

# Hepatic Haven

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Thomas Starzl

## WELCOME TO OUR READERS

Liver transplantation is one of the most extraordinary achievements in modern medicine—not because it is rare or dramatic, but because it quietly transforms what was once inevitable into what is now possible. For patients with advanced liver disease, transplantation has changed the meaning of prognosis, survival, and hope. For clinicians and researchers, it has reshaped how complex, multidisciplinary care can be delivered at the highest level.

This newsletter is dedicated to the pioneers of liver transplantation—the individuals and teams whose collective work built the foundation on which today's transplant programs stand.

Our goal is not to tell individual life stories here. Those stories deserve space, depth, and careful attention, and they will be explored separately. Instead, this introductory issue serves as a welcome: an orientation to the shared history of liver transplantation and the people who helped shape it.

## A COLLECTIVE ACHIEVEMENT

Liver transplantation did not emerge from a single discovery or a single institution. It developed over decades through sustained effort, rigorous experimentation, ethical debate, and interdisciplinary collaboration. Early work took place at a time when outcomes were uncertain, immunosuppression was primitive, and the procedure itself was viewed by many as unrealistic or even reckless.

Progress came slowly, often through trial and error. Techniques were refined. Organ preservation improved. Rejection became better understood. Systems of patient selection, postoperative care, and long-term follow-up evolved. What distinguishes the pioneers of liver transplantation is not simply innovation, but perseverance in an environment where success was never guaranteed.

Just as importantly, no one advanced the field alone. Surgeons depended on hepatologists. Hepatologists relied on pathologists and immunologists. Anesthesiologists, intensivists, nurses, coordinators, and support staff made survival possible long before transplantation became routine. Liver transplantation is, and has always been, a team endeavor.



Tomoaki Kato



### FROM POSSIBILITY TO STANDARD OF CARE

As outcomes improved, liver transplantation transitioned from an experimental intervention to an accepted standard of care. That transition brought new responsibilities. Ethical questions surrounding organ allocation, equity, consent, and transparency became central. Scarcity required fairness. Public trust became essential. Pioneers helped shape the systems that govern transplantation today—national registries, allocation frameworks, quality oversight, and training standards. These systems are often invisible to patients, yet they are among the most important contributions to the field’s longevity and credibility.

At the same time, the scope of transplantation expanded. Pediatric liver transplantation addressed the needs of infants and children with congenital and acquired liver disease. Living donor liver transplantation opened new pathways for patients while introducing new ethical and technical challenges. Programs emerged around the world, contributing regional expertise and reinforcing the global nature of progress.

### RECOGNIZING CONTRIBUTORS

Throughout the history of liver transplantation, many individuals have contributed to its advancement. Some helped establish foundational surgical techniques. Others advanced immunosuppression, pediatric transplantation, or living donor approaches. Still others built programs, trained generations of clinicians, or guided ethical and policy development.



### FROM THE EDITOR

Welcome to the second issue of Dr. Michael Baruch’s Liver Transplant Newsletter, where we continue to honor the pioneers of liver transplant surgery and the collective effort that transformed liver failure from a terminal condition into a treatable disease. As both a retired surgeon and a liver transplant recipient, I approach this work with deep respect for the individuals and teams whose innovation, discipline, and perseverance shaped modern transplantation.

This issue builds on our inaugural edition by further recognizing the surgeons, physicians, and multidisciplinary professionals who advanced liver transplant surgery through decades of scientific inquiry, technical refinement, and ethical stewardship. Rather than focusing on individual biographies, this newsletter highlights the shared foundations of progress and the systems of care that made transplantation possible.

Our mission remains educational and reflective: to provide historical perspective, clinical insight, and acknowledgment of the pioneers whose work continues to influence patient care today. Your engagement and feedback are deeply valued as we grow this health-focused community together.

Thank you for being part of this ongoing journey of recognition, understanding, and hope.

— Dr. Michael Baruch



Francis D. Moore

*posed of several well-orchestrated organs and systems, ensures the smooth operation of these functions. Knowledge of the liver's anatomy is foundational to understanding its role in health and disease, allowing us to appreciate the singular importance of this organ in the human body's functioning.*



Sir Roy Calne

This shared history includes early pioneers whose work laid the groundwork for modern practice, as well as contemporary leaders who expanded the field's reach and complexity. Among those who form part of this ongoing continuum are individuals such as Thomas E. Starzl, Roy Calne, Henri Bismuth, and others who helped define the field in its formative years.

It also includes more recent contributors, such as Dr. Jean Emond and Dr. Tomoaki Kato, whose work in complex liver transplantation, pediatric transplantation, and surgical innovation represents the continued evolution of the discipline. These names are included here not to single out individuals, but to acknowledge stewardship and contribution within a larger collective effort.

#### WHAT THIS NEWSLETTER WILL DO

This newsletter is designed as an ongoing series, not a single statement. Each issue will explore aspects of liver transplantation history, innovation, and impact—sometimes by era, sometimes by theme, and sometimes by highlighting contributors in a structured, uniform way.

What this series will not do is rank pioneers or reduce progress to simplified narratives. Liver transplantation is too complex—and too human—for that. Instead, our intent is to provide context, continuity, and appreciation for how far the field has come, and how it continues to move forward.

