

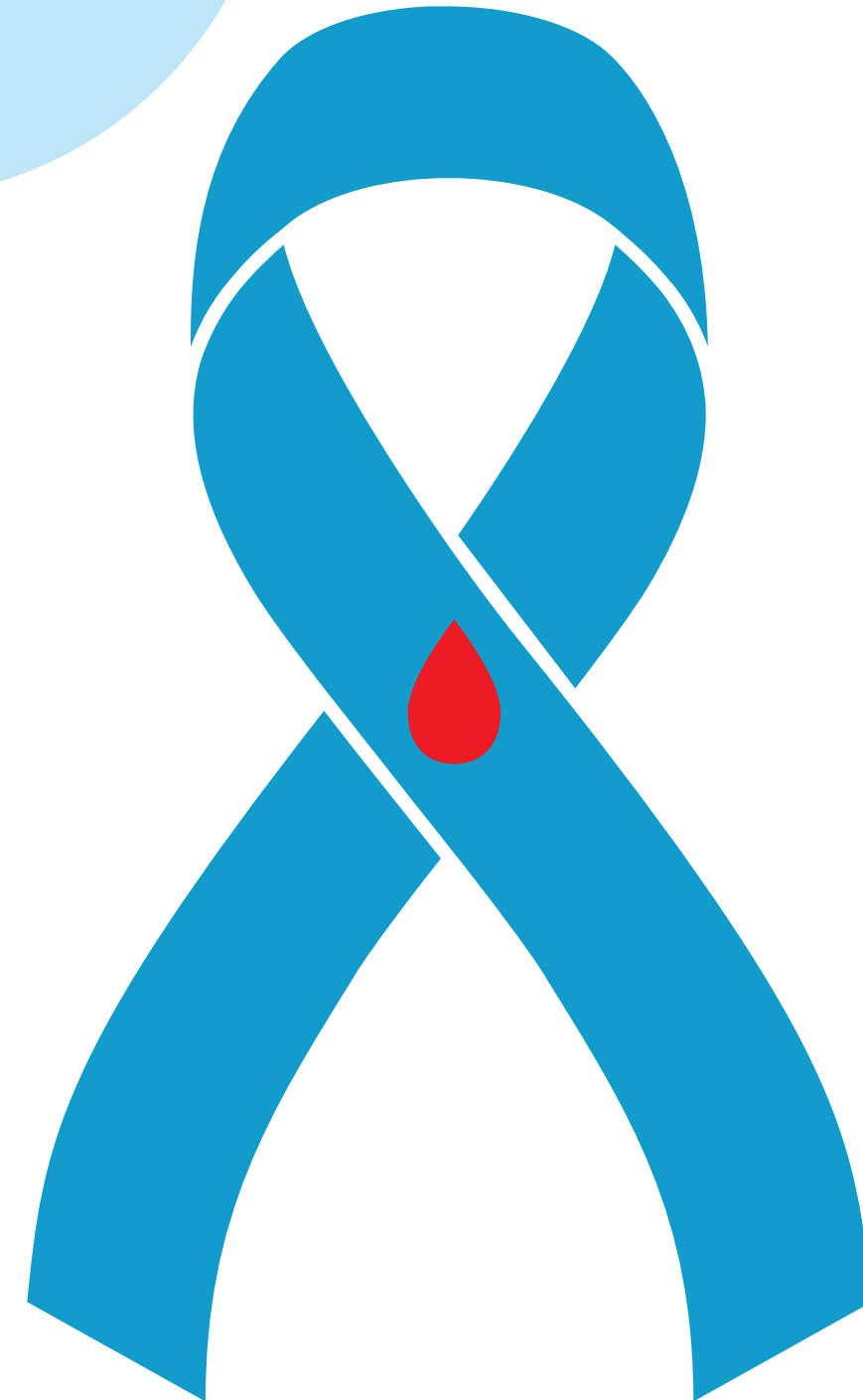
DIABETES

BSc (Hons) Health and
Social Care
Digital Transformation in
the Health and Care
Professions
Freestyle Libre

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Agenta



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Acknowledgement of the use of AI tools

I confirm that I have not used any AI tools in the research and creation of this assignment. I confirm that I have not presented any AI generated materials as my own work. I confirm I have copies of my drafts, notes, and other resources I used, which I may be asked to provide in evidence



