

ezine ifssh

CONNECTING OUR GLOBAL HAND SURGERY FAMILY

MULTIDISCIPLINARY
TEAM APPROACH

IFSSH FINANCIAL
SPONSORSHIPS

Sensory Rehabilitation



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The importance of a team effort for patient restoration

Hand therapists are, unfortunately, still not recognized by some doctors and administrators as an essential part of the team for the optimal management of hand patients.

At a recent symposium I was involved in, the role of hand therapy from both a surgeon's and a therapist's perspective of patient rehabilitation was thoroughly analysed. The conclusion was that one cannot expect the best results for the patient without the other, with many examples given as evidence. It was also emphasized that both professions should be involved right from the beginning, and not one after the other.

The term "rehabilitation" may imply that hand therapy starts after surgery. Since this should not be the case, a better term might be "restoration," which suggests a more holistic approach - a planning together from the beginning to restore the misfortune of the patient.

Hence the importance of combined hand surgery and hand therapy meetings, discussions, symposia, and congresses. This promotes mutual understanding and fosters a common language.

The Ezine has always promoted this interaction by including practical hand therapy contributions in every issue.

"Together we get better results."



ULRICH MENNEN
Editor

President's Message

Expanding our Circle of Impact

Recently I was reading the book, 'Moral Ambition' by Rutger Bregman. One of the chapters started with this primer – Remember sitting in history, thinking: 'If I was alive then, I would have..... You are alive now. Whatever you are doing is what you would have done' (David Slack, a television writer and producer). This tells us that no time could be lost if doing a right thing. As I read that, I thought it could be a good start to write on our IFSSH Patron of Hand Surgery program. The IFSSH stands for improving hand surgery care across the world. This we do through education and training. It can happen only through adequate funding. While we can transfer information using technology without much cost, for improving skill levels we need funding.

There appears to be no substitute for being with a mentor, observing in person the thought processes that go into assessing patient presentations, choosing and executing a surgical procedure. The IFSSH funds the Harold Kleinert Visiting Professor program whereby a doyen in the field travels to another country and spends time with young hand surgeons. When Steven Moran visited centers in Australia and Jin Bo Tang visited Poland, the impact was perceivable. In the recently concluded APFSSH Congress in Mumbai, an US \$ 10,000 grant from the IFSSH helped make all the workshops free and it was a great bonanza for young surgeons. The halls were packed to capacity which might not have occurred if we were to charge registration fees for each of the workshops. The young delegates had so many take-home messages from the workshops. I am sure this will have a great positive impact in the outcomes of the patients they treat.

At Ganga we have been privileged to play host to so many young surgeons who visit us, some for a short term and some in the longer term.

Talking to surgeons and trainees from LMIC countries where there are no organised hand surgery services has made me realise that their needs go beyond providing access to hand surgery knowledge and skilling them. As pioneers in their areas, they need to bring up a Hand Therapy department, organise splint making facilities, social rehabilitation programs and, more importantly, champion the need and role of hand surgery in the community so that they are able to raise some funds locally to sustain the efforts. This training in leadership skills is again important. Once that is achieved, I am sure our efforts will bear fruit. Countries which do not have hand surgery societies will have them formed, and access to quality hand surgery to the millions who are less privileged will be achieved. The IFSSH Officers plan to have a full day strategy meeting when we meet in Basel on the sidelines of the FESSH 2026. We will discuss such issues and take them forward.

Until then, let each one of us make a small step forward by contributing to the IFSSH Patron of Hand Surgery program. Then if you are sitting in history and ask the question, 'If I was alive then, I would have' you will find that you have some good answers. Please visit the IFSSH website - www.ifssh.info - click on the Patron page and become a contributor. There could never be a better time than 'now' to do a good thing.



S. RAJA SABAPATHY
President: IFSSH

Message from the Secretary-General



Dear Colleagues,

It is autumn here in the Northern Hemisphere reminding us that the next IFSSH-IFSHT Congress is exactly 3 years away. Our Singapore colleagues have already started their well-planned preparations for this congress. Before this, we have another major event: the 2nd IFSSH Mid-Term Course in Hand Surgery, which is only 1.5 years away in Italy. The IFSSH Executive Committee has great pleasure in seeing the planned structures and contents of the Course and we wish that many colleagues around the world will go to Venice in early April of 2027! From there we can make plans to meet again in Singapore in October of 2028.

The educational impact of IFSSH is growing faster every year. The workshops sponsored by IFSSH in the recent APFSSH Congress (Mumbai, India) were well-executed with very positive feedback. A course in Burundi, Africa, also sponsored by the IFSSH, will be held later this month. I am happy to see the educational activities are spreading across different regions.

While writing this, I am preparing for a return visit to Poland (8-14 October 2025), which is an invitation that I got during my IFSSH Harold Kleinert Visiting Professorship to Poland two years ago (16 September - 3 October 2023). This is truly a symbol and demonstration of the power of the Kleinert Visiting Professorship. The bond and friendship, and professional ties continue beyond the period of the Visiting Professorship to become long-lasting professional and personal relationships.

I look forward to seeing many colleagues in Poland and the beautiful Polish autumn again after two years.

I welcome any suggestions and communications to further the mission and impact of IFSSH and wish you all enjoy the beautiful change in seasons in your part of the world.

Welcome: Jordan Group for Hand and Upper Limb Surgery

Earlier this year the Jordan Group for Hand and Upper Limb Surgery submitted an application for IFSSH membership. The IFSSH Delegates' Council unanimously voted to accept the Jordan Group as an IFSSH Member Society at the 2025 annual meeting.

The Jordan Group was established in 2018 and has grown to 36 members. Dr Waleed Haddad is the current President, Dr Saab Mestarihi is the Secretary, and Dr Ghandi Almanasir will participate in the IFSSH Delegates' Council as their inaugural IFSSH Delegate.

We extend a warm welcome to all members of the Jordan Group for Hand and Upper Limb Surgery. This increases the IFSSH membership to now include [65 member societies from 63 countries](#).



2025-2028 IFSSH Committee Structure

IFSSH President, S. Raja Sabapathy, has determined that this triennium's work will be led by six committees:

1. IFSSH Nominating Committee - Chair: Daniel Nagle, Immediate Past-President
2. IFSSH Committee for Educational Sponsorship - Chair: David Warwick, President-Elect
3. IFSSH Philanthropy Committee - Chair: Steven Moran, IFSSH ExCo Member-at-Large (North and Central America)
4. IFSSH Membership Committee - Chair: Ilse Degreef, IFSSH ExCo Member-at-Large (Europe and Africa)
5. IFSSH Committee for Educational Course Organisation - Chair: Jonathan Hobby, IFSSH ExCo Member-at-Large (Europe and Africa)
6. IFSSH Committee for Educational Resources - Chair: Satoshi Ichihara, IFSSH ExCo Member-at-Large (Asian-Pacific)

The first three of these are existing IFSSH committees, the latter three are new initiatives for the 2025-2028 triennium. These committees will steer the IFSSH to grow its potential membership, increase its treasury, optimise its educational activities to reach and support hand surgeons worldwide, and guide its future.

The committees will report to the IFSSH Delegates at annual Council meetings and to the international hand surgery community through the Ezine and IFSSH events.

If you have ideas or feedback, please contact the committees through the IFSSH secretariat: administration@ifssh.info.

IFSSH Committee for Educational Sponsorship

The IFSSH Committee for Educational Sponsorship (CES) continues to receive and review requests for educational funding. This is granted on a competitive basis. The CES has recently awarded two grants:

APFSSH Congress: Workshop accessibility – September 2025, Mumbai, India

\$10,000 was provided to the APFSSH in conjunction with the Indian Society for Surgery of the Hand as local hosts. Eight pre-congress workshops were held in Mumbai. The \$10,000 from the IFSSH allowed for 210 delegates from 17 countries to participate in the workshops, free of charge. These 210 participants take their increased knowledge and skills back to their 17 countries and share it with their colleagues and trainees, improving the hand surgery care of countless patients. The IFSSH commends the APFSSH and ISSH hosts on this model of disseminating knowledge and utilising educational sponsorship funds to educate many. A full report of the workshops is available in the November issue of the IFSSH Ezine.

WALANT Course – November 2025, Bujumbura, Burundi

Following an incredibly successful series of IFSSH supported courses in Kenya, Dr Don Lalonde (Canada) and Professor Pankaj Jani (Past President, College of Surgeons of East, Central and Southern Africa (COSECSA)) have again joined forces to introduce a WALANT workshop to Burundi. \$10,000 from the IFSSH has been allocated to invite as many surgeons as possible to attend, free of charge, this workshop (a pre-COSECSA Congress event) from neighbouring East Central African countries, with the vision of expanding the use of WALANT and minor procedure room surgery. These workshops have had a great impact across Central Africa already and have improved access for hand surgery patient care. We wish Dr Lalonde and Prof Jani a fruitful trip to Burundi. A report will be shared in the February 2026 IFSSH Ezine.

Please continue to submit applications of worthy educational projects from your society. General funding can support educational projects of varying size and cost, from a single society or a collaborative effort, for work occurring in your home country or as outreach.

The [recipient reports](#) may provide your society with inspiration of what can be achieved with financial support from the IFSSH. Please review the application process within the [IFSSH CES guidelines](#). If you have an idea and wish to discuss opportunities, please contact the IFSSH secretariat – administration@ifssh.info.

IFSSH Patron of Hand Surgery program

The IFSSH is a not-for-profit organization. Your support is invaluable to our mission of advancing hand surgery worldwide and improving patient care.



- Donations directly impact our ability to:
- fund a broad range of educational initiatives for hand surgeons and our hand therapy colleagues;
 - organise international and regional conferences, courses and workshops for knowledge exchange;
 - enable access to collaborative and sub-specialty meetings worldwide;
 - support traveling fellowship programs for young surgeons; and
 - provide resources for ongoing professional development, such as the Hand Surgery Resource.

Please consider donating through the IFSSH Patron of Hand Surgery program to support global hand surgery education. We acknowledge the generosity of all IFSSH Patrons of Hand Surgery to date.

Future Meetings

A detailed list of national and regional hand surgery meetings is available on the IFSSH website. The IFSSH Courses and Congresses are as follows:



2nd IFSSH Mid-Term Course in Hand Surgery
4th-8th April, 2027
Venice, Italy
www.congressworks.com/venice2027



17th IFSSH - 14th IFSHT Congress
23rd – 27th October, 2028
Singapore
www.ifssh-ifsht2028.org



18th IFSSH - 15th IFSHT Congress
2031 (dates TBC) Rio de Janeiro, Brazil



JIN BO TANG
Secretary-General: IFSSH
Email: administration@ifssh.info
Web: www.ifssh.info
X/Instagram: @IFSSHand

Celebrating Our Patrons

Advancing Hand Surgery Worldwide

The International Federation of Societies for Surgery of the Hand (IFSSH) is proud to recognize the most recent donors to the **IFSSH Patron of Hand Surgery program** – an initiative dedicated to expanding global access to hand surgery education. Thanks to their generosity, the IFSSH continues to support and extend its educational offering. In particular, young surgeons from resource-limited regions are gaining life-changing opportunities to attend international congresses, participate in hands-on workshops, and bring new skills back to their communities. Past recipients hail from Nepal to Switzerland, from Ghana to Singapore, and from Mongolia to Brazil. Embedded workshops and outreach programs span from Hungary to India, and from Kenya to Cambodia. Reports detail transformative experiences that have led to new local training programs, clinics, and mentorship networks.

Recent supporters have joined at the **Gold, Platinum** and even **Super Platinum** levels, demonstrating an inspiring commitment to the future of our specialty. Their gifts fund fellowships, visiting professorships, outreach programs, and educational resources that are transforming care. We invite you to join them. By becoming a Patron, you can help ensure that excellence in hand surgery transcends borders and impacts patients worldwide.

Donation levels	Upper-middle and high income countries (World Bank definition)	Low and lower-middle income countries (LMIC) (World Bank definition)
Super platinum	\$25,000	\$12,500
Platinum	\$10,000	\$5,000
Gold	\$5,000	\$2,500
Silver	\$2,000	\$1,000
Bronze	\$1,000	\$500



We acknowledge the generous donations to date and thank the donors for their commitment to furthering the work of the IFSSH:

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Dr Daniel Nagle – USA
Prof Gregory Bain – Australia
Gold
Dr Praveen Bhardwaj – India
Dr L. Scott Levin – USA
Silver
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Dr Hari Venkatramani – India
Dr Lax Bhandari – India
Dr Jing Chen – China.
Alejandro Badia, M.D. – USA
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Letters to the Editor

Personal Celebration

To the Editor,

I am sending this photo of my 95th birthday celebration on 18 May 2025 at my daughter Francesca's country house in Tuscany. The photo was taken the moment she brought the birthday cake!

Present were a group of Italian Hand Surgeons who were my pupils. Marked no 1 is Roberto Adani who was honoured "Giant in Hand Surgery" by FESSH in 2024, marked no 2 and 3 are Riccardo Luchetti and Massimo Ceruso respectively, who were honoured IFSSH "Pioneer of Hand Surgery" in 2025.

Unfortunately, not present, was another old pupil of mine, Antonio Landi, who received the same honour in 2025.

Warm greetings,

PROF. PAOLO BEDESCHI

(IFSSH "Pioneer of Hand Surgery" 2001).



PAIN - Response To Editorial IFSSH Ezine August 2025 # 59

Pain—Do We Truly Appreciate Its Impact?

Pain is the most common symptom that drives patients to seek medical attention.

Pain is subjective, yet undeniably real. It cannot be measured objectively, but its presence is genuine. How does one articulate such a deeply personal sensation of discomfort? It is profoundly individual, inherently emotional, and affects a person's entire being—particularly when it becomes chronic. When pain persists relentlessly, it transforms into the individual's "new normal," bringing with it an entirely new set of emotional and physical manifestations.

Pain is debilitating. It influences our emotions, judgment, decision-making, attitude, concentration, motivation, goodwill, and even our short-term personality. Sometimes, its intensity is so overwhelming that it consumes the mind, clouding thoughts, and perception. It can limit mobility, reduce energy, and disrupt sleep. Referred pain can further complicate and confuse the experience, as its origin may be misunderstood, leading to misdiagnosis or ineffective treatment.

I speak from experience.

Do we, as healthcare professionals, truly account for these emotional dimensions when assessing patients? Do we take the time to discuss pain in detail with those who seek our help?

We must recognise that simply explaining the cause and origin of pain can alleviate much of a patient's uncertainty, irritability, anxiety, and depression—

almost as if the brain undergoes a recalibration or a reset. A little patience, understanding the interconnection between body and mind, and compassion can often be more beneficial to our patient, than an excessive reliance on medication.

In my own case, the doctor's primary concern was locating the pain to justify ordering an investigative test. There was no discussion regarding the character, type, or intensity of the pain.