For clinicians and trainees, this perspective offers grounding: a reminder that current standards were once debated ideas, and that today's challenges will shape tomorrow's practice. For patients and families, it offers reassurance that modern transplantation reflects decades of learning, refinement, and ethical care.

#### A STORY STILL BEING WRITTEN

The history of liver transplantation is not finished. Advances in immunosuppression, organ preservation, machine perfusion, allocation policy, and long-term outcome management continue to reshape the field. New pioneers emerge by addressing present-day challenges with the same discipline and responsibility that defined earlier eras.

This newsletter exists to honor that continuum.

Every successful transplant performed today reflects the work of those who came before—often individuals who never met the patients whose lives they ultimately changed. Their contributions live on not only in operating rooms and clinics, but in the everyday reality that liver failure is no longer an automatic endpoint.

We invite you to read, reflect, and return as this series unfolds. The pioneers of liver transplantation built more than a procedure. They built a pathway—one that continues to offer life, possibility, and hope.

#### A CHRONOLOGICAL TIMELINE OF LIVER TRANSPLANTATION

##### Key Events and Contributing Surgical Pioneers 1950s – THE SCIENTIFIC FOUNDATION

- Advances in vascular surgery, anesthesia, organ preservation, and critical care establish the prerequisites for solid-organ transplantation.
- Early experimental liver transplantation in animal models demonstrates technical feasibility.
- Surgeons such as Francis Moore contribute foundational work in surgical physiology and metabolism that informs transplant surgery.

##### 1963 – FIRST HUMAN LIVER TRANSPLANTS

- The first human liver transplant procedures are attempted.
- These early efforts, led by pioneering surgeons including Thomas E. Starzl, establish that liver transplantation in humans is surgically possible, despite extremely limited early survival.
- Liver transplantation enters clinical experimentation.

##### Late 1960s – TECHNICAL REFINEMENT AND EARLY PROGRAMS

- Improvements in vascular anastomosis, biliary reconstruction, and perioperative management emerge.
- Surgeons such as Roy Calne and Roger Williams contribute to advancing immunologic understanding and clinical liver care.
- Liver transplantation remains experimental but increasingly systematic.

##### 1970s – PERSISTENCE AND INCREMENTAL PROGRESS

- Refinement of operative technique and postoperative intensive care leads to gradual improvements in survival.
- Organ preservation methods improve, allowing safer donor organ transport.
- European centers advance liver surgery under leaders such as Henri Bismuth and Rudolf Pichlmayr, contributing to technique standardization and program development.

##### Early 1980s – IMMUNOSUPPRESSION BREAKTHROUGH

- The introduction of cyclosporine revolutionizes graft survival.
- Liver transplantation transitions from experimental therapy to a viable clinical option.
- Broader institutional adoption becomes possible.

##### Mid–Late 1980s – STANDARD OF CARE ESTABLISHED

- Liver transplantation is formally recognized as standard therapy for end-stage liver disease.
- Pediatric liver transplantation expands.
- Surgeons such as Thomas Starzl, Roy Calne, and Henri Bismuth help solidify transplantation as a reproducible discipline.

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## *Timeline Continued*

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### 1990s – PROGRAM EXPANSION AND PEDIATRIC ADVANCES

- Outcomes improve through better surgical techniques, imaging, and immunosuppression.
- Pediatric transplantation gains momentum.
- Surgeons such as Thomas Starzl, Christoph Broelsch, and Russell Strong advance split-liver and pediatric transplantation, expanding access for children.
- Dr. Jean Emond contributes to the maturation of complex adult and pediatric liver transplantation within major academic centers.

### Mid–Late 1990s – LIVING DONOR AND SPLIT-LIVER TRANSPLANTATION

- Living donor liver transplantation expands in response to organ shortages.
- Split-liver techniques become more widely adopted.
- Ethical oversight and donor safety frameworks become central.
- Contributions from Broelsch, Strong, and international collaborators help refine these approaches.

### Early 2000s – MODERN ALLOCATION AND SYSTEMS OF CARE

- Objective scoring systems such as MELD are adopted to prioritize transplant candidates.
- Allocation becomes data-driven and transparent.
- Transplant outcomes improve nationwide.

### 2000s – GLOBALIZATION AND TECHNICAL COMPLEXITY

- Liver transplantation expands globally with increasing international collaboration.
- Pediatric and technically complex liver transplantation programs mature.
- Dr. Tomoaki Kato plays a key role in advancing pediatric and complex liver transplantation, contributing to high-volume, specialized transplant centers.

### 2010s – LONG-TERM OUTCOMES AND TRAINING

- Focus shifts toward long-term graft survival, quality of life, and management of chronic complications.
- High-risk and retransplant cases become increasingly feasible.
- Emphasis grows on training the next generation of transplant surgeons.

### LATE 2010s–PRESENT – TECHNOLOGY AND INNOVATION

- Machine perfusion and advanced organ preservation techniques emerge.
- Immunosuppression becomes more targeted and safer.
- Transplant systems adapt to global challenges while maintaining high standards of care. PRESENT DAY – A CONTINUING LEGACY

- Liver transplantation is a routine, lifesaving therapy worldwide.
- Ongoing challenges include organ shortage, access, equity, and long-term outcomes.
- The legacy of contributors—Starzl, Moore, Calne, Williams, Bismuth, Pichlmayr, Strong, Broelsch, and contemporary leaders such as Dr. Jean Emond and Dr. Tomoaki Kato—remains embedded in modern practice.
- EDITORIAL NOTE
- This timeline honors collective advancement, not individual biography. Each name represents leadership, mentorship, and contribution within a broader multidisciplinary effort that continues to evolve.



