

Prof. Dr. med. Bettina Jungwirth

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Bettina Jungwirth is Professor at the Department of Anesthesiology and Intensive Care Medicine of the Technical University of Munich. She completed her residency in Anesthesiology at the Technical University Munich, followed by a fellowship in cardiothoracic anesthesia at the Department of Cardiothoracic Anesthesia, Duke University, NC, USA. Since 2008 she works as attending in the Department of Anesthesiology and Intensive Care Medicine at the Technical University Munich. In 2010 she finished her habilitation thesis and became a member of the Faculty of Medicine of the TU Munich. As head of the division of perioperative medicine she established a research group of Big Data and Artificial Intelligence in this field.

Key research areas:

- Big Data in Anesthesiology; development of a preoperative decision support tool; machine learning for real-time risk calculation during the perioperative course
- Improvement of postoperative outcome
- Effect of anesthesia on cognition of mice with Alzheimer's disease

Her research work has been awarded with numerous prizes and is published in high-ranking journals. She is author of several book chapters and is reviewer for national and international journals. At national and international meetings Bettina Jungwirth has given numerous lectures.

Career and education

Since 2018	Professor at Technical University of Munich, Germany
Since 2011	Member of the curriculum commission, Medical faculty, TU Munich
since 2010	Senior Consultant at Department of Anesthesiology and Intensive Care medicine, Technical University of Munich, Germany
2010	Habilitation, <i>venia legendi</i> in Anesthesiology, Technical University of Munich, Germany
2008 – 2010	Consultant for Anesthesiology and Intensive Care Medicine at Technical University of Munich, Germany
2007 – 2008	Fellowship Cardiothoracic Anesthesia and Critical Care Medicine, Duke University, North Carolina, USA
2007	Board Certification in anesthesiology
2002	Promotion, doctoral degree „Dr.med.“
2001 – 2007	Residency, Department of Anesthesiology, Technical University of Munich, Germany
2000	Graduation as MD
1994 - 2000	Medical School, University of Regensburg and Technical University of Munich, Germany

Honors and Awards

Secundo loco W3 Professorship Anesthesiology and Intensive Care Medicine, University Ulm (2019)

Best habilitation lecture at Technical University of Munich, Germany (2011)

Resident Travel Award of the Society of Neurosurgical Anesthesia and Critical Care (2006)

Project award of the Johannes B. Ortner-Stiftung (2006)

Resident Travel Award, Society of Neurosurgical Anesthesia and Critic Care (2005)

Poster awards at EuroNeuro-Summit at Oxford, United Kingdom (2005)

Resident Research Award of the American Society of Anesthesiologists (2005)

Best talk, annual meeting German Society of Anesthesiology and Intensive Care (2005)

Starter Grant of the Society of Cardiovascular Anesthesiologists (2003)

Certificates

Specialist in Intensive Care Medicine (2016)

Certificate in medicine didactics, Technical University Munich (2011)

Board Certification in Perioperative Transesophageal Echocardiography (TEE) at German Society for Anesthesiology und Intensive Care (2009)

Board Certification in Perioperative Transesophageal Echocardiography des National Board of Echocardiography, USA (2008)

Original scientific papers in peer-reviewed journals

1. Kagerbauer SM, Kadera V, Gordan LM, Blobner M, Török E, Schmid S, Podtschaske AH, *Jungwirth B*; Influence of sex and hormonal status on initial impact and neurocognitive outcome after subarachnoid haemorrhage in rats. *Behav Brain Res*. 2019 May 2;363:13-22
2. Schmid S, Rammes G, Blobner M, Kellermann K, Bratke S, Fendl D, Kaichuan Z, Schneider G, *Jungwirth B*.;Cognitive decline in Tg2576 mice shows sex-specific differences and correlates with cerebral amyloid-beta. *Behav Brain Res*. 2019 Feb 1;359:408-417
3. Huber W, Schneider J, Lahmer T, Küchle C, *Jungwirth B*, Schmid RM, Schmid S.; Validation of RIFLE, AKIN, and a modified AKIN definition ("backward classification") of acute kidney injury in a general ICU: Analysis of a 1-year period. *Medicine (Baltimore)*. 2018 Sep; 97(38): e12465.
4. Anetsberger A, Blobner M, Haller B, Schmid S, Umgelter K, Hager T, Langgartner C, Kochs EF, Laugwitz KL, *Jungwirth B*, Bernlochner I. Immature platelets as a novel biomarker for adverse cardiovascular events in patients after non-cardiac surgery. *Thromb Haemost*. 2017 Oct 5; 117(10): 1887-85
5. Schmid S, *Jungwirth B*, Gehlert V, Blobner M, Schneider G, Kratzer S, Kellermann K, Rammes G. Intracerebroventricular injection of beta-amyloid in mice is associated with long-term cognitive impairment in the modified hole-board test. *Behav Brain Res*. 2017 May 1;324:15-20

6. Schmid S, Kapfer B, Heim M, Bogdanski R, Anetsberger A, Blobner M, Jungwirth B. Algorithm-guided goal-directed haemodynamic therapy does not improve renal function after major abdominal surgery compared to good standard clinical care: a prospective randomised trial. *Crit Care*. 2016 Mar 8;20(1):50
7. Anetsberger A, Blobner M, Krautheim V, Umgelter K, Schmid S, Jungwirth B. Self-Reported, Structured Measures of Recovery to Detect Postoperative Morbidity. *PLoS One*. 2015; 10(7)
8. Peterss S, Guenther S, Kellermann K, Jungwirth B, Lichtinghagen R, Haverich A, Hagl C, Khaladj N. An experimental model of myocardial infarction and controlled reperfusion using a miniaturized cardiopulmonary bypass in rats. *Interact Cardiovasc Thorac Surg*. 2014 Jul 1.
9. Umgelter K, Anetsberger A, Schmid S, Kochs E, Jungwirth B, Blobner M. Survey on the need for information during the preanesthesia visit. *Anaesthesist*. 2014 Oct;63(10):753-9
10. Haseneder R, Starker L, Berkmann J, Kellermann K, Jungwirth B, Blobner M, Eder M, Kochs E, Rammes G. Sevoflurane anesthesia improves cognitive performance in mice, but does not influence in vitro long-term potentiation in hippocampus CA1 stratum radiatum. *PLoS One*. 2013 May 28;8(5):e64732
11. Kellermann K, Gordan LM, Blobner M, Luppä P, Kochs EF, Jungwirth B. Functional outcome in female rats after 45 minutes of deep hypothermic circulatory arrest: gender matters. *Thorac Cardiovasc Surg*. 2013; 61(1):52-65
12. Gordan ML, Jungwirth B, Ohl F, Kellermann K, Kochs EF, Blobner M. Evaluation of neurobehavioral deficits following different severities of cerebral ischemia in rats: a comparison between the modified hole board test and the Morris water maze test. *Behav Brain Res*. 2012; 235(1):7-20
13. Jungwirth B, Gordan ML, Kellermann K, Blobner M, Kochs EF. Xenon administration immediately after but not before or during cardiopulmonary bypass with cerebral air embolism impairs cerebral outcome in rats. *Eur J Anaesthesiol*. 2011 Dec;28(12):882-7.
14. Gordan ML, Kellermann K, Blobner M, Nollert G, Kochs EF, Jungwirth B. Fast rewarming after deep hypothermic circulatory arrest in rats impairs histologic outcome and increases NFκB expression in the brain. *Perfusion*. 2010 Sep;25(5):349-54.
15. Kellermann K, Dertinger N, Blobner M, Kees F, Kochs EF, Jungwirth B. Perioperative moxifloxacin treatment in rats subjected to deep hypothermic circulatory arrest: reduction in cerebral inflammation but without improvement in cognitive performance. *J Thorac Cardiovasc Surg*. 2011 Mar;141(3):796-802.
16. Jungwirth B, Eckel B, Blobner M, Kellermann K, Kochs EF, Mackensen GB. Impact of cardiopulmonary bypass on systemic Interleukin-6 release, cerebral NFκB expression and long-term neurocognitive outcome in rats. *AnesthAnalg* 2010;110:312-20
17. Kellermann K, Gordan ML, Nollert G, Blobner M, Kochs EF, Jungwirth B. Long-term assessment of NFκB-expression in the brain and neurologic outcome following deep hypothermic circulatory arrest in rats. *Perfusion* 2009; 24: 429-36
18. Jungwirth B, Kellermann K, Qing M, Mackensen GB, Blobner M, Kochs EF. Cerebral TNFα expression and long term neurocognitive performance following cardiopulmonary bypass in rats. *J Thorac Cardiovasc Surg* 2009; 138:1002-7
19. Jungwirth B, Adams DB, Mathew JP, Swaminathan M, Glower DD, Mackensen GB. Mitral valve prolapse and systolic anterior motion illustrated by real time three-dimensional transesophageal echocardiography. *AnesthAnalg* 2008; 107: 1822-24.

20. de Lange F, Dieleman JM, Jungwirth B, Kalkman CJ: Effects of cardio-pulmonary bypass on neurocognitive performance and cytokine release in old and diabetic rats : BJA 2007;99: 177-83
21. Jungwirth B, Kellermann K, Blobner M, Schmehl W, Kochs EF, Mackensen GB: Cerebral air emboli differentially alter outcome after cardiopulmonary bypass in the rat compared to normal circulation. Anesthesiology. 2007;107:768-75
22. Jungwirth B, Mackensen G, Blobner M, Neff F, Reichart B, Kochs E, Nollert G: Neurologic outcome following cardiopulmonary bypass with deep hypothermic circulatory arrest in rats: description of a new model. J Thorac Cardiovasc Surg 2006; 131: 805-12
23. Jungwirth B, Gordan ML, Blobner M, Schmehl W, Kochs EF, Mackensen GB: Xenon impairs neurocognitive and histologic outcome after cardiopulmonary bypass combined with cerebral air embolism in rats. Anesthesiology 2006; 104: 770-6

Reviews in peer-reviewed journals

1. Eifert S, Guethoff S, Kaczmarek I, Beiras-Fernandez A, Seeland U, Gulbins H, Seeburger J, Deutsch O, Jungwirth B, Katsari E, Dohmen P, Pfannmueller B, Hultgren R, Schade I, Kublickiene K, Mohr FW, Gansera B. Applying the Gender Lens to Risk Factors and Outcome after Adult Cardiac Surgery. *Viszeralmedizin*. 2014 April; 30(2): 99–106.
2. Schmid S, Jungwirth B. Anaesthesia for renal transplant surgery: an update. *Eur J Anaesthesiol*. 2012 Dec;29(12):552-8.
3. Haseneder R, Kochs E, Jungwirth B. Postoperative cognitive dysfunction. Possible neuronal mechanisms and practical consequences for clinical routine. *Anaesthesist*. 2012; 61(5):437-43
4. Kellermann K, Jungwirth B. Avoiding stroke during cardiac surgery. *Semin Cardiothorac Vasc Anesth* 2010 Jun;14(2):95-101
5. Jungwirth B, de Lange F. Animal models of cardiopulmonary bypass: Development, applications and impact. *Semin Cardiothorac Vasc Anesth* 2010 Jun;14(2):136-40
6. Jungwirth B, Ziegelgaensberger W, Kochs EF, Rammes G. Anesthesia and postoperative cognitive dysfunction (POCD). *Mini-Rev Med Chem* 2010 Jan 21
7. Jungwirth B, Kochs EF. Cardiopulmonary bypass and neurologic dysfunction – Results from animal models. *Applied Cardiopulmonary Pathophysiology* 2009; 13: 148-51
8. Jungwirth B, Mackensen GB. Real-time 3-dimensional echocardiography in the operating room. *Semin Cardiothorac Vasc Anesth* 2008; 12:248-64