

Brief history of Maastricht UMC+

- 1976 Faculty of Medicine PBL
thematic research
- 1980 Faculty of Health Sciences
- 1984 Academic Hospital Maastricht (azM)
- 2007 Faculty of Health, Medicine and Life
Sciences (FHML)
- 2008 Maastricht University Medical Centre +

Five Graduate Schools

Cardiovascular Diseases (CARIM)

Nutrition and Metabolism (NUTRIM)

Oncology and Developmental Biology (GROW)

Mental Health and Neurosciences (MHeNS)

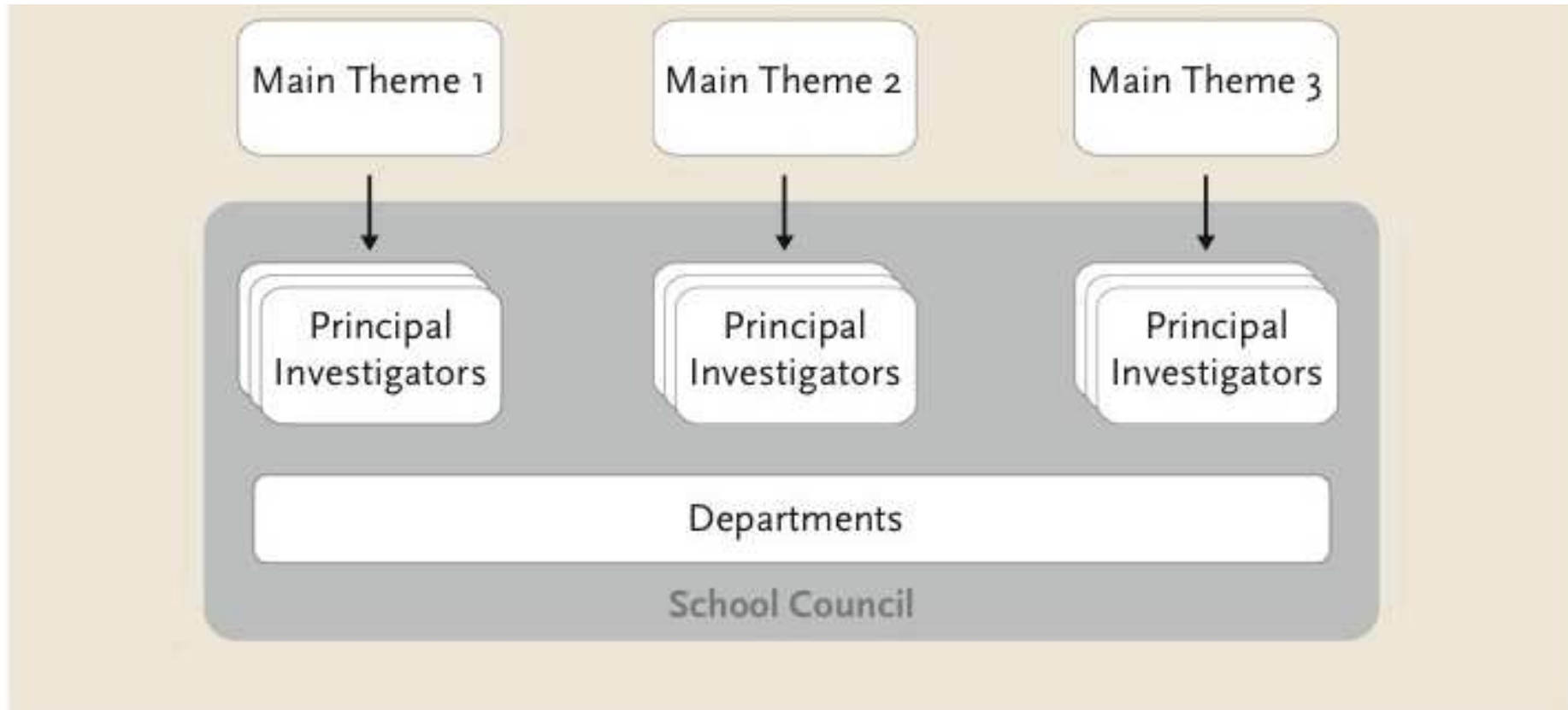
Public Health and Primary Care (CAPHRI)