**Dr. Thomas Starzl**

Dr. Thomas E. Starzl: The Foundational Architect of Liver Transplantation

Dr. Thomas E. Starzl is widely regarded as the foundational figure in the development of liver transplantation. His work transformed liver replacement from a theoretical and experimental endeavor into a reproducible, lifesaving clinical therapy. At a time when survival after solid-organ transplantation was rare and immunologic rejection poorly understood, Dr. Starzl demonstrated extraordinary scientific persistence and surgical courage.

In 1963, Dr. Starzl performed the first human liver transplant attempts, establishing that replacement of the human liver was surgically possible. Although early outcomes were limited, these initial procedures laid the technical and conceptual groundwork for the field. Rather than abandoning the effort, Dr. Starzl systematically refined surgical techniques, perioperative management, and postoperative care, recognizing that success required more than operative skill alone.

One of Dr. Starzl's most significant contributions was his role in advancing immunosuppression. His clinical investigations helped establish the critical importance of effective immune control in graft survival. The later introduction of cyclosporine, combined with the surgical frameworks he helped develop, marked a turning point that transformed liver transplantation from an experimental procedure into a viable treatment for end-stage liver disease.

Beyond his technical contributions, Dr. Starzl was instrumental in building transplant programs and training generations of surgeons, physicians, and researchers. His influence extended internationally, shaping how liver transplantation was practiced, taught, and ethically governed across institutions and continents.

Dr. Starzl's legacy is not defined by a single operation or discovery, but by the system he helped create—one that integrated surgery, immunology, pathology, and multidisciplinary care into a coherent and sustainable model. Modern liver transplantation, now a standard of care worldwide, rests firmly on the foundations he established. His work exemplifies the essence of medical pioneership: persistence in uncertainty, commitment to scientific rigor, and an unwavering focus on patient survival.

## Pioneers Continued

### **Francis D. Moore: The Intellectual Foundation of Transplant Surgery**

Dr. Francis D. Moore holds a distinctive place in the history of liver transplantation—not as the surgeon who performed the first transplant, but as the thinker who helped make transplantation scientifically and clinically possible. His influence lies in shaping how surgeons understand the human body under extreme stress, a perspective essential to the development of complex procedures such as liver transplantation.

At a time when surgery was often viewed primarily as a technical craft, Dr. Moore advanced the concept of surgery as an applied physiologic science. His groundbreaking work in metabolism, shock, fluid and electrolyte balance, nutrition, and organ failure transformed perioperative care. These insights became critically important as surgeons began attempting procedures that profoundly disrupted normal physiology, including liver replacement.

Liver transplantation presents extraordinary metabolic and hemodynamic challenges. Massive fluid shifts, coagulopathy, and systemic inflammatory responses are inherent to the operation. The physiologic principles articulated by Dr. Moore provided the framework that allowed surgeons, anesthesiologists, and intensivists to manage these stresses in a rational, reproducible way. Long before transplantation achieved consistent success, his work guided how critically ill surgical patients were stabilized and supported. Equally influential was Dr. Moore's emphasis on multidisciplinary care. He recognized that complex surgical success required coordination among surgeons, internists, anesthesiologists, nutritionists, and laboratory scientists. This team-based philosophy later became a defining feature of transplant centers, where outcomes depend on seamless collaboration across specialties.

As an academic leader and mentor, Dr. Moore trained generations of surgeons who carried his principles into emerging fields, including hepatobiliary and transplant surgery. He championed rigorous research, honest outcome reporting, and ethical responsibility—values that proved essential as transplantation moved from experimental practice to accepted therapy.

In the story of liver transplantation, Dr. Francis D. Moore's legacy is foundational rather than procedural. He helped create the intellectual environment in which transplantation could succeed. Modern liver transplant care—with its focus on physiology, systems-based practice, and disciplined innovation—reflects his influence at every level.



Dr. Francis D. Moore



Sir Roy Calne

### **Sir Roy Calne: Bridging Surgery and Immunology in Liver Transplantation**

Sir Roy Calne occupies a central place in the history of liver transplantation as one of the key figures who helped bridge surgical innovation with immunologic understanding. His work was instrumental in transforming transplantation from a technical possibility into a sustainable clinical therapy, particularly through his contributions to immunosuppression and program development.

From the earliest days of organ transplantation, rejection represented the greatest barrier to success. Sir Roy Calne recognized that surgical technique alone could not overcome this obstacle. He played a pivotal role in advancing the clinical use of immunosuppressive agents, helping establish principles that allowed transplanted organs to survive beyond the immediate postoperative period. His early work with immunosuppressive drugs laid critical groundwork for later breakthroughs that dramatically improved graft survival.

