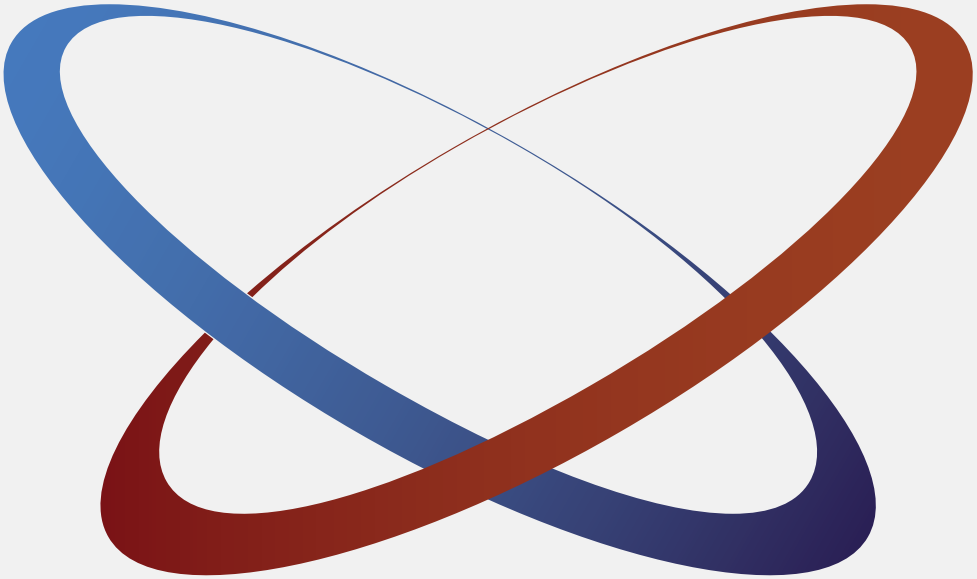
ECCare



Maatschap ECCare

AboutUs

ECCare is an association of six experienced certified clinical perfusionists specialized in delivering extracorporeal circulation and blood management services to medical institutions and companies.

ECCare is established in September 2009 and signed its first major contract with the Isala Klinieken in Zwolle in June 2010.

Isala hospital is still our most important partner. We provide all extracorporeal and blood management services needed for cardiothoracic surgery. In cooperation with Isala we conduct a program for the practical training and education of their trainee perfusionists.

All ECCare perfusionists are certified by the 'College Ziekenhuis Opleidingen' (CZO, Eng: College of Hospital Educations) and maintain an active registration by 'de Nederlandse Sociëteit voor Extra-Corporale Circulatie' (NeSECC, Eng: Dutch Society for Extracorporeal Circulation) submitting ourselves to a reaccreditation program. All ECCare perfusionist attend a variety of relevant medical congresses and workshops to uphold a high level of education and experience. We also actively participate in the quality programs of the medical institutions and partners to who we deliver our services.

Maatschap ECCare

Steven Eilander

chairman ECCare

certified clinical perfusionist
since 1992

Heleen de Graaf

Secretary ECCare

certified clinical perfusionist
since 1997

Ad Boogaart

Treasurer ECCare

certified clinical perfusionist
since 1991

Cees Maas

fellow ECCare

certified clinical perfusionist
since 1982

Peter Segers

fellow ECCare

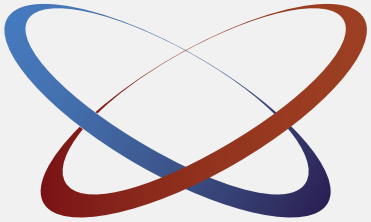
certified clinical perfusionist
since 1986

Sabine Scherphof

fellow ECCare

certified clinical perfusionist
since 2010

OurLogo



The ECCare logo represents the most important aspect of our area of expertise, which is maintaining adequate systemic blood circulation and tissue perfusion by means of a heart-lung machine. The uninterrupted circles depict the arterial an venous aspects of our body's vascular system which, interweaved like the circles, take care of delivering oxygen and nutrients to the body-tissues and ensure the removal of waste products. The circles are positioned within the logo in such a way that they reveal, when looked upon closely, several heart symbols. The heart is the driving force necessary to maintain the blood circulation. And illnesses and defects of the heart are the main reason of existence of our profession. Only through taking over the functions of the heart and lungs is it possible that surgical interventions in and at the heart can be performed safely.

