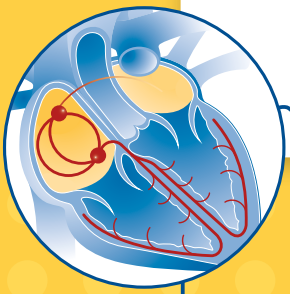
Kompetenznetz Vorhofflimmern e.V. – Atrial Fibrillation NETwork (AFNET)

AFNET e.V.



2003-2023

YEARS OF AFNET

2003-2023

YEARS OF AFNET

Imprint

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AFNET board of directors:
Paulus Kirchhof, Stephan Willems, Ulrich Schotten, Andreas Goette

Dear members, partners, and friends of AFNET,

With this book, we celebrate 20 years of AFNET. The book tells the story of the first 20 years of AFNET in the words of its founders, members, and partners. Old and new photographs, personal views, and short articles shine a light on different aspects of AFNET. Between 2003 and 2023, AFNET matured from a BMBF-funded national German competence network for health into an internationally recognized, not-for-profit academic research organization registered in Germany as an "eingetragener Verein". AFNET was created with the aim to integrate basic, translational and clinical research to improve the lives of patients with atrial fibrillation. These roots guided the design and delivery of national and international investi-

gator-initiated clinical trials, observational research projects, basic and translational research projects, contributions to international research consortia, and international consensus conferences. AFNET owes a lot to the BMBF, the DZHK, the European Union, and industry partners who funded and supported its projects and activities. Equally important, AFNET is thankful to all patients who agreed to participate in AFNET projects. On behalf of all the staff, members, and volunteers at AFNET, we would like to say **"Thank you!"** to everyone who helped AFNET. Together, we improved the research infrastructure for atrial fibrillation and advanced the care of patients with this common disease that remains difficult to contain.

AFNET will apply its networked expertise to develop and deliver new investigator-initiated clinical, translational, and data science projects. Building on its past, AFNET will continue to learn and adapt. With the continued support of our valued partners, we look forward to the next 20 years of AFNET. AFNET will continue on its mission to improve the lives of patients with atrial fibrillation and other cardiovascular diseases.

We hope that you enjoy this book as much as we do, and that you will read and see reasons to celebrate 20 years of AFNET.

December 2023,

Andreas Goette, Paderborn,
Paulus Kirchhof, Hamburg,
Ulrich Schotten, Maastricht,
Stephan Willems, Hamburg,
and Ines Gröner, Münster.

The mission of AFNET

Mission statement

The mission of AFNET is to improve the lives of patients with cardiovascular diseases by generating knowledge on their mechanisms and evidence on effective and safe treatments. To achieve this, AFNET provides a platform to plan and execute non-commercial, international, investigator-initiated controlled clinical trials, registries, and translational research projects that can inform better care of patients with cardiovascular disease. AFNET cooperates with selected partners to conduct its projects. Funding is obtained through public and/or private partnerships. AFNET has long expertise in the management of atrial fibrillation, but also provides support for research in other fields informing cardiovascular care.

AFNET is unique!

» Complementary expertise of cardiologists and neurologists, many years of clinical experience, close cooperations across the disciplines and with industry partners and last but not least a high level of enthusiasm and motivation were key to the success of our network.« **GÜNTER BREITHARDT,** FORMER CHAIR OF THE BOARD

» As an academic research organization AFNET is unique: profound scientific knowledge and the ability to manage complex international clinical studies without being driven by profit interests characterizes the work. « **INES GRÖNER,** MANAGING DIRECTOR

» Institutions and organizations are always successful because of their people. AFNET people are deeply involved in the science, and we have an excellent management team. This generates new ideas which make us attractive for industry partners. «

ULRICH SCHOTTEN, BOARD MEMBER

» The people working together in the AFNET are highly cited scientists who really know the field of atrial fibrillation. We bring the best people together, and we have a very close and friendly relationship with each other. That really helps to collaborate with other partners to provide the best science and the best knowledge about atrial fibrillation. «

ANDREAS GOETTE, BOARD MEMBER

» AFNET is above all a group of people who have a common interest in better understanding atrial fibrillation, conducting clinical studies professionally and thus improving the care of people with atrial fibrillation. The people are probably the most important part of this organization. «

PAULUS KIRCHHOF, CHAIR OF THE BOARD

» AFNET combines enthusiasm, vision, and expertise. AFNET provides a platform for investigator-initiated trials with the aim to improve patient outcome. «

STEPHAN WILLEMS, BOARD MEMBER

The first decade of AFNET

Founding of the Atrial Fibrillation Network

The Atrial Fibrillation NETwork (AFNET) was founded in 2003 as one of 21 research networks in Germany funded by the German Federal Ministry of Research and Education (BMBF). A large grant established the basis for a Germany-wide research network.

The people who developed the idea of the Atrial Fibrillation Network were the four cardiologists Günter Breithardt (Münster), Peter Hanrath (Aachen), Gerhard Steinbeck (München), and Thomas Meinertz (Hamburg). They developed the concept of the network, submitted the application to the BMBF, and won the grant. They became the first board of directors of the AFNET with Günter Breithardt as chair.

» We are very grateful to Günter Breithardt, Peter Hanrath, Gerhard Steinbeck, and Thomas Meinertz because they, together with Ursula Ravens who joined the board a few years later, enabled to build up the infrastructure and enabled the first projects. These people instilled the team spirit that is the culture of AFNET until today. «

PROF. PAULUS KIRCHHOF, CHAIR OF THE BOARD SINCE 2015

» The BMBF's call for proposals of 31 January 2001 for the establishment of medical competence networks for cardiovascular diseases was a unique opportunity. The aim was to identify a common research topic, to bring together national experts in the field, to create the necessary horizontal and vertical structures not only for research but also for education and communication, and, most importantly, to be successful in competition with a large number of applications.

It was a great fortune and a prerequisite for the eventual success, not only in the foundation, but also in the long-term

management of the network, that we four founders worked together in a spirit of trust and mutual understanding, without being hindered by excessive feelings of competition and envy. It required a mixture of ambition and enthusiasm and a great deal of stamina to go through the two-stage application procedure.

Our task as founders was to assemble national experts and their groups, to prepare a project proposal with the required horizontal and vertical networking, to stand up for the plans and projects in a competitive review process, living with doubts whether we would succeed, and finally to receive the good news that the project was recommended for approval by an international expert committee.

We all had quite some experience with other project submissions like individual research applications or collaborative research projects (SFB) but this network required a broader approach, ranging from basic research to clinical research to education and communication.

Success has to do with the people involved. A big thank you goes to Dr. Richard Ammer, who was indispensable in the application phase to put together the preliminary and final application, as well as to our first, long-standing managing director, Dr. Thomas Weiß. « **GÜNTER BREITHARDT**, CHAIR OF THE AFNET BOARD FOR THE FIRST 12 YEARS

Prof. Günter Breithardt, chairman of the AFNET board (2003-2015)

Structure of the early AFNET

AFNET was led by the board of directors and advised by a steering committee consisting of other scientists involved in the research project. From the start, the work of AFNET was overseen by an international scientific advisory board.

AFNET comprised projects in three research sections, headed by the board members:

- A – healthcare and long-range prognosis (Steinbeck)
- B – optimized diagnostics and therapy (Meinertz)
- C – pathophysiology (Hanrath / Ravens).

The sub-projects were led by scientists from universities all over Germany.

In the early years, AFNET was part of the University of Münster, and the central office that coordinated the network was integrated into the University Hospital. The central office team of the early AFNET was composed of the managing director, a secretary, and staff members for finances and public relations.

At the outset, the AFNET funding was scheduled for five years, terminating in 2008. Fortunately for the long-term success of the network, BMBF funding was prolonged several times until 2014. During the years of BMBF funding, AFNET successfully established a lasting structure of the network.

» As is typical for project-based research, the funding was limited to three plus two years. However, the notion was to become sustainable and financially independent on the long-term as an institution. Thus, we were asked to stand on our own feet after the end of public support. We managed to reach this goal! The challenge strengthened us! «

GÜNTER BREITHARDT

Central office teams 2004 and 2009

Dr. Thomas Weiß, the first managing director (2003-2012)

» AFNET is an example of a successful evolution from a publicly funded national academic clinical research network into an independent international study platform producing guideline relevant clinical data for the benefit of the patients. «

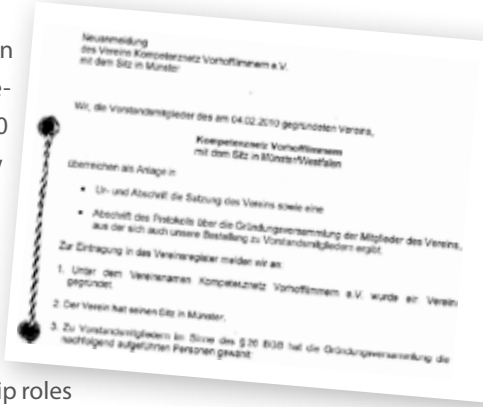
THOMAS WEISS

Founding of the association

The research networks funded by the German Federal Ministry of Research and Education (BMBF) were designed as time-limited projects. The BMBF explicitly desired that these networks perpetuate themselves before the end of the funding period. AFNET succeeded in building up stable research cooperations and developed ideas for large clinical trials.

Growing scientific activities of AFNET called for an adjustment of its structure. Therefore, the steering committee decided to found the association Kompetenznetz Vorhofflimmern e.V. (AFNET) to continue the work of the BMBF-funded research network Kompetenznetz Vorhofflimmern.

In 2010, AFNET was registered as an association (e.V. = "eingetragener Verein") that acts as an independent, not-for-profit organisation. From 2010 until 2014, the BMBF-funded project and the new association existed in parallel with identical boards of directors and steering committees. Since 2015 all AFNET activities occur in the association.


Neuanmeldung
des Vereins Kompetenznetz Vorhofflimmern e.V.
mit dem Sitz in Münster

Wir, die Vorstandsmitglieder des am 04.02.2010 gegründeten Vereins,

Kompetenznetz Vorhofflimmern
mit dem Sitz in Münster/Westfalen

übersenden als Anlage in

- Ur- und Abschrift der Satzung des Vereins sowie eine
- Abschrift des Protokolls über die Gründungsversammlung der Mitglieder des Vereins, aus der sich auch unsere Bestellung zu Vorstandsmitgliedern ergibt.

Zur Eintragung in das Vereinsregister melden wir an:

1. Unter dem Vereinsnamen Kompetenznetz Vorhofflimmern e.V. wurde ein Verein gegründet.
2. Der Verein hat seinen Sitz in Münster.
3. Zu Vorstandsmitgliedern im Sinne des § 26 BGB hat die Gründungsversammlung die nachfolgend aufgeführten Personen gewählt:

The structure of an association enables sponsorship roles for international clinical trials and participation in international research consortia. In 2011 EAST – AFNET 4 was started, the first international clinical AFNET trial with AFNET association as sponsor. Several other international trials followed in the years thereafter.

Today the association has 130 members. Membership is possible for physicians, scientists, hospitals, private practices, and companies – see AFNET association, page 86 ff.

AFNET coming of age

Over the years, the national network has developed into an internationally active academic research organisation dedicated to translational cardiovascular research and evaluating new therapies mainly focusing on atrial fibrillation.

Partnership with DZHK: joint booths at the DGK congresses in 2014 ...

Partnership with DZHK

As sponsor of large investigator-initiated trials, AFNET relies on consistent partners. In addition to their industrial partners who provide financial and in-kind support for the conduct of the trials, AFNET found new public partners, notably the German Centre of Cardiovascular Research (DZHK).

The DZHK was established in 2012 on the initiative of the Federal Ministry of Education and Research (BMBF), as one of six German Centres of Health Research. The mission of DZHK is to develop new therapies and diagnostic procedures that have an impact on the lives of people suffering from cardiovascular diseases. Numerous cardiovascular research projects were pooled under the umbrella of DZHK.

In 2014, AFNET and DZHK entered into a strategic partnership. DZHK has funded specific projects and infrastructure of AFNET since 2015. Beyond that, the joint activities of AFNET and DZHK include corporate booths at the annual congress of the German Cardiac Society (DGK).

» The partnership with the DZHK is a recognition of our many years of experience in conducting national and international trials « **GÜNTER BREITHARDT**

... and in 2022

Comment on the strategic partnership between DZHK and AFNET:

» In 2012, shortly after foundation of the German Centre for Cardiovascular Research (DZHK), the question arose how to deal with the cardiological competence networks (KN). The KN for Congenital Heart Diseases (KNAHF), Atrial Fibrillation (AFNET) and Heart Failure (KNHI) were funded by the German Ministry of Education and Research (BMBF) between 2004 and 2013. The question was sensitive in the way that, on the one hand, the KN shared scientific goals with the DZHK and had built up clinical study structures that could be a model for the DZHK. They appeared thus as ideal partners. On the other hand, the participating sites and actors as well as the overall scientific focus differed, and a natural resistance existed to simply continue funding the established KN with DZHK budget.

In the end, we found a model that satisfied the needs of both sides. The DZHK degressively funded all three KN until 2018 (KNHI), 2019 (KNAHF) and 2022 (AFNET). The details differed between the three KN, but the principles were that (1) the KN should retain their organizational independence and identity, (2) the KN should act as clinical trial sites for DZHK, (3) the KN could apply for funding of own clinical trials at DZHK, (4) DZHK financed part of the clinical trials and of the KN infrastructure and AFNET acknowledged the respective DZHK funding.

This model turned out to be fruitful, particularly in case of the AFNET, which developed a very strong, internationally recognized brand name in clinical research and published 44 high impact papers mentioning DZHK support until today. Congratulations from my side and good continuation! «

PROF. THOMAS ESCHENHAGEN,

FORMER CHAIRMAN OF THE DZHK BOARD

A growing central office

At the end of the BMBF funding in 2015, the AFNET central office moved from the University Hospital to an innovation campus in Münster where it remains.

The number of team members grew over the years and now the team consists of 12 persons mainly focusing on project management for clinical studies and scientific communication support.