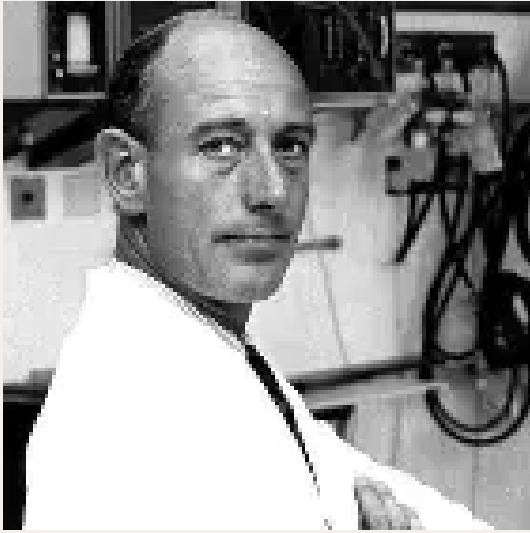
In liver transplantation, where immunologic and metabolic demands are especially complex, these advances proved transformative. Improved immune control allowed surgeons and physicians to refine operative techniques, expand indications, and focus on long-term outcomes rather than short-term survival. Sir Roy's contributions helped shift transplantation from an experimental undertaking to a reproducible clinical discipline.

Equally important was his role in building and shaping transplant programs. Sir Roy understood that success required institutional commitment, rigorous follow-up, and multidisciplinary collaboration. He contributed to the development of structured transplant centers that integrated surgery, hepatology, pathology, and immunology—an organizational model that remains the standard today.

As a teacher and mentor, Sir Roy Calne influenced generations of transplant surgeons and physician-scientists. His approach emphasized scientific curiosity, careful observation, and ethical responsibility. These values were especially important during periods when transplantation outcomes were uncertain and public scrutiny was high. By insisting on disciplined evaluation and transparent reporting, he helped establish credibility for the field.

Sir Roy Calne's legacy in liver transplantation is defined by integration. He helped unite surgical ambition with immunologic science, enabling progress that neither discipline could have achieved alone. Modern liver transplantation—with its reliance on tailored immunosuppression, multidisciplinary care, and long-term graft management—continues to reflect the principles he championed. His contributions remain embedded in everyday transplant practice, underscoring the enduring impact of thoughtful, science-driven pioneership.

## Pioneers Continued



**Professor Roger Williams**

### **Professor Roger Williams: Advancing Hepatology at the Heart of Liver Transplantation**

Professor Roger Williams played a pivotal role in the evolution of liver transplantation by advancing the field of hepatology at a time when surgical progress alone was insufficient. His work helped define liver transplantation not merely as an operative solution, but as a medically integrated therapy grounded in deep understanding of liver disease, failure, and recovery.

At a critical stage in transplantation history, Professor Williams emphasized the importance of precise diagnosis, patient selection, and timing—factors that proved essential to improving outcomes. By clarifying the natural history of acute and chronic liver disease, he helped identify which patients could truly benefit from transplantation and when intervention offered the greatest chance of success.

Professor Williams was also instrumental in advancing the medical management of liver failure, bridging the gap between pre-transplant care and postoperative survival. His work reinforced the necessity of close collaboration between hepatologists and transplant surgeons, establishing a model of multidisciplinary care that remains fundamental to transplant programs today.

Beyond clinical impact, he contributed to building institutional frameworks that supported transplantation as a sustained and ethical practice. His leadership helped integrate research, clinical care, and education within specialized liver units, shaping how transplant centers functioned worldwide.

In the history of liver transplantation, Professor Roger Williams' legacy lies in ensuring that surgical innovation was matched by medical insight—an essential balance that continues to define successful transplant care.



**Professor Henri Bismuth**

### **Professor Henri Bismuth: Rigor and Structure in Liver Transplant Surgery**

Professor Henri Bismuth was one of the most influential figures in the development of modern liver transplantation and hepatobiliary surgery. Known for his disciplined, methodical approach, he helped bring clarity, structure, and reproducibility to some of the most complex procedures in surgery. His work was instrumental in advancing liver transplantation from an experimental endeavor to a carefully regulated clinical discipline.

Professor Bismuth emphasized that successful transplantation depended on far more than technical execution. He championed meticulous anatomical understanding, careful patient selection, and strict adherence to operative principles. These standards reduced complications and improved outcomes at a time when liver transplantation carried significant risk and uncertainty.

Equally important was his commitment to multidisciplinary collaboration. Professor Bismuth fostered close integration between surgeons, hepatologists, pathologists, and critical care teams, reinforcing the systems-based approach that remains fundamental to transplant programs worldwide. His leadership helped establish structured training pathways, ensuring that complex techniques could be taught safely and consistently.

In the history of liver transplantation, Professor Henri Bismuth's legacy is defined by precision, discipline, and intellectual rigor. His contributions continue to influence how liver transplant surgery is practiced, taught, and evaluated today.

## **Professor Rudolf Pichlmayr: Building Structure and Ethics in Liver Transplantation**

Professor Rudolf Pichlmayr was a central figure in the development of liver transplantation in Europe and a pioneer in establishing the structural, ethical, and organizational foundations that allowed the field to mature. His work helped move liver transplantation beyond isolated innovation toward a disciplined, programmatic practice capable of sustained success.

At a time when liver transplantation was still evolving, Professor Pichlmayr emphasized systematic planning, standardized operative approaches, and rigorous postoperative care. He recognized that long-term success depended not only on surgical technique, but also on careful coordination between surgery, hepatology, anesthesia, intensive care, and pathology. This integrated model became a hallmark of successful transplant centers.