The four hearts within the logo will reveal themselves upon closer look.

They represent the four spear points of our group, which are:

Extracorporeal circulatory support in cardiac surgical procedures

Autotransfusion techniques and blood management procedures

Long-term extracorporeal support in patients with cardiac and/or lung failure

Research, training, education and consultancy

Our Services

General Information

As clinical perfusionists we provide extracorporeal circulation support in patients undergoing a cardiothoracic surgical intervention. We also provide pre-, intra- and postoperative autotransfusion techniques reducing, possibly avoiding, use of donor blood when undergoing surgery. We provide these techniques not only in cardiac surgical procedures but for any major surgical intervention like for instance in orthopedic surgery. We are also involved in wound healing techniques based on preparation of autologous platelet gels.

ECCare offers services to hospitals, institution, companies and organizations who are involved in cardiac surgery and the treatment of high risk cardiology patients, blood saving strategies, blood management techniques and research.

We offer these services at our own facilities and/or within the facilities of our partners. If required we can deliver onsite service. If called for we can provide a 24/7 service on our clinical services.

ECCare can be your partner in initiating projects aiming at blood saving strategies and wound healing based on autologous blood treatment techniques.

Extracorporeal Circulation

Historically, the most important task of a clinical perfusionist lies in the extracorporeal support of the human circulatory system during cardiac surgical interventions. These procedures require the take over of heart and lung functions by means of a heart-lung machine for the duration of the surgical procedure.

The chosen extracorporeal support technique, the choice of material but above all the knowledge, skills and experience of the clinical perfusionist are factors co-determining the operative result, recovery and quality of life after surgery.

Our group of perfusionists is highly trained and very experienced. Together we have performed over 30,000 extracorporeal circulation procedures in support of cardiac surgical procedures. On average our partners have an experience of 20 years as clinical perfusionists.

We are not only experienced in terms of numbers of performed procedures but also in the diversity of techniques we can apply and the great variety of materials and equipment we are accustomed to work with. We have a broad experience using mini-ECC systems, like for instance the Medtronic Resting Heart System. For our partner Isala we developed our own miniaturized system, which is used on a routine basis. Techniques like extracorporeal circulation without the use of cardiotomy suction, mini bloodcardioplegia, antegrade cerebral perfusion techniques, deep hypothermic circulatory arrest, kinetically supported venous drainage etc. are applied by us on a routine base.

Use of the above mentioned techniques, using systems and individual components that are coated with a biocompatible coating, prevention of mixing damaged and activated blood from pericardial and pleural cavity's with the patients systemic circulation and an aggressive policy with regard to the prevention of using donor blood products are key elements of the expert treatment of the more and more aging cardiac surgical patient.

ECCare takes part in the robotic surgery program of Isala Heartcentre. `
Isala Heartcentre is the first to be using the daVinci robot in cardiac and pulmonary surgery. It offers potentially many advantages to the patient like:

- smaller incisions, less pain and therefore reduced exposure to anesthetic an pain medication
- reduced bloodloss and need for donor blood transfusions
- reduced risk for infection
- shorter hospital stay, faster recovery to normal day live
- less scarring

Our Services

Cardiac & Pulmonary Support

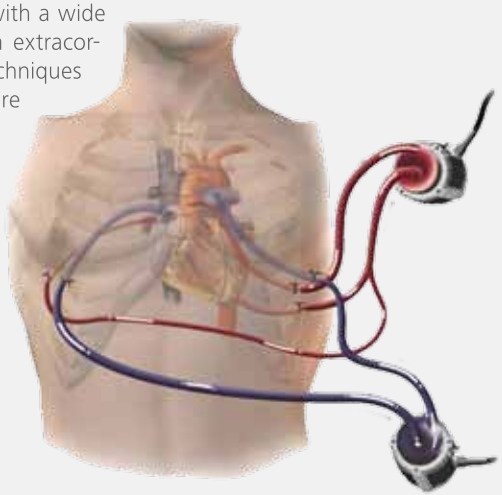
A special part of our area of expertise is the long-term support of patients with a persisting, sometimes permanent failure of their cardiac and/or pulmonary function.

