# The effects of red blood cell transfusion on the microcirculation in chronic anemic preterm neonates.

Published: 15-05-2014 Last updated: 17-08-2024

To determine the effect of a single red blood cell transfusion on the microcirculation.

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Red blood cell disorders
Study type	Observational non invasive

# Summary

### ID

**NL-OMON40949** 

**Source** ToetsingOnline

**Brief title** Transfusion and Microcirculation (TraM)

### Condition

- Red blood cell disorders
- Vascular disorders NEC

**Synonym** Microcirculation, smallest bloodvessels

**Research involving** Human

### **Sponsors and support**

**Primary sponsor:** Erasmus MC, Universitair Medisch Centrum Rotterdam **Source(s) of monetary or material Support:** Ministerie van OC&W

### Intervention

Keyword: Microcirculation, Preterm neonates, Transfusion

### **Outcome measures**

#### **Primary outcome**

Vessel density and microvascular flow index derived from CytoCam imaging.

#### Secondary outcome

Flow, venous saturation and hemoglobin concentration measured by O2C.

# **Study description**

#### **Background summary**

The microcirculation is an underexposed new field in neonatal intensive care medicine. Visualizing the microcirculation can help us understand tissue perfusion at cellular level. Red blood cell (RBC) transfusion are commonly administered to premature infants, especially during the first postnatal month. However in neonates there is a poor relationship between the hemoglobin (Hb) or hematocrit (Ht) level and clinical symptoms. It would be of great interest to visualize if there is a beneficial effect of a RBC transfusion at a cellular level.

#### **Study objective**

To determine the effect of a single red blood cell transfusion on the microcirculation.

#### Study design

Prospective, observational pilot study.

#### Study burden and risks

There will be no interference with standard care. The only burdening is four times skin contact of the CytoCam. The CytoCam is provided with a sterile cap and uses normal green light. The O2C sensor is an pulse oximetry like sensor which is placed on the upper arm during the erythrocyte transfusion. The temperature of the tip of the camera does not increase.

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# Contacts

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# **Trial sites**

# **Listed location countries**

Netherlands

# **Eligibility criteria**

#### Age Children (2-11 years)

### **Inclusion criteria**

Gestational age below 32 weeks
Chronic anemia determined by protocol \*anemia in preterm infants\* of the NICU department
Erasmus MC - Sophia
Written informed consent

### **Exclusion criteria**

- Any known congenital or chromosomal defects will be excluded from this study.
- Acute bleeding (i.e. pulmonary bleeding, gastrointestinal bleeding)
- Any known hematological disorder (i.e. pathological hemolysis)

# Study design

### Design

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

### Recruitment

NL	
Recruitment status:	Recruiting
Start date (anticipated):	26-01-2015
Enrollment:	24
Туре:	Actual

# **Ethics review**

Approved WMO	
Date:	15-05-2014
Application type:	First submission
Review commission:	METC Erasmus MC, Universitair Medisch Centrum Rotterdam (Rotterdam)

# **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

ССМО

**ID** NL48445.078.14