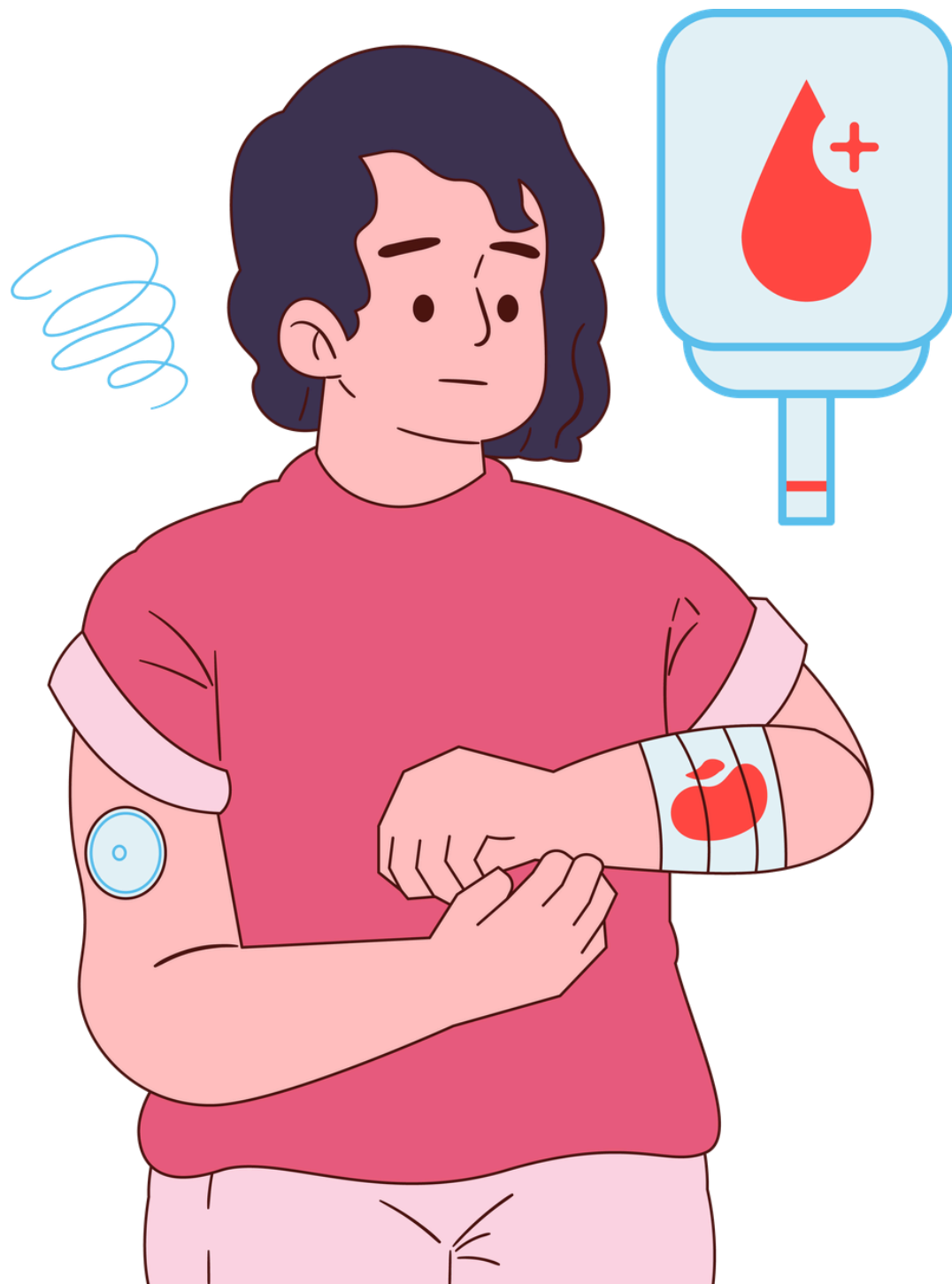


Introduction



Electronic devices like Abbott's FreeStyle Libre have changed the way people manage their diabetes (Abbott, 2024). This sensor may be worn on the skin and lets you check your glucose levels all the time with a reader or app. It improves existing techniques and gives you real-time information for personalised treatment. While diabetes is most often diagnosed in adults over 45 (Type 2) or in children between 4 and 14 (Type 1), it can actually start at any age, from infancy through late adulthood (NHS, 2024).

