

Paolo Guido Camici MD FESC FACC FAHA FRCP



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Professore Ordinario di Cardiologia

Universita' Vita-Salute - San Raffaele

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APPOINTMENTS

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| April 2010 | Professore Ordinario di Cardiologia, Universita' Vita-Salute - San Raffaele, Milano, Italy. |
| January 2006 | Consultant Cardiologist, Royal Brompton and Harefield Hospital Trust. |
| March 1995 | Professor of Cardiovascular Pathophysiology and Consultant Cardiologist, Imperial College School of Medicine (ICSM), Hammersmith Campus, University of London, UK. |

Clinical activities

Consultant Cardiologist. Run a general adult cardiology clinic at Hammersmith Hospital and the heart failure clinic at the Royal Brompton Hospital. Responsible for the diagnostic service of PET Cardiac Imaging.

Research

Direct the PET research programme in cardiology at the Medical Research Council – Clinical Sciences Centre, at Hammersmith Hospital.

Undergraduate Teaching

I teach regularly in modules 7 and 12 for the Imperial College BSc and am responsible for supervising BSc projects in the 5th year. I also teach in the BHF REA Course.

Postgraduate Teaching

Lecture and examine students for the Diploma of Internal Medicine and Cardiology at ICSM on the Hammersmith Campus.

I regularly contribute to Staff Round presentation at Hammersmith Hospital.

Since 1992, I have supervised 13 MD students (10 as main supervisor and 3 as co-supervisor) and 5 PhD students (2 as main supervisor and 3 as co-supervisor).

At present I am involved as external assessor in 3 PhD Theses from the University of London, 2 in Imperial College and one from King's College.

In the past 3 years I have been involved as external examiner in 3 PhD theses, one from the University of Louvain, one from the University of Groningen and one from the University of Amsterdam.

- July 1994 **Director, PET Cardiology Group, Medical Research Council (MRC) Clinical Sciences Centre, Hammersmith Hospital, London.**
- Conferment of *Tenured Position with MRC* - Consultant Clinical Scientist
- 1991 to June 1994 **Senior Lecturer and Consultant Cardiologist, Royal Postgraduate Medical School (RPMS) and MRC Cyclotron Unit, Hammersmith Hospital, London.**
- 1985 - 1991 **Director of Research, Consiglio Nazionale Delle Ricerche (CNR) Institute of Clinical Physiology, Pisa, Italy.**
- Undertook clinical duties in the coronary care unit, the cardiology clinic and catheterisation laboratory of the CNR Institute of Clinical Physiology. He has performed over 1000 left and right catheterisations and PTCA. He was responsible for cardiac studies at the new PET centre. Lectured and tutored in cardiology. He served as a member of the examination committee of courses in cardiac surgery and clinical physiology.
- 1983 - 1984 **Clinical Scientist, MRC Cyclotron Unit, Hammersmith Hospital, London.**
- Carried out clinical research studies in patients with coronary artery disease using PET.
- 1977 - 1994 **Assistant Professor, Istituto Di Patologia Medica, University of Pisa.**
- Undertook clinical duties in the coronary care unit and the cardiology clinic of the Institutes of Clinical Physiology and Patologia Medica at the Hospital of Santa Chiara in Pisa.

Conducted experimental studies in animals and patients on the coronary circulation and myocardial metabolism.

Lectured on the clinical and pathological aspects of cardiovascular disease in the course of Patologia Medica.

1975 - 1977

Post-doctoral Fellow, CNR Institute of Clinical Physiology, University Hospital, Pisa.

Received full training in clinical cardiology and nuclear medicine.

Carried out experimental studies on the pathophysiology of myocardial ischaemia.

PROFESSIONAL SOCIETIES

Fellow of the American College of Cardiology

Fellow of the European Society of Cardiology

Fellow of the Royal College of Physicians

Fellow of the American Heart Association

Member of the Association of Physicians of Great Britain and Ireland

EXTRA MURAL COMMITMENTS

1989 to 1996

Cardiology Group of European Community Concerted Action on Positron Emission Tomography: *Chairman*

1992 to present

FNRS-Commission de la Recherches cliniques, Belgium:- member.

1996 to present

Visiting Professor, University of Zurich, Switzerland

1997 (January)

Visiting Professor, The Cleveland Clinic Foundation, Ohio, USA

1997 to present

Member of the board of the Division of Cardiology and Respiratory Medicine (Imperial College, Faculty of Medicine)

1997 to present

Member of the Committee for Academic Promotions in the National Heart and Lung Institute (Imperial College, Faculty of Medicine)

1998 to present

Member of the Editorial Board of *Basic Research in Cardiology*

1999 to present

Member of the Editorial Board of *Heart*

2000 (August)

Visiting Professor, University of Munich, Germany

2000 to present

Member of the Advisory Board of the Medical Research Council

2000 to present

Member of the Editorial Board of *Heart Drug*

2000 to 2002

Chairman of the Working Group *Interventional Cardiology and Coronary Pathophysiology* of the European Society of Cardiology

2000 (November)

Visiting Professor, Mayo Clinic, Rochester, Minnesota, USA

2001 to present

Member of the Editorial Board of *Herz*

2001 to 2005

HEART-UK, MRC sponsored trial; Member of the Steering Committee

2002 to 2004

Member of the "Science Council" of the European Society of Cardiology

2002

Visiting Professor, University of Sapporo, Japan

2002

Visiting Professor, University of Kobe, Japan

2003 to present

Member of the Editorial Board of the *European Journal of Cardiology*

2003 to present

Consulting Editor for *Cardiovascular Research*

2003 to present

Member of the Editorial Board of the *Italian Journal of Cardiology*

2004 to present	Member of the Editorial Board of the <i>Hellenic Journal of Cardiology</i>
2004 to present	Member of the Editorial Board of the <i>Journal of Nuclear Medicine</i>
2006	Member of the writing panel of the <i>Guidelines of the European Society of Cardiology for Percutaneous Coronary Interventions</i> (Eur Heart J 2005; 26:804-847) and <i>on the management of stable angina pectoris</i> (Eur Heart J 2006; 27:1341-81).
2007 to present	Member of the Editorial Board of the <i>Journal of Nuclear Cardiology</i>
2007 to present	Member of the Editorial Board of the <i>Journal American College of Cardiology (Imaging)</i>
2007 to present	Member of the Editorial Board of <i>European Journal of Nuclear Medicine and Molecular Imaging</i>
2008 to present	Member of the Editorial Board of <i>Current Cardiovascular Imaging Reports</i>
2008 to present	Member of the Editorial Board of <i>Circulation Journal</i>
2008 to present	Member of the Editorial Board of <i>Cardiovascular Ultrasound</i>
2009	International Associate Editor of <i>European Heart Journal</i>

EDUCATION

1981	Specialization in Cardiovascular Diseases with full honours at Pisa University.
1977	Specialization in Nuclear Medicine at Pisa University.
1974	MD, University of Pisa Title of thesis: Attività flogogena della polimixina B.
1968-1974	School of Medicine, University of Pisa, Italy.

GENERAL EDUCATION

1963-1967	Liceo Classico Galileo Galilei, Pisa, Italy. Major studies in Latin, Greek and Philosophy.
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PERSONAL DETAILS

Place of birth	Genova, Italy
Date of birth	5 th March 1949
Nationality	Italian

HONOURS

Cavaliere dell'Ordine al Merito della Repubblica Italiana.

Coronary microvascular dysfunction

Paolo G Camici MD

Vita Salute University and Scientific Institute San Raffaele, Milan, Italy

The development and refinement of non-invasive cardiac imaging over the past two decades has provided new tools for the identification of pre-clinical disease. A bulk of studies, mainly using positron emission tomography (PET) for the non-invasive quantification of regional myocardial blood flow, have demonstrated that dysfunction of the coronary microcirculation occurs in many clinical conditions in the absence of demonstrable stenoses on the large epicardial arteries. Studies in asymptomatic subjects, but with risk factors for coronary artery disease such as hypercholesterolemia, essential hypertension, diabetes mellitus and smoking, have provided evidence of how these risk factors translate into measurable damage to the coronary microcirculation in the absence of demonstrable stenoses of the epicardial arteries. In some cases these abnormalities represent mere epiphenomena, whilst in others they represent important markers of risk or even contribute to the pathogenesis of myocardial ischemia, thus becoming therapeutic targets.

In the absence of obstructive stenoses on the epicardial arteries, a reduced coronary flow reserve is a marker of coronary microvascular dysfunction. Although a single cutoff value of coronary flow reserve (e.g. ≤ 2.0) below which microvascular function is deemed abnormal would be useful clinically, it must be noted that, in normal humans, coronary flow reserve varies according to age and gender. Therefore, it is essential to compare coronary flow reserve data in patients with those obtained in age- and sex-matched normal subjects. In addition, resting myocardial blood flow is linearly related to cardiac work. Therefore, when comparing different patients it is important to correct resting myocardial blood flow for the main determinants of

external cardiac workload, i.e. as blood pressure and heart rate (rate-pressure product; RPP). A corrected coronary flow reserve can then be calculated by dividing hyperemic flow by RPP-corrected resting flow. More complex is the assessment of coronary microvascular dysfunction in territories subtended by stenotic coronary arteries where the evaluation of microvascular function depends on the clinical context. As proposed by Camici and Crea, coronary microvascular dysfunction can be classified in the following four groups: 1) coronary microvascular dysfunction occurring in the absence of obstructive epicardial coronary artery disease and myocardial diseases (type A); 2) coronary microvascular dysfunction occurring in the context of cardiomyopathies (type B); 3) coronary microvascular dysfunction occurring in the presence of obstructive epicardial coronary artery disease (type C); 4) iatrogenic coronary microvascular dysfunction (type D).

Camici PG, Crea F. Coronary microvascular dysfunction. *N Engl J Med*. Feb 22 2007;356(8):830-840.