

ezine ifssh

CONNECTING OUR GLOBAL HAND SURGERY FAMILY

HAND THERAPY
ADVANCED SCOPE OF
HAND THERAPY PRACTICE

TIPS AND TECHNIQUES
A SCHEME TO PROJECT THE
RADIAL NERVE ON THE HUMERUS



IFSSH, IFSHT & FESSH

COMBINED CONGRESS

LONDON 2022





THE INTERNATIONAL FEDERATION OF SOCIETIES FOR SURGERY OF THE HAND
THE INTERNATIONAL FEDERATION OF SOCIETIES FOR HAND THERAPY

LONDON
2022

COMBINED XXVII FESSH CONGRESS

6 – 10 June 2022
ExCeL Conference Centre, London, UK
<https://ifssh-ifsht2022.com>



contents

4 EDITORIAL

Good Patient Communication
- Ulrich Mennen

5 PRESIDENT'S MESSAGE

- Marc Garcia-Elias

6 SECRETARY-GENERAL REPORT

- Raja Sabapathy

10 PIONEER PROFILES

• Jan Roman Haftek
• John Turner Hueston

12 HISTORIAN REPORT

Goodbye IFSSH Historian, and welcome IFSSH
Communications Director
- David Warwick

13 RE-PRINTS SCIENTIFIC JOURNALS

• Articles from Scientific Journals: HTAIT
• Management of Acute Distal Radioulnar Joint
Instability Following a Distal Radius Fracture

37 TIPS AND TECHNIQUES

A scheme to project the radial nerve on the
humerus
- Alexander Zolotov

40 HAND THERAPY

• Advanced Scope of Hand Therapy Practice :
Improving access to care for the management
of acute and chronic hand conditions.
- Karina Lewis
- Ruth Cox
- Celeste Glasgow

• IFSHT Newsletter

45 ART

"Izandla Ziyagezana"
- Anton Smit

48 MEMBER SOCIETY NEWS

• South African Society for Surgery of the Hand
• Ecuadorian Society for Surgery of the Hand
• Swiss Society for Surgery of the Hand
• Singapore Society for Hand Surgery
• American Society for Surgery of the Hand
• Venezuelan Society for Surgery of the Hand
• Spanish Society for Hand Surgery
• American Association for Hand Surgery
• Columbian Society for Surgery of the Hand

61 UPCOMING EVENTS

Update from IFSSH/IFSHT London Congress
Organisers

Good Patient Communication

To run a busy practice involves not only making good clinical decisions, but also many important non-clinical aspects of patient management. The nature of running a practice forces one to multitask, which can easily result in neglect of the most important focus, namely, the patient. After all, no patient no practice.

Unfortunately, in many medical curricula, not enough attention is given to the art of communication in the clinical setup. The relationship between patient and doctor is unique. The patient is anxious, needs information, advice and guidance; whereas the doctor is seen as the one with knowledge, experience and wisdom. This is a very uneven relationship, and often not appreciated by the doctor.

In the December 2021 issue of the "ASSH Perspectives"¹ the theme was "Tips for Good Patient Communication". It makes for interesting and worthwhile reading, and helps us to re-focus on this important issue again.

Why does a person want to see you, the doctor? In what state of mind is this help-seeking person? What information would help this person to make an informed decision about his/her ailment?

Here are a few ideas to ponder:

- Impressions - do I impart a kind, confident and a willing attitude to help my patient?
- Attitude – do I create a comfortable atmosphere that facilitates open and easy conversation?
- Empathy – do I try to understand my patient's situation of need; i.e., try to imagine his/her position?

- Listen – do I take time for my patient to verbalise his/her concerns and questions?
- Partnership – is my response collaborative?
- Explanation- do I use easily understandable language, drawings and models when I counsel the patient?
- Decision making – do I take my patient's needs into account; do I have a holistic approach; is my formulation unbiased?
- Evaluation – do I refrain from being dogmatic and promising unrealistic expectations?
- Results – do I genuinely share in the eventual outcomes, even if the results are less than anticipated?

Best wishes for a happy practice,
Ulrich



Ulrich Mennen
Editor

1. American Society for Surgery of the Hand: "ASSH Perspectives" membership@assh.org

President's message

Dear Colleagues,
This will be my last President's Message to you. Before I close this important chapter of my life, let me thank you for having placed your confidence in my abilities to assume the Presidency of this organization. It has been my honor and privilege to serve you in this position. I also want to acknowledge those who helped me so much, sharing my responsibilities while I have been trying to stabilize my health. A friend in need, is truly a friend indeed.

As it has been customary during the Opening Ceremony, at the forthcoming IFSSH Congress in June in London, we will celebrate the life and achievements of 28 recently promoted "Pioneers of Hand Surgery". This year, in order to further emphasize the feelings expressed above, both the Executive and the Nominating Committee accepted my proposition to also pay respect to what I called the "Unknown Hand Surgeon", somebody whose untimely death and scarcely published work would have been ignored if it was not for the butterfly effect of his or her many achievements.

Many surgeons in the past could be chosen to fulfill this category. When I requested this, I had one particular surgeon in mind: Dr. Fernando Fonseca Máñez (1946-2014) from Caspe, Spain. As an active surgeon and member of the Spanish Society for Surgery of the Hand, he did more than 2400 operations on deformed children in a certain part of Africa. When I asked Fina Sensada¹, his widow, why he had been so stubbornly dedicated in helping these children, she didn't give me a straight answer. Instead, she told me what I later considered the most beautiful story of friendship between two children from totally different cultures and beliefs: the story of Fernando and his friend Ali. The last words that the 7 year old Fernando said to the feverish Ali on his deathbed were:

"I promise you, that when I grow up, I will be a doctor, and I will help those who have nobody that can help them get better. And in each of them I will see you, Ali!"

Moved by that "apparently childish" tale, I wanted this "Fernando and Ali" story to be retold. Initially it was only published in Spanish¹, but has also now been translated into English. It is nicely illustrated by a world-class classical dancer, Nacho Duato². This booklet will be freely distributed to all the attendees at the upcoming IFSSH-FESSH- IFSHT Congress in London.

I know that what I am proposing, to give to all Hand Surgeons and Therapists a copy of the 'Fernando and Ali' story, may be considered unusual. We are supposed to have a technical and scientific meeting where all types of surgery and therapy are discussed. In this case, however, I think of this tale not as a remedy, but as a holistic attitude towards life and our profession. A very necessary attitude that may influence the solving of many problems, because of our diverse backgrounds, cultures, beliefs and attitudes. "In our diversity, we grow together"



Thank you all so much again. Best wishes!

Marc Garcia-Elias
President of the IFSSH

1. <https://www.nosolocine.net/fina-sensada-una-vida-dedicada-al-cine-y-a-la-solidaridad-por-txerra-cirbian/>
2. https://es.wikipedia.org/wiki/Nacho_Duato

Secretary General Report



Dear Colleagues,

IFSSH, IFSHT & FESSH Combined Congress: 6-10 June 2022, London

In 2016 the British Society for Surgery of the Hand (BSSH) presented the winning bid to host the 15th Triennial IFSSH Congress in London. The BSSH joined with its Hand Therapy colleagues (BAHT) to form a local organising committee, and then combined with FESSH committees. With the assistance and oversight of the IFSSH and IFSHT, the results of their hard work will be seen at the 2022 Congress.

The Congress website - <http://www.ifssh-ifsht2022.com/> - is regularly updated with information. On the website you can find the most current Congress programme, listings of the congress social events, suggestions for London tourism, and hotel recommendations.

The Congress programme includes:

Opening Ceremony and Welcome Reception

All congress participants are invited to the opening evening of the Congress (6pm, 6th June) to share in British hospitality and traditions. The 28 IFSSH Pioneers of Hand Surgery will receive their acknowledgement at the Opening Ceremony and we look forward to honouring their contributions.

IFSSH Delegates' Council Meeting

The 2022 IFSSH Delegates' Council meeting will be held on Wednesday 8 June 2022. All IFSSH Member Societies are asked to ensure a representative is present. Please contact the IFSSH Secretariat (administration@ifssh.info) for further information.

Within this meeting, the IFSSH Delegates will select:

- the host of the 2028 IFSSH Congress - Bidding societies: Association of Chinese-speaking Hand Surgeons United and Singapore Society for Hand Surgery
- the host of the inaugural Mid-Term Course in Hand Surgery - Bidding societies: Australian Hand Surgery Society, Bolivian Association of Hand Surgery, Ecuadorian Hand Surgery Society, and Thai Society for Surgery of the Hand.
- the incoming Executive Committee and Nominating Committee members.

Scientific Programme

An exciting programme is planned. The 2022 Keynote Speakers are:

- IFSSH Swanson Lecturer - Professor Tim Davis, Nottingham, UK
- Presidential Lecturer - Professor Duncan Angus McGrouther, Singapore
- BSSH Douglas Lamb Lecturer - Professor David Ring, Texas, USA
- Special Guest Lecturer - Brigadier Nikki Moffat CBE, UK

The Instructional Course and Congress textbook will be based around the theme of Tendon Disorders of the Hand and Wrist. Numerous international guest lecturers will deliver the symposia topics. An incredible 1800 abstracts were submitted and reviewed; those selected for presentation will create stimulating free paper sessions.

The programme is regularly updated and available on the Congress website.

Pub Night and Congress Dinner

The official Congress social events will be held at the Revolution Leaden Hall Bar (Wednesday evening) and Old Billingsgate (Thursday evening). Tickets can be purchased within the registration system.

UK Travelling Fellowship Scheme

The IFSSH congratulates the BSSH on this initiative. Thirty three fellows have been selected from a pool of applicants worldwide. These Fellows will spend two weeks prior to the congress at British Hand Surgery Departments to experience the local surgical and training programmes. We thank all of the hosting units for their participation to give these international Fellows a very unique experience.

We have already received registrations from over 78 countries, reinforcing the international focus of the IFSSH Congress. The opportunity to meet again with colleagues and share knowledge at in-person scientific sessions should not be missed.

We hope you will join us in London next month!

With very best wishes



S. Raja Sabapathy

Secretary-General, IFSSH

Email: secretary@ifssh.info

Web: www.ifssh.info

Twitter/Instagram: @IFSSHHand

THE INTERNATIONAL FEDERATION OF SOCIETIES FOR SURGERY OF THE HAND
THE INTERNATIONAL FEDERATION OF SOCIETIES FOR HAND THERAPY

LONDON
2022

COMBINED XXVII FESSH CONGRESS

6 – 10 June 2022
ExCeL Conference Centre, London, UK



Jan Roman Haftek

(1928-2015)



Jan Roman Haftek was born on 8 November 1928 in Kańczuga, Poland. After completing his secondary schooling in Przeworsk in 1947, he attended the Warsaw University of Medical Sciences and qualified in 1952 as a medical doctor. Further

training in the Department of Neurosurgery earned him the qualification as neurosurgeon in 1956.

While working in the Neurosurgery Department for 13 years, he undertook numerous scientific visits abroad. From 1959-1960 Haftek worked at the Polenov Institute of Neurosurgery in Leningrad, USSR, studying peripheral nerve surgery. He obtained his Doctoral degree (PhD) from the University of Warsaw in 1962. The next year Haftek started working at the Capital Rehabilitation Centre in Konstancin, and established the first Department of Acute Spinal Cord Injuries in Poland. From 1966-1967 he worked under Sir Herbert Seddon as well as Prof. Peter K. Thomas at the Royal National Orthopaedic Hospital in London, UK.

Jan Haftek became Assistant Professor in 1970, and became the head of the Clinic and Department of Neurosurgery at the Military Academy in Lodz, and 13 years later rose to the rank of colonel. He then returned to Konstancin as Chief of the Capital Rehabilitation Centre until 1991 where he established the Nerve Injury Clinic, and in 1985 also became the head of the Department of Neurotraumatology as well as of the Postgraduate Education Medical Centre.

In 1987 he became full Professor. He was a popular speaker at many national and international meetings and a much loved teacher by his students.

Prof. Haftek was member of various national and international Societies including the Polish Rehabilitation Society, which he initiated, the Polish Neurosurgery Society, the International Medical Society of Paraplegia and the Polish Orthopaedic Traumatology Society.

His numerous awards and honours included the Commander's Cross of the Order of Polonia Restituta (Revival of Poland) (1989), an honorary doctorate from the Military Medical Academy in Lodz (1999), and the Gold Medal of Honour from the World Federation of Neurosurgical Societies (Marrakesh, 2005). He was an Honorary Citizen of Jaroslaw (1998) and Kanczuga (2007).

Jan Haftek was first married to Cecylia Gmernicka-Haftek (1928-2016) with whom they had two sons, Marek (dermatologist) and Jaroslaw (engineer), and his second marriage was with Izabela Ogonowska-Haftek (neurologist) (d. 21 August 2005) with whom he had daughter Katarzyna. Jan was also interested in classical music and poetry, and loved hunting. He died on 9 December 2015 in Warsaw, Poland.

On 11 March 2007 at the Tenth Congress of the International Federation of Societies for Surgery of the Hand in Sydney, Australia, Prof. Jan Roman Haftek was honoured as "Pioneer of Hand Surgery"

John Turner Hueston

(1926-1993)



John Turner Hueston was born on 16 January 1926 in Hawthorn, Australia. After completing his initial schooling at Trinity Grammar School in Melbourne, he qualified as a doctor (MBBS) in 1948 from the Trinity College of the University of Melbourne in Australia.

He then took a surgical resident post at the Royal Melbourne Hospital and completed his Master in Surgery (MS) in 1951 and became a Fellow of the Royal Australian College of Surgeons (FRACS). In 1952 after joining the Royal Australian Army Medical Corps, he was sent to the Korean War as Senior Surgical Specialist with the British Commonwealth Forces.

In 1953 Hueston went to England and passed his Fellow of the Royal College of Surgeons (FRCSEngland) exam. He then served as Senior House Officer in Plastic Surgery to Sir Archibald McIndoe in East Grinstead, Sussex, until 1954 when he returned to Australia and joined the practice of Sir Benjamin Rank and Alan Wakefield in the Royal Parade I Melbourne.

Hueston was then appointed Consultant to the Repatriation General Hospital in Heidelberg, Victoria (1954-1965), the Footscray Hospital, Melbourne (1955-1965) and the Royal Melbourne Hospital (1954-1975) where he also became head of the Department of Plastic Surgery in 1966.

John Hueston's main medical interest was Dupuytren's contracture. He published a monograph in 1964 which earned him the Hunterian professional lecture of the Royal College of Surgeons of England in the same year. He became a well-known lecturer in Europe and America, and was honoured with the Founders Lecture of the American Society for Surgery of the Hand (1969) and the McIndoe Memorial Lecture from the Royal College of Surgeons, England (1984). His numerous publications are well-known which made him the pre-eminent recognised authority on Dupuytren's in his time.

Hueston was member and was made honorary member of various Societies.