Freestyle Libre



(SMILES MED SUPPLY, 2025)

Impact on healthcare services



How the NHS Uses FreeStyle Libre

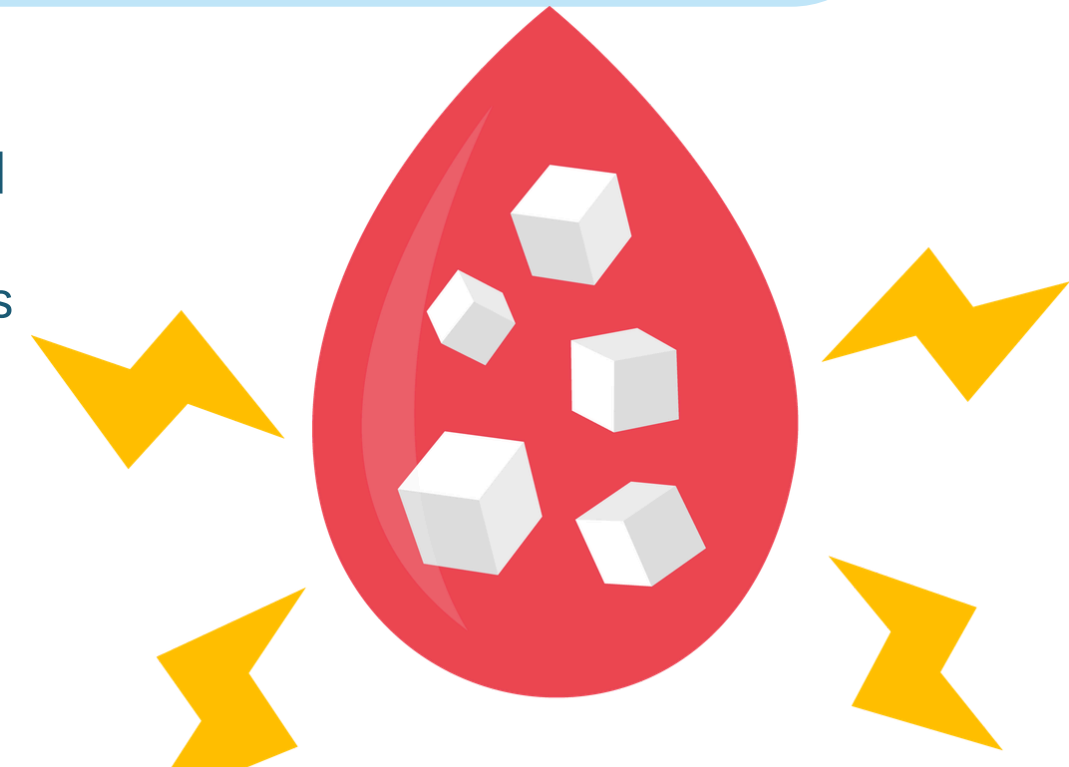
- **Standard Treatment:** Since 2019, the NHS provides these sensors on prescription, moving away from old-fashioned finger-prick tests (NHS London, n.d.).
- **Better Appointments:** Instead of looking at paper notebooks, doctors use digital reports to give more accurate, personal advice (Diabetes UK, 2025).

Better Care from Home

- **Patient Control:** Patients can see their sugar levels instantly, helping them fix problems before they get worse .
- **Remote Updates:** Patients can share data from home so doctors can update treatment plans without needing a face-to-face appointment (Al Hayek et al., 2021).

