

Recommended EEG standard electrode configurations

For source montages and source analysis two principles are important:

1. Covering of the lower head with inferior electrodes to record activity from the inferior surfaces of the brain, especially from the basal temporal lobe, from the temporal pole, from orbito-frontal cortex, and from basal occipital and cerebellar areas.
2. Equal spacing of the electrodes over the whole head to cover all brain areas.

In the following montage EEGxx the number xx indicates the number of electrodes.

EEG25 - Minimum 10-20 configuration including inferior electrodes

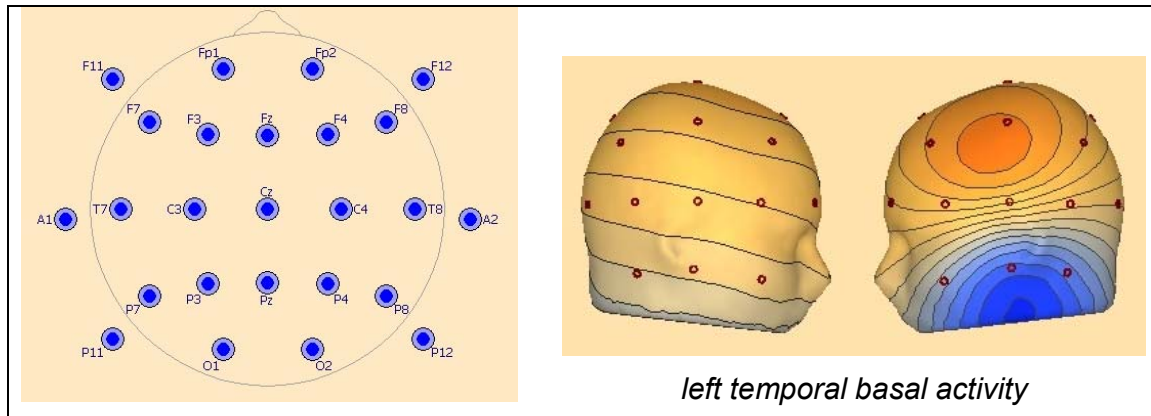
This covers the 19 standard 10-20 electrodes:

Fp1, Fp2, F7, F3, Fz, F4, F8

plus 6 inferior electrodes on both sides:

F11, A1, P11, F12, A2, P12

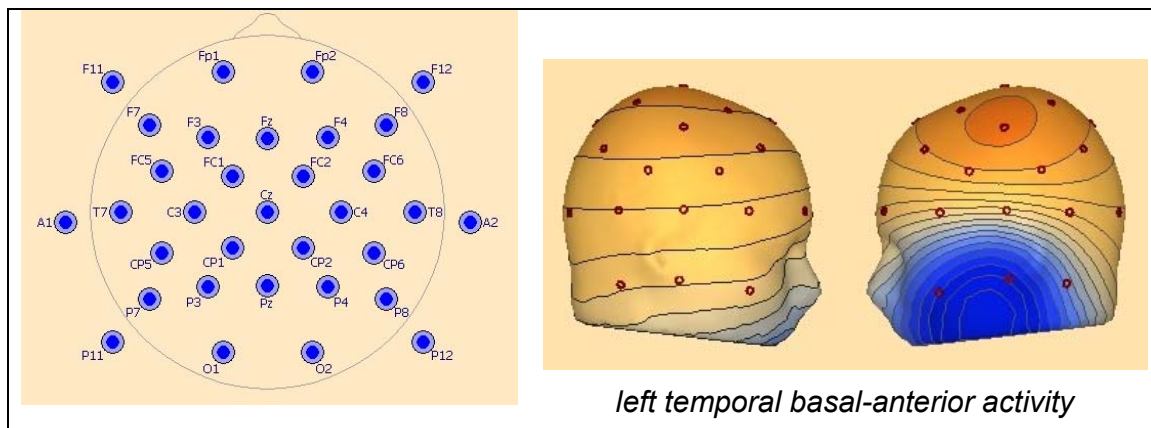
with a recommended continuation of the 20% distances, i.e. use F11 instead of F9, P11 instead of P9, A1 instead of T9 to have a wider coverage of the inferior head. A1 / A2 may be replaced by T9 / T10 (or FT9 / FT10) for convenience and comfort.



EEG33 - Additional 10-10 electrodes within the major squares

To the above electrodes add the following 8 intermediate electrodes:

FC5, FC1, FC2, FC6, CP5, CP1, CP2, CP6



EEG35 - Additional supraorbital electrodes for better EOG separation

SO1, SO2

EEG37 - Wider inferior coverage at interlaced 20% distances

Continue 20% down from F7, FC5, CP5, P7 etc. and use the following 8 inferior electrodes instead of 6:

F11, FT9, TP9, P11, F12, FT10, TP10, P12

EEG41 – Improved frontal and occipital coverage

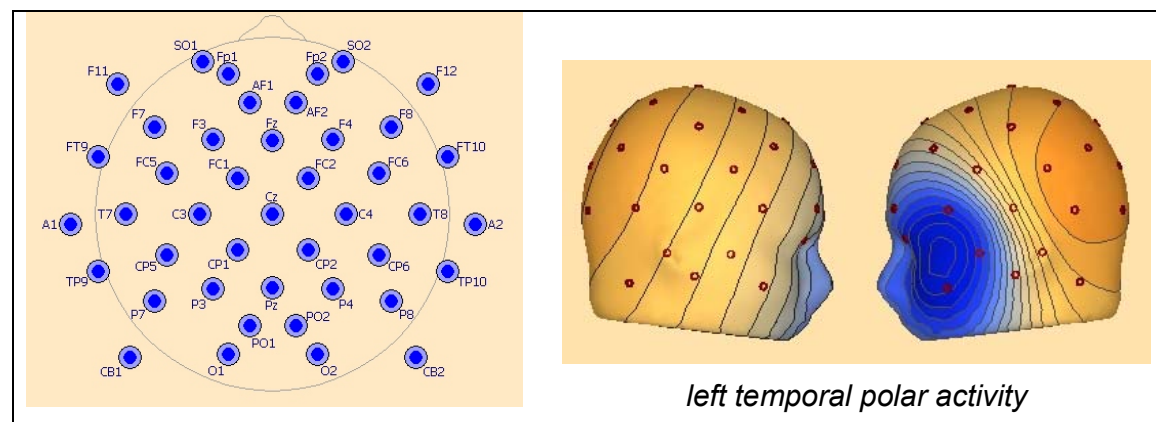
Additional electrodes halfway between Fz and Fp1 / FP2 and Pz and O1 / O2:

AF1, AF2, PO1, PO2

EEG43 – Inferior chain with 5 electrodes including A1 / A2

F11, FT9, A1, TP9, P11, F12, FT10, A2, TP10, P12

EEG43 represents the widest coverage with relatively even spacing.



EEG64-256

With 64 or more channel caps it is similarly recommended to use a sufficient number of inferior electrodes all around the head. At least 4 inferior temporal electrodes on each side and additional electrodes above or below the eyes (outside of the cap) are suggested.

We can recommend EGI Geodesic nets (64, 128, 256) and the equidistant EasyCap 61 with additional 3 electrodes for free placement around the eyes, or EasyCap 128 with nearly equidistant electrodes.

EGI: <http://egi.com/products.html>

EasyCap: <http://easycap.de/easycap/english/schemae.htm>