During his stay in London, UK, he married Constance Berndt (Registered Nurse), whom he met years earlier while studying in Melbourne. They had three daughters, Penelope, Jillian and Rosemary. John enjoyed sailing, tennis, art and architecture, and even after his retirement in St. Saturnin d'Apt in Provence, France he continued researching the life of Baron Guillaume Dupuytren. John Hueston died on 29 December 1993. He was made honorary citizen of Aix-en-Provence.

John Turner Hueston was honoured "Pioneer of Hand Surgery" by the IFSSH during the Tenth Congress of the IFSSH in Sydney, Australia on 11 March 2007.

Historian Report

GOODBYE IFSSH HISTORIAN, AND WELCOME IFSSH COMMUNICATIONS DIRECTOR

It has been a privilege to serve IFSSH as the Historian for the past 5 ½ years. All the hard work- finding, collating and archiving so much of the Federation's past- has been done by my predecessor Frank Burke. So I just had to update as we went along. Many societies have contributed to the history tab https://ifssh.info/member_nation-histories.php; if any more societies wish to do so then please let me know. The website is continuously updated as we pass through time with the work that IFSSH undertakes- the lists of Pioneers, congresses, Swanson lectures, Secretary General newsletters, council minutes and so on.

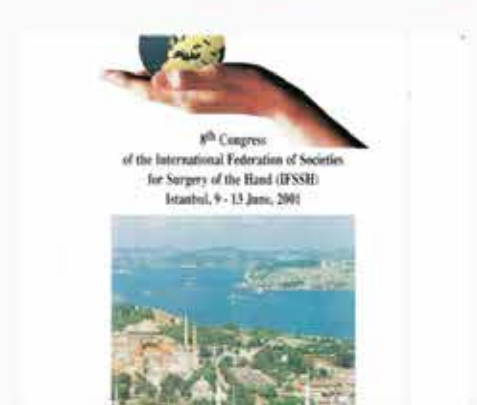
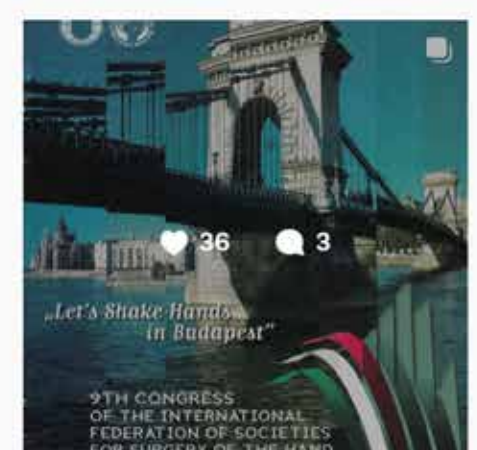
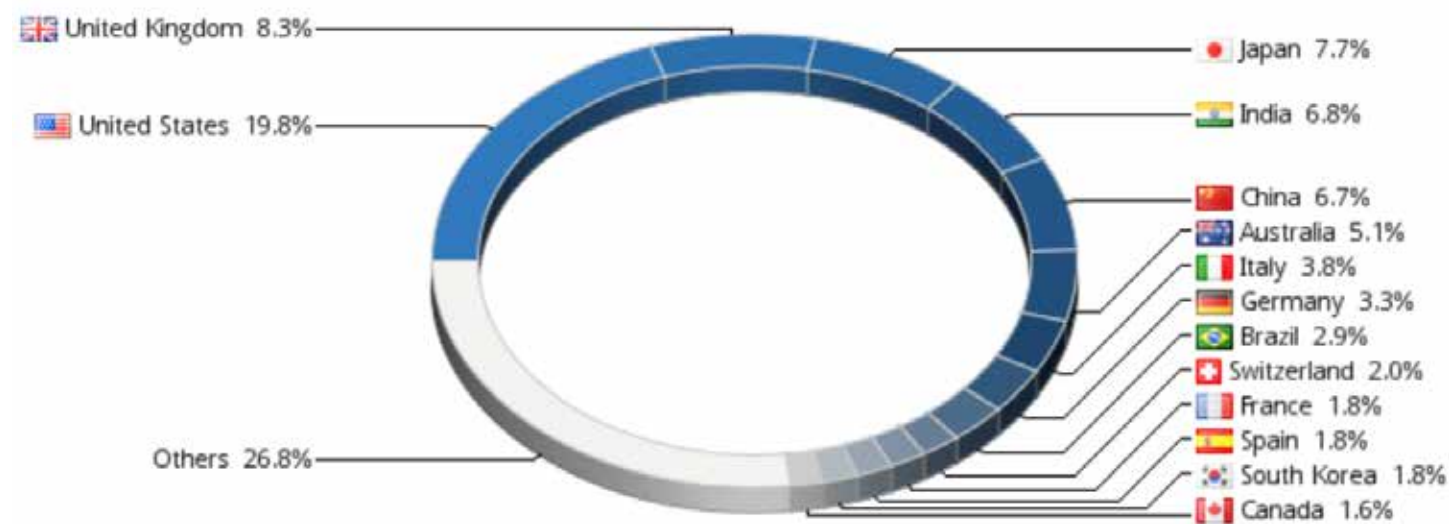
Whilst I have a large file of past paper documents in my office, the role of Historian has now become entirely digital and IFSSH has become, just like everything else in the world, a digital entity as well.

As a large organisation, we have to communicate with our members and we show the world what we as hand surgeons can offer. So communications have become more and more important and with the internet, easier and easier. Virtual platforms such as Zoom and Teams, which blossomed during the pandemic, have transformed how we run our IFSSH administration and how we provide education and information to the world of hand surgery.

The three monthly free electronic magazine, IFSSH Ezine, has important and interesting information for both Hand Surgeons and Hand Therapists (www.ifssh.info)

Our website has been visited by people from 146 different countries as the flag counter shows. Armenia was our most recent visitor.

146 different countries have visited this site. 206 flags collected. [View all details »](#)



Twitter and Instagram have proven to be a great way to contact our members and to anyone in the globe who wants to know what we do. Our IFSSH Twitter account @ifsshHand has 1829 followers and our Instagram account ifsshand has 2100 followers. Thanks to Belinda, the IFSSH Administrator, for keeping the accounts relevant and updated.

As I leave the Historian post when my tenure expires in June, the new person will be the Communications Director, a role that will become increasingly relevant as we seek to deliver more material to more people in a world where the expense of travel-from both a financial perspective but even more so a climate change perspective- can be mitigated by digital communication.

David



David Warwick



IFSSH DISCLAIMER:

The IFSSH ezine is the official mouthpiece of the International Federation of Societies for Surgery of the Hand. The IFSSH does not endorse the commercial advertising in this publication, nor the content or views of the contributors to the publication. Subscription to the IFSSH ezine is free of charge and the ezine is distributed on a quarterly basis.

Should you be interested to advertise in this publication, please contact the Editor: ezine@ifssh.info

IFSSH EZINE EDITORIAL TEAM:

EDITOR:
Professor Ulrich Mennen
Past President: IFSSH

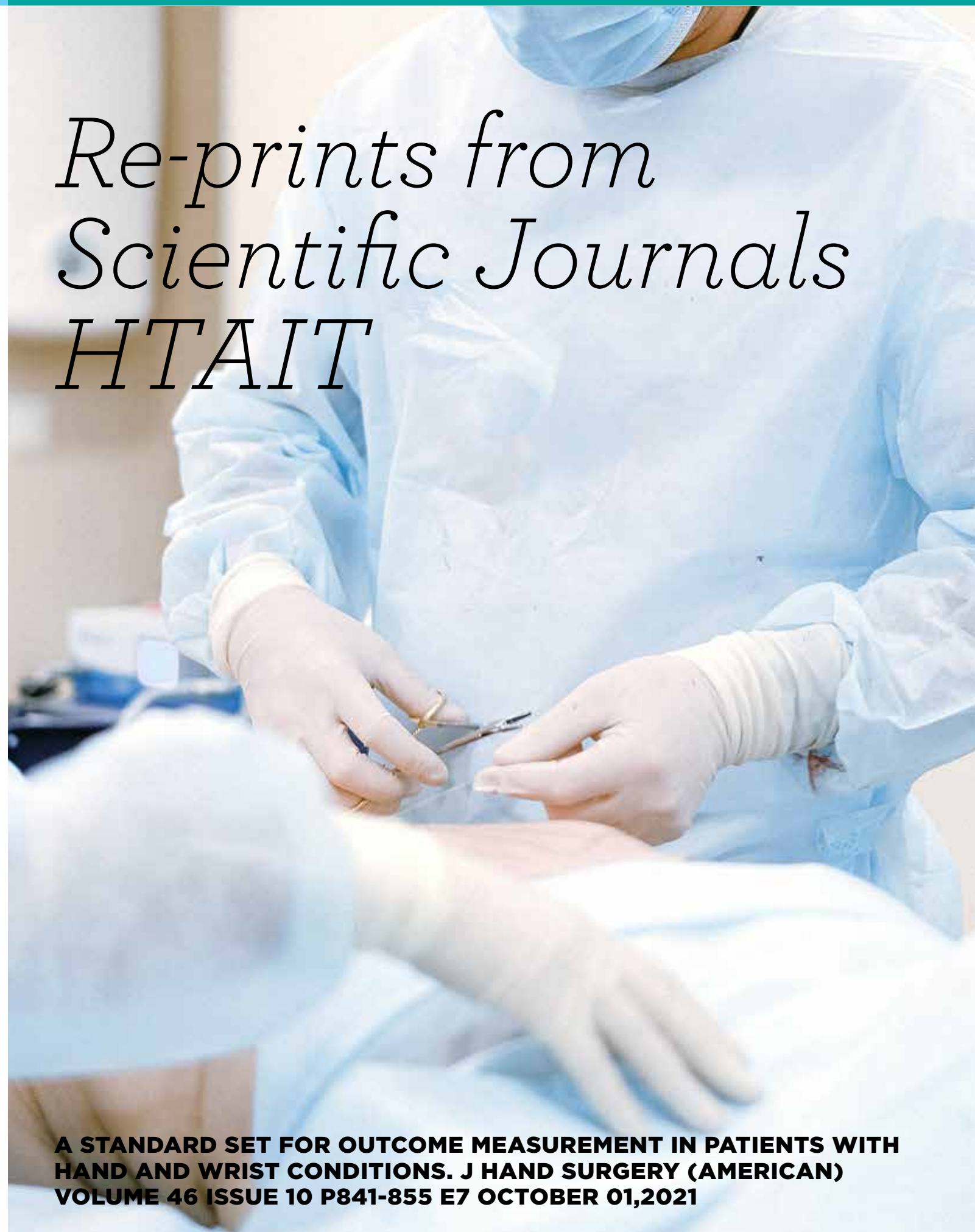
DEPUTY EDITOR:
Professor Michael Tonkin
Past President: IFSSH

GRAPHIC DESIGNER:
Tamrin Hansen
www.foxydesign.co.za

TO SUBSCRIBE GO TO:
www.ifssh.info
administration@ifssh.info

Re-prints from Scientific Journals

HTAIT



A STANDARD SET FOR OUTCOME MEASUREMENT IN PATIENTS WITH HAND AND WRIST CONDITIONS. J HAND SURGERY (AMERICAN) VOLUME 46 ISSUE 10 P841-855 E7 OCTOBER 01,2021



Vargo CR. Hand Therapy Assessments for Use with International Technicians (HTAIT). *Journal of Global Health Reports*. 2018;2:e2018001. doi:10.29392/joghr.2.e2018001

Research Articles

Hand Therapy Assessments for Use with International Technicians (HTAIT)

Courtney Retzer Vargo*

Keywords: global health

<https://doi.org/10.29392/joghr.2.e2018001>

Journal of Global Health Reports

Vol. 2, 2018

Hand Therapy Assessments for Use with International Technicians (HTAIT) is a simple, easy to use needs assessment intended to help identify current knowledge as well as areas for growth in the rehabilitation of the hand and upper extremity. The target population includes hand therapists and non-profit organizations preparing to travel internationally. This tool can be administered to international technicians, nurses, or healthcare staff at a host institution that have been identified as participants of the learning opportunity. The HTAIT consists of four assessment modules that can be used together or independently depending on purpose of the trip: Basic Upper Extremity Anatomy, Wound Care & Scar Remodeling, Orthotic Principles and Rehabilitation. The scoring rubric and grid allow the instructor to use the score(s) in identifying the technician's most likely learning level. The results of the HTAIT allow for tailored training, demonstration, and learning opportunities by assisting the visiting therapist or organization in determining the level of competency in a host therapy technician. Targeted learning opportunities lead to a more effective experience for both the visiting and host practitioners, while increasing the likelihood of long-term carryover of occupational therapy principles.

The inherent altruism of occupational and physical therapists often results in daydreaming about international humanitarian work. For those specializing in upper extremity rehabilitation, a one or two week volunteer trip can offer a chance to create meaningful change in someone's life while balancing obligations to employers and family. Volunteer experiences are typically in challenging, resource-poor environments, expensive, and challenge one's clinical skills, adaptability and creativity, but the outcome can be immense for both the visiting and host therapists. Despite this, many therapists are reluctant to participate out of fear of the unknown. Little is often known about individual patients prior to arriving in the host country and the dichotomy between the severity of local conditions and the lack of long term resources can be intimidating to a formally trained therapist. There may also be uncertainty regarding the role of the local staff during the experience, contributing to disconnect between providers. However, instead of an obstacle to be overcome, these differences should be seen as an opportunity to share knowledge and information, essential to creating long-lasting change and educational growth for everyone involved.

The World Health Organization (WHO), a division within the United Nations system, is an organization essential to the study of global health related issues and establishing the direction of the UN's health policy. The WHO is responsible for identifying concerns that impact health around the world, selecting a research agenda and evidence-based policy, defining norms and standards, and analyzing global health trends.¹ The "World Report on Disability", commissioned by the WHO in 2011, is a wide-ranging report intended to shape the course of disability prevention and management.¹ Two years later, the WHO held the Conven-

tion on the Rights of Persons with Disabilities through a series of local and online discussions aimed at carrying out the report's action plan, with the ultimate goal of recommending specific proposals during the Sixty-seventh World Health Assembly in 2014. The Convention on Disability underscored the significance of making "quality health services available and affordable to people with disabilities", "developing disability policies and programs that address the health and rehabilitation needs of people with disabilities, and allocating appropriate resources", and "improving data to better understand these health and rehabilitation needs and monitor and evaluate the impact of policies and programs".¹ This immense paper is separated into nine expansive calls for action, requiring collaboration among multiple government and private sector agencies, and to be executed via the detailed recommendations at the end of each section.¹

These recommendations are a call to action for hand therapists to contribute to global change through international humanitarian work focused on the training of local professionals, arming them with the skills to address basic needs of upper extremity patients, improve and preserve function, and limit deformity and pain. It is difficult to determine how many organizations around the world are providing therapeutic hand care and to what extent. This is in part because the title of these individuals can vary greatly between countries and many nations do not have a central professional association or educational program focusing on the upper extremity.² The International Federation of Societies for Hand Therapy (IFSHT) is an organization whose mission it is to "provide global networking and educational opportunities to develop and enhance the practice of hand therapy".² In 2014, IFSHT surveyed their 33

member countries in order to better understand how local circumstances merge to create global trends. When asked about access to hand therapy educational resources, respondents reported considerable challenges such as the lack of textbooks in their primary language, a lack of English proficiency in order to access mainstream journals, and the high cost of ordering journals online, all major barriers in the attempt to increase the breadth and depth of clinical education.² However, the IFSHT survey only targeted full-members, or those countries with a large enough rehabilitation community to warrant membership. This begs the question, what about the other 168 nations of the world not yet represented due to an immature or isolated hand therapy community or none at all?