The Challenges

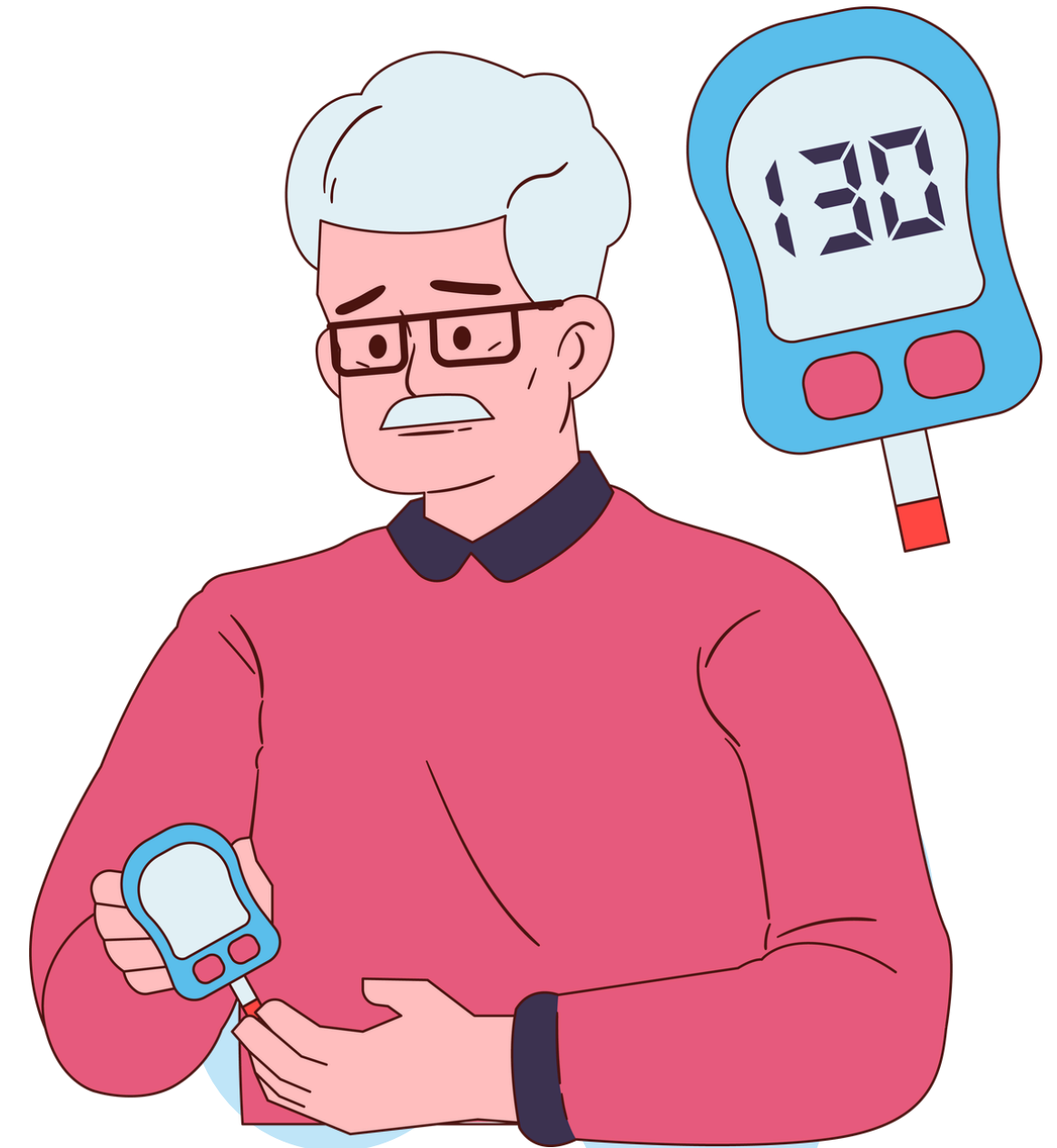
- **Too Much Data:** Sensors create a lot of information, which can be hard for doctors to read quickly and accurately .
- **Need for Training:** The NHS must spend money on better computers and training for staff and patients to use the tech properly .
- **Extra Work:** Handling all this new digital information can be overwhelming for both busy clinics and patients (NHS, 2019).



Impact on healthcare workforce



- **Data Analysis Skills:** Specialists must now analyse complex glucose trends rather than just reading single blood test numbers (NICE, 2022).
- **Effective Consultation:** Sharing screens to view data together makes appointments more focused and helps patients understand their own health (Diabetes UK, 2023).
- **Patient Training:** Clinicians now act as teachers, ensuring patients know how to use the machine/app and read the digital charts.
- **Skills Upgrading:** Learning to use digital tools is now a must-have skill, so staff need regular practice to stay up to date.
- **System Support:** To prevent staff burnout from "data overload," hospitals must provide clear rules and better digital tools (WHO, 2024).



Impact on patients

- **Pain-Free Monitoring:** Replaces painful finger-pokes with a simple sensor, making it easier to check sugar levels anywhere (Alcántara-Aragón, 2019).
- **Instant Feedback:** Shows exactly how a snack or a walk changes sugar levels, making it clear how the body reacts.
- **Health Ownership:** Patients stop just "taking advice" and start leading their own care by using their data to make daily choices (NHS London, n.d.).
- **Emergency Prevention:** Warns users before their sugar gets too high or too low, helping to stop emergencies before they happen.
- **Overcoming Barriers:** Shows that we need to help people who don't have good internet or aren't good with phones so they don't get left behind (freestyle.abbott, n.d.).



