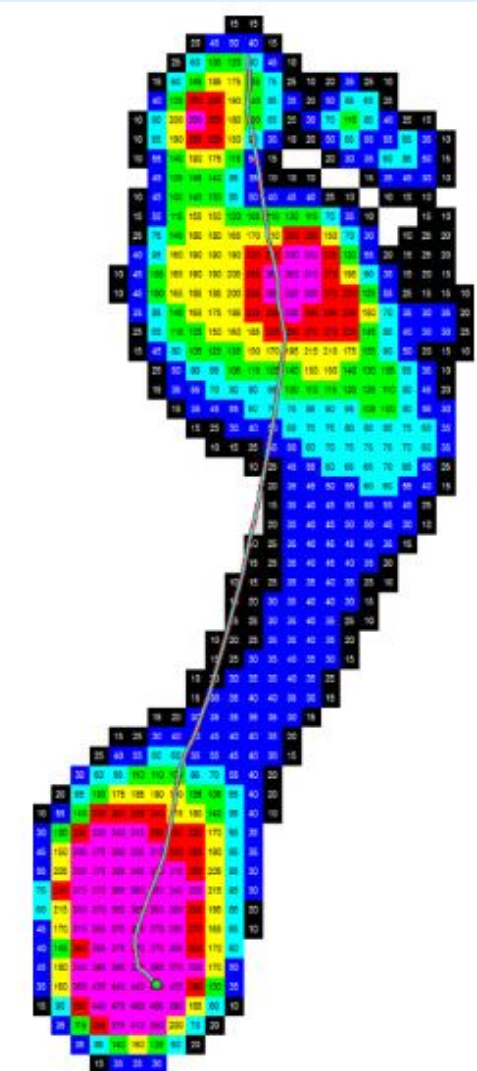


Visual Education for Diabetic Foot Ulcer Prevention: A Randomized Trial (Baseline)

EP 15



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BACKGROUND

People with diabetes who are at risk of foot ulceration need effective self-care education. The 2023 IWGDF prevention guideline identified limited evidence for structured education and uncertainty regarding the most effective approach.