There is a world-wide deficit of rehabilitation practitioners, PT, OT, physical medicine physicians and their counterparts. Shortfalls in this area become more troubling when the lack of physician specialists is appreciated, often essential in the treatment of upper extremity injury.³ The progressive pain and dysfunction associated with inadequate care or a total lack of care can profoundly impact vocational status, challenge cultural norms and negatively affect the psychological and emotional well-being of the whole family.

In 2015, the WHO released the Global Disability Action Plan 2014-2021: Better health for all People with Disability, which specifically recommended more training opportunities to be developed in order to create rehabilitation practitioners at multiple levels of education, specific to the local population's needs.^{4,5} A resource-limited environment often requires clinicians to have a high level of expertise in order to allow them to operate as a multidisciplinary practitioner. The WHO's position recognizes that mid and entry-level educational programs can bridge service gaps, understanding that "training community-based workers can address geographical access and respond to workforce shortages and geographical dispersion".¹ These therapy technicians can serve to broaden access to care in underserved populations. However, understanding and identifying a host provider's punctuated levels of medical knowledge in addition to language and cultural barriers can complicate the experience. With this objective in mind, Hand Therapy Assessments for Use with International Technicians (HTAIT) was created (see Appendix S1 in Online Supplementary Document(Online Supplementary Document)). This simple, easy to use needs assessment tool is designed to help visiting therapists and non-profit organizations gain a snapshot of the local hand therapy knowledge in order to more effectively prepare for the experience and tailor learning opportunities to the host provider's areas of need. Visiting hand therapists preparing to travel internationally can administer the HTAIT to "international technicians", nurses, or healthcare staff at the host institution that have been pre-identified as participants for the upcoming learning experience. Training, demonstration, and learning opportunities can be shaped by the visiting therapist in association with the identified level of competency in a host therapy technician, improving the effectiveness of the experience for both the visiting and host practitioners and increasing the likelihood of long term carryover.

The HTAIT consists of four assessment modules, *Basic Upper Extremity and Anatomy, Wound Care & Scar Remodeling, Orthotic Principles and Rehabilitation of the Upper Extremity*, designed to either be used together or independently depending on the purpose of the trip and the expressed interest of both parties (see Appendix S1 in Online Supplementary Document(Online Supplementary Doc-

ument)). Although the assessment modules are not necessarily sequential, they do require knowledge that is hierarchical in nature with a certain degree of overlap. Therefore, it would be expected to administer assessment modules 1, 2 and 3 together, but unlikely that assessment modules 3 or 4 would be given without a high score in assessment module 1. HTAIT test design involved heavy consideration of cultural and linguistic barriers, taking care to avoid intimidation or insult with questions that were either too elementary or too sophisticated. Instead, the goal was for the questions to cross the spectrum of entry-level knowledge in upper extremity rehabilitation while establishing questions that could easily be translated without degrading the overall quality of the assessment.

Bloom's Taxonomy was vital to the question design process. Intended as guide to aid instructors in the creation of learning objectives, different learning styles are separated into six domains. Each domain focuses on a different type of thought process essential in the hierarchy of critical thinking, notable for the use of specific words and pattern of questions.⁶ All of HTAIT's assessment modules consist of questions that draw from each of Bloom's Taxonomy levels and its associated learning level found in the scoring rubric and grid (see Appendix S1 in the Online Supplementary Document(Online Supplementary Document)). This design recognizes that there is not simply a hierarchy of facts, but a hierarchy of the ways in which a learner processes and manipulates those facts.

In addition, Knowles' work on the adult learning approach was consulted in the creation of HTAIT. Based on four key principles, a person's "self-concept", their "personal experience" that they bring to learning process, their "readiness to learn", and their "orientation to learning"⁷ provides the context by which an adult participates in the learning process. In particular, Knowles' principles of experience and motivation associated with an adult learner are central in the instruction of the therapy technician and should be embraced as a useful aspect of program development. The visiting instructor should not approach such an experience with an air of superiority but rather with the appreciation that they are part of a collaboration that can benefit all parties. Healthcare workers in developing countries must draw on a rich background of skills that can be of service to the educational process in addition to offering a learning opportunity for the visiting instructor.

Beyond question design, another equally vital component in the HTAIT's creation was consideration of the number of questions needed to reach an appropriate threshold for the results to be reasonably accepted as an accurate reflection of what the learner actually knows. Batterham and Atkinson⁸ caution against the assumption that a small number should be rejected at the risk of overlooking clinically useful information. With this construct in mind, a threshold of ten questions per HTAIT assessment module was chosen, maintaining an individual assessment that was easy to administer, particularly if it was to be given orally using a translator. In addition, ten questions allows each learning module to properly address the breadth and depth of clinical knowledge in each category, while including a variety of questions targeting an ever higher order of cognitive processing.

A combination of multiple-choice and yes/no questions were chosen for each HTAIT assessment module (see Appendix S1 in Online Supplementary Document(Online Supplementary Document)). This strategy is the most efficient use of time while specific word choice is able to glean valuable information regarding adjunct knowledge such as

* Concentra Advanced Specialists, Las Vegas, Nevada, USA

anatomy details or medical terminology. The number of correct answers in each HTAIT assessment module are added together to provide the overall score, with each question valued at 1, 3, or 5 points according to the instructor key. The total number of points in each assessment module corresponds to a learning level category on the scoring rubric. Each of these learning level categories are then used as a guide to focus the development of learning opportunities through specific suggestions listed on the scoring rubric.

Cook, Cleland & Huijbregts⁹ state that a quality assessment has both quantifiable sensitivity and specificity and should be evaluated for both. An assessment tool's sensitivity measures its capacity to recognize a particular condition when it is present in a population pool, whereas specificity is the measure of a test's ability to recognize if a condition is missing when it is truly is not present.⁹ Assessments can have either measure without the other and still be useful although a practitioner may select a test based on the strength of either value. However, as Cook et al.⁹ discussed, methodological weaknesses in the design of such a tool can skew the results, negatively impacting the clinical decision making to follow. Furthermore, Cook et al.⁹ states that a common methodological mistake often involves using an inappropriate gold standard for comparison.

Brown & Rodger¹⁰ stress that occupational therapy as a profession must strive to close the gap between existing research and its application in the clinical setting. Occupational therapy as a scientific practice hasn't always held to its roots, particularly when challenges in the real world setting creates barriers to accessing quality research or assessment tools.¹¹ Thoughtful clinicians must engage in scientific investigation in order to pursue objective answers to questions and learn if those answers "hold true over time and if they hold true in more than one practice setting".¹⁰ The evolving need to create training opportunities for therapy technicians in the developing world has presented unique challenges demanding unique strategies and educational tools, but the assessment of such a tool cannot be easily quantified. Therefore, in the absence of a gold standard, questions of validity and reliability of the HTAIT remain. However, this does not negate its practical use and with time and expansion, psychometrics can be investigated further.

Holm¹² stressed the principal need for occupational therapy to be focused on evidence-based practice (EBP),

challenging our profession to be supported in science. Evidence-based practice is the crossroads of a fastidious use of the best evidence available, taking into account the needs and values of the subject and thoughtful clinical judgment.¹³ Holm¹² stressed that we must be able to explain "what we do and why we do it" and this principle was certainly a central theme in the creation of a novel assessment tool such as the HTAIT.

However, growth cannot come without innovation and in its truest form, comparison is often lacking. Currently, there is no appropriate method of examining the validity or reliability of the HTAIT as there exists no comparable assessment in terms of style or purpose in hand therapy. It is my intention that the HTAIT is made open source in order for my occupational therapy and hand therapy colleagues to use it in their own international humanitarian work and determine its usefulness. As a collective, hand therapists have the skills, aptitude and will to broaden the reach of our specialty and advance the principles of functional independence to the most underserved corners of the world.

ACKNOWLEDGEMENTS

This project was undertaken while the author was pursuing the post-professional Doctorate in Occupational Therapy (OTD) with a concentration in Upper Extremity Rehabilitation, at Concordia University Wisconsin, 12800 North Lake Shore Drive, Mequon, Wisconsin, US 53092-2402. Special thanks to Dr. Rebecca Neiduski, PhD, OTR/L, CHT as well as Sarah Ewald, CHT, Immediate Past President of the International Federation of Societies for Hand Therapy (IFSHT).

Funding: None.

Competing interests: The author has completed the Unified Competing Interest form at http://www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and declares no conflict of interest.

Correspondence to:

Courtney Retzer Vargo, OTD, OTR/L, CHT
Concentra Advanced Specialists
2200 South Rancho Drive, Ste 100
Las Vegas, NV 89102
courtneyva1977@yahoo.com
cvargo@concentra.com

REFERENCES

1. Organization WH. The World Report on Disabilities. 2011. http://www.who.int/disabilities/world_report/2011/report/en/index.html.
2. Ewald S, Wendling U. Membership Survey Report. International Federation of Societies for Hand Therapy. 2014. <https://www.ifsht.org/sites/default/files/Report%20IFSHT%202014%20Member%20Survey%20%20hand%20therapy%20%20around%20the%20world%20DEF.pdf>.
3. Wasley-Retzer C. Reflections on the WHO Disability Action Plan. *ASHT Times*. 2013;20(11).
4. Wasley-Retzer C. Hand therapy around the world. *ASHT Times*. 2015;22:38-39.
5. Organization WH. WHO global disability action plan 2014-2021: Better health for all people with disability. 2015. <http://www.who.int/disabilities/actionplan/en/>.
6. Adams NE. Bloom's taxonomy of cognitive learning objectives. *J Med Libr Assoc*. 2015;103(5):152-153. doi:10.3163/1536-5050.103.3.010
7. Knowles SMM. informal adult education, self-direction and andragogy. *The Encyclopedia of Informal Education*. 2002. <http://infed.org/mobi/male-olm-knowles-informal-adult-education-self-direction-and-andragogy/>.
8. Batterham AM, Atkinson G. How big does my sample need to be? A primer on the murky world of sample size estimation. *Physical Therapy in Sport*. 2005;6(3):153-163. doi:10.1016/j.ptsp.2005.05.004
9. Cook C, Cleland J, Huijbregts P. Creation and critique of studies of diagnostic accuracy: Use of the STARD and QUADAS methodological quality assessment tools. *Journal of Manual & Manipulative Therapy*. 2007;15(2):95-102. doi:10.1179/106698107790819945
10. Brown GT, Rodger S. Research utilization models: Frameworks for implementing evidence-based occupational therapy practice. *Occup Ther Int*. 1999;6(1):1-23. doi:10.1002/oti.85
11. MacEwan Dysart A, Tomlin GS. Factors related to evidence-based practice among U.S. occupational therapy clinicians. *American Journal of Occupational Therapy*. 2002;56(3):275-284. doi:10.5014/ajot.56.3.275
12. Holm MB. Our Mandate for the New Millennium: Evidence-Based Practice. *American Journal of Occupational Therapy*. 2000;54(6):575-585. doi:10.5014/ajot.54.6.575
13. Bennett S, Bennett JW. The process of evidence-based practice in occupational therapy: Informing clinical decisions. *Aust Occ Ther J*. 2000;47(4):171-180. doi:10.1046/j.1440-1630.2000.00237.x



Online Supplementary Document

J Glob Health Rep 2018;2:e2018036

Courtney Retzer Vargo, OTD, OTR/L, CHT

Hand Therapy Assessments For Use With International Technicians (HTAIT)**Appendix S1****Background:**

Rehabilitation professionals and hand therapists participating in international medical humanitarian efforts often do so with very little information regarding the capabilities of the local staff or organization. The HTAIT is a simple, easy to use needs assessment to help identify current knowledge as well as areas for growth by focusing training, demonstration, and learning opportunities to assist the visiting therapist in determining the level of competency in a host therapy technician or organization. Hand therapists and non-profit organizations preparing to travel internationally can administer this tool to international technicians, nurses, or healthcare staff at the host institution, improving the effectiveness of the experience for both visiting and host practitioners and increasing the likelihood of long term carryover.

Methods:

The HTAIT consists of four assessment modules, each focusing on a different element of upper extremity rehabilitation: *Basic Upper Extremity Anatomy, Wound Care & Scar Remodeling, Orthotic Principles, and Rehabilitation*. The modules are designed to be given individually or in combination with one another depending on the expressed needs or interest of the host facility. Although the assessment modules are not necessarily sequential, they do require knowledge that is hierarchical in nature with a certain degree of overlap. Therefore, it would be expected to administer assessment modules 1, 2 and 3 together, but unlikely that assessment modules 3 or 4 would be given without a high score in assessment module 1.

Findings:

To score the HTAIT, add the number of correct answers in each assessment module according to the instructor key. The total number of points in each assessment module corresponds to the student's Learning Level category on the scoring rubric and GRID. Practitioners can then use the Learning Level category as a guide to focus learning opportunities.

Conclusion:

Information gleaned from the HTAIT will improve the effectiveness of the learning experience for both the visiting and host practitioners, increasing the likelihood of long term carryover of rehabilitation principles and strategies.

Assessment Module 1: Basic Upper Extremity Anatomy

1. The flexor muscle tendon units are located on the palmar side of the forearm and hand.

YES NO

2. The extensor and flexor muscle tendon units begin above the elbow and extend to the fingertips.

YES NO

3. The thumb has muscles and tendons that begin both in the forearm as well as the hand.

YES NO

4. The bicep muscle can bend what two joints?

Answer: _____

5. The median nerve provides sensation to the dorsum of the hand.

YES NO

6. The scaphoid bone is located at the ulnar aspect of the wrist.

YES NO

7. The Flexor Digitorum Superficialis tendon splits into two slips to allow the Flexor Digitorum Profundus to attach at the distal phalanx joint?

