



# 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.[<sup>1</sup>]

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.[<sup>2</sup>] 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.[<sup>3</sup>] The rate of lower limb amputations for people with chronic kidney disease and diabetes is 10 times that of the population with diabetes alone.[<sup>4</sup>] 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.[<sup>5</sup>]

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.

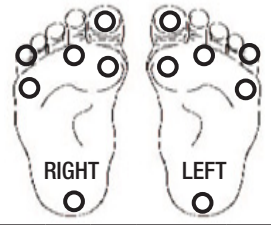
# DIABETES FOOT SCREENING & RISK STRATIFICATION FORM Please fill in blank spaces, tick or circle applicable highlighted areas.

|      |          |                         |
|------|----------|-------------------------|
| Date | Location | Date of last assessment |
|------|----------|-------------------------|

|                        |          |           |
|------------------------|----------|-----------|
| <b>PATIENT DETAILS</b> | 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

|                             |   |                |   |      |
|-----------------------------|---|----------------|---|------|
| <b>NEUROLOGICAL TESTING</b> | 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 |   |      |

|                   |                           |        |                           |        |
|-------------------|---------------------------|--------|---------------------------|--------|
| <b>VASCULAR</b>   | <b>RIGHT FOOT</b>         |        | <b>LEFT FOOT</b>          |        |
|                   | 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) |                           |        |                           |        |

|                     |  |        |                         |        |
|---------------------|--|--------|-------------------------|--------|
| <b>RISK FACTORS</b> | 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)   |        |                         |        |

|                    |  |        |                                    |        |
|--------------------|--|--------|------------------------------------|--------|
| <b>ACTIVE FOOT</b> | 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        |  |
|----------------------------|--|
| <b>LOW RISK FOOT</b>       | No risk factors present e.g. no loss of protective sensation or absent or diminished pulses.   |
| <b>ACTION</b>              | 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.   |
| <b>MODERATE FOOT</b>       | One risk factor present e.g. loss of sensation, absent or diminished pulses without callus or deformity.   |
| <b>ACTION</b>              | 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.  |
| <b>HIGH RISK FOOT</b>      | Previous amputation or ulceration or more than two 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.                     |
| <b>ACTION</b>              | 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   |
| <b>ACTIVE FOOT DISEASE</b> | 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.   |
| <b>ACTION</b>              | 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. |

|               |  |  |  |   |   |   |
|---------------|--|--|--|---|---|---|
| <b>ACTION</b> | <b>Risk category</b>                                       | <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 more than two 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.

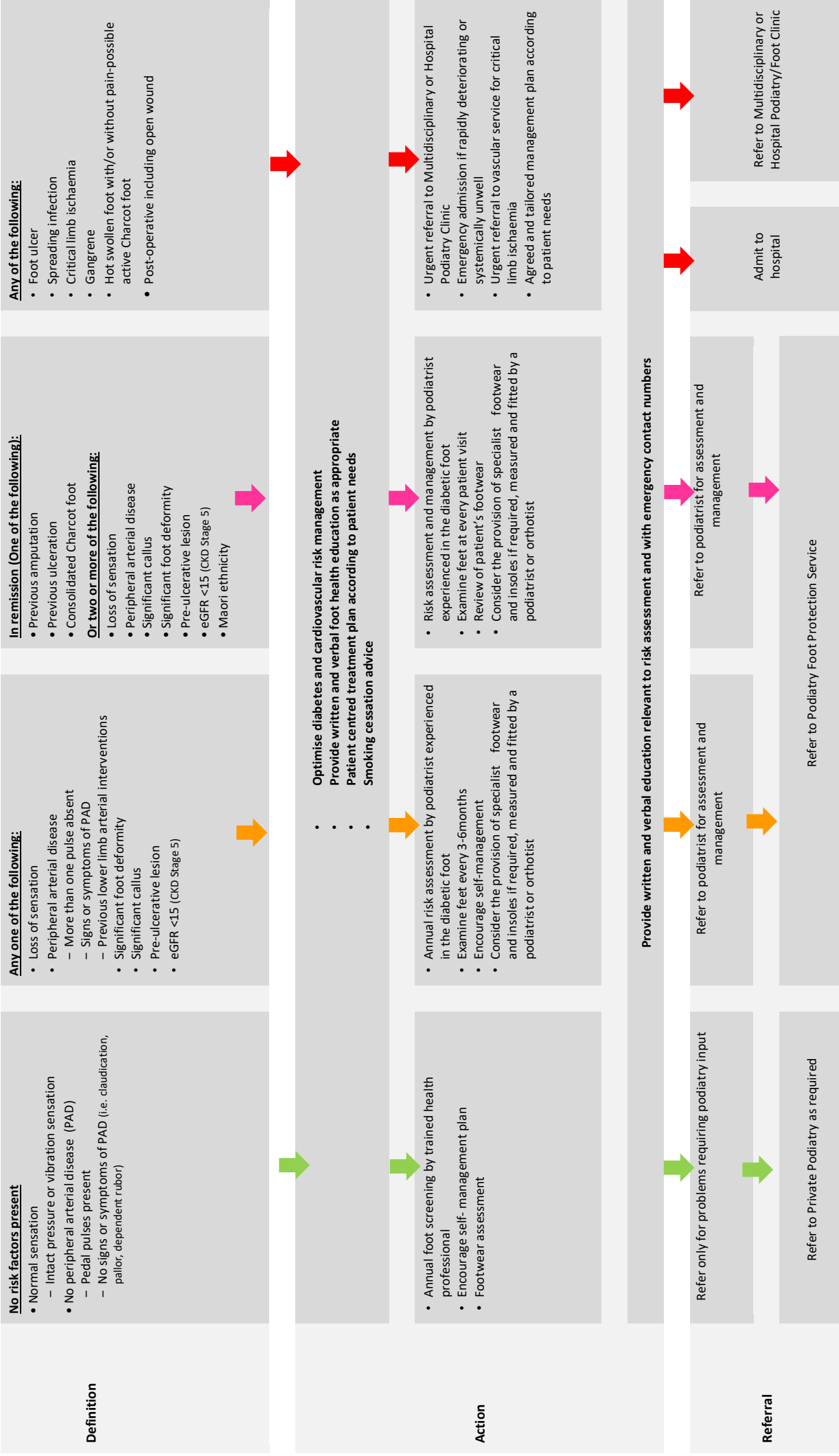
## REFERRAL PATHWAY FOR DIABETES FOOT SCREENING AND ASSESSMENT

**LOW RISK**

**MODERATE RISK**

**HIGH RISK**

**ACTIVE RISK**



# 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: