ETTNO
Effects of transfusion thresholds on neurocognitive outcome of extremely low birth weight infants (ETTNO) a blinded randomized controlled multicenter trial

### Principal and Coordinating Investigator
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### Registration
EudraCT-No.: 2010-021576-28. ClinicalTrials.gov Identifier: NCT01393496

### Condition
Extremely low birth weight, anemia of prematurity, impaired neurodevelopment

### Objective(s)
To compare the effect of restrictive versus liberal red blood cell transfusion thresholds on long-term neurodevelopmental outcome in extremely low birth weight infants

### Intervention(s)
Experimental intervention: Implementation of "liberal" versus "restrictive" guidelines for red blood cell transfusions in extremely low birth weight infants
Control intervention: Because neither "liberal" nor "restrictive" guidelines for red blood cell transfusions can be considered "standard" therapy in preterm infants, one will serve as control for the other
Follow-up per patient: until 24 months of age corrected for prematurity
Duration of intervention per patient: during the initial hospitalization until discharge

### Key Inclusion and Exclusion Criteria
Key inclusion criteria: Preterm infants with a birth weight of 400-999g
Key exclusion criteria: Missing parental consent, gestational age > 30 weeks, or congenital anomalies

### Outcome(s)
Primary efficacy endpoint: Incidence of death or major neurodevelopmental impairment determined at 24 months of age corrected for prematurity
Key secondary endpoint(s): Incidences of the individual components of the composite primary outcome, mental and physical developmental index scores of the Bayley Scales of Infant Development (II edition), growth, and duration of respiratory support and hospital stay
Assessment of safety: Incidences of diseases of prematurity, and of all adverse events

### Study Type
Prospective, observer blinded, parallel group randomized controlled multicenter trial

### Statistical Analysis
Descriptive analysis of baseline characteristics. Efficacy: Intention-to-treat (primary) and per-protocol (secondary) analysis of primary and secondary outcome variables by logistic regression if binary and by analysis of variance if quantitative Safety: Safety analysis of all adverse events (including all major diseases of prematurity) based on all individuals included in the study Exploratory analyses: a series of pre-defined subgroup analyses with descriptive statistics and simultaneous evaluation of subgroup variables in logistic regression models

### Sample Size
To be assessed for eligibility: (n = 1415)
To be allocated to trial (i.e., randomized): (n = 920)
To be analysed: (n = 780, i.e., 2 x 390)

### Trial Duration
Trial set-up starting: January 2010
First patient in to last patient out: July 1st 2011 - September 30th 2015
Duration of the entire trial: 5.5 years

### Participating Centers
To be involved (n): 31 Level III NICUs