CARIM's history

- 1988: Foundation
- 1992: Recognition as a Research School by RNAAS
- 1997, 2002 and 2008: Re-recognition

Organization

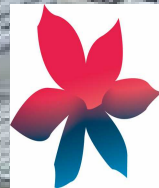
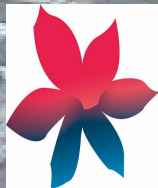
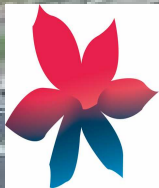
250 fte; budget 2009: 23 million euro; 400 papers, mean IF 5.03



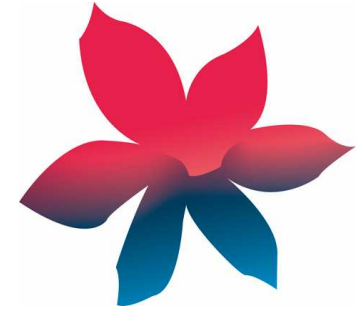
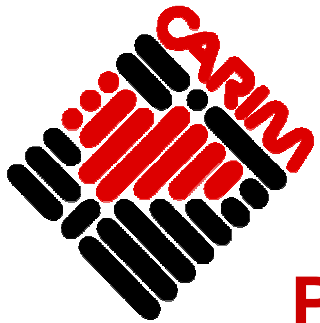
**Thrombosis
and
Haemostasis**

