

.Curriculum vitae Christian Puelacher

Personal information

Name: Christian Puelacher
Date of birth: 21.04.1988
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Education

2021 onward Residency Cardiology, University Hospital Basel
2017-2020 Residency Internal Medicine, University Hospital Basel
2013-2017 Doctoral studies, University Hospital Basel, Supervisor:
Prof. Christian Müller, Switzerland
2007-2013 Medical studies, Medical University Innsbruck, Austria
2006-2007 Community service Jugendrotkreuz Tirol, Austria
1998-2006 Akademisches Gymnasium Innsbruck, Austria

Employment history

2021 onward Residency Cardiology at the University Hospital Basel, Prof. Stefan Osswald
2017 - now Post-doc perioperative cardiac care at the Cardiovascular Research Institute Basel, University Hospital Basel
2017-2020 Residency Internal Medicine at the University Hospital Basel, Prof. Stefano Bassetti
2014-2017 PhD candidate at the Cardiovascular Research Institute Basel, University Hospital Basel, Prof. Christian Müller
2013-2014 Fellow and MD candidate at the Cardiovascular Research Institute Basel, University Hospital Basel, Prof. Christian Müller
2013-2013 Study coordinator for the ISCHEMIA trial, Medical University Innsbruck
2010-2013 Speaker at the "Institut für Studentenkurse", Innsbruck, group and private tutoring
2006-2007 Community service Jugendrotkreuz Tirol

Language skills

German Native
English Fluent, CAE, eight years of bilingual education
French Basic

Approved research projects

- Basel Incidence, Patient Characteristics, Pathophysiology, and Outcome of Perioperative Myocardial Injury After Non-cardiac Surgery (BASEL-PMI, NCT02573532); prospective pragmatic observational study [2014]
- Reliability of cardiac troponins for the diagnosis of myocardial infarction in the presence of rhabdomyolysis; retrospective cohort study [2016]
- Impact of implementation of a routine screening and response system for perioperative myocardial injuries/infarctions after non-cardiac surgery (Impact-PMI); retrospective case-cohort study [2019]
- Implementation of a clinical screening and response system for perioperative myocardial infarction/injury after noncardiac surgery (Implement-PMI); prospective multicenter before-after comparison, pilot study [2021]
- Continuous Monitoring of Vital Signs for Improved Phenotyping of Perioperative Myocardial Infarction/Injury after noncardiac surgery in high risk patients (PMI-VITAL); prospective observational study [2022]

Supervision of junior researchers

- Master students Luca Osswald, Christina Hollenstein, Lukas Bock, Ekrem Temizel, Noemi Glarner, Saranya Thambipillai, Christina Hollenstein
- MD candidates Johanna Gückel, Reka Hidvegi, Deborah Müller, Lorraine Sazgary, Matthias Gugala, Marcel Liffert, Rebecca Meister, Hatice Gerhard, Samantha Weder
- PhD candidates Noemi Glarner, MD; Mirjam Pargger, MDC

Teaching activities

- Academia Seminar supervisor methods and statistics classes, POEM, Medical University Basel
Speaker methods and statistics classes, Cardiovascular Research Institute Basel, University Hospital Basel
Tutor at the Institute of Anatomy, Innsbruck
- Industry Speaker at the “Institut für Studentenkurse”, Innsbruck
Speaker Thought Leadership, Roche

Membership in panels, boards and scientific reviewing activities

- Panel work Student representative at PhD Educational Platform for Health Sciences, Basel

	Chair, Advisory Board Perioperative Myocardial Infarction, Roche Diagnostics
	Biomarker study group, European Society of Anaesthesiology
Peer-reviewer	American Journal of Cardiology, European Journal of Clinical Investigations, European Heart Journal, Journal of the American College of Cardiology, Anesthesia & Analgesia
Hospital IT	Version beta-tester R + R-Studio and Mendeley

Active membership in scientific societies

European Society of Cardiology

Organisation of courses and conferences

Courses	Handling of Missing Data, June 2017
	PhD Methods-Journalclub Health Sciences, 2015-2017
	Cardiology resident curriculum, Hospital Basel, 2022

Prizes, awards, fellowships

Grants	PPHS Top-Up 2016 (9500 CHF)
	Swiss Heart Foundation 2022: PMI-VITAL (50000 CHF)
Prizes	Best presentation, Clinical Research Day 2017; Otto-Hess-Trainee Award, 2018; Best presentation, IGM 2019
Fellowships	VWFAWF PhD-Stipend 2016 (75000 CHF)
Industry	Roche Diagnostics (130000 CHF): BASEL-PMI subproject
	Roche Diagnostics (150000 CHF): IMPACT-PMI
	Roche Diagnostics (201000 CHF): Implement-PMI