Impact on community

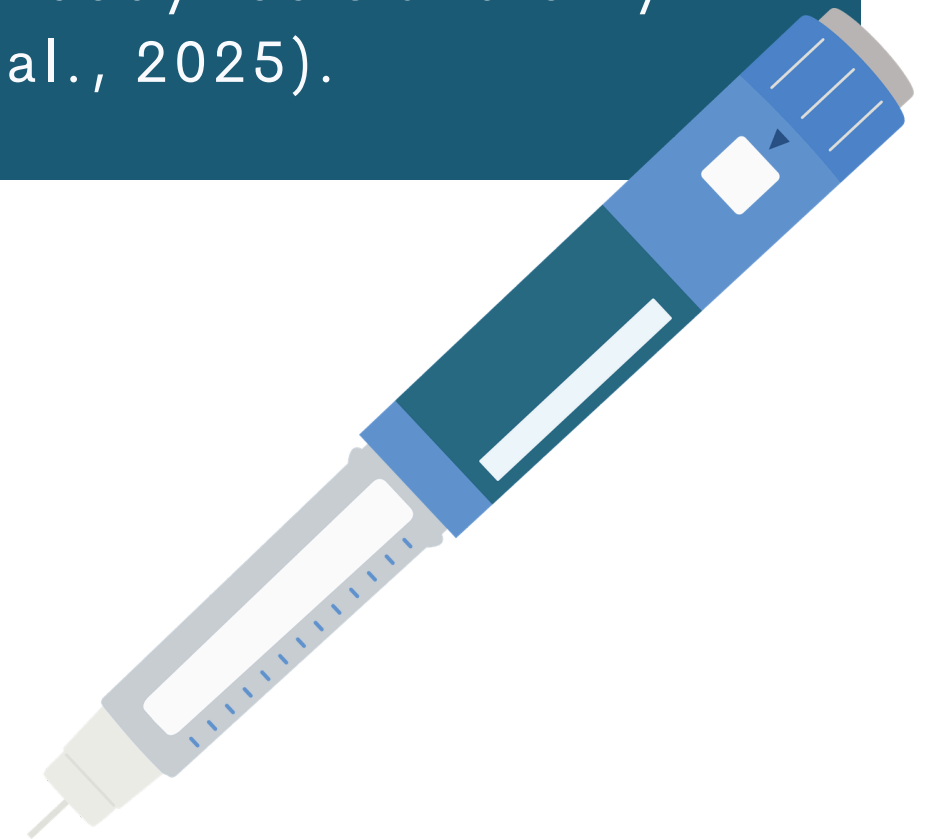
- **Support for Caregivers:** Families can now see live data, allowing them to step in and help during emergencies, which lowers stress for everyone at home.
- **Saving Clinic Time:** By moving routine checks to the home, local clinics have more space and time to treat patients with urgent or complex needs .
- **Closing the Tech Gap:** To help everyone, the community must provide training and tools for people who don't have internet or digital skills (Gregory and Curtis, 2022).
- **Teamwork in Care:** Patients, doctors, and the local community work together as partners to design health services that actually fit people's lives.
- **Preventing Emergencies:** Healthier daily habits across the population lead to fewer ambulance calls and emergency room visits, saving tax money (NHS England, 2023).