**Cardiac
Function and
Failure**

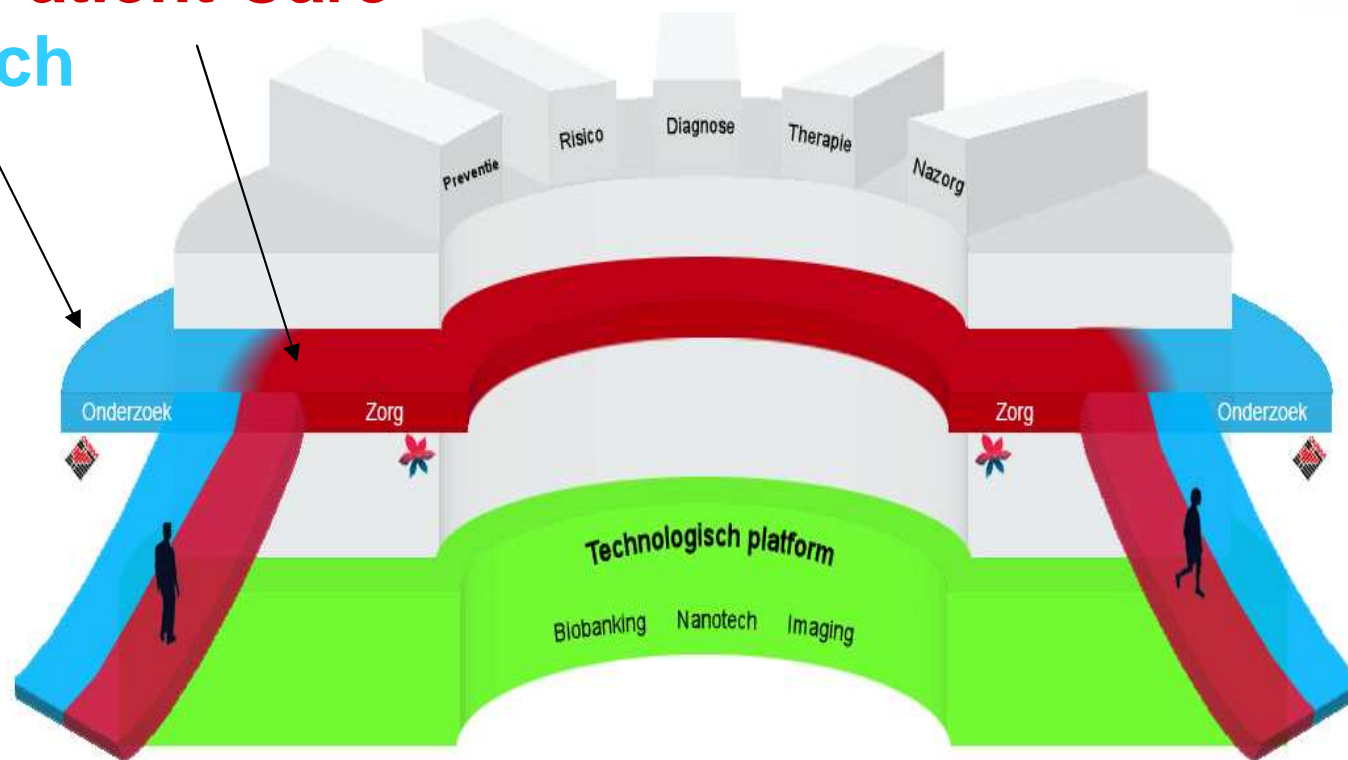
**Vascular
Biology**



Alignment of Research and Patient Care



Patient Care
Research





CARIM and CVC

Dominant Themes

Bringing Mechanisms into the Clinic

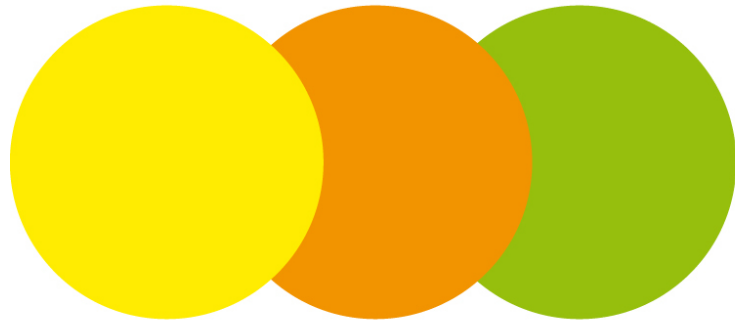
Plaque Instability and Thrombosis

Cardiac Failure and Atrial Fibrillation

Metabolic Aspects

Imaging

From therapy to early diagnosis



DE MAASTRICHT STUDIE

uitdaging voor een gezonde leefstijl

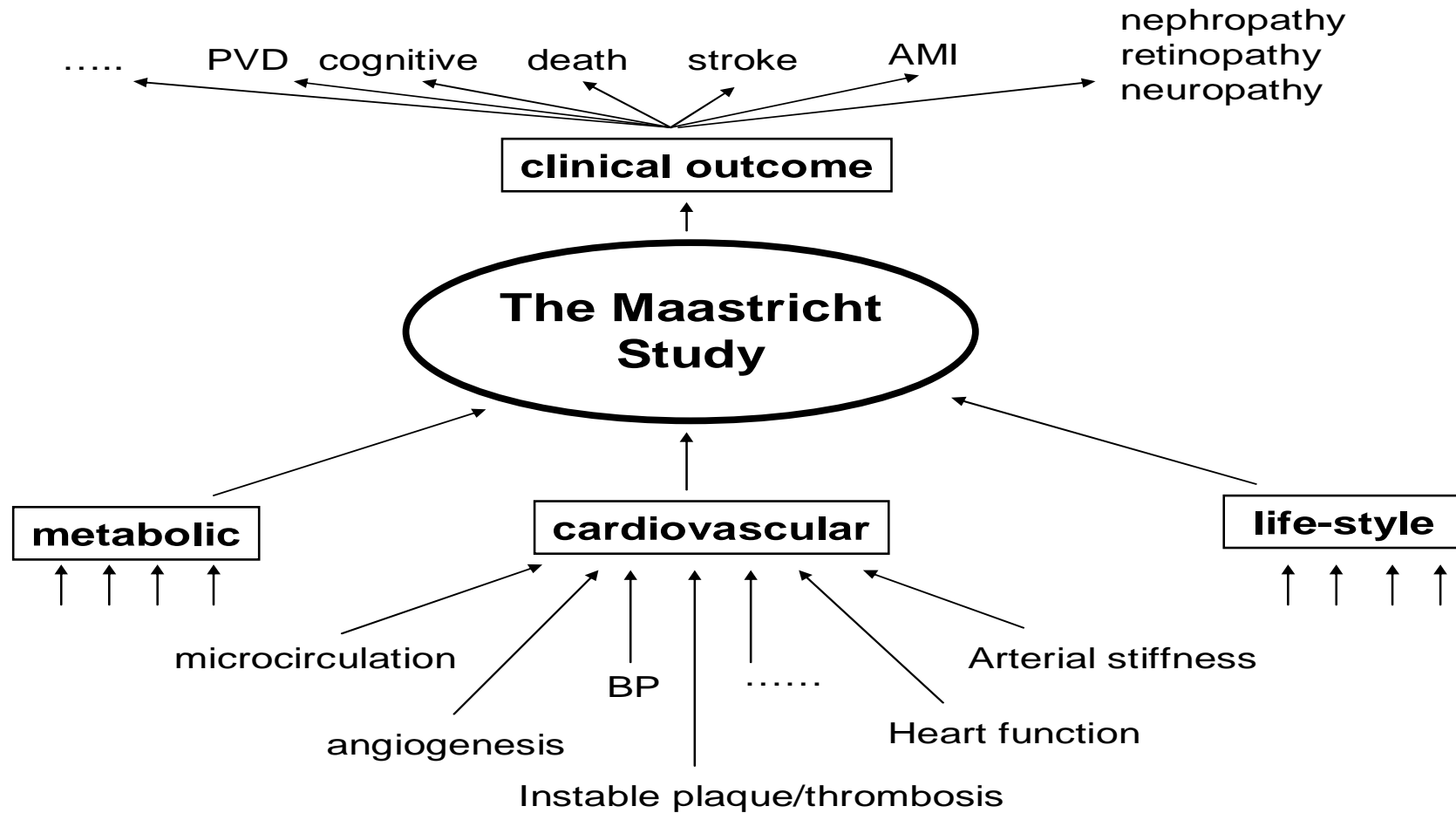
A challenge for a healthy lifestyle

The Maastricht study

- 10.000 people, 40 years and older from Maastricht and its surroundings
- 5000 with type 2 diabetes, 5000 without
- Follow-up >10 year
- Round I (2010-2014), II (2014-2019) etc..



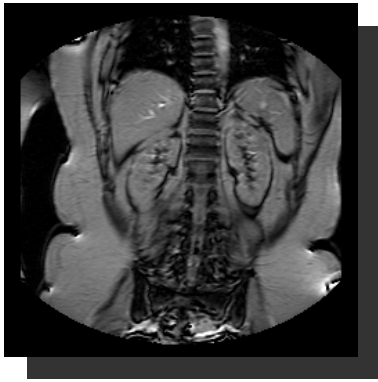
Design Maastricht Study



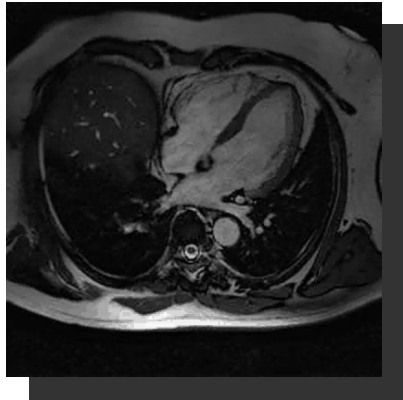
Imaging Facilities

- State-of-the-art CT
- State-of-the-art MRI
- Two-Photon Laser Scanning Microscopy

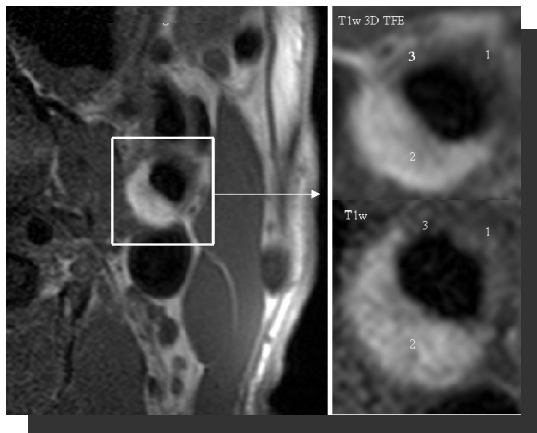
State of the Art MRI



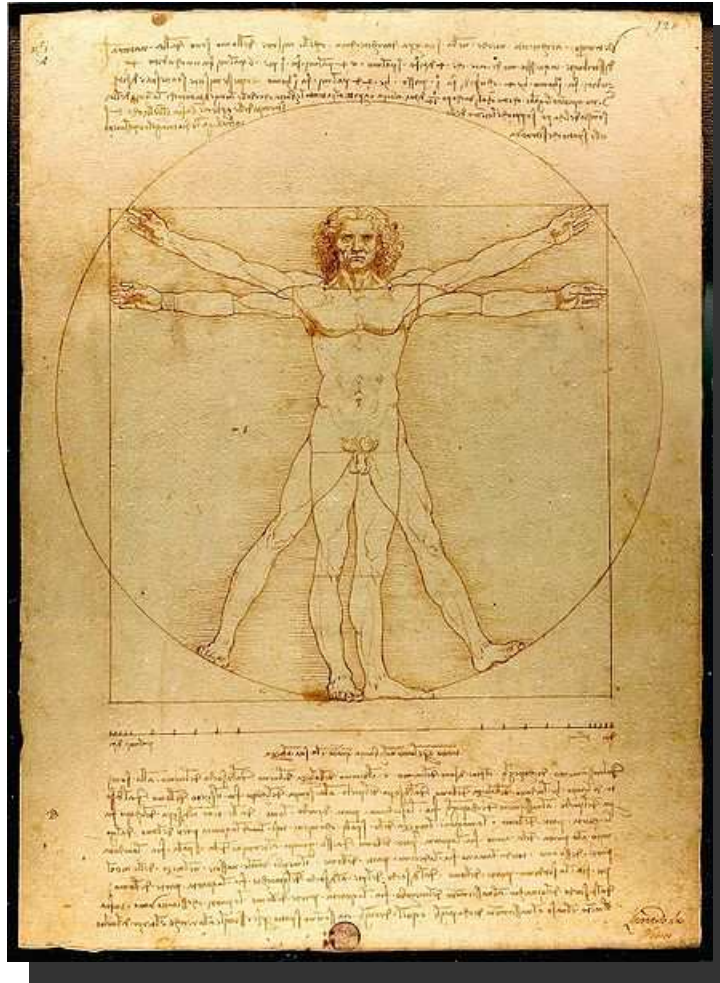
Total body fat



Heart function

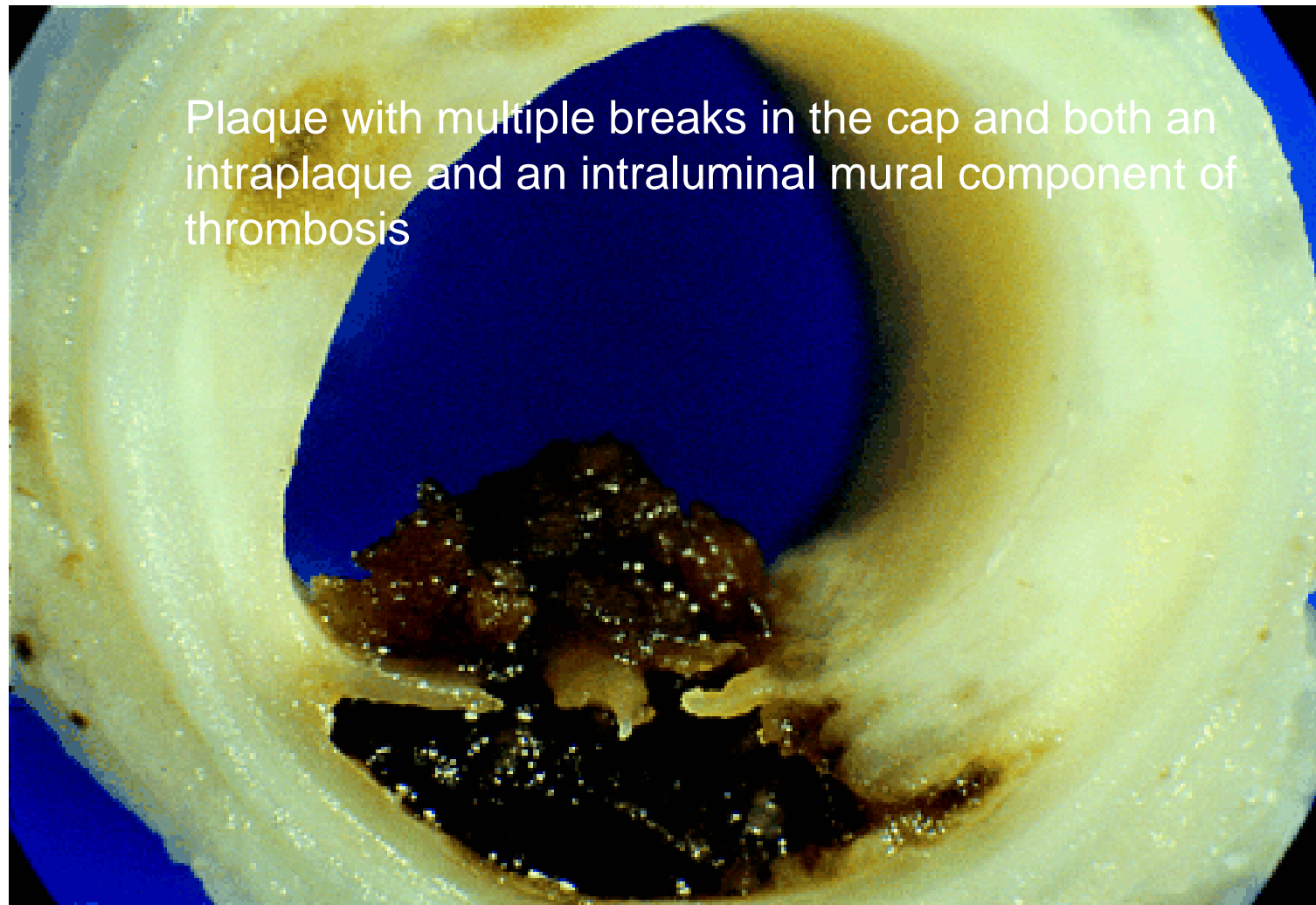


Vascular wall

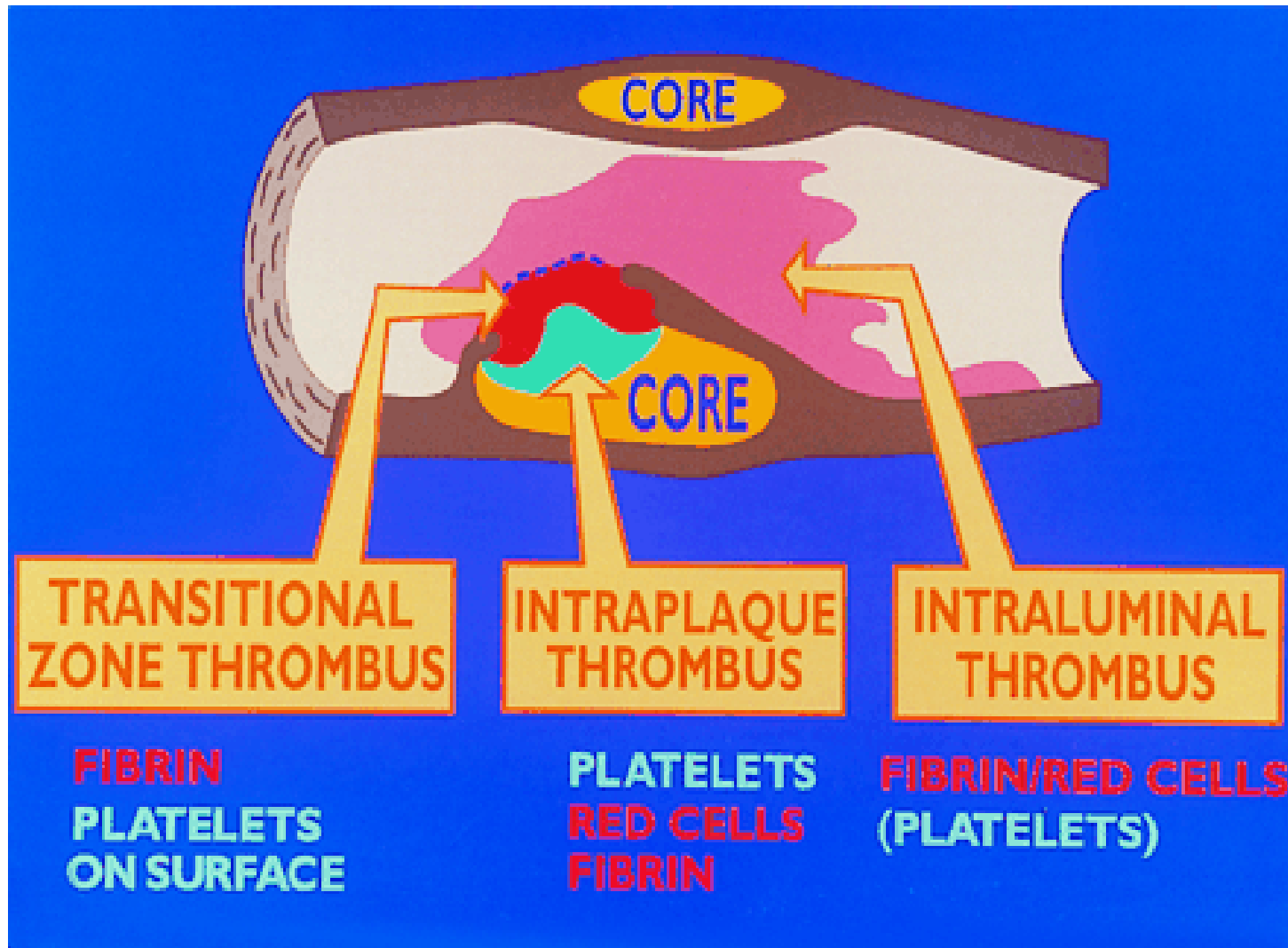


Total body MRA

Plaque rupture: the result of a disintegrating plaque and subsequent thrombus formation