Answer: _____

8. What three bones does the shoulder complex consists of?

Answer: _____

9. What nerve provides motor innervation to both parts of the thumb and small finger?

Answer: _____

10. What long forearm bone rotates around another bone to allow the forearm-hand complex to supinate?

Answer: _____

Instructor Key**Module 1: Basic Upper Extremity Anatomy**

(4 low/4 med/2 high) total 26 points

1. The flexor muscle tendon units are located on the palmar side of the forearm and hand? (Yes: The FDP and FDS are located on the volar aspect of the forearm and hand) 1POINT
2. The extensor and flexor muscle tendon units extend from the upper arm to the fingertips? (Yes: The extrinsic flexors and extensors have origins at the proximal forearm and do not cross the elbow joint.) 1POINT
3. The thumb has muscles and tendons that begin both in the forearm as well as the hand? (Yes: the thumb has both intrinsic and extrinsic muscles-tendon units.) 1POINT
4. The bicep muscle can bend what two joints? (Answer: The bicep muscle crosses both the anterior shoulder and the anterior elbow joint, allowing for flexion at each joint.) 1POINT
5. The median nerve provides sensation to the dorsum of the hand? (No: The median nerve provides sensation to the anterior aspect of the forearm and the volar aspect of the thumb, IF, MF and the radial aspect of the RF.) 3POINTS
6. The scaphoid bone is located at the ulnar aspect of the wrist? (No: The scaphoid bone is located on the radial aspect of the wrist). 3POINTS
7. The Flexor Digitorum Superficialis tendon splits into two slips to allow the Flexor Digitorum Profundus to attach at the distal phalanx joint? (No: The FDP tendon splits into two slips to allow the FDS to attach at the distal phalanx joint.) 5 POINTS
8. What three bones does the shoulder complex consists of? (Answer: the scapula, clavicle and humerus). 3POINTS
9. What nerve provides motor innervation to both parts of the thumb and small finger? (Answer: the ulnar nerve). 3POINTS
10. What long forearm bone rotates around another bone to allow the forearm-hand complex to supinate? (Answer: the radius rotates around the ulna to allow supination motion). 5POINTS

Assessment Module 2: Wound Care & Scar Remodeling

1. There are three layers of skin.
YES NO
2. A hypertrophic scar is raised, red and can be tender or itchy.
YES NO
3. At the very least, sterile water should be used clean a wound by boiling for a minimum of 5 seconds and then storing it in a closed container.
YES NO
4. Body parts with fresh burns should not be allowed to move until the wound has fully healed.
YES NO
5. Household products such as butter or cooking oil are safe to apply to fresh burns and wounds.
YES NO
6. The same piece of gauze or cloth should be reapplied to a wound after it is cleaned.
YES NO
7. How long does it take for a severe burn scar to remodel?
Answer: _____
8. What two forces are required for optimal scar remodeling?
Answer: _____
9. What position should be avoided during burn and wound healing to provide maximum tissue length?
Answer: _____
10. What position should the fingers be positioned in to avoid clawing during burn wound healing?
Answer: _____

Instructor Key**Module 2: Wound Care & Scar Remodeling**

(4 low/4 med/2 high) total 26 points

1. There are three layers of skin? (Yes: The epidermis, the dermis and the hypodermis) 1POINT
2. A hypertrophic scar is raised, red and can be tender or itchy. (Yes: a hypertrophic scar is all of the above but does not extend beyond the border of the scar) 3POINTS
3. At the very least, sterile water should be used clean a wound by boiling for a minimum of 5 seconds and then storing it in a closed container. (No: Water should be boiled for a minimum of 60 seconds in order to render it safe for basic wound cleansing) 1POINT
4. Body parts with fresh burns should not be allowed to move until the wound has fully healed. (No: Limbs with burn wounds must be moved to the limits of the joint regularly in order to maintain joint range of motion and encourage tissue length to prevent contractures.) 3POINTS
5. Household products such as butter or cooking oil are safe to apply to fresh burns and wounds. (Answer: Products such as these are not safe to apply to wounds or burns and can cause infection or delay in healing.) 1POINT
6. The same piece of gauze or cloth should be reapplied to a wound after it is cleaned. (No: a clean, fresh dressing should be applied each time the wound is cleansed to prevent infection) 1POINT
7. How long does it take for a severe burn scar to remodel? (Answer: 2 years or longer) 3POINTS
8. What two forces are required for optimal scar remodeling? (Answer: Compression and tissue tension) 3POINTS
9. What position should be avoided during burn and wound healing to provide maximum tissue length? (Answer: Flexion is the position of comfort and also the position that is most likely to lead to contracture) 5POINTS
10. What position should the fingers be positioned in to avoid clawing during burn wound healing? (Answer: Clawing of fingers can be avoided by positioning the MP joints in flexion, IP joints in extension, thumb mid palmar radial abduction) 5POINTS

Assessment Module 3: Orthotic Principles

1. A fracture should be immobilized for at least 4-6 weeks.
YES NO
2. As many joints as possible should be included in the orthotic immobilization in order to protect the healing structure.
YES NO
3. A severed tendon can be repaired by immobilizing in an orthotic for at least 4-6 weeks.
YES NO
4. A barrier such as a thin cloth or gauze should be applied between the skin and the orthotic for protection.
YES NO
5. A distal radius fracture should be positioned in an orthotic with a neutral wrist.
YES NO
6. What are some of the contraindications of orthotic application of an injured structure?
Answer: _____
7. Why should the digits not be immobilized in a resting flexed position if the hand and digits are very swollen?
Answer: _____
8. What might be the consequence of applying a too-tightly fitting orthotic?
Answer: _____
9. What position should a shoulder be positioned in during the healing phases of a burn?
Answer: _____
10. What position should the hand/digits be positioned in during the healing phase of a burn?
Answer: _____

Instructor Key

Module 3: Orthotic Principles

(4 low/4 med/2 high) total 26 points

1. A fracture should be immobilized for at least 4-6 weeks? (Yes: A typical fracture is consolidated enough for gentle, interval motion at 4-6 weeks) 1POINT
2. As many joints as possible should be included in the orthotic immobilization in order to protect the healing structure. (No: Only the joints essential to protection of the injured structure should be immobilized to prevent stiffness). 1POINT
3. A severed tendon can be repaired by immobilization in an orthotic for at least 4-6 weeks. (No: The ends of a severed tendon cannot consolidate without surgical repair). 1POINT
4. A barrier such as a thin cloth or gauze should be applied between the skin and the orthotic for protection. (Yes: A thin barrier allows for perspiration absorption and reduces friction in order to protect against maceration and skin breakdown) 1POINT
5. A distal radius fracture should be positioned in an orthotic with a neutral wrist. (No: A DR fracture is typically positioned in short arm, volar resting orthotic in 20-30 degrees of wrist extension) 3POINTS
6. What are some of the contraindications of orthotic application of an injured structure? (Answer: Edema fluctuations, skin maceration, tissue/wound integrity, sensation deficits, ect) 3POINTS
7. Why should the digits not be immobilized in a resting flexed position if the hand and digits are very swollen? (Answer: The PIP and DIP should be in extension with the MPs in slight flexion to preserve digital extension and maintain tissue length of intrinsic muscles of the hand) 3POINTS
8. What might be the consequence of applying a too-tightly fitting orthotic? (Answer: a too-tightly fitting orthotic could create pooling edema, compress nerve, and impede healing but disrupting blood supply). 3POINTS
9. What position should a shoulder be positioned in during the healing phases of a burn? (Answer: slight shoulder abduction) 5POINTS
10. What position should a hand/digits be positioned in during the healing phase of a burn? (Answer: MP joints should be positioned in slight flexion, IP joints in extension and thumb in mid palmar radial abduction) 5POINTS

Assessment Module 4: Rehabilitation Principles for the Upper Extremity

1. Therapy can be a specific exercise or familiar activity in which the goal is increasing independence.
YES NO
2. Needing to engage in a task and wanting to engage in a task are both important aspects of a person.
YES NO
3. Safety is an important consideration in exploring an adaptive approach to completing a task.
YES NO
4. An activity's level of difficulty cannot be altered by changing the patient's body position.
YES NO
5. A stiff joint should be repeatedly pushed past the point of pain but not held in place.
YES NO
6. In what way might you grade an activity to make it more or less challenging based on the needs of the patient?
Answer: _____
7. In general, what tissue quality is needed before strengthening can be introduced?
Answer: _____
8. When should range of motion begin following a burn injury?
Answer: _____
9. What precautions should be taken when caring for a limb with no sensation or poor sensation?
Answer: _____
10. What is an important question to ask a patient when setting an outcome goal for therapy?
Answer: _____

Instructor Key

Module 4: Rehabilitation Principles for the Upper Extremity

(4 low/4 med/2 high) total 26 points

1. Therapy can be a specific exercise or familiar activity in which the goal is increasing independence? (Yes: Therapeutic exercise and therapeutic tasks both provide opportunities to improve quality of movement for greater independence in everyday situations). 1POINT
2. Needing to engage in a task and wanting to engage in a task are both important aspects of a person. (Yes) 1POINT
3. Safety is an important consideration in exploring an adaptive approach to completing a task. (Yes) 1POINT
4. An activity's level of difficulty cannot be altered by changing the patient's body position? (No: Environment and the patient's relationship within the therapeutic environment plays a vital role in the kinds of challenges the activity might pose.) 3POINTS
5. A stiff joint should be repeatedly pushed past the point of pain but not held in place. (No: As appropriate, a stiff joint should be ranged to the point of firm end feel as tolerated and held in place for a minimum of 30 seconds before being slowly released at tissue speed. This will maximize tissue growth for increased length while avoiding joint and soft tissue damage and increased edema.) 3POINTS
6. What sorts of ways might you grade an activity to make it more or less challenging based on the needs of the patient? (Answer: Time constraints, duration/endurance tolerated, speed of the task/exercise, level of resistance or weight tolerated, number of steps, visual or verbal cues required, quality of movement or compensatory movements) 5POINTS
7. In general, what tissue quality is needed before strengthening can be introduced? (Answer: Adequate tissue length should be achieved prior to initiation of strengthening through range of motion exercise). 5POINTS
8. When should range of motion begin following a burn injury? (Answer: Range of motion should be introduced as is safely allowed to minimize joint contractures and encourage tissue length.) 1POINT
9. What precautions should be taken when caring for a limb with no sensation or poor sensation? (Answer: Extreme hot or cold temperature, pressure points, friction, skin integrity, ect.) 3POINTS
10. What is an important question to ask a patient when setting an outcome goal for therapy? (Answer: The patient should be consulted as to what their goal is for the therapeutic intervention as well as what sorts of activities they would like to be able to accomplish more easily. Patient volition is vital to any successful therapeutic interaction). 3POINTS

Hand Therapy Assessments For Use With International Technicians (HTAIT)

Assessment Module(s) Scoring Rubric

Module 1: Basic Upper Extremity Anatomy: total 26 points

Level 1 (score of 0-6 points)

Orientation- Focus on the names of UE large muscle groups and their general location; names for the direction of motion for each joint structure such as flexion vs extension; names of the three major nerves; introduce concept if anterior/posterior and volar/dorsal

Level 2 (score of 5-13 points)

Refinement- Focus on names and location of the bones of the shoulder, forearm, hand, and digits with possible introduction of proximal row of carpal bones; introduce names and location of FDP/FDS and EDC; focus on pattern of cutaneous innervation of median, ulnar and radial nerves;

Level 3 (score of 12-26)

In Depth- Names of all carpal bones and their relation to one another; sensory vs motor innervation patterns in the UE; names, origin and insertion and action of intrinsic vs extrinsic wrist flexors and extensors; names, location and action of muscles of the shoulder and elbow

Module 2: Wound Care & Scar Remodeling

Level 1 (score of 0-6 points)

Orientation- Basic structure and function of skin and connective tissues; basic stages of normal wound healing; indications of infection or healing complication; principles of infection control and cleansing of wounds

Level 2 (score of 5-13 points)

Refinement- Principles of scar remodeling; Impact of positioning on healing burns/wounds; importance of interval movement in creation of tissue length to preserve function

Level 3 (score of 12-26)

In Depth- Specific positioning for burns/wounds of digits, hand, wrist, elbow, shoulder/axilla; physiological factors that may delay healing

Module 3: Orthotic Principles

Level 1 (score of 0-6 points)

Orientation- Purpose of orthotics for fractures, tendon injuries, nerve injuries; principles of soft tissue and joint protection in orthotic application; introduction to materials and basic static orthotic design such as volar resting, thumb spica, ulnar gutter

Level 2 (score of 5-13 points)

Refinement- Principles of assessing soft tissue for orthotic application such as edema, bony prominences, external hardware; refinement of static orthotic design including safe position, dorsal blocking, oval eight

Level 3 (score of 12-26)

In Depth- Introduction of dynamic orthotics; detailed orthotic modifications for specific joints

Module 4: Rehabilitation

Level 1 (score of 0-6 points)

Orientation- Principles of patient volition and self-actualization; concepts of grading a familiar activity for therapeutic purposes; concepts of ADLs/IADLs and or recreation/play as therapeutic activities

Level 2 (score of 5-13 points)

Refinement- Activity gradation; strategies for increased active range of motion, passive range of motion, place and hold for increased tissue length/growth in stiff joint; impact of altered sensation on function/safety; desensitization strategies; low tech adaptation and environmental modifications for increased function

Level 3 (score of 12-26)

In Depth- principles of adequate range of motion and tissue length; strengthening strategies

	Module 1 Basic Upper Extremity Anatomy	Module 2 Wound Care & Scar Remodeling	Module 3 Orthotic Principles	Module 4 Rehabilitation
<i>Level 3 In Depth (score of 12-26 points)</i>	Names of all carpal bones and their relation to one another; sensory vs motor innervation patterns in the UE; names, origin, insertion and action of intrinsic vs extrinsic wrist flexors and extensors; names, location and action of muscles of the shoulder and elbow	Specific positioning for burns/wounds of digits, hand, wrist, elbow, shoulder/axilla; physiological factors that may delay healing	Introduction of dynamic orthotics; detailed orthotic modifications for specific joints	Principles of adequate range of motion and tissue length; strengthening strategies
<i>Level 2 Refinement (score of 5-13 points)</i>	Focus on names and location of the bones of the shoulder, forearm, hand, and digits with possible introduction of proximal row of carpal bones; introduce names and location of FDP/FDS and EDC; focus on pattern of cutaneous innervation of median, ulnar and radial nerves	Principles of scar remodeling; impact of positioning on healing burns/wounds; importance of interval movement in creation of tissue length to preserve function	Principles of assessing soft tissue for orthotic application such as edema, bony prominences, external hardware; refinement of static orthotic design including safe position, dorsal blocking, oval eight	Activity gradation; strategies for increased A/AA/PROM and place and hold for increased tissue length/growth in stiff joint; impact of altered sensation on function/safety; desensitization strategies; low tech adaptation and environmental modifications for increased function
<i>Level 1 Orientation (score of 0-6 points)</i>	Focus on the names of UE large muscle groups and their general location; names for the direction of motion for each joint structure such as flexion vs extension; names of the three major nerves; introduce concept of anterior/posterior and volar/dorsal	Basic structure and function of skin and connective tissues; basic stages of normal wound healing; indications of infection or healing complication; principles of infection control and cleansing of wounds	Purpose of orthotics for fractures, tendon injuries, nerve injuries; principles of soft tissue and joint protection in orthotic application; introduction to materials and basic static orthotic design such as volar resting, thumb spica, ulnar gutter	Principles of patient volition and self-actualization; concepts of grading a familiar activity for therapeutic purposes; concepts of ADLs/IADLs and or recreation/play as therapeutic activities

Acknowledgement: This article was published in the JHS (American), volume 46, issue 10, p841-855, 1 October 2021, as an Open Access article and is republished here with thanks to the publishers and authors.