AFNET team 2015, 2020, 2023

» I have experienced a great team spirit, mutual trust and high engagement in the projects and the scientific collaboration by all network partners and AFNET team members. That's for sure a major factor for success. « **INES GRÖNER,** MANAGING DIRECTOR

Statements by AFNET team members

» The uniqueness of the AFNET consists of the successful interdisciplinary translational collaboration of academic, medical/scientific, economic and industrial partners across all levels of care at an international level. «

THOMAS WEISS, FORMER MANAGING DIRECTOR

» AFNET as an employer is interesting for me because we are responsible for various tasks: These include helping to write study documents such as protocol and patient information, ethics and regulatory submissions of trials, organizing congresses and conferences and much more. «

VINCENT BEUGER, PROJECT MANAGER

» I find the atmosphere in AFNET inspiring and motivating. Despite the ever-present competition, cooperation prevails in AFNET. The good atmosphere in AFNET is thanks to a few integrating personalities. Prof. Breithardt deserves special mention here. He has always managed to unite the different interests and reach a consensus even in difficult discussions, for example when it came to perpetuating the network. «

ANGELIKA LEUTE, FORMER TEAM MEMBER AND CURRENT FREELANCE COLLABORATOR

Committees

AFNET is led by a four-member board of directors. The board is advised by a steering committee consisting of a maximum of fifteen persons – mostly scientists – who represent the focus of AFNET's activities. An advisory board oversees the work. The committees are elected by the general meeting of the AFNET association. All committee members work on an honorary basis. Currently AFNET is headed by the following persons:

Board of Directors

- Prof. Dr. med. Andreas Götte, Paderborn, Germany (public relations)
- Prof. Dr. med. Paulus Kirchhof, Hamburg, Germany (chair)
- Prof. Dr. med. Dr. (PhD) Ulrich Schotten, Maastricht, Netherlands (treasurer)
- Prof. Dr. med. Stephan Willems, Hamburg, Germany

Steering Committee

- Prof. Günter Breithardt, Münster (guest)
- Prof. Lars Eckardt, Münster
- Prof. Larissa Fabritz, Hamburg
- Dr. Ines Gröner, Münster (managing director)
- Prof. Karl Georg Häusler, Würzburg
- Prof. Thorsten Lewalter, Munich
- Prof. Ursula Ravens, Freiburg
- Prof. Renate Schnabel, Hamburg
- Prof. Moritz Sinner, Munich
- Prof. Daniel Steven, Cologne
- Prof. Dierk Thomas, Heidelberg
- Prof. Reza Wakili, Essen
- Prof. Antonia Zapf, Hamburg (guest)

Statements by AFNET steering committee members

Board of directors 2022

» *The AFNET is a natural structure created by the collaboration of scientists who all have a strong interest in research and in advancing medicine in the field of atrial fibrillation.* « DIERK THOMAS

» *The 20-years' experience in project management and clinical trials that has generated ground-breaking evidence in the field of atrial fibrillation is unique in the field, not only in Germany. It is a pleasure to work together with the dedicated and experienced AFNET team as a clinician and researcher.* «

RENATE SCHNABEL

» *AFNET trials gained a remarkable reputation which is mainly due to the continuous efforts of this scientific group. The organization and execution of multicenter prospective randomized trials are the most visible part of high-quality scientific work. Since we are working as clinicians in hospitals and are performing these studies in the application of novel treatment concepts to our patients, the clinical relevance and importance of these study initiatives have always been compelling and therefore make it very easy to convince patients to be part of these scientific projects. We are always delighted to work together with the AFNET to execute these important studies and to further answer important questions in the daily routine therapy of our patients.* «

DANIEL STEVEN

Steering committee 2022

AFNET Organigram

Steering Committee:

Prof. Günter Breithardt

Prof. Lars Eckardt

Prof. Larissa Fabritz

Dr. Ines Gröner

Prof. Karl Georg Häusler

Prof. Thorsten Lewalter

Prof. Ursula Ravens

Prof. Renate Schnabel

Prof. Moritz Sinner

Prof. Daniel Steven

Prof. Dierk Thomas

Prof. Reza Wakili

Board of directors:

- Prof. Paulus Kirchhof

- Prof. Andreas Götte

- Prof. Ulrich Schotten,

- Prof. Stephan Willems

Advisory Board

Business Board / Central Office

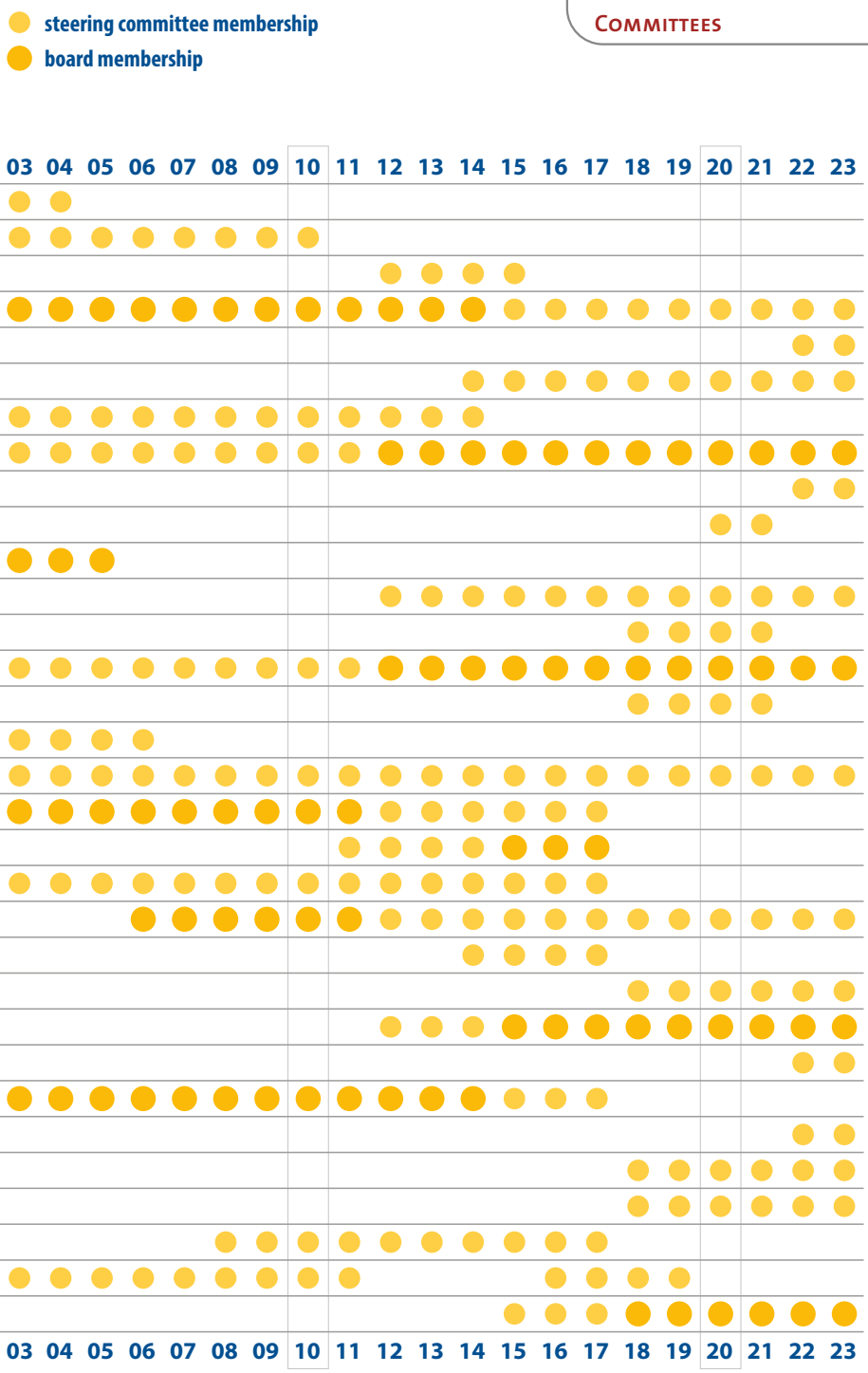
Scientific Partners

Operative Partner

Study Sites

AFNET committee members over 20 years

Richard Ammer	University Hospital Münster
Hans-Jürgen Becker	Deutsche Herzstiftung, Frankfurt
Gerlinde Benninger	AFNET, Münster
Günter Breithardt	University Hospital Münster
Larissa Fabritz	University Medical Center Hamburg-Eppendorf
Lars Eckardt	University Hospital Münster
Thomas Fetsch	CRI, Munich
Andreas Götte	St. Vincenz Hospital Paderborn
Ines Gröner	AFNET, Münster
Doreen Haase	AFNET, Münster
Peter Hanrath	University Hospital Aachen
Karl Georg Häusler	University Hospital Würzburg
Gerhard Hindricks	Leipzig Heart Center
Paulus Kirchhof	University Medical Center Hamburg-Eppendorf
Ingo Kutschka	University Medical Center Göttingen
Walter Lehmacher	University of Cologne
Thorsten Lewalter	Hospital Munich South
Thomas Meinertz	Praxis Meinertz & Jäckle, Hamburg
Michael Näbauer	LMU Klinikum Großhadern, Munich
Michael Oeff	University Hospital Brandenburg
Ursula Ravens	University Heart Center Freiburg
Thomas Rostock	University Medical Center Mainz
Renate Schnabel	University Medical Center Hamburg-Eppendorf
Ulrich Schotten	University Hospital Maastricht
Moritz Sinner	LMU Klinikum Großhadern, Munich
Gerhard Steinbeck	Klinikum Starnberg
Daniel Steven	University Hospital Cologne
Dierk Thomas	University Hospital Heidelberg
Reza Wakili	University Hospital Essen
Karl Wegscheider	Hamburg Center for Health Economics
Thomas Weiß	AFNET, Münster
Stephan Willems	Asklepios Hospital St. Georg, Hamburg


steering committee membership
board membership
03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Advisory board

The current AFNET advisory board consists of three persons who advise the managing board in scientific, economic, and juristic questions. Correspondingly, the present advisory board consists of one scientist (1), one lawyer / regulatory advisor (2) and one business administration / financial advisor (3):

1. Prof. Günter Breithardt, Münster

2. Prof. Burkhard Sträter, Bonn

3. Dr. Alexander Hewer, Berlin

» The members of our advisory board cover long-term memory of the development of AFNET, legal advice with special experience from a perspective of clinical trials and device legislation, and economic advice with personal experience in multicenter research platforms. The mission is to review recent developments and activities of AFNET and to assist in planning for the future. Advice by the advisory board to the board of AFNET is part of our good governance practice. « **GÜNTER BREITHARDT**

Steering committee 2019 ...

... 2015

... 2013

... 2006

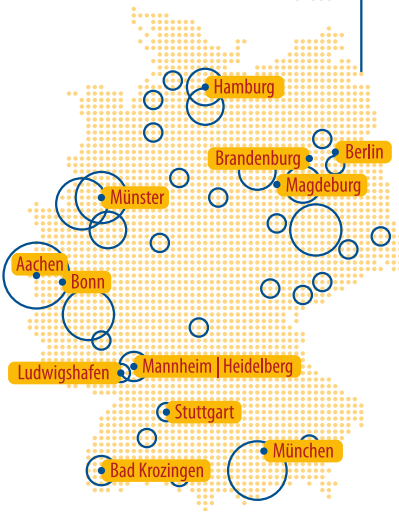
... 2004

Clinical research – AFNET goes international

A growing network

One of the first AFNET projects was the AFNET 1 registry which enrolled about 10.000 patients with atrial fibrillation in Germany between 2004 and 2006. In the course of this registry AFNET established a Germany-wide network of physicians in hospitals and private practices. This network laid the foundation for further studies and clinical trials. Over the years it stretched out over several European countries and it is still growing.

A Germany-wide network of study sites



Members of AFNET in Münster at the start of the registry in February 2004: Paulus Kirchhof, Thomas Weiß, Günter Breithardt

» In the course of this registry, AFNET established for the first time in Germany a nation-wide network of physicians between university hospitals, community hospitals and private practices for the study of atrial fibrillation. «

PROF. GERHARD STEINBECK, MUNICH, LEADING INVESTIGATOR OF THE AFNET 1 REGISTRY

Cooperation of cardiologists and neurologists

The AFNET registry was accompanied by a critical event committee (CEC) in which cardiologists and neurologists collaborated to assess the occurring serious adverse events.

CEC members Prof. Dr. Ulrich Tebbe, Prof. Dr. Michael Oeff (both cardiologists) and Dr. Karl Georg Häusler (neurologist) together with physician Ute Wolf at the founding meeting of the CEC for the AFNET registry in Hamburg on 16 October 2004.

» As a neurologist, I particularly associate interdisciplinary collaboration with the AFNET. The interaction between heart and brain is a major focus of our work, also including the relevance of atrial fibrillation for stroke and cognition. «

PROF. KARL GEORG HÄUSLER, NEUROLOGIST, MEMBER OF THE CEC

» The collaboration between centers in the cardiological and neurological areas is a special feature of our structure. «

PROF. GÜNTER BREITHARDT, FORMER CHAIR OF THE AFNET BOARD

Investigator initiated trials

AFNET has 20 years of expertise in clinical research. All AFNET studies are non-commercial, investigator initiated controlled clinical trials. The ideas for these trials came from AFNET scientists in order to answer questions that clinicians face in their practice.

The first AFNET trials were conducted in Germany and funded by the BMBF, with additional support from industry partners. Legal sponsors for these trials were different universities in Germany.

- **Gap-AF – AFNET 1** (Catheter ablation of atrial fibrillation by linear pulmonary vein isolation)
- **ANTIPAF – AFNET 2** (A randomized controlled clinical trial to investigate the efficacy of Olmesartane (Angiotensin II receptor blocker) to prevent paroxysmal atrial fibrillation)
- **Flec-SL – AFNET 3** (Short-term pharmacological rhythm control of atrial fibrillation)

Since the founding of the AFNET association in 2010, five large randomized clinical trials were successfully conducted in Europe and beyond. In these trials, the AFNET association served as legal sponsor, and financial support was provided by industry partners and public funding.