Over many years of attending medical conferences, I cannot recall a seminar or roundtable discussion specifically dedicated to the topic of pain in hand surgery.

As healthcare professionals, do we possess the necessary insight and willingness to truly understand and empathise with our patients? Should we not integrate the study and understanding of pain as a fundamental component of hand surgery education?

Your thoughts?



ULRICH MENNEN
Editor

I read with great interest your last editorial in Ezine about pain.

You probably remember I contributed some years ago about CRPS and related pain. You are totally right to raise the questions and to state: 'I speak from experience'.

This is a major point: when the doctor becomes himself a patient, the manifestation of pain becomes of utmost interest—because it is real, disturbing, so negative.

I totally agree with everything you have written— and observed frequently that as doctors we accept certain pain descriptions (those which fit our textbooks and related diagnoses) and become reluctant when the patient behaves or speaks differently. Then, we try often to give it back in a strange way: "this does not correlate to what we know", "this description does not fit our normal patterns".

We don't "believe" the patient's story, or we consider he is crazy in some way. We are getting tired to listen to those stories.

It is well known that even the telling of the symptom pain, in own words, with a respectful audience, gives the patient some relief. I now give every patient time and room to tell his pain story, in his words, and I put additional questions if I feel it should be more developed. Frequently, at the end of consultation, the patient acknowledges with words like "nobody took the time to listen", "thank you for having listened to me". It has been proven that especially in neuropathic pain this attitude is already a therapeutic step.

In hand surgery, pain may be the leading argument for a surgical intervention (severe joint arthritis, nerve entrapment, deep infection, etc). On the other hand, it might be a difficult outcome parameter: the patient will judge the benefit from surgery through the reduction or disappearance of pain. Operating on a neuroma thus may be challenging and the long-term outcome not foreseen.

In this last Ezine, I also found an announcement of a congress in Madrid chaired by Paco Pinal, a well-respected and esteemed Spanish hand surgeon who worked a lot on CRPS and the "dust bin" of unsolved pain issues in the hand and upper limb. He is certainly right that some pain issues may be addressed by proper diagnosis and surgery (eg. carpal tunnel release), but he also reminds us that 'we doctors are not in the patient's brain'.

Pain memory is a terrible physiologic "tool"— as it may keep the symptom, even if the origin of pain has disappeared. Our mental and emotional status will influence this memory; and often hand pain is a way to announce a physical inability where the person would like to say for example: "I hate my job" but is not allowed to because of his family, the social status, or some psychological conflicts.

You are right to point that there was not one seminar with a round table about pain issues. The Ezine could easily offer such a platform.

We would be delighted to learn how differently pain is perceived in different countries and various cultures; how it impacts on work and leisure activities and how doctors behave, and patients seek help outside scientific medicine.

“when the doctor becomes himself a patient, the manifestation of pain becomes of utmost interest because it is real, disturbing, so negative”

I do hope you get a lot of replies and that you feel the energy to put those answers into a written round table and then present it in one of the next issues of our Ezine.

I send you my best respectful wishes and thank you for the opportunity to regularly read the news your Ezine spreads all over the world.

Very sincerely yours,

JÖRG BAHM MD PhD
Senior Consultant
Sektion Plexuschirurgie

Jörg Bahm Klinik für Plastische Chirurgie,
Hand- und Verbrennungschirurgie

Tel.: +49 (0) 241 80-89 702
Fax: +49 (0) 241 80-82 448
E-Mail: jbahm@ukaachen.de

Homepage: [Klinik für Plastische Chirurgie, Hand- und Verbrennungschirurgie](http://Klinik-für-Plastische-Chirurgie-Hand-und-Verbrennungschirurgie)

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IFSSH EZINE EDITORIAL TEAM:

EDITOR:
Professor Ulrich Mennen
Past Pres. and Pioneer: IFSSH

DEPUTY EDITOR:
Professor Michael Tonkin
Past Pres. and Pioneer: IFSSH

GRAPHIC DESIGNER:
Tamrin Hansen
www.foxydesign.co.za
TO SUBSCRIBE GO TO:
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2nd IFSSH Mid-Term Course in Hand Surgery

Venice, Italy | 4-8 April 2027

www.ifsshvenice2027.com | Instagram: [@ifsshvenice2027](https://www.instagram.com/ifsshvenice2027)



500 Days to Venice

500 days. As of 20 November 2025, that's all that separates us from one of the most promising educational events in international hand surgery: the 2nd IFSSH Mid-Term Course, to be held in Venice, from 4-8 April 2027.

The countdown has begun, and we invite the global hand surgery community to save the date, register early, and stay updated as the scientific and social programs continue to develop.

A Scientific Program Tailored to You

The 2nd Mid-Term Course Scientific Committee, in close collaboration with the members of newly established IFSSH Committee for Educational Course Organisation – Chaired by Jonathan Hobby, with Jin Bo Tang, and Fidel Cayon – is working intensively to craft a program that is practical, inclusive, and future-oriented.

The program will be highly interactive, with plenty of time for discussion and open exchange of perspectives. Dedicated sessions titled “Clinical Challenges and Surgical Solutions” have been introduced to foster active participation. Participants will contribute directly by discussing complex clinical cases and surgical strategies alongside international experts.

The morning plenary sessions, led by internationally renowned faculty and coordinated by the Italian Scientific Committee, will cover the core knowledge of hand surgery, offering in-depth insights into the most debated topics and recent innovations across the following areas:

1. From Fracture Management to Reconstruction in Hand and Wrist Trauma
2. Management of the Degenerative Hand and Wrist
3. Wrist and Small Joint Arthroscopy
4. Tendon Repair and Reconstruction
5. Brachial Plexus and Peripheral Nerve Surgery
6. Microsurgical Reconstruction in Trauma and Tumours
7. Congenital Hand and Paediatric Trauma
8. Dupuytren’s Disease and Tenosynovitis

The format emphasises interaction and customisation, with afternoon sessions including Expert Panels, Case Discussions, Focus Sessions, and Hands-On Workshops. Participants will be able to build their own modular tracks that best reflect their personal interests, clinical focus, and professional goals.



The Darsena Hall of the Palazzo del Cinema: The iconic stage of the Venice Film Festival, soon home to the 2nd IFSSH Mid-Term Course



Magic evening in Venice: a rare moment when the Dolomites appear behind St Mrk’s Square — a stunning view called “Stravedamento” (Credits: Davide Busetto)

Stay Connected

With only 500 days to go, every month, every week will bring new updates: confirmed speakers, workshop details, practical information, and registration news.

Don’t miss out: Sign up for the newsletter at www.ifsshvenice2027.com
Follow us on Instagram: [@ifsshvenice2027](https://www.instagram.com/ifsshvenice2027)

Be part of this journey from the beginning.

ANDREA ATZEI

Chair - IFSSH 2nd Mid-Term Course in Hand Surgery, Venice 2027



17th IFSSH-IFSHT Singapore 2028:

Towards Sustainable Hand Surgery and Therapy

The countdown begins - 3 years to go!

Three years from now, on 23 October 2028, we will meet in Singapore for a congress that blends science, sustainability, and cultural richness. We are excited to share more about the journey ahead.

A Congress with Purpose

The theme for IFSSH-IFSHT 2028 is, "Towards Sustainable Hand Surgery and Therapy", reflects our commitment to the future of our specialties. Singapore is a fitting host city: innovative, resourceful, and forward-looking.

Together, we will address how hand surgery and therapy can evolve responsibly to meet the needs of tomorrow.



In 2028, we will explore sustainability across multiple dimensions:

- Clinical practice: Techniques that balance excellence with efficiency and equity.
- Education: Building enduring systems of knowledge transfer for the next generation.
- Technology: Harnessing innovation while ensuring accessibility worldwide.

Beyond the Operating Room

A congress is also a time to celebrate culture and connection. Singapore offers just that - especially in October. Mid-Autumn Festivals include lantern displays, mooncakes, and family traditions.

- Deepavali (Festival of Lights): A spectacular celebration in Little India, with streets illuminated in vibrant colors.
- City-wide light-ups: Chinatown and Gardens by the Bay come alive with dazzling displays.

Come to Singapore to experience these festivities in October 2028—a perfect backdrop for our global gathering.

Stay Informed

- Visit our website at www.ifssh-ifsht2028.org and sign-up to our newsletter!
- Follow us on Instagram [@ifssh_ifsht2028](https://www.instagram.com/ifssh_ifsht2028) for news and inspiration!

Warm regards,

THE IFSSH-IFSHT 2028 SINGAPORE ORGANISING COMMITTEE



Workshops conducted during the APFSSH 2025 Congress in Mumbai

10 September 2025. The Westin Mumbai Powai Lake, Mumbai. India

From 10 to 13 September 2025 in Mumbai, the Asian-Pacific Federation of Societies for Surgery of the Hand (APFSSH) with 19 member nations held its 14th Biennial Congress along with the 12th Annual Congress of Asian-Pacific Federation of Societies for Hand Therapy (APFSHT) and 10th Annual Congress of Asian-Pacific Wrist Association (APWA). The meeting also combined with the 48th Annual Conference of the Indian Society for Surgery of the Hand (ISSH) and the 12th Annual Congress of Society for Hand Therapy India (SHTI).

The Congress was attended by 531 participants from 34 countries. It featured 163 invited faculty, 6 prestigious orations, 8 hands-on workshops, 14 morning master-classes, 90 ePosters, 125 free-papers, 8 engaging debates and 3 social events over dinners. The Congress was inaugurated by Mr Jeevesh Kushwah, a triple amputee who has received a double arm transplant.

The IFSSH Committee for Educational Sponsorship awarded financial support to conduct workshops for the benefit of 200 potential delegates at 8 hands-on workshops which were conducted as the opening event of the APFSSH 2025 Congress in Mumbai.

The workshops had a robust organisational structure:

- **In-Charge Workshop Group** - Dr Shailesh Gupta, who oversaw all the workshops and took reports from all the conveners.
- **Conveners** - Each workshop had one convener, who took care of all the logistics and coordinated with chair, co-chair and the faculty as well as the delegates.
- **Chair and Co-Chair** - were primarily in-charge of the workshop contents and communicated with the conveners about specific requirements.
- **Faculty** - who were involved in actual content delivery and interaction with the delegates at the work stations.
- **Industry Partners** – who provided the required materials for the hands-on workshops.

In addition to the Chair, Co-Chair and Conveners, a total of 60 faculty from different countries took part in the workshops. The faculty did not receive any sponsorship from the participating industry for their travel, stay or congress registration.

Two hundred and ten delegates from 17 countries participated in the workshops, registering online in advance. Delegates were **not charged any fee** for the workshops.

Here is a glimpse of the workshops in the words of a Chair, a Convener, and a Delegate:

Report by Course Chair: Mr. Sumedh Talwalkar, United Kingdom

Workshop: 3D Printing in Hand Surgery

The instructional workshop at APFSSH 2025 was a highly engaging and well-attended event, praised for its practical value, seamless organisation, and expert faculty.

The programme began with focused lectures covering principles of 3D planning, distal radius and forearm malunions, tumour reconstruction, and congenital deficiencies, delivered by an eminent international faculty. This was followed by an interactive hands-on session, where participants rotated through stations on distal radius, forearm malunions, and miscellaneous deformities. The small-group format ensured personalised learning and direct engagement with experts.

Key strengths included the integration of lectures with hands-on training, international perspectives, and consistently excellent participant feedback highlighting clarity, practicality, and interactivity.

The workshop was made possible through the support of KLS Martin, with special appreciation to Mr. Mirza, Mr. Johannes Winker, and their team. The Chairman acknowledged the contributions of the faculty and organisers, with particular gratitude to Dr. Nikita Shetty for her outstanding leadership and meticulous planning.



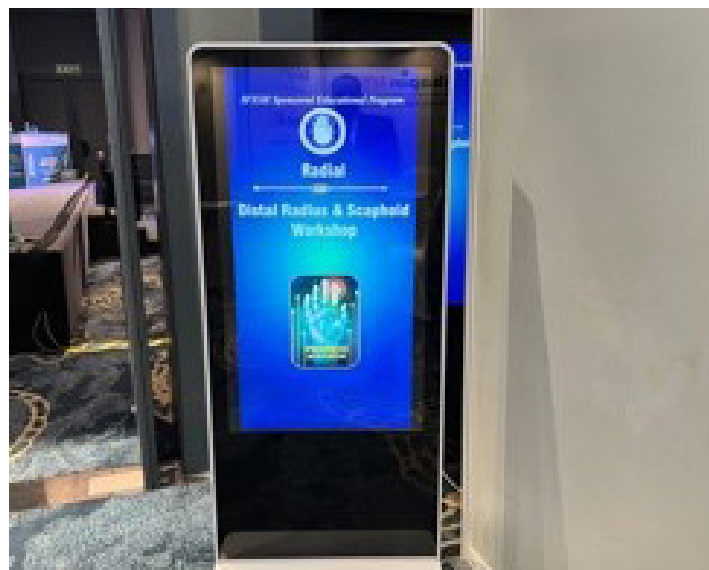
Report by Workshop Convener: Dr Prashant Kamble, Mumbai, India

Workshop: Distal Radius and Scaphoid Fracture Fixation

The Distal Radius and Scaphoid Workshop was successfully conducted with enthusiastic participation and valuable academic exchanges. Key highlights of the event are as follows:

- **Format and Stations:** 10 stations were set up, each accommodating two participants. The format included faculty demonstration followed by hands-on training.
- **Session Details:**
 1. Distal Radius Workshop- Focused on volar plating and dorsal plating techniques.
 2. Scaphoid Workshop- Began with faculty-led demonstration, followed by hands-on practice about headless compression screw fixation.

The workshop successfully met its objectives of enhancing surgical skills and promoting meaningful academic dialogue, as evidenced by post event interaction with the participants.



Report by Delegate: Dr. Ajin Edwin Hand Surgeon, Kerala, India

Workshop – Suture Anchors in Hand, Wrist and Elbow Surgery.