Re-prints from Scientific Journals

MANAGEMENT OF ACUTE DISTAL RADIOULNAR JOINT INSTABILITY FOLLOWING A DISTAL RADIUS FRACTURE: A SYSTEMATIC REVIEW AND META-ANALYSIS - JOURNAL OF HAND SURGERY GLOBAL ONLINE



Journal of Hand Surgery Global Online 3 (2021) 133–138



Contents lists available at ScienceDirect

Journal of Hand Surgery Global Online

journal homepage: www.JHSGO.org



Original Research

Management of Acute Distal Radioulnar Joint Instability Following a Distal Radius Fracture: A Systematic Review and Meta-Analysis

Angel X. Xiao, MSE,^{*} Alexander R. Graf, MD,[†] Alexander Dawes, BS,[†] Charles Daley, MD,[†] Eric R. Wagner, MD,[‡] Michael B. Gottschalk, MD[†]

^{*} Emory University School of Medicine, Atlanta, GA

[†] Department of Orthopedic Surgery, Emory University, Atlanta, GA

[‡] Department of Orthopedic Surgery, Medical College of Wisconsin, Milwaukee, WI

ARTICLE INFO

Article history:

Received for publication January 18, 2021

Accepted in revised form February 23, 2021

Available online March 31, 2021

Key words:

DRF fracture
DRUJ instability
Review
Treatment

Purpose: We sought to review the clinical outcomes of conservative and operative treatment options for acute distal radioulnar joint (DRUJ) instability associated with distal radius fractures in adult patients.

Methods: A systematic search of PubMed, MEDLINE, and EMBASE for articles published between 1990 and 2020 involving DRUJ instability associated with distal radius fractures was performed. The primary outcomes analyzed included clinical grip strength; range of motion; the disability of the arm, shoulder and hand (DASH) score; and the modified Mayo wrist score (MMWS).

Results: Of the 531 articles identified in the literature search, 8 met our defined criteria and were included in the final analysis. The cumulative sample size was 258 patients at a mean follow-up of 11.1 months (range, 3–16.9 months). Treatment groups included cast immobilization in supination, K-wire stabilization, and triangular fibrocartilage complex (TFCC) repair. Statistical analysis revealed no difference across groups in active flexion-extension or DASH scores. A significant decrease in grip strength was found in patients who underwent TFCC repair compared with that in those who underwent both cast immobilization ($P = .04$) and K-wire stabilization ($P = .02$). Furthermore, we found a significant decrease in active pronation-supination between patients who underwent TFCC repair and those who underwent cast immobilization ($P = .03$). Patients who underwent TFCC repair were also found to exhibit decreased MMWS as compared with those who underwent K-wire stabilization ($P = .05$). Overall, persistent DRUJ instability was only found in 4 patients (1.5%), without a significant difference between treatment groups.

Conclusions: This study suggests functional advantages of certain treatment modalities over others, with the range of motion being highest in patients who underwent cast immobilization and grip strength being highest in patients who underwent K-wire stabilization. However, the mean DASH scores showed no difference across all groups, calling into question the clinical need to pursue operative treatment via K-wire stabilization or TFCC repair over conservative treatment via cast immobilization. This study will hopefully serve as a foundation for future prospective studies to help improve and standardize treatment algorithms in patients with DRUJ instability and distal radius fractures.

Type of study/level of evidence: Therapeutic II.

Copyright © 2021, THE AUTHORS. Published by Elsevier Inc. on behalf of The American Society for Surgery of the Hand. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Declaration of interests: C.D. receives research support from Arthrex. E.R.W. is a consultant for Stryker Corporation and Wright Medical Group N.V. He also receives research support from Arthrex and Konica Minolta. M.B.G. receives research support from Stryker Corporation, Konica Minolta, and Arthrex. Each author certifies that their institution approved the human protocol for this investigation and that all investigations were conducted in conformity with ethics principles of research. No benefits in any form have been received or will be received by the other authors related directly or indirectly to the subject of this article.

Corresponding author: Michael B. Gottschalk, MD, Department of Orthopedic Surgery, Emory University, 59 S Executive Park NW, Atlanta, GA 30329
E-mail address: michael.gottschalk@emoryhealthcare.org (M.B. Gottschalk).

<https://doi.org/10.1016/j.jhsg.2021.02.005>

2589-5141/Copyright © 2021, THE AUTHORS. Published by Elsevier Inc. on behalf of The American Society for Surgery of the Hand. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Distal radius fractures (DRF) are the most common fractures of the upper extremities, with an incidence of approximately 640,000 in the United States per year.¹ Meanwhile, the incidence of concomitant distal radioulnar joint (DRUJ) instability varies widely.^{2–4} Although the optimal treatment method of associated acute DRUJ instability in the setting of DRF is controversial, many studies suggest that DRUJ instability is a poor prognostic factor, often resulting in chronic pain, decreased range of motion, and decreased grip strength if undiagnosed or untreated.^{5–8}

The DRUJ is an anatomically complex structure with little inherent bony stability. This is due to a mismatch of the radius of curvature between the relatively larger sigmoid notch and ulnar head as well as the shallow nature of the articulation. This bony architecture enables a full 160° arc of pronosupination but comes at the cost of instability to volar and dorsal translation.⁹ Previous biomechanical studies have shown that the dorsal and volar radioulnar ligaments (RUL) that comprise the triangular fibrocartilage complex (TFCC) are the main restraint to DRUJ translation, along with contributions from the interosseous membrane (IOM) and the dorsal capsular ligaments (DCL).^{9–13} Therefore, it is not surprising that DRFs with associated TFCC injuries involving the RUL or ulnar styloid fractures that disrupt the foveal attachment of the deep RUL insertion have been associated with a higher incidence of DRUJ instability.^{6,14–19} However, the effect of TFCC repair on restoring DRUJ stability is controversial. Previous studies have shown that associated ulnar styloid fracture non-union after DRF fixation does not lead to long-term DRUJ instability.^{20–23} In addition, while studies have shown good preliminary results with arthroscopic TFCC repair, there remains no high quality evidence indicating that repair is necessary, provided the DRF is anatomically reduced and stabilized.^{18,24,25}

These findings have led many authors to argue that, in the context of persistent DRUJ instability following anatomic reduction and fixation of the DRF, the added surgical time and potential risk of morbidity of TFCC repair may not be justified,^{11,26} particularly in cases with intact support from other structures such as IOM and DCL.^{10,12,27} Therefore, other treatment options, such as cast immobilization or K-wire stabilization of the DRUJ, should be considered.^{11,28–31}

Given the lack of consensus regarding a standardized treatment algorithm and reference standard for the diagnosis of DRUJ instability, the purpose of this systematic review is to comprehensively investigate and compare outcomes of conservative and surgical treatment of acute DRUJ instability associated with a DRF fracture. Results from this analysis will hopefully highlight functional differences across treatment groups in order to better inform optimal care for this challenging patient population. We hypothesized that conservative treatment would be non-inferior to more invasive options.

Materials and Methods

Protocol

The study protocol was registered with PROSPERO, an international prospective register of systematic reviews (CRD42020197386). This systematic review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines³² and the Figure depicts the study identification process. To identify relevant publications, we searched PubMed, MEDLINE, and EMBASE and included studies published between January 1990 and May 2020. The key words used in the search queries were “DRUJ,” “instability,” “repair,” “fracture,” “TFCC,” “ulnar,” “styloid,” “radioulnar,” and “reduction.” Studies in which a part of the study population met the inclusion

criteria were included if the results of the subpopulation were presented separately. References of included articles were reviewed to incorporate additional relevant studies. Articles not available in English and duplicates were removed. Review articles, case reports, and technical notes as well as studies that had repeated patients or included a subset of future articles were also excluded.

Studies were initially screened by the primary author based on title and abstract and then further eliminated with a full manuscript review. A study was included if it met all of the following criteria: (1) the study population included adult patients with DRF, (2) acute DRUJ instability was measured intraoperatively or immediately post-operatively, (3) the patient received treatment for the DRUJ instability, and (4) the distal radius fracture underwent anatomic reduction and internal fixation. Theoretically, larger associated ulnar styloid and ulnar styloid base fractures are thought to be inherently unstable secondary to their TFCC and ligamentous attachments.^{33,34} As a result, patients with more extensive fracture patterns such as ulnar fractures involving more than the tip of the ulnar styloid or fractures with extensive comminution of the ulnar head were excluded.

Quality assessment

The level of evidence for each study was recorded following The Journal of Bone and Joint Surgery and the Oxford Centre for Evidence Based Medicine criteria and was graded by the primary author from levels 1 through 5.³⁵

Data extraction

The primary outcomes analyzed were functional clinical measures. Clinical data extracted from the final studies were patient demographics, treatment interventions, length of follow-up, and clinical results, defined by grip strength, range of motion, DASH score,³⁶ MMWS,³⁷ and incidence of chronic DRUJ instability.

Data analysis

Upon final screening, data from articles were pooled for analyses distinct cohorts created based on treatment group. Final treatment groups included cast immobilization, K-wire stabilization and TFCC repair (arthroscopic and open). Of note, as the ulnar fovea is the attachment site for the deep radioulnar ligaments within the TFCC, we included fixation of ulnar styloid tip fractures into this treatment group. Patients who underwent fixation of more extensive ulnar fractures were omitted. In order to calculate averages for further analysis, cases were assigned frequency weights. Analysis of variance testing was conducted to analyze differences among treatment groups and Tukey testing was used to identify specific groups between which differences occurred. An alpha of 0.05 was set for determining significance for all clinical outcome measures.

Results

Study selection

A total of 531 articles were originally identified from the literature search as depicted in Figure 1. After excluding studies that did not meet the inclusion criteria, 8 studies were selected for inclusion in the systematic review (Table 1).

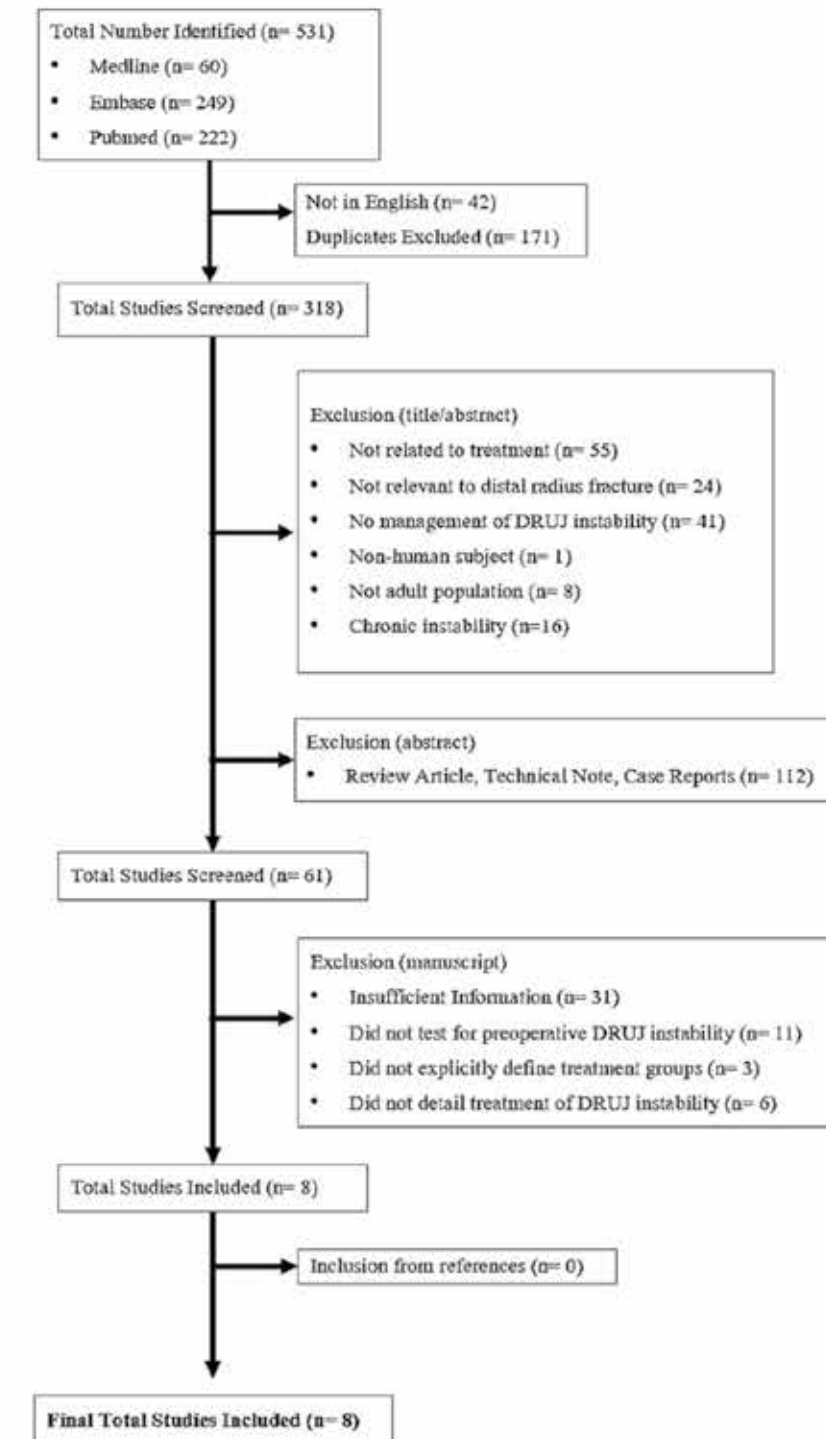


Figure 1. Flow diagram depicting the search strategy for inclusion of articles in the systematic review reported in accordance with the Preferred Reporting Systems for Systematic Reviews and Meta-Analysis statement.

Study demographics

Within the 8 included studies, a total of 258 wrists (258 patients) were analyzed with a weighted mean age of 53 years (range

18–89). The mean follow-up time was 11.1 months (range, 3–16.9 months). Of note, a significant number of patient fractures were classified as AO type C. Detailed demographics are displayed in Table 2.