The AFNET trials exemplify the added value of independent investigator initiated trials (IITs) for clinical progress. EAST – AFNET 4, the first pan-European IIT conducted by AFNET, started in 2011 and recruited patients in 11 European countries.

east

early treatment of
atrial fibrillation for
stroke prevention trial

- **EAST – AFNET 4**
  (Early treatment of atrial fibrillation for stroke prevention trial)

Poster to promote patient recruitment for EAST – AFNET 4 in the participating study sites in different European countries.

- **AXAFA – AFNET 5**
  (Anticoagulation using the direct factor Xa inhibitor apixaban during Atrial Fibrillation catheter Ablation: Comparison to vitamin K antagonist therapy)

- **NOAH – AFNET 6**
  (Non-vitamin K antagonist Oral anticoagulants in patients with Atrial High rate episodes)

- **AXADIA – AFNET 8**
  (A Safety Study Assessing Oral Anticoagulation with Apixaban versus Vitamin-K Antagonists in Patients with Atrial Fibrillation (AF) and End-Stage Kidney Disease (ESKD) on Chronic Hemodialysis Treatment)

- **Smart in OAC – AFNET 9**
  (Multi-centre, multi-national, investigator-initiated, single-arm case-finding study of a cloud based analytic service as screening tool to detect and quantify episodes of atrial arrhythmia using an automated, wearable photoplethysmography-based monitoring system)

» Investigator initiated trials are indispensable for medical care. If such independent clinical research did not exist, many important questions would never be investigated. This also includes the comparison of different treatment strategies as performed in the EAST – AFNET 4 trial. «

GÜNTER BREITHARDT

» The personal commitment and personal motivation of the study personnel involved were crucial to the success of the AFNET studies. «

THOMAS WEISS

Cooperation with many players

Large clinical trials rely on good collaboration between many players over a long time.

Each large clinical trial is overseen by several scientific committees consisting of international scientists who are specialists in the research field of the trial. The committees are coordinated by the AFNET team.

A large number of physicians in hospitals and private practices in many participating countries enroll patients and treat them within the trial over a follow-up period of

several years. To ensure professional conduct of the study at each site and for each patient, AFNET works with contract research organisations (CRO) who support the delivery of our trials. Good communication with the participating investigators is key for successful patient recruitment and for high quality study data in the end. This is achieved by investigator meetings at regular intervals. In those meetings the investigators have the opportunity to discuss their study related questions with the leading scientists and with the project managers of the AFNET team and the CRO.

Last but not least, the participating patients are essential for the success of a clinical trial. The patients often remain at the trial for several years. It is a challenging task to keep the study patients motivated for such a long time. We are much indebted to the many patients who participated in AFNET trials.

AFNET managed these challenges, completed several trials successfully and produced practice-changing results.

NOAH – AFNET 6 investigator meeting 2023

Statements by study patients

» Should the atrial fibrillation come back one day, I'll be more than willing to undergo further treatments, maybe ablation too. « **EAST – AFNET 4 STUDY PARTICIPANT**

» I am pleased that as a patient I can contribute to researching this form of arrhythmia and finding the optimal treatment for myself and other sufferers. «

NOAH – AFNET 6 STUDY PARTICIPANT

Statements by investigators who contributed to AFNET trials

» AFNET trials address open questions that are clinically highly relevant and affect a large patient population. The results of the study are guideline relevant and have huge impact on the therapy of our patients in daily practice. Data from AFNET trials helped us to better understand the impact of rhythm or rate control in patients with atrial fibrillation or the impact of oral anticoagulation in patients with atrial high rate episodes. «

PROF. ROLAND TILZ, UNIVERSITÄTSKLINIKUM SCHLESWIG-HOLSTEIN, LÜBECK. HE CONTRIBUTED TO EAST - AFNET 4 AND NOAH - AFNET 6

» A lot of AFNET studies were published recently. One of the hot topics is the NOAH - AFNET 6 study. We are looking forward on how this will be implemented in clinical care. «

PROF. DOMINIK LINZ, MAASTRICHT UNIVERSITY MEDICAL CENTER

» The ANTIPAF - AFNET 2 trial was our first project to collaborate with AFNET. I have been following the successful path of our research project for 19 years now. Looking at the scientific collaboration within AFNET, I appreciate especially the uncomplicated and humble collegial exchange of everybody concerned, equally from universities, hospitals, practices involved in scientific research, sponsors and professional societies in Germany and beyond. «

DR. CHRISTOPH AXTHELM, CARDIOLOGICUM DRESDEN & PIRNA

» Participation in AFNET trials provides an opportunity to contribute to pioneering cardiac research under the guidance of top-tier scientific leadership and exemplary organization! « **DR. MARTIN BORLICH**, HERZZENTRUM BAD SEGEBERG

» Trials initiated or supported by AFNET always try to answer practical and clinically relevant questions. Once you consider these questions to be of relevance, a scientist should actively participate and enroll patients for these projects. «

PROF. PHILIPP SOMMER, HERZ- UND DIABETES-ZENTRUM NRW, BAD OEYNHAUSEN

» AFNET works on questions which are very relevant to patients. The studies carried out have particular impact and ultimately result in a benefit for the patients. «

PROF. LARISSA FABRITZ, UKE HAMBURG

Partner in clinical trials

AFNET is also a partner in a number of ongoing controlled clinical trials conducted by other sponsors including three ongoing trials of the German Centre for Cardiovascular Research (DZHK):

- **CLOSURE-AF-DZHK 16**

  (Left atrial appendage CLOSURE in patients with Atrial Fibrillation at high risk of stroke and bleeding compared to medical therapy)

- **CMR-ICD-DZHK 23**

  (Cardiac Magnetic Resonance guidance of Implantable Cardioverter Defibrillator implantation in non-ischaemic dilated cardiomyopathy)

- **CABA-HFPEF-DZHK 27**

  (CAtheter-Based Ablation of atrial fibrillation compared to conventional treatment in patients with Heart Failure with Preserved Ejection Fraction)

and one of the Ottawa Heart Institute Research Corporation:

- **OCEAN**

  (Optimal Anticoagulation for Higher Risk Patients Post-Catheter Ablation for Atrial Fibrillation Trial)

AFNET provides regulatory project management for these trials and is assisting with other tasks such as organizing investigator meetings and writing study documents such as newsletters, charters, and patient information / informed consent.

Comment

» Our collaboration with AFNET stands out because it's rooted deeply in mutual respect and trust. What sets AFNET apart is their expertise in investigator-initiated clinical trials. Their long-standing experience in project management assures that every task is done with great care and attention to detail. In the challenging environment of tight deadlines and high stakes, AFNET always maintains a clear perspective, prioritizing tasks to ensure that no detail is overlooked.

Their responsiveness and reliability in communication ensure that we're always on the same page, fostering a collaborative spirit. Successful collaboration needs clear communication, adherence to deadlines, and the expertise of the team involved.

It's equally essential to have an open forum for discussions, ensuring that complex challenges are addressed from multiple perspectives. In our partnership with AFNET, all these factors are consistently present, making our cooperation both rewarding and effective. « **DR. ABDUL PARWANI,**

PRINCIPAL INVESTIGATOR OF THE CABA-HFPEF-DZHK 27 TRIAL

Basic Science: Section C – Pathophysiology

In addition to epidemiological and clinical research, basic research on the pathophysiology of atrial fibrillation was the third research focus of the BMBF-funded AFNET between 2003 and 2011. Section C – Pathophysiology comprised investigations on the causes of atrial fibrillation and the underlying mechanisms at a cellular and molecular level. This research was based on animal models and on human atrial tissue donated by patients undergoing open heart surgery.

The basic science projects of section C resulted in numerous publications. This research revealed new insights into the pathophysiological mechanisms that induce and maintain atrial fibrillation. Their findings led to a better understanding of atrial remodeling and the effectiveness of antiarrhythmic drugs.

Prof. Peter Hanrath, Aachen, the first head of section C

AFNET board member Prof. Ulrich Schotten, leader of the project C5 in those days, was awarded the Woldemar Mobitz Prize 2005 for his work on contractile remodeling. His working group was able to prove that for several months, fibrillating human atrial tissue is not as diseased as was generally assumed. The contractile reserve is reduced by only about 15 percent. Therefore, treatment of the loss of contractility with drugs that increase cardiac strength after cardioversion appears possible in principle. Animal studies in goats showed that new potassium channel blockers are able to increase the contractile force after cardioversion of atrial fibrillation to above-normal values within minutes, although contractility was completely abolished immediately after cardioversion.

During the period of these projects, their leaders were young investigators at the beginning of their career. Under the direction of the former AFNET board members Prof. Peter Hanrath (2003-2005), and subsequently Prof.

Ursula Ravens (2006-2015), the participating research groups established stable and constant collaborations among each other. Thereby they laid the cornerstone for the future participation of AFNET as a partner in large research consortia.

The projects of section C	Coordinating investigator:
• **C1** Molecular and electrophysiological causes of atrial fibrillation in a transgenic mouse model	Paulus Kirchhof (Hamburg, formerly Münster and Birmingham)
• **C2** Electrophysiological characterization of the pulmonary vein region in healthy dogs and dogs with experimental atrial fibrillation	Wolfgang Schöls (Heidelberg)
• **C3** Regulation of ion channel proteins in early phases of atrial fibrillation	Dobromir Dobrev (Essen, formerly Dresden) Ulrich Schotten (Maastricht, formerly Aachen)
• **C4** Electrical remodeling and effects of pharmaceuticals on chronic atrial fibrillation	Dobromir Dobrev (Essen, formerly Dresden)
• **C5** Contractile remodeling in atrial fibrillation: Mechanisms and therapeutic approaches	Ulrich Schotten (Maastricht, formerly Aachen)
• **C6** Characterisation of atrial molecular and electrical remodeling in chronic heart failure - a substrate predisposing for atrial fibrillation	Dr. med. Jürgen Schreieck (Tübingen, formerly Munich)
• **C7** Molecular signal transduction pathways in atrial cardiomyocytes and their interaction with the interstitial matrix during atrial fibrillation	Andreas Goette (Paderborn, formerly Magdeburg)
• **C8 / AC4** Genetic determinants of atrial fibrillation	Stefan Kääb (Munich)

Comment by Prof. Ursula Ravens, head of the basic science section C since 2006

In 2001, Günter Breithardt joined forces with his clinical friends Peter Hanrath, Thomas Meinertz and Gerd Steinbeck to apply for an interdisciplinary national research network (competence network on atrial fibrillation, AF) funded by the BMBF (German Federal Ministry of Education and Research). The overall aim was to improve treatment of the most frequent sustained arrhythmia of the heart. The prominent group of clinicians had suggested a huge AF registry, several clinical trials, and – to my delight – also a section on pathophysiological mechanisms related to AF.

The purpose of the basic science projects was to identify specific changes in atrial tissue during AF induced remodeling in order to provide a rationale for novel therapeutic interventions. The timing of the invitation to join the competence network application was perfect because research in arrhythmogenesis experienced a shift in focus from ventricular to atrial mechanisms. Paulus Kirchhof (C1) of Günter Breithardt's group in Münster had a long-standing interest in the antiarrhythmic effects sodium channel blockers and his novel results in AF provided the theoretical rationale for the Flec-SL - AFNET 3 study.

The original C2 project on the important topic of electrophysiological characterisation of the pulmonary veins was eventually not pursued for unknown reasons. Ralph Bosch (C3) had just returned from his research fellowship with Stanley Nattel (Montreal), one of the leading researchers in experimental AF, and had established his own electrophysiological laboratory in Tübingen, where he had introduced a rabbit model of tachypacing-induced AF to investigate ion channel changes in early phases of AF, that cannot readily be studied in patients. My own group in Dresden had previously started to engage in the AF-associated electrophysiological changes observed in

isolated atrial cardiomyocytes obtained from human atrial biopsies that were donated by patients undergoing open heart surgery. In the project led by Dobromir Dobrev (C4), we contributed with drug effects on various ion currents. Based on his previous collaboration with the famous Maastricht group who had created the familiar quotation „AF begets AF“ (PMID: 7671380), Ulrich Schotten (Aachen) hypothesized in project C5 that depressed atrial force of contraction in AF was due to abnormal calcium handling by atrial cardiomyocytes and proposed to investigate the underlying mechanisms. Jürgen Schreieck (Tübingen, formerly Munich) was supposed to characterise atrial molecular and electrical remodeling in chronic heart failure (C6), because this condition is often associated with atrial fibrillation. Fibrosis and AF was dealt with in the C7 project led by Andreas Goette (Paderborn, formerly Magdeburg). And last but not least, in project C8 headed by Stefan Kääb (Munich) genetic problems in AF were investigated.

In the call for competence networks, it had been made very clear by the financial backers that they expected the consortium to find independent funding at the end of the support period. This goal has been pursued by the members of the C section from the very beginning. Once the competence network had been granted, they immediately started their projects with great enthusiasm, but also under the pressure of collecting data that were publishable in high-impact journals. This was considered an essential prerequisite for reaching a stage of continuous collaboration and obtaining further funding. Although I was not directly involved as a project leader, I had the pleasure of being invited to their biannual meetings so that I could give advice and support. When Peter Hanrath retired in 2005, I was very happy to become his formally elected successor. Only then I officially participated in the AFNET

AFNET evaluation 2006: The researchers Dobromir Dobrev and Paulus Kirchhof presented their projects.

competence network as coordinator of the C section.
The basic science section had been very successful in the course of the first funding period, especially with respect to publications. Yet not all projects were transferred into the second application round, and others required amendments because of exciting new results.

The transgenic mouse model of cardiac overexpression of the cAMP-response element modulator (CREM) had been discovered to develop atrial fibrillation and were then characterized with respect to structural changes. Project C3 had a turbulent history. Since former project leader Ralph Bosch wanted to establish himself as a clinical cardiologist in his own praxis, the project was entrusted to a colleague who did not provide a convincing concept. In order to maintain the availability of the rabbit model of tachy-paced AF, we decided to rescue the planned initially experiments on ion channel regulation under the joint leadership of Ulrich Schotten and Dobromir Dobrev. Finally, project AC4 was a merge of the epidemiological project A4 and the basic science project C8 because both projects search for AF-associated genetic changes in the same patient cohort. Project 6 was not followed up because Jürgen Schreieck dropped out of the group. The continuation of the modified and the remaining projects eventually led to further concerted research activities related to AF. These have been commented on by Ulrich Schotten (see page 41).