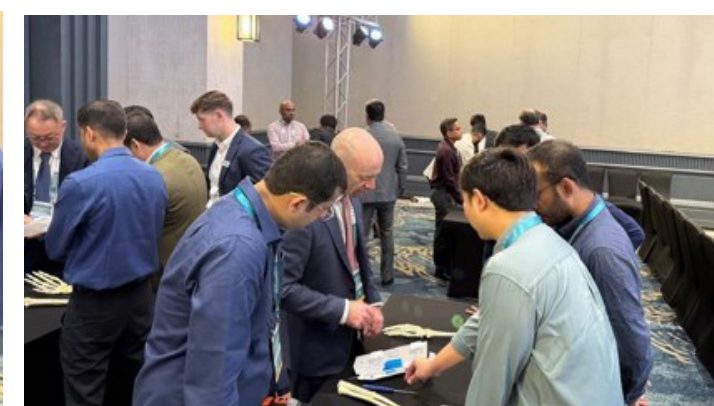
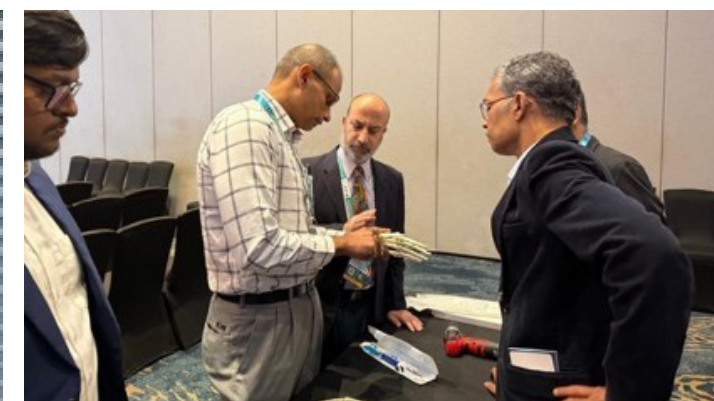
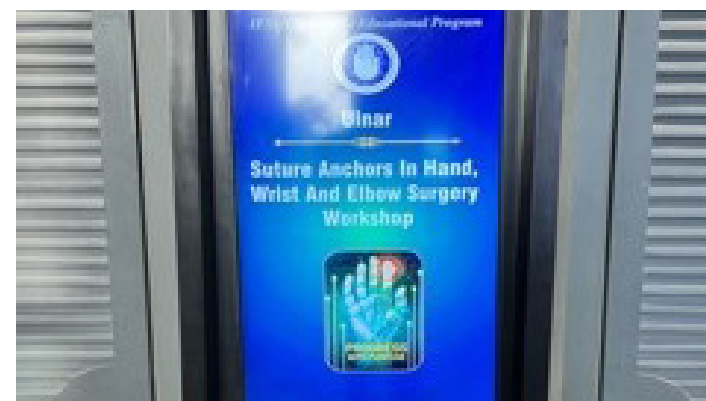
Reflections on the excellent Surgical Workshop at APFSSH 2025

I am writing to express my sincere appreciation for the outstanding "Suture Anchors in Hand, Wrist and Elbow" workshop conducted during the APFSSH 2025 conference.

The scientific program was exceptionally well-curated. It commenced with a foundational lecture by Professor Binu Thomas on the evolution and contemporary management strategies for thumb CMC joint arthritis, which was excellently complemented by a video demonstration of the tightrope procedure for the same condition.

The subsequent hands-on session provided invaluable practical experience in mini-tightrope application. Following this, a series of three insightful lectures were delivered. Dr. Ram Chidambaram (India) presented on the use of the Internal Brace™ system for thumb ulnar collateral ligament repair. This was followed by Dr. Simon Maclean (New Zealand), who detailed a technique for ligament augmentation with an all-dorsal approach for scapholunate ligament reconstruction using an internal brace. The session concluded with an advanced demonstration by Prof. Toshiyasu Nakamura on arthroscopic TFCC repair utilising suture anchors. Each topic was covered with remarkable depth and clarity, and the opportunity to practise these advanced techniques on the provided models was immensely beneficial for all delegates.

Thank you to the APFSSH and all the esteemed faculty members for providing such a valuable and educational opportunity. The workshop was a significant contribution to the continuing professional development of all attendees.



Glimpses from other workshops:



IFSSH Sponsorships

As President of the Indian Society for Surgery of the Hand (ISSH), the host Society which organised the APFSSH-APFSHT-APWA Congress of 2025 and as Organising Chairman of the said Congress, I sincerely thank the IFSSH Committee for the Educational Sponsorship and the IFSSH Executive Council for seeing merit in my application for sponsorship and offering US \$10,000 towards the sponsorship of these workshops.

Special thanks to Ms Belinda Smith, the Administrative Secretary of IFSSH, for her crisp communication and swift transfer of funds.

The workshops were received well by the youngsters who had the opportunity to learn from the global experts in a small group interaction format with Hands-on Training modules.

“The IFSSH Sponsorship ensured that we could offer these workshops without any costs to the 210 delegates”

The IFSSH Sponsorship ensured that we could offer these workshops without any additional costs to the delegates and could involve 84 faculty for 210 delegates, maintaining a very healthy learner-teacher ratio.

I am happy to provide more details about the workshops as may be required by the IFSSH.

With gratitude,

DR PANKAJ AHIRE,
Mumbai, India
27 September 2025

Recognising Touch

Films as therapeutic tool for re-learning sensibility in persons following peripheral nerve injuries to the hand and forearm.

In hand therapy clinics there has been a lack of available tools for training sensibility after peripheral nerve injury of the forearm (Rosén et al., 2003). The new theory of the plastic brain (which is no longer new!) emphasises training from early onset; multisensory and holistic training in a familiar context (Lundborg, 2003; Lundborg and Rosén, 2001; Rosén et al., 2015).

The objective was to embark on a film project to bridge this gap and create films to use as a training tool following peripheral nerve injury in the forearm. The film project was supported with funds from the Western Norway Region Health Authority and consists of film material aimed at patients and health professionals, specifically to consciously use other senses, and to assist in the patients' process of rehabilitation after nerve injuries.

The films are the product of innovative teamwork between an artist, two dancers, a film photographer, an occupational therapist and a plastic surgeon.

The Rationale: When the brain does not understand what the hand feels.

Knowledge of the plastic brain and cortical reorganisation in re-learning sensibility is essential for the development of this clinical tool (Lundborg, 2003; Nordmark et al., 2018).

The importance of conscious use of other senses, such as hearing, for developing tactile gnosis, is shown in the literature. (Rosen and Lundborg, 2007). Multisensory training with use of all senses involves sensory integration mechanisms. In addition, auditory stimulation can determine signal changes in somatosensory areas in the cortex (Mendes et al, 2013).

Training in daily activities

Focusing on gaining function through training in a natural, meaningful context of daily activities is central to occupational therapy theory (Fisher, 2013). Daily activities are seen as both being meaningful and end being part of the patients' needs and wishes for performing activities and participating in society. Several authors emphasise occupation-based interventions and assessments in hand therapy.

Occupational therapists working with hand injuries find occupation-based assessments and interventions to be more important in rehabilitation than some occupation-based interventions linked to the dominating medical and biomechanical industry. (Che Daud et al., 2015; Valdes et al., 2023; Ransby, T. B. et al., 2024; I., and Buchanan, H., 2024). Vikström et al. suggest training in daily activities to be more holistic and meaningful (Vikström, 2018; Vikström et al., 2018). The adaptation process of dealing with loss of function and strategies for coping is described in qualitative studies (Chemnitz, 2013).

Training cold sensitivity in the context of daily activities

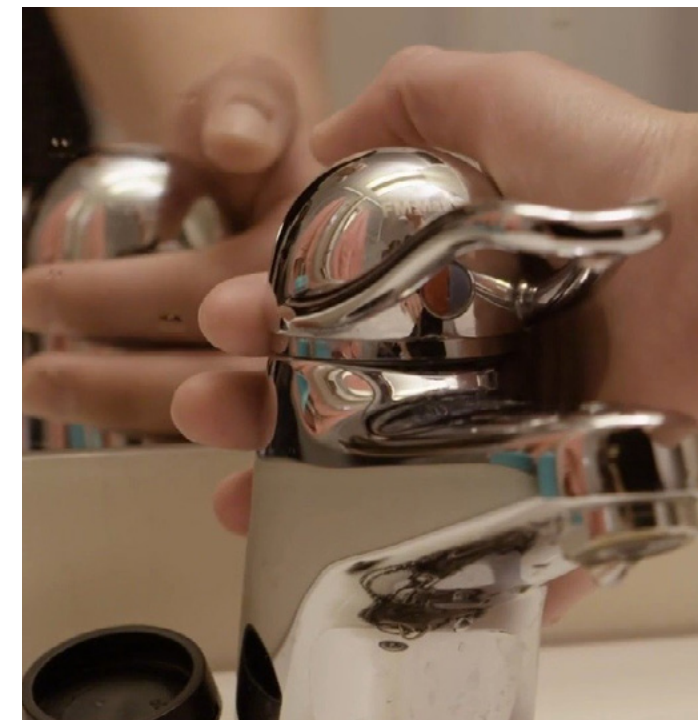
Cold sensitivity is a common, long-lasting problem for many patients which can be a barrier to participation in daily activities and work. (Frostadottir et al., 2022). Cold-induced pain is associated with higher scores of cold sensitivity and greater impact on quality of life (Carlsson et al., 2010; Novak & Mackinnon, 2016).

The films show and recommend training the senses of temperature (cold and warm), from early on just like training other aspects of sensory function.

Some studies focus on conditional behavioristic training of the cold sense. According to the theory of the plastic brain the cold sense should be trained in a natural context from early on. The films show activities that includes cold stimuli in a natural context and teaches patients to feel temperature with two hands or with both affected and unaffected fingers to contribute to relearning sensibility before pain and discomfort starts to evolve during re-innervation.



Using two hands, sight, touch, smell and hearing to feel again.



Touch cold items in a familiar context of daily living and attend to differences in temperatures.

Mentalisation and action observation

Another aspect of using films as tools for training sensibility is stimulating mirror neurons in the brain. Action observation has been shown to influence the motor cortex during immobilisation (Bassolino et al., 2014). Discomfort and disturbed sensation associated with the re-innervation process, is addressed in the films by highlighting pleasant touch.

The films can be used during phase 1 (the latent phase) of sensory re-learning from the onset of rehabilitation when there is no sensibility in the fingers, to activate the areas of the somatosensory cortex as well as during phase 2 when regeneration and re-innervation of the nerve is ongoing. It can be done in early rehabilitation without loading the hand, focusing on placing things in the affected hand, to touch and feel.

The films shows multi-sensory training, including auditory stimulation, cold sensitivity training and action observation in activities of daily living.



Recognise touch- feel again!

Materials and methods

The films were produced in collaboration with the following team: Else Leirvik (artist), Marie Ronold Mathiesen (dancer), Lene Aareskjold (dancer), Nils Petter Devold (film photographer), Torunn Nessa, Hand therapist, (occupational therapist), Zetlitz, Elisabeth, Ph.D., (Plastic-and hand surgeon)

First a test film of 15 min was made. The whole team tried to imagine how persons with nerve injury might experience their situation focusing on touch in daily activities. Patients and therapists participated in further development of the films. The test film was shown to four patients with traumatic injuries to N. ulnaris and N. medianus. They were asked for feedback on several aspects of the film. The recommendations were used in the production of further films. The film was also shown to hand therapists at the annual Seminar of Hand Therapy in Norway (2018) and feedback was obtained from the participants in the audience.



The film shows the joy of touching! (patient)

Innovation

Bringing other professions into the field of health and rehabilitation was one innovative part of the project. The artists brought their artistic tool of vulnerability and sensibility into the production of the films.

The expression "being touched" means being emotionally moved. This illuminates/ illustrates the sensitivity needed on all levels for relearning touch. Professional artists involved in innovative co-production of films added quality and value to the films and with further insight was gained by the patients who were presented to them.

Results

A therapists remarked after watching the test film: "It was an aha-experience watching the film" and another therapist reported "The film might be especially helpful for patients who might struggle understanding the rehabilitation". It was also pointed out that more than one film could be useful.

A previous patient reported "I wish I could have watched this film back when I was injured". Another remarked "The film shows the joy of touching"



It was an aha-experience watching the film" (therapist)

Tips for use of the films with patients with nerve injuries in the clinic:

Don't just give out the link to the films to patients (or therapists and parents of children), but take time to explain the importance of the presentation.

- Explain to your patient how nerve injuries affect the brain: the signals to the brain from the injured nerve in the arm have changed and the brain does not understand what the hand feels.
- Explain how training in daily activities represent known sensation to the brain in a familiar context. Example: We know how warm or cold water feels to wash our hands in, and training of the injured hand should be to feel these right temperatures again.
- Explain to your patients that even though they might not be able to lift or load the hand in an early phase, they can practice sensations and touch by placing objects of daily living in the hand and manipulate them.

“the signals to the brain from the injured nerve in the arm have changed and the brain does not understand what the hand feels”

Conclusions

The final production includes a voiced introduction film and five films accompanied by the sounds of touching in daily activities. Based on the positive remarks the films have relevance and value to persons with peripheral nerve injuries to the forearm, hand or fingers.

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You can access these films at:

<https://www.helse-stavanger.no/en/avdelinger/Klinikk-for-kirurgi-nevrologi-og-rehabilitering/plast-kirurgisk-avdeling/recognize-touch/>

or Google: "Recognize touch" and "Helse Stavanger".



TORUNN NESSA is an Occupational Therapist at the Plastic and Hand Surgery Department at Stavanger University Hospital in Norway. She is 50 years old, mother of two plus one bonus child. She has worked at Stavanger University Hospital since 2004. She is writing her Master's thesis in Citizenship and Cooperation about training in daily activities after nerve injury. In 2025, she won the Christina Alegri Award for Innovation at the joint IFSSH-IFSHT Congress.



IFSHT NEWSLETTER – REACH

Issue 1 of Volume 5 of the IFSHT newsletter is available on the IFSHT website. This issue is a special issues on the triennial congress which took place in Washington DC in March 25

<https://ifsht.org/publications/>

The publication aims to collate Research, Education, Achievement and Clinicians in Hand and upper limb therapy around the world.

We call on hand and upper limb therapy clinicians and researchers to submit any contributions for consideration to:

informationofficer@ifsht.org



UPCOMING EVENTS

The next joint IFSSH and IFSHT Triennial Congress will be in Singapore in 2028. The website is live for more information.

Further details can be found at:

<https://www.sshs.sg/ifssh2028>



NEVER MISS AN ISSUE!

Did you know you can subscribe to REACH so you will receive a link each time a new issues goes on line?

Keep in touch with Hand Therapy around the world. IFSHT sends a newsletter three to four times each year along with important notifications on dates and deadlines. We are aiming to enhance the communication between members and member countries through these notifications.

Our new newsletter is called R.E.A.C.H. and we look forward to feedback from our members.

Sign up following the link below:

<https://ifsht.org/newsletter/>

Hand Therapy happenings

Editor: This new page is for reports on local initiatives, especially those which promote a multidisciplinary team approach in the management of the hand patient.

Working Hands, Working Together: Integrated Approaches to Upper Limb and Hand Rehabilitation

Located on the Wynberg Military Base in Cape Town, 2 Military Hospital forms part of the South African Military Health Service (SAMHS) which is responsible for providing comprehensive medical care to the South African National Defence Force (SANDF), its personnel, and their dependents.

Every year, the 2 Military Hospital Occupational Therapy Department hosts an annual symposium which takes place on the military base and is attended by health care professionals both in and outside of the military health community. As the years have gone by, the symposium has grown and become a platform for members of the Multidisciplinary Team (MDT) to network and broaden their perspectives on various disciplines and their roles when approaching healthcare.

