as diabetes.

Risk factors for diabetic foot disease in Indigenous people

- In addition to biomedical risk factors, complex social and political factors such as geographical isolation, inferior infrastructure, educational and employment disadvantage, and both cultural and linguistic differences are all potential barriers to optimal healthcare for Indigenous people.
- Lower limb complications of diabetes, including peripheral neuropathy and peripheral artery disease, are more common in Indigenous people compared with non-Indigenous people.

Lower extremity amputations in Indigenous people with diabetes

- Foot ulceration and amputation are about two- to three-times more common, and occur at a younger age, in Indigenous people compared with non-Indigenous people.

Interventions for diabetic foot disease in Indigenous people

- Successful intervention strategies for managing diabetic foot disease in Indigenous people include: the use of evidence-based guidelines, risk stratification and screening, and the introduction of multidisciplinary teams that include Indigenous health workers.
- Despite the evidence for these strategies, their funding and implementation remains inadequate and the disparity in outcomes persist.

Thank you

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Diabetic Foot Care Clinical Pathway
Diabetes Obesity Nutrition Strategic Clinical Network

References

1. Population Health Agency Canada PHAC (2011). Diabetes in Canada: Facts and figures from a public health perspective. Retrieved February 4, 2012: http://www.phac-aspc.gc.ca/cd-mc/publications/diabetes-diabete/facts-figures-faits-chiffres-2011/highlights-saillants-eng.php#chp6
2. *Diabetes Canada – 2018 Guidelines* http://guidelines.diabetes.ca/?_ga=2.227381149.1442406565.1523456460-1702708969.1255533306

3. Wounds Canada Best Practice Recommendations for prevention and management of Diabetic Foot Ulcers: https://www.woundscanada.ca/docman/public/health-care-professional/bpr-workshop/895-wc-bpr-prevention-and-management-of-diabetic-foot-ulcers-1573r1e-final/file