Mobility with diabetes

Rowan Hillson

What do you do on your holidays? A politician said, ‘On holiday my husband and I do a lot of quite strenuous walking up mountains in Switzerland, and it [diabetes] doesn’t stop me doing it.’

Mobility is defined as ‘the ability to move or be moved freely and easily’. Most people with diabetes can get about but there are myriad ways in which having diabetes can impair mobility. Some include:

Sensory problems
In diabetes, multiple eye pathologies can cause temporary or permanent visual impairment severe enough to impede walking, for example affecting acuity, field, colour, depth, contrast, and/or binocular vision. High or low glucose can temporarily blur vision.

Deafness is more common among people with diabetes than in those without – we listen as well as look for danger. On meta-analysis the odds ratio of hearing impairment for people with diabetes vs those without was 2.15 (1.72–2.68). Does anyone else have difficulty walking. When I say difficulty I mean that I don’t seem to be able to walk in a straight line for very long. I’m all over the place… I’ve limited feeling in part of my left foot and wonder if that’s the problem.

Knowing where our body is in relation to our surroundings, particularly the ground, is important for walking. Diabetic sensory neuropathy often impairs lower limb position sensation. If vibration sensation is impaired, proprioception is usually impaired. Check proprioception during foot assessments. Impairment of light touch and pressure sensation also impedes safe walking. Whether barefoot or shod, we need to feel the ground to walk comfortably. Poor pressure sensation may cause heavy gait risking injury.

Severe painful neuropathy hampers walking. Despite what the patient below was told, medication can help.

‘Diabetes has damaged nerves in my legs… although my feet are numb there is also a tingling all the time… I get the most severe shooting pains. Walking gives me different discomfort sensations/pains. At times it is like walking on a pebble beach bare footed and feels bruised. At other times it is worse – like walking on broken glass. I was told quite bluntly “Of course there is no cure and no medication”. I said “Thanks for nothing”.

Motor problems
Diabetic motor neuropathy may be bilateral or affect individual nerves, for example, Common Peroneal damage causes foot drop.

People with diabetes are more likely to have muscle weakness or wasting (sarcopenia) than those without diabetes. Muscle infarction or infection occurs in diabetes, and surgical intervention saves limb or life, but may leave deformity or dysfunction.

Circulatory problems
‘I have “intermittent claudication” caused by the narrowing of arteries supplying the legs. I can just about do 3 flights of stairs, or walk 300–400 meters before needing to stop and wait for legs to “fill up” before I can continue.’

Diabetic foot disease
Alison has long-standing diabetes. While working on security for the 2012 Olympics her ‘wet corn’ became infected: ‘I was kept in overnight and given IV antibiotics. Late into the evening the surgeon came round and confirmed the inevitable. You’ve guessed it, I’m now down to nine toes… It took three months to heal and then I went back to work on event security.’

Even so-called ‘minor’ amputations can immobilise patients for long periods.

Diabetic foot disease can be seriously disabling and distressing. In-depth interviews of Scandinavian patients with diabetic foot disease found that they ‘experienced changes in their feet, pain and insomnia, fatigue and limited mobility, social isolation and loneliness, a restricted life, loss of control, and fear for the future’.

Transport
People whose diabetic complications preclude driving usually miss this greatly, especially if they have other mobility issues. Visual impairment may preclude using a mobility scooter. Access to public transport varies nationwide and one must get to the bus stop or train station. Once there, while most people are helpful, some fellow travellers can be astonishingly heartless. I saw a visually-impaired man with a guide dog being elbowed aside by commuters as he tried to board the Tube so I helped him. A friend with diabetes told me that she was left standing for hours on a train on her fractured leg in a very obvious plaster cast. No one was willing to give her a seat!

Medical misery
Having complex diabetes and/or mobility problems usually means attending multiple health care appointments, adding to the burden of any disability. This may mean travelling to different places, often distant. Appointments in the same building may be on different days. Is a 15-minute appointment really worth an hour on the bus each way plus waiting time? Reduce patients’ travel demands. With modern communication systems, does the patient need to travel at all? If so, can appointments in the same place be on the same day?

Self-confidence
Fear of hypoglycaemia, of falling, of adverse public reaction, and other worries can diminish self-confidence.