The need and value of working in a MDT, especially in the field of orthopaedics and hand therapy has become so important, especially following the COVID-19 pandemic. It appears that we just haven't recovered fully, and still tend to work in silos. The need for ALL members of the MDT to realise the importance of a team approach when treating upper limb and hand conditions continues to grow and is as pertinent now as it has ever been.

As such, the theme of the Symposium this year was "Working Hands, Working Together: Integrated Approaches to Upper Limb and Hand Rehabilitation", with the aim of broadening the attendees' thoughts on the MDT and how working as a team can positively impact patient outcomes. The symposium took place on 20-21 August 2025.



The 1st day hosted highly esteemed speakers from various disciplines presenting on their experiences working in an MDT, as well as the benefits with regards to optimum patient outcomes. Speakers included Prof U. Mennen, Prof M. Solomons, Ms Trish Griffiths (OT), Ms Ingrid Griessel (OT), and Ms Suzanne Davey (Lymph therapist). The symposium also included an informative and thought-provoking ethics lecture presented by Ms Karin Weskamp (OT) on the use of AI (artificial intelligence) and its place in the MDT and upper limb management. The 2nd day was hosted by one of the department’s own therapists, Ms Stacy Saunders, who did an Introductory Workshop on K-taping for the Upper Limb. At the end of the 2 days, I would like to believe that we achieved our goal with attendees walking away saying:

“The information - I really learned a lot that was new to me. I enjoyed hearing from different members of the MDT practicing in different areas.”

“...that it was informative, interactive, pictures, videos and case study scenarios.”

“Thank you for making the effort to uplift and keep the OT community together. Training events has the added benefit of networking and learning from each other informally. You did well in your attempt.”



“...presenters’ vast experience and knowledge was reflected in their presentations. Knowledge gained can be used within the workplace to improve current skill and service delivery.”

“...the variety of presenters each with their own set of experiences.”

“Allowing other people to share their perspectives and having a ‘safe space’ for sharing how each therapist deals with their patients and with the conditions was informative and provided multiple insights. Especially because it is practical experiences and not just what should work according to theory.”

We set out with the aim of encouraging ‘working hands to work together’, and I believe that we have achieved that. It is by creating these spaces where members of the team can build an integrated healthcare community and connect with each other in order that we do not lose “our human touch” and help to empower our patients.

STACY SAUNDERS,
Occupational Therapy Department
2 Military Hospital
Wynberg Military Base, Cape Town
2milotdept@gmail.com

SRM International Hand Conclave 2025

The SRM International Hand Conclave 2025 was held on 29-30 April 2025, at the SRM Institute of Science and Technology (SRM IST), Kattankulathur, India. The event was organised by the SRM College of Physiotherapy in association with the Department of Plastic Surgery, SRM Medical College Hospital and Research Centre, and focused on advancing evidence-based practice and innovation in hand therapy. It served as a platform for students, clinicians, researchers, academicians and industry leaders to share knowledge and learn about current evidence on various hand therapy related topics.

The inauguration ceremony began with a welcome address by Mr Veeragoudhaman TS, Dean of SRM College of Physiotherapy, who underlined the importance of functional restoration in hand care. Dr. Nitin M. Nagarkar, Pro Vice-Chancellor (Medicine and Health Sciences), presided over the ceremony and gave the presidential address. A highlight of the opening was the address by Dr. Raja Sabapathy, President of the International Federation of Societies for Surgery of the Hand (IFSSH) and Chairman of Ganga Hospital, Coimbatore, who served as Guest of Honour.

Other notable speakers included Dr. G. Karthikeyan, Consultant Plastic Surgeon, Esvee Hospital, Chennai. Additional dignitaries were Dr. R. Venkatraman, Medical Superintendent; Dr. C. Balasubramanian, Professor and Head, Department of Plastic Surgery; and Dr. Santharam R, Professor of Plastic Surgery, SRM Medical College Hospital and Research Centre, Kattankulathur.



Opening Invocation – Tamil Thaai Vaazthu (Hymn to Mother Tamil)

The scientific programme was spread across two days. Sessions were delivered by national and international experts in hand surgery, rehabilitation, and biomedical engineering. Both days comprised a total of 15 scientific sessions and concluded with panel discussions. Alongside these sessions, scientific abstracts were presented.

A total of 485 delegates attended from 15 institutions across India. The attendees included physiotherapists, medical professionals, occupational therapists, researchers, and students from across the country. Their diverse backgrounds enriched discussions and encouraged interdisciplinary collaborations.

The valedictory ceremony, held on 30 April, recognised participants' contributions. Certificates were distributed, and winners were awarded prizes. The conclave emphasised the role of interdisciplinary collaboration in hand care and concluded with proposals for inter-institutional partnerships, collaborative research projects, and the establishment of annual follow-up meetings.

The event supported the United Nations Sustainable Development Goals. It particularly highlighted goals related to health and well-being, quality education, and global partnerships. With its robust scientific programme, active student participation, and contributions from both national and international experts, the SRM International Hand Conclave 2025 marked a significant step toward advancing hand therapy practices and improving access to quality care.

Enclosed: Event photos and QR code for the opening speech video



Opening Ceremony: Lamp Lighting by Dr. Raja Sabapathy, IFSSH President



Opening Speech Video
– Dr. Raja Sabapathy,
IFSSH President

Art Exhibit #25

“The Sob”

David Alfaro Siqueiros (Mexico)
Painting. Media: pyroxylin. 122 x 61 cm. 1939.
Museum of Modern Art (MoMA), New York City, NY, USA.

E. F. Shaw Wilgis

1936 - 2025



Edward Ford Shaw Wilgis was born on 17 December 1936 in Baltimore, USA. He attended the University of Maryland School of Medicine, Baltimore, Maryland, USA from 1958 to 1962, and continued his training as a Resident in General Surgery at

the Union Memorial Hospital in Baltimore from 1963 to 1967. From 1967-1968 he was a Hand Registrar at the Derby Group of Hospitals in Derby, England, UK. He served in the Maryland National Guard from 1962 to 1968.

Shaw Wilgis became Associate Professor of Orthopaedics as well as Plastic Surgery at the Johns Hopkins Hospital School of Medicine in Baltimore, MD. He was a founding member, and appointed Chief of Hand Surgery, of the Curtis National Hand Centre, Union Memorial Hospital in Baltimore from 1983 to 2000. From 2000, he was Director of Research at the same institution until 2013, when he became Director-Emeritus. He pioneered microsurgical techniques for nerve and vascular surgery.

Wilgis was a member of numerous organisations, including American Society for Surgery of the Hand (President 1987-1988), American Foundation for Surgery of the Hand (President 1988-1991), American College of Surgeons, The Sunderland Society (President 1984-1985), the International Society for

Reconstructive Surgery, Baltimore County Medical Society, Medical and Chirurgical Faculty of the State of Maryland, The Johns Staige Davis Society, Groupe Pour L'Avancement de la Microchirurgie (Foreign Member), American Society of Reconstructive Microsurgery, MedStar Health (Chairman, Board of Directors 2006-2009), and Associate Editor of the Journal of Hand Surgery (American). To his credit are multiple visiting professorships.

He was a prolific writer and published 5 books, 23 book chapters and 64 articles. In 2014 he edited the well-known book "The Wonder of the Human Hand". Another of his books is "Vascular Injuries and Diseases of the Upper Limb".

Shaw passed away on 2 February 2025 in his home in Towson, Maryland, and is survived by his wife and extended family.

At the 11th Triennial Congress of the IFSSH in Seoul, Korea in 2010, E.F. Shaw Wilgis was awarded the honour "Pioneer of Hand Surgery".

*“Honoured as
Pioneers of Hand
Surgery”*

Renzo Mantero

1930-2012



Renzo Mantero was born on 11 February 1930 in Portovenere, Italy. He completed his medical degree at the State University of Genoa in 1954, Italy, and obtained his specialty qualification in General Surgery in 1959, and then in Orthopaedics and

Traumatology in 1962 at the same university.

He was promoted in 1964 to Professor in Surgical Semiology and Course Tutor in Hand Surgery at the University of Prava, Italy. From 1970 to 1994 he was appointed Chief Surgeon of the Department of General and Hand Surgery at the S. Paolo Hospital in Savona. In 1995 he became Chief Surgeon of the "Regional Centre of Hand Surgery" at the same hospital until 1999, and then in 2000 Scientific Director until his death. He passed away on 1 November 2012 in Pietra Ligure.

Mantero also started a private hand surgery practice in 2000 at the S. Michele Clinic in Albenga. Prof Mantero was the founder of the Savona Hand Surgery Centre and started the annual Founders Course in Hand Surgery and Rehabilitation which is recognised by SICM (Italian Society for Surgery of the Hand). This course is also the official course for hand surgery in the State Universities of Genoa, Pavia, Padova and Milan. Upwards of 3000 surgeons have attended this course to date. He described several surgical techniques, including a pull-out technique for flexor tendon repair.

Renzo Mantero made a life study of the representation and symbolism of the hand in art. Another of his passions was functional techniques related to musical instrument handling, lecturing regularly at the Conservatorium "Niccolò Paganini" in Genoa. He published well over 200 scientific papers both in Italian and English.

Mantero was member of SICM since its foundation in 1963 and its President from 1980-1981. He was also member of various other Societies amongst others the Italian Society of Orthopaedics and Traumatology, French Society for Surgery of the Hand (GEM), Spanish Society for Surgery of the Hand (SECMA), and Fellow of the International College of Surgeons (FICS).

Prof. Renzo Mantero was honoured as "Pioneer of Hand Surgery" by the IFSSH at its 11th Triennial International Congress in Seoul, Korea in 2010.

Reports

THE IFSSH AND THE ASIAN-PACIFIC REGION

Satoshi Ichihara
Executive Committee Member-at-Large (Asian-Pacific)

IFSSH Executive Committee

It has been a great honour to be elected as an Executive Committee Member-at-Large to represent 20 Asian-Pacific countries, at the annual IFSSH Delegates' Council Meeting held during the IFSSH-IFSHT Triennial Congress (Washington, March 2025). Following Prof. Yasuo Yamauchi (1998-2001) and Prof. Moroe Beppu (2013-2016), this marked the third occasion where a member from the Japanese Society for Surgery of the Hand (JSSH) was elected as an IFSSH Executive Committee member.

I am honoured to serve on the IFSSH Executive Committee, especially alongside other Asian-Pacific colleagues including the current IFSSH President, Dr S. Raja Sabapathy (India), and Secretary-General, Prof. Jin Bo Tang (China).

In the three-year term of this position beginning 2025 and ending 2028, while there are many issues to tackle, a particular emphasis will be placed on supporting the development of hand surgery in developing countries. The IFSSH introduced the "IFSSH Patron of Hand Surgery" program in late 2024 to establish a donation fund that will extend the number, size and location of educational initiatives that can be supported. Surgeons in many Asian-Pacific and other regions surgeons are already active at their individual levels; however, future efforts will require support from the entire Asian-Pacific region as well as from all over the world (https://ifssh.info/hand_surgery_donation_program.php).



Another key task is the enhancement of globally accessible educational tools for the advancement of hand surgery. While IFSSH possesses a variety of educational tools, we are called upon to reassess and improve these resources to ensure they remain current and relevant. A wonderful IFSSH resource available to all free of charge through is the "Hand Surgery Resource" (<https://ifssh.info/hand-surgery-resource.php>), available through websites, apps, podcasts and YouTube videos. Finally, though I am still in the early stage of my career, I intend to fulfil my duties and contribute to enhancing the international presence of the Asian-Pacific region. I sincerely appreciate all your support.

Asian-Pacific in the IFSSH: History and Future

When discussing Asian-Pacific's contributions to IFSSH, it is also essential to explain the history and activities of the Asian-Pacific Federation of Societies for Surgery of the Hand (APFSSH). The APFSSH is an Allied Organization of the IFSSH. The memberships of the two groups are slightly different and each runs its own Congresses. However, there are many common bonds, people, places and hand surgery themes and I will outline these shared aims and accomplishments here. The IFSSH was established in 1966 with just eight founding member societies. Japan was the only inaugural member from the the Asian-Pacific region.



Fig. 1: Past Presidents of the APFSSH

The Australian Hand Surgery Society was given the honor of organizing the inaugural APFSSH congress in Perth, 22-24 March, 1997. The congress was a great success under the presidency of Prof. Tatsuya Tajima. Prof. Tajima, along with Prof. Michael Tonkin and Prof. Raja Sabapathy have all been APFSSH Presidents (Fig. 1) and also IFSSH Presidents.

The APFSSH is now well established with 13 member societies. To recognize the contribution of Tatsuya Tajima in developing the Federation and as the inaugural president, the Tajima Lecture was established in 2004 where the current president nominates the lecturer of each congress. Those so honoured in the past were SP Chow, Osaka 2004; Michael Tonkin, Bangkok 2006; Yu-Dong Gu, Hong Kong 2008; Yoshikazu Ikuta, Kaohsiung 2009; Lam-Chuan Teoh, Bali 2012; Kazuteru Doi, Kuala Lumpur 2014; Akio Minami, Cebu 2017; Wayne Morrison, Melbourne 2020; Robert Pho, Singapore 2023. Many of these lecturers have served on the IFSSH Executive Committee or been honored as IFSSH Pioneers, and Prof. Morrison delivered the IFSSH Swanson Lecture at the 2010 IFSSH Congress in Delhi. We are fortunate to have many distinguished hand surgeons in our region.

At the most recent APFSSH Congress in Mumbai, 2025, the Tajima lecture (titled "When to Change Gears in Your Practice and How to Keep Going") was delivered by the current IFSSH President Raja Sabapathy (India) which was followed by a long-standing ovation (Fig. 2).



Fig. 2: Dr. Raja Sabapathy (President of IFSSH) receives huge applause after the Tajima lecture (Left)

In the same congress, an announcement was made by Fuminori Kanaya (APFSSH President; Fig. 3) that **2029 APFSSH will be held in Tokyo**. The 3rd IFSSH Congress was held in Tokyo in 1986. It is an honour for the Japanese Society to host another major hand surgery congress.



Fig. 3: Past APFSSH Presidents (from left to right, Raja Sabapathy, Goo-Hyun Beak and Anthony Berger) and the newly elected President, Prof. Fuminori Kanaya (Center-right)

The Establishment of Journal of Hand Surgery Asian-Pacific

The maiden issue of the Asian-Pacific Journal of Hand Surgery, initially named Hand Surgery, was published in January 1996 under the guidance of Editor-in-Chief Shew-Ping Chow (1996-2002, Hong Kong). Subsequently the Journal editorial office moved to Japan, edited by Yoshikazu Ikuta (2003-2008) and Akio Minami (2009-2014), then Korea under the editorship of Goo Hyun Baek (2015-2021) and, subsequently, India under the editorship of Raja Sabapathy (2022-2024).

