A "Wight" approach to diabetic foot screening?

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Key words

- Diabetic foot ulcer
- Podiatrist-led screening service
- Screening

Article points

1. Early identification of patients at high risk of developing diabetic foot ulceration is of paramount importance.
2. The annual screening appointment is an opportunity to check not only neuropathy and vascular supply, but also other issues.
3. The Isle of Wight provides a podiatrist-led screening service and this is currently being reviewed to improve capacity.

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Early identification of patients at high risk of developing diabetic foot ulceration is a top priority due to the associate clinical, economic and psychosocial burdens. Routine screening is necessary for preventive care and optimal use of resources. Attendance at the screening appointment gives an opportunity to check not only neuropathy and vascular supply, but also myriad other issues. Involving patients in their own care decreases foot complications, such as ulceration and amputation. The Isle of Wight provides a podiatrist-led screening service and this is currently being reviewed to improve capacity.

It is estimated that one in three people with diabetes will develop a foot ulcer in their lifetime (Armstrong et al, 2017). Foot ulcers precede more than 80% of all amputations in people with diabetes (Singh et al, 2005). People with diabetes are also approximately 23 times more likely to have a toe, foot or limb amputated than those without diabetes (Kerr, 2020).

Regular diabetic foot screening is a key component of systematic and multidisciplinary care and is supported by evidence-based best practice recommendations (Kuhnke et al, 2013). It plays a significant role in ulcer prevention. During COVID-19 it was noted that good access to foot clinics was essential for limb salvage and effective wound healing (Urbančič-Rovan, 2021).

Diabetic foot problems have a significant financial impact on the NHS. A report published in 2019 estimated that the cost of healthcare for ulceration and amputation in diabetes is between £837 million and £962 million per year (Kerr et al, 2019).

In 1989, the St Vincent Declaration highlighted the importance of prevention and cure of diabetes and its complications. Prevention was seen as a strategy to markedly reduce lower-limb amputations and foot care preventive programmes were initiated.

Background

The Isle of Wight has a population of 142,296 (Population Data UK, 2022). The number of people with diabetes is 11,898; as at April 2022, the prevalence of diagnosed diabetes was 7.7% and the estimated prevalence is 10.3% (2017–2020 data, reported December 2021; Fingertips [2022]). This is above the national average of 7.1% and makes the diabetic foot screening programme a particular necessity.

The Isle of Wight podiatry service, in common with other podiatry teams, had a suspension of foot screening during lockdown. It continued to provide high-risk, emergency and ulcer care during hte pandemic. It also created a new enhanced role, upskilling its podiatrists to enable collaborative care (Stanley and Rawlinson, 2021). This ensured that some screening was maintained, albeit in an altered form. However, what sets the island apart is that the diabetic foot screening is carried out by podiatrists employed within the NHS Trust service.

The service was set up by a local GP and the head of podiatry in 1998, because they were concerned by the high amputation rates on the island and felt that patients should be reviewed for possible problems with their feet and enable rapid escalation

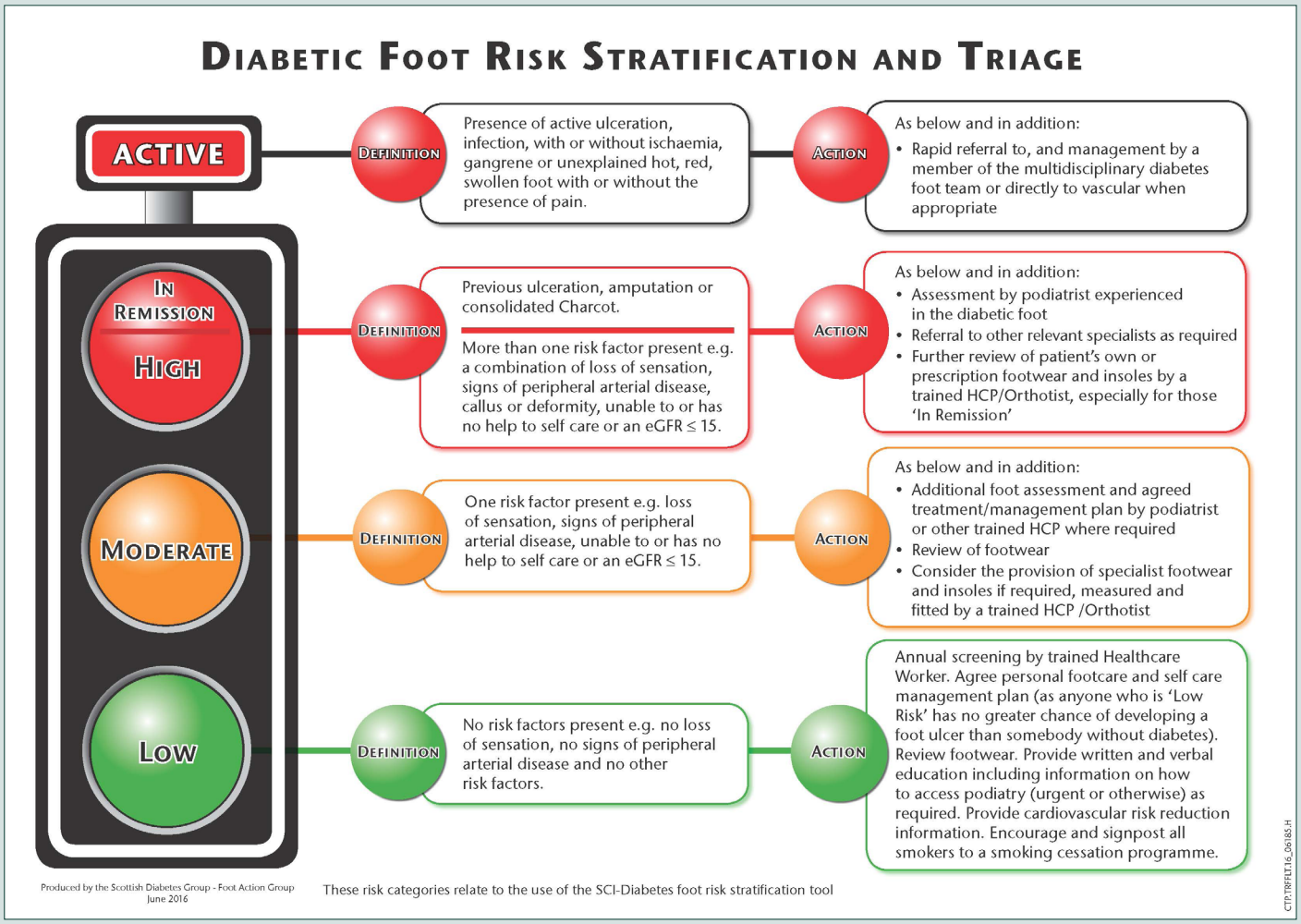

Figure 1. Foot risk assessment and traffic light scheme with suggested patient pathways related to risk, developed by the Scottish Diabetes Foot Action Group (June 2016).

if necessary. This initially started with a 30-minute screening appointment.

The screening appointment

The National Institute for Health and Care Excellence (NICE) recommends an annual foot examination (NICE, 2015).

In our 30-minute session, we carry out an ankle brachial pressure index (ABPI), a recommended non-invasive technique for detecting peripheral arterial disease (PAD), and use a 10 g monofilament for detecting impaired peripheral sensory neuropathy (Hirsch et al, 2001; Norgren et al, 2007; NICE, 2015; NICE QOF indicators 2018).

The examination also checks for vibration sense using a Rydel-Seiffer tuning fork. Deformity, presence of callus, current and previous ulceration are noted and recorded on a template.

Further circulation tests include palpation of both dorsalis pedis and posterior tibial pulses. A Doppler is used and any issues are noted, such as atrial fibrillation. Atrial fibrillation is associated with a substantial risk of mortality and morbidity from stroke and thromboembolism (Proletti et al, 2021)

Any discrepancies are recorded and escalated to alert the GP of any required necessary actions (including ECG and prophylactic anticoagulants). Clinicians also take the opportunity to do a brief biomechanical review and watch as the patients walk into the clinic room. Any issues, such as hallux valgus, hallux limitus and abnormalities in the toes leading to uneven pressure distribution in the apices, are checked and recorded, and referred to the

biomechanics/musculoskeletal (MSK) team within podiatry.

A brief dermatological survey of the feet is conducted, with any new or changing moles or lesions, hair on legs and feet and changes in the colour and texture of the feet and legs noted. Finally, shoes are checked for uneven wear and foot health advice is given.

The results are recorded on SystmOne, the GP system, which has the Quality and Outcomes Framework (QOF) codes embedded in each box that is ticked.

The risk stratification is calculated using guidance from the International Working Group for the Diabetic Foot (Bus et al, 2019). Patients are categorised patients into three tiers of risk which equates to the likelihood of them developing foot ulceration. NICE (2015) guidance is then followed for the recommended return times for these patients to be reviewed and any issues that may arise to be actioned. The Scottish Diabetes Foot Action Group developed and produced a traffic light system with actions (Figure 1 — October 2021 version), which is regularly updated; this has been adopted in England (Leese et al, 2011).

Patients are given an advice leaflet, which is a standardised NHS Scotland one that has been adopted in England. This has many variations for not only low-high feet, but also other issues, such as looking after feet when they are in remission. They also receive a personalised set of results and are referred to the podiatry team for ongoing care and review, depending on their risk status.

Once the patient has been risk assessed, the completed referrals are then escalated via a 'hub and spoke' mechanism. Screening is at the rim of the wheel. The patient then travels along the 'spokes' (podiatry foot protection and clinics) into the 'hub', which is the specialist diabetes foot clinics and secondary care clinics. The hub includes the multidisciplinary team.

We are very fortunate to have the community/district nursing locality teams feeding into the spokes and both the tissue viability service and crisis rapid response team also. This gives excellent coverage of patients within their own homes and those who may not usually attend for foot screening.

Discussion

The initial pilot in 1998 was anecdotally successful, and numbers of amputation appeared to drop. The major amputation rate on the Isle of Wight in 2017–2020 was 4.8/100,000 per year. This is the eighth lowest of the 135 CCG areas in England, well below the UK average of 8.2/100,000 (Office for Health Improvement & Disparities, 2022). This is notable considering the above-average rate of diabetes on the Island.

The issue was that we became a victim of our own success and the initial 30-minute session become untenable as the number of individuals with diabetes increased.

Screening appointment timings were adjusted and ABPIs were rebooked to be carried out in the routine podiatry clinics. This created capacity and is now under further review as there is the possibility of using a non-registered diabetes foot screener to undertake low-risk foot screening, with the podiatry team continuing to undertake moderate/high risk screening.

Insights for Diabetes Excellence, Access and Learning (iDEAL) made several recommendations, one of which is to have clinical commissioning group and primary care network clinical leads reviewing the training for healthcare staff to undertake routine foot screening and the pathway for referral of higher risk people with diabetes into the specialist foot protection team (Robbie, 2021). The remainder of the patients should be followed up by a foot protection service.

The National Diabetes Foot Care Audit (NDFA) found that 9 out of 10 providers have a foot protection service, which has primary responsibility for the care of people at high risk of new ulceration and for the prevention of ulcers (NHS Digital, 2022). A foot protection service is already in place on the Isle of Wight and the process of releasing the low-risk patients to the screener will be audited carefully. Plans to screen the moderate and high-risk patients when they attend for their regular appointments and the migration of the service onto SystmOne in the routine clinics will ensure that these opportune occurrences are recorded, and every opportunity is taken to ensure the patient is aware of their risk status.

McCabe et al (1998) noted that patients who participated in a screening programme had a

statistically lower rate of amputation in comparison than those who did not participate. Lewis et al (2020) suggested that multiple appointments required for the overall annual diabetes review may be why people fail to attend for screening, and proposed that there may be an option of combining retinal screening and foot screening.