Table 1
Details of Included Studies

Author/Year	Level of Evidence	Total DRUJ Repairs	Mean Age (years)	Female/Male (number)	Dominant/Non-Dominant (number)	Mean Follow-up (months)	AO Type (type: number)	Treatment
Kaizeman/2011	IV	8	29.4	-	-	3	-	Long arm cast in supination (6 wks)
Lee/2016	III	130	58.3	82/48	-	16.9	-	Sugartong splint in midsupination (4ks) OR 1.6 mm K-wire fixation OR arthroscopic TFCC repair
Kim/2012	IV	19	45	10/9	-	12	-	Sugartong splint in 30° supination (4 wks)
Bajwa/2015	IV	15	53	-	-	12	A: 10 B: 5 C: 10	1.6mm K-wire fixation (1-2 dorsal, 1 radial)
Liu/2014	III	24	59.4	18/6	-	16	A: 8 B: 3 C: 14	1-2 K-wire fixation in neutral (6 wks)
Johandi/2017	IV	12	50.5	3/9	4/8	12	A: 3 B: 1 C: 8	Open TFCC repair
Garcia-Ruano/2014	IV	21	42	4/17	12/9	4.7	-	Arthroscopic TFCC repair
Gong/2015	IV	29	53	21/8	-	12	A: 12 B: 3 C: 14	Open TFCC suture

Clinical outcome measures

Final clinical outcomes evaluated are displayed in Table 3. Grip strength was significantly decreased in TFCC repair compared with both cast immobilization (18.7 kg vs 24.6 kg, $P = .04$) and K-wire stabilization (18.7 kg vs 25.3 kg, $P = .02$). No significant difference was found across treatment groups with regards to active range of motion in flexion-extension. However, TFCC repair was associated with a significant decrease in active pronation-supination when compared with cast immobilization (152.2 vs 166.2, $P = .03$). In addition, TFCC repair was associated with decreased MMWS compared with those treated with K-wire stabilization (84.5 vs 89.6, $P = .05$). Despite having considerable power in the study, there was no statistical difference detected between groups when comparing DASH scores.

Across all patients included in the study, recurrent DRUJ instability post-operatively was rare ($n = 4$, 1.5%) and not associated with any specific treatment method. However, the method and frequency of screening were highly variable as no reference standard for diagnosing DRUJ instability in this setting currently exists.

Discussion

DRUJ stability is critical for proper force transmission between the forearm and wrist. Undiagnosed DRUJ instability can result in recurrent subluxation, dislocation, and/or pain.^{3,38} Persistent, chronic instability at this joint is associated with many long-term complications, with specific links to ulnar sided arthritis, wrist pain, reduced grip strength, and motion limitation.^{27,39–41} However, there is a paucity of data addressing the management of acute DRUJ instability following DRF treatment. Focusing on literature since 1990, we sought to systematically review all treatment modalities for DRF associated with secondary DRUJ instability.

Treatment groups identified included conservative management such as cast immobilization and surgical interventions, ranging from K-wire stabilization of the ulna to the radius to a more invasive TFCC repair. Patient outcomes were gauged via the MMWS, which favored K-wire stabilization over TFCC repair, as well as the DASH, which found no difference between the groups. As a physician-based scoring system, the MMWS is determined by the physician's assessment of pain, the active flexion/extension arc,

grip strength, and the ability to return to regular employment or activities.⁴² Given the increased grip strength in K-wire patients compared with TFCC patients, it is reasonable to see the trend in MMWS score as well. Interestingly, the DASH is self-administered by patients and, thus, captures the patient's own perception of their recovery. While our results seem to indicate differences in functional outcomes, there seems to be minimal difference in patient satisfaction across all treatment groups. Thus, functional differences, while important, must be weighed when considering treatment options in the context of patient need and satisfaction.

Cast immobilization with the forearm in supination for 4 to 6 weeks is effective in providing the stability needed for the soft tissue stabilizers of the DRUJ to heal. However, concerns for joint stiffness and muscle atrophy from prolonged immobilization have limited its widespread use. Previous studies have indeed shown that cast immobilization for DRUJ instability does result in relatively worse short-term functional outcomes; however, long-term functional outcomes are comparable to patients who underwent operative treatment.⁴³ Our review builds upon this study and suggests that, despite initial immobilization, patients treated with cast immobilization have improved active range of motion at longer-term follow-up. This improvement is statistically significant when compared with surgical TFCC repair and may be attributable to the lack of scar formation related to open or percutaneous operative intervention.

K-wire stabilization of the DRUJ is an alternative strategy that effectively maintains DRUJ congruity by using the intact ulna as a strut to stabilize the soft tissue stabilizers of the DRUJ.^{28,31} However, placement of the K-wire across the DRUJ can restrict pronosupination and lead to complications such as infection, hardware failure, pin-site irritation, and pain.^{44,45} Moreover, K-wire stabilization requires a secondary pin removal procedure after 4 to 6 weeks to prevent stiffness and possible contracture.^{21,45,46} In our study, K-wire fixation did lead to better grip strength and MMWS scores as compared with TFCC repair, but did not significantly improve wrist motion or DASH scores relative to cast immobilization. Therefore, the added time, cost, and potential morbidity relative to cast immobilization must be considered.

TFCC repair is another treatment alternative to cast immobilization and K-wire stabilization for DRUJ instability. Theoretically, the DRUJ is stabilized through direct re-attachment of the soft

Table 2
Reported Post-operative Outcomes by Treatment Group

Author/Year	Grip Strength (kg)	Flexion (°)	Extension (°)	Pronation (°)	Supination (°)	DASH	MMWS	DRUJ Instability at Follow-up (no. of patients)
Cast immobilization								
Kaizeman/2011	-	-	-	-	-	-	-	2
Lee/2016	24	-	105	-	158	14	85	0
Lee/2016*	23	-	122	-	164	17	89	0
Lee/2016**	24	-	122	-	166	16	83	0
Kim/2012	28	58	64	11	84	11	84	0
K-wire stabilization								
Bajwa/2015	-	-	-	-	-	3.5	-	0
Lee/2016	26	-	109	-	159	16	87	0
Lee/2016*	27	-	120	-	163	15	91	1
Lee/2016**	25	-	119	-	163	17	90	0
Liu 2014	23.8	-	103.5	-	152.3	-	-	0
TFCC repair								
Lee/2016	23	-	120	-	163	14	85	0
Johandi/2017	21.4	48	55.8	68.3	79.2	8.5	-	1
Garcia-Ruano/2014	-	-	-	-	-	8.1	84.2	0
Gong/2015	16	58	64	72	78	12	-	-

No star = patients without ulnar styloid process fractures; * = patients with ulnar styloid process tip fracture; and ** = patients with ulnar styloid process fracture.

Table 3
Comparison of Postoperative Outcomes by Treatment Group

Postoperative outcome	Treatment			P Value
	Cast Immobilization (n = 94)	K-wire Stabilization (n = 69)	TFCC Repair (n = 52)	
Grip strength (kg) ^a	24.6 ± 1.0	25.3 ± 0.8	18.7 ± 2.2	.01
Flexion-Extension (°)	120.0 ± 3.2	112.2 ± 4.3	117.4 ± 5.3	.44
Pronation-Supination (°) ^b	166.2 ± 2.7	158.6 ± 2.8	152.2 ± 4.0	.04
MMWS ^c	84.9 ± 1.4	89.6 ± 1.2	84.5 ± 0.4	.04
DASH	15.0 ± 1.3	11.4 ± 3.8	11.5 ± 1.5	.55

^a Post hoc analysis shows significant difference between TFCC repair and other treatment options.

^b Significant difference between cast immobilization and TFCC repair.

^c Post hoc analysis shows significant difference between TFCC repair and K-wire stabilization.

^d Sample size differed in the analyses for MMWS comparing K-wire stabilization (n = 45) to TFCC repair (n = 32) and for DASH comparing K-wire stabilization (n = 60) to other treatment groups.

tissue stabilizers or fixation of their bony insertion to restore native anatomy. However, in our study TFCC repair failed to show any superior clinical benefit with regard to range of motion, grip strength, or functional outcome measures when compared with K-wire and cast immobilization. This is supported by previous studies that have shown that TFCC repair is not necessary to achieve a good long-term clinical outcome as long as there is stable anatomic DRF fixation.^{24,47} This is also supported by studies that have shown residual DRUJ laxity after an untreated TFCC injury after DRF fixation is common (45%) and often painless (97% of patients).⁴⁸

In addition, while this study did not directly address the impact of ulnar styloid fracture on DRUJ instability, the literature surrounding ulnar styloid fracture management is conflicting. Although some evidence may suggest that ulnar styloid base fractures may contribute to joint instability, a recent systematic review by Almedghio et al.⁴⁹ found no significant correlation between an ulnar styloid fracture and the functional and clinical outcomes of DRF treatment, irrespective of size or displacement of the ulnar styloid fragment. This is further supported by Yuan et al who conducted a meta-analysis on clinical outcomes in DRF patients with concomitant ulnar styloid fractures and demonstrated that there was no significant difference of outcomes between union and non-union of ulnar styloid fractures.⁵⁰

Despite performing a comprehensive systematic review, there are several limitations to our study. First, the studies included had a relatively short follow-up time, ranging from 3 to 16.9 months. Second, most of the studies had a small sample size, owing to the low incidence of the injury complex and the difficulty in diagnosis,

limiting the power of this study. Because of the limited number of available studies, we were unable to separate specific immobilization angles within cast immobilization, as immobilization ranged from mid supination to full supination and physicians often employed patient-specific angles within this range. We were also unable to control for hand dominance or stratify treatment groups by injury severity, although we note that the majority of included studies involved AO Class C fractures, indicating that these treatment options were considered in relatively high impact injuries. Lastly, although the objective and subjective outcome measures compared in this review are important components in determining a "successful" treatment, other patient-specific factors that were not included or measured may contribute to overall patient satisfaction. Moving forward, further studies are required to help determine the optimal treatment of DRUJ instability in this complex and controversial setting.

Based on our systematic review, clinical outcomes between the treatment groups do not support the use of more invasive TFCC repair to manage DRUJ instability associated with DRF. Moreover, across the groups, the incidence of persistent, symptomatic DRUJ instability at long-term follow-up was incredibly low regardless of post-DRF fixation treatment choice (1.5%). There may be tradeoffs between different techniques, with K-wire stabilization resulting in better grip strength and cast immobilization a better range of motion, but there is no indication that the time, effort, and expense of TFCC repair is necessary. However, larger controlled trials should be conducted to elucidate these differences and their implications on both functional outcomes and patient satisfaction.