‘I am 31 and was diagnosed with type 1 diabetes three months ago… However, what I didn’t expect was this huge lack of confidence that has happened. I was a happy, confident, athletic person. Now I am scared about going out. Worried about even going out for a walk. I panic that I won’t recognise the symptoms of a hypo. It takes me so long to leave the house because I obsessively check I have everything that I might need. This is a far
cry from the spontaneous person I was 4 months ago. I know that this is unreasonable but I have lost all confidence in my body. 12

‘In the last few years my life has been entirely on hold, I’m… afraid life is passing me by. I’ve had to run my blood sugars higher than you should because of constant hypo… this has badly impacted my mental and physical health. I’m being treated for severe panic disorder and cannot travel alone, go to work, or even be separated very much from my parents as it has destroyed my confidence and ability.’ 13

The external environment

The outside world is full of hazards for people with physical or sensory impairment. For example, pedestrian crossovers assume one can walk at ≥1.2 metres/second (2.7 miles/hour). UK researchers timed an 8-foot walk at normal pace in a random sample of 3145 adults (83% without a long-standing illness) aged ≥65 years. Only 16% of men and 7% of women walked at ≥1.2m/s. For men, mean walking speed was 0.9m/s, for women, 0.8m/s. Speed decreased with increasing age. 14 In 2014, 17.7% of the UK population were aged ≥65 years. 15

An American study of gait in 558 people using a 4m walkway with a pressure-sensitive computer system found a mean walking speed of 0.95m/s in those with diabetes vs 1.02m/s in those without diabetes. The mean age in both groups was 79 years. Individuals with diabetes walk slower and with shorter step lengths, a longer stance phase, a wider base of support, greater step time variability on irregular surfaces, and improper pressure distribution at the foot compared with individuals without diabetes. 16

NICE advises: ‘To enable people with limited mobility to move along and across streets, implement policies on:
• A consistent approach to permanent or temporary obstructions – this may include vending boards, bins, parked cars, and street furniture such as chairs and hanging baskets.
• Pedestrian crossings – ensuring that there are enough and that these are accessible crossings. Also ensuring that crossings with signals give people enough time to cross the road.
• The correct use and maintenance of tactile paving.’ 17

Financial help

In the UK, people with mobility problems may get financial help. In England, Scotland and Wales ‘Disability Living Allowance’ is still available for people <16 years old, or those born on or before 8 April 1948 who have an existing claim. Those aged 16–64 years have to apply for a ‘Personal Independence Payment’ if they have a health condition or disability where they ‘have had difficulties with daily living or getting around (or both)’ for 3 months and expect these difficulties to continue for at least 9 months (unless you’re terminally ill with less than 6 months to live’). Claimants for a Personal Independence Payment must attend a formal assessment (performed at home if necessary). Those ≥65 years old can apply for an Attendance Allowance. 18

Disability in this context relates to the Equality Act 2010: ‘Whether a person satisfies the definition of a disabled person for the purposes of the Act will depend upon the full circumstances of the case. That is, whether the adverse effect of the person’s impairment on the carrying out of normal day-to-day activities is substantial and long term…’ The Act does not define what is to be regarded as a ‘normal day-to-day activity’. It does suggest that ‘walking and travelling by various forms of transport’ as well as driving would generally be considered as normal day-to-day activities. 19

Summary

Most people with diabetes are fully mobile. Some are athletes. However, the physical and psychological consequences of diabetes can seriously impair mobility. Ask if diabetes is affecting your patients’ activities of daily living, including getting about. Consider sensory, motor, circulatory, or structural problems, for example amputation. Has the patient lost self-confidence? Does glucose balance need to be improved for safe enjoyment of life?

Does a patient with impaired mobility need to see you or colleagues face-to-face? Try to maximise the use of the patient’s time and minimise travel.

Guide patients with mobility problems to possible sources of financial support. Citizens Advice provides advice in the UK. 20

Dr Rowan Hillson, MBE, Past National Clinical Director for Diabetes

References

14. Asher L, et al. Most older pedestrians are unable to cross the road in time: a cross-sectional study. Age Ageing 2012;41:690–4