Diabetes-related retinopathy is the leading cause of certifiable blindness among working age adults in England and Wales (Liew et al, 2014). However, eye screening programmes have markedly reduced this incidence, and have 81% uptake (Harris, 2012). Feedback from patients and staff in a combined eye and foot screening pilot was positive as it reduced multiple visits (Lewis et al, 2020).

Another main group of non-attendees are anecdotally workers. These are a group of individuals who struggle to attend for their appointments due to limitations in working patterns; we are looking at developing other methods of engaging them. This is in the development stage.

Conclusion

The success of foot screening is only as good as the numbers of people attending for assessment. Annual diabetic foot screening is not a single strategy capable of preventing foot ulceration, but part of a long series of preventive strategies that can reduce the incidence of the condition (Abu-Qamar, 2006).

Information from all the screening programmes needs to be integrated into a partnership model, ideally in a "one-stop" model to empower and enable patients to self-manage their risks, combining positive lifestyle choices, and incorporating their podiatry follow-up and personalised pharmacotherapy. ■

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Online CPD activity

Visit www.diabetesonthenet.com/cpd to record your answers and gain a certificate of participation

Participants should read the preceding article before answering the multiple choice questions below. There is ONE correct answer to each question. After submitting your answers online, you will be immediately notified of your score. A pass mark of 70% is required to obtain a certificate of successful participation; however, it is possible to take the test a maximum of three times. A short explanation of the correct answer is provided. Before accessing your certificate, you will be given the opportunity to evaluate the activity and reflect on the module, stating how you will use what you have learnt in practice. The new CPD centre keeps a record of your CPD activities and provides the option to add items to an action plan, which will help you to collate evidence for your annual appraisal.

1. What is the approximate lifetime risk of foot ulceration in people with diabetes, according to Armstrong et al (2017)? Select ONE option only.

   A. 25%
   B. 33%
   C. 50%
   D. 66%
   E. 75%

2. How many times more likely is it that people with diabetes have a toe, foot or limb amputated than those without diabetes, according to estimates by Kerr (2017)?

   A. 3
   B. 13
   C. 23
   D. 33
   E. 43

3. According to NICE guidance, how often should someone at low risk of diabetes foot ulceration be assessed? Select ONE option only.

   A. Three monthly
   B. Six monthly
   C. Annually
   D. Every 2 years
   E. When needed

4. What is the approximate annual NHS expenditure on diabetic foot-related problems? Select ONE option only.

   A. £130–270 million
   B. £330–470 million
   C. £530–670 million
   D. £730–870 million
   E. £830–970 million

5. Above which level is lower-limb surgical amputation defined as major, rather than minor? Select ONE option only.

   A. Knee
   B. Midfoot
   C. Ankle
   D. Forefoot
   E. Toe

6. What is the estimated UK annual rate of major amputations? Select ONE option only.

   A. 2.4/100,000
   B. 4.8/100,000
   C. 8.2/100,000
   D. 10.4/100,000
   E. 12.6/100,000

7. What approximate percentage of people with diabetic foot ulcers will eventually need an amputation? Select ONE option only.

   A. 20%
   B. 33%
   C. 50%
   D. 66%
   E. 75%

8. What is the approximate 5-year predicted mortality rate (%) after any amputation for diabetic foot ulceration? Select ONE option only.

   A. 30%
   B. 40%
   C. 50%
   D. 60%
   E. 70%

9. How many people in the UK have undiagnosed type 2 diabetes? Select ONE option only.

   A. 65,000
   B. 85,000
   C. 650,000
   D. 850,000
   E. 1,650,000

10. Diabetes-related retinopathy is a leading cause of blindness, despite improvements in screening. Approximately how many people their sight seriously affected by their diabetes each year in the UK? Select ONE option only.

    A. 1,700
    B. 2,700
    C. 3,700
    D. 4,700
    E. 5,700