

## SOP: aEEG/EEG recording

Version	Author(s)	Date	Changes	Approved by
1.0	Lena Hellström-Westas Anne Mette Plomgaard Gorm Greisen	29.05.2012	Initial Version	Lena Hellström-Westas
1.1	Lena Hellström-Westas Anne Mette Plomgaard Gorm Greisen	19.12.2012	Minor changes Print screen must be send	Gorm Greisen
1.2	Anne Mette Plomgaard Gorm Greisen	28.01.2013	Minor changes If the child treated with Morphine, the aEEG should, be recorded as long as possible after bolus.	Gorm Greisen

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## 1.0 SafeBoosC and aEEG/EEG

A 2-h recording of aEEG/EEG should be performed in all infants.

The aEEG/EEG should be recorded at 64h +/- 8h postnatal age (56 to 72hours).

If the child is treated with morphine, other opioids or sedative medications, the aEEG should preferably be recorded as long as possible after a bolus.

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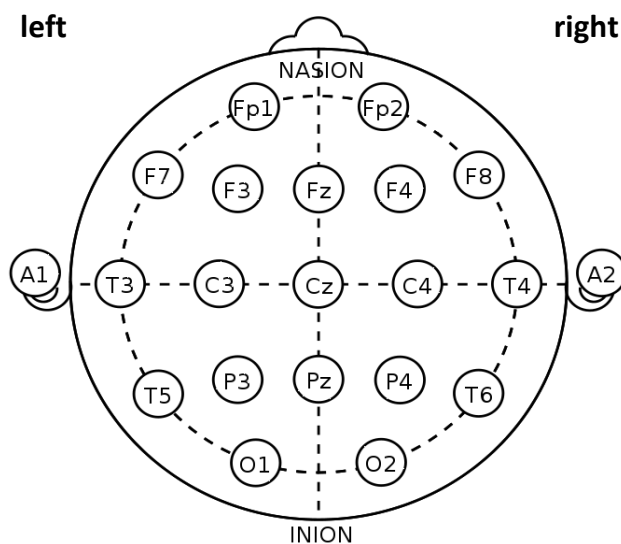
**Electrode positioning – must always include P3-P4 positioning, from where the the most important EEG parameter - the interburst interval - will be estimated.**

## 2.0 Recording the aEEG/EEG

### The procedure:

1. Fill in the aEEG/EEG recording protocol in the eCRF (see Appendix A)
2. Prepare the parents and the staff caring for the baby
3. Prepare the equipment (only Nicolet, BrainZ, MicroMed, G-tec may be used)
  - Check that the date and time in the monitor is correct
  - Enter patient identification as usual
4. Prepare the baby, if necessary remove the NIRS sensor
5. Place the electrodes (use gel or needle as per local routine):
  - Avoid abraded skin, obvious kephal hematoma, severe oedema or other abnormality
  - **Place the P3 and P4 electrodes according to the 10-20-system – (figure 1).**If it is local routine to use additional electrodes we recommend, if you are using BrainZ, to increase the distance from the P3/P4 electrode to the C3/C4 electrodes to two times the width of the measuring-tape (instead of one).

Figure 1



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6. Check that the electrode impedance is less than 20 kOhm
7. Check that the P3-P4 signal has acceptable low noise (running a thin line, with minimal artifacts from EKG, respiratory movements, hiccups or other)
8. Check that the P3 and P4 electrodes are connected and labeled correctly by touching them slightly and checking the signal on the screen labeled P3-P4
9. Start recording.
10. Note any disturbance or pain or sedative medication using the event marking system
11. Stop when at least 120 minutes of good quality EEG has been recorded

### 3.0 Saving and sending the aEEG/EEG data

***The procedure:***

1. Save the aEEG/EEG on the monitor as the local copy
2. Make a Screen print of the aEEG and save it.
3. For transfer to Copenhagen Trial UNIT (CTU), save an anonymised copy (Study ID can be visible).  
**It is important that the file is not saved as a text file but that raw data is saved in the original format of the aEEG-device.**
4. Upload all files, including the “print screen”, related to the recording on an USB stick. Save the file in a folder labeled with the infants SafeBoosC study number (*According to the SOP: data transfer to the Copenhagen Trial Unit*)

Transfer this folder together with the folder containing the NIRS-data to the CTU within 1 week of the infants' birth

***Keep a local copy of the aEEG/EEG with patient identification for the GCP-monitor and clinical use.***

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### Appendix A: Information required in the eCRF

Date of aEEG/EEG recording (dd/mm/yy): \_\_\_\_\_

Start time (hh/mm): \_\_\_\_\_

Stop time (hh/mm): \_\_\_\_\_

#### Equipment

Nicolet

BRM (BrainZ)

Micromed

g.tec

Others name: \_\_\_\_\_

#### Electrodes

Disc

Hydrogel

Needle

#### Electrode positions

Standard P3/P4

Abnormal P3/P4

Additional electrodes Describe: \_\_\_\_\_

#### Medications baby received within 24 h prior to recording:

Caffeine  YES  NO

Last dose before aEEG/EEG: dd/mm/yy: \_\_\_\_\_ hh/mm: \_\_\_\_\_

Comment: \_\_\_\_\_

Theophylline  YES  NO

Last dose before aEEG/EEG: dd/mm/yy: \_\_\_\_\_ hh/mm: \_\_\_\_\_

Comment: \_\_\_\_\_

Opioid  YES  NO

Please specify opioid (e.g. morphine, fentanyl): \_\_\_\_\_

Last dose before aEEG/EEG: dd/mm/yy: \_\_\_\_\_ hh/mm: \_\_\_\_\_

Comment: \_\_\_\_\_

Sedative (e.g. midazolam, please specify)

Last dose before aEEG/EEG: dd/mm/yy: \_\_\_\_\_ hh/mm: \_\_\_\_\_

Comment: \_\_\_\_\_

Anticonvulsive (e.g. phenobarbital, please specify)

Last dose before aEEG/EEG: dd/mm/yy: \_\_\_\_\_ hh/mm: \_\_\_\_\_

Comment: \_\_\_\_\_

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## Appendix B: How to download and save data with BrainZ

### Archiving of EEG data - Hospital specific and for SafeBoosC

In order to insure that a secure copy of the EEG data is maintained there will be a two step method for archiving.

At the start of the assessment, when you have reached step:

#### Enter the patient's details:

- In the **Patient ID** box enter the assigned SafeBoosC study id.
- In the **Patient Name** box enter either the patient name or hospital number, whichever is best for tracking that patient in your hospital
- In the **Clinician initials** box enter either the initial or full name or the researcher responsible for starting the BRM recording

At the end of the assessment

Make two copies of the patient EEG file, one for your hospital's records that will include all identifiers (names and dates) and one for SafeBoosC that will anonymised (all patient identifiers deleted).

#### To copy for your hospital's records:

Select patient file from **Internal Storage** column on left

In the middle of the screen is an **Archive Clinical** button

Select the ▼

Select **Raw data**

The file will copy onto **Removable Media**

This data can then be placed on CD, DVD or secure hospital server for your records.

#### To copy for SafeBoosC

Select patient file from **Internal Storage** column on left

In the middle of the screen is an **Archive Clinical** button

Select the ▼

Select **Make anonymous**

In the **Replace with** box insert the SafeBoosC study number

Select **Raw data**

Select **OK**

The file will copy onto **Removable Media** with all patient identifier erased

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