Professor Pichlmayr also made important contributions to ethical discourse in transplantation. He was a strong advocate for transparent organ allocation, responsible patient selection, and clear reporting of outcomes. These principles were essential in building public trust during an era when transplantation outcomes were uncertain and organ scarcity raised profound moral questions. In addition, he played a key role in advancing pediatric liver transplantation and in refining techniques that expanded access to transplantation for younger patients. His leadership helped ensure that innovation was matched by responsibility and oversight. Professor Rudolf Pichlmayr's legacy in liver transplantation lies in his commitment to structure, ethics, and systems-based care. His work reinforced the idea that pioneering medicine must be both scientifically ambitious and institutionally accountable—an enduring principle that continues to guide transplant practice today.



Professor Rudolf Pichlmayr



Professor Russell Strong

## **Professor Russell Strong: Innovation in Service of Access**

Professor Russell Strong made enduring contributions to liver transplantation by addressing one of the field's most pressing challenges: limited access to donor organs. His work helped expand the reach of transplantation while maintaining a strong commitment to patient safety and ethical responsibility.

Recognizing that reliance on deceased-donor organs alone was insufficient, Professor Strong played a pivotal role in advancing living donor liver transplantation. This approach demanded exceptional surgical precision, careful donor selection, and robust ethical safeguards. By demonstrating that living donation could be performed safely, he helped create a viable pathway for patients who might otherwise never receive a transplant.

Professor Strong also contributed to the development and refinement of split-liver transplantation, enabling a single donor liver to benefit multiple recipients. These innovations proved particularly impactful in pediatric transplantation, where organ size and availability are critical determinants of survival. His work helped establish pediatric liver transplantation as a reliable and timely therapy.

Beyond technical innovation, Professor Strong emphasized multidisciplinary coordination and long-term outcome evaluation. He understood that success in transplantation required careful postoperative care, transparent reporting, and continuous improvement.

In the history of liver transplantation, Professor Russell Strong's legacy is defined by pragmatic innovation—solving real-world problems while preserving the ethical and clinical foundations of the field.



### **Professor Christoph Broelsch: Advancing Pediatric and Split-Liver Transplantation**

Professor Christoph Broelsch was a pivotal figure in the evolution of liver transplantation, particularly through his contributions to pediatric transplantation and the development of split-liver techniques. His work addressed one of the field's most persistent challenges—organ scarcity—while expanding safe access to transplantation for children and adults alike. Professor Broelsch recognized early that innovative surgical strategies were necessary to meet growing demand. He played a central role in refining split-liver transplantation, demonstrating that a single donor liver could be safely divided to serve two recipients. This approach significantly increased organ utilization and had a profound impact on pediatric transplantation, where timely access to appropriately sized grafts is critical.

Equally important was his emphasis on meticulous technique, careful recipient selection, and coordinated perioperative care. Professor Broelsch understood that innovation in transplantation required not only surgical creativity but also disciplined execution and rigorous outcome assessment. His work helped establish split-liver transplantation as a reproducible and ethically sound practice.

As a leader and mentor, he influenced transplant programs internationally, contributing to the dissemination of advanced techniques and fostering collaboration across centers.

In the history of liver transplantation, Professor Christoph Broelsch's legacy lies in expanding possibility—demonstrating that thoughtful innovation can responsibly extend life-saving therapy to more patients while maintaining the highest standards of care.

## **Dr. Tomoaki Kato: Redefining the Limits of Liver and Multi-Organ Transplantation**

Dr. Tomoaki Kato stands as one of the defining figures of modern transplantation, representing a generation of surgeons who extended liver transplantation beyond isolated organ replacement into the realm of highly complex, multi-organ and life-saving reconstructive procedures. His work reflects the maturation of transplantation into a discipline capable of addressing not only end-stage liver disease, but the interconnected failure of multiple organ systems.

A central focus of Dr. Kato's career has been pediatric liver transplantation, an area that demands extraordinary technical precision and clinical judgment. Infants and children with liver failure often present with congenital anomalies, metabolic disorders, and limited physiologic reserve.

Dr. Kato helped refine surgical strategies that allow transplantation in very small recipients, improving survival and long-term outcomes for patients who once had few viable options. His work reinforced the principle that pediatric transplantation is not simply a smaller version of adult surgery, but a distinct and demanding specialty.

Equally significant has been Dr. Kato's contribution to living donor liver transplantation. In an era defined by persistent organ shortage, living donation offered new hope while introducing profound ethical and technical challenges. Dr. Kato's work emphasized meticulous donor evaluation, careful operative planning, and uncompromising attention to donor safety. By advancing these principles, he helped expand access to transplantation while preserving public trust and ethical integrity.

Beyond single-organ transplantation, Dr. Kato is particularly recognized for his leadership in multi-organ transplantation, including combined liver-intestine, liver-pancreas, and other complex transplant procedures. These operations represent some of the most challenging interventions in modern surgery. Patients requiring multi-organ transplantation often suffer from catastrophic systemic disease, severe malnutrition, prior surgical complications, and prolonged dependence on life support. Success in these cases requires not only surgical mastery, but deep understanding of immunology, critical care, and long-term rehabilitation.

