Diabetic foot screening: improving functionality for the future

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Diabetic foot screening and risk stratification is a proven way to determine the chance of an individual with diabetes has of developing a future foot ulcer that may lead to amputation.

Following the establishment of an individual's foot risk, a treatment/management plan should be implemented according to that risk which is outlined by the SDFAG Traffic Light system (October 2021; *Figure 1*).

All healthcare resources (especially personnel) need to be used efficiently and appropriately to ensure the delivery of a person-centred service protecting valuable podiatry resources to enable them to be targeted at individuals with the greatest risk, and this should be organised at a local level.

Current practice is that foot screening is undertaken annually by any healthcare professional (HCP)/worker with suitable training. Training to ensure capability and to ensure screening is carried out in a standardised and evidence-based fashion is available at *www.diabetesframe.org*.

It is expected and encouraged that those individuals in any risk category who are attending podiatry for a podiatric need are screened by the podiatrist as part of their treatment/management plan.

It is strongly advised that whoever carries out the screening that they use the SCI-Diabetes foot screening tool to record the foot screening as the SCI system self calculates the patient's risk. This allows the individual with diabetes to be informed of their risk immediately and counselled with verbal and written advice, and also allowing the HCP/worker to have immediate guidance as to the recommended action to direct appropriate care while automatically populating results into the annual Scottish Diabetes Survey.

Changes

The Scottish Diabetes Foot Action Group (SDFAG) believes that an evolving, evidence-based strategy for foot screening is required with the goal of delivering a more evidenced and person-centred service to enhance foot screening outcomes.

SUMMARY OF KEY CHANGES

1. Change Low risk foot screening to every 2 years in keeping with clinical evidence.
2. When an individual with diabetes transitions from Low risk to Moderate risk they should be referred to a podiatrist for assessment (which may be a one-off appointment) and be provided with an individual tailored care package if required, which would be agreed with the individual with diabetes, to reduce the risk of ulceration. If there is no podiatric need the continuation of annual foot screening can subsequently be undertaken by any HCP/worker.
3. Stop "screening" in individuals with diabetes deemed to be High Risk or In Remission (as risk does not become lower) and undertake regular "assessments"
4. All individuals with diabetes identified as In Remission or High Risk of developing a foot ulcer or associated problems that may lead to an amputation, should have regular review (annual as a minimum) and assessment and as such their duty of care will fall to podiatry services and themselves. This will ensure appropriate documented treatment/management plans are in place, according to individual needs, with ongoing referral to vascular, orthotics, multidisciplinary foot clinics etc. if required.

We have highlighted the areas in bold that summarise these progressive changes. It is worth noting that some of these changes have already occurred in certain Board areas across Scotland and have been viewed as positive steps to improving care models.

To this end, following wide consultation the SDFAG has introduced various changes to current practice:

1. After 2 years' follow-up, people with diabetes and low-risk feet have a 99.6% chance of being ulcer free (Leese et al, 2006) and only a 5% of changing their risk status to "moderate risk" (Heggie et al, 2020). **Foot screening for**

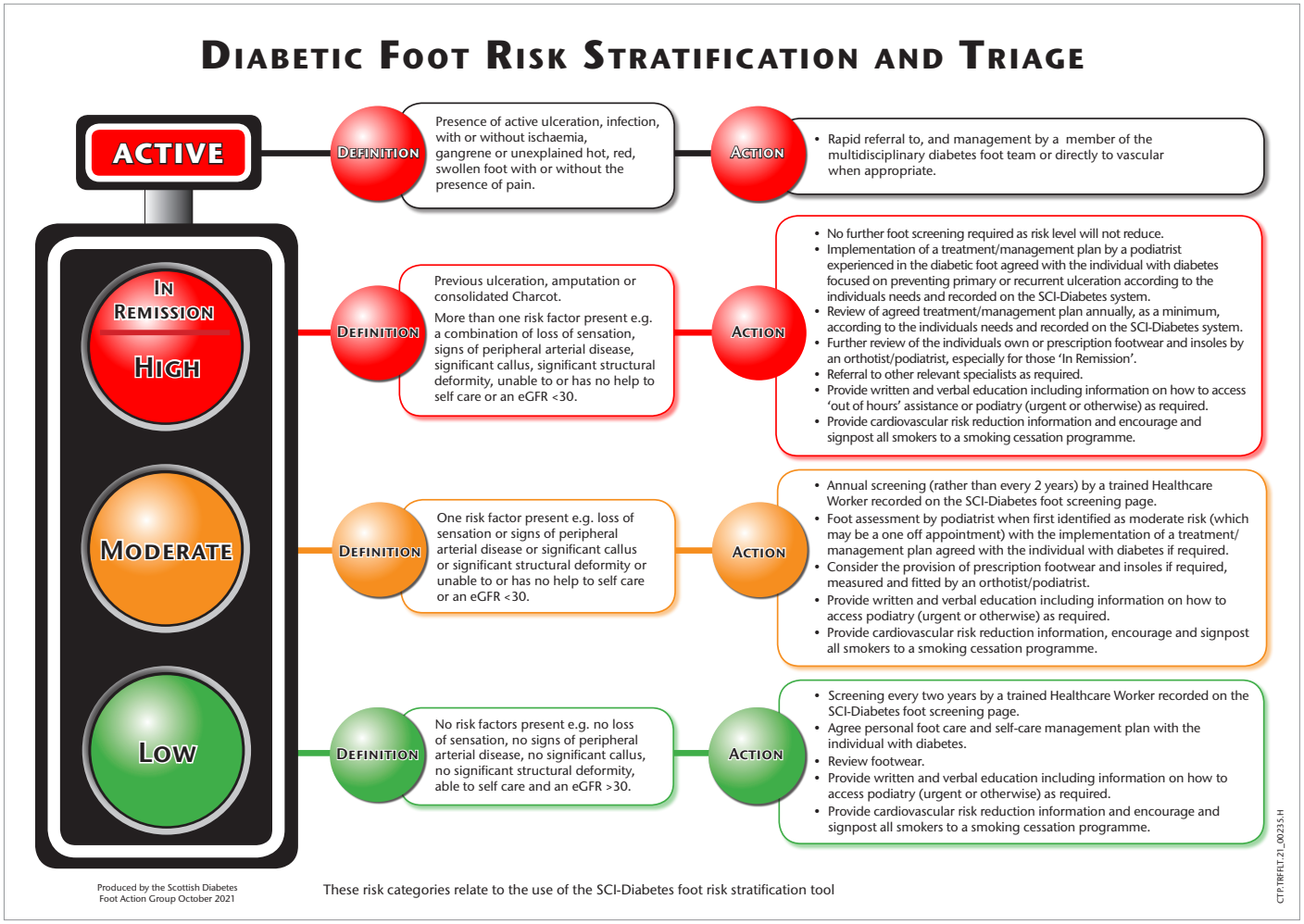

Figure 1. SDFAC Traffic Light system.

individuals deemed Low Risk is moved from every 1 year to every 2 years in line with evidence. This screening would be carried out opportunistically by any trained HCP/worker who is seeing the patient as happens currently.

2. **When the individual with diabetes foot risk transitions from Low Risk to Moderate Risk they should be referred to a podiatrist for assessment (which may be a one-off appointment) and be provided with an individual tailored care package if required, which would be agreed with the individual with diabetes, to reduce the risk of ulceration.** If there is no podiatric need annual screening can subsequently be undertaken by any HCP/worker.

If the cause for Moderate Risk is:

a) Loss of monofilament sensation: Education and assessment of footwear and insoles and other possible preventative interventions may be required. If so refer to podiatry and/or orthotics.
b) Pulses non palpable: encourage walking and smoking cessation. Address CV risk factors and consider vascular referral if rest pain.
c) Structural deformity such that the individual with diabetes is unable to use high street shoes: Refer to podiatry or orthotics for education, assessment of current footwear with the possible supply of insoles and prescription or bespoke footwear. If an intervention is prescribed follow up by podiatry/orthotics will be required. Orthopaedic input may also be helpful
d) Unable to self-care: individuals with diabetes who are unable to or have no help to self-care should be sign posted to healthcare providers/ worker to assist with foot care.