Career breaks

01-04 2021	Paternity leave
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Research output list

Peer-reviewed publications in international scientific journals

First or Co-first author publications (* marks corresponding author)

1. **Puelacher C**, Hillinger P, Wagener M, Müller C. Cardiac biomarkers for infarct diagnosis and early exclusion of acute coronary syndrome. *Herz*. 2014;39:1–4.
2. **Puelacher C**, Hillinger P, Wagener M, Müller C. Use of cardiac biomarkers for the diagnosis of myocardial infarction and heart failure | Kardiale Biomarker bei Myokardinfarkt und Herzinsuffizienz. *J fur Kardiol*. 2015;22.
3. **Puelacher C**, Rudez J, Twerenbold R, Moreno Weidmann Z, Osswald S, Eckstein F, Lurati-Buse G, Pargger H, Mueller C. B-type natriuretic peptide secretion without change in intra-cardiac pressure. *Clin Biochem*. 2015;48:318–21.
4. Sou SM, Puelacher C, Twerenbold R, Wagener M, Honegger U, Reichlin T, Schaerli N, Pretre G, Abächerli R, Jaeger C, Rubini Gimenez M, Wild D, Rentsch KMKMKM, Zellweger MJMJ, Mueller C. Direct comparison of cardiac troponin I and cardiac troponin T in the detection of exercise-induced myocardial ischemia. *Clin Biochem*. 2015;49:421–432.
5. **Puelacher C**, Lurati-Buse G, Singeisen H, Dang M, Cuculi F, Müller C. Perioperative myocardial infarction/injury after noncardiac surgery. *Swiss Med Wkly*. 2015;145:w14219.
6. **Puelacher C**, Twerenbold R, Mosimann T, Boeddinghaus J, Gimenez MR, Wildi K, Jaeger C, Reichlin T, Schneider J, Honegger U, Max W, Schumacher C, Nestelberger T, Hillinger P, Grimm K, Kreuzinger P, Weidmann ZM, Rentsch K, Arnold C, Osswald S, Mueller C. Effects of hemolysis on the diagnostic accuracy of cardiac troponin I for the diagnosis of myocardial infarction. *Int J Cardiol*. 2015;187:313–5.
7. Gualandro DM, Puelacher C, Lurati Buse G, Llobet GB, Yu PC, Cardozo FA, Glarner N, Zimmerli A, Espinola J, Corbière S, Calderaro D, Marques AC, Casella IB, de Luccia N, Oliveira MT, Lampart A, Bolliger D, Steiner L, Seeberger M, Kindler C, Osswald S, Gürke L, Caramelli B, Mueller C, GREAT network. Prediction of major cardiac events after vascular surgery. *J Vasc Surg*. 2017;217:833-842.e1–3.
8. **Puelacher C**, Wagener M, Abächerli R, Honegger U, Lhasam N, Schaerli N, Prêtre G, Strebel I, Twerenbold R, Boeddinghaus J, Nestelberger T, Rubini Giménez M, Hillinger P, Wildi K, Sabti Z, Badertscher P, Cupa J, Kozhuharov N, du Fay de Lavallaz J, Freese M, Roux I, Lohrmann J, Leber R, Osswald S, Wild D, Zellweger MJ, Mueller C, Reichlin T. Diagnostic value of ST-segment deviations during cardiac exercise stress testing: Systematic comparison of different ECG leads and time-points. *Int J Cardiol*. 2017;1–7.
9. **Puelacher C**, Wagener M, Honegger U, Assadian M, Schaerli N, Mueller D, Strebel I, Twerenbold R, Boeddinghaus J, Nestelberger T, Wildi K, Sabti Z, Sazgary L, Badertscher P, du Fay de Lavallaz J, Marbot S, Kaiser C, Wild D, Zellweger MJMJ, Reichlin T, Mueller C. Combining high-sensitivity cardiac troponin and B-type natriuretic peptide in the detection of inducible myocardial ischemia. *Clin Biochem*. 2018;52:33–40.
10. **Puelacher C**, Lurati Buse G, Seeberger D, Sazgary L, Marbot S, Lampart A, Espinola J, Kindler C, Hammerer A, Seeberger E, Strebel I, Wildi K, Twerenbold R, du Fay de Lavallaz J, Steiner L, Gurke L, Breidthardt T, Rentsch K, Buser A, Gualandro DM, Osswald S, Mueller C. Perioperative Myocardial Injury After Noncardiac Surgery: Incidence, Mortality, and Characterization. *Circulation*. 2018;137:1221–1232.
11. Gualandro DM, Puelacher C, LuratiBuse G, Lampart A, Strunz C, Cardozo FA, Yu PC,

- Jaffe AS, Barac S, Bock L, Badertscher P, du Fay de Lavallaz J, Marbot S, Sazgary L, Bolliger D, Rentsch K, Twerenbold R, Hammerer-Lercher A, Melo ES, Calderaro D, Duarte AJ, de Luccia N, Caramelli B, Mueller C, TropoVasc and BASEL-PMI Investigators. Comparison of high-sensitivity cardiac troponin I and T for the prediction of cardiac complications after non-cardiac surgery. *Am Heart J*. 2018;203:67–73.
12. Mueller D, Puelacher C, Honegger U, Walter JE, Badertscher P, Schaerli N, Strebel I, Twerenbold R, Boeddinghaus J, Nestelberger T, Hollenstein C, du Fay de Lavallaz J, Jeger R, Kaiser C, Wild D, Rentsch K, Buser A, Zellweger M, Reichlin T, Mueller C. Direct Comparison of Cardiac Troponin T and I Using a Uniform and a Sex-Specific Approach in the Detection of Functionally Relevant Coronary Artery Disease. *Clin Chem*. 2018;64:1596–1606.
 13. Du Fay De Lavallaz J, Puelacher C, Lurati Buse G, Bolliger D, Germanier D, Hidvegi R, Walter JE, Twerenbold R, Strebel I, Badertscher P, Sazgary L, Lampart A, Espinola J, Kindler C, Hammerer-Lercher A, Thambipillai S, Guerke L, Rentsch K, Buser A, Gualandro D, Jakob M, Mueller C. Daytime variation of perioperative myocardial injury in non-cardiac surgery and effect on outcome. *Heart*. 2019;105:826–833.
 14. **Puelacher C**, Gugala M, Adamson PD, Shah A, Chapman AR, Anand A, Sabti Z, Boeddinghaus J, Nestelberger T, Twerenbold R, Wildi K, Badertscher P, Rubini Gimenez M, Shrestha S, Sazgary L, Mueller D, Schumacher L, Kozhuharov N, Flores D, Du Fay De Lavallaz J, Miro O, Martín-Sánchez FJ, Morawiec B, Fahrni G, Osswald S, Reichlin T, Mills NL, Mueller C. Incidence and outcomes of unstable angina compared with non-ST-elevation myocardial infarction. *Heart*. 2019;105:1423–1431.
 15. Hidvegi R, Puelacher C*, Gualandro DM, Lampart A, Lurati Buse G, Hammerer-Lerchner A, Walter J, Liffert M, Bolliger D, Steiner L, Kindler C, Espinola J, Strebel I, Gueckel J, Marbot S, Arslani K, Boeddinghaus J, Nestelberger T, Zimmermann T, Freese M, Guerke L, Mujagic E, Rikli D, Buser A, Mueller C, Wolff T, Wildi K, Genini A, Twerenbold R, Sazgary L, Koechlin L, Wussler D, Breidhardt T, Flores D, Osswald S, Rentsch K. Obesity paradox and perioperative myocardial infarction/injury in non-cardiac surgery. *Clin Res Cardiol*. 2020;109:1140–1147.
 16. **Puelacher C**, Gualandro DM, Lurati Buse G, Bolliger D, Marbot S, Kindler C, Hammerer-Lercher A, Gürke L, Steiner L, Mueller C. Etiology of Peri-Operative Myocardial Infarction/Injury After Noncardiac Surgery and Associated Outcome. *J. Am. Coll. Cardiol*. 2020;76:1910–1912.
 17. Sazgary L, Puelacher C*, Lurati Buse G, Glarner N, Lampart A, Bolliger D, Steiner L, Gürke L, Wolff T, Mujagic E, Schaeren S, Lardinois D, Espinola J, Kindler C, Hammerer-Lercher A, Strebel I, Wildi K, Hidvegi R, Gueckel J, Hollenstein C, Breidhardt T, Rentsch K, Buser A, Gualandro DM, Mueller C, Gürke L, Wolff T, Mujagic E, Schaeren S, Lardinois D, Espinola J, Kindler C, Hammerer-Lercher A, Strebel I, Wildi K, Hidvegi R, Gueckel J, Hollenstein C, Breidhardt T, Rentsch K, Buser A, Gualandro DM, Mueller C, Marbot S, Walter J, Freese M, Nestelberger T, Boeddinghaus J, de Lavallaz J du F, Twerenbold R, Badertscher P, Koechlin L, Zimmermann T, Troester V, Michou E, Osswald S, Seeberger E, Seeberger M, Rickli D, Wussler D, Dinort J, Prepoudis A, Meissner K, Fahrni G, Jeger R, Kaiser C, Infanti L. Incidence of major adverse cardiac events following non-cardiac surgery. *Eur Hear Journal Acute Cardiovasc Care*. 2020;zuaa008.
 18. **Puelacher C***, Bollen Pinto B, Mills NL, Duceppe E, Popova EE, Duma A, Nagele P, Omland T, Hammerer-Lercher A, Lurati Buse G. Expert consensus on peri-operative