References

- Chung KC, Spilson SV. The frequency and epidemiology of hand and forearm fractures in the United States. *J Hand Surg Am.* 2001;26(5):908–915.
- Tsai PC, Faksima N. The distal radioulnar joint. *Bull NYU Hosp Jt Dis.* 2009;67(1):90–96.
- Mulford JS, Axelrod TS. Traumatic injuries of the distal radioulnar joint. *Orthop Clin North Am.* 2007;38(2):289–297.vii.
- Mirghasemi AR, Lee DJ, Rahimi N, Rashidinia S, Elfar JC. Distal radioulnar joint instability. *Geriatr Orthop Surg Rehabil.* 2015;6(3):225–229.
- Cheng HS, Hung LK, Ho PC, Wong J. An analysis of causes and treatment outcome of chronic wrist pain after distal radial fractures. *Hand Surg.* 2008;13(1):1–10.
- Lindau T, Adlercreutz C, Aspenberg P. Peripheral tears of the triangular fibrocartilage complex cause distal radioulnar joint instability after distal radial fractures. *J Hand Surg Am.* 2000;25(3):464–468.
- Harvey J. Treatment of concomitant injuries of the DRUJ. *BMC Proc.* 2015;9(3).
- Trehan SK, Gould HP, Meyers KN, Wolfe SW. The effect of distal radius fracture location on distal radioulnar joint stability: A cadaveric study. *J Hand Surg Am.* 2019;44(6):473–479.
- Kleinman WB. Stability of the distal radioulnar joint: biomechanics, pathophysiology, physical diagnosis, and restoration of function what we have learned in 25 years. *J Hand Surg Am.* 2007;32(7):1086–1106.
- Omokawa S, Iida A, Kawamura K, et al. A biomechanical perspective on distal radioulnar joint instability. *J Wrist Surg.* 2017;9(2):88–96.
- Atesok KI, Jupiter JB, Weiss AP. Galeazzi fracture. *J Am Acad Orthop Surg.* 2011;19(10):623–633.
- Moritomo H. The function of the distal interosseous membrane and its relevance to the stability of the distal radioulnar joint: An anatomical and biomechanical review. *Handchir Mikrochir Plast Chir.* 2015;47(5):277–280.
- Manz S, Wolf MB, Leclere FM, Hahn P, Bruckner T, Unglaub F. Capsular imbrication for posttraumatic instability of the distal radioulnar joint. *J Hand Surg Am.* 2011;36(7):1170–1175.
- Shirakawa K, Shirota MTAC. Pin fixation for basal ulnar styloid fractures associated with distal radius fractures. *Tech Hand Up Extrem Surg.* 2013;17(3):158–161.
- Hauck RM, Skahan IJ, Palmer AK. Classification and treatment of ulnar styloid nonunion. *Journal of Hand Surgery.* 1996;21(3):418–422.
- May MM, Lawton JN, Blazar PE. Ulnar styloid fractures associated with distal radius fractures: incidence and implications for distal radioulnar joint instability. *J Hand Surg Am.* 2002;27(6):965–971.
- Seinwald GR, Della Santa D. Unstable distal radial fractures treated by external fixation: an analytical review. *Scand J Plast Reconstr Surg Hand Surg.* 2002;36(4):226–230.
- Ruch DS, Yang CC, Smith BP. Results of acute arthroscopically repaired triangular fibrocartilage complex injuries associated with intra-articular distal radius fractures. *Arthroscopy.* 2003;19(5):511–516.
- Wysocki RW, Richard MJ, Crowe MM, Leversedge FJ, Ruch DS. Arthroscopic treatment of peripheral triangular fibrocartilage complex tears with the deep fibers intact. *J Hand Surg Am.* 2012;37(3):509–516.
- Ring D, McCarthy LP, Campbell D, Jupiter JB. Condylar blade plate fixation of unstable fractures of the distal ulna associated with fracture of the distal radius. *J Hand Surg Am.* 2004;29(1):103–109.
- Han SH, Hong IT, Kim WH. LCP distal ulna plate fixation of irreducible or unstable distal ulna fractures associated with distal radius fracture. *Eur J Orthop Surg Traumatol.* 2014;24(8):1407–1413.
- Sammer DM, Shah HM, Shaouyer MJ, Chung RC. The effect of ulnar styloid fractures on patient-rated outcomes after volar locking plating of distal radius fractures. *J Hand Surg Am.* 2009;34(9):1595–1602.
- Zeke Y, Sakai A, Oshige T, Moritani S, Nakamura T. Treatment with or without internal fixation for ulnar styloid base fractures accompanied by distal radius fractures fixed with volar locking plate. *Hand Surg.* 2012;17(2):181–190.
- Fok MWM, Fung CX, Lau TW, Fung YKE, Fung BKK, Leung FKL. The status of triangular fibrocartilage complex after the union of distal radius fractures with internal plate fixation. *Int Orthop.* 2018;42(8):1917–1922.
- Andersson JK, Ahlen M, Andernord D. Open versus arthroscopic repair of the triangular fibrocartilage complex: a systematic review. *J Exp Orthop.* 2018;5(1):6.
- Katoik U, Trumble T. Distal radioulnar joint dysfunction. *J Hand Surg Am.* 2005;5(1):8–29.
- Johnston K, Durand D, Hildebrand KA. Chronic volar distal radioulnar joint instability: joint capsular plication to restore function. *Can J Surg.* 2009;52(2):112–118.
- Giannoulis FS, Sotereanos DG. Galeazzi fractures and dislocations. *Hand Clin.* 2007;23(2):153–163.v.
- Eberl R, Singer G, Schalamon J, Petnehazy T, Hoelthwarth ME. Galeazzi lesions in children and adolescents: treatment and outcome. *Clin Orthop Relat Res.* 2008;466(7):1705–1709.
- Reckling FW. Unstable fracture-dislocations of the forearm (Monteggia and Galeazzi lesions). *J Bone Joint Surg Am.* 1982;64(6):857–863.
- Rettig ME, Rastin KB. Galeazzi fracture-dislocation: a new treatment-oriented classification. *J Hand Surg Am.* 2001;26(2):228–235.
- Mohr D, Liberati A, Tetzlaff J, Altman DG. PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med.* 2009;6(7):e1000097.
- Altman E. The ulnar side of the wrist: Clinically relevant anatomy and biomechanics. *J Hand Ther.* 2016;29(2):111–122.
- Pidgeon TS, Crisco JJ, Waryasz GR, Moore DC, DaSilva MF. Ulnar styloid base fractures cause distal radioulnar joint instability in a cadaveric model. *Hand (N Y).* 2018;13(1):65–73.
- Wright JG, Swiontkowski MF, Heckman JD. Introducing levels of evidence to the journal. *J Bone Joint Surg Am.* 2003;85(1):1–3.
- Hudak PL, Amadio PC, Bombardier C. Development of an upper extremity outcome measure: the DASH (disabilities of the arm, shoulder and hand) [corrected]. The Upper Extremity Collaborative Group (UECG). *Am J Ind Med.* 1996;29(6):602–608.
- Cooney WP, Linscheid RL, Dobyns JH. Triangular fibrocartilage tears. *J Hand Surg Am.* 1994;19(1):143–154.
- Wijffels M, Brink P, Schipper I. Clinical and non-clinical aspects of distal radioulnar joint instability. *Open Orthop J.* 2012;6:204–210.
- Mulford JS, Axelrod TS. Traumatic Injuries of the distal radioulnar joint. *Hand Clinics.* 2010;26(1):155–163.
- Geissler WB, Fernandez DL, Lamey DM. Distal radioulnar joint injuries associated with fractures of the distal radius. *Clin Orthop Relat Res.* 1996;327:135–146.
- Scheker IR, Ozer K. Ligamentous stabilization of the distal radioulnar joint. *Tech Hand Up Extrem Surg.* 2004;8(4):239–246.
- Slutsky DJ. Outcomes assessment in wrist surgery. *Journal Wrist Surg.* 2013;2(1):1–4.
- Lee SK, Kim KJ, Cha YH, Choy WS. Conservative treatment is sufficient for acute distal radioulnar joint instability with distal radius fracture. *Ann Plast Surg.* 2016;77(3):297–304.
- Richard MJ, Wartinbee DA, Riboh J, Miller M, Leversedge FJ, Ruch DS. Analysis of the complications of palmar plating versus external fixation for fractures of the distal radius. *J Hand Surg Am.* 2011;36(10):1614–1620.
- Dennison DG. Open reduction and internal locked fixation of unstable distal ulna fractures with concomitant distal radius fracture. *J Hand Surg Am.* 2007;32(6):801–805.
- Bajwa AS, Rammappa M, Lee L, Nanda R. Treatment of unstable distal radius fractures: non-invasive dynamic external fixator versus volar locking plate - functional and radiological outcome in a prospective case-controlled series. *Sicot J.* 2015;1:34.
- Deniz G, Kose O, Yanik S, Colakoglu T, Tugay A. Effect of untreated triangular fibrocartilage complex (TFCC) tears on the clinical outcome of conservatively treated distal radius fractures. *Eur J Orthop Surg Traumatol.* 2014;24(7):1155–1159.
- Mrljenic A, Gejzer M, Lindau T, Tagil M. The natural course of traumatic triangular fibrocartilage complex tears in distal radial fractures: a 13-15 year follow-up of arthroscopically diagnosed but untreated injuries. *J Hand Surg Am.* 2012;37(8):1555–1560.
- Almeidgho S, Arshad MS, Almari F, Chakrabarti I. Effects of ulnar styloid fractures on unstable distal radius fracture outcomes: A systematic review of comparative studies. *J Wrist Surg.* 2018;7(2):172–181.
- Yuan C, Zhang H, Liu H, Gu J. Does concomitant ulnar styloid fracture and distal radius fracture portend poorer outcomes? A meta-analysis of comparative studies. *Injury.* 2017;48(11):2575–2581.

A scheme to project the radial nerve on the humerus



Fig. 1. Pablo Picasso "Girl on the ball" (1905).

The frequency of iatrogenic damage to the radial nerve in the treatment of humeral shaft fractures is estimated to be 10–20% (Hak D.J., 2009). The radial nerve can get damaged during closed reduction, plating, nailing and external fixation of humerus fractures.

To prevent this complication, the surgeon should avoid contact with the radial nerve and if that is impossible, the radial nerve should be identified beforehand and preserved carefully during operative procedures.

There are many schemes to visualise the radial nerve on the humerus. However, most of them have a similar disadvantage – the use of an absolute fixed modular from any landmarks. These values differ significantly among different authors.

For example, the distance between the lateral epicondyle and the radial nerve in different studies vary from 8 cm to 15,8 cm (Lau T.W. et al., 2007; Chou P. et al. 2008; Ozden H. et al., 2009; Artico M. et al., 2009). Certainly, 15 cm for a large athlete and a young girl is not the same (Fig. 1). Some surgeons suggested that the differences in radial projections may vary in different races. (Chou P. et al. 2008; Ozden H. et al., 2009).

In our opinion, the anatomical position of the radial nerve is primarily tied to the length of the humerus of the individual. This hypothesis was confirmed by studying the topography and anatomical position of the radial nerve in patients during operations, in volunteers during ultrasound examination, and in anatomical dissections (Zolotov A.S. et al., 2010, 2015). According to the results of these studies, the radial nerve crosses the posterior surface of the humerus at a point which divides the measured length of the humerus into two unequal segments: the upper 45% and the lower 55% (Fig. 2). On the lateral surface, the radial nerve crosses the humerus above the lateral epicondyle at a distance equal to 32% of the measured length of the humerus (Fig. 3). The distance from the acromial process of the scapula to the olecranon was taken as the measured length of the humerus.

Acknowledgement: This article was published in the JHSGO volume 3, issue 3, p133-138, May 01, 2021, as an Open Access article and is republished here with thanks to the publishers and authors. [https://www.jhsgo.org/article/S2589-5141\(21\)00017-7/fulltext#relatedArticles](https://www.jhsgo.org/article/S2589-5141(21)00017-7/fulltext#relatedArticles)

$$l = 0,55L$$

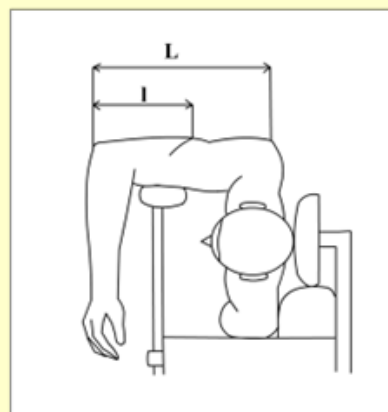


Fig. 2. The radial nerve on the posterior surface of the humerus. "L" - the distance from the "acromial angle" to the olecranon; "l" - the distance from the olecranon to the radial nerve along the posterior surface.

$$l^* = 0,32L^*$$

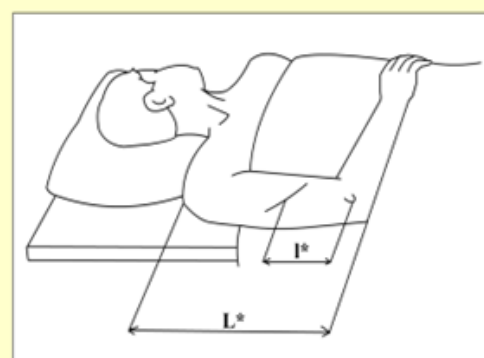


Fig. 3. The radial nerve on the lateral surface of the humerus. "L*" - the distance from the "acromial angle" to the olecranon; "l*" - the distance from the lateral epicondyle to the radial nerve along the lateral surface.

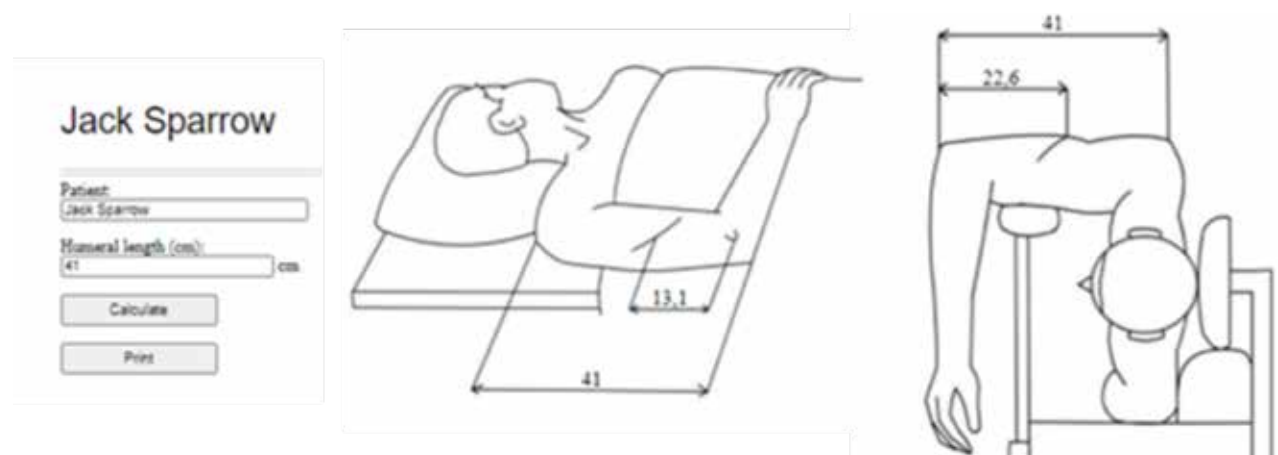


Fig. 4. In the left part of the window, there is a box for entering the measured length of the patient's humerus in cm, the "calculate" button, and the "print" button.

Taking into account this constant anatomical pattern in our studies, a computer program was developed which is available online: <http://nerve.drzolotov.com>

When the program starts, a window with text and two pictures appears on the computer display (Fig. 4).

In the left part of the window, there is a box for entering the measured length of the patient's humerus in cm, the "calculate" button, and the "print" button. The value in centimeter (cm), obtained by measuring the humerus length, is entered in the appropriate box. By "clicking" on the "calculate" button, the figures show the distances in cm from the olecranon to the radial nerve on the posterior surface, and from the lateral epicondyle to the radial nerve on the lateral surface. The data obtained can be transferred onto the patient's skin by marking the anatomical course of the radial nerve with a surgical marker.

By "clicking" on the "print" button, we get drawings with data in a paper version. A personal smartphone can replace the print version of the picture.

We have been using this radial nerve diagram for a long time and consider it useful and predictable for patients with different anthropometric data, various constitutions, sex, age, and races.

References

1. Artico M., Telera S., Tiengo C., Stecco C., Macchi V., Porzionato A., Vigato E., Parenti A., De Caro R. Surgical anatomy of the radial nerve at the elbow // *Surg Radiol Anat.* – 2009. - Vol. 31. P. 101–106.
2. Chou P., Shyu J., Ma H., Wang S., Chen T. Courses of the radial nerve differ between Chinese and Caucasian // *Clinical Orthopaedics and Related Research.* – 2008. - Vol. 466. – P. 135-138.
3. Hak D.J. Radial nerve palsy associated with humeral shaft fracture // *Orthopedics.* – 2009. – Vol. 39. – P. 111–114.
4. Ozden H., Demir A., Guven G., Yildiz Z., Turgut A., Bulbul K., Ay H. The relation of sulcus nervi radialis with the fracture line of humerus fracture and radial nerve injury // *Surg Radiol Anat.* – 2009. – Vol. 31. – P. 283–287.
5. Lau T.W., Leung F., Chan C.F., Chow S.P. Minimally invasive plate osteosynthesis in the treatment of proximal humeral fracture // *International Orthopaedics.* – 2007. – Vol. 31. – P. 657–664.
6. Zolotov A.S., Zolotova J.A., Zolotov A.A. A diagram of radial nerve projection at humeral level // *Genij Ortopedii.* - 2010. - № 2. – P. 122-126.
7. Zolotov A.S., Pak O.I., Dyachkova Yu.A. Essays on surgery for peripheral nerve injuries - Moscow: Litterra, 2015. - 104 p.



Alexander Zolotov

Professor and Chief of the Department of Orthopaedic Surgery
University Hospital, Far Eastern Federal University.

Vladivostok,

Russia.

[dalexp@gmail.com](mailto:dalexpk@gmail.com)

www.drzolotov.com

Advanced Scope of Hand Therapy Practice

IMPROVING ACCESS TO CARE FOR THE MANAGEMENT OF ACUTE AND CHRONIC HAND CONDITIONS.

What is an Advanced Scope of Practice (ASP) hand therapy service?

Expanding patient numbers and long waitlists mean health services are increasingly adopting novel models of service provision to expedite access to care for consumers with hand conditions. In the Australian context, Advanced Scope of Practice (ASP) hand therapists implement therapist-led care and waitlist management for a range of acute, chronic, and post-surgical upper limb conditions¹⁻⁴. A variety of titles are used to describe similar models of care such as; extended or advanced scope of practice clinics, triage clinics, primary contact services or therapist-led care pathways.

ASPs are often required to independently assess and make treatment decisions within their scope of practice but not typically completed within their role. For example, assessing the need for further investigations and/or interventions such as steroid injections or surgery. Additionally, hand therapists in these roles may be tasked with a triaging role to identify patients requiring surgical review and those who can be managed conservatively. In this way, ASP hand therapists are responsible for leading

service delivery of certain conditions, often under the clinical governance of a surgeon, and under an agreed care framework.

Why have ASP services been implemented?