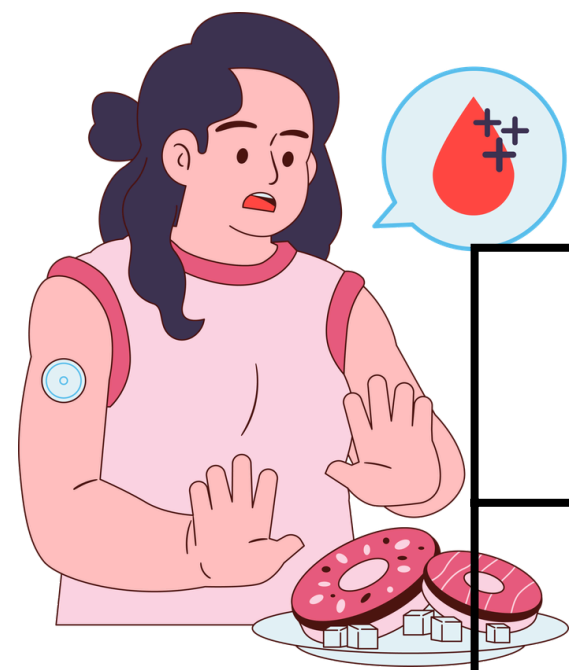
Challenges of the innovation



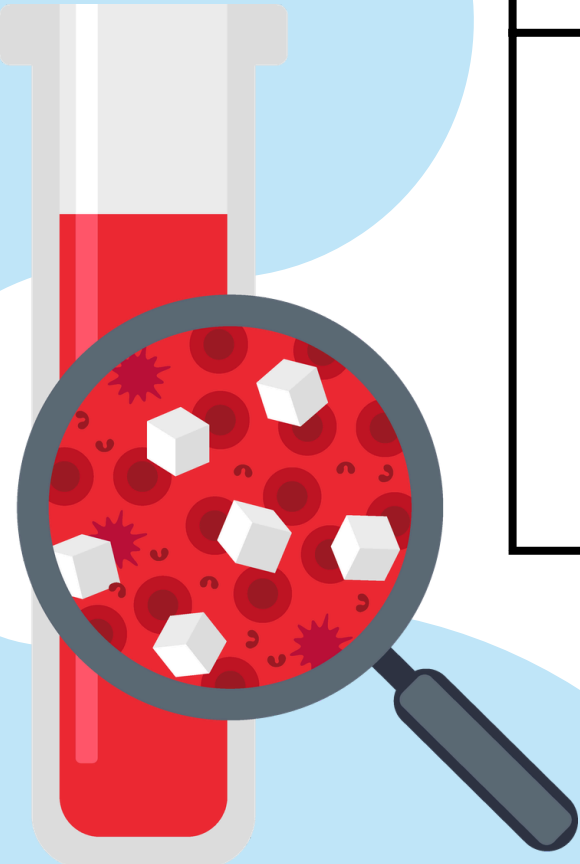
- **Sensor Issues:** The small patches can fall off easily if they get wet or bumped, which stops the data from working.
- **Skin Reactions:** The glue used to stick the sensor to the arm can sometimes cause itchy rashes or sore skin (Hooper, 2026).
- **Computer Glitches:** Sometimes the patient's phone app and the doctor's computer don't talk to each other correctly, making it hard to share info.
- **Medical Waste:** Since the sensors are made of plastic and have small batteries, they create a lot of trash that is hard to recycle (Seery, 2025).
- **Trusting the Screen Too Much:** Patients might stop listening to how their body feels and only look at the numbers, which can be risky if the sensor is wrong (Wilmot et al., 2025).



Advantages and Weaknesses



Advantages	Weaknesses
The system can alert patients to dangerous sugar drops in the middle of the night, providing peace of mind that finger-pricks never could.	When a new sensor is applied, there is a waiting period (often 60 minutes) where no data is available, leaving a temporary "blind spot" in care.
Seeing a simple "up" or "down" arrow helps people understand the speed of their sugar changes, not just the current number.	Sensors measure fluid under the skin rather than blood; this can cause "lag time," meaning the sensor might be a few minutes behind the actual blood sugar



(DIABETES UK, 2024)
(HEALTHLINE, 2021)



RECOMMENDATIONS



- **Match Symptoms to Trends:** Scan when feeling tired (high sugar) or shaky (low sugar) to match physical symptoms with "up" or "down" arrows.
- **Identify Food Spikes:** Use the graph to spot how white bread or soda causes sharp peaks; replace them with oats or greens for a flatter line.
- **Practice Smart Pairing:** Add protein (nuts/eggs) to snacks to slow down sugar absorption and prevent sudden energy "crashes."
- **Check After Eating:** Review your data 1–2 hours after eating to see how specific foods affect your levels and adjust portion sizes for next time.
- **Walk it Off:** Start a 10-minute walk if you see sugar levels climbing; the Libre will show the line leveling out almost immediately.
- **Share the Data:** Use the LibreLink app to send data to doctors or family so they can provide support if levels become dangerous.



(FREESTYLE.ABBOTT, 2025)
HWECLINICALGUIDANCE.NHS.UK, N.D.)



CONCLUSION



CONCLUSION

DIGITAL TOOLS LIKE THE FREESTYLE LIBRE HAVE MOVED DIABETES CARE FROM "GUESSING" TO "KNOWING." BY REPLACING PAINFUL TESTS WITH REAL-TIME DATA, THIS TECHNOLOGY EMPOWERS PATIENTS TO UNDERSTAND THEIR BODIES, HELPS FAMILIES FEEL SECURE, AND ALLOWS HEALTHCARE TEAMS TO WORK MORE EFFICIENTLY. WHILE CHALLENGES LIKE COST AND TECH SKILLS REMAIN, THE SHIFT TOWARD A MORE CONNECTED, PROACTIVE, AND PERSONALIZED APPROACH IS CREATING A HEALTHIER FUTURE FOR THE ENTIRE COMMUNITY.



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