



**Professor Pierre-Alain Clavien**

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## Curriculum Vitae

### Current Position

- Professor and Chairman  
Department of Surgery and Transplantation  
University Hospital of Zurich, Switzerland

### Key Skills

- Highly specialized medicine (ALPPS, NanoKnife)
- Complex liver and pancreatic surgery
- Minimally invasive (laparoscopic) HPB and liver surgery
- Liver tumors and colorectal liver metastases
- Biliary surgery, gallbladder cancer and cholangio carcinoma
- Liver transplantation, living liver transplantation and split liver transplantation

### Academic Degrees

- 1976 H.S. Diploma, College of Geneva, Switzerland
- 1982 M.D. Geneva Medical School, Switzerland
- 1990 FMH Surgery (Swiss Board of Surgery)
- 1992 Ph.D. Institute of Medical Science and Immunology,  
University of Toronto, Ontario, Canada

### Clinical and Academic Appointments

- 2000 – present Professor & Head, Department of Surgery and Transplantation,  
University Hospital Zurich, Switzerland
- 2009 – present Chairman, Center for Surgery, Zurich, Switzerland
- 2007 – present Director, Swiss HPB and Transplantation Center Zurich
- 1999 – 2002 Full Professor (Tenured), Dept. of Thoracic & General Surgery,  
Duke University, Durham, North Carolina
- 1997 – 2001 Director, Division of Transplantation, Department of Thoracic  
and General Surgery, Duke University, Durham, North Carolina
- 1996 – 2001 Chief, Hepatobiliary Surgery, Department of Thoracic and  
General Surgery, Duke University, Durham, North Carolina
- 1997 – 1999 Associate Professor of Surgery, Department of Thoracic and  
General Surgery Duke University, Durham, North Carolina

- 1994 – 2000      Director Liver Transplantation Program, Dept. of Thoracic and General Surgery Duke University Medical Center, Durham, North Carolina
- 1994 – 1997      Assistant Professor of Surgery, Dept. of Thoracic and General Surgery, Duke University, Durham, North Carolina
- 1993              Clinical Associate, Liver Transplantation and Hepatobiliary Surgery, Toronto General Hospital and Hospital for Sick Children, University of Toronto

### Special Appointments

- Honorary Diploma of the European Board of Surgery for HPB Surgery and Liver Transplantation
- Honorary Fellowship of the American College of Surgeons (FACS Hon)
- Fellowship of the Royal College of Surgeons of England (FRCS Engl)
- Fellowship of the Royal College of Surgeons of Edinburgh (FRCS Ed)
- Honorary Member, Académie Nationale de Médecine, France
- Honorary Member, Académie Nationale de Chirurgie, France
- **Board of Director and Council:** British Journal of Surgery Society
- **Editor:** Patient safety in surgery (online Journal)
- **Associate Editor:** Annals of Surgery
- **Editorial Boards:** Gastroenterology, Hepatology, Transplantation, Annals of Surgery, British Journal of Surgery, Surgery, Current Opinion in Organ Transplantation, Advances in Gastroenterology, Hepatology & Nutrition, Hepato-Gastroenterology, HPB Surgery, World Journal of Surgery, Der Chirurg, Gastroenterology Research and Practice, Langenbeck's Archives of Surgery, Journal of the Italian Society of Surgery (SIC), Updates in Surgery, Digestive Surgery, European Surgical Research

### Special Lectures and Visiting Professorships: >350

- Longmire Lecture: The Longmire Surgical Society, UCLA, Los Angeles, USA, 2006.
- Tom E Starzl State of the Art Lecture: Annual Congress of the American Association for the Study of the Liver (AASLD), Boston, USA, 2009.
- Martin Allgöwer Lecture: "Surgical leadership: Do we need it and can we measure it?" 46<sup>th</sup> World Congress of Surgery WCS, Bangkok, Thailand, 2015.
- Morrison Schroeder Lecture: "Surgical Leadership: Do we need it and can we measure it?" and "Liver preservation: Where we are and future perspectives". Visiting Professor. Medical College of Wisconsin, Milwaukee, Wisconsin, USA, 2015.
- John Hopkins Hospital Grand Round/ MGH Richardson Lecture: "Liver Surgery – new developments", MGH Transplant Seminar: "Liver preservation – cool is beautiful". Visiting Professor. Johns Hopkins Hospital and Massachusetts General Hospital, Baltimore/ Boston, USA, 2016.
- Special Grand Rounds Presentation: "Novel approaches for organ preservation in liver transplantation", "ALLPS in Hepatobiliary Malignancy". Visiting Professor. Lori Thompson Leist Visiting Professorship in Liver Transplantation, Mayo Clinic, Jacksonville, USA, 2017.

**Honors and Awards: >25**

- Annual Prize of the Swiss Society of Surgery (\$10 000) (1989)
- Roche Travel Award, American Society of Transplantation (AST) (\$15 000) (1997)
- Roche Organ Transplantation Research Foundation (ROTFR) Award (\$100 000) (2004)
- Otto Naegeli Prize (the most prestigious scientific prize given every 2 yrs in Switzerland) (\$250 000) (2008)
- Honorary Diploma in Transplantation surgery (UEMS board)
- Gimbernat Prize, given by the Societat Catalana de Cirurgia, Barcelona, Spain (2011)
- UEGF (United European Gastroenterology Federation) Research Prize (the most prestigious prize given every year by the European federation of Gastroenterology) (\$150 000) (2011)
- Gemzine Award for Innovation in Transplantation. The Transplantation Society

**Memberships: National and International Committees & Societies: >50**

- European Surgical Association (ESA)
- American Surgical Association (ASA)
- European-African Hepato-Pancreato-Biliary Association (E-AHPBA)
- International Hepato-Pancreato-Biliary Association (IHPBA)
- International Surgical Group (ISG)
- Société Suisse de Chirurgie (SSC)
- International Society of Surgery (ISS/SIC)
- American Association for the Study of Liver Diseases (AASLD)
- Society for Surgery of the Alimentary Tract (SSAT)
- American Society of Transplant Surgeons (ASTS)
- International Association of Surgeons & Gastroenterologists (IASG)
- The British Journal of Surgery Society (BJS)
- Swiss National Institute of Research (SNF)
- Association for Research in Surgery, Swiss Society of Surgery (ARS)
- International Liver Cancer Association (ILCA)
- Swiss Academy of Medical Sciences (SAMW)
- Académie Française de Chirurgie (Paris, France)
- The Transplantation Society (TTS)
- Association for Academic Surgery and Perioperative Medicine (AASPM)
- Swiss Transplantation Society (STS)
- Governor of the American College of Surgeons (ACS)
- International Liver Transplantation Society (ILTS)
- Académie Nationale de Médecine, France
- Académie Nationale de Chirurgie, France

## Key Areas of Research

- His areas of research include organ preservation, liver ischemia-reperfusion injury and liver regeneration, and pathogenesis of cancer, as well as outcome research with publications in Science, PNAS, Annals of Surgery, Gastroenterology, Lancet, and NEJM.
- His laboratory made the discovery of serotonin as a key mediator of liver regeneration and pathogenesis of cancer (Science 2006).
- Dr. Clavien has also developed a simple and widely used system to evaluate complications after surgery, which hold his name – The Clavien-Dindo Classification – and developed and validated the Comprehensive Complication Index (CCI®).

## Research Funding

- He is continuously holding competitive grants including NIH and Swiss National Foundation since 1996
- More than 35 competitive research grants (> 10 Million \$)

## Publications

- Over 600 peer reviewed articles in high ranked international journals
- The impact of his research might be highlighted with a H Factor of 112 and a Citation Index of over 56'724
- He is Editor of five books; With the very popular books “Medical Care of the Liver Transplant Patient” and the “Atlas of Upper Gastrointestinal and Hepato-Pancreato-Biliary Surgery” (2<sup>nd</sup> Edition, October 2015)

## Clinical Publications (12 relevant papers)

1. Weber M, Dindo D, Demartines N, Ambühl PM, Clavien P-A. Kidney transplantation from donors without a heartbeat. N Engl J Med 2002; 347: 248-255.
2. Dindo D, Müller MK, Weber M, Clavien P-A. Obesity in general elective surgery. Lancet 2003; 361: 2032-2035.
3. Clavien P-A, Rüdiger HA, Selzner M, Kadry Z, Graf R. A prospective randomized study of ischemic preconditioning in 100 consecutive patients undergoing major liver resection under inflow occlusion. Ann Surg 2003; 238: 843-852.
4. 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.
5. Clavien P-A, Petrowsky H, DeOliveira ML, Graf R. Strategies for safer liver surgery and partial liver transplantation. N Engl J Med 2007; 356: 1545-1559.
6. Heinrich S, Pestalozzi BC, Schäfer M, Weber A, Bauerfeind P, Knuth A, Clavien P-A. Prospective phase II trial neoadjuvant chemotherapy with gemcitabine and cisplatin for resectable adenocarcinoma of the pancreatic head. J Clin Oncology 2008; 26: 760-769.
7. Ergina PL, Cook JA, Blazeby JM, Boutron I, Clavien P-A, Reeves BC, Seiler CM. Challenges in evaluating surgical innovation. Lancet 2009; 374: 1097-1104.
8. 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: 1363-1371.
9. Vonlanthen R, Slankamenac K, Breitenstein S, Puhan MA, Muller MK, Hahnloser D, Hauri D, Graf R, Clavien P-A. The impact of complications on costs of major surgical procedures. A cost analysis of 1200 patients. Ann Surg 2011; 254: 907-913.

10. Clavien P-A, Lesurtel M, Bossuyt P, Gores GJ, Langer B, Perrier A, on behalf of the OLT for HCC consensus group. Recommendations for liver transplantation for HCC: an International Consensus Conference Report. *Lancet Oncol* 2011; 11: 70175-70179.
11. Dutkowski P, Oberkofler CE, Slankamenac K, Puhan MA, Schadde E, Müllhaupt B, Geier A, Clavien P-A. Are there better guidelines for allocation in liver transplantation? *Ann Surg* 2011; 254: 1-9.
12. Slankamenac K, Graf R, Barkun J, Puhan MA, Clavien P-A. The Comprehensive Complication Index. A novel continuous scale to measure surgical morbidity. Feature article. *Ann Surg* 2013; 258: 1-7 (with editorial from M. Brennan)

### **Research Publications (12 relevant papers)**

1. Kohli V, Gao W, Camargo Jr CA, Clavien PA. Calpain is a mediator of preservation-reperfusion injury in rat liver transplantation. *Proc Natl Acad Sci U S A (PNAS)* 1997; 94: 9354-9359.
2. Sindram D, Porte RJ, Hoffman MR, Bentley RC, Clavien P-A. Synergism between platelets and leukocytes in inducing endothelial cell apoptosis in the cold ischemic rat liver: a Kupffer cell mediated injury. *The FASEB Journal* 2001; 15: 1230-1232.
3. Selzner N, Selzner M, Odermatt B, Tian Y, Van Rooijen N, Clavien P-A. ICAM-1 triggers liver regeneration through leukocyte recruitment and Kupffer cell-dependent release of TNF- $\alpha$ /IL-6 in mice. *Gastroenterology* 2003; 124: 692-700.
4. Tian Y, Jochum W, Georgiev P, Moritz W, Graf R, Clavien P-A. Kupffer cell dependent TNF- $\alpha$  signaling mediates injury in the arterialized small-for-size liver transplantation in the mouse. *Proc Natl Acad Sci U S A (PNAS)* 2006; 103: 4598-4603.
5. Lesurtel M, Graf R, Aleil B, Tian Y, Jochum W, Bader M, Clavien P-A. Platelet-derived serotonin mediates liver regeneration. *SCIENCE* 2006; 312: 104-107.
6. El-Badry AM, Moritz W, Contaldo C, Tian Y, Graf R, Clavien P-A. Prevention of reperfusion injury and microcirculatory failure in macrosteatotic mouse liver by omega-3 fatty acids. *Hepatology* 2007; 45: 841-845.
7. Nocito A., Dahm F, Jochum W, Jang JW, Clavien P-A. Serotonin mediates oxidative stress and mitochondrial toxicity in a murine model of nonalcoholic steatohepatitis. *Gastroenterology* 2007; 133: 608-618.
8. Nocito, F. Dahm, Georgiev P, Graf R, Clavien PA. Serotonin regulates macrophage-mediated angiogenesis in a mouse model of colon cancer allografts. *Cancer Research*, 2008, 68:5152-58.
9. Soll C, Jang JH, Riener MO, Moritz W, Wild PJ, Graf R, Clavien P-A. Serotonin promotes tumor growth in human hepatocellular cancer. *Hepatology* 2010; 51: 1244-1254.
10. Furrer K, Rickenbacher A, Tian Y, Jochum W, Bittermann AG, Käch A, Humar B, Graf R, Moritz W, Clavien P-A. Serotonin reverts age-related capillarization and failure of regeneration in the liver through a VEGF-dependent pathway. *Proc Natl Acad Sci U S A (PNAS)* 2011; 108: 1945-1950.
11. Raptis DA, Fischer MA, Graf R, Nanz D, Weber A, Moritz W, Tian Y, Oberkofler CE, Clavien P-A. MRI: the new reference standard in quantifying hepatic steatosis? *Gut* 2012; 61: 117-127.
12. Lehmann K, Tschuor C, Rickenbacher A, Jang JH, Oberkofler CE, Tschopp O, Schule S, Raptis DA, Weber A, Graf R, Humar B, Clavien P-A. Liver failure after extended hepatectomy in mice is mediated by a p21-dependent barrier to liver regeneration. *Gastroenterology* 2012; 143: 1609-1619.