Cleaning and maintenance

Best: Rinse the cap with the electrodes directly after each usage

Electrodes

Clean the electrodes immediately after each use, best before the electrolyte gel or paste starts drying. Rinse off all rests of the gel under a running tap. In case of dried gels, please soak the electrodes shortly (half a minute) and rinse again, or use a soft toothbrush.
In case of more persistent or greasy stains you may use mild detergents, pure soap or baby shampoo, and clean your cap and electrodes in luke-warm soap water. Please do not use dish detergents, as they may alter the electrode surface. Disinfectants will increase premature aging. Please always rinse with water after cleaning.
Dry the electrodes quickly with a tissue or towel.
Please note: Dried gel may reduce the capacity of sensor to transduce signals and is a very frequent reason for bad impedances and bad signals.

Cap

In addition to the above, the cap itself (without electrodes) can be cleaned in a washing machine at 30° celsius, using a mild detergent.
Please do not put in dryer nor iron, best let it air-dry.

Storage

Best is to store the cap and electrodes in a dry and dark place.

Handling and Maintenance

Lifespan of electrodes depends on the handling. The most critical spot of an electrode is where the elastic cable goes into the solid electrode housing, and into the plug – please do never overstretch or overbend this section.

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EASYCAP
EEG Recording Caps and Related Products

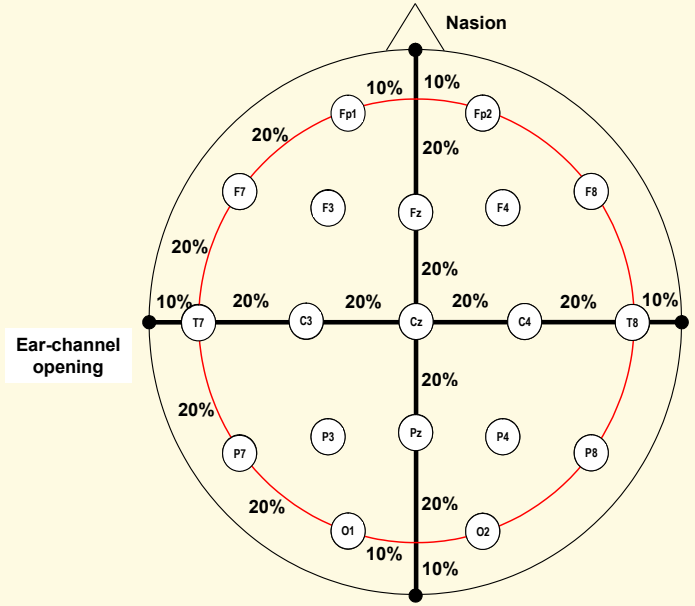
EEG caps in a nutshell

Why EEG recording caps ?

- easy application
- saving time
  for higher numbers of electrodes, manual positioning of electrodes is more time-consuming
- high precision
- highly reproducible electrode positions

The International 10/20-System

employs connecting lines of anatomical landmarks, with length of these lines defined as 100%. Electrodes are placed in distances of 10% or 20% of either the longitudinal or the lateral lines.
The resulting points are approximately equidistant.
Marked red: the „hat-line“around the head - 10% higher than Nasion, Inion, and ear-channels



Cap sizes

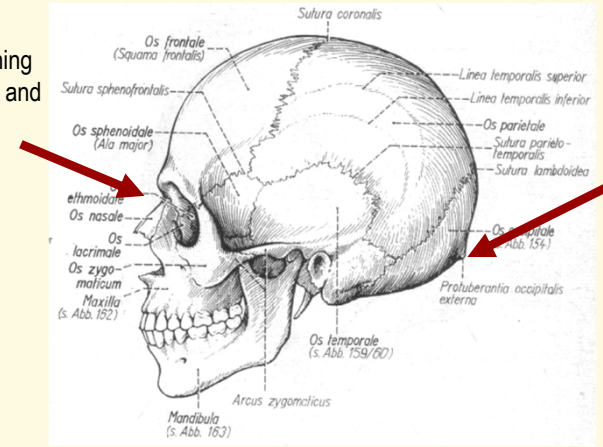
Cap sizes denote the head circumference in centimeter.
Measure the participant´s head circumference at the hat line and choose a corresponding cap size (or one slightly larger).
Size labels are found at the back of our caps.

Adult caps: 54, 56, 58, 60, 62 (average male: 58, average female: 56)
Children caps: 50 (3-4 years), 52 (5-10 years), 54 (11-14 years)
Infant caps: 36 (newborn), 38, 40 (3 months), 42, 44 (7 month), 46, 48 (2 years)

Correct positioning of cap

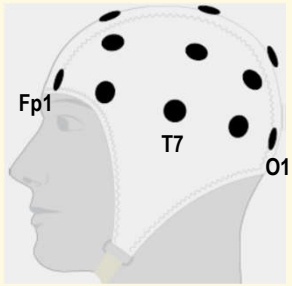
Caps are placed in relation to anatomical landmarks Nasion and Inion

Nasion
is the deepening between nose and forehead



Inion
is the lowest palpable rim at the back of the head

Measure the distance from Nasion to Inion centrally over the head with a measuring tape. Then put on the cap and place Cz half-way.
Make sure the cap is left-right symmetric.



Now close the chin belt.

The cap fits correctly when
Fp1/Fp2 - O1/O2 - T7/T8,
viewed from the side,
all are in the same plane
(with Fp1/Fp2 close to the eyebrows)

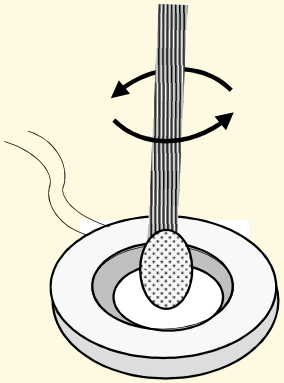
Achieving high signal quality

Good contact between the skin and the sensor, via electrolyte gel or paste, are a prerequisit for low impedances and good signal quality.

→ With the wooden end of the cotton swab, push aside the hair in the electrode opening until the skin is clearly visible

→ Clean the skin
with a degreasing agent such as alcohol (dip the cotton end of a wooden swab in alcohol and degrease the skin by rotating on the spot). This will achieve the first large step, reducing impedances to below 30 kOhm.
If possible participants should come with their hair washed (without using conditioner).

→Abrade the skin
with an abrasive paste (dip another cotton swab in abrasive paste and, again, rotate in the electrode opening, on the spot). This will further reduce impedances to below 5 kOhm.



Through the large opening of ring-shaped electrodes abrasion can be performed by means of a cotton swab.

Best results are achieved when rotating the cotton swab FAST and with MINIMAL PRESSURE.
More pressure will only result in reddening of the skin, or even in bleeding – quick but gentle will do.

With low pressure, this procedure is
- painless and not inducing skin lesions
- very effective

→Apply electrode gel through the electrode opening, e.g. with a syringe

→Check impedances
As most electrolytes permeate the skin, impedances improve after a few minutes ‘magically’ by themselves. Thus best start filling all electrodes and only thereafter check impedances. Best start with REF and GND.

If needed, repeat the abrasive step by gently twisting with a cotton swab.
Most impedance problems result from insufficient contact between skin and gel or gel and sensor.