Despite evidence of significant socioeconomic burden, non-acute hand and upper limb conditions are typically considered a low priority for access to specialist outpatient appointments and surgery in public hospitals in nationalised health care contexts. As such, wait-times for outpatient consultation and surgery are often long, presenting a significant barrier for access to care within public health systems. This may have negative consequences as longer wait times are associated with poorer clinical outcomes and reduced patient satisfaction^{1,5}. With the number of surgeries for non-acute hand conditions predicted to significantly increase in the coming decade⁶ combined with the impact of resource allocation and delayed surgery from the COVID-19 response, planning and development of optimal workforce and service delivery models to manage wait times and patient load are critical. To assist with managing these challenges, ASP services have been implemented to streamline

care, improve efficiencies and as such, improve patient outcomes. Additionally, these services are in line with guidelines endorsed by professional bodies and health services which suggest a trial conservative treatments for conditions such as thumb carpometacarpal arthritis and mild-moderate carpal tunnel syndrome prior to surgery¹³⁻¹⁵

Where are ASP services implemented?

Extended or advanced scope models of care were implemented in the United Kingdom in response to mandates to reduce wait-times from General Practitioner referral to Specialist appointment in the 2000s^{7,8}. From then, these models of care have been implemented broadly in various countries and settings including in the United Kingdom, Ireland, Canada, and Australia.

What conditions are typically managed by ASP Hand Therapy services?

Diagnoses managed under these models of care initially included chronic conditions such as carpal tunnel syndrome, trigger finger, CMC osteoarthritis and de Quervains tenosynovitis^{1,2,4,9}. The ASP typically manages all people with these conditions (mild to severe). For example, people with severe carpal tunnel syndrome, even when surgery is likely, will see the ASP to help reduce symptoms while they await surgery and therefore improve quality of life. This system also enables the ASP to re-categorise/upgrade the initial triage category so that the patient sees the surgical team more quickly in the event

the condition has deteriorated. Diagnoses have since expanded to include those which typically follow a relatively predictable recovery path, such as fractures and dislocations suitable for conservative management, and post-operative care of conditions such as tendon repairs and carpal tunnel releases¹⁰.

Evidence regarding ASP Hand Therapy services

Results of retrospective and prospective studies suggest that ASP hand therapy models of care accelerate access to care and reduce duplication of care, thereby reducing the need for surgery as well as improving patient outcomes and satisfaction^{1,3,4,9,10}. Additionally, previous studies have demonstrated high agreement between advanced practice therapists and orthopaedic surgeons regarding the need for surgical management of carpal tunnel syndrome¹¹.

Governance considerations for ASP Hand Therapy services

As with any new care pathway, there are several considerations in relation to governance when implementing a hand therapist-led service. These include:

- Supervision: Therapists working in these settings require advanced knowledge and will often have completed post graduate qualifications in hand therapy. However, clinical governance and supervision may be provided by a specialist medical practitioner.

Table 1: Examples of conditions typically managed within ASP clinics:

Chronic	Traumatic	Post surgical
• Carpal tunnel syndrome	• Finger dislocations	• Carpal tunnel release
• Trigger digit	• Simple fractures	• Trigger release
• De Quervains tenosynovitis	• Volar plate injuries	• De Quervains release
• CMC OA	• Mallet finger	• Tendon repairs
		• Finger tip injuries
		• Wound exploration and washouts

Table 2: Example indicators for ASP hand therapy management: Mallet Finger (conservative management)

Indicators for ASP management	Indicators for discharge	Indicators for review by surgical team
<ul style="list-style-type: none"> • Soft tissue injury • Avulsion involving less than 30% joint surface • No joint subluxation 	<ul style="list-style-type: none"> • Less than 15-degree extension lag at end of treatment • Return to baseline function 	<ul style="list-style-type: none"> • Greater than 15-degree extension lag that has not responded to 8 weeks of continuous splinting • Presence of swan neck deformity that is not responding to conservative measures • x-ray indicated following initial splint application* • x-ray indicated after 12/52 of splinting due to ongoing clinical tenderness*
*If therapists unable to request imaging independently		

- Pathways for escalation of care from therapist to surgeon: In some cases, patient care may need to be escalated to the surgical team, and therefore a pathway to allow this to occur in a timely manner is required for patient safety. Options could include running ASP clinics alongside surgical outpatient clinics, or having an agreed time set aside for a surgeon and ASP to discuss patients as needed.

- Identifying suitable conditions to be managed within a therapist-led service: Typically, this is determined based on considerations such as:
- The needs of the hospital and health service
 - Patient referral numbers and clinical need
 - Therapist experience
 - Training requirements of junior surgeons

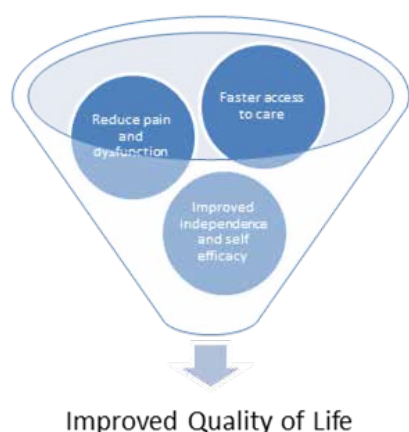


Image 1: Patient benefits
Reference (Glasgow et al., 2020).

- Triaging of appropriate patients/conditions: This is typically completed by either the hand therapists self-selecting appropriate patients from outpatient waitlists, by the surgeon responsible for triaging or via direct referral post-surgery.

- Training of therapists. Although therapists work within their scope of practice, further training relevant to a particular health service may be required. Examples could include; Additional training regarding ordering of appropriate imaging requests and their interpretation.

- Additional training regarding ordering of appropriate imaging requests and their interpretation.
- Additional training regarding the preferences of the supervising surgeons/in relation to the management of relevant conditions.
- Including ASP hand therapists in registrar training and/or development of relevant training packages.
- Consideration of system level implications such as the need for higher numbers of hand therapists and formalised advanced practice training programmes (in conjunction with national hand therapy bodies) to support increased workforce demands.

Benefits to health services include:

- Streamlined care as patients arrive for their initial surgical appointment with conservative options already trialed, investigations completed, and education provided regarding their condition and management options.
- Simple conditions which do not require surgery are managed by hand therapists. This increases appointment availability and time within surgical departments for patients who do require input from surgeons and/or surgery.
- Reduces duplication of care being provided by both surgical teams and therapists.
- Improved access to care via reduced wait-times for patients with chronic hand conditions. For example, in the Australian context, the transition to an ASP model resulted in wait-times being reduced to within clinically recommended timeframes^{4,12}

Patient benefits include:

- Expedited access to care²
- Reduced duplication of care provided by surgical teams and therapists^{1,10,12}
- Reduced need for surgery^{1,9}
- Reduced symptoms^{1,3,9}
- High patient satisfaction^{1,3,10}

References

1. Lewis KJ, Coppieters MW, Ross L, Hughes I, Vicenzino B, Schmid AB. Group education, night splinting and home exercises reduce conversion to surgery for carpal tunnel syndrome: a multicentre randomised trial. *Journal of Physiotherapy*. 2020;66(2):97-104.
2. Cox R, Laracy S, Glasgow C, Green K, Ross L. Evaluation of occupational therapy-led advanced practice hand therapy clinics for patients on surgical outpatient waiting lists at eight Australian public hospitals. *J Hand Ther*. 2020;33(3):320-328.
3. Glasgow C, Cox R, Laracy S, Green K, Ross L. A cohort investigation of patient-reported function

and satisfaction after the implementation of advanced practice occupational therapy-led care for patients with chronic hand conditions at eight Australian public hospitals. *J Hand Ther*. 2020;33(4):445-454.

4. O'Brien L, Hardman A, Goldby S. The impact of a hand therapy screening and management clinic for patients referred for surgical opinion in an Australian public hospital. *J Hand Ther*. 2013;26(4):318-322; quiz 322.
5. Chandra PS, Singh PK, Goyal V, Chauhan AK, Thakkur N, Tripathi M. Early versus delayed endoscopic surgery for carpal tunnel syndrome: prospective randomized study. *World Neurosurg*. 2013;79(5-6):767-772.
6. Bebbington E, Furniss D. Linear regression analysis of Hospital Episode Statistics predicts a large increase in demand for elective hand surgery in England. *Journal of Plastic, Reconstructive & Aesthetic Surgery*. 2015;68:243-251.
7. Rose R-L, Probert S. Development and implementation of a hand therapy extended scope practitioner clinic to support the 18-week waiting list initiative. *Hand Therapy*. 2009;14(4):95-104.
8. Warwick D, Belward P. Hand therapist carpal tunnel clinic. *British Journal of Hand Therapy*. 2004;9(1):23-26.
9. Hall B, Lee HC, Fitzgerald H, Byrne B, Barton A, Lee AH. Investigating the effectiveness of full-time wrist splinting and education in the treatment of carpal tunnel syndrome: a randomized controlled trial. *Am J Occup Ther*. 2013;67(4):448-459.
10. Sobb JA, Tharakan C, Beazley J. Allied health led post operative hand clinic: Evaluation of an alternative model of care. *Australian Occupational Therapy Journal*. 2022;69(1):77-88.
11. Lewis KJ, Coppieters, M. W., Vicenzino, B., Hughes, I., Ross, L., & Schmid, A. B. Occupational Therapists, Physiotherapists and Orthopaedic Surgeons Agree on the Decision for Carpal Tunnel

Surgery. International journal of health policy and management. 2020.

12. Burton C, Palmer MA, Fanton L, Cox R, Wishart LR. Multi-site evaluation of advanced practice hand therapy clinics for the management of patients with trigger digit. J Hand Ther. 2021.
13. American Academy of Orthopaedic Surgeons Evidence-Based Clinical Practice Guideline on the Management of Carpal Tunnel Syndrome <http://www.orthoguidelines.org/topic?id=1020>. Published February 29, 2016.
14. Kolasinski SL et al American College of Rheumatology/Arthritis Foundation Guideline for the Management of Osteoarthritis of the Hand, Hip, and Knee. Arthritis Care Res (Hoboken). 2020 Feb;72(2):149-162. doi: 10.1002/acr.24131. Epub 2020 Jan 6. Erratum in: Arthritis Care Res (Hoboken). 2021 May;73(5):764. PMID: 31908149.
15. Iacobucci, G. NHS proposes to stop funding 17 "unnecessary" procedures <https://doi.org/10.1136/bmj>.



KARINA LEWIS

B.Occ Thy, MPhil, MPH, AHTA (Australian Hand Therapy Association) Accredited Hand Therapist
Advanced Practitioner (Hand Therapy) |
Occupational Therapist
Gold Coast University Hospital | Logan Hospital,
Queensland, Australia
karina.lewis@health.qld.gov.au



RUTH COX

B Occ Thy, MBA (Professional)
Director Occupational Therapy
Queen Elizabeth II Jubilee Hospital, Queensland
Australia
Ruth.cox@health.qld.gov.au



CELESTE GLASGOW

B Occ Thy, PhD, MSc, AHTA (Australian Hand Therapy Association) Accredited Hand Therapist
1) Clinic Co-ordinator
EKCO Hand Therapy Brookwater, Queensland,
Australia
2) Senior Lecturer
School of Health and Rehabilitation Sciences
University of Queensland, Queensland, Australia
celeste.glasgow@ekco.com.au



Art Exhibit #16

“IZANDLA ZIYAGEZANA”

“Hands wash each other” or “One good turn deserves another”

Sculptor: Anton Smit

Bronze

info@antonsmit.co.za | antonsmitdigital@gmail.com

Bronkhorstspuit dam, South Africa



IFSH May 2022

IFSHT NEWSLETTER - REACH VOLUME 2, NO. 1

The IFSHT is excited to present the first issue of the second volume of the IFSHT newsletter which is available here: <https://ifsht.org/publications/reach-newsletter-issue-1-2/>

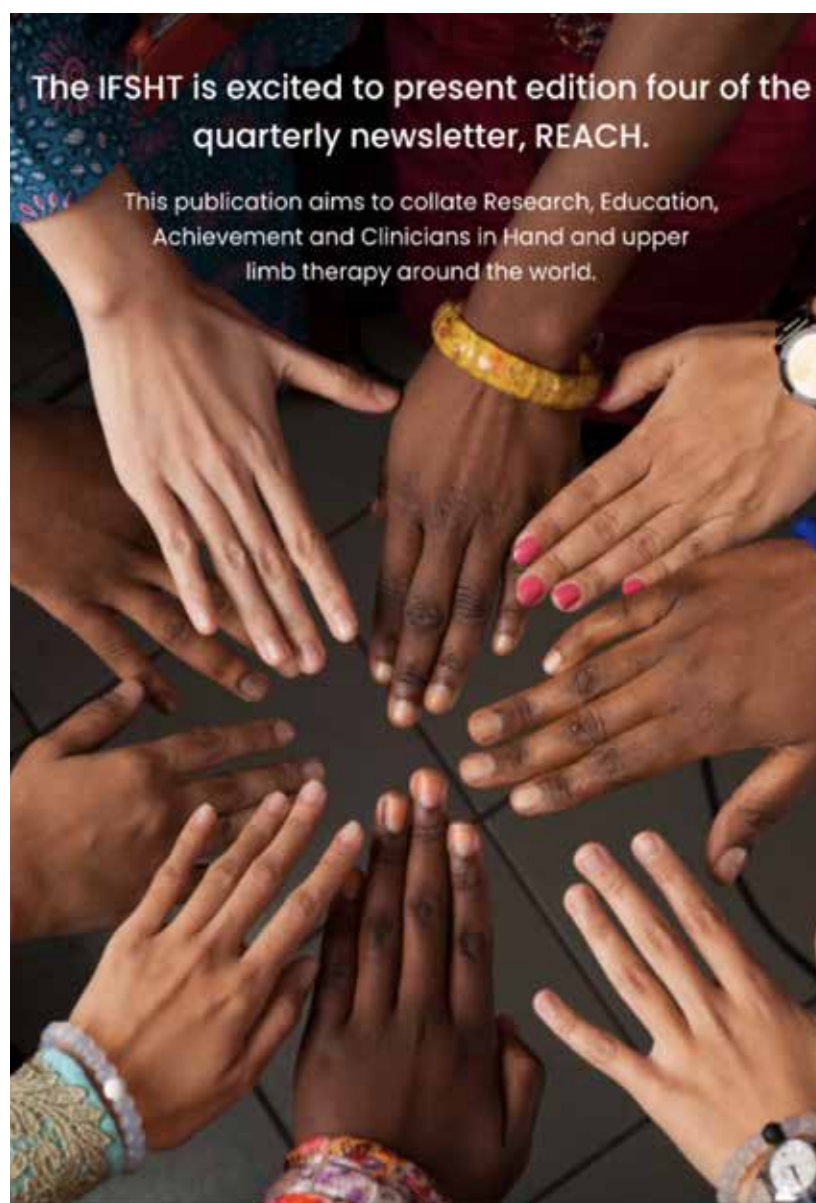
The publication aims to collate Research, Education, Achievement and Clinicians in Hand and upper limb therapy around the world.

Within this issue we again feature our Levels of Evidence section and research highlