



# Prof. Dr. med. Pierre-Alain Clavien

Specialist in visceral surgery,  
Member of FMH

Look at the full flyer from Prof. Clavien [here](#).

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## Languages

DE,EN,FR

## Work Experience

since 2023	Private practice, surgery for liver, pancreas and biliary (HPB), Privatklinik Bethanien, Zurich, CH
since 2015	Co-Director, Liver4Life, Wyss Zurich Translational Center, Zurich, CH
since 2012	Associate Professor, Hôpital Paul Brousse, Paris, F
2003–2023	Director, Swiss Hepato-Pancreato-Biliary Center, Department of Visceral and Transplant Surgery, University Hospital Zurich, CH
2000–2023	Professor and Clinic Director, Clinic for Visceral and Transplant Surgery, University Hospital Zurich, CH
1994–2000	Professor and Director, Division of Liver Surgery and Transplantation, Duke University, NC, USA
1993	Clinical Associate, Liver Transplantation and Hepatobiliary Surgery, Toronto General Hospital and Hospital for Sick Children, University of Toronto, CAN

## Education

1992–1993	Specialist training, Toronto General Hospital and Hospital for Sick Children, Ontario, CAN
1992–1993	Fellowship, Pancreatic and Liver Surgery (ASTS accreditation), Toronto General Hospital and Hospital for Sick Children, Ontario, CAN
1989–1992	Ph.D. program, Institute of Medical Science and Immunology, University of Toronto, Ontario, CAN (SM Strasberg)
1990	Specialist FMH
1983–1988	Training as a specialist in surgery, Department of Surgery, University Hospital Basel and Geneva, CH
1982	Doctor of Medicine, Faculty of Medicine, Geneva, CH
1976	University degree, Geneva University of Applied Sciences, CH

## Memberships

- Member of the National Academy of Medicine, NAM (USA)
- Académie Nationale de Médecine (F)
- Académie Nationale de Chirurgie (F)
- Swiss Academy of Medical Science, SAMW

- American Surgical Association, ASA
- European Surgical Association, ESA
- Royal College of Surgeons of England, FRCS Engl
- Royal College of Surgeons of Edinburgh, FRCS Ed
- American College of Surgeons, FACS
- Asian Surgical Association
- European Hepato-Pancreato-Biliary Association, EHPBA
- International Hepato-Pancreato-Biliary Association, IHPBA
- British Journal of Surgery Society
- International Liver Cancer Association, ILCA
- International Surgical Group, ISG
- Swiss Transplantation Society, STS
- The Transplantation Society, TTS
- Schweizerische Gesellschaft für Chirurgie, SGC

## Competences

Internationally recognised surgeon for liver, pancreas and gall bladder surgery (HPB surgery).

### Medical expertise

- Complex liver and pancreas surgery
- Minimally invasive (laparoscopic and robotic) pancreatic and liver surgery
- Liver tumours and colorectal liver metastases (incl. 2-stage hepatectomy (ALPPS), Nanoknife)
- Gall bladder surgery, gall bladder cancer and cholangiocarcinoma
- Liver transplantation, living liver transplantation (Liver4Life)

Includes:

- > 1,500 complex liver resections
- > 600 complex pancreatic resections
- > 1'500 biliary operations

## Awards

### Awards and special prizes (total >25)

- Otto Naegeli Prize, 2008 (CHF 250'000)
- Gimbernat Prize, 2011, given by the Societat Catalana de Cirurgia
- UEGF Research Prize (\$150'000), given by the European federation of Gastroenterology
- Innovation prize in transplantation, 2012, given by the Transplantation Society TTS
- Annual Award of the Swiss Surgical Society, 1989 (\$10'000)

## Apprenticeship

- Supervision of more than 45 PhD students (10 at Duke University, 35 at the University of Zurich)
- Training of 30 clinical fellows who are today in leading positions worldwide
- Teaching and training in complex liver and pancreatic surgery

As well as several books and atlases, including Atlas of the Upper Gastrointestinal Tract and Hepatobiliary Surgery. 3rd edition with new chapter on robotics in preparation.

## Research

### Wyss translational center projects (5 relevant papers)

- Clavien P-A, Dutkowski P, Tibbitt MW et al. Transplantation of a human liver following 3 days of ex situ normothermic preservation. **Nature Biotechnol.** 2022; 40: 1610-1616.
- Eshmuminov D, Clavien P-A et al. An integrated perfusion machine preserves injured human livers for 1 week. **Nat Biotechnol.** 2020; 38: 189-198.
- Eshmuminov D, Clavien P-A. Long-term dynamic ex vivo organ preservation. **Nat Rev Gastroenterol Hepatol.** 2022; doi: 10.1038/s41575-022-00727-2.
- Mueller M, Clavien P-A et al. Long-term Normothermic Machine Preservation of Partial Livers: First Experience With 21 Human Hemi-livers. **Ann Surg.** 2021; 274: 836-842.
- Sousa Da Silva RX, Clavien P-A et al. Defatting of Human Livers during Long-Term ex situ Normothermic Perfusion. Novel Strategy to Rescue Discarded Organs for Transplantation. **Ann Surg.** 2023; Accepted for publication.

