



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.

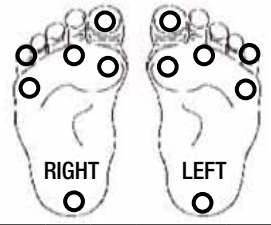
DIABETES FOOT SCREENING & RISK STRATIFICATION FORM Please fill in blank spaces, tick or circle applicable highlighted areas.

Date	Location	Date of last assessment
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PATIENT DETAILS	Name	NHI
	Address	DOB
	Phone	AGE
	GP	Ethnicity
	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 (pain, paraesthesia, numbness, burning, sharp)		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			
	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



ACTIVE

HIGH RISK

MODERATE RISK

LOW RISK



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



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



- 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 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



Admit to Hospital



Refer to Multi-disciplinary or Hospital Foot Clinic

Referral

Refer to Private Podiatry

Refer to Community Podiatry

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: