

Fragile Skin Modified EEG

General tips:

- Ongoing communication with patient/family regarding dressing tolerances, electrode placement and modifications as skin fragility and product tolerance may vary.
- Avoid or minimize adhesives.
- Dab, do not rub the skin.
- Gentle, slow movements to avoid any possible skin breakdown.
- Using silicone-based mesh contact layer as an EEG electrode buffer on the skin.
 - For short-term EEG that cannot be glued, silicone-based mesh contact layer is not indicated as long as the electrode is properly “floated.” Floating the electrode involves the application of enough conductive paste that the cup of the electrode does not meet the patient’s skin. A silicone-based foam transfer dressing, pieces of cotton balls, or folded gauze can be used as a cushion for the tail of the electrode on electrodes not protected by hair (Fp1, Fp2, F7, F8, A1, A2, often F3, F4, Fz).
- For the EKG, secure an EEG electrode filled with conductive paste with silicone-based tape or use conductive gel defib pad and EKG clamp leads.

Ensure all supplies and dressing products are available and prepared prior to beginning application.

EEG Supplies:

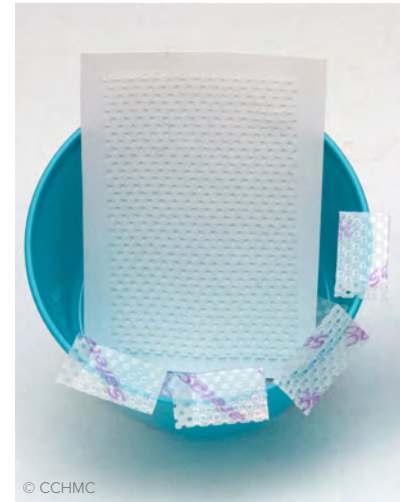
- 1 Conductive paste
- 2 Silicone-based mesh contact layer cut into small strips
- 3 Strips of gauze
- 4 Alcohol pads
- 5 Collodion
- 6 Electrodes
- 7 Stockinette



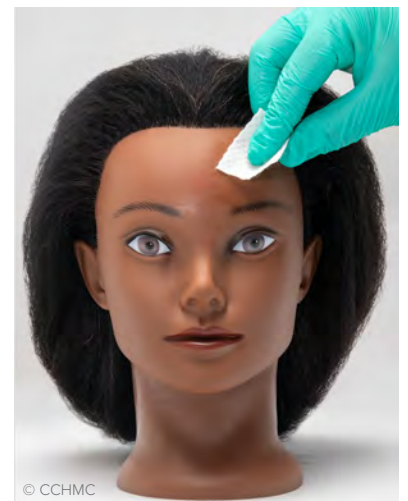
Instructions for EEG placement:

Prepare for the test:

- Silicone-based mesh contact layers, though non-adhesive, are very sticky. It can be helpful to peel back half of one side and the other side completely off, sticking it to the rim of a denture cup.
- Cut strips of silicone-based mesh contact layer the length of your electrodes from the tip of the cup to the end of the hub and a little bit wider than the electrode cup.
- Partially pre-peel your silicone-based mesh contact layer or have a second person available to help with this step.
- Prepare enough silicone-based mesh contact layer strips for all electrodes that are not protected by hair at minimum (Fp1, Fp2, F7, F8, A1, A2, often F3, F4, Fz) with extras in case some are dropped for short term EEGs. Use silicone-based mesh contact layer as a buffer for all electrodes for long-term EEG monitoring on patients with medically delicate skin.

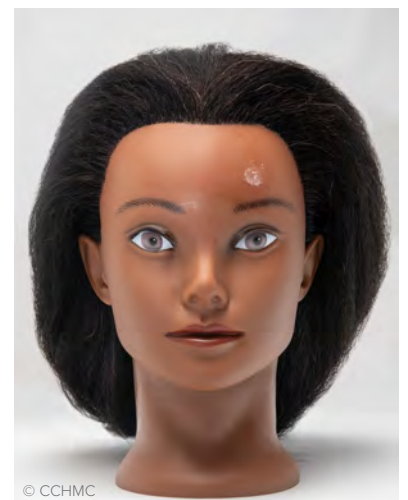
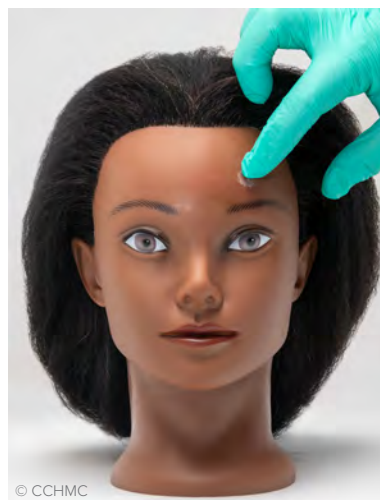


1. Part the hair carefully where marked. (May lightly mark with a felt tip marker.)
2. Take alcohol swab over gloved finger and **dab** gently in a single direction to remove excess oils, dead skin, and any hair product that may be in place. The goal will be balanced impedances when <10 kOhms cannot be achieved. This needs to be properly documented in the study.