Starting in 2024, Sandeep Jacob Sebastin from Singapore has assumed the role of Editor-in-Chief, significantly contributing to the journal's further development. Up until today, much effort has been put in by many editors and associate editors for its establishment and the journal currently has around 50 editorial board members and over 300 reviewers (Fig. 4). This Journal is a monumental undertaking of which all members of the Federation should be proud.

Since 2024, it has achieved an Impact Factor of 0.5 and has received numerous submissions of original articles and review articles (<https://www.worldscientific.com/worldscinet/jhs>). The Journal supports the academic work of not only the Asian-Pacific region but also worldwide contributions and readership. Each IFSSH newsletter is published in the Asian-Pacific journal, sharing the announcements and events of the IFSSH with the journal's readership.

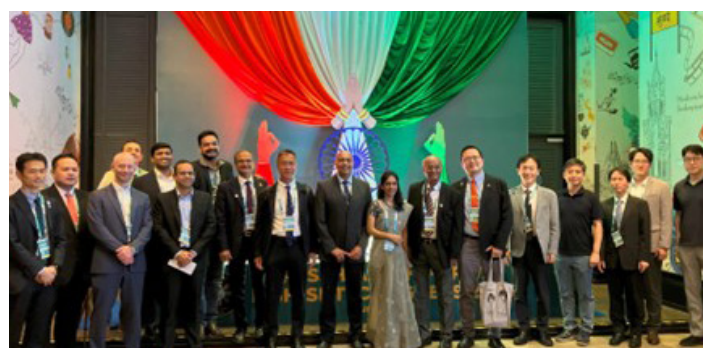


Fig. 4: Commemorative photo after the Editorial Board Meeting

Current Landscape of IFSSH Member Societies Represented by Asian-Pacific Region

The IFSSH members of the Asian-Pacific region currently include 20 member societies, reflecting a rich history and ongoing growth in hand surgery collaboration. Below is an overview of the societies by region and year of joining (https://ifssh.info/member_society_histories.php):

- Australia - Australian Hand Surgery Society (1975)
- Bangladesh - Bangladesh Society for Surgery of the Hand (2008)
- Chinese-Speaking association - Association of Chinese-Speaking Hand Surgeons United (2017)
- Hong Kong - Hong Kong Society for Surgery of the Hand (1987)
- India - Indian Society for Surgery of the Hand (1975)
- Indonesia - Indonesian Society for Surgery of the Hand (2005)
- Iran - Iranian Society for Surgery of the Hand (1986)
- Israel - Israeli Society for Surgery of the Hand (1972)
- Japan - Japanese Society for Surgery of the Hand (1966)
- Jordan - Jordan Hand and Upper Limb Group (2025)
- Kuwait - Kuwait Society for Surgery of the Hand (2015)
- Malaysia - Malaysian Society for Surgery of the Hand (2007)
- New Zealand - New Zealand Society for Surgery of the Hand (1978)
- Philippines - Philippine Society for Surgery of the Hand (1987)
- Singapore - Singapore Society for Hand Surgery (1986)
- South Korea - Korean Society for Surgery of the Hand (1987)
- Sri Lanka - Sri Lanka Society for Surgery of the Hand (2024)

- Taiwan - Taiwan Society for Surgery of the Hand (1990)
- Thailand - Thai Society for Surgery of the Hand (1986)
- United Arab Emirates - United Arab Emirates Society for Surgery of the Hand (2023)

Of note, the Member Societies of the Asian-Pacific region include one of the founding members of IFSSH (Japan, 1966) and also the most recent addition to the IFSSH (Jordan Hand and Upper Limb Group, 2025). In the last three years, at least one Asian-Pacific Society has become a member of IFSSH each year (Emirates 2023, Sri Lanka 2024, Jordan 2025). We hope to encourage this continuous trend.

Expanding Hand Surgery in Asian-Pacific Region

We look forward to building on this momentum and taking the next steps together—fostering collaboration (Fig. 5), and helping shape a stronger future for hand surgery in Asian-Pacific.



Fig. 5



Fig. 6

Fig. 5: APFSSH 2025 participating countries connected by a single trunk

Fig. 6: Selection for the Best Poster Award

At APFSSH 2025 in Mumbai, we were able to exchange many ideas at personal levels. During the selection for the Best Poster Award, I had the opportunity to work together with the Congress President, Dr. Praveen Bhardwaj, and members of the Indian Society for Surgery of the Hand (Fig. 6). In addition to exchanging many views with IFSSH President Raja Sabapathy (Fig. 7), valuable discussions regarding the revision of

Hand Surgery Resources were made with Dr. Jonathan Hobby, the Exco Member representing Europe and Africa who was also present at the Congress (Fig. 8). At the Congress Dinner, I enjoyed a pleasant time with members of the Korean Society for Surgery of the Hand (Fig. 9). I believe that these grassroot-level friendships will strengthen the bonds between the societies of our region (Fig. 10).



Fig. 7



Fig. 8

Fig. 7: Chatting with Raja Sabapathy and Keizo Fukumoto

Fig. 8: Commemorative photo with Jonathan Hobby



Fig. 9



Fig. 10

Fig. 9: Commemorative photo with KSSH members
Fig. 10: Commemorative photo with JSSH members

Collaborations between member societies are also a fantastic opportunity to engage with the IFSSH community. A great example was this year's invitation of the **Taiwan Society of Hand Surgery** to the Annual Meeting of the Japanese Peripheral Nerve Society (Akinori Sakai, Chairman of JSSH) (Fig. 11-14). Prof. Yuan-Kun Tu from TSSH (APFSSH President, 2014-2017) delivered a special lecture titled **"Current Trends in the Treatment for Brachial Plexus Injury and Spinal Cord Reconstruction."** In 2024, several JSSH members were invited to TSSH, where they delivered presentations at the Annual Meeting of TSSH, exchanged views, and deepened their friendships (Fig. 15).

Another great collaboration amongst IFSSH member societies earlier this year in our region was the Combined Hand Surgery Summit 2025 (Fig. 16). This was held in Singapore 21-23 February 2025 with the Malaysian, Indonesian and Thai Hand Surgery Societies as guests.



Fig. 16



Fig. 11



Fig. 12



Fig. 13



Fig. 14



Fig. 15

Fig. 11: Gifting a poster of the Manga Tenogeka (a Japanese manga on Hand Surgery) to Prof. Tu at the Presidential dinner
Fig. 12: Special Lecture by Prof. Tu
Fig. 13: Commemorative photo with Prof. Tu and TSSH members
Fig. 14: Commemorative photo with Akinori Sakai, Chairman of JSSH
Fig. 15: Commemorative Photo After the 2024 Annual Meeting of TSSH

Fig. 17: The 2028 IFSSH-IFSHT Triennial Congress, hosted by the Singapore Society.
Fig. 18: The IFSSH Congresses of the Asian-Pacific region



Fig. 17



Fig. 18

The Asian-Pacific region is entrusted to host the next IFSSH Congress (Fig. 17). This will be in Singapore, 23-27 October 2028 and in collaboration with our therapist colleagues. Our region has held many successful IFSSH Congresses: Tokyo 1986, Tel Aviv 1989, Sydney 2007, Seoul 2010 and New Delhi 2013 (Fig. 18). We hope that all surgeons from Asian-Pacific will support our Singapore colleagues and participate in the 2028 IFSSH-IFSHT Congress. Please sign up to the mailing list and watch for upcoming announcements: <https://www.ifssh-ifsht2028.org/>.

In Closing

In contributing this chapter as the IFSSH Member-at-Large representing the 20 societies from the Asian-Pacific region, I thoroughly researched the history of each IFSSH Member Society in the Asian-Pacific region, and also the IFSSH Allied Federation (APFSSH). Through this, I gained a profound sense of the tremendous effort the Asian-Pacific hand surgeons have invested in establishing the IFSSH. I am determined not to rest on the current level of hand surgery in the Asian-Pacific region, built by our great predecessors, but to strive for even greater heights. Moreover, I deeply understand that the work that leads to the future, and the task entrusted to me, is not for one Society to reach an outstanding level alone, but to raise the overall level of hand surgery throughout the Asian-Pacific region with the collaboration of all IFSSH Member Societies.

Please contact us at: administration@ifssh.info.



SATOSHI ICHIHARA
Japanese Society for Surgery of the Hand (JSSH)
IFSSH Member-at-Large (Asian-Pacific), 2025-2028

FRENCH SOCIETY FOR SURGERY OF THE HAND (SFCM)

The unmissable events of the SFCM: A Year of Sharing and Innovation

The French Society for Surgery of the Hand (SFCM) is preparing for the 2025–2026 period rich encounters, knowledge transmission, and innovation. Throughout the year, congresses, practical courses, and symposia will punctuate the scientific and collegial life of our community. Beyond their high-level scientific programs, these gatherings provide invaluable opportunities to meet, exchange ideas, and foster a shared vision: to continually improve patient care.

Strasbourg in October: The French College in the Spotlight

On 10 October 2025, Strasbourg hosted the 4th day of the French College under the direction of Professor Sybille Facca. True to its mission of continuous education, this meeting was an opportunity to strengthen ties across generations, share practical experiences, and stimulate reflection on our daily practice.

An Autumn of Major Congresses

- In November, we will gather for the 99th SOFCOT Congress (10-12 November, Paris), a true crossroads of national orthopaedics.
- From 18-19 December 2025 the highlight of the year will take place. The 61st SFCM Congress will be held at the Palais des Congrès in Paris.

More than a scientific meeting, this congress is the unifying moment of our community.

The chosen theme – “Errors in Hand Surgery” – reflects a strong will to address an essential yet often sensitive issues without evasion. Recognising our limits, analysing complications, and sharing experiences are key steps toward collective progress and greater patient safety.

The program will feature plenary lectures, hands-on workshops, case discussions, and interactive debates.

As always, the unique atmosphere of the congress—marked by reunions, collegial exchanges, and a shared energy—will embody the spirit of the SFCM: demanding, innovative, and profoundly human.

Looking ahead

The year 2026 already promises to be rich in opportunities, with two major international meetings:

1. The Practical Flap Course in May in Luxembourg.
2. The International Summit on Neuropathic Pain Surgery in Madrid.

These events highlight the international scope and influence of French hand surgery.



AUSTRALIAN HAND SURGERY SOCIETY (AHSS)

A Life of Service: Honouring A/Prof Graham Gumley, IFSSH Pioneer of Hand Surgery

Celebrating a transformative legacy of surgical excellence, teaching and global outreach

The Australian Hand Surgery Society (AHSS) proudly acknowledges Associate Professor Graham Gumley on his recent recognition as an IFSSH Pioneer of Hand Surgery. One of the highest honours in our field. This accolade reflects a lifetime of commitment not only to surgical and academic excellence, but to transformative humanitarian work that has touched countless lives across the Asian-Pacific region and beyond.

A/Prof Gumley's influence spans over five decades. He has trained and mentored hundreds of medical students, registrars, and fellows both in Australia and internationally—through roles at Sydney Hospital Hand Unit, Macquarie University Hospital, and Liverpool Hospital. Since 2010, he has served as Fellowship Director at Macquarie University Hospital, guiding 17 fellows through a RACS-approved hand and microsurgery fellowship. He has contributed to 17 peer-reviewed publications, six book chapters, and countless educational presentations across the globe.

But it is his humanitarian work that truly sets him apart.



Over 30 surgical missions have taken him to Cambodia, Vietnam, India, Samoa, Uganda, and Indonesia. In Cambodia, his impact was particularly profound. Following the Khmer Rouge crisis, he co-founded the Sihanouk Hospital Center of HOPE (SHCH) in 1997 and served as its first Medical Director. Under his leadership, SHCH provided over 65,000 outpatient consultations and more than 800 major surgeries annually to Cambodia's most vulnerable.

His contribution was so valued that he was awarded the Royal Order of Sahametrei by King Norodom Sihanouk—Cambodia's highest civilian honour for foreigners.

More recently, in 2024, Graham led the first ever microsurgical training module in the Pacific Islands through the Pacific Islands Orthopaedic Association (PIOA). The program designed and delivered with his signature humility, faith and precision—equipped regional surgeons with vital microsurgical skills, ensuring sustainable care for their own communities.

Despite a long list of achievements—including two Humanitarian Service Awards from the Australian Orthopaedic Association and appointment as a Member of the Order of Australia (AM)—Graham is known for his quiet humility. He deflects praise, treats all with dignity and compassion, and lives his deeply held Christian faith through service. Whether teaching in a ward in Samoa or mentoring a fellow in Sydney, A/Prof Gumley lifts others up with warmth, clarity, and care.





A Broader Legacy: AHSS Outreach Through the Decades

A/Prof Gumley's service sits within a proud tradition of outreach within the AHSS. For over 30 years, AHSS has extended its expertise well beyond Australia, bringing life-changing surgical care and sustainable medical training to communities in need.

AHSS outreach began in the 1970s with pioneers like Professor Bill Cumming, who led early missions to Indonesia, Fiji, and Papua New Guinea. His efforts laid the groundwork for enduring training programs that continue to evolve today. The outreach effort was significantly expanded in the 1990s, when leaders like A/Prof Gumley and A/Prof Bruce Conolly extended the Society's reach to Cambodia, Vietnam, and Myanmar—helping establish modern hand surgery units and building strong mentorship frameworks.

Unlike one-off missions, AHSS outreach is centred on long-term partnerships. In Vietnam, AHSS surgeons helped establish the country's first specialist hand surgery unit in Hue in 2002, growing from a small 10-bed unit to a 50-bed department performing over 1,600 procedures annually. In Nepal, recent efforts led by Dr David Graham have supported Dr Shilu Shrestha, Nepal's first female hand and microsurgeon, in setting up dedicated hand services—again pairing surgical support with teaching and infrastructure development.

AHSS members also work closely with trusted organisations including Interplast, Orthopaedic Outreach, Hands On South Pacific, and the Pacific Islands Orthopaedic Association, often collaborating to deliver workshops, fellowships, and virtual training.

From Fiji to Nepal, Cambodia to the Solomon Islands, the AHSS continues to deliver on its mission to provide expert care and build sustainable capacity—one surgeon, one patient, and one community at a time.

Looking Ahead

The AHSS Outreach Committee remains committed to expanding these efforts across the region and welcomes interest from members keen to contribute their skills and time. Outreach opportunities span both clinical and teaching roles, including in-country missions, virtual mentorships, and curriculum development.

A/Prof Graham Gumley's career exemplifies the highest values of our profession: service, humility, compassion, and excellence. His legacy has shaped the DNA of AHSS Outreach and continues to inspire the next generation of surgeons to look beyond their borders and serve where the need is greatest.

