



Diabetes Foot Screening and Risk Stratification Tool

New Zealand Society

NZSSD

for the Study of Diabetes

Welcome to the Diabetes Foot Screening and Risk Stratification Tool



This tool is based on the work of the Scottish Foot Action Group (SFAG). It has been adapted (with SFAG permission) by the New Zealand Society for Study of Diabetes (NZSSD) - Podiatry Special Interest Group (PodSIG) for use in the New Zealand context. It is intended to act as a national guide for developing integrated diabetes footcare pathways and to facilitate standardised access to care for people with diabetes related foot complications. The tool is in Word format to enable localisation with the addition of relevant contact details.

SFAG have used the validated Scottish Intercollegiate Guidelines Network (SIGN) risk stratification system. It includes the five criteria of neuropathy, pulses, previous ulceration or amputation, foot deformity and ability to self care. These areas are then combined and stratified into a low, moderate or high risk score. People with a high risk score have demonstrated an 86 fold increased risk of further ulceration and the moderate risk a 6 fold increased risk. Of particular significance was the low risk group which showed a 99.7% chance of remaining ulcer free over a 2.5 year period.[¹]

In the New Zealand version, Maori ethnicity has been included as a factor in the moderate and high risk category. The relative risk for diabetes related lower extremity amputation is 6 fold and for Maori women over the age of 65 years it is 10 fold.[²] Currently the diabetes related lower extremity amputation rates do not indicate the need for the inclusions of groups based on ethnicity.

End stage renal failure has also been included. There is a strong association between renal impairment and foot complications.[³] The rate of lower limb amputations for people with chronic kidney disease and diabetes is 10 times that of the population with diabetes alone.[⁴] People with end stage renal failure have a four fold risk of foot complications. Further compounding this problem is a low perception of foot risk among people on haemodialysis.[⁵]

Included as part of the tool is The Diabetes Foot Assessment and Risk Stratification Form. It has been developed to provide a promforma for the details required to adequately assess and triage foot risk level. The form follows the five criteria used in the stratification system. It is intended as a guide only and it is not expected that it would be implemented in its current format unless a **paper based** form is required. The information fields could be utilised in most Patient Management Systems (PMS) where the majority of the patient detail fields would automatically populate. It is recognised that many health care practitioners carrying out an assessment will not use a doppler for their vascular assessment but some will, hence the space was provided to record the details. The action plan section is to act as a prompt and in some PMS a referral would be automatically generated.

We hope you find the tool helpful.

NZSSD PodSIG

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1 Leese, G.P., et al., *Stratification of foot ulcer risk in patients with diabetes: a population-based study*. International Journal of Clinical Practice, 2006. 60(5): p. 541-545.

2 Ministry of Health, *Tatau Kahukura: Maori health chart book 2010, 2nd Edition*, 2010, Ministry of Health: .

3 Margolis, D.J., Hofstad, O., Feldman, H.I., Association between renal failure and foot ulcer or lower extremity amputation in patients with diabetes. *Diabetes Care*,31(7), 1331-1336

4 Eggers,P.W., Ghodes,D., Pugh,J. (1999) Non traumatic lower extremity amputations in Medicare end-stage renal disease population. *Kidney International*,56, 1524-1533

5 Yumang M J, et al., *Perceptions of risk for foot problems and foot care practices of patients on hemodialysis*. Nephrology Nursing Journal, 2009. 36(5): p. 509-516.

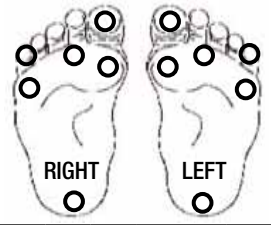
DIABETES FOOT SCREENING & RISK STRATIFICATION FORM Please fill in blank spaces, tick or circle applicable highlighted areas.

Date		Location		Date of last assessment	
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PATIENT DETAILS	Name			NHI	
	Address			DOB	
				AGE	
	Phone			Ethnicity	
	GP				
	Practice			Phone	

MEDICAL HISTORY					
Type	DM1	DM2	Duration		
Treatment	<input type="checkbox"/> Insulin	<input type="checkbox"/> OHAs	<input type="checkbox"/> Diet		
Latest HbA1c			When		
Random BGL			CVD Risk	%	
Renal	eGFR			Creatinine	
Smoker	yes	no	ABC Provided	yes	no

DIABETES FOOT SCREENING

NEUROLOGICAL TESTING	10g Monofilament Testing Sites		Loss of protective sensation (LOPS) if < 11 sites detected from both feet			
			/ 12 sites	LOPS	yes	no
			Painful neuropathy <small>(pain, paraesthesia, numbness, burning, sharp)</small>		yes	no
			Specify			
✓ Detected		✗ Not detected				

VASCULAR	RIGHT FOOT		LEFT FOOT			
	Palpable Dorsalis Pedis	yes	no	Palpable Dorsalis Pedis	yes	no
	Palpable Posterior Tibial	yes	no	Palpable Posterior Tibial	yes	no
	Previous Vascular Surgery	yes	no	When?		
	Intermittent Claudication	yes	no	Night or Rest Pain	yes	no
If yes (describe)						

RISK FACTORS	Previous diabetes amputation	yes	no	Previous ulceration	yes	no	
	Significant structural foot deformity	yes	no	End stage renal failure	yes	no	
	Significant callous / pre-ulcerative lesion	yes	no	Maori Ethnicity	yes	no	
	Foot care: patient is capable or has help to self-manage foot care	yes					no
	Others (specify)						

ACTIVE FOOT	Active Ulceration	yes	no	Suspected Charcot Foot (see desc.)	yes	no
	If yes, urgent referral to Multi-disciplinary or Hospital Foot Clinic. Urgent hospital admission for severe or spreading infection or critical limb ischaemia.					

RISK STRATIFICATION

LOW RISK FOOT
No risk factors present e.g. no loss of protective sensation absent or diminished pulses.

ACTION
Annual screening by a suitable trained nurse or health professional. Agreed self-management plan. Provide written and verbal education with emergency contact numbers. Appropriate access to podiatrist if required.

MODERATE FOOT
One risk factor present e.g. loss of sensation, absent or diminished pulses without callus or deformity.

ACTION
Annual risk assessment by a podiatrist. Agreed and customised management and treatment plan outlined by podiatrist according to patient's needs. Provide written and verbal education with emergency numbers.

HIGH RISK FOOT
Previous amputation or ulceration or two or more risk factors present e.g. loss of sensation, absent or diminished pulses, PAD, foot deformity with significant callous formation, pre-ulcerative lesions, end stage renal failure or Maori ethnicity.

ACTION
Annual assessment by podiatrist. Agreed and customised management and treatment plan by podiatrist according to patient's needs. Provide written and verbal education. Referral for specialist intervention if/when required

ACTIVE FOOT DISEASE
Presence of active ulceration, unexplained hot, red, swollen foot with or without the presence of pain (suspected Charcot foot), severe or spreading infection or critical limb ischaemia.

ACTION
Urgent referral to Multi-disciplinary or Hospital Foot Clinic for active ulceration and suspected Charcot foot. Urgent Hospital admission for severe or spreading infection or critical limb ischaemia. Provide written and verbal education with emergency contact numbers.

ACTION	Risk category	● <input type="checkbox"/> Active Foot Disease		● <input type="checkbox"/> High Risk Foot		● <input type="checkbox"/> Moderate Risk Foot		● <input type="checkbox"/> Low Risk Foot		
	<input type="checkbox"/> Patient informed of risk category	<input type="checkbox"/> Patient instructed on risk management			<input type="checkbox"/> Education pamphlets provided to patient					
	Currently attending:	<input type="checkbox"/> MDT/ Hospital Foot Clinic		<input type="checkbox"/> Community Podiatrist		<input type="checkbox"/> Private Podiatrist		<input type="checkbox"/> Patient self-cares		<input type="checkbox"/> Nil
	Refer to:	<input type="checkbox"/> Hospital Foot Clinic		<input type="checkbox"/> Community Podiatrist		<input type="checkbox"/> Diabetes Service		<input type="checkbox"/> Vascular Service		<input type="checkbox"/> District Nursing
	<input type="checkbox"/> Other	Specify								
	Additional comments									
Screened by				Designation			Clinic			

DIABETES FOOT SCREENING AND RISK STRATIFICATION



DEFINITIONS

Presence of active ulceration, unexplained hot, red, swollen foot with or without the presence of pain (suspected Charcot foot), severe or spreading infection, or critical limb ischaemia.

Previous amputation or ulceration or two or more risk factors present –e.g. loss of sensation, absent or diminished pulses, PAD, foot deformity with callus, pre-ulcerative lesions, end stage renal failure or Maori ethnicity.

One risk factor present – e.g. loss of sensation, absent or diminished pulses without callus or deformity.

No risk factors present - no loss of sensation or absent or diminished pulses.



