# EEG monitoring of delirium in Intensive Care Unit patients

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To examine how sensitive certain (combinations of) EEG parameters are for diagnosing delirium in a heterogeneous group of ICU patients during 24 hours of EEG registration. The delirium assessment by delirium experts will determine which patients...

Ethical review	Approved WMO
Status	Will not start
Health condition type	Deliria (incl confusion)
Study type	Observational non invasive

# Summary

### ID

NL-OMON37856

**Source** ToetsingOnline

**Brief title** EEG of delirium in ICU patients

# Condition

• Deliria (incl confusion)

**Synonym** delirium, delusional

**Research involving** Human

### **Sponsors and support**

Primary sponsor: Universitair Medisch Centrum Utrecht Source(s) of monetary or material Support: Ministerie van OC&W

### Intervention

Keyword: Delirium, Electroencephalography, Intensive Care Unit patients

### **Outcome measures**

#### **Primary outcome**

Quantitative EEG characteristics, clinical diagnosis of delirium three times a

day by a group of two delirium expert based on DSM-IV criteria

#### Secondary outcome

-Classification of delirium based on CAM-ICU and ICDSC screening by ICU nurses

-Determination of electrodes that can be used for calculation of EEG

characteristics and electrodes vulnerable for noise and movements artefacts.

# **Study description**

#### **Background summary**

Delirium is a common disorder in the intensive care unit (ICU), but poorly recognized by ICU physicians and -nurses. Electroencephalography (EEG) appeared to be a sensitive tool for the diagnosis of delirium, but this knowledge was never implemented in a continuous monitoring system. However, to provide continuous delirium detection in ICU, the EEG characteristics should be compared at several moments during recording with the diagnosis of delirium experts (gold standard) in a heterogeneous group of ICU patients. Thereby, the most sensitive EEG parameters for the detection of delirium can be determined and at the same time it can be determined how sensitive these EEG parameters are when compared to the gold standard.

#### **Study objective**

To examine how sensitive certain (combinations of) EEG parameters are for diagnosing delirium in a heterogeneous group of ICU patients during 24 hours of EEG registration. The delirium assessment by delirium experts will determine which patients suffer from delirium and this will be used to determine the sensitivity of certain EEG parameters for detecting delirium.

#### Study design

Observational study

#### Study burden and risks

The burden is a 24 hour EEG recording with a limited number of electrodes. This burden is minimal and this type of EEG recording is therefore more and more standard practice in several ICUs. EEG recording has no risks. The burden further includes three evaluations by a group of 2 delirium experts. There is a group-related benefit, as development of an objective tool for delirium detection may improve treatment and therefore outcome.

# Contacts

#### Public

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# **Trial sites**

# **Listed location countries**

Netherlands

# **Eligibility criteria**

Age Adults (18-64 years)

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Elderly (65 years and older)

### **Inclusion criteria**

-Informed consent -Age of 18 years or older

### **Exclusion criteria**

-Comatose patients defined as Richmond Agitation-Sedation Scale (Rass) score < -2 or a Glasgow Coma Scale < 8.

-No communication possible with patient or legal representative due to language barrier or deafness

-Admission for a neurological or neurosurgical disorder

-Expected discharge from the ICU or death within 24 hours

-Patients who participated in this study earlier

-Use of continuous veno-venous hemofiltration or extracorporeal membrane oxygenation, as these therapies result in a specific noise on the EEG.

-Patients in which EEG due to practical reasons not possible is.

-Patients who receive isolation precautions due to infection.

# Study design

# Design

Study type: Observational non invasive		
Masking:	Open (masking not used)	
Control:	Uncontrolled	
Primary purpose:	Diagnostic	

### Recruitment

NL	
Recruitment status:	Will not start
Enrollment:	74
Туре:	Anticipated

# **Ethics review**

Approved WMODate:22-08-2012Application type:First submissionReview commission:METC Universitair Medisch Centrum Utrecht (Utrecht)

# **Study registrations**

# Followed up by the following (possibly more current) registration

No registrations found.

# Other (possibly less up-to-date) registrations in this register

No registrations found.

### In other registers

**Register** CCMO **ID** NL39653.041.12