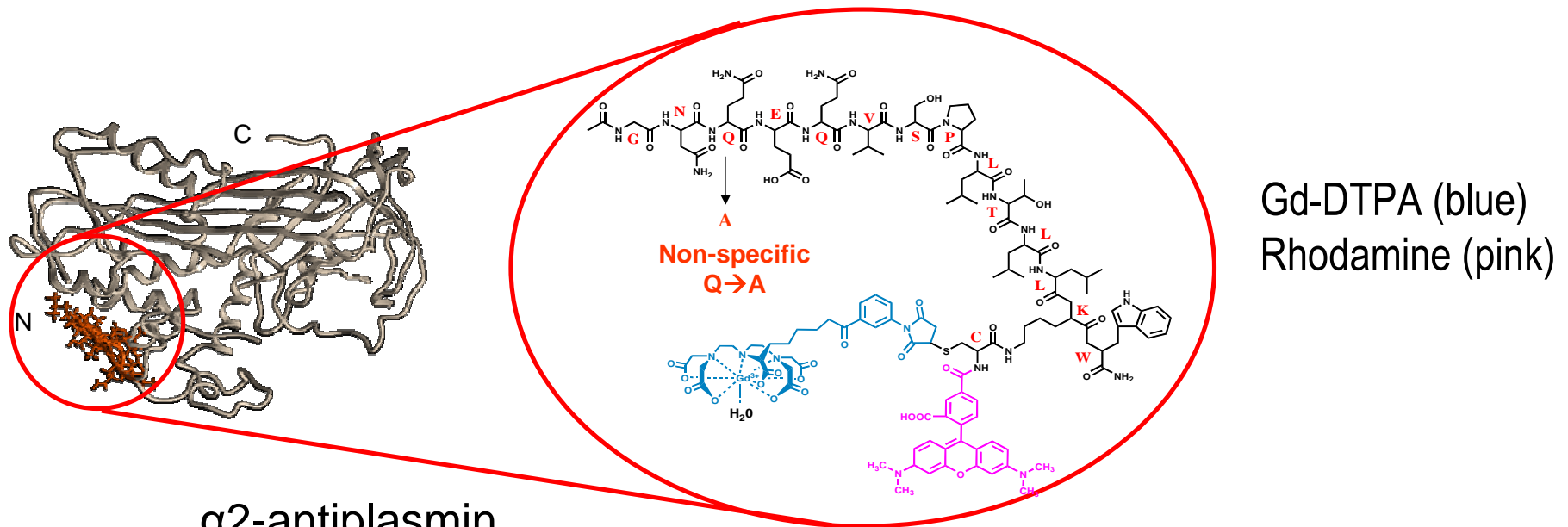


Diagrammatic representation of stages of development of thrombosis after disruption



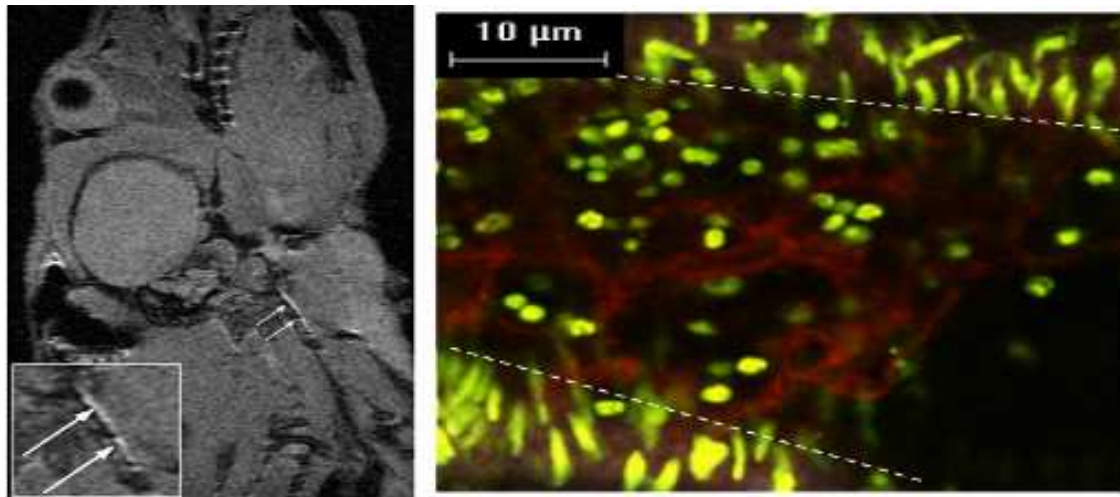
Molecular imaging of thrombus

- During early stages of thrombus formation, activated factor XIII cross-links α_2 -antiplasmin covalently to the fibrin network
- Aim: In vivo visualization of fresh thrombi using a bimodal α_2 -antiplasmin-based contrast agent



In vivo imaging of thrombus with labeled $\alpha 2$ antiplasmin

Specific Contrast Agent



■ Contrast agent
■ DNA staining

Thrombus formation was induced by 10% FeCl_3 treatment of the carotid artery
Dose: $5.1 \mu\text{mol Gd /kg}$ body weight

Miserus et al., JACC Imaging 2009

Euregional Center of Excellence of CardioVascular Medicine



European Vascular Centre

ECCE

EUCAR



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AACHEN - MAASTRICHT