3. All individuals with diabetes deemed to be

High Risk/In Remission no longer require a foot screening as foot screening is to determine the risk an individual with diabetes has of developing a foot ulcer and they will never return to a lower-risk category. **The duty of care and management for all individuals with diabetes deemed to be High Risk/In Remission now fall to podiatry services.** The individual with diabetes will work in partnership with podiatry services to create a mutually agreed and documented treatment/management plan according to need, which will include education and advice regarding the importance of self-management, with the focus on preventing primary or recurrent ulceration. This treatment/management plan may also include ongoing referral to vascular, orthotics, multidisciplinary foot clinics, orthopaedics etc. where appropriate.

4. All Active foot disease, as currently recommended, will be managed within a multidisciplinary foot team or by a member of the multidisciplinary foot team where appropriate. No further foot screening required. When the individual with diabetes moves from Active foot disease to In Remission treatment/management the plan as above is activated.

All at risk and In Remission individuals being managed by Podiatry will have their treatment recorded on the newly developed Foot Surveillance Tool on the Scottish Care Information Diabetes system (SCI-Diabetes), to be released in September 2022.

This system will guide appropriate, evidence based treatment according to presenting risk factors and allow the recording of ongoing treatment and management with the recommendation of suitable interventions and the recording of outcomes.

Managing cardiovascular risk factors, such as smoking, blood pressure and lipid management is important for all individuals with diabetes (Young et al, 2008) but especially for those at higher risk. This is because individuals with diabetes with High Risk feet are nine times more likely to die due to their condition than to have an amputation (Vadiveloo et al, 2019).

These proposals have been approved following consultation with the Scottish Government, the Scottish Diabetes Group and Diabetes Scotland. Also crucially approval was sought and agreed from the Podiatry Managers Group for Scotland who agreed that the duty of care will fall to Podiatry services, and the individual with diabetes, for all individuals with diabetes of High Risk and above feet and a one-off assessment appointment for those transitioning from Low to Moderate Risk, currently around 6% annually of people with Low Risk feet. Currently, there are 300,000 people with diabetes in Scotland. Of these, 80% are Low Risk and 7% of these transition to Moderate Risk each year (n=15,000). Of all patients, 7% are High Risk/In Remission or Active ulcers (n=21,000) and 13% are Moderate Risk (n=39,000), but many of these will not need ongoing podiatric services.

Although these changes will streamline foot screening, putting an increased emphasis on the need for a much more preventative strategy, the long-term goal is that that Low Risk foot screening will be carried out with other aspects of screening such as retinal, blood pressure and urinalysis, which would make for a much more person-centred and efficient service.

These changes support the National Clinical Strategy ensuring that individuals are seen by the right person at the right time in the right place. The changes also support the priorities detailed in the Diabetes Improvement plan, in particular, preventative care and individual-centred care. ■

Heggie F, Chappell F, Crawford A et al (2020) Complication rate among people with diabetes at low risk of foot ulceration in Fife, UK: an analysis of routinely collected data. *Diabet Med* 37(12): 2116–23

Leese GP, Reid F, Green V et al (2006) Stratification of foot ulcer risk in patients with diabetes: a population based study. *Int J Clin Pract* 60(5): 541–5

Vadiveloo T, Jeffcoate W, Donnan PT et al (2018) Amputation-free survival in 17,353 people at high risk for foot ulceration in diabetes: a national observational study. *Diabetologia* 61(12): 2590–7

Young MJ, McCardle JE, Randall LE, Barclay JI (2008) Improved survival of diabetic foot ulcer patients 1995–2008: possible impact of aggressive cardiovascular risk management. *Diabetes Care* 31(11): 2143–7