- myocardial injury screening in noncardiac surgery. *Eur J Anaesthesiol.* 2021;38:600–608.
19. Gualandro DM, Puelacher C, Lurati Buse G, Glarner N, Cardozo FA, Vogt R, Hidvegi R, Strunz C, Bolliger D, Gueckel J, Yu PC, Liffert M, Arslani K, Prepoudis A, Calderaro D, Hammerer-Lercher A, Lampart A, Steiner LA, Schären S, Kindler C, Guerke L, Osswald S, Devereaux PJ, Caramelli B, Mueller C, Marbot S, Strebel I, Genini A, Rentsch K, Boeddinghaus J, Nestelberger T, Wild K, Zimmermann T, Duarte AJS, Buser A, de Luccia N, Koehlin L, Wussler D, Walter J, Widmer V, Freese M, Lopez-Ayala P, Twerenbold R, Badertscher P, Seeberger E, Wolff T, Mujagic E, Mehrkens A, Dinort J, Fahrni G, Jeger R, Kaiser C, Matheus M, Pastana AF. Incidence and outcomes of perioperative myocardial infarction/injury diagnosed by high-sensitivity cardiac troponin I. *Clin Res Cardiol.* 2021;
 20. Gueckel J, Puelacher C*, Glarner N, Gualandro DM, Strebel I, Zimmermann T, Arslani K, Hidvegi R, Liffert M, Genini A, Marbot S, Schlaepfer M, Steiner LA, Bolliger D, Lampart A, Gürke L, Kindler C, Schären S, Osswald S, Clauss M, Rikli D, Lurati Buse G, Mueller C. Patient- and procedure-related factors in the pathophysiology of perioperative myocardial infarction/injury. *Int J Cardiol.* 2022;353:15–21.
 21. Kvarda P, Puelacher C, Clauss M, Kuehl R, Gerhard H, Mueller C, Morgenstern M. Perioperative myocardial injury and mortality after revision surgery for orthopaedic device-related infection. *Bone Joint J.* 2022;104-B:696–702.

Co-authorships

22. Stallone F, Twerenbold R, Wildi K, Reichlin T, Rubini Gimenez M, Haaf P, Fuechslin N, Hillinger P, Jaeger C, Kreuzinger P, Puelacher C, Radosavac M, Moreno Weidmann Z, Moehring B, Honegger U, Schumacher C, Denhaerynck K, Arnold C, Bingisser R, Vollert JO, Osswald S, Mueller C. Prevalence, characteristics and outcome of non-cardiac chest pain and elevated copeptin levels. *Heart.* 2014;100.
23. Stallone F, Twerenbold R, Wildi K, Reichlin T, Gimenez MR, Haaf P, Fuechslin N, Hillinger P, Jaeger C, Kreuzinger P, Puelacher C, Radosavac M, Weidmann ZM, Moehring B, Honegger U, Schumacher C, Denhaerynck K, Arnold C, Bingisser R, Vollert JO, Osswald S, Mueller C. Prevalence, characteristics and outcome of non-cardiac chest pain and elevated Copeptin levels. *Heart.* 2014;100.
24. Gualandro DMDM, Puelacher C, Mueller C. High-sensitivity cardiac troponin in acute conditions. *Curr Opin Crit Care.* 2014;20:472–7.
25. Zürcher S, Honegger U, Wagener M, Lee G, Stallone F, Marxer T, Puelacher C, Schumacher C, Sou SM, Twerenbold R, Reichlin T, Hochgruber T, Tanglay Y, Freese M, Wild D, Rentsch K, Osswald S, Zellweger M, Mueller C. Delayed release of brain natriuretic peptide to identify myocardial ischaemia. *Eur J Clin Invest.* 2015;45:1175–83.
26. Jaeger C, Wildi K, Twerenbold R, Reichlin T, Rubini Gimenez M, Neuhaus J-DJ-D, Grimm K, Boeddinghaus J, Hillinger P, Nestelberger T, Singeisen H, Gugala M, Pretre G, Puelacher C, Wagener M, Honegger U, Schumacher C, Moreno Weidmann Z, Kreuzinger P, Krivoshei L, Freese M, Stelzig C, Dietsche S, Ernst S, Rentsch K, Osswald S, Mueller C. One-hour rule-in and rule-out of acute myocardial infarction using high-sensitivity cardiac troponin I. *Am Heart J.* 2015;171:92-102.e5.
27. Wildi K, Zellweger C, Twerenbold R, Jaeger C, Reichlin T, Haaf P, Faoro J, Giménez MR, Fischer A, Nelles B, Druey S, Krivoshei L, Hillinger P, Puelacher C, Herrmann T, Campodarve I, Rentsch K, Steuer S, Osswald S, Mueller C. Incremental value of copeptin to highly sensitive cardiac Troponin I for rapid rule-out of myocardial infarction. *Int J Cardiol.* 2015;190:170–6.
28. Hillinger P, Twerenbold R, Jaeger C, Wildi K, Reichlin T, Rubini Gimenez M, Engels U, Miró O, Boeddinghaus J, Puelacher C, Nestelberger T, Röthlisberger M, Ernst S, Rentsch K, Mueller C. Optimizing Early Rule-Out Strategies for Acute Myocardial Infarction: Utility of 1-Hour Copeptin. *Clin Chem.*

2015;61:1466–74.

29. Twerenbold R, Wildi K, Jaeger C, Gimenez MR, Reiter M, Reichlin T, Walukiewicz A, Gugala M, Krivoshei L, Marti N, Moreno Weidmann Z, Hillinger P, Puelacher C, Rentsch K, Honegger U, Schumacher C, Zurbriggen F, Freese M, Stelzig C, Campodarve I, Bassetti S, Osswald S, Mueller C. Optimal Cutoff Levels of More Sensitive Cardiac Troponin Assays for the Early Diagnosis of Myocardial Infarction in Patients With Renal Dysfunction. *Circulation*. 2015;131:2041–50.
30. Weidmann ZM, Breidthardt T, Twerenbold R, Züsli C, Nowak A, Von Eckardstein A, Erne P, Rentsch K, De Oliveira MTMT, Gualandro D, Maeder MTMT, Rubini Gimenez M, Pershyna K, Stallone F, Haas L, Jaeger C, Wildi K, Puelacher C, Honegger U, Wagener M, Wittmer S, Schumacher C, Krivoshei L, Hillinger P, Osswald S, Mueller C. Prediction of mortality using quantification of renal function in acute heart failure. *Int J Cardiol*. 2015;201:650–7.
31. Rubini Gimenez M, Twerenbold R, Jaeger C, Schindler C, Puelacher C, Wildi K, Reichlin T, Haaf P, Merk S, Honegger U, Wagener M, Druey S, Schumacher C, Krivoshei L, Hillinger P, Herrmann T, Campodarve I, Rentsch K, Bassetti S, Osswald S, Mueller C. One-hour Rule-in and Rule-out of Acute Myocardial Infarction Using High-sensitivity Cardiac Troponin I. *Am J Med*. 2015;128:861-870.e4.
32. Druey S, Wildi K, Twerenbold R, Jaeger C, Reichlin T, Haaf P, Rubini Gimenez M, Puelacher C, Wagener M, Radosavac M, Honegger U, Schumacher C, Delfine V, Kreutzinger P, Herrmann T, Moreno Weidmann Z, Krivoshei L, Freese M, Stelzig C, Isenschmid C, Bassetti S, Rentsch K, Osswald S, Mueller C. Early rule-out and rule-in of myocardial infarction using sensitive cardiac Troponin I. *Int J Cardiol*. 2015;195:163–170.
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- benefit of high-sensitivity cardiac troponin I in the detection of exercise-induced myocardial ischemia. *Am Heart J.* 2016;173:8–17.
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Peer reviewed books and conference proceedings

None

Contribution to books

None

Patents and licenses

None

Oral contributions to international conferences

Speaker: GREAT 2014, ESC 2015, SGK 2015, GREAT 2015, ESC 2016, GREAT 2016, Clinical Research Day 2017, PCC 2018, IGM 2019, ESC 2021

Posterpresenter: ESC 2014, ACCA 2014, IGM 2015, SGK 2015, ESC 2015, Clinical Research Day 2016, IGM 2017, PCC 2018, ESC 2018, ESC 2019, IGM 2020

Outreach activities

Outreach events ScienceSlamClub Basel, organisation and participation in events from 2014-2017, president from 2016-2017

Social Media Twitter @ChristianPuel

Other artefacts with documented use

None