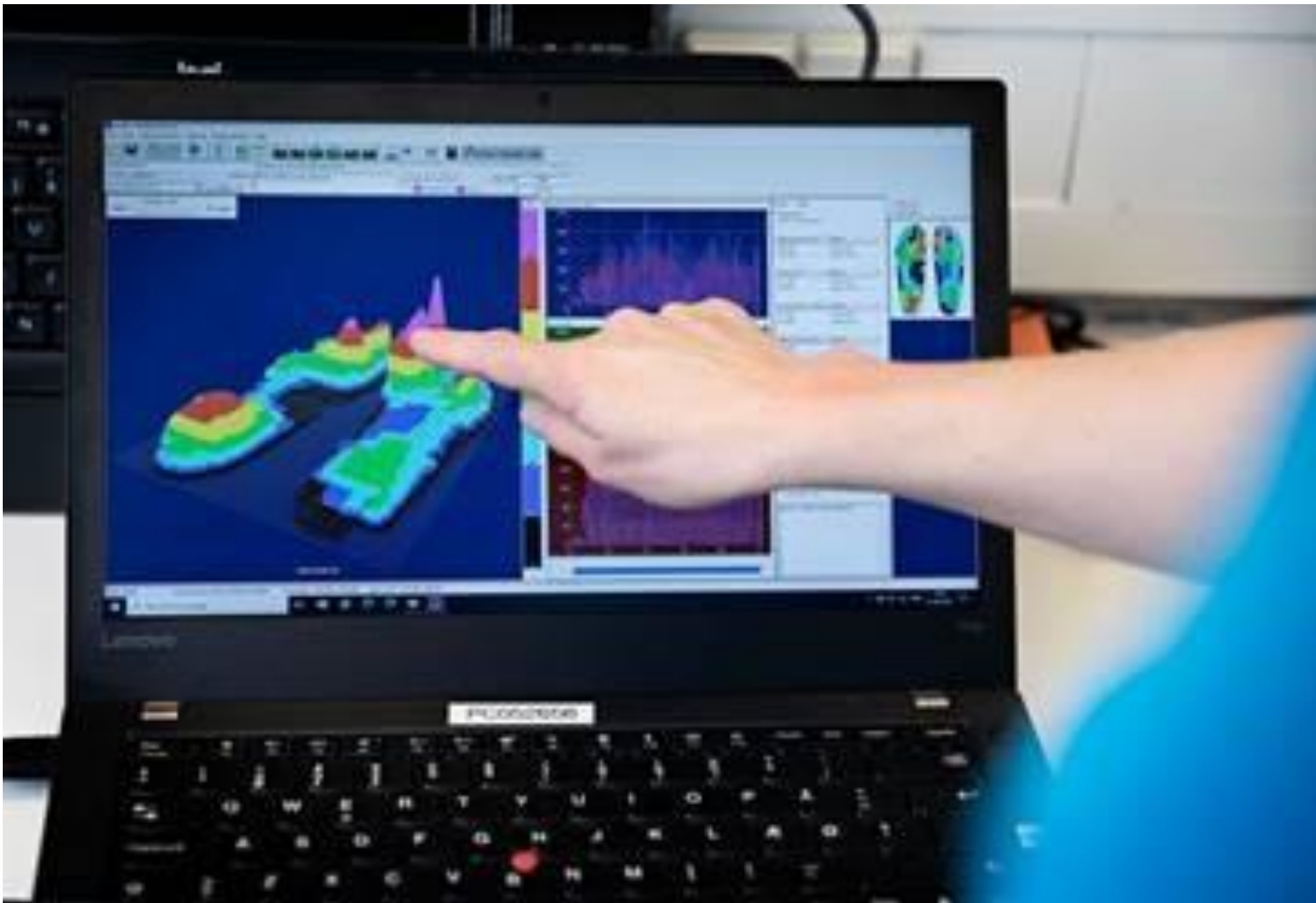


Figure 1. Peak plantar pressure is shown on the screen, and participants receive a copy.

AIM

To assess whether visual plantar-pressure feedback can strengthen annual foot-care education and support ulcer prevention.

WHO-5 results are presented in ePoster 43.

Reference: van Netten JJ et al. Prevention of foot ulcers in persons with diabetes at risk of ulceration: a systematic review and meta-analysis. Diabetes Metab Res Rev. 2023. doi:10.1002/dmrr.3652.

METHODS

Randomized controlled trial at Steno Diabetes Center Copenhagen. Participants at moderate-to-high risk of foot ulceration were randomized to standard education or standard education plus visual feedback based on Novel® plantar pressure measurements. WHO-5 and behavior questionnaires were completed at baseline; behavior was reassessed at 4 months, with follow-up after 10–18 months. Recruitment: May 2024–September 2025.