Dr. Kato's contributions in this area helped demonstrate that multi-organ transplantation could be performed safely and reproducibly within specialized centers. His work advanced surgical techniques for vascular reconstruction, intestinal transplantation, and abdominal domain management, while integrating immunosuppressive strategies capable of supporting multiple grafts simultaneously. These advances expanded the boundaries of transplantation from organ replacement to true systemic rescue.

Another defining aspect of Dr. Kato's work is his role in managing extreme complexity and re-transplantation. Many patients referred for care had exhausted conventional options, often after prior failed transplants or extensive abdominal surgery. Dr. Kato's experience in these settings reinforced the importance of individualized planning, adaptability in the operating room, and comprehensive multidisciplinary support.



Dr. Tomoaki Kato

His work helped establish that even the most challenging cases could be approached with rigor rather than resignation.

Equally important is Dr. Kato's influence as an educator and program builder. He has played a major role in training surgeons, physicians, and transplant teams in the management of pediatric, living donor, and multi-organ transplantation. His emphasis on preparation, systems-based care, and honest outcome assessment helped shape transplant programs capable of sustaining high-volume, high-complexity practice. Through mentorship and leadership, his impact extends far beyond individual operations. In the broader history of liver transplantation, Dr. Tomoaki Kato represents the modern pioneer—one who built upon the foundational work of earlier generations while confronting the realities of contemporary medicine: organ scarcity, rising complexity, ethical responsibility, and the need for durable long-term outcomes. His career illustrates how transplantation evolved from isolated organ replacement into a discipline capable of restoring entire physiologic systems.

Today, multi-organ transplantation stands as one of the clearest expressions of how far the field has progressed. Dr. Kato's contributions to this evolution underscore a central truth of transplantation history: progress is measured not only by survival, but by the courage to confront complexity in service of patients who otherwise have no path forward.



Dr. Jean Emond

### Dr. Jean Emond: Precision, Leadership, and the Evolution of Modern Liver Transplantation

Dr. Jean Emond is widely recognized as one of the leading figures in contemporary liver transplantation, known for his contributions to complex transplant surgery, program leadership, and the advancement of multidisciplinary transplant care. His work reflects the maturation of liver transplantation from a pioneering endeavor into a highly structured, outcomes-driven discipline capable of addressing the most challenging clinical cases.

A defining aspect of Dr. Emond's career has been his role in advancing complex adult and pediatric liver transplantation. These procedures demand exceptional technical skill, careful operative planning, and seamless coordination among surgical, medical, and critical care teams. Dr. Emond's approach emphasized anatomical precision, thoughtful patient selection, and rigorous perioperative management—principles that helped improve safety and reproducibility in high-risk transplant cases.

Dr. Emond also played an important role in refining living donor liver transplantation, an area that requires balancing innovation with ethical responsibility. Living donation expands access to transplantation but places healthy donors at risk, making meticulous evaluation and surgical discipline essential. His work reinforced the importance of donor safety, transparent decision-making, and long-term follow-up, helping strengthen public trust in living donor programs.

Beyond technical contributions, Dr. Emond is particularly respected as a program builder and institutional leader. Successful liver transplant programs depend on more than individual surgical expertise; they require systems that integrate hepatology, anesthesia, intensive care, pathology, nursing, and transplant coordination. Dr. Emond's leadership helped shape transplant centers that function as cohesive units, capable of delivering consistent, high-quality care across the full transplant continuum.

Education and mentorship have been central to Dr. Emond's influence. Through training surgeons and multidisciplinary professionals, he contributed to the development of future leaders in transplantation. His emphasis on preparation, judgment, and accountability helped instill a culture in which innovation is guided by evidence and responsibility rather than technical ambition alone.

Dr. Emond's work also reflects a commitment to ethical stewardship in transplantation. As the field expanded and patient populations became more complex, he supported frameworks that emphasized equitable access, outcome transparency, and continuous quality improvement. These values are essential in a discipline where resource scarcity and public trust remain defining challenges.

In the broader history of liver transplantation, Dr. Jean Emond represents the bridge between pioneering innovation and modern excellence. Building on the foundations laid by earlier transplant pioneers, he helped refine liver transplantation into a disciplined, team-based practice capable of managing complexity while maintaining patient safety and long-term outcomes.

Today, the principles Dr. Emond championed—precision, collaboration, mentorship, and ethical responsibility—remain embedded in modern transplant care. His legacy is reflected not only in successful transplants, but in the programs, professionals, and systems that continue to carry liver transplantation forward.

# Recipe Time

## **The Health Benefits of Tofu: A Nutrient-Dense Plant Protein**

Tofu, derived from soybeans, has been a staple of traditional Asian diets for centuries and has gained global recognition as a versatile, nutrient-dense food. From a health perspective, tofu offers a unique combination of high-quality protein, beneficial fats, and bioactive compounds that support metabolic, cardiovascular, and overall health.

One of tofu's primary benefits is its complete protein content. Unlike many plant-based foods, tofu contains all nine essential amino acids, making it an excellent protein source for vegetarians, vegans, and individuals seeking to reduce animal protein intake. Adequate protein intake supports muscle maintenance, immune function, wound healing, and metabolic stability—particularly important for aging populations and patients recovering from illness or surgery.

Tofu is also naturally low in saturated fat and cholesterol-free, characteristics associated with improved cardiovascular health.

Replacing higher-fat animal proteins with tofu may help reduce LDL cholesterol levels and improve lipid profiles. Population studies have linked regular soy consumption with lower rates of coronary heart disease, especially when soy replaces processed meats or high-fat dairy products.



A distinguishing feature of tofu is its content of isoflavones, plant-based compounds with estrogen-like activity. These phytoestrogens may help modulate hormonal balance, particularly in postmenopausal women. Isoflavones have been associated with reduced frequency of hot flashes, improved bone density, and potential protection against hormone-sensitive cancers when consumed as part of a balanced diet. Importantly, current evidence supports the safety of whole soy foods like tofu for most individuals, including those with a history of breast cancer, when consumed in moderation.

Bone health is another notable benefit. Tofu prepared with calcium sulfate can be a significant source of calcium, contributing to bone mineral density and helping reduce fracture risk. This is especially relevant for individuals who are lactose intolerant or avoid dairy. Additionally, tofu contains magnesium and phosphorus, minerals that play supportive roles in skeletal integrity. From a metabolic standpoint, tofu may support blood sugar control. Its low glycemic index and combination of protein and healthy fats help slow glucose absorption, making it a beneficial food for individuals with diabetes or insulin resistance. Soy protein has also been shown to modestly improve insulin sensitivity in some studies.

Tofu's anti-inflammatory and antioxidant properties further enhance its health profile. Isoflavones and other phytonutrients may help reduce oxidative stress and chronic inflammation, processes implicated in cardiovascular disease, neurodegeneration, and aging.

Finally, tofu is highly adaptable in the kitchen, absorbing flavors while maintaining a neutral base. This versatility encourages consistent consumption, which is key to realizing its long-term health benefits.

In summary, tofu is a nutrient-rich, heart-healthy protein source that supports muscle maintenance, metabolic health, bone strength, and cardiovascular function. When incorporated thoughtfully into a balanced diet, tofu offers meaningful health advantages across diverse populations.



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## CRISPY BAKED TOFU WITH GARLIC, GINGER, AND SOY



### Ingredients

- 1 block (14–16 oz) extra-firm tofu
- 2 tablespoons low-sodium soy sauce or tamari
- 1 tablespoon olive oil or avocado oil
- 1 tablespoon rice vinegar or lemon juice
- 1 teaspoon fresh grated ginger
- 1–2 cloves garlic, minced
- 1 teaspoon sesame oil (optional but recommended)
- 1 tablespoon cornstarch (for crispiness)
- Optional garnish: sesame seeds, scallions, chili flakes



### **Crispy Baked Tofu with Garlic, Ginger, and Soy**

*This recipe produces tofu that is crisp on the outside, tender inside, and deeply flavorful—without frying.*

*Nutrition Facts – Firm Tofu (Plain, Unseasoned)*

*Serving size: ½ cup (about 126 g / 4.4 oz)*

*Calories*

- ~180 kcal

*Macronutrients*

- Protein: 20 g
- Total Fat: 11 g
  - Saturated fat: 1.5–2 g
  - Polyunsaturated fat: ~6 g
  - Monounsaturated fat: ~2 g
- Carbohydrates: 4 g
  - Dietary fiber: 2 g
  - Sugars: <1 g
- Cholesterol: 0 mg

*Micronutrients*

- Calcium: 250–350 mg (25–35% DV)\*
- Iron: 3–4 mg (15–25% DV)
- Magnesium: ~65 mg (15% DV)
- Phosphorus: ~275 mg (20% DV)
- Potassium: ~350 mg (8–10% DV)
- Zinc: ~2 mg (15–20% DV)

*\*Higher when tofu is made with calcium sulfate.*

*Other Notable Components*

- Isoflavones (soy phytoestrogens): ~20–25 mg
- Sodium: ~15 mg (plain tofu; seasoned versions are higher)

*Why These Numbers Matter*

- High-quality complete protein supports muscle, wound healing, and immune function
- Low saturated fat and no cholesterol support cardiovascular health
- Calcium-rich (when prepared with calcium sulfate) supports bone health
- Low carbohydrate and low glycemic index, beneficial for diabetes and metabolic health
- Naturally low sodium, important for liver, cardiac, and transplant patients

## Instructions

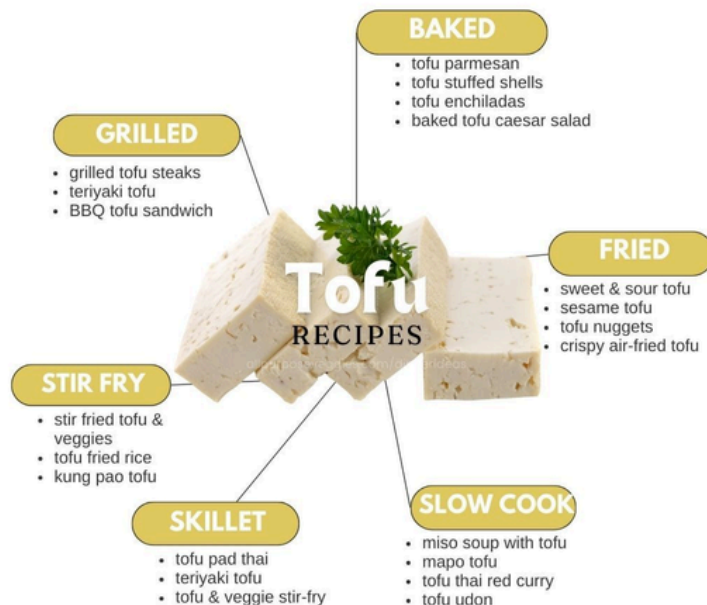
1. Press the tofu
2. Drain tofu and press for 20–30 minutes (use a tofu press or wrap in a towel with a weight on top). This step is critical for good texture.
3. Preheat oven
4. Set oven to 400°F (205°C). Line a baking sheet with parchment paper.
5. Cut the tofu
6. Slice tofu into 1-inch cubes or rectangles.
7. Prepare the marinade
8. In a bowl, whisk soy sauce, olive oil, vinegar, ginger, garlic, and sesame oil.
9. Marinate
10. Gently toss tofu in the marinade. Let sit for 10–20 minutes (longer if time allows).
11. Add cornstarch
12. Sprinkle cornstarch over the tofu and toss gently until lightly coated. This creates a crisp exterior.
13. Bake
14. Spread tofu in a single layer on the baking sheet.
15. Bake for 25–30 minutes, flipping halfway, until golden and crisp.
16. Finish and serve
17. Garnish as desired. Serve hot.