ACTIONS

Urgent referral to the Multi-disciplinary or Hospital Foot Clinic for active ulceration or suspected Charcot foot. Urgent admission for severe or spreading infection or critical limb ischaemia. Provide written and verbal education with emergency contact numbers.

Annual assessment by a podiatrist. Agreed and customised management plan with a podiatrist according to patient needs. Provide written and verbal education with emergency contact numbers. Referral to specialist if required.

Annual risk assessment by a podiatrist. Agreed and customised management plan outlined by podiatrist according to patient needs. Provide written and verbal education with emergency contact numbers.

Annual screening by a trained Nurse or Health Professional. Agreed self-management plan. Provide written and verbal education with emergency contact numbers. Appropriate access to podiatrist if required.

REFERRAL PATHWAY FOR DIABETES FOOT SCREENING AND ASSESSMENT

● LOW RISK



- Protective sensation intact (10g pressure)
- One or more pulse present in each foot

● MODERATE RISK



- One risk factor present**
- Loss of protective sensation
 - Absent or diminished pulses
 - Foot deformity with callus
 - Pre-ulcerative lesion

● HIGH RISK



- Previous amputation
 - Previous ulceration
- Or two or more of the following:**
- Loss of protective sensation
 - Absent or diminished pulses
 - PAD
 - Charcot deformity
 - Foot deformity with callus
 - End stage renal failure
 - Maori ethnicity

● ACTIVE



- Active foot ulcer
- Spreading infection
- Critical Limb Ischaemia
- Gangrene
- Hot swollen foot with/without pain-possible active Charcot

Definition



- Optimise diabetes control
- Written and verbal foot health education as appropriate
- Agreed and tailored management/treatment plan according to patient needs



- Specialist intervention when appropriate
- Review of footwear with referral to orthotist if appropriate



- Urgent referral Multi-disciplinary or Hospital Foot Clinic
- Emergency admission if rapidly deteriorating or systemically unwell
- Urgent referral to vascular with acute ischaemia
- Agreed and tailored management plan according to patient needs
- Provide written and verbal education with emergency contact numbers

Action



- Annual foot screening by health professional
- Encourage self-management
- Footwear assessment



- Annual risk assessment by podiatrist
- Encourage self-management
- Footwear assessment



- Specialist intervention when appropriate
- Review of footwear with referral to orthotist if appropriate



- Urgent referral Multi-disciplinary or Hospital Foot Clinic
- Emergency admission if rapidly deteriorating or systemically unwell
- Urgent referral to vascular with acute ischaemia
- Agreed and tailored management plan according to patient needs
- Provide written and verbal education with emergency contact numbers



Refer only for problems requiring podiatry input



Refer to podiatry as appropriate



Refer to podiatry for assessment and management



Referral

Refer to Private Podiatry

Refer to Community Podiatry

Admit to Hospital

Refer to Multi-disciplinary or Hospital Foot Clinic

REFERRAL PATHWAY FOR ACTIVE DIABETIC FOOT DISEASE

RISK STATUS

Active Foot Disease

- Active foot ulcer
- Hot swollen foot with/ or without pain-suspected Charcot foot
- Severe or spreading infection
- Critical limb ischaemia
- If in doubt, refer or contact to discuss

High Risk

- Foot intact and stable
- Previous amputation
- Previous ulceration
- Referral to community podiatry service for ongoing management

REFERRAL PATHWAY

MULTIDISCIPLINARY/HOSPITAL FOOT CLINIC

MEDICAL ADMISSION

- Severe infection
- Rapid deterioration of ulcer
 - Deep abscess
 - Spreading cellulitis
 - Systemically unwell

Access to surgical team if required

If in doubt, seek advice from the Multi-disciplinary or Hospital Foot Clinic

URGENT VASCULAR REVIEW

- Acute / critical limb ischaemia
- Discolouration of toes/foot: pale, dusky, black
 - Signs of necrosis
 - Pain at rest, often at night

If in doubt, seek advice from the Multi-disciplinary or Hospital Foot Clinic

COMMUNITY PODIATRY SERVICE

MANAGEMENT

MULTI-DISCIPLINARY/HOSPITAL FOOT CLINIC

Postal Address:
Physical Address:
Tel:
Fax:

ALL PATIENTS WITH ACTIVE FOOT DISEASE

- Ongoing review by appropriately skilled and experienced podiatrist
- Information given about future foot care and how to access services in an emergency
- Refer to Orthotist for footwear if clinically required.
- Antibiotics as required
- Referral to vascular, orthopaedics, surgical or medical if clinically required

COMMUNITY PODIATRY

Postal Address:
Physical Address:
Tel:
Fax: