

This guide is intended for clinicians. It gives information on how to support users of FES in managing their skin irritation and returning to use FES.

Signs and Symptoms

The first sign of irritation is often redness of the skin underneath an electrode, which is still present the following morning. Itchiness and raised spots indicate a more severe reaction. Scratching is likely to cause trauma to the skin and therefore further increase the irritation caused by stimulation.

Treatment

1. Discontinue stimulation at the electrode site until the skin has healed.
2. Recommend the user apply a fragrance-free moisturiser, such as E45, to soothe the skin.
3. If not healing within a few days, consider Eumovate cream for not more than one week. This is a topical corticosteroid, containing Clobetasone butyrate 0.05% which can be bought without a prescription at a chemist. Alternatively, the FES user should speak with their GP/other healthcare professional.

Prevention

1. Discuss electrode care. Ensure the user is changing their electrodes every four weeks. They should also keep the electrodes hydrated, free of skin cells and debris, and store in a sealed container.
2. Review general skin condition and skin care with the user. Dry, flaky skin lacks protection and may allow low resistance channels across the skin which concentrate charge. Multiple applications of moisturiser may be required after removing electrodes at night.
3. Ensure the user maintains a good skin care regime:
 - a. Never place electrodes over broken skin (cuts, bites, rashes, grazes etc)
 - b. Do not shave the skin using a razor (as this can cause micro cuts to the skin). Instead cut hair using scissors or clippers.
 - c. Avoid long hot soaks in bath, which will dry out the skin and make it more vulnerable.
 - d. Wash using soap free cleansers such as Dermol wash or E45. Soap is alkaline and can irritate the skin.
 - e. Moisturise overnight using mild fragrance-free moisturisers (E45) or dermal double base moisturiser. Wipe off excess oils or lotions and ensure the surface of the skin is clean prior to application of electrodes the next morning.

Re-starting FES

1. Do not restart FES until the skin irritation has healed (unless using alternative electrode positions as discussed below).
2. Explore different electrode positions. Some patients may achieve an effective response from multiple different electrode combinations (as many as four or five different combinations might be possible). These can be rotated daily, resting areas of skin while maintaining use of FES.
3. If alternative electrode sites are not available, consider reducing the time FES is used and slowly building back up to normal use over several days.

Stimulation Parameters

1. If possible, change to bi-phasic symmetrical waveform. This is a charge balanced waveform, which is thought to prevent build-up of ions and altered skin pH under each electrode.
2. Consider decreasing output current, frequency, or pulse width to lower the overall intensity of stimulation and exposure to the electrical charge.
3. Consider reducing extension and falling ramp to decrease skin exposure to the electrical stimulus.

Electrodes

Consider using an alternative brand of electrode, particularly one that is hypoallergenic. OML can give you information on the different types of electrodes available.

Long-term skin irritation:

In cases of chronic skin irritation, ask the patient's GP to refer to a dermatologist.

More information on managing skin irritation can be found
using the link or QR code

<https://odstockmedical.com/knowledge/patient-information-sheet-skin-irritation/>



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