### Basic research (7 relevant papers)

- Schneider MA, Heeb L, Gupta A and Clavien P-A et al. Attenuation of peripheral serotonin inhibits tumor growth and enhances immune checkpoint blockade therapy in murine tumor models. **Science Translational Medicine** 2021; 13 (611): eabc8188.
- Linecker M, Clavien P-A. Exercise improves outcomes of surgery on fatty liver in mice – a novel effect mediated by the AMPK pathway. **Annals of Surgery.** 2020; 271: 347-55.
- Langiewicz M, Humar B, Clavien P-A. JNK1 induces hedgehog signaling from stellate cells to accelerate liver regeneration in mice. **J Hepatol.** 2018; 69: 666-675.
- Kachaylo E, Clavien P-A, Humar B. PTEN down-regulation promotes  $\beta$ -oxidation to fuel hypertrophic liver growth after hepatectomy in mice. **Hepatology.** 2017; 66: 908-921.
- Langiewicz M, Humar B, Clavien P-A. Hedgehog pathway mediates early acceleration of liver regeneration induced by a novel two-staged hepatectomy in mice. **J Hepatol.** 2017; 66: 560-570.
- Dutkowski P, Schlegel A, de Oliveira M, Müllhaupt B, Neff F, P-A Clavien. HOPE for human liver grafts obtained from donors after cardiac death. **J Hepatol.** 2014; 60, 765-772.
- Lesurtel M, Graf R, Aleil B, Walther DJ, Tian Y, Jochum W, Gachet C, Clavien P-A et al. Platelet-derived serotonin mediates liver regeneration. **Science.** 2006; 312 (5770): 104-107.

### Outcome research (7 relevant papers)

- Domenghino A, Walbert C, Birrer D, Puhan MA, Clavien P-A. Consensus recommendations on how to assess the quality of surgical interventions. **Nature Medicine.** 2023; 29: 811-822.
- Staiger RD, Schwandt H, Puhan MA, Clavien P-A. Improving surgical outcomes through benchmarking. **Br J Surg.** 2019; 106: 59-64.
- Raptis DA, Clavien P-A et al. Defining Benchmark Outcomes for ALPPS. **Ann Surg.** 2019; 270: 835-841.
- Muller X, Clavien P-A et al. Defining Benchmarks in Liver Transplantation: A Multicenter Outcome Analysis Determining Best Achievable Results. **Ann Surg.** 2018; 267: 419-425.
- Rössler F, Clavien P-A et al. Defining Benchmarks for Major Liver Surgery: A multicenter Analysis of 5202 Living Liver Donors. **Ann Surg.** 2016; 264: 492-500.
- Slankamenac K, Graf R, Barkun J, Puhan MA, Clavien P-A. The comprehensive complication index: a novel continuous scale to measure surgical morbidity. **Ann Surg.** 2013; 258: 1-7.

- Dindo D, Demartines N, Clavien P-A. Classification of surgical complications: a new proposal with evaluation in a cohort of 6336 patients and results of a survey. **Ann Surg.** 2004; 240: 205-213.

#### Others (5 relevant papers)

- Clavien P-A, J. Deiss. Consensus on how to select a chair for medicine. Ten tips for choosing an academic chair. **Nature.** 2015; 519(7543): 286-287.
- Vetter D, Clavien P-A et al. Effects of Art on Surgical Patients: A Systematic Review and Meta-analysis. **Ann Surg.** 2015; 262: 704-13.
- Von Websky MW, Clavien P-A et al. Trainee satisfaction in surgery residency programs: Modern management tools ensure trainee motivation and success. **Surgery.** 2012; 152: 794-801.
- Raptis DA, Clavien P-A et al. Job satisfaction among young board-certified surgeons at academic centers in Europe and North America. **Ann Surg.** 2012; 256: 796-805.
- Tschuor C, Clavien P-A et al. Job satisfaction among chairs of surgery from Europe and North America. **Surgery.** 2014; 156: 1069-1077

## Publications

All publications (> 750) by Prof. Pierre-Alain Clavien can be found [here](#).