A full history of AHSS Outreach is available on the AHSS website: ahss.org.au/ahss-outreach/

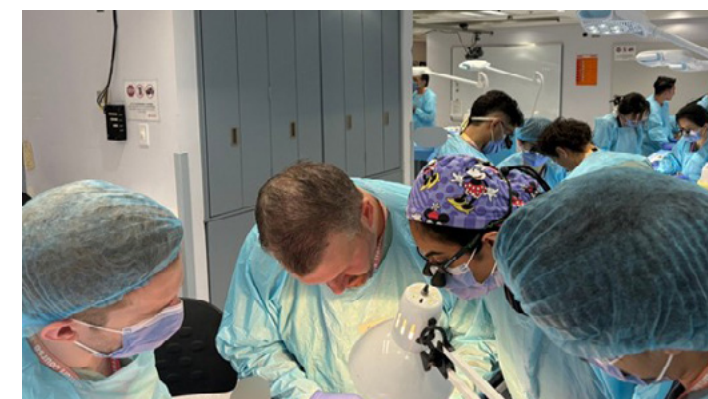
CANADIAN SOCIETY FOR SURGERY OF THE HAND (CSSH)

The Canadian Society for Surgery of the Hand (CSSH) held another well attended meeting on 3 June 2025. Plastic and Orthopedic surgeons flew in from coast-to-coast to gather in Toronto, Ontario.

This year involved a full day of activities. In the morning, we were fortunate to host a cadaveric nerve dissection lab with residents, fellows and staff in attendance. Our national experts from across the country were on-site to provide hands-on teaching of nerve transfers and decompressions for each small group of learners. The nerve course was followed up by our ever-popular point of care ultrasound (PoCUS) course, which was again at maximum capacity! The evening session involved didactic lectures and panels. Of note was a very popular panel on complications in hand surgery, as well as CMCJ arthritis and flexor tendon rehabilitation.

The CSSH extends our congratulations to Dr. Eric Mitchell as the recipient of this year's CSSH Hand Surgery Scholarship. Dr. Mitchell graduated from Western University in plastic surgery and will continue his hand surgery education at Ohio State University.

We once again thank our executive committee for another excellent meeting. Their time and energy make this all possible.



Nerve dissection workshop underway



Spending some time with the exhibitors during the program intermission



A well-attended and well enjoyed nerve dissection workshop!

We would like to extend a warm welcome to hand surgeons across the globe to visit us at our next meeting in June 2026. We will return to the mountains in beautiful Kelowna, British Columbia. We hope to see you there! Registration for the meeting will ultimately be available on our website and is linked to annual membership for the Society: <https://www.csshscm.com/>



Colleagues from coast-to-coast!



Panel session underway



CSSH Hand Surgery scholarship recipient Dr Eric Mitchell (right)

DOMINICAN ASSOCIATION OF HAND SURGERY AND MICROSURGERY (ADOCIMA)

The Dominican Association of Hand Surgery and Microsurgery (ADOCIMA) is pleased to invite hand surgeons from around the world to its II Dominican Congress of Hand Surgery and Microsurgery. This premier event will take place from 12 to 14 March 2026, at the prestigious Hard Rock Hotel in Punta Cana, Dominican Republic.



II CONGRESO DOMINICANO DE CIRUGÍA DE LA MANO Y MICROCIRUGÍA

En honor al Dr. Luis R Scheker

1er Encuentro de los exalumnos del Dr. Jorge Clifton



Luis Scheker



Jorge Clifton
Rafael Reynoso
Leonardo López
René Barroza
Raúl Rodríguez
Abraham Delgadillo



Clarisa Simón
Sergi Barrera



Luis Felipe Noguera Escobar
Fabián Suárez Romero
Aida García



Fernando Romero



Marcos Nuñez
Otoniel Díaz

12- 14 DE MARZO DE 2026

HOTEL HARD ROCK

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TARIFAS	Especialistas	Residentes
Hasta el 30 de sept	300 US\$	250 US\$
Hasta el 31 de dic	350 US\$	300 US\$
Hasta el 29 de feb	400 US\$	375 US\$
A partir del 29 de feb	500 US\$	450 US\$

Acompañantes USD \$50



Agencia organizadora

DESIGN

809-334-1910
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www.adocima.com
@adocima

II Dominican Congress of Hand Surgery and Microsurgery: Academic Excellence in Punta Cana

A World-Class Scientific Program
We have prepared a comprehensive and cutting-edge scientific program designed to cover the most important and challenging topics in our specialty: trauma and congenital deformities, infections, inflammatory/autoimmune diseases, peripheral nerve, brachial plexus, thoracic outlet, and tumors.

The Congress will feature the participation of internationally recognised faculty who will share their knowledge and the latest innovations in our field. This is your opportunity to immerse yourself in three days of intensive learning, starting Thursday 12 March at 12:00 PM and concluding Saturday 14 March at 1:00 PM. The preliminary program will be available soon on our website: www.adocima.com and on Instagram: [@adocima](https://www.instagram.com/adocima).

- Legacy, Tributes, and Academic Reunions**
This congress will be a commemorative event:
1. **Tribute to Dr. Luis Scheker:** The event will be dedicated in honour of Dr. Luis Scheker, a pioneer of hand surgery in the Dominican Republic. Dr. Scheker is world-renowned as the creator of the distal radioulnar joint (DRUJ) implant and the educator of hundreds of surgeons, following a brilliant career spanning over 35 years with Kleinert and Kutz (University of Louisville, USA).
 2. **1st Alumni Reunion of Dr. Jorge Clifton:** The congress will also serve as a space for the reunion of generations of specialists trained by Dr. Jorge Clifton, a distinguished professor dedicated to brachial plexus surgery.

Present Your Work and Share Your Expertise
The call for the presentation of free papers and posters is now open. This is an excellent platform to share your research and personal experience with a global audience.



Selected works will be included in the official congress program.

An Unbeatable Destination: Punta Cana, Dominican Republic
Beyond academic excellence, this congress is the perfect excuse to combine professional growth with an unforgettable experience.

- **Location:** Enjoy the beautiful and world-famous beaches of Punta Cana. The Hard Rock Hotel offers a luxury setting for the congress and a wide range of leisure activities.
- **Networking and Camaraderie:** The congress is designed to strengthen professional ties, enjoy various social activities, and share with colleagues in a spirit of fellowship.
- **Dominican Warmth:** Experience the hospitality and warmth that characterize Dominicans, ensuring your stay is as enriching as it is pleasant.

We look forward to welcoming you in March 2026 for a congress that will be both formative and memorable!

Sincerely,
The Board of Directors
Dominican Association of Hand Surgery and Microsurgery (ADOCIMA)
Web: www.adocima.com
Instagram: [@adocima](https://www.instagram.com/adocima)



GUATEMALAN HAND SURGERY ASSOCIATION

Expanding Hand Surgery Education in Guatemala

The Guatemalan Hand Surgery Association has recently undertaken a series of educational initiatives aimed at both the national and international medical community. These efforts seek to raise awareness of hand surgery, improve patient care, and strengthen the training of future specialists.

Strengthening Education in Guatemala

In recent months, the Association has organised multiple activities for physicians throughout the country, with the purpose of increasing awareness of hand surgery, the role of the Association, and the appropriate timing for referral to a hand surgeon.



The tendon minicourse, one of the activities organised by the association for educational programs on Orthopaedic and Trauma surgery.

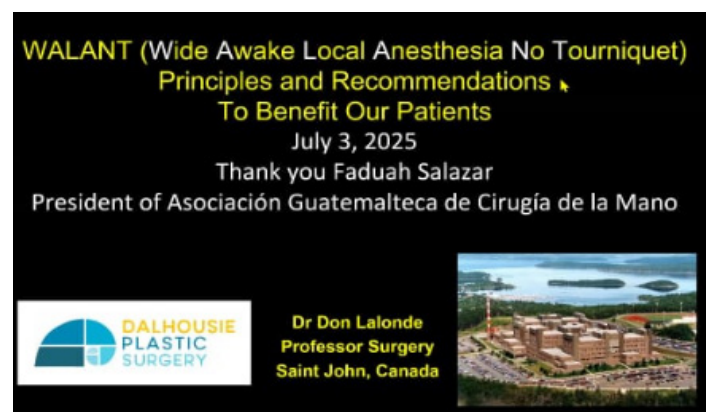
In collaboration with the College of Physicians and Surgeons of Guatemala, both in-person and virtual programs have been implemented to reinforce basic knowledge of hand pathologies, ranging from common conditions such as trigger finger to advanced procedures such as replantation or revascularisation.

A key initiative has been training physicians and paramedical staff on the proper preparation of amputated parts to improve the likelihood of successful reimplantation.

International Outreach and WALANT Technique

On the international front, the Association recently launched academic virtual sessions featuring distinguished speakers. The opening lecture was delivered by Dr. Donald Lalonde, presenting the WALANT technique, which offers greater access to cost-effective hand surgery in Guatemala.

Additional sessions included lectures with experts from Singapore, China, Mexico, Brasil and Ecuador, fostering a global exchange of knowledge. Building on the enthusiasm generated, the first WALANT Guatemala Course has been scheduled for March 2026.



First Virtual Activity by the AGCM with the help of Dr. Donald Lalonde

Resident Training and Future Generations

The Association has also promoted practical workshops for residents, recognising their critical role as the first point of contact for patients with hand emergencies in the public and social security healthcare systems.

One of the most successful sessions was held with orthopedic and trauma surgery residents at Roosevelt Hospital during their annual residents' congress, focusing on tendon suturing and repair techniques.

These positive outcomes underscore the importance of expanding and diversifying the Association's educational programs.

And we also support all the young hand surgeons to be part of educational opportunities that would help the Association to develop new educational programs. Opening up a space for them to use as a platform to share what they learn through their training.

An Open Invitation

The Guatemalan Hand Surgery Association extends an open invitation to surgeons worldwide to join this effort, supporting the advancement of hand surgery in Guatemala and contributing to the education of the next generation of specialists.



Invitation format for the ongoing virtual activities for hand surgery diffusion organised by the AGCM



Invitation for the international activities organised by the AGCM, In this case the invitation for the activity done with Singapore.



CELEBRATING OUR PATRONS: ADVANCING HAND SURGERY WORLDWIDE

The International Federation of Societies for Surgery of the Hand (IFSSH) is proud to recognize the most recent donors to the IFSSH Patron of the Hand Surgery Program – an initiative dedicated to expanding global access to hand surgery education. Thanks to their generosity, young surgeons from resource-limited regions are gaining life-changing opportunities to attend international congresses, participate in hands-on workshops, and bring new skills back to their communities.

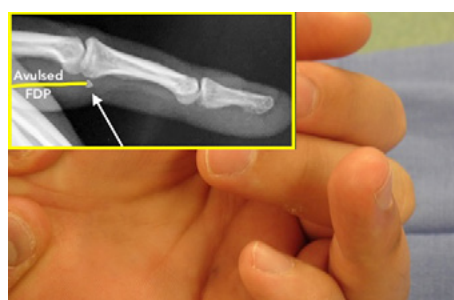


Recent supporters have joined at the **Gold (\$5,000)**, **Platinum (\$10,000)**, and even **Super Platinum (\$25,000)** levels, demonstrating an inspiring commitment to the future of our specialty. Their gifts fund fellowships, visiting professorships, outreach programs, and educational resources that are transforming care from Ghana to Mongolia and beyond. We invite you to join them. By becoming a Patron, you can help ensure that excellence in hand surgery transcends borders and impacts patients worldwide.

Learn more and make your pledge today at www.ifssh.info.

NEW PODCAST: JERSEY FINGER

Hand Surgery Resource, an educational asset of the IFSSH, has just launched an exciting new podcast on the Jersey Finger.



Come hear the details at [YouTube](#), [Music](#), [Apple Music](#), [Spotify](#), [Overcast](#), [Amazon Music](#), and [Audible](#). Be sure to sign up as a subscriber at your favorite outlet.

Re-published Article



Acknowledgement: We thank the Editor, ASSH, and the Publisher of the Journal of Hand Surgery (American) for re-publishing this open access article.

CURRENT CONCEPTS

The Use of Musculoskeletal Ultrasound for Diagnosis of Peripheral Nerve Compression Syndromes

John R. Fowler, MD*



CME INFORMATION AND DISCLOSURES

The *Journal of Hand Surgery* will contain at least 2 clinically relevant articles selected by the editor to be offered for CME in each issue. For CME credit, the participant must read the articles in print or online and correctly answer all related questions through an online examination. The questions on the test are designed to make the reader think and will occasionally require the reader to go back and scrutinize the article for details.

The JHS CME Activity fee of \$15.00 includes the exam questions/answers only and does not include access to the JHS articles referenced.

Statement of Need: This CME activity was developed by the JHS editors as a convenient education tool to help increase or affirm reader's knowledge. The overall goal of the activity is for participants to evaluate the appropriateness of clinical data and apply it to their practice and the provision of patient care.

Accreditation: The American Society for Surgery of the Hand (ASSH) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

AMA PRA Credit Designation: The ASSH designates this Journal-Based CME activity for a maximum of 1.00 *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

ASSH Disclaimer: The material presented in this CME activity is made available by the ASSH for educational purposes only. This material is not intended to represent the only methods or the best procedures appropriate for the medical situation(s) discussed, but rather it is intended to present an approach, view, statement, or opinion of the authors that may be helpful, or of interest, to other practitioners. Examinees agree to participate in this medical education activity, sponsored by the ASSH, with full knowledge and awareness that they waive any claim they may have against the ASSH for reliance on any information presented. The approval of the US Food and Drug Administration (FDA) is required for procedures and drugs that are considered experimental. Instrumentation systems discussed or reviewed during this educational activity may not yet have received FDA approval.

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Disclosures for this Article

Editors

Dawn M. LaPorte, MD, has no relevant conflicts of interest to disclose.

Authors

All authors of this journal-based CME activity have no relevant conflicts of interest to disclose. In the printed or PDF version of this article, author affiliations can be found at the bottom of the first page.

Planners

Dawn M. LaPorte, MD, has no relevant conflicts of interest to disclose. The editorial and education staff involved with this journal-based CME activity has no relevant conflicts of interest to disclose.

Learning Objectives

Upon completion of this CME activity, the learner will understand:

- The role and benefits of ultrasound for diagnosis of peripheral nerve compression syndromes
- The basic science behind the use of ultrasound for diagnosis of nerve compression syndromes
- The sensitivity and specificity of ultrasound for diagnosis of carpal tunnel syndrome and cubital tunnel syndrome and the accepted measurements, as well as correlation with severity

Deadline: Each examination purchased in 2025 must be completed by December 31, 2025, to be eligible for CME. A certificate will be issued upon completion of the activity. Estimated time to complete each JHS CME activity is up to one hour.

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Musculoskeletal ultrasound has emerged as a reasonable alternative to electrodiagnostic studies in the diagnostic work-up of carpal tunnel syndrome, cubital tunnel syndrome, and other peripheral nerve compression syndromes. Chronic nerve compression results in nerve edema, which can be measured using ultrasound and reported as increased cross-sectional

From the *University of Pittsburgh, Pittsburgh, PA.

