

**Peter Radermacher, MD, PhD**  
**Professor of Anaesthesiology and Intensive Care Medicine**

**Specialty:** Anaesthesiology and Intensive Care Medicine  
**Institute:** University Medical School  
**Department:** Anaesthesiology and Intensive Care Medicine  
**City:** Ulm  
**Country:** Germany  
**Function:** Chair, Institute of Anaesthesiological Pathophysiology and Process Development  
**Scientific Focus:** Biology of muscle wasting and functional outcomes in critical illness



**Key words:** TBI; traumatic-hemorrhagic shock; gaseous mediators (O<sub>2</sub>, H<sub>2</sub>S)

**Curriculum Vitae:**

Date and place of birth:	March 20, 1959, Düsseldorf (FRG)
Married since:	1985 with Monika Radermacher
Children:	Katharina (1987), Leonhard (1990), Martin (1992), Bernhard (1998)
1969 – 1977	Albert-Einstein-College, Kaarst
1977 – 1984	University Medical School, Heinrich-Heine-University, Düsseldorf
1981	Grant recipient of the Studienstiftung des Deutschen Volkes
1981	Marseille University Medical School (Timone Hospital, Dept. of Anaesthesia and Intensive Care)
1984	M. D. Thesis: „Influence of intravenous lipid emulsions on triglyceride and protein metabolism in man“
1984 – 1991	Resident in Anaesthesia, Dept. of Anaesthesiology, Medical School, Heinrich-Heine-University, Düsseldorf
1985 – 1987	Grant recipient of the German Research Society, Dept. of Medical Intensive Care (Dir.: Prof. Francois Lemaire), Henri Mondor Hospital, Créteil (France)
1990	International field study (grant of the German Research Society) on „Physiology of Apnea Diving“, Pusan (Korea)
1991	Boards exam in Anaesthesiology
1991 – 1992	Military Service, Naval Medical Institute, Federal German Navy, Kiel; Training as Diving Medical Officer
1992	Ph. D. thesis: “Venous admixture in patient with ARDS and pulmonary hypertension – methods of analysis and effects of vasodilator therapy”
1992	Staff Anaesthetist, Dept. of Anaesthesia, Medical School, Heinrich-Heine-University, Düsseldorf;
1994	Professor of Anaesthesiology, Dept. of Anaesthesiology, University Medical School, Ulm
1995	Boards Exam Special Postoperative Intensive Care;
1997 – 2014	Head of Section of Pathophysiology and Process Development”, Dept. of Anaesthesiology, University Medical School, Ulm
1997	Boards exam “Diving and Hyberbaric Medicine”



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2001 - 2014	Vice-Chairman Department of Anesthesiology, Ulm University Medical School
2002	Sabbatical leave and Associate Professor, Laboratory of Fundamental and Applied Bioenergetics, Joseph Fourier University, Grenoble (France) (Dir.: Prof. Xavier Lerveve)
2007	Dr. honoris causa, Medical Faculty, University, Angers, France
2010	Honorary Member of the Czech Society of Intensive Care Medicine
2011 - 2014	International member of the Scientific Committee of the French Society of Intensive Care Medicine
2014	Director Institute of Anaesthesiological Pathophysiology and Process Development", University Medical School, Ulm
2018	International member of the Committee of Translational Research of the French Society of Intensive Care Medicine
2018	Appointment as Editor-in-Chief Intensive Care Medicine Experimental

### **SCIENTIFIC AWARDS**

1990	Research Award Intensive Care München/Münster "Prostacyclin for the treatment of pulmonary hypertension associated with ARDS"
1992	E.-K. Frey Award of the German Society of Medical Intensive Care for the Ph. D. thesis
1993	Poster Award of the European Society of Intensive Care Medicine for "Prostacyclin improves gastric intramucosal pH in patients with septic shock"
2009	Dräger-Award Intensive Care of the European Society of Anesthesia for the publication "Effects of ventilation with 100 % oxygen during early hyperdynamic porcine fecal peritonitis"

### **MEMBERSHIPS**

American Physiological Society  
European Society Intensive Care Medicine  
European Society of Anaesthesiologists  
European Underwater Baromedical Society  
German Society of Nutritional Medicine

### **JOURNAL REVIEW FOR**

Crit Care (Associate Editor)  
Shock (Associate Editor 2007-2017)  
American Journal of Respiratory and Critical Care Medicine Crit Care Med  
Intensive Care Medicine (Assoc. Editor 2000-2006)  
Intensive Care Medicine Experimental (Assoc. Editor since 2013; Editor-in-Chief-Elect 2018)  
Journal of Applied Physiology  
Anesthesia and Analgesia  
Anesthesiology  
British Journal of Anaesthesia  
British Journal of Pharmacology



## **GRANT REVIEW FOR**

German Research Society (DFG)  
Institut National de la Santé et de la Recherche Médicale (France)  
Fondation pour la Recherche Médicale (France)  
Swiss National Fonds  
Fonds for the Advancement of Scientific Research (Austria)  
Research Agency of the Ministry of Health (Czech Republic)

## **RESEARCH GRANTS**

- 1992 – 1994 Interdisciplinary Research Group 1404 “Hormone resistance: Biochemistry and Clinics” Project B5” Glucose turnover in sepsis – influence of prostacyclin”
- 1998 – 2000 German Research Society (Ra 396/3-1) “iNOS- and PARS-inhibition in septic shock”
- 1998 – 1999 Young Investigators Award of the European Society of Intensive Care Medicine (ESICM) to Dr. Martin Matejovic (Plzen, Czech Republic) “Selective iNOS inhibition and PARS-blockade in hyperdynamic endotoxemic shock”
- 1999 – 2000 German Research Society (Ra 396/4-1) “Iloprost in septic shock”
- 2000 – 2002 German Research Society (Ra 396/5-1) “ATP-MgCl<sub>2</sub> in endotoxemic shock”
- 2000 – 2002 German Research Society (Ra 396/3-2) “ROS, iNOS, and HO-1 in endotoxemic shock”
- 2001 – 2003 European Society of Anesthesia Research Award to Gebhard Fröba (Ulm) “Comparison of vasodilators during aortic cross-clamping in pigs”
- 2001 – 2002 Grant of the Alexander-von-Humboldt-foundation to Dr. Damian Vassilev (Queen-Victoria-Hospital, Sofia) for the project „Hemoxygenase and oxygen radicals during endotoxemia“
- 2001 – 2002 Young Investigators Award of the ESICM to Balazs Hauser (Budapest, Hungary) “Interaction of iNOS, O<sub>2</sub>-radicals and HO-1 during long term hyperdynamic porcine endotoxemia”
- 2002 – 2004 German Research Society (Ra 396/5-2) “ATP-MgCl<sub>2</sub> in hyperdynamic septic shock in patients”
- 2002 – 2004 Interdisciplinary Centre for Clinical Research (IZKF) Project Group H „Specific interaction and adaptation between infectious pathogens and host“, Project Ho2 „Pathomechanisms of sepsis in transgenic mice“
- 2003 – 2004 Roman-Herzog-grant of the Alexander-von-Humboldt-foundation to Dr. Balasz Hauser (Semmelweis-University, Budapest) for the project „Cyclopentenon PGJ2 to inhibit NF- $\kappa$ B-activation during endotoxemia“
- 2005 Grant of the Alexander-von-Humboldt-Stiftung for Dr. Martin Matejovic (Charles-University, Plzen, Czech Republic) for the project „Hyperoxic ventilation in porcine septic shock: effects on oxidative stress, systemic and hepato-splanchnic macro- and microcirculation and energy metabolism“
- 2005–2006 German Research Society (SCHE 899/2-1) “Oral superoxide dismutase after thoracic aortic cross clamping”
- 2005–2007 PhD-thesis grant of the Land Baden-Württemberg for Michael Gröger, MA, for the project „Oxidative DNA-damage during pure O<sub>2</sub> ventilation in porcine septic shock“
- 2005–2007 Research grant of the European Society of Anesthesiology for Dr. Eberhard Barth for the project “Impact of superoxide dismutase (SOD) on catecholamine responsiveness,



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- myocardial function, macro- and microcirculation, tissue oxygenation and cellular integrity during polymicrobial septic shock in mice“
- 2006–2008 Ely Lilly Sepsis Elite Award of the European Society of Intensive Care Medicine for Dr. Dirk Maybauer for the project “The role of pure O<sub>2</sub> breathing in a clinically relevant, long-term, hyperdynamic porcine model of fecal peritonitis-induced septic shock“
- 2006–2008 German Research Society (SCHE 899/2-2) “Protection against ischemia/reperfusion-injury after aortic cross clamping“
- 2007–2008 Research grant of the German Sepsis Society for Dr. Vladislava Simkova for the project „H<sub>2</sub>S-induced suspended animation – is it beneficial in sepsis?“
- 2008–2010 German Research Society (SCHE 899/2-3) “H<sub>2</sub>S-induced suspended animation during aortic cross clamping-induced ischemia/reperfusion injury.“
- 2008–2011 German Ministry of Defence (Project M/SABX/8A004) “H<sub>2</sub>S-induced „suspended animation“ during hemorrhagic shock in swine.“
- 2009–2011 German Research Society (RA 396/9-1) „H<sub>2</sub>S-induced suspended animation for the modulation of the post-traumatic inflammatory response after murine blunt chest trauma“ as part of the Clinical Research Group KFO 200 „Inflammatory response after trauma to muscle and skeleton“
- 2011–2012 Else-Kröner-Fresenius-Stiftung (AZ 2011\_A18) “Effects of the PPAR- $\alpha$ / $\beta$ -agonist GW0742 on kidney and heart function and organ injury during porcine fecal peritonitis“
- 2011-2012 Else-Kröner-Fresenius-Stiftung (AZ 2011\_A27) „Hämodynamische und molekulare Effekte von Sauerstoff bei gesunden Probanden und bei Patienten mit Mehrgefäß-KHK“ (Co-Investigator)
- 2011-2014 Programme Hospitalier de Recherche Clinique 2011 „Evaluation de l’effet de l’hyperoxie sur la survie chez les patients en choc septique. Etude OXYSEPSIS“ (Co-Investigator)
- 2011-2014 Deutsche Forschungsgemeinschaft (RA 396/9-2) „Modulation of the post-traumatic inflammatory response by short-term mechanical ventilation with 100 % O<sub>2</sub> after blunt chest trauma and COPD“ as part of the Clinical Research Group KFO 200 „Inflammatory Response after Trauma to Muscle and Skeleton“
- 2011-2014 Deutsche Forschungsgemeinschaft (Ra 396/11-1) „Improvement of fracture healing due to O<sub>2</sub>-induced modulation of the post-traumatic inflammatory response“ as part of the Clinical Research Group KFO 200 „Inflammatory Response after Trauma to Muscle and Skeleton“ (Co-Investigator)
- 2012-2013 Ministry for Wissenschaft, Forschung und Kunst Baden-Württemberg, Innovation Fonds Medicine: Förderlinie Lehre, innovative Lehrprojekte, „Trauma Management and Trauma Research“
- 2012-2015 BioCenter Boehringer Ingelheim Ulm University: „Role of the purinergic receptor P2RX4 for the inflammatory response after blunt chest trauma with pre-existing chronic obstructive pulmonary disease“
- 2013-2015 „Role of endogenous and exogenous H<sub>2</sub>S for the inflammatory response in chronic obstructive pulmonary disease“ Innovation Fonds Medicine „Danger Response and Regeneration after Muskuloskeletal Trauma“
- 2013-2016 „Hyperoxia and hypothermia for the treatment of hemorrhagic shock“ Research Consortium „Development of Regenerative Therapies for the Treatment of Acquired Tissue and Function Defects“ of the Bundeswehrkrankenhaus and the Universität Ulm



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- 2015-2018 „H2S-related modulation of the trauma response in nicotine-caused COPD“ (Project B02 of the CRC 1149 „Danger Response, Disturbance Factors and Regenerative Potential after Acute Trauma“)
- 2015-2018 „Hyperoxia after haemorrhagic shock with pre-existing atherosclerosis“ (Project B03 of the CRC 1149 „Danger Response, Disturbance Factors and Regenerative Potential after Acute Trauma“).
- 2015-2018 „Trauma-Modelling and -Monitoring“ (Project Z02 of the CRC 1149 „Danger Response, Disturbance Factors and Regenerative Potential after Acute Trauma“)
- 2016-2020 „VO<sub>2</sub>, VCO<sub>2</sub>, <sup>13</sup>CO<sub>2</sub>/<sup>12</sup>CO<sub>2</sub>-isotope enrichment and O- und N-radical-production in blood and expiratory gas for the quantification of metabolism and oxidative and nitrosative stress“(Project 10 of the GRK 2203 „Pulmosens“)

Up to now more than 400 original articles, reviews etc. in peer reviewed journals (e.g. N Engl J Med, Lancet Respir Med, Am J Respir Crit Care Med, Intensive Care Med, Crit Care Med, Crit Care, Br J Pharmacology, Shock...)