

Digital intervention for smell training

A real-world study on engagement, adherence, and behavioural dynamics

Challenge

Traditional Smell Training

- Imprecise
- Burdensome
- Lacks adherence tracking
- This leads to **low adherence** (typically 33%–56%) in previous studies

Digital Smell Training (DST)

- Structured technological solution for olfactory rehabilitation
- This study aimed to evaluate the **real-world feasibility** of a home-based DST system, focusing on how participants engage with it and sustain its use over time

Results

Sustained High Adherence

74% Adherence was sustained for twice-daily training over six months

High Usability & Acceptance

Perceived ease of use, clarity, and skillfulness with DST improved

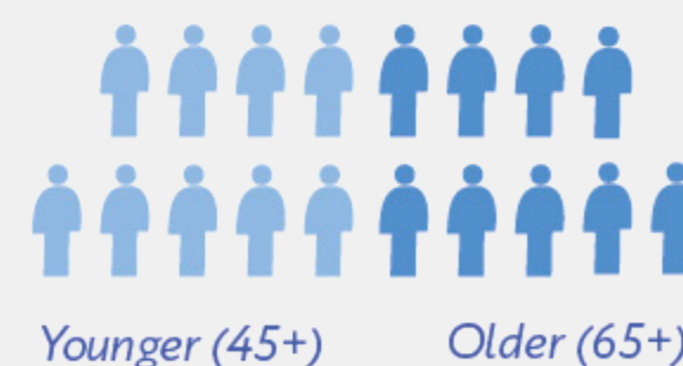
Dynamic Motivation

Novelty → Habit formation
Hope → Social reinforcement

M3 Demotivation M4 Sustained Motivation

M3 → Fading novelty
M4 → Slowed progress
→ Perceived improvements

The DST System & Study Design



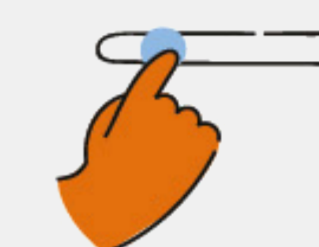
18 participants with varied olfactory abilities



Two locations, stacked deployment



Smell Care App data



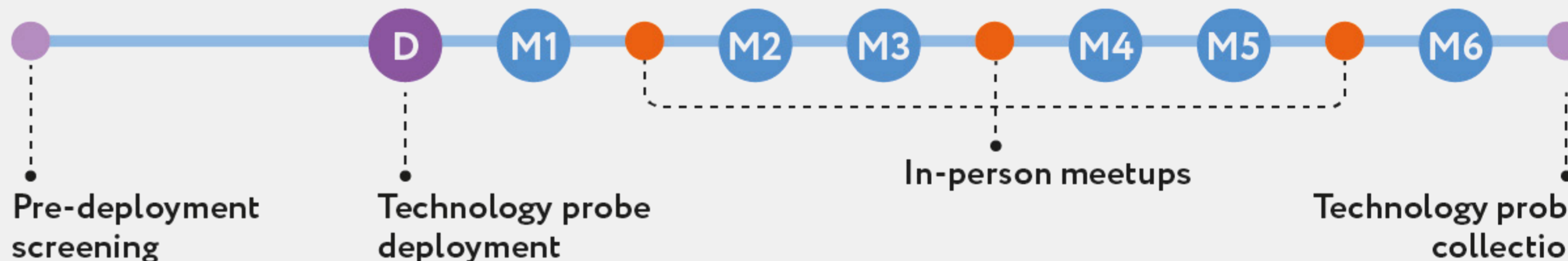
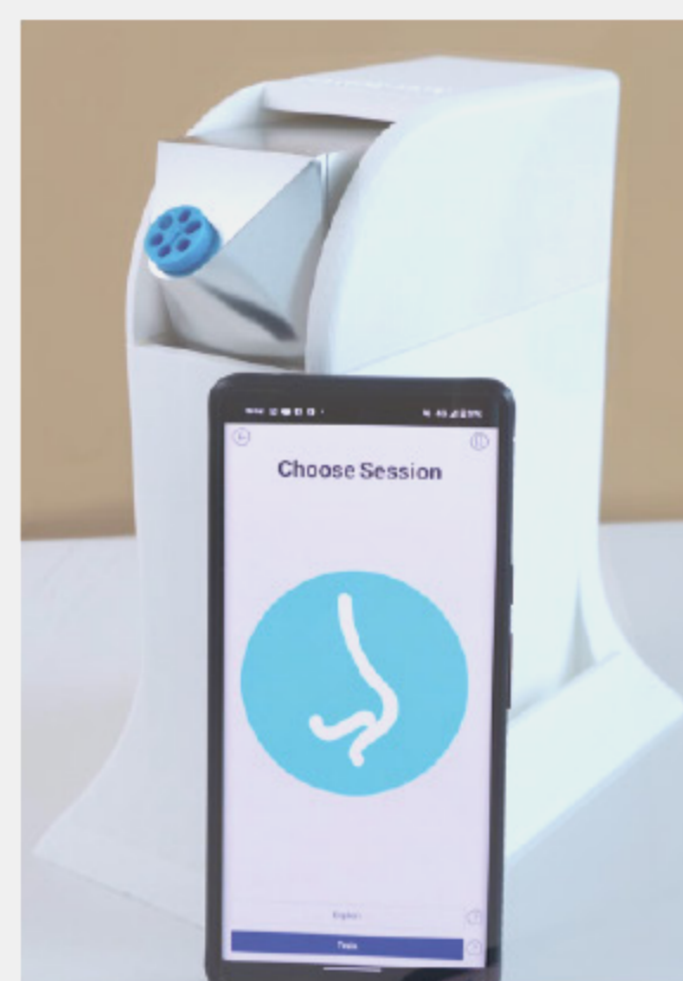
Questionnaires



Semi-structured interviews

Mixed-methods data collection

- Six-month mixed-methods feasibility study
- 18 UK households
- Technology probe using a custom **Scent Delivery Device (SDD)** and Smell Care app developed by Hynt Labs Limited



• **First longitudinal evidence of real-world engagement with technology-enabled olfactory training**

• **Adoption of DST depends on understanding behavioural dynamics**

• **Sustaining long-term engagement requires adaptive features such as personalisation, gamification, and progress milestones**

• **DST offers a scalable, digital intervention at home for actively engaging with the 'forgotten' sense**