In summary, I consider myself fortunate to have been part of the AFNET competence network. AFNET has provided an extraordinary opportunity for wonderful interdisciplinary collaboration with brilliant scientists and clinicians, many of whom have become good friends over the years.

International research projects

Based on their cooperation within section C, the AFNET basic science working groups formed a network all over Germany and beyond. This network of scientists pooled their expertise and reached out for international cooperation partners. AFNET applied successfully for public funding and became a partner in large European and transatlantic research consortia.

- **European-North American Atrial Fibrillation Research Alliance (ENAFRA)**
  - Funded by Leducq Foundation, 2007-2010
  - European Coordinator: Dobromir Dobrev
  - This multidisciplinary network focused on the role of calcium in AF, at the genetic, molecular, and cellular levels.

- **European Network for Translational Research in Atrial Fibrillation (EUTRAF)**
  - Funded by EU, 2010-2015
  - Consortium member: Ulrich Schotten
  - The project focused on new biomarkers for AF and therapeutic targets. Researchers identified novel ion channels and transporters as pharmacological targets of AF. Additional therapeutic targets were identified in the process of atrial remodeling and in the genetic contributors of AF.

- **Characterizing Atrial fibrillation by Translating its Causes into Health Modifiers in the Elderly (CATCH ME)**
  - Funded by EU (Horizon 2020), 2015-2019
  - Coordinator: Paulus Kirchhof

- CATCH ME brought together academic expert institutes, healthcare organisations and leading professional organisations with the intention to improve the care of patients with atrial fibrillation (AF). One main outcome of CATCH ME are the two health care apps developed by the consortium. Scientific findings stemming from this consortium continue to be published until today.

- Digital risk-based screening for atrial fibrillation in the European Community (**AFFECT-EU**)
  - funded by EU (Horizon 2020), 2020-2023
  - Coordinator: Renate Schnabel
  - Main focus: atrial fibrillation screening algorithm, digital devices, early AF detection

- Machine Learning Artificial Intelligence Early Detection STroke Atrial Fibrillation (**MAESTRIA**)
  - Funded by EU (Horizon 2020), ongoing since 2021
  - MAESTRIA – AFNET 10: Clinical cohorts for validation of new digital biomarkers (MAESTRIA work package 4). Start of the trial: 2023
  - Scientific WP leader: Andreas Goette

» *Over the years, AFNET has not only made important study contributions to improving the clinical care of patients with atrial fibrillation, but it has also been involved in the development of the scientific basis for this. An example is the fact that atrial fibrillation leads to the stabilization of the arrhythmia and fibrosis in the atrium. This insight was the basis of the EAST - AFNET 4 trial, in which early rhythm control therapy proved to be beneficial. This basic scientific work took place in the early phase of the atrial fibrillation network in the section C – pathophysiology.*

The work was later continued within several international networks, a Leducq network and various EU projects. The influence of AFNET on this was significant. Many of the ideas from this time were later developed further in EU projects. Above all, researchers in the early phase of the AFNET formed scientific partnerships and friendships that were maintained over decades and later greatly benefited research within and outside the EU networks. «

PROF. ULRICH SCHOTTEN, MAASTRICHT

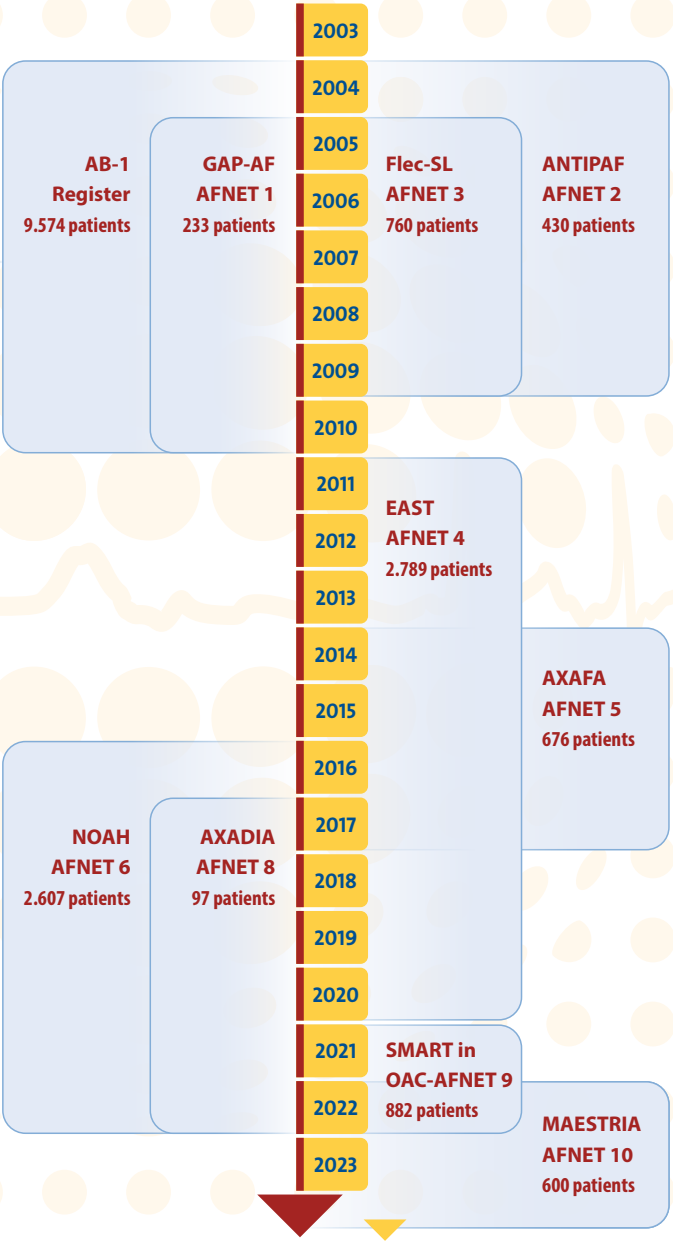
» *From the beginning, the AFNET has been involved in cutting-edge, innovative cooperative projects as a strong partner. In international consortia, often with high-volume EU funding, novel science from experimental basics to public health initiatives were advanced. Such high risk – high profile projects have been the breeding ground for novel hypotheses that were transformed into randomized clinical trials for proof of concept and clinical application. Over the years and continuous work through the AFNET, such early research has resulted in significant changes in clinical practice.*

In projects from multi-omics (CATCH ME) to early screening for atrial fibrillation (AFFECT-EU) and artificial intelligence-based tools to manage atrial fibrillation (MAESTRIA), the AFNET was responsible to involve all stakeholders, communicate research results across diverse groups and at multiple levels. In consensus conferences, project partners including researchers, industry, patient representatives and clinicians led to summaries of the current frontiers research results and set them into context of clinical practice. Thus, the AFNET has always been a strong and valued partner in international research projects. « **PROF. RENATE SCHNABEL**, HAMBURG

Research results

Studies and projects overview

AFNET as sponsor:
Studies and projects
2003-2023



Studies with
AFNET as a partner
starting 2015

2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028

OCEAN
1.284 patients
Sponsor: OHIRC Ottawa
Funding: C-SPIN + Industry

CATCH ME
Sponsor: University of Birmingham
Funding: EU

AFFECT EU
Sponsor: UKE Hamburg
Funding: EU

CABA-HFPEF-DZHK27
1.548 patients
Sponsor: Charité Berlin
Funding: DZHK

CLOSURE-AF-DZHK16
970 patients
Sponsor: Charité Berlin
Funding: DZHK

CMR-ICD-DZHK23
760 patients
Sponsor: UKSH Lübeck
Funding: DZHK

EMERGE Cryo
350 patients
Sponsor: AK St. Georg, Hamburg
Funding: Industry

Results of selected AFNET trials and registries

During the past two decades, AFNET completed several trials and registries. Their results helped to improve care for patients with atrial fibrillation. Here you will find short summaries of the most important studies and results.

AFNET 1 Registry

The Atrial Fibrillation Network set up a nationwide registry comprising around 10.000 patients with atrial fibrillation from hospitals and private practices. The AFNET 1 registry provided data on the occurrence and treatment of atrial fibrillation in Germany, for example new insights into underlying diseases and the quality of antithrombotic treatment for stroke prevention. The basic data of the registry were published in 2009. Several subgroup analyses followed, for example regarding the clinical type of AF, predisposing conditions, symptoms, and the use of anticoagulation for prevention of stroke. ***(Näbauer M et al. Europace 2009)***

» Based on 8833 AF-patients followed for a mean of 6.5 years, prognostic markers of all-cause mortality were assessed: mortality is high in the first year with 6.2 %, remaining high thereafter, and arises primarily from heart failure, peripheral artery disease, chronic obstructive lung disease, and diabetes mellitus. Parameters related to the electrical manifestation of AF did not have an independent impact on long-term mortality in this representative cohort. «

PROF. GERHARD STEINBECK, PRINCIPAL INVESTIGATOR OF THE AFNET 1 REGISTRY

Gap-AF – AFNET 1

Using catheter ablation to create complete linear lesions around pulmonary veins proved more effective than the creation of incomplete lesions in preventing recurrence of atrial fibrillation (AF). This is the result of Gap-AF – AFNET 1 (Ablation strategies for atrial fibrillation), the first controlled clinical trial that compared directly the two ablation strategies in patients with paroxysmal atrial fibrillation. In 2016, the trial was published in the journal Circulation: Arrhythmia and Electrophysiology. *(Kuck KH et al. Circ Arrhythm Electrophysiol. 2016)*

ANTIPAF – AFNET 2

The ANTIPAF – AFNET 2 (ANgiotensin II anTagonists In Paroxysmal Atrial Fibrillation) trial was the first trial to prospectively evaluate the principal hypothesis that the angiotensin II receptor antagonist olmesartan suppresses episodes of paroxysmal AF. In patients with AF and concomitant structural heart disease such as hypertensive heart disease or systolic heart failure, ARBs are effective adjunct therapies while being highly tolerable. ANTIPAF provides pivotal evidence, however, that ARBs do not reduce the number of AF episodes in patients with paroxysmal AF and without structural heart disease. The results were presented at ESC congress in Stockholm in August 2010. *(Goette A et al. Circ Arrhythm Electrophysiol. 2012)*

Principal investigator Prof. Andreas Goette presented the ANTIPAF – AFNET 2 trial at ESC congress 2010

Flec-SL – AFNET 3

Short-term antiarrhythmic drug treatment after cardioversion is less effective than is long-term treatment, but can prevent most recurrences of atrial fibrillation. Short-term treatment would be a sensible alternative, particularly for patients who have an increased risk of side effects or complications. This is the result of the controlled clinical trial Flec-SL – AFNET 3, conducted by the German Atrial Fibrillation Network (AFNET) and published in the renowned journal The Lancet in June 2012. *(Kirchhof P et al. Lancet 2012)*

» AFNET and EHRA conducted EAST – AFNET 4 throughout Europe as a large investigator-initiated trial on a European level. The success of this trial confirms that such trials are a powerful tool to change clinical practice. «

ANDREAS GOETTE, ST. VINCENZ-HOSPITAL PADERBORN, GERMANY, AND EAST - AFNET 4 SPONSOR REPRESENTATIVE.

EAST – AFNET 4

Patients with newly diagnosed atrial fibrillation (AF) benefit from early rhythm control therapy, according to results of EAST – AFNET 4, an AFNET/EHRA trial presented in a Hot Line session at the digital ESC Congress on 29.08.2020. Early rhythm control therapy with antiarrhythmic drugs and/or AF ablation reduced a composite of cardiovascular death, stroke, and hospitalization for worsening heart failure or acute coronary syndrome in 2789 patients with early AF and cardiovascular risk factors compared to usual care over a 5-year follow-up time. During the past 3 years, the benefit of early rhythm control was also confirmed for different subgroups. It applies generally – to all types of atrial fibrillation, regardless of other diseases or special characteristics of those affected. Cardiologists therefore recommend that all people with newly diagnosed atrial fibrillation should be offered rhythm control treatment through catheter ablation or antiarrhythmic medication as soon as possible. ***(Kirchhof P et al. NEJM 2020)***

The EAST – AFNET 4 trial was one of the highlights at the ESC online congress 2020

EAST – AFNET 4 sub-analyses

- Early rhythm control therapy in patients with heart failure *(Rillig A et al. Circulation 2021)*
- Anticoagulation, therapy of concomitant conditions, and early rhythm control therapy: a detailed analysis of treatment patterns in the EAST - AFNET 4 trial *Metzner A et al. Europace 2021)*
- Systematic, early rhythm control therapy equally improves outcomes in asymptomatic and symptomatic patients with atrial fibrillation *(Willems S et al. Eur H J 2021)*
- Presenting Pattern of Atrial Fibrillation and Outcomes of Early Rhythm Control Therapy *(Goette A et al. JACC 2022)*
- Early rhythm control in patients with atrial fibrillation and high comorbidity burden *(Rillig A et al. Circulation 2022)*
- Early rhythmcontrol therapy for atrial fibrillation in patients with a history of stroke *(Jensen M et al. Lancet Neurol. 2022)*
- Attaining sinus rhythm mediates improved outcome with early rhythm control therapy of atrial fibrillation *(Eckardt L et al. Eur H J 2022)*
- Cost- effectiveness of early rhythmcontrol versus usual care in atrial fibrillation care *(Gottschalk S et al. Europace 2023)*
- Association of genetic risk and outcomes in patients with early rhythm control therapy in atrial fibrillation *(Kany S et al.Cardiovasc Res 2023)*

AXAFA – AFNET 5

Atrial fibrillation ablation on continuous apixaban therapy does not increase the risk of stroke or bleeding compared to vitamin K antagonist therapy and preserves short-term cognitive function. These are the key findings from the investigator-initiated clinical trial AXAFA – AFNET 5. The results were presented at the EHRA congress in Barcelona, Spain, on 20.03.2018. *(Kirchhof P et al. Eur H J 2018)*

» AXAFA – AFNET 5 is one of the clinical trials initiated and conducted by the AFNET and supported by the DZHK in a unique cooperation. We are proud of this ongoing partnership. «

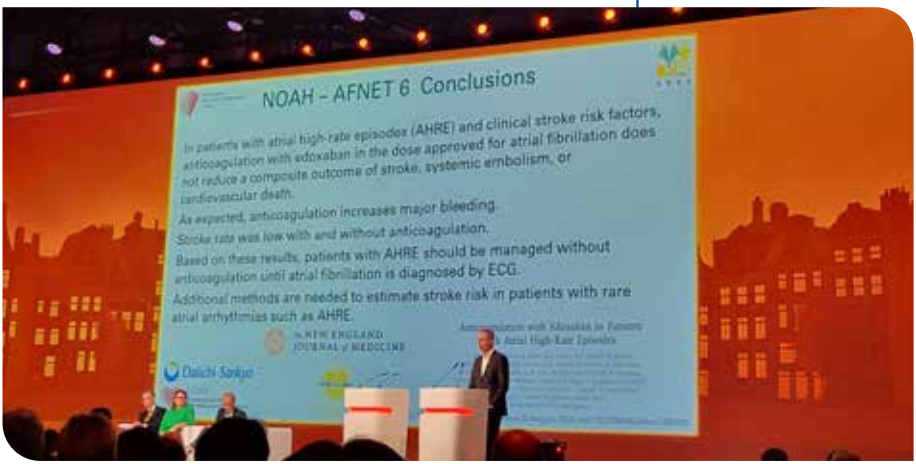
ULRICH SCHOTTEN,
AFNET BOARD MEMBER

NOAH – AFNET 6

The NOAH – AFNET 6 trial revealed: In patients with atrial high rate episodes (AHRE), but without ECG-documented atrial fibrillation (AF), oral anticoagulation increases bleeding without a large effect on stroke prevention. Stroke rate was low in patients with AHRE with and without oral anticoagulation. The results were presented at the annual congress of the European Society of Cardiology (ESC) on 25.08.2023 in Amsterdam and published in the New England Journal of Medicine. ***(Kirchhof P et al. NEJM 2023)***

» The results of NOAH – AFNET 6 clearly suggest to demand ECG documentation of atrial fibrillation prior to initiation of oral anticoagulation. The low stroke rate in patients with AHRE not treated with anticoagulation is good news for these patients. We now need to do more research to identify patients with AHRE who are at high risk of stroke. Our findings also have relevance for the management of patients with rare atrial arrhythmias detected by consumer electronics. « **PAULUS KIRCHHOF**, PRINCIPAL INVESTIGATOR

The NOAH – AFNET 6 result was presented at ESC congress 2023



AXADIA – AFNET 8

In the AXADIA – AFNET 8 trial, oral anticoagulation with the non-vitamin K antagonist oral anticoagulant (NOAC) Apixaban appeared equally safe and effective as vitamin K antagonists (VKA) in patients with atrial fibrillation (AF) and severe chronic kidney disease. The results were presented at the American Heart Association (AHA) congress on 06.11.2022 in Chicago, USA and simultaneously published in Circulation. *(Reinecke H et al. Circulation 2022)*

» Taken together with other observational publications, our findings support the use of Apixaban in patients with AF on hemodialysis. «

HOLGER REINECKE, PRINCIPAL INVESTIGATOR

Smart in OAC – AFNET 9

Consumer electronics provide a novel route to screen for atrial arrhythmias. The Smart in OAC – AFNET 9 study offered smartphone and wearable-based continuous arrhythmia screening to older adults and detected atrial arrhythmia in five percent of the participants. The results of the study performed by AFNET were published in the European Heart Journal of Digital Health in November 2022. *(Fabritz L et al. Eur H J Digital Health 2022)*

» These findings encourage the use of fully digital, consumer-electronics based systems to screen for atrial arrhythmias in unselected older adults. «

LARISSA FABRITZ, PRINCIPAL INVESTIGATOR

Prof. Larissa Fabritz, UKE Hamburg

AFNET / EHRA Consensus Conferences

High-level expert meetings

AFNET coordinates a series of consensus conferences with the European Heart Rhythm Association (EHRA). The participants of these conferences are selected experts in atrial fibrillation from Europe and beyond. Since 2007, nine two-day expert meetings were jointly organized by AFNET and EHRA. Each conference resulted in a published consensus paper.

Prof. Paulus Kirchhof, one of the initiators of this conference format, explains the background of these meetings: *» Despite improved treatment options, many patients with atrial fibrillation suffer strokes, heart failure, and preventable death. There are various approaches to improve care for patients with atrial fibrillation. The AFNET/EHRA consensus conference provide a high-level expert forum to discuss recent advances in AF diagnosis and therapy, to identify unmet medical needs and knowledge gaps, and to suggest better ways to deliver care for patients with atrial fibrillation. «*

The results of each conference are summarized in a consensus paper published in Europace and other journals. Some of the results were recognized and cited by the European Medicines Agency and by guideline writing groups.

During the two-day meetings, participants discussed in plenary sessions …

… and break-out groups

AFNET/EHRA CONSENSUS CONFERENCES OVERVIEW

AFNET/EHRA Consensus Conference:	Scientific committee:
9. 11-13 September2023, Münster, Germany Longer and better lives for patients with atrial fibrillation	Andreas Götte, Paulus Kirchhof, Helmut Pürerfellner, Isabelle van Gelder
8. 12-14 October 2021, Hamburg, Germany + online Early diagnosis and precision treatment of atrial fibrillation in the digital era	Paulus Kirchhof, Christophe Leclercq, Renate Schnabel, Ulrich Schotten, Emma Svennberg
7. 14-16 March 2019, Lisboa, Portugal Management of patients with AF: New therapies and special populations	Hein Heidbüchel, Gerhard Hindricks, Paulus Kirchhof, Ulrich Schotten
6. 17-19 January 2017* Integrating new approaches to atrial fibrillation in an era of digital evolution	Günter Breithardt, John Camm, Paulus Kirchhof, Gregory Lip, Ulrich Schotten
5. 22-23 January 2015* Understanding and eliminating inequalities and barriers that prevent optimal treatment of atrial fibrillation	Günter Breithardt, John Camm, Paulus Kirchhof, Gregory Lip
4. 24-25 January 2013* Personalised management of atrial fibrillation patients – connecting pathophysiology and clinical experience with outcomes	Günter Breithardt, John Camm, Paulus Kirchhof, Gregory Lip
3. 08-09 November 2010* Stroke Prevention, Thromboembolic Risk Assessment, Modification of Risk Factors, and Rhythm Control to Reduce Cardiovascular Complications in Atrial Fibrillation	Günter Breithardt, John Camm, Paulus Kirchhof, Gregory Lip
2. 27-28 October 2008* Research Perspectives for Diagnosis and Treatment of Atrial Fibrillation	Günter Breithardt, John Camm, Harry Crijns, Paulus Kirchhof
1. 22-23 January 2007* Outcome parameters for Trials in Atrial Fibrillation	Angelo Auricchio, Günter Breithardt, Paulus Kirchhof, Silvia Priori

*Conferences 1-6 (2007-2017) took place in the European Heart House, Sophia Antipolis, France.

Results of the consensus conferences

2007

The first conference in 2007 resulted in an expert consensus of outcome parameters for trials in atrial fibrillation patients. The scientists summarized a set of outcome parameters in seven relevant outcome domains, namely death, stroke, symptoms and quality of life, rhythm, left ventricular function, cost, and emerging outcome parameters. Their recommendations influenced the current guidance on antiarrhythmic drugs of the European Medicines Agency.

2008

The second consensus conference in 2008 suggested directions for research to improve management of patients with atrial fibrillation. Attendees called for research initiatives aiming at a better understanding of the different causes of atrial fibrillation and its complications, and at development and validation of mechanism-based therapies. For future therapy they envisioned a combination of management of underlying and concomitant conditions, early and comprehensive rhythm control therapy, adequate control of ventricular rate and cardiac function, and continuous therapy to prevent AF-associated complications. A few years later, AFNET tested this concept in the EAST – AFNET 4 trial.

2010

In 2010, the participants of the third AFNET / EHRA conference discussed emerging therapeutic and diagnostic improvements and formulated a perspective to implement comprehensive management of patients with atrial fibrillation. In 2013, the fourth conference identified opportunities to better personalize management of atrial fibrillation. The 2013 consensus paper suggested a new taxonomy of atrial fibrillation based on its pathophysiological type. The best definition of mechanism-based types of atrial fibrillation remained a topic of the conferences thereafter.

2015

The needs and opportunities for improving the quality of atrial fibrillation care were discussed during the fifth AFNET / EHRA conference in 2015. The consensus report included a list of priorities for research in atrial fibrillation patients.

2017

The expert group of the sixth consensus conference in 2017 developed innovative solutions based on new approaches to screening and diagnosis, enhancing integration of AF care, developing clinical pathways for treating complex patients, improving stroke prevention strategies, and better patient selection for heart rate and rhythm control.

2019

The seventh AFNET / EHRA consensus conference in 2019 focused on dynamic risk assessment and risk-based therapy stratification to optimize quality of care in patients with atrial fibrillation. The experts' proposals included an algorithm for the acute management of patients with atrial fibrillation and heart failure, a call for a refined, data-driven assessment of stroke risk, suggestions for anticoagulation use in special populations, and a call for rhythm control therapy selection based on the risk of atrial fibrillation recurrence.

2021

Against the background of the recently published results of the EAST – AFNET 4 trial, the expert group of the eighth AFNET / EHRA conference in 2021 discussed the importance of early diagnosis and better rhythm control therapy for improving outcomes in patients with atrial fibrillation. Their consensus report supported improved care for patients with atrial fibrillation by guiding prevention, individualized management, and research strategies.

2023

The ninth AFNET / EHRA consensus conference continued the work of the previous conferences. During the meeting in September 2023, over 80 participants discussed research advances in the light of the 2020 and the upcoming 2024 ESC treatment guidelines and jointly developed recommendations for better atrial fibrillation management. The writing group prepared a consensus document that will be published in the next months.

Publications of the consensus reports:

- ***Eur Heart J*** 2007. doi: 10.1093/eurheartj/ehm358
- ***Eur Heart J*** 2009. doi: 10.1093/eurheartj/ehp235
- ***Europace*** 2012. doi: 10.1093/europace/eur241
- ***Europace*** 2013. doi: 10.1093/europace/eut232
- ***Europace*** 2016. doi: 10.1093/europace/euv304
- ***Europace*** 2018. doi: 10.1093/europace/eux318
- ***Europace*** 2021. doi: 10.1093/europace/euaa279
- ***Europace*** 2023. doi: 10.1093/europace/euac062

AFNET and EHRA – 20 years of cooperation

The European Heart Rhythm Association (EHRA) and AFNET are both celebrating 20 years of successful heart research this year.

» We have a continuous cooperation over many years and because of sharing the same goals this cooperation is quite smooth. We share the same goal in doing clinical trials, in raising awareness campaigns for patients, and in organizing conferences. « **HELMUT PÜRERFELLNER**, EHRA PRESIDENT-ELECT AND CHAIRPERSON OF THE 9TH AFNET/EHRA CONSENSUS CONFERENCE

» Close and friendly collaboration with colleagues all interested in AF leading to new research and discussions in a very good and pleasant atmosphere. Always a lot of interaction, friendly discussions and fun, social events are of major importance. I started as one of the youngest, now I am one of the oldest participants. As young EP it was a great opportunity and motivation to meet those famous people like Guenther Breithardt, Al Waldo and John Camm. Due to these meetings, I was able to improve my own research! This cooperation is unique because of the same interests and also the same attitude for collaboration improving science in AF. Important to invite young colleagues together with key opinion leader. This is a way to mentor the young ones and from which I benefitted so much myself. «

ISABELLE VAN GELDER, ONE OF THE CHAIRPERSONS OF THE LATEST AFNET/EHRA CONSENSUS CONFERENCE

» It makes it special that EHRA and AFNET have a lot of history in common. Over the years we have had many joint meetings. Usually, these took place in the European Heart House in Nice. We had all experts there, but nevertheless it was a rather small meeting providing ample time to discuss. There was always a creative atmosphere that extended into the writing groups on the second day. The fact that AFNET moved from ‚thinking about research' to ‚coordinating research' via clinical trials is really an example for the rest of Europe. … Congratulations to AFNET! « **HEIN HEIDBÜCHEL**, PAST EHRA PRESIDENT AND CHAIRMAN OF THE 7TH AFNET/EHRA CONSENSUS CONFERENCE

» The AFNET/EHRA consensus conference is one of the highlights every second year. There are a lot of specialists in one room. The discussions are very focused on the topic. This makes these conferences successful.
The consensus paper is a summary of these active discussions. I expect an overview of all the latest topics and the latest studies that were presented at the congresses of ESC, AHA, ACC. Now we will really start the discussion what the results mean for the treatment of our patients. «

DOMINIK LINZ, MAASTRICHT UNIVERSITY MEDICAL CENTER

» 20 years is a long time in our fast-moving world. I really hope that AFNET and EHRA remain as dynamic as they have been over the last 20 years, that they promote high-end research and translate the findings into clinical practice. « **RENATE SCHNABEL**, AFNET STEERING COMMITTE MEMBER

Support by research consortia

The consensus conferences are organized and co-financed by AFNET and EHRA with additional financial support from EU research consortia, from other public funders, and from industry.

The 2023 conference "Longer and better lives for patients with atrial fibrillation" took place in cooperation with the European consortium MAESTRIA (Machine Learning Artificial Intelligence Early Detection STroke Atrial Fibrillation). AFNET is part of the MAESTRIA consortium and conducts the MAESTRIA – AFNET 10 study, an international, multicentre, non-interventional, observational registry which includes patients with different types of AF.

The 8th AFNET/EHRA consensus conference in 2021 "Early diagnosis and precision treatment of atrial fibrillation in the digital era" was held in cooperation with the AFFECT-EU (Digital risk-based screening for atrial fibrillation in the European Community) consortium. The scientific program of the consensus conference contained an AFFECT-EU session on "Refined atrial fibrillation screening". Additional support was provided by DZHK.

MAESTRIA – AFNET 10 scientific leader Prof. Andreas Goette gave project manager Dr. Beatriz Lorente an interview during the conference.

The conferences in 2017 "Management of patients with AF: new therapies and special populations" and 2019 "Integrating new approaches to AF in an era of digital evolution" were supported by the EU research consortium CATCH ME (Characterizing Atrial fibrillation by Translating its Causes into Health Modifiers in the Elderly). Special CATCH ME sessions focused on research questions of the CATCH ME project: "Different types of AF require different forms of therapy" in 2017 and "Stratification of patients with AF" in 2019.

The first three conferences in 2007 "Outcome parameters for trials in AF", 2008 "Research perspectives for diagnosis and treatment of AF", and 2010 "Stroke prevention, thromboembolic risk assessment, modification of risk factors, and rhythm control to reduce cardiovascular complications in AF" received financial support from the BMBF, whereas the conferences in 2013 "Connecting pathophysiological and clinical data for personalized AF management" and in 2015 "Understanding and eliminating inequalities and barriers that prevent optimal treatment of AF" were held without additional public funding.

Several MAESTRIA consortium members participated in the 9th AFNET/EHRA consensus conference and one of the break-out sessions focused on research questions of the MAESTRIA project.

Research Highlights

A comment from Paulus Kirchhof

Scientific highlights of the Atrial Fibrillation NETwork

One of the key mechanisms to deliver the mission of AFNET to the international scientific community are publications. This article reviews selected publications from 20 years of AFNET, starting in the BMBF-funded early years until November 2023 when this piece was written. Over the years, AFNET has contributed to basic and translational research papers, led review articles, reported observational research projects and controlled clinical trials, and produced a series of publications stemming from the AFNET/EHRA consensus conferences.

AFNET started its work in 2003. The initial, BMBF-funded research network initiated research projects in three areas: Observational research, clinical trials, and basic and translational science. The first major paper reported the baseline data of the AFNET registry of patients with atrial fibrillation *(Näbauer M et al. Europace. 2009)*. This paper and the report of the first AFNET/EHRA consensus conference describe the starting point of AFNET: Clinical data illustrating therapeutic needs in patients with atrial fibrillation and recommendations on outcomes in patients with atrial fibrillation *(Kirchhof P et al. Eur Heart J. 2007)*. The AFNET/EHRA consensus document was one of the few papers used by the European Medicines Agency to update their guidance on the development of antiarrhythmic drugs for atrial fibrillation. With support from the European Union, AFNET members wrote a comprehensive overview article on mechanisms of atrial fibrillation, reflecting the biological and mechanistic foundation that guides the work in the network *(Schotten U et al. Physiol Rev 2011)*. This

review covers many of the mechanisms that were identified and validated in the translational work in the network, including work on the genomic basis of atrial fibrillation *(Ellinor PT et al. Nat Genet. 2012)*, basic and translational research supporting a role of PITX2 in this context *(Kirchhof P et al. Circ Cardiovasc Genet. 2011)* and research into the regulation of fibroblasts and extracellular matrix formation in the atria *(Reyat JS et al. JCI Insight. 2020)*. Another well-received article was the report on the 2nd AFNET/EHRA consensus conference: This paper proposed a new treatment paradigm, early and comprehensive AF management *(Kirchhof P et al. Eur Heart J. 2009)* that was later tested in the EAST – AFNET 4 trial.

The first three controlled clinical trials led and designed by AFNET and funded in public-private partnership by the BMBF and industry partners, were GAP-AF – AFNET 1, ANTIPAF – AFNET 2, and Flec SL – AFNET 3. Their findings were published between 2012 and 2016: ANTIPAF – AFNET 2 showed that inhibition of angiotensin receptors does not prevent recurrent atrial fibrillation *(Goette A et al. Circ Arrhythm Electrophysiol. 2012)*. Flec-SL – AFNET 3 demonstrated that antiarrhythmic drug therapy has a long-term effect after cardioversion *(Kirchhof P et al. Lancet. 2012)*. These trials implemented innovative design aspects such as patient-operated ECG monitoring and delivery of approved study medications through routine care channels. A few years later, GAP-AF – AFNET 1 reported that recovery of pulmonary vein connections to the left atrium is a major cause of recurrent atrial fibrillation after pulmonary vein isolation *(Kuck KH et al. Circ Arrhythm Electrophysiol. 2016)*. The diligent core-lab analysis of invasive recordings during the follow-up investigations in that trial illustrates the close cooperation between the network partners. The 3rd *(Kirchhof P et al. Europace. 2012)* and 4th *(Kirchhof P et al. Europace. 2013)* AFNET/EHRA consensus conference reports helped

to place these findings into context and supported the development of new, integrated approaches to atrial fibrillation care. Integrated, holistic approaches to AFNET care are among the key innovations in atrial fibrillation guidelines since 2016.

In 2013, the concept of early rhythm control therapy was formally described in the design paper of the EAST – AFNET 4 trial *(Kirchhof P et al. Am Heart J. 2013)*. This trial marks the transition from the BMBF-funded network to the current not-for-profit academic research organisation AFNET that is organised as a registered entity in Germany ("eingetragener Verein"). The founding principles of the BMBF-funded network were continued from the BMBF-funded network to the current organisation, including innovations in trial design and delivery and the public-private partnership funding model for controlled clinical trials. The German Center for Cardiovascular Research (DZHK) became an important partner for AFNET starting with the EAST – AFNET 4 trial, partly funding EAST – AFNET 4, AXAFA – AFNET 5, and NOAH – AFNET 6. AFNET is also a contributing partner in several DZHK-led trials. In parallel to the initiation of these and other clinical trials, AFNET partners continued their experimental and translational work, leading to publications on hypercoagubility *(Spronk HM et al. Eur Heart J. 2016)*, an EU network aiming to define biologically defined subtypes of atrial fibrillation *(Fabritz L et al. Nat Rev Cardiol. 2016)*, and a formal proposal of the concept of atrial cardiomyopathy in an international consensus paper *(Goette A et al. Heart Rhythm. 2017)*. The report on the 5th AFNET/EHRA consensus conference proposed a roadmap to integrate these and other concepts into improved patient care *(Kirchhof P et al. Europace. 2016)*. These concepts also led to contributions of AFNET members to international consensus documents on atrial fibrillation screening *(Freedman B et al. Circulation 2017; Schnabel RB et al. Circulation 2019)*, on

atrial fibrillation ablation in patients with persistent atrial fibrillation and on integrated care in patients with atrial fibrillation *(Kirchhof P et al. Lancet. 2017)*.

The design of the NOAH – AFNET 6 trial, testing anticoagulation in patients with device-detected atrial fibrillation, was published in 2017 *(Kirchhof P et al. Am Heart J. 2017)*. One year later, the outcome of AXAFA – AFNET 5 was reported and published: This trial convincingly showed that anticoagulation with the DOAC apixaban is not inferior to vitamin K antagonist therapy in patients undergoing atrial fibrillation ablation *(Kirchhof P et al. Eur Heart J. 2018)*. The trial used innovative periprocedural brain MRI protocols differentiating acute and chronic brain lesions and captured cognitive function *(Haeusler KG et al. Circulation. 2022)*, contributing to dementia as an emerging research area in atrial fibrillation *(Rivard L et al. Circulation. 2022)*. EU-funding helped to develop AF-related smartphone apps and digital solutions that were reviewed in a first foray of AFNET into digital cardiology in 2018 *(Kotecha D et al. Europace 2018)*. The optimal periprocedural management of patients with atrial fibrillation undergoing stent implantation was evaluated in the AFNET-associated ENSURE trial that reported its results in 2019, comparing DOAC- and vitamin-K-antagonist-based anticoagulation in combination with antiplatelet therapy *(Vranckx P et al. Lancet. 2019)*. In the same year, an analysis of 96 biomolecules in patients with and without atrial fibrillation *(Chua W et al. Eur Heart J. 2019)* and a collaborative translational project combining left atrial sequencing, experimental data and circulating biomolecule quantification *(Reyat JS et al. JCI Insight. 2020)* identified new biomolecules for atrial fibrillation reflecting different disease mechanisms. These publications were among the first papers using data sets and biosamples from AFNET projects for further research. The optimal antithrombotic therapy around intervention, the opportunities and pitfalls

of digital tools in the care of patients with atrial fibrillation, and an updated mechanistic classification of patients with AF integrated these findings with other research results during the 6th AFNET/EHRA consensus conference *(Kotecha D et al. Europace. 2018)*.


The NEW ENGLAND JOURNAL of MEDICINE

The EAST – AFNET 4 trial was terminated early due to efficacy in March 2020. Closing out the trial and ensuring that the trial results were credible during the first wave of the Covid-19 pandemic was an unexpected challenge. The enthusiasm and professionalism of all participating sites and partners enabled a robust analysis of the trial. Its primary results remain the most commonly cited paper published by AFNET so far *(Kirchhof P et al. N Engl J Med. 2020)*. The results are clear: Early rhythm control therapy, given to all patients with recently diagnosed atrial fibrillation and stroke risk factors, reduces cardiovascular outcomes compared to usual care. Through collaborations more than 10 additional publications were generated based on the EAST – AFNET 4 data set. These analyses demonstrate the effectiveness and safety of early rhythm control therapy in high-risk subgroups *(Rillig A et al. Circulation. 2022; Jensen M et al. Lancet Neurol. 2023)* and across the genetic AF risk spectrum *(Kany S et al. Cardiovasc Res. 2023)*. A complex mediator analysis furthermore identified attaining sinus rhythm as the key mediator of early rhythm control *(Eckardt L et al. Eur Heart J. 2022)*.

AFNET completed other investigator-initiated controlled clinical trials: A digitally designed and delivered feasibility study, SMART in OAC – AFNET 9, demonstrated that wearable-based ECG screening for atrial fibrillation is feasible in elderly populations *(Fabritz L et al. Eur Heart J Digit Health. 2022)*. A trial comparing apixaban and vitamin K antagonist therapy in patients with atrial fibrillation on hemodialysis reported earlier this year *(AXADIA – AFNET 8, (Reinecke H et al. Circu-*

lation. 2023)). The results of NOAH – AFNET 6 were published in August 2023. The low stroke rate in patients with device-detected, rare episodes of atrial fibrillation was a surprise *(Kirchhof P et al. N Engl J Med. 2023)*. The results of NOAH – AFNET 6 have since then been confirmed in a trial-level meta-analysis of NOAH – AFNET 6 and ARTESiA *(McIntyre WF et al. Circulation. 2023)*. A first subanalysis suggests that the findings extend to the population with long episodes lasting 24 hours or more *(Becher N et al. Eur Heart J. 2023)*. The findings of EAST – AFNET 4, new insights into atrial fibrillation screening, and the available information on digital support for patients with atrial fibrillation were summarised in the report on the 7th and 8th AFNET/EHRA consensus conferences *(Fabritz L et al. Europace. 2021; Schnabel RB et al. Europace. 2022)*.

This almost chronological list of internationally recognized papers from AFNET is a selection. Many other papers could not be mentioned but warrant equal attention. These research papers and review articles exemplify the continuous work of AFNET in four closely linked areas of research: Experimental and translational research in national and international networks, analyses of large patient-level observational data sets, investigator-initiated clinical trials, and international consensus conferences. Taken together, the work illustrates how AFNET works towards creating an open, positive, and productive research environment in the field of atrial fibrillation. AFNET believes that this work helped to improve the lives of patients with atrial fibrillation. The results of the last two decades also identify new research areas. We will continue to work on them.

Communication

Science communication in the AFNET

Successful science communication includes the dissemination of comprehensive information about research activities and results customized for the different target groups of scientists, physicians, patients and the general public. AFNET renders this by various means.

» Let's talk about science and communicate research findings. Knowledge translation is a very important step to raise public awareness, create innovations and improve current practice.« **PROF. ANDREAS GOETTE**, AFNET BOARD MEMBER

» The AFNET is now entering a phase in which more and more research results are being produced. This is also noticeable in communication. The new findings are increasingly being incorporated into practice. People can benefit from it. Let's convey this in our science communication – with films, podcasts, websites, social media, press work and other communication channels.«

DR. ANGELIKA LEUTE, PRESS OFFICER

Website

The website **www.kompetenznetz-vorhofflimmern.de** or **www.af-net.eu** provides detailed information on the research projects and results, the network and its committees, as well as patient education.

Press releases

Scientific papers on new research findings are accompanied by press releases for specialist and general media. AFNET press releases and news are available at

www.kompetenznetz-vorhofflimmern.de/en/research-network/news

The AFNET newsletter

From the outset, the AFNET board intended to regularly inform collaborators, partners and friends of the AFNET. This has been achieved by a periodical newsletter. Over the two decades, the newsletter repeatedly altered its shape and frequency of publication – from the initial bimonthly two-page flyer to the quarterly web-based email today.

www.kompetenznetz-vorhofflimmern.de/en/research-network/newsletter

Social media

The social media team posts research highlights and other activities through the AFNET channels on **LinkedIn** and **X (formerly Twitter)**.

de.linkedin.com/in/af-net

twitter.com/afnetev

Interviews and statements of AFNET members and partners are available on our Youtube channel.

AFNET tweets on the International Women`s Day 2023

Patient education

In addition to researching heart diseases, providing reliable information to patients and their families has always been an important concern for the physicians and scientists who work together in the AFNET.

New research results, including from AFNET studies, has contributed to a better understanding of atrial fibrillation in recent years and has led to further developments in the diagnosis and treatment of this most common cardiac arrhythmia. Despite the considerable progress, many people still die as a result of atrial fibrillation. The arrhythmia is often not detected in time and is only noticed when the patient has already suffered a stroke. In order to prevent such serious outcomes, it is crucial to detect atrial fibrillation early and treat it consistently. By providing information intelligible to all, AFNET wants to raise awareness of this by no means harmless arrhythmia. Recent studies have also shown that the better informed patients are about the disease and therapy options, the more successful treatment is.

» Since I have atrial fibrillation myself, I would like to get an overview of the treatment options. I came across the AFNET information brochure on the internet. It is clearly written and answered many of my questions. What I find particularly important: it was written by independent scientists. This makes it different from most other health information you can find on the internet. «

A PATIENT'S STATEMENT

Patient information booklet „Vorhofflimmern – Herz aus dem Takt“

The brochure “Vorhofflimmern – Herz aus dem Takt (atrial fibrillation – heart out of rhythm)” provides information about the most common cardiac arrhythmia and its treatment. It was written by heart specialists from AFNET and provides independent and understandable information based on the current state of research.

This booklet has a long tradition, almost as long as AFNET itself. The first edition appeared 18 years ago, in September 2005, and has since been completely revised and updated several times, most recently in 2023.
www.kompetenznetz-vorhofflimmern.de/en/patient-information/patient-leaflet

In 2011, AFNET took part in a worldwide competition run by Boehringer called “1 Mission 1 Million – Getting to the Heart of Stroke” that aimed to raise awareness of atrial fibrillation and the increased risk of stroke and rewarded projects on patient information. The AFNET patient information booklet was nominated and – thanks to public voting – won a prize worth 10,000 euros. The money was used to finance the printing of the next edition of the brochure.

Award ceremony in Paris: Dr. Thomas Weiß, then managing director of AFNET, accepted the award.

A comment by Prof. Thomas Meinertz

AFNET and the German Heart Foundation

One goal of the German Heart Foundation is to provide patients with comprehensive and continuous information about the current status of diagnosis and treatment of heart diseases. The German Heart Foundation considers itself to have another objective: to support patient-oriented research in the field of cardiovascular diseases.

The Atrial Fibrillation Network, founded in 2003 by the Federal Ministry of Education and Research (BMBF), sought cooperation with the German Heart Foundation soon after its creation.

As a board member of the German Heart Foundation and a founding member of Atrial Fibrillation Network at the time, it became clear to me that atrial fibrillation was a focus of both institutions. It was therefore obvious to me to suggest that the German Heart Foundation supports AFNET research projects in the field of atrial fibrillation.
Together, the German Heart Foundation and the Atrial Fibrillation Network, with contributions from numerous members of the network, published a patient brochure on the diagnosis and treatment of atrial fibrillation in 2005. This brochure appeared in several editions and recently in a new version at the cutting edge of research.
Research projects of the Atrial Fibrillation Network have been repeatedly and sustainably supported financially by the German Heart Foundation. These include the EAST – AFNET 4 study, which can be regarded as a milestone in the treatment of atrial fibrillation and which was published in the renowned New England Journal of Medicine in 2020. But the German Heart Foundation also supported AFNET basic research projects.

The founding generation of AFNET (Breithardt, Hanrath, Meinertz and Steinbeck) have long since handed over the management of AFNET to the next generation. The current leaders successfully maintain the ongoing cooperation between AFNET and the German Heart Foundation. As the founders of AFNET, we are happy and satisfied that the network and also the cooperation with the Heart Foundation will continue to be so successful.

Awareness campaigns

In the past 20 years, AFNET has taken part in several initiatives to raise awareness of atrial fibrillation and its risks. The awareness campaigns were organized by different partners on a national or international level.

> *» AFNET has always the patient benefit in mind, to fill the gap between experimental science and clinical application. From basic science to clinical science to patient education. The main goal is to improve the patients` quality of life and prognosis. We want to teach the patients how to manage their problem and how to seek the best medical advice. This is one of the goals of AFNET. «*
>
> **STEPHAN WILLEMS**, AFNET BOARD MEMBER

The European Heart Rhythm Association (EHRA) established a patient website with comprehensive information on atrial fibrillation. This website **www.afibmatters.org** is available in several languages. The AFNET team helped to develop the German version.

AFIB MATTERS
ATRIAL FIBRILLATION

Following the "heart rhythm week" campaign of the British "Arrhythmia Alliance" charity, AFNET provided patient-oriented hand-outs on its website: a heart rhythm checklist and instructions for taking the pulse.


Neuigkeiten aus der Deutschen Herzstiftung

Neue Awareness Kampagne #PULSEDAY

Unter dem Dach der Herzstiftung macht Aktionstag am 1. März 2024 auf die Risiken durch Herzrhythmusstörungen aufmerksam.

(v.l.): Prof. Christian Veltmann, Martin Vestweber, Prof. Roland Tilz, Ruth Ney, Prof. Daniel Steven, Prof. K.R. Julian Chun, Dirk Hirche, PD Philipp Breitbart, Prof. Thomas Voigländer. Vorne: Larissa Thevis, Dr. Melanie Generwerdens, Prof. David Duncker

Prospectively, there will be a new international awareness day: The Pulseday on 1 March every year. It was initiated by the European Heart Rhythm Association across Europe and by AGEP (Arbeitsgruppe Elektrophysiologie und Rhythmologie), one of the working groups of the German Society of Cardiology (DGK) in Germany. The initiative is supported by AFNET and other partners.

Events for patients

AFNET and St. Vincenz Hospital organized a patient event on cardiovascular diseases in Paderborn on 06 September 2023. Prof. Andreas Goette, AFNET board member and head of the cardiology clinic of St. Vincenz Hospital Paderborn, came to the "Herzbus" (heart bus) to personally support the campaign.

The picture shows Prof. Goette (left) and Benjamin März from the AFNET team.

During the annual congress of the German Society of Cardiology in April 2005, AFNET organized a public awareness event in the city of Mannheim. While the scientific conference was taking place in the Congress Center Rosengarten, a few hundred meters away interested passers-by and patients had the opportunity to have their heart rhythm checked by doctors from AFNET and to receive information about atrial fibrillation and their personal risk profile.

Every year in November, the German Heart Foundation announces "Herzwochen" (Heart Weeks). In this awareness campaign, the Heart Foundation provides information and coordinates events about heart diseases all over Germany. Every few years, the focus is on atrial fibrillation. AFNET has participated in the campaign with educational events for patients and the interested public, such as patient seminars in cooperation with the University Hospital Münster (UKM).

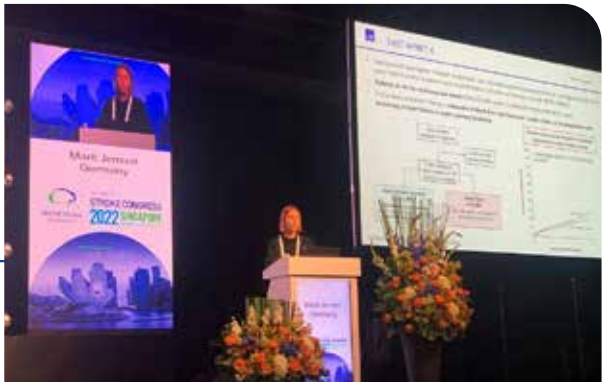
Patient seminar in Münster in 2018. Prof. Lars Eckardt, AFNET steering committee member and head of the rhythmology clinic at UKM, opened the event.

Events

Congresses

AFNET scientists regularly attend cardiological congresses in Germany, Europe, America and beyond, to present their research findings and study results. They are part of an international scientific community in the field of atrial fibrillation and other cardiovascular diseases and are in close contact with cardiologists worldwide. AFNET contributes to national and international congresses not only with presentations but also with special symposia organized by AFNET members.

The NOAH – AFNET 6 trial result – presented in a late-breaking clinical trials hot-line session – was one of the highlights of the annual congress of the European Society of Cardiology (ESC) in Amsterdam 2023.



Results of an EAST – AFNET 4 subgroup analysis were presented at the World Stroke Congress in Singapore 2022

AFNET symposium at the annual congress of the European Heart Rhythm Association (EHRA) in Barcelona 2023

From the outset, AFNET has participated in the annual congresses of the German Society of Cardiology (DGK) in Mannheim with scientific presentations and a joint booth together with colleagues from other competence networks and, since 2014, with the German Center for Cardiovascular Research (DZHK).

On the occasion of the 20 year anniversary AFNET organized a scientific session at the DGK congress 2023

Stephan Willems, Ines Gröner, and Andreas Goette in front of the booth

AFNET/EHRA CONSENSUS CONFERENCES

Nine international expert meetings have jointly been organized by AFNET and EHRA since 2007. Participants came from different European countries, America, and the Asia-Pacific region.

Read more about these events. The AFNET/EHRA conferences are described in an extra chapter, see pages 50 ff.

Participants of the AFNET/EHRA consensus conference 2023 in Münster

2021 in Hamburg

2013 and 2010 in Sophia Antipolis, France

AFNET 10 YEARS ANNIVERSARY

On 28 February and 01 March 2013, the Atrial Fibrillation Network celebrated its tenth anniversary with a ceremony and a scientific symposium in Berlin. Around 90 members and partners of the AFNET took part in the event.

Prof. Günter Breithardt opened the Ceremony in the Langenbeck-Virchow-Haus, Berlin.

Prof. Dr. iur. Dres. h.c. Paul Kirchhof, Heidelberg, former member of the Federal Constitutional Court, was invited as a guest speaker in the ceremony. He gave a lecture on „Der Auftrag des Arztes und die Ansprüche des Patienten in Zeiten knapper werdender Ressourcen" (The doctor's mission and the patient's demands in times of increasingly scarce resources).

PD Dr. Elisabeth Falkenstein, who had supervised and accompanied the AFNET on behalf of the project sponsor for 10 years, praised the achievements of the competence network in her welcoming speech.

Prof. John Camm, London, UK, and Prof. Isabelle van Gelder, Groningen, NL, gave keynote lectures in the symposium.

Dr. Gerlinde Benninger, then managing director of AFNET, spoke the closing words in the symposium.

AFNET 20 YEARS ANNIVERSARY

AFNET celebrated its 20th anniversary with international guests and current and former colleagues on 12 September 2023. The anniversary event took place during the AFNET/EHRA consensus conference in Münster.

Members and partners of AFNET met at the consensus conference.

After the scientific sessions, some of the participants took a bike ride to the Hot Jazz Club at Münster's city harbor where the anniversary celebration took place.

During the dinner, the former chair of the AFNET board, Prof. Günter Breithardt, addressed the participants and looked back on 20 years of AFNET.

Continuing Medical Education

AFNET supports physicians in their continuing education in the field of atrial fibrillation. This happens at national and international scientific congresses, and through educational courses at a regional level in which AFNET scientists explain new treatment options and current guideline recommendations.

Educational courses have been organized in cooperation with industry partners and University Hospitals or other cardiological clinics. AFNET cardiologists have given lectures in a series of seminars called Afib Academy organized by Sanofi in 2009 and 2010. Another series of more than 20 courses were organized by AFNET and Boehringer between 2010 and 2012.

Afib academies in cooperation with Sanofi: Prof. Thomas Meinertz in Hamburg, Prof. Andreas Goette in München

Public events of the competence networks

One task of the BMBF-funded competence networks to inform the general public about their research fields. This was achieved, among other things, by public events such as the joint appearances of the networks at the Long Night of Sciences (Lange Nacht der Wissenschaften) in Berlin.

Long Night of Science in Berlin 2008. AFNET took part in the joint exhibition of the competence networks and presented a self-built catheter ablation model.

10 years anniversary of the medical competence networks in Berlin 2009: The former AFNET managing director, Dr. Thomas Weiß, demonstrated catheter ablation on the model.

AFNET events for politicians

Atrial fibrillation affects several million people in Europe and is associated with a high risk of stroke and death. To address this growing health problem, politicians are an important target group.

Members of parliament and press representatives visited AFNET in the University Hospital Münster in 2005.

AFNET scientists, politicians, and other partners are invited to participate in the 20 year AFNET anniversary event in Berlin on 17 January 2024. The organizers look forward to an interesting day with fruitful discussions.

Parliamentary evening in Berlin in 2010

AFNET Association

Kompetenznetz Vorhofflimmern e.V.

The association Kompetenznetz Vorhofflimmern e.V. (AFNET) was founded on 4th of February to continue the work of the research network Kompetenznetz Vorhofflimmern funded by the Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung BMBF) from 2003 to 2014. Since 2015 individual projects have been co-funded by the German Center for Cardiovascular Research (Deutsches Zentrum für Herz-Kreislauf-Forschung DZHK).

» The funding of the Competence Network by the BMBF was essential to build up the infrastructure and resources to become sustainable and shape the successor, the Atrial Fibrillation Network (AFNET), as an independent association. This transition which occurred with some overlap between both entities would not have been possible without the devotion and expertise of our team and the conviction and devotion of the voluntary members of the Board and the Steering Committee. Doing research is our mission based on long-term education and experience, but starting an independent entity as a start-up academic research platform required more than our professional background included. Would we do this again? It was a long but rewarding walk.

Now the association is our backbone. We became independent of any further funding by the BMBF at the end of 2014. Already at that time, we were close to the DZHK which had been founded in 2012. « **PROF. GÜNTER BREITHARDT**,

CHAIR OF THE AFNET BOARD UNTIL 2015

Membership

Membership in the AFNET association is possible for physicians, scientists, hospitals, private practices, and companies. Today the association has 130 members.

What does the association do for its members?

- Hospitals and medical practices which are AFNET members can participate in AFNET studies if qualified accordingly.
- Hospitals and medical practices will be provided with the AFNET logo.
- AFNET provides its institutional and medical members with patient information booklets.
- Members will be informed about the activities of the association by a periodic newsletter.
- Addresses and services of institutional and medical AFNET members are mentioned on the AFNET website. Thereby AFNET supports its members in their self-promotion.
- AFNET supports its members in public relations, e.g. by announcing public events of a member on the AFNET website.
- Members who actively participate in one of the AFNET studies, will receive a certificate of participation.

General assembly of the AFNET association 2023 in Mannheim: Dr. Ines Gröner, managing director, and Prof. Paulus Kirchhof, chair of the board

The regular general meeting takes place once a year, normally during the annual congress of the German cardiac society in Mannheim.

AFNET general assembly 2013

Cooperations

As a research network AFNET thrives through its cooperations. In the AFNET studies and projects scientists and physicians cooperate on a national, European and sometimes international level.

Since 2015, AFNET has been closely cooperating with the German Center for Cardiovascular Research (Deutsches Zentrum für Herz-Kreislauf-Forschung, DZHK). Within the scope of the strategic partnership, AFNET and DZHK support each other in the conduct of their studies.