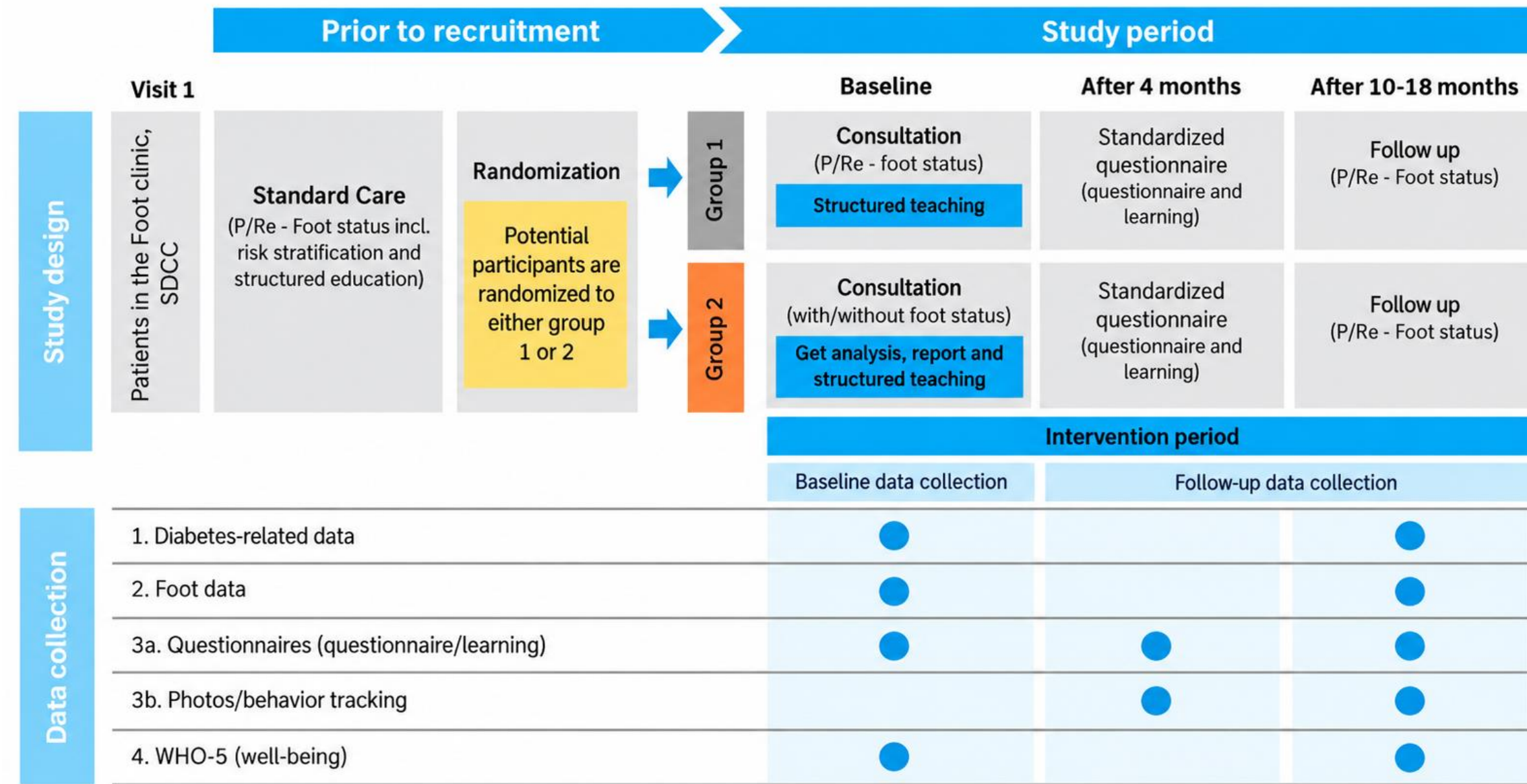


Figure 2. Study design.

RESULTS

325 participants were included (163 intervention; 162 standard care). Baseline data are shown in Tables 1 and 2. The 4-month behavior questionnaire was completed by 100 participants (Table 3).

LIMITATIONS

The study was conducted in routine clinical practice; workflow changes, technical problems with the measurement system, and staffing shortages affected study delivery.

Characteristics	Intervention (n=163)	Standard care (n=162)
Sex, male, n (%)	127 (78%)	129 (79%)
Age, years	65.8 ± 10.6	66.9 ± 9.7
Type 1 diabetes, n (%)	65 (40%)	64 (39%)
Diabetes duration, years	23.6 ± 15.7	24.3 ± 14.6
BMI, kg/m²	29.2 ± 6.5	28.2 ± 5.2
Employed, n (%)	71 (44%)	62 (38%)
HbA1c, mmol/mol	58.4 ± 12	57.9 ± 13.2
Chronic kidney disease*, n (%)	42 (26%)	38 (23%)
Macular edema, n (%)	39 (24%)	41 (25%)
Retinopathy, n (%)	83 (51%)	92 (57%)
Stroke, n (%)	17 (10%)	14 (9%)

Table 1. Baseline characteristics. Mean (SD) or n (%). *CKD: eGFR <60 mL/min/1.73 m² and/or UACR ≥30 mg/g for ≥3 months.

Baseline foot status	Intervention (n=163)	Standard care (n=162)
Palpable foot pulses, right, n (%)	150 (92%)	140 (86%)
Palpable foot pulses, left, n (%)	151 (93%)	136 (84%)
Vibration threshold, right, 25–50 V	42 ± 9.5 V	43 V
Vibration threshold, left, 25–50 V	42 ± 9.4 V	43 V
Monofilament right (yes), n (%)	136 (83%)	138 (85%)
Monofilament left (yes), n (%)	134 (82%)	137 (84%)
Abnormal gait, n (%)	83 (51%)	91 (56%)
Charcot, n (%)	3 (2%)	2 (1%)
Deformities, n (%)	163 (100%)	163 (100%)
Regular podiatry in primary care, n (%)	118 (72%)	119 (73%)

Table 2. Baseline foot status.

Question	Answer options	Intervention n = 76	Standard Care n = 24
To what extent do you think you have a sense of touch in your feet?	I find that my sense of touch is very slightly reduced I experience that my sense of touch is slightly reduced I experience that my sense of touch is reduced Don't know	24 40 10 2	9 7 8 0
Total		76	24
Have you been recommended what kind of footwear you should wear indoors?	Yes No Don't know	44 23 6	16 6 2
Total		73	24
If yes – how often do you wear the recommended footwear indoors during a normal week?	7 days a week 5-6 days a week 3-4 days a week 1-2 days a week 0 days a week	22 3 10 0 4	6 2 2 0 4
Total		39	14
Have you been recommended what kind of footwear you should wear outdoors?	Yes No Don't know	51 18 5	20 4 0
Total		74	24
If yes – how often do you wear the recommended footwear outdoors during a normal week?	7 days a week 5-6 days a week 3-4 days a week 1-2 days a week 0 days a week	29 3 10 0 4	11 6 2 0 1
Total		46	20
Are you aware of the vulnerable areas of your feet?	Yes Somewhat No Don't know	22 32 6 0	9 4 4 0
Total		62	17
Do you wear socks or go barefoot at home?	Yes Somewhat No Don't know	23 15 37 0	6 9 9 0
Total		75	24

Table 3. Questionnaire responses at 4 months.

DISCUSSION / CONCLUSION

Baseline data describe a predominantly male cohort (79%) with long-standing diabetes (~24 years); 25% had chronic kidney disease and 54% retinopathy. Four-month responses identify indoor footwear as an important target for future education. Questionnaire responses suggest increased awareness. We hypothesize that visual plantar-pressure feedback will strengthen ulcer-prevention behaviors; outcome analyses will follow completion of follow-up.