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Corresponding author: John R. Fowler, MD, University of Pittsburgh, Suite 1010, Kaufmann Bldg, 3471 Fifth Ave, Pittsburgh, PA 15213; e-mail: johnfowler10@gmail.com.

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area. If the cross-sectional area exceeds predetermined cutoffs, a diagnosis can be made. The purpose of this review was to summarize the literature regarding the use of ultrasound for the diagnosis of peripheral nerve compression syndromes. (*J Hand Surg Am.* 2025;50(4):481–490. Copyright © 2025 by the American Society for Surgery of the Hand. Published by Elsevier Inc. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).)

Key words Carpal tunnel, cubital tunnel, ultrasound.

INTRODUCTION

Peripheral nerve compression syndromes (carpal tunnel syndrome, cubital tunnel syndrome, etc) are some of the most common conditions evaluated by hand surgeons. Unlike anemia, which is defined by a laboratory test (the hematocrit), peripheral nerve compression syndromes are not defined by a single test, but rather by a combination of signs and symptoms. The lack of a universally accepted reference standard has made defining who has the syndrome challenging and a major area of debate in our field. Traditionally, EMG and nerve conduction studies (NCS) have been used to obtain an objective evaluation of nerve function. However, discordant results occasionally make interpretation of these electrodiagnostic studies (EDS) confusing in the clinical setting. Additionally, EDS can be painful for some patients, costly, and inefficient. Although EDS examine nerve conduction, musculoskeletal ultrasound (US) examines nerve edema primarily through measurement of nerve cross-sectional area (CSA). Nerve compression results in nerve swelling proximal and distal to the area of compression. If the nerve CSA exceeds established values (Table 1), a diagnosis of peripheral nerve compression can be made. The purpose of this article was to review the current literature regarding the use of musculoskeletal US for the diagnosis of peripheral nerve compression.

BASIC SCIENCE AND PROOF OF CONCEPT

Nerve compression affects intraneural microcirculation, resulting in increased permeability and intrafascicular edema with increased endoneurial fluid pressure.¹ The intrafascicular edema can be identified using cross-sectional imaging such as magnetic resonance imaging (MRI) and musculoskeletal US. Buchberger et al² demonstrated that subjects with nerve study-confirmed carpal tunnel syndrome (CTS) had considerably increased median nerve CSA at the carpal tunnel inlet compared with subjects without CTS using MRI and US. Hersh et al³ compared MRI

and US measurements in 20 subjects and found a near-perfect correlation between US and MRI. In contrast, Lee et al⁴ compared the CSA of the median nerve using MRI, US, and cadaveric direct measurements at five different levels and found that MRI tended to overmeasure the true size of the nerve and US tended to under-measure. MRI had a better correlation with cadaveric direct measurements; however, both US and MRI had moderate-to-strong correlation. Gao et al⁵ had multiple examiners measure cylindrical objects buried in US phantoms and echoed the findings of Lee et al that US measurements are on average smaller than “actual” measurements and also found a measurement error of approximately 10%.

CARPAL TUNNEL SYNDROME

Most work has been performed on the use of US for CTS. This is in part because of the frequency with which physicians evaluate patients for CTS and the ease of imaging the carpal tunnel and median nerve compared with other locations. Several different locations have been evaluated to determine the “ideal” location to measure nerve CSA. Nakamichi and Tabana^{6,7} performed US examinations on over 400 subjects with CTS and determined that the proximal wrist crease, at the level of the pisiform, was the most sensitive and specific location (Fig. 1a, b). Hobson-Webb⁸ has popularized the use of the wrist-to-forearm ratio, and others have examined additional measurements that have variable increases in diagnostic accuracy. A wrist-to-forearm ratio of ≥ 1.4 is considered “positive” for the diagnosis of CTS.^{4,9–18}

In general, the diagnostic accuracy of US for the diagnosis of CTS is similar to EDS. Fowler et al¹⁹ performed a systematic review and meta-analysis to determine the accuracy of US for the diagnosis of CTS. The sensitivity and specificity of US depend on the reference standard chosen. When compared with EDS as the reference standard, US had a sensitivity and specificity of 80% and 79%, respectively. When

TABLE 1. Commonly Accepted Cutoff Values	
Nerve/Location	Cutoff Value
Median nerve—wrist crease	≥10 mm ²
Ratio wrist crease to 12 cm proximal to wrist crease	≥1.4
Ulnar nerve at medial epicondyle	≥10 mm ²
Change in ulnar nerve CSA over 2 cm segment (2 cm prox ME to ME and/or 2 cm dist ME to ME)	≥2 mm ²

dist, distal; ME, medial epicondyle; prox, proximal.

clinical diagnosis was used as the reference standard, US had a sensitivity and specificity of 77% and 93%, respectively. Wiesler et al²⁰ reviewed 44 wrists in 26 patients with CTS and 86 wrists in 43 asymptomatic volunteers. The mean CSA at the wrist crease was 14 mm² in the CTS patients and 9 mm² in the asymptomatic volunteers. Using a cutoff point of 11 mm² or higher resulted in a sensitivity of 91% and specificity of 84%. Duncan et al²¹ performed US on 102 wrists with a diagnosis of CTS and found no difference in mean CSA between subjects with a clinical diagnosis of CTS and those confirmed with EDS. In addition, the authors noted a sensitivity of 82% and specificity of 97% using a cutoff value of > 9 mm². Kele et al¹³ found a sensitivity of 89% and specificity of 98%, and Kwon et al²² found similar sensitivity and specificity for US when compared with EDS.

Fowler et al²³ prospectively evaluated 85 patients referred to an upper-extremity practice for electrodiagnostic testing and found a sensitivity of 90% and specificity of 89% when using CTS-6 as the reference standard. Chen and Fowler²⁴ reviewed 402 wrists in 265 patients who presented to an upper-extremity clinic with numbness/tingling in the arm. Electrodiagnostic testing and US were performed on each wrist, and the diagnostic accuracy was evaluated using the CTS-6 as the reference standard. Using a CSA of 10 mm² at the level of the pisiform as the cutoff, the sensitivity of US was 76% and specificity 51%. The sensitivity of EDS was 87% and specificity was 27% using the interpretation of a board-certified electrodiagnostic physician. Interestingly, US and EDS only agreed with each other on 75% of wrists. Pan et al found a sensitivity and specificity of 80% and 88%, respectively, in 349 wrists, most (314) of which did not have clinical evidence of CTS. The mean CSA in wrists without clinical CTS was 6.9 mm² compared with 11.1 mm² in wrists with clinical signs of CTS.²⁵

One problem when studying the diagnostic accuracy of US and EDS for CTS is that there is no universally accepted reference standard. In situations where there is no universally accepted reference standard, latent class analysis can be used to estimate the probability of the condition by identifying associations of risk factors. Using latent class analysis, Fowler et al²⁶ found that the sensitivity and specificity of US were 91% and 94% compared with 81% and 91% for electrodiagnostic testing, respectively. In a second latent class analysis using additional clinical diagnostic tools, Wang et al²⁷ found a sensitivity of 89% and specificity of 72% for US.

MEASUREMENTS OTHER THAN CSA AT THE WRIST CREASE

Most studies have used a single measurement of median nerve CSA at the wrist crease as the diagnostic standard; however, others have evaluated the use of ratios rather than absolute measurements given the variability in height and weight among patients. In general, the literature demonstrates that the wrist-to-forearm ratio is abnormal in many patients with clinical signs and symptoms of CTS but with normal EDS.^{10,12,28} Billakota and Hobson-Webb¹⁰ reviewed the diagnostic accuracy of the wrist:forearm ratio (≥1.4) in 1,021 cases and found that 79/1021 (8%) patients had normal nerve studies but positive US findings based on use of the wrist-to-forearm ratio. Aseem et al²⁸ reviewed 22 wrists in 14 patients who had clinical signs and symptoms of CTS with normal nerve studies and found that 100% of these patients had a positive wrist-to-forearm ratio.²⁸ Hirsiger et al¹² found that using the ratio of the CSA at the inlet to the CSA within the carpal tunnel had the highest sensitivity (80%) and specificity (92%) with a ratio of 1.25 as the cutoff. It is clear based on these studies that the use of the wrist-to-forearm ratio may be beneficial in clinical scenarios where the clinical diagnosis is discordant with nerve study findings.

Ng et al²⁹ found that a positive CSA proximal to the carpal tunnel or distal to the carpal tunnel or a positive flexor retinaculum bowing measurement had a sensitivity of 100%, a specificity of 84%, and an accuracy of 93% for the diagnosis of CTS in a cohort of patients with a clinical diagnosis of CTS and positive NCS. Mallouhi et al¹⁵ found that using the Color Doppler to identify intraneural hypervascularity increased the diagnostic accuracy to 95% when compared with using median nerve CSA alone, which had a diagnostic accuracy of 91%.

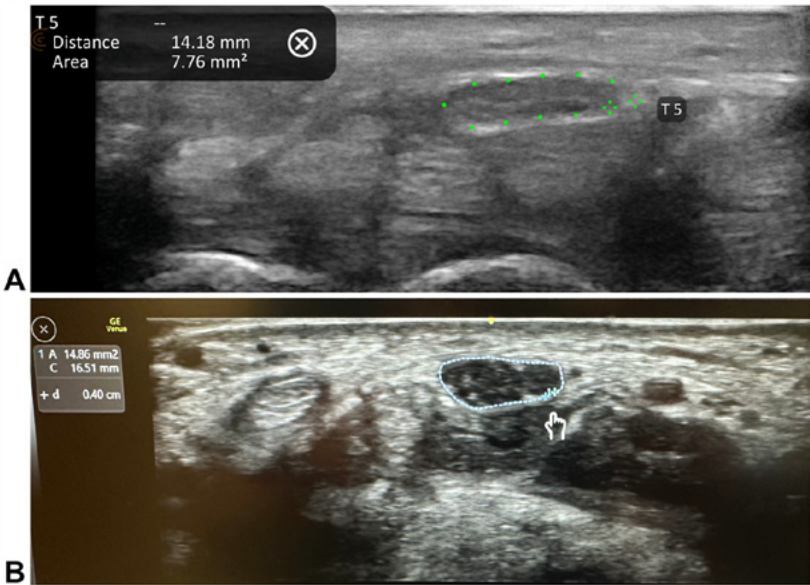


FIGURE 1: A Short axis US image at the wrist crease demonstrating a “normal” median nerve CSA (7.76 mm²) and B enlarged median nerve CSA (14.86 mm²).

“PREDICTING” THE RESULTS OF NERVE STUDIES USING US

Many researchers have used US to “make” a diagnosis of carpal tunnel syndrome; however, Mhoon et al³⁰ looked at it from a different angle and used US to “predict” a normal NCS. An US CSA of <9 mm² had a sensitivity of 99% for predicting normal NCS with only one of 192 patients with a normal NCS having a positive US. At this time, there is not a “perfect” test for CTS; however, if US can predict a normal NCS in 99% of cases, it is a more efficient and comfortable screening test compared with NCS. Ziswieler et al³¹ prospectively evaluated 110 wrists in patients with suspected CTS and found that a median nerve CSA < 8 mm² effectively “ruled out” a diagnosis of CTS and a CSA ≥12 mm² was highly predictive of CTS. These studies are good examples of how US can be used pragmatically in clinical practice. If an US is obtained and is “normal,” it is highly unlikely that NCS will be positive.

Special considerations

Several studies have confirmed that obesity is a major confounding variable when attempting to use US for the diagnosis of CTS. Pan et al²⁵ found that the mean body mass index of patients with clinical signs and symptoms of CTS was 31.4 compared with 27.3 in patients without signs and symptoms of CTS. Diabetes, in particular insulin-dependent

diabetes, is a known risk factor for the development of CTS. Demino and Fowler³² examined the effect of diabetes on median nerve CSA at the wrist. In patients with non-insulin-dependent diabetes and CTS, the mean CSA was 11.1 mm² compared with 14.6 mm² in patients with insulin-dependent diabetes and CTS. Hassan et al³³ found that in patients with diabetic peripheral neuropathy, US was unable to find a difference in median nerve CSA in patients with a clinical diagnosis of CTS and those without. Therefore, US is unable to differentiate between peripheral neuropathy and CTS when symptoms are present. However, if a normal median nerve CSA is present at the wrist crease, one can then be confident that the clinical symptoms are from the neuropathy and not CTS. Based on these studies, caution should be exercised when interpreting the results of US in obese patients and those who have diabetes, particularly insulin-dependent diabetes.

Finger et al³⁴ evaluated the diagnostic accuracy of NCS and US in young and elderly cohorts and found high specificity in younger patients (with lower sensitivity) and high sensitivity in elderly patients (with lower specificity). This study highlights the finding that both US and NCS are less accurate in patients aged less than 30 years and older than 70 years. Caution should be exercised in interpreting the results of these diagnostic tests in these age groups. Bathala et al⁹ echoed these results, noting that CSA did increase with increasing

TABLE 2. US Correlation With EDS-Graded Severity

Nerve Compression Syndrome	Normal	Mild	Moderate	Severe
Carpal tunnel syndrome	<10 mm ²	10–11.99 mm ²	12–13.99 mm ²	≥14 mm ²
Cubital tunnel syndrome	<10 mm ²	10–12.8 mm ²	12.9–14.7 mm ²	≥14.8 mm ²

age. Hacker et al³⁵ found that patient sex did not meaningfully alter the cutoff values for a positive diagnosis.

CORRELATION WITH NCS

Anecdotaly, surgeons like having objective numbers to follow and the severity grading used with NCS. Therefore, there has been interest in correlating US with NCS findings and grading severity based on US findings.^{11,14,36,37} Aloï et al³⁸ reviewed 273 wrists in patients presenting to an upper-extremity clinic with complaints of numbness and/or tingling in the hand/arm. Using a median nerve CSA cutoff of 10 mm², US had a specificity of 85% and a sensitivity of 76% when using NCS as the reference standard. Ultrasound was able to differentiate between mild, moderate, and severe CTS using cutoffs of 10, 12, and 14 mm², respectively (Table 2). Ting et al³⁹ found similar values using cutoffs of 10.5, 13.4, and 16.5 mm², respectively, for mild, moderate, and severe CTS.

Positive US and negative NCS

Most hand surgeons have encountered patients with clinical signs and symptoms of CTS yet normal NCS. Al-Hashel et al⁴⁰ performed a blinded, prospective cohort study on 60 hands with “clinically definite” CTS with normal NCS and 40 control hands. The authors found a positive US in 49% of patients in the CTS group compared with only 5% in the control group. Chen and Fowler confirmed the results of this study, demonstrating that 68% of patients with clinical CTS and normal nerve studies had a positive US compared with only 13% of controls.⁴¹ As with the wrist-to-forearm ratio, a single measurement of the median nerve CSA at the wrist crease may also objectively confirm CTS in patients with normal NCS.

