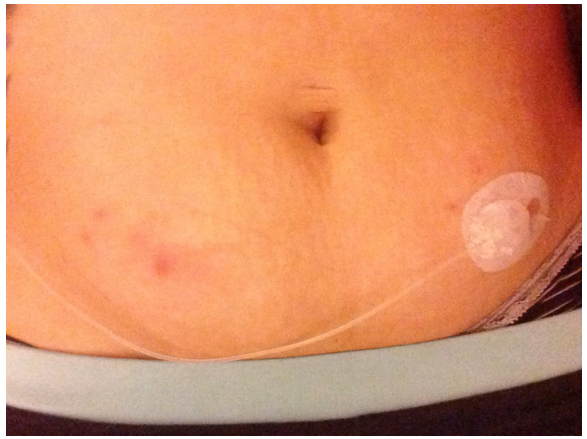
Skin Integrity

Geraldine Gallen
Type 1 Service Lead
Senior Diabetes Specialist Nurse
ABCD Diabetes Technology Network UK
Committee Member



King's College Hospital
NHS Foundation Trust

Courtesy of David Turner - Medtronic

Why is skin care so important?

- What are we trying to achieve with the technology?
- Improved HbA1c
- Improved quality of life
- Reduction in hypos
- High usage >80% of the time
- High TIR >70%

- What is the most important factor in achieving this?

- If a patient is unable to adhere to wearing the sensor or cannula we cannot achieve the desired outcomes

King's College Hospital NHS Foundation Trust

Prevention of skin irritation – a recent publication

Diabetes Technology & Therapeutics, Vol. 20, No. S2 | Original Articles

Open Access |

Preserving Skin Integrity with Chronic Device Use in Diabetes

Laurel H. Messer, Cari Berget, Christie Beatson, Sarit Polsky, and Gregory P. Forlenza

Published Online: 1 Jun 2018 | https://doi.org/10.1089/dia.2018.0080

- Recent publication in Diabetes Technology and Therapeutics Journal – 2018
- Review current literature related to the prevalence of dermatological issues with insulin pumps and CGM.
- Discuss published solutions to skin irritation
- Share the consolidated experience of a large academic diabetes clinic to address placement, prophylactic skin care, adhesives, removal, and skin healing with diabetes device use

King's College Hospital NHS Foundation Trust

Why is skin irritation an important topic to discuss?

- Skin integrity and placement are ongoing concerns for people with diabetes who utilize CGM and CSII. This is especially significant for individuals with skin sensitivities and paediatric patients.

- Dermatological complications are often cited as a barrier to device use and a reason for device discontinuation.

- With the increasing use of technology dermatological concerns are becoming more common in people with diabetes and a persistent topic in diabetes support groups and social media websites.

- Few resources are available, This paper is a guide on how to comprehensively assess, prevent, and treat skin conditions associated with diabetes device usage.

Reasons for skin irritation

- CGM and CSII device usage can lead to skin injury and irritation (hypersensitivity reactions, contact dermatitis), scarring, and lipodystrophy.

- Reactions typically take a long period of exposure to induce initially, but may occur more rapidly after repeated exposure due to reactivation of memory cells.

- These reactions may occur in response to chemicals in CGM and infusion set adhesives

Where should sensors be sited?

- Sensors are less likely to be accidentally dislodged if they were placed on a flat plane such as upper buttocks, upper arm, upper abdomen, or upper thigh.

- Regardless of location, when subcutaneous tissue is insufficient, individuals may feel persistent discomfort when the cannula/sensor

- Compression on the tissue may cause pressure induced sensor attenuation (PISA) in CGM users.

- PISA can be the cause of an artificially low sensor glucose reading when sited in inappropriate areas and can cause tissue damage

Site tips

- Once an appropriate location has been identified, a variety of techniques and barrier agents may be used to minimize risk of reactions

- Good skin care practices such as thorough cleansing, gentle exfoliation (if needed), and omitting oil containing moisturizer are essential

- A common solution to previously known hypersensitivity reactions has been the off-label use of **nasal steroid sprays** being applied topically to the skin.

- Although there are no studies about long-term use of nasal steroids applied topically, it has been anecdotally endorsed as a way to prolong sensor use and protect skin from adverse reactions

King's College Hospital NHS Foundation Trust

Adhesives and Removal

- Bandages placed over the entire sensor and transmitter are not recommended due to buildup of moisture and further loosening of adhesive.

- Enhancing adhesion is important for a variety of device wearers, especially children (due to curvy surfaces and high activity levels), swimmers, individuals who live/work in high humidity, and athletes (due to increased perspiration and movement) – Skin Tac

- Careful removal techniques can greatly reduce the likelihood of contact dermatitis and mechanical injury from device use .

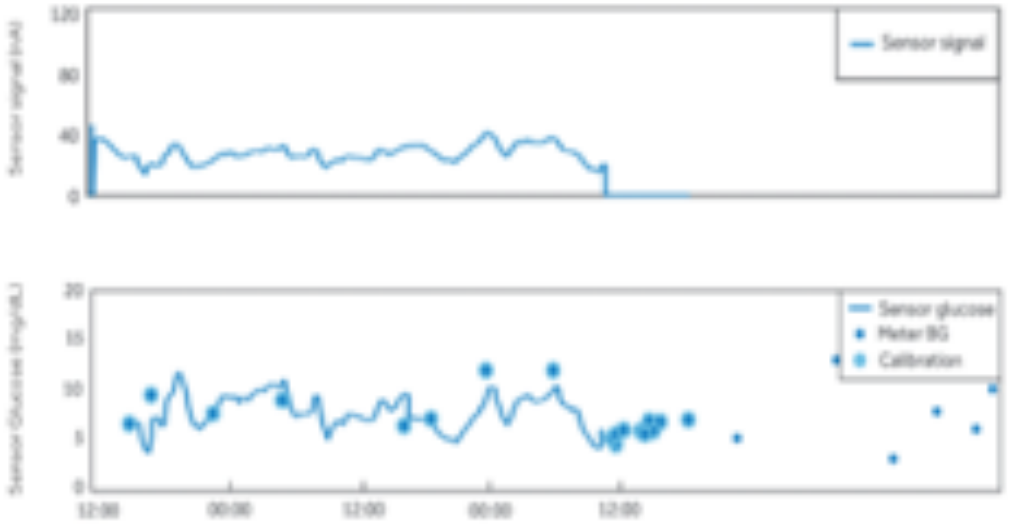
- As diabetes technologies evolve to use long-lasting skin adhered components, skin integrity must to be prioritized by the medical diabetes community.

BEST Practice

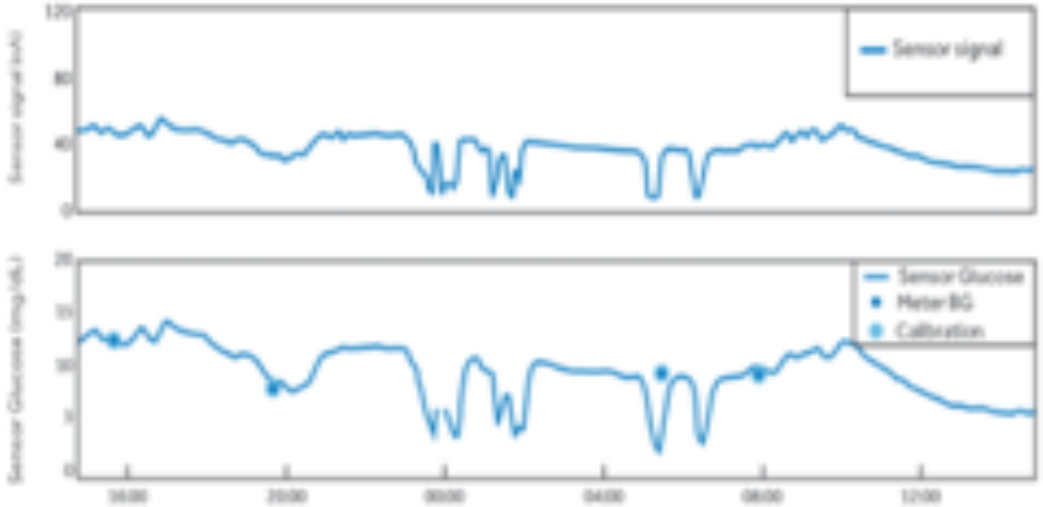
SENSOR INSERTION AND TAPING

DTN UK
collaborate · evolve · support

Sensor not secure causes sensor pull-out



Pressure / twist on transmitter causes re-initialisations / artifacts



King's College Hospital
NHS Foundation Trust

Good site rotation
Avoid sites in close proximity to the navel or another insulin infusion site
Avoid sites where clothing can rub, where body naturally bends a great deal or sites that are scarred or have hardened tissue
Do NOT use skin preparation solutions prior to insertion e.g cavilon
Local anesthetic creams (EMLA) are ok
Do not insert cannulas/sensors through tape
Good Hydration
Refer to allergy specialist