It concerns patients who, after having a single or multiple myocardial infarction(s), are left with a significantly reduced cardiac function such that it becomes life threatening and the only alternative left is heart transplantation. Because the availability of donor hearts is limited these patients end up on a waiting list. Some of these patients need mechanical support of their circulation while they wait for a suitable donor heart.

Apart from the above mentioned group of patients waiting for a donor heart there also exists a group of patients who suffer from one of a variety of illnesses that impair the function of the heart muscle to such an extend that it becomes life threatening. Given time and 'rest' the heart can however partially of even fully recover. Putting these patients on a long-term extracorporeal cardiac support system provides this.

This principle of providing 'rest' to an organ to help it recover is also applied in long-term extracorporeal lung support. A significant reduction of the pulmonary function, of even complete failure as a result of trauma or an infection (a well known example is acute pulmonary failure due to H1N1, influenza infection) may be successfully treated with an extracorporeal artificial lung system, over a period of days or even weeks.

Our group of perfusionist has a broad experience with a wide range of long term extracorporeal support techniques amongst which are the recent Levitronix Centrimag systems and the Maquet PLS systems.



Bloodmanagement

Under the common denominator 'Blood management' our group offers a range of services involving autologous blood transfusion techniques and wound treatment techniques based on products prepared out of the patients own blood.

Cell Salvaging
During major surgical interventions and in the first few hours after surgery a patient may lose a considerable amount of blood due to the procedure. Upon exiting the vascular system and through contact with the tissues in the operative field the coagulation of blood will be triggered and a cascade of biochemical reactions follows. Because of this the blood lost is unsuited for re-transfusion.

Within this volume of lost blood many viable red blood cells remain. These cells are preferably returned to the patient to maintain an adequate oxygen transport capacity of the patient's blood. This can be done by collecting the lost blood immediately together with an anticoagulant. The collected blood is than filtered and processed by means of a so called 'cell salvage device' more commonly known as a 'cell saver'. These devices concentrate the red blood cells and wash-out the activated and damaged components, returning an end-product suitable for re-transfusion. This end product, a red blood cell concentrate, is superior in quality to donor blood products and eliminates the risks involved with using donor blood products.

The necessity of using donor blood products during or after major surgery will be reduced and in many cases even prohibited.

Platelet Rich Plasma (PRP) and Platelet-gel (PG) Therapies
Platelets are crucial in wound healing. Besides playing a role in the primary haemostatic process they release upon activation a diversity of growth factors. These growth factors play a central role in repairing tissue defects. Growth-factors are special proteins that are at the centre of modulating the inflammatory reaction, cell division, cell differentiation, angiogenesis, protein transcription, chemotaxis and have collagenic activity.
Using a blood component concentration device it is possible to separate the buffy-coat of a drawn volume of 50 ml's patient blood to produce a sufficient amount of end product. This product contains a platelet and white blood cell count that far exceeds normal quantities. The product can be used locally in the treatment area and optionally be activated with autologous thrombin, also produced from the drawn volume of patient blood. The applied product will stimulate wound healing, formation of new blood vessels, regeneration of bone and cartilage tissue en improve wound healing in general.

Our Services

Training & Education

ECCare can be you partner in the education of your personnel. We are experienced in the education/training of clinical perfusionists and other medical personnel (anesthesia nurses, surgical nurses, ICU nurses, physician assistants, doctors etc.). We have experience in organizing workshops relating to our specific area of expertise.

We have provided product training for clients of medical companies. At your request we can organize seminars or other client-directed courses specifically targeted at medical personnel or your own staff.

ECCare can provide training, lectures and/or workshops on the following topics.
At your request we can also provide lectures on topics not listed below.

- General extracorporeal Circulation (EC)
- Oxygenators
- Arterial bloedpumps
- Myocardial protection
- EC in surgical procedures of the aorta
- EC and monitoring
- Mini-EC systems
- Limitation and exclusion of cardiotomy suction
- General cell salvaging
- Blood sparing techniques
- General plateletgel therapy
- General longterm cardiac support
- Nursing aspects of longterm cardiac support
- General longterm pulmonary support
- Nursing aspects of longterm pulmonary support
- Any topic of interest.....

Consultancy

Based on our specific knowledge and experience ECCare offers consultancy services to medical institutions and companies. We offer our expert knowledge as:

Broad consultancy with respect to our area of expertise or specific consultancy based on subject or area of interest. We advise institutions with regard to the reshaping of a department of extracorporeal circulation and/or blood management focusing on charting the needs, analysis and solution of existing or newly formed problems, cost control and implementation of new developments.
Consultancy regarding policy making for new treatment modalities and logistic processes.
Consultancy with regard to third party contracts regarding disposable and hardware components necessary in extracorporeal circulation and blood management procedures.
Clinical evaluation of (new) products or formulating a second opinion at request. Through our experience in performing research a consultancy service can be extended with (clinical) research aimed at evaluation and innovation of extracorporeal techniques, procedures and materials.

Research

As a professional group of clinical perfusionists we believe that performing scientific research within our area of expertise is of the utmost importance. Only through continuous research is it possible to scientifically validate existing treatment techniques. It is also of great importance in developing new modalities of treating patients. We therefore perform scientific research and provide support for others doing research in areas of medicine that overlap with our area of expertise.

OurPartners

Isala hospital is our premium partner. We provide all extra-corporeal and bloodmanagement services to this hospital and it is our primary location for on-site training and education.

Our activities in the Isala consist of:

- 1200 extracorporeal circulation procedures
- 125 standby procedures (OPCAB, THV)
- 25 ECLS and VAD procedures
- 1250 cellsalvaging procedures
- 100 plateletgel procedures

Isala is the largest non-academical hospital in the Netherlands and provides nearly all top clinical services to its patients.

Isala was formed after a merger of two hospitals in the city of Zwolle in 1998. The Weezenlanden Hospital and the Sophia Hospital fused into the 'Isala Klinieken' (Isala Clinics). With the relocation in august 2013 of both former hospitals to a newly build hospital the name was changed to 'Isala'.

Facts & Figures Isala

556402	polyclinic visits
45917	hospital admissions
22	operating rooms
5577	employees
341	medical specialists

Facts & Figures Cardiothoracic Surgery

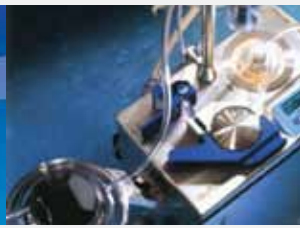
700	CABG procedures (including 60 OPCAB)
120	AVR isolated (50 minimally invasive)
45	AVR/CABG
80	MVR or MVR/CABG (35 MVP robot assisted)
275	Combined cardiac surgical procedures
115	AF treatment, MAZE/PVI
200	Lung surgery (50 robot assisted)

Our Partners

Medtronic

Medtronic is one of our most valued partners. We provide clinical training on topics like centrifugal pumping, mini-by-pass systems and specific product training for customers of Medtronic.
We also participate in research projects and field testing of new products.





Academia

The severe inflammatory reaction due to the contact of human blood with non-physiologic surfaces and air, along with the recirculation of fluids aspirated from the mediastinum, represent the major causes of post-operative morbidity in patients undergoing Extracorporeal Circulation (ECC).

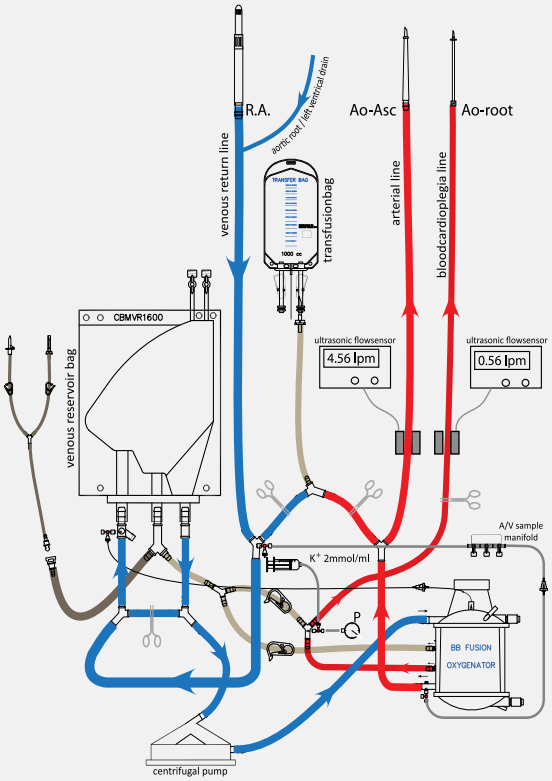
The availability of new, more biocompatible materials has significantly reduced the incidence of blood and tissue trauma related to ECC. Nevertheless some problems still remain unsolved.

The concept of using more biocompatible membranes for oxygenators, routine use of centrifugal pumps and biocoated components and interconnecting tubing, minimizing the total foreign contact surface area, excluding air/blood interfaces by means of a closed reservoir system and avoidance of cardiotomy suction which will introduce activated blood from pleural and

pericardial cavities into the patient circulation, has resulted in the development of the so- called 'Mini-ECC Systems.'

At Isala, in Zwolle, the Netherlands, more than 1200 open-heart procedures per year are performed.

The Isala mini-ECC System with Medtronic components is in our practice the standard circuit since 2008.



OurAcademia

Course Objectives

Understanding the concept of mini-ECC systems in general;
Mini-ECC systems in comparison to conventional bypass;
Beneficial aspects of mini-ECC systems and our approach to mini-ECC systems;
Translating the experience and expertise of our team to the clinical situation of the attending trainee/team.

Course Overview

The training will be given on location at Isala hospital, Zwolle The Netherlands. However, at request, a training seminar at the customers premises can be an option as well.

The training sessions will cover all major aspects of running mini-ECC systems. The training consists of several presentations and practical training sessions during clinical cases.

At request the training and presentations can be extended to include other area's of interest.

Academia Programme

First day

Setting up, priming and de-airing of a mini-ECC circuit including a Medtronic centrifugal bloodpump.

Clinical Case

Initiating CPB/ Weaning from CPB with a centrifugal bloodpump

Presentations

'Isala klinieken method for using bloodcardioplegia. A modified Calafiore technique using the driving force of the Biomedicus blood pump.'

'Kinetic Assist for venous drainage using a centrifugal blood pump in case of femoral vein canulation'

'Setting up, priming and de-airing of a mini-ECC circuit including the Biomedicus centrifugal bloodpump.'

Second day

Setting up, priming and de-airing of a mini-ECC circuit including a Medtronic centrifugal bloodpump.

Clinical Case

Presentations

'The use of the Biomedicus pump for left ventricular assist.'

OurPublications

Publications in the English language

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AJ Boogaart, S Eilander, CM Maas, PAM Segers, I Bethlehem, H de Graaf. NeSECC Journal 1998; vol 23(2): p44-46

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Fourth European Congress Extra Corporeal Circulation Technology Noordwijk The Netherlands, FESECT 1991

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In Vivo Vergelijking Van De Performance Karakteristieken Van De Maquet Quadrox HMO 2000, Quadrox-I HMO 70000 En Quadrox-I Small Adult HMO 50000 Oxygenatoren.
SF Scherphof EKP, S Eilander EKP, AJ Boogaart EKP, PAM Segers EKP, CM Maas EKP, ir. H De Graaf EKP.
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ECMO Ondersteuning Bij Een Patiënt Met ARDS Ten Gevolge Van Een Dubbelzijdige Pneumonie Op Basis Van Influenza Type A (H1N1).
PAM Segers, CM Maas, AJ Boogaart, S Eilander, H de Graaf, RRP Laurens, WJL Suyker MD PhD, FG Leicher MD, JEAT Wever MD, FTF Snellen MD, JJ Ennema MD, H Sonneveld MD, CJ Kwik MD. NeSECC UPTODATE 2010; ed 1: p14-19

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ECCare

Postal Adress:
Veldbloemenlaan 26
8081 DZ Elburg
The Netherlands
+31 (0) 6 53 79 85 38
info@eccare.nl

Chamber of Commerce
Oost Nederland
nr. 08211903

VAT number
NL8215.08.167.B.01

Banking relation
account 1555.84.383
Rabobank, Zwolle