Efficiency/cost

There is increasing pressure on health care systems to provide not only quality care but also cost-effective care. Fowler et al⁴² performed a cost-effectiveness analysis to examine a scenario where US was used

as a first-line diagnostic test for CTS. In this analysis, the costs of the diagnostic tests were used, and “penalties” for a wrong diagnosis were included, such as time off work and additional testing. In cases where the US examination was considered incorrect, NCS were then obtained. The analysis found that the use of US alone was the most cost-effective strategy in the practice of specialists. Charles et al⁴³ reviewed 132 patients who underwent carpal tunnel release (CTR) within 90 days of diagnosis. All patients underwent confirmatory testing with either NCS or US. Nerve conduction studies alone were used in 98 patients, and US alone was used in 34 patients. Patients who had confirmatory testing with US had an average of 1.8 fewer medical visits and underwent CTR an average of 23 days earlier than those who had confirmatory testing with NCS. Carrozzi et al⁴⁴ used the net promoter score to show that patients are more likely to recommend US to a friend or family member than EDS.

CHANGES IN MEDIAN NERVE CSA AFTER SURGERY

One proposed advantage of the use of NCS is the ability to repeat the testing and observe changes in NCS parameters after treatment. If a patient reports increased symptoms after surgery and the NCS worsens, those findings could support an injury to the nerve and indicate exploration. However, if the NCS is improved, observation and reassurance may be warranted. Therefore, there has been interest in examining changes in median nerve CSA after surgical treatment and how those changes correlated with patient reported outcomes. Pimentel et al⁴⁵ reported on 22 patients who underwent CTR and had both preoperative and postoperative US at 4, 12, and 96 weeks after surgery. The mean CSA before surgery was 19.7 mm², which increased to 20.1 mm² at 4 weeks, decreased to 15.5 mm² at 12 weeks, and 13.5 mm² at 96 weeks. Demino and Fowler reviewed 199 wrists in 172 patients who underwent CTR and found that on average, the median nerve CSA decreased from preoperative values by 1.2 mm² at 2 weeks after surgery, 1.5 mm² at 6 weeks after

surgery, and 1.7 mm² at 6 months after surgery.⁴⁶ Mondelli et al⁴⁷ reviewed 67 consecutive CTR and noted improvements in the median nerve CSA at the carpal tunnel inlet that correlated with clinical and electrophysiologic improvement at 1 and 6 months. Vogelin et al⁴⁸ reported on a prospective cohort of 60 wrists that underwent CTR and had both preoperative and 4-month postoperative US measurements of the median nerve. The authors noted decreases in median nerve CSA and that patients with a preoperative CSA < 10 mm² tended to have worse outcomes when compared with patients with a preoperative CSA > 10 mm².

CORRELATION BETWEEN US CSA AND PATIENT REPORTED OUTCOME'S

Aloï et al⁴⁹ retrospectively reviewed 224 wrists in patients who underwent CTR. The authors showed improvements (decreases) in both median nerve CSA and Boston Carpal Tunnel Questionnaire (BCTQ) scores at 2 weeks, 6 weeks, and 6 months after surgery. Kim et al⁵⁰ reviewed 44 wrists at 3 weeks and 3 months after CTR. The authors also found a decrease in median nerve CSA and that decrease correlated with improvements in the BCTQ. Bland and Rudolph reviewed 1,146 patients who underwent CTR and had both preoperative and postoperative US. The authors noted that the mean median nerve CSA at the wrist crease was 13.1 mm² for “successful” operations and 11.9 mm² for “unsuccessful” operations.⁵¹

US CSA AND PROGNOSIS

There are conflicting reports regarding whether US is a valid prognostic test. Aloï et al⁵² reviewed 72 hands that had US and BCTQ data available before surgery and at 6 weeks after surgery. There was no difference in BCTQ at any time point between patients with a positive US (defined as a CSA ≥10 mm²).

LEARNING CURVE

Crasto et al⁵³ studied the effect of instruction and guidance on the accuracy of orthopedic residents and hand fellows measuring the CSA of the median nerve. Prior to instruction, participants only measured the correct structure 36% of the time. After instruction, this increased to 97% accuracy, and the proportion of measurements within 1 mm² of the “true” value increased by 20%. Fowler et al⁵⁴ examined the inter- and intrarater reliabilities between an intern who had never used US, a fellow who had taken a weekend US course, and a hand fellowship-trained hand surgeon with considerable US experience. There was moderate agreement between the surgeons of varying experience

and near-perfect intrarater agreement for the surgeon with considerable experience. Gonzalez-Suarez et al⁵⁵ and Aleman et al⁵⁶ found a similarly high correlation between examiners. Impink et al⁵⁷ showed excellent interrater reliability for US measures of the median nerve CSA at the wrist crease and a minimal detectable change of only 5% between examiners.

POTENTIAL LIMITATIONS OF US FOR CARPAL TUNNEL SYNDROME EVALUATION

One of the proposed reasons for obtaining NCS in the evaluation of CTS is the ability to “rule out” or identify other associated pathologies such as cervical radiculopathy, peripheral neuropathy, and/or other more proximal nerve compression syndromes (pronator syndrome or proximal median nerve compression). However, the evidence that NCS actually does those things in clinical practice is often quite limited. A typical upper-extremity NCS does not adequately evaluate for peripheral neuropathy as diagnostic criteria often require the examination of lower-extremity nerves as well. The evaluation of the proximal median nerve is also not part of a typical NCS examination unless specifically requested by the ordering physician and even in those cases may be normal despite compression. Although cervical radiculopathy can be identified on the EMG portion of the electrodiagnostic test, it is positive in less than half of patients with clinically diagnosed radiculopathy.⁵⁸

Other potential limitations of the use of US for the diagnosis of CTS are policies and/or regulations by insurers and workers’ compensation companies that require NCS for the diagnosis and/or treatment of CTS. Updated guidelines by the American Academy of Orthopedic Surgery, which suggest that US, NCS, and CTS-6 are all equivalent methods for confirming CTS, may lead to changes in these policies over time.

CURRENT CLINICAL PRACTICE FOR EVALUATION OF PATIENTS WITH CARPAL TUNNEL SYNDROME

In my practice, all patients with a history and physical examination consistent with CTS undergo a limited US examination of the median nerve at the wrist crease. I personally perform the US to increase the efficiency of diagnosis (referring the patient to another physician to perform the examination is inefficient, increases cost, and is unnecessary). The CSA of the median nerve is measured using the trace function, and a CSA of ≥ 10 mm² is considered diagnostic for CTS. If the US correlates with the

clinical diagnosis, nothing further is needed. The severity of CTS is graded as mild (10–12 mm²), moderate (12–14 mm²), or severe (>14 mm²). If the clinical picture and US findings are discordant, a wrist-to-forearm ratio is obtained with a ratio of ≥1.4 considered diagnostic for CTS. If the wrist-to-forearm ratio is also discordant with the clinical picture, a diagnostic US-guided carpal tunnel injection is then performed.

CUBITAL TUNNEL SYNDROME

Similar to the evaluation of CTS, the ulnar nerve is evaluated at the elbow, and CSA of the ulnar nerve is measured. Carroll et al⁵⁹ analyzed 115 nerves in 89 patients with clinical signs and symptoms of ulnar neuropathy at the elbow. Ultrasound correlated with clinical findings in 95% of cases compared with NCS, which correlated in 91% of cases. In addition, US correlated with severity as evaluated using NCS. Wiesler et al²⁰ reviewed 14 patients with cubital tunnel syndrome and 60 elbows in 30 healthy controls. The mean maximum CSA of the ulnar nerve was 6.5 mm² in healthy controls and 19 mm² in patients with cubital tunnel syndrome. Bayrak et al⁶⁰ reviewed 41 elbows in 36 patients with clinical and EDS evidence of ulnar neuropathy at the elbow and compared those elbows with 42 elbows in 21 healthy controls. An ulnar nerve CSA ≥11 mm² was found to have a sensitivity of 95% and specificity of 71% with an area under the curve of 0.96. Ellegaard et al⁶¹ prospectively studied 41 patients referred for cubital tunnel syndrome and 43 healthy controls. The sensitivity of US was 93%, and the specificity was 50%. Beekman et al⁶² performed a systematic review of studies examining the diagnostic accuracy of US for the diagnosis of cubital tunnel syndrome and found high sensitivity and specificity in most studies.

US CORRELATION WITH SEVERITY

Carroll et al⁵⁹ performed a retrospective review of patients presenting with ulnar neuropathy of the elbow (UNE) and found that US strongly correlated with severity as diagnosed by EDS. Mean maximal CSA in mild UNE was 12.9 mm², 14.8 mm² in moderate UNE, and 18 mm² in severe UNE. Beekman et al⁶³ prospectively evaluated 102 patients (109 elbows) with a clinical diagnosis of cubital tunnel syndrome and measured the ulnar nerve diameter at various levels around the elbow. The US examination was positive in 78% of elbows with sensory-only findings and 87% of elbows with sensory and

motor findings, compared with 79% and 76% for EDS, respectively.

CHANGES AFTER CUBITAL TUNNEL RELEASE

Duetzmann et al⁶⁴ retrospectively reviewed 48 patients who had undergone surgical decompression of the ulnar nerve at the elbow and found that 36/48 patients showed a reduction in ulnar nerve CSA; however, that change did not correlate with clinical outcomes. In contrast, Beekman et al⁶⁵ prospectively evaluated 84 patients with ulnar neuropathy at the elbow and found that patients who had a decrease in ulnar nerve diameter at the elbow after treatment were more likely to report a favorable outcome. Further research is needed on postsurgical changes after cubital tunnel release.

DYNAMIC ULNAR NERVE SUBLUXATION IDENTIFIED USING US

Detection of ulnar nerve subluxation is another proposed benefit of US evaluation in the work-up of cubital tunnel syndrome. Van Den Berg et al⁶⁶ evaluated 342 patients with cubital tunnel syndrome and 70 healthy controls, finding ulnar nerve perching in 14% of patients and full subluxation in 7% of patients and 5.7% and 5.7% in healthy controls, respectively. The presence or absence of subluxation did not correlate with clinical findings of sensory disturbance or motor weakness and did not correlate with EDS findings. It is often possible to identify a subluxating ulnar nerve clinically in thin patients; however, it is also often beneficial to confirm this with US, and it may change the clinical algorithm as patients with subluxating ulnar nerves, in my practice, are often offered earlier cubital tunnel release with anterior transposition rather than continued nonsurgical treatments.

CURRENT CLINICAL PRACTICE FOR EVALUATION OF PATIENTS WITH CUBITAL TUNNEL SYNDROME

In my practice, all patients with a history and physical examination consistent with cubital tunnel syndrome undergo measurement of the ulnar nerve at the medial epicondyle, 2 cm proximal to the epicondyle, and 2 cm distal to the epicondyle. The elbow is taken through a range of motion, and the nerve is evaluated for perching and/or frank subluxation. I personally perform the US to increase the efficiency of diagnosis. The CSA of the ulnar nerve is measured using the trace function, and a CSA of ≥ 10 mm² and/or a

change of ≥2 mm² between measurements is considered diagnostic.

OTHER PERIPHERAL NERVE COMPRESSION SYNDROMES

There is much less published literature on the other, more uncommon peripheral nerve compression syndromes. For example, most of the literature for radial tunnel syndrome focuses on documenting normal anatomy and showing that injections can be provided accurately around the radial nerve rather than on diagnostic criteria and diagnostic accuracy.^{67,68} Others have attempted to study anterior interosseous nerve syndrome, Wartenberg syndrome, and even neuralgic amyotrophy, all in small series.^{69,70} Choi et al⁶⁹ reviewed the US anatomy of the median nerve at the elbow; however, there is limited clinical evidence to suggest its ability to differentiate between normal and abnormal clinical scenarios. Özdemir et al⁷¹ found the US, MRI, and NCS were not helpful in the diagnosis of pronator syndrome. The use of US to assist in the diagnosis of thoracic outlet syndrome is a current area of investigation but will unlikely be used in the routine practice of most hand and upper-extremity surgeons. The benefit of US in these settings is unclear, and more research will be needed to define its role.

CONCLUSION

Ultrasonography is a powerful tool in the diagnostic work-up for peripheral nerve compression. Like any diagnostic test, US has its benefits and deficiencies. When used in the appropriate setting, US has diagnostic accuracy that is equivalent to or exceeds that of EDS. As more hand surgeons become trained in the use of US, it is possible that it will replace EDS as the preferred first-line test in the work-up of peripheral nerve compression syndromes.

CONFLICTS OF INTEREST

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JOURNAL CME QUESTIONS

The Use of Musculoskeletal Ultrasound for Diagnosis of Peripheral Nerve Compression Syndromes

1. Nerve compression leads to which of the following?
- a. Increased intraneural vascularity and improvement in axonal transport.
 - b. Decreased intraneural vascularity, increased permeability, and intrafascicular edema.
 - c. Decreased permeability and extrafascicular edema.
 - d. Decreased extraneural vascularity and epineural swelling.
2. Which of the following is the most commonly accepted cross-sectional area cut-off value at the wrist for diagnosis of carpal tunnel syndrome?
- a. 8 mm²
 - b. 10 mm²
 - c. 12 mm²
 - d. 14 mm²
 - e. 20 mm²

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3. Which of the following wrist to forearm ratios is considered diagnostic for carpal tunnel syndrome?
- a. 0.8
 - b. 1.0
 - c. 1.4
 - d. 2.0
 - e. 10.0
4. Which of the following statements are true regarding changes in median nerve cross-sectional area after carpal tunnel release?
- a. The median nerve cross-sectional area increases and this correlates with improvement in patient reported outcomes.
 - b. The median nerve cross-sectional area decreases and this correlates with improvement in patient reported outcomes.
 - c. There is no change in median nerve cross-sectional area after surgery.
 - d. The median nerve cross-sectional area increases and this does not correlate with improvements in patient reported outcomes.
 - e. The median nerve cross-sectional area decreases and this does not correlate with improvements in patient reported outcomes.

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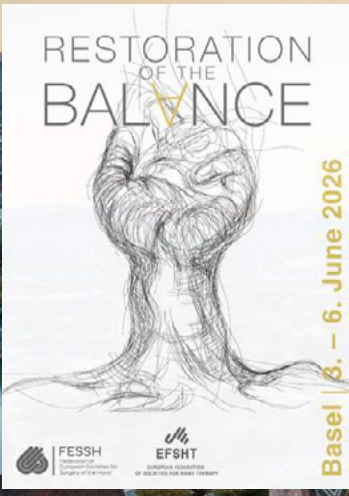
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Warm invitation and welcome to the Joint FESSH/EFSTH Congress 2026, June 3-6 in Basel, Switzerland!

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