## Serving Ideas

- Over brown rice or quinoa
- In a stir-fry with broccoli and bell peppers
- On a salad with sesame dressing
- In a grain bowl with roasted vegetables

## Why This Recipe Works

- Baking avoids excess oil while still achieving crispness
- Ginger and garlic enhance digestion and flavor
- High protein, low saturated fat, and adaptable to low-sodium diets

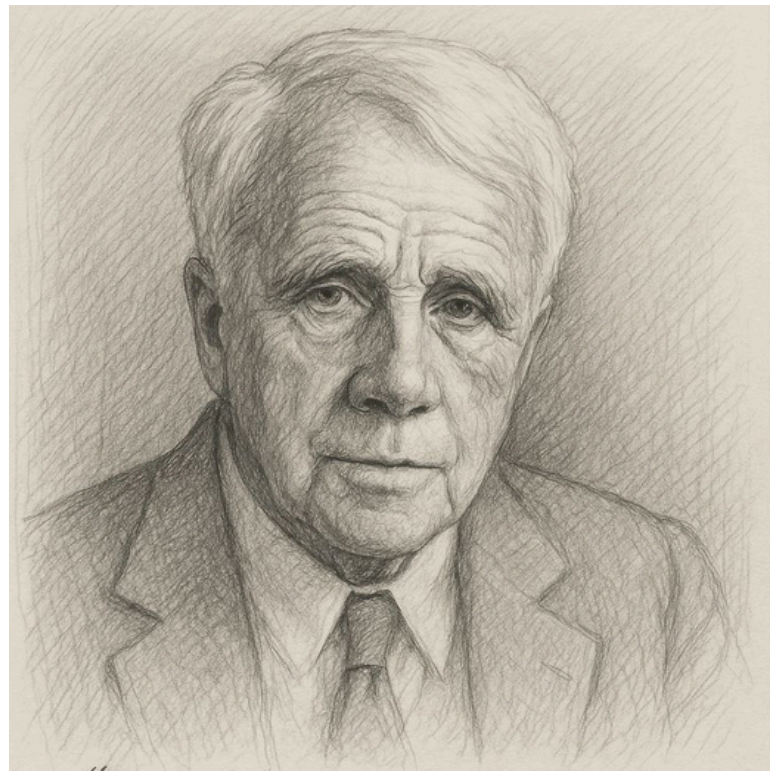


HAPPINESS MAKES UP IN  
HEIGHT FOR WHAT IT LACKS  
IN LENGTH.  
— ROBERT FROST

### The Work They Chose

They stood where maps ran thin,  
at the edge of what the body would allow,  
where the liver—dark, tireless—  
had finally laid its burden down.  
No banners marked the clearing.  
Only tables, light, and hands  
that knew the weight of waiting  
and the cost of saying try.  
They learned by winter work,  
by failures buried under charts,  
by nights when monitors spoke softly  
and hope had to be built again by morning.  
The path was not a straight one.  
It bent around loss,  
cut through doubt,  
crossed rivers of blood and silence  
where names were written once  
and never again.  
Some split the field so two could eat.  
Some borrowed from the living  
with vows heavier than steel.  
Some stitched more than one ending  
into a single body  
and asked it to believe in morning.  
They argued with the immune storm,  
with time, with scarcity,  
with the old rule that one failing part  
must take the whole with it.  
They did not always win.  
They learned how to lose  
and return.  
What they left us was not just a way  
to move flesh for flesh,  
but a grammar of care—  
how surgeons speak to hepatologists,  
how nurses listen for the unsayable,  
how teams become something steadier  
than any single hand.  
Now the work is quieter.  
The road is marked.  
The tools are better named.

But the clearing remains,  
and every operation steps back into it  
where the question is still asked:  
Will this body take the gift?  
The pioneers are not gone.  
They are in the pause before incision,  
in the checklist spoken slowly,  
in the knowledge that failure teaches  
if you are willing to stay.  
They chose the long work—  
not to conquer death,  
but to bargain with it honestly,  
one life at a time,  
and leave the path open  
for those who follow.



“In three words I can  
sum up everything  
I’ve learned about life:  
it goes on.”

— Robert Frost