In addition, AFNET is in cooperation with various research institutions, e.g. the cardiology societies DGK (German Society for Cardiology), ESC (European Society of Cardiology), EHRA (European Heart Rhythm Association) as well as the German Heart Foundation (Deutsche Herzstiftung). Most AFNET studies involve external partners providing financial support for the conduct of the study. These

» We have been continuously funded by public funders. The first 10 years were shaped by funding from the German government, the German Ministry of Education and Research (BMBF), a large grant that enabled the first projects and established the infrastructure. Thereafter we have been continuously funded by the European Union and by other public funders and many of our projects are done as investigator-initiated trials in close cooperation with industry partners. These partners provide the means for us to deliver our projects and they are partners, but AFNET is in the driving seat. « **PROF. PAULUS KIRCHHOF**, CHAIR OF THE BOARD

partners include pharmaceutical and medical device companies, companies providing mobile health, health insurances and players in the public health system.

AFNET is always open to new research cooperations. Institutions, companies and scientists are welcome to approach us with research ideas and project proposals. If you are interested in a cooperation with AFNET, please contact us at info@kompetenznetz-vorhofflimmern.de.

» The success of the AFNET is based on several important factors:

- *Long-term substantial funding (> 11 years) by the BMBF in order to set up the basic structures and to collect experience*
- *Explicit demand for creating sustainable structures that will survive the end of the public funding period*
- *Scientific/medial expertise along with economic expertise working hand in hand*
- *The involved universities as legal entities of the AFNET in its initial phase allowed creative approaches for establishing new and sustainable legal structures in order to allow a smooth transfer from public to private financing*
- *Close interdisciplinary networking across all levels of care between university hospitals, local hospitals, resident physicians, CROs, professional societies, and industrial partners while – most important - maintaining scientific independency*
- *Expanding the network from a national into an international organisation*
- *Last but not least our study patients .«*

DR. THOMAS WEISS, FORMER MANAGING DIRECTOR

Public funding over 20 years

AFNET e.V.

2003
2004
2005
2006
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2024

Bundesministerium für Bildung und Forschung

2003-2010: 1st period

2010-2014: 2nd period

Deutsche Herzstiftung

EHRA European Society of Cardiology

2011-2021:

EAST – AFNET 4

DZHK
DEUTSCHES ZENTRUM FÜR HERZ-KREISLAUF-FORSCHUNG E.V.

2015-2018: 1st period

- EAST – AFNET 4
- AXAFA – AFNET 5
- NOAH – AFNET 6

2019-2022: 2nd period

- EAST – AFNET 4
- NOAH – AFNET 6

European Commission

2015-2018: CATCH ME

2020-2023: AFFECT EU

2021-2024: MAESTRIA

Cooperation Partners

- Deutsches Zentrum für Herz-Kreislauf-Forschung (DZHK)
- Deutsche Herzstiftung
- Deutsche Gesellschaft für Kardiologie (DGK)
- European Society of Cardiology (ESC)
- European Heart Rhythm Association (EHRA)
- Bundesverband niedergelassener Kardiologen (BNK)
- Kompetenznetz Angeborene Herzfehler (KN AHF)
- Kompetenznetz Herzinsuffizienz (KN HI)
- Technologie- und Methodenplattform für die vernetze Medizinische Forschung (TMF)

What do the members and partners think about AFNET?

» In my opinion, the most important strength of the AFNET is represented by the national and international network it is embedded in. These networks are in multiple aspects important. The resources to responsibly perform the expensive multicenter studies are limited. Therefore, the investigational forces can be united in the AFNET research team and these important studies can be conducted in a straightforward manner. Furthermore, the outstanding experience of the study team leads to the best imaginable foundation for planning and executing these studies. «

PROF. DANIEL STEVEN

» AFNET is a cooperation of scientists with a special interest in improving care of patients with atrial fibrillation. AFNET trials have therefor a high clinical relevance and the results are likely to change our current practice. Additionally, the trial team at AFNET is specialized in the conduction of trials with patients with atrial fibrillation and these trials are therefore managed with a high level of professionalism. « **PROF. LEIF-HENDRIK BOLDT**

» AFNET is an independent academic research organization. For me, independence from economic interests is crucial. At AFNET, the focus is always on the benefit for people. «

DR. ANGELIKA LEUTE

» This year AFNET is 20 years old and this is an amazing success and we are very happy that we reached this timeline. We have delivered almost a dozen clinical research projects. They start to change and improve the care of patients. We are now moving into the next wave of investigator-initiated trials and also enabling younger people to take the lead in those projects. «

PROF. PAULUS KIRCHHOF

» AFNET is a good example of how continuity can be achieved even after government funding has expired.«

PROF. KARL GEORG HÄUSLER

» For me, an important characteristic of our work at AFNET is the relatively industry-independent planning, financing and supervision of studies and projects. «

DR. CHRISTOPH AXTHELM

» Congratulation to twenty successful years of AFNET! I am following Atrial Fibrillation Network from the beginning on and its development is very, very impressing. It has an important impact in cardiac science and progress. I am thankful to be as a member of the advisory committee part of AFNET ....« **DR. ALEXANDER HEWER**

» For me the greatest achievement is the EAST – AFNET 4 trial that we did together. We supported it actively, because it made and will make a change in the guidelines, because early rhythm control proved to be superior to rate control and that is a shift of paradigm. So, this is very important and it is a highlight for me .« **PROF. HELMUT PÜRERFELLNER**

» Together we are strong. We have been facilitating patient-oriented research for 20 years. With the results, we contribute to improving care. Research turns survival into life .« **DR. ULRIKE BAUER**

Vision for the future

Vision for the next 20 years

- Improving synergy between researchers and bringing science and society closer together
- Extending our scientific network and strengthening international cooperations
- Increasing the number of public grants and private sector investments to fund innovative research projects
- Conducting international randomized clinical trials with impact on clinical guidelines
- Increasing the number of publications in high impact scientific journals
- Developing a data hub harmonizing information collected from different studies
- Optimizing treatment strategies and treatment decisions to improve the lives of our patients with atrial fibrillation and to promote cardiovascular health

Further development of AFNET is constantly discussed. A new initiative of AFNET and DGK, for example, aims at rewarding research in the field of atrial fibrillation by two newly created AFNET awards:

- A young investigator award for atrial fibrillation research
- An AFNET lecture on arrhythmia

How do members and partners see the future of AFNET?

»First, the advent of new anticoagulants preventing embolism is eagerly awaited in the next five years. These drugs may allow to better define the role of anticoagulation in subclinical AF, and hopefully will allow to reduce stroke also in this large population with early manifestation of AF and smaller risk of stroke compared to the manifest forms of AF.
In view of the increasing role of catheter ablation for AF treatment, we need also to define the patient in whom such an attempt is highly unlikely to cause any clinical benefit.
Finally, in ten years (or so), application of artificial intelligence to routine ECGs of people in sinus rhythm will tell us who will in the future develop AF so that preventive counseling may be started.".« **GERHARD STEINBECK**

»I see three areas of activity: 1. Working closely with German and international partners, for example EU consortia and the DZHK, AFNET can explore its rich data sets by contributing to translational and data science research. 2. AFNET will continue to deliver and innovate international clinical trials, bringing together relevant stake holders to improve the lives of patients with atrial fibrillation and other cardiovascular diseases. 3. I also wish that AFNET remains a useful and formative place for the next generations of interdisciplinary clinicians and researchers with an interest in arrhythmias. They hold the key to understanding and preventing the chronic, complex cardiovascular conditions that affect so many of us.« **PAULUS KIRCHHOF**

»AF related projects, the core business of AFNET, might be expanded to other cardiovascular topics within the next 20 years. Telemedicine and artificial intelligence.« **THOMAS WEISS**

» I foresee a transformative era for cardiovascular research, driven by robust collaborations like that of AFNET and DZHK. The coming two decades promise groundbreaking discoveries and therapeutic advancements that could vastly improve the lives of millions globally. Personalized medicine, augmented by advanced data analytics and artificial intelligence, will likely pave the way for tailored treatments in cardiovascular diseases. Collaborative efforts between esteemed organizations like AFNET and DZHK will be at the forefront of translating these visionary advancements into tangible realities. « **ABDUL PARWANI**

» The AFNET is a driving force in Germany and, in part, in Europe to help translate ground-breaking research ideas into stringent und collaborative research projects and clinical trials. We will see AFNET being involved in further advances in atrial fibrillation science with significant clinical impact. «

RENATE SCHNABEL

» I look forward to future trials with factor XIa inhibitor drugs. In addition, an expansion of our efforts to create greater awareness of cardiac risks in the population would be desirable in conjunction with an expansion of screening activities. It would also be conceivable to expand the range of studies at AFNET to include further cardiological indications. «

VINCENT BEUGER

» The ideal future would be that within 20 years AFNET would not be necessary anymore. If we understand better what AF is, you can also better prevent it – but that will not be done in 20 years! « **HEIN HEIDBÜCHEL**

» To my mind, a main achievement of the previous work of the AFNET was the implementation of randomized clinical trials and prospective registries, aiming to achieve a benefit for patients with atrial fibrillation. As the results of some of these studies led to respective guideline recommendations, I hope that it will be possible to consolidate this interdisciplinary think tank in the future, to enable further studies and to increase the awareness for atrial fibrillation in the population. « **KARL GEORG HÄUSLER**

» I would like to see more press work for the general public. The further the implementation of the study results progresses, the more important it becomes that people who are less interested in science learn about them and understand the benefits of this research. «

ANGELIKA LEUTE

» Coming from a clear focus on Atrial Fibrillation, that gives our network its name, I expect AF to remain the major field of our future research, accompanied by complementary scientific activities. Congratulations on 20 years of great work! I wish us and our network further success and persisting relevance for the daily work with our patients!. «

CHRISTOPH AXTHELM

» Now we have to proceed with the topic of atrial fibrillation. Probably we need to include other entities like heart failure and other comorbidities. There is much more to do and we will do more studies, probably broader studies in the field of atrial fibrillation. « **ANDREAS GOETTE**

» Medical and societal needs for screening, diagnosis and therapy of cardiovascular diseases will increase in the next two decades. Patient orientation and involvement will get more and more important. There will also be further scientific-technical progress, such as usage of AI in healthcare and new therapy methods. All these developments will provide excellent opportunities for AFNET together with its network on national and international level for shaping the management of cardiovascular diseases and improving the quality of life of patients worldwide. « **INES GRÖNER**

» I hope and I am convinced that AFNET will continue to play a major role internationally supporting digitalisation and collaboration in cardiovascular research so that the population will participate in studies easily and nobody will be excluded. «

LARISSA FABRITZ

» I am convinced, that the way we treat atrial fibrillation is about to change in the next years. Besides stroke prevention, the restoration and maintenance of sinus rhythm will be our main treatment goal. Rate control will be the treatment strategy only in a selected subset of patients. The EAST – AFNET 4 trial set the ball rolling. « **LEIF-HENDRIK BOLDT**

» I believe that the focus of the AFNET in recent years has been the implementation of clinical trials and should also be prospective, whereby the interdisciplinary context is just as important as the patient relationship. The aim of the studies should be the immediately recognizable benefit for patients with atrial fibrillation. Hopefully it will be possible to maintain this structure as such in the next few years in order to be able to carry out further studies and also make further progress in terms of awareness, i.e. to sensitize patients to disease topics. « **KARL GEORG HÄUSLER**

» In the next 20 years, we will better understand how to prevent AF and how to further improve mortality. In addition, artificial intelligence will play an important role in the noninvasive and invasive management of our patients. AI will help us to individualize patient management. «

ROLAND TILZ

» Running trials involving more European partners (like STEER AF, EHRA-PATHs) addressing differences in local circumstances and culture throughout Europe (and the rest of the world). Improving mentoring of young colleagues in research, e.g. invite them in steering Cies, like I had the possibility long ago (facilitated by John Camm). This is so important to continue research. Continue the close collaboration with EHRA. EHRA can benefit from the research expertise of AFNET and adequately performed RCTs are so important to improve quality of life and outcome of our patients. «

ISABELLE VAN GELDER

» We're facing the challenge of keeping up with the fast pace of technological advancements while delivering study results that meet our high-quality standards. The use of artificial intelligence will simultaneously be a subject of our research and a tool to help us achieve this goal. Fortunately, we have AFNET as a strong partner to support us in this endeavor.. « **MARTIN BORLICH**

» AFNET is strong in clinical trials. I expect that this will continue to be used for the benefit of patients, that AFNET will be a contact for patients with specific questions about atrial fibrillation and will also be informed about new therapies. «

DIERK THOMAS

» Patient empowerment will be of utmost importance and patients will use more and more wearables to detect their pulse. For us will be a lot of data to be managed and artificial intelligence will play a major role. « **HELMUT PÜRERFELLNER**

» The further goals of the AFNET are to go beyond what we have reached so far in terms of improvement of healthcare for patients with atrial fibrillation, but now we switch also to other diseases, comorbidities that are associated with atrial fibrillation as heart failure and stroke. « **ULRICH SCHOTTEN**

» Facilitated decision-making supported by AI will change the scenario within the coming years – also in the AF world. Exciting years to come with a lot of new knowledge to gain. «

PHILIPP SOMMER

» For the future, I would envision that like in some of the Scandinavian countries we in Germany with our surrounding neighbors will also be capable of providing huge databases and registries. This would form the base for even more extensive and close-to-clinical-relevance science. I would also envision that the responsible financial supporters of these expensive endeavors would more closely focus on the prospective outcome of different research groups and therefore prioritize the support of AFNET-related study work. Furthermore, I think we paved the road to maintain contact with the network and beyond this develop and further refine study ideas in a close collaboration and exchange between the AFNET research collaborators. « **DANIEL STEVEN**

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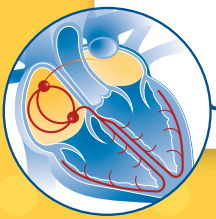
Kompetenznetz Vorhofflimmern e.V. – Atrial Fibrillation NETwork (AFNET)



AFNET e.V.

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