#### Clinical (14 relevant papers)

- Clavien P-A, et al. Strategies for safer liver surgery and partial liver transplantation. **N Engl J Med.** 2007; 356: 1545-59.
- Petrowsky H, Clavien P-A et al. Modern therapeutic approaches for the treatment of malignant liver tumours. **Nat Rev Gastroenterol Hepatol.** 2020; 17: 755-772.
- Clavien P-A, et al. State of the art Starzl lecture: What is critical for liver surgery and partial liver transplantation: Size or quality? **Hepatology.** 2010; 52: 715-29.
- Eshmuminov D, Raptis DA, Linecker M, Wirsching A, Lesurtel M, Clavien P-A. Meta-analysis of associating liver partition with portal vein ligation and portal vein occlusion for two-stage hepatectomy. **Br J Surg.** 2016; 103(13): 1768-1782.
- Ignatavicius P, Clavien P-A et al. Choices of Therapeutic Strategies for Colorectal Liver Metastases among Expert Liver Surgeons: A Throw of the Dice? **Ann Surg.** 2020; 272: 715-722.
- Petrowsky H. First Long-term Oncologic Results of the ALPPS Procedure in a Large Cohort of Patients with Colorectal Liver Metastases. **Ann Surg.** 2020; 272: 793-800.
- Raptis DA, Clavien P-A et al. Defining Benchmark Outcomes for Pancreatoduodenectomy with Portomesenteric Venous Resection. **Ann Surg.** 2020; 272: 731-737.
- Linecker M, Clavien P-A et al. Perioperative omega-3 fatty acids fail to confer protection in liver surgery: Results of a multicentric, double-blind, randomized controlled trial. **J Hepatol.** 2020; 72: 498-505.
- Sánchez-Velázquez P, Clavien P-A et al. Benchmarks in Pancreatic Surgery: A Novel Tool for Unbiased Outcome Comparisons. **Ann Surg.** 2019; 270: 211-218.
- Dindo D, Müller MK, Weber M, Clavien P-A. Obesity in general elective surgery: **Lancet.** 2003, 361:2032-35.
- Heinrich S, Clavien P-A et al. Prospective phase II trial neoadjuvant chemotherapy with gemcitabine and cisplatin for resectable adenocarcinoma of the pancreatic head. **J Clin Oncology.** 2008, 26, 760-69.
- DeOliveira ML, Schulick RD, Nimura Y, Rosen C, Gores G, Neuhaus P and Clavien P-A. New staging system and a registry for perihilar cholangiocarcinoma. **Hepatology.** 2011; 53: 1363-71.
- Kron P, Clavien P-A et al. PA. Ablation or Resection for Colorectal Liver Metastases? A Systematic Review of the Literature. **Front Oncol.** 2019; 9: 1052.

- Clavien P-A, Selzner M. End-to-end pancreatico-duodenostomy: an alternative reconstruction for partial resection of the head of the pancreas. **Journal of the American College of Surgeons**. 1998; 187: 330-332.

## Handouts Presentations

### 500 lectures held worldwide

- State of the Art Lecture: «Staging of cholangiocarcinoma by PET-scan FDG. » Consensus Conference of the European Hepato Pancreato Biliary Association (EHPBA), Brussels, Belgium, 01.12.2007.
- Tom E Starzl State of the Art lecture: «What is critical for liver surgery and partial liver transplantation – size or quality?» 60th Annual Meeting of American Association for the Study of the Liver (AASLD), Boston, USA, 30.10.-03.11.2009.
- Opening Lecture: «State of the art: breakthrough innovations», Opening of the Erasmus MC Transplant Institute, Rotterdam, Netherlands, 28.10.2021.
- Keynote Lecture: «Classification of Complications and Benchmarking, Transplantation after "failed" ALPPS». AHPBA 2018 Annual Meeting, Miami, USA, 07.-11.03.2018.
- Henrik Kehlet Keynote Lecture: «New concept of benchmarking in surgery». 6th ERAS World Congress, Stockholm, Sweden, 23.-25.03.2018.
- Keynote Lecture: «Limits of pancreatic surgery» and Lecture: «How to assess outcome in surgery – Who is good, who is bad?», Pharmaceutical, Medical, Dental Congress & Exhibition Middle East, Erbil, Iraq, 02.-05.05.2019.
- Keynote Lecture: «What are the Essential Requirements for an HPB Service to Deliver Quality Outcomes» and «MEET THE PROFESSOR: Three types of hepatectomy to solve most indications, but which one to choose! », IHPBA 2020, Melbourne, Australia, Online, 27.-29.11.2020.
- Keynote Lecture: «Surgical indications and management of solid benign liver tumours – Benign lesions of liver and pancreas». Royal Belgian Society of Surgery Hepato-Biliary and Pancreatic Section (BSHBPS), Brussels, Belgium, 27.11.2009.
- Keynote Lecture: Pump Symposium for chemotherapy: «HAIP chemotherapy, Benchmarking pancreas surgery», Congress of the E-AHPBA, Amsterdam, Netherlands, 02.-05.06.2019.
- Keynote robotic liver surgery: «Limits and perspectives: When is MIS Liver Surgery Better?», CRSA Webinar 2020, Online, 30.09.2020.

## Media

- [«Unser Ziel ist, das europaweit beste Fachwissen anzubieten»](#), Schweizerische Ärztezeitung, 2023
- [Liverreport, Issue 4](#), 2022
- [«Der Patient spielt keine Rolle mehr»](#), NZZ, 2020
- [«Le bien-être des patients ne cesse de s'améliorer»](#), L'illustré, 2018
- [«Pierre Clavien: first a surgeon, and first a scientist»](#), Lancet

## Accreditation

[Privatklinik Bethanien](#)

[Medizinisches Zentrum Haus zur Pyramide](#)

## Specialties

[Hepatobiliary surgery \(liver surgery\)](#)

[Pancreatic surgery](#)

[Biliary surgery](#)

[Surgical oncology](#)

[Visceral surgery](#)

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