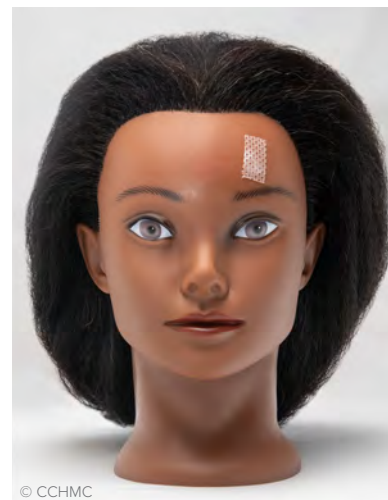
3. **Dab** a small amount of conductive paste where the cup of the electrode will go (about the size of the cup of the electrode).

Note: do not increase the surface of the electrode by spreading conductive paste over too large an area. This increases the risk of a salt bridge between electrodes and increases the risk of high impedances.



4. Lay a pre-cut strip of silicone-based mesh contact layer over the prepped area, following the trajectory your tail will go, so the hub will be supported by the buffer.*

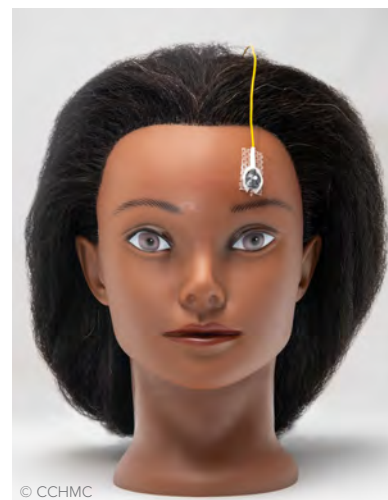
**Refer to general tips for short term EEG modifications.*



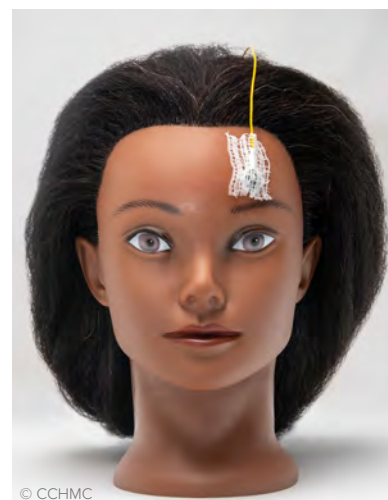
5. Take your electrode with a little more conductive paste than you would typically use and place it over the silicone-based mesh contact layer, matching the cup of the electrode with the patch of conductive paste you laid earlier. The two areas of conductive paste will tunnel through the porous mesh to each other, rendering the silicone-based mesh contact layer electrographically invisible.



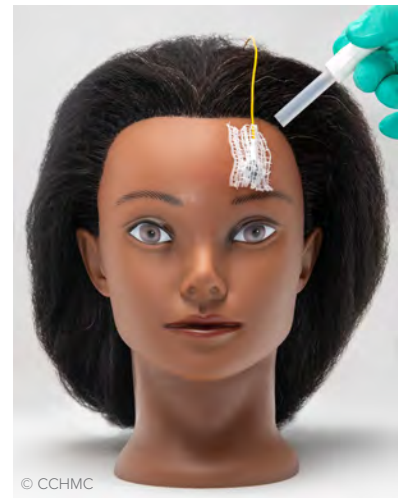
6. Apply the electrode and tail over the silicone-based mesh contact layer, avoid direct contact with the skin.



7. Dip gauze strip in collodion and apply over the electrode/silicone-based mesh contact layer, overlapping onto the skin.

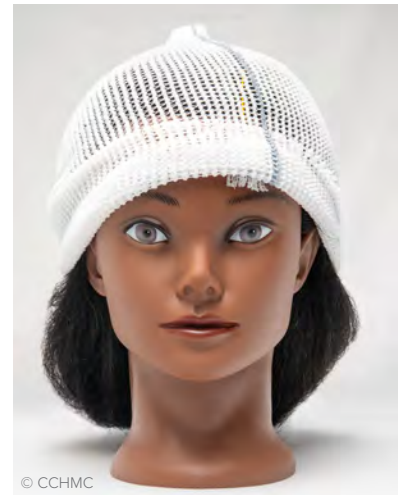


8. Dry the collodion gauze with air hose.
9. Repeat steps 1 through 8 for the remainder of electrode placements.



10. Secure electrodes with stockinette or tubular stocking dressing.

Headwraps: make sure not to wrap too tightly if wrapping with gauze. Leave enough room to comfortably fit two fingers. Whenever possible, use a stockinette or surgical mesh of an appropriate size instead.



During study and electrode removal:

- Whenever possible, moving electrode location slightly daily is best practice to prevent skin breakdown.
- Remove electrodes by dabbing with collodion remover. If collodion is not used, may remove electrodes by dabbing with warm water.
- If electrodes need removed for a short period of time, remove with acetone.
- After the study is completed, the patient and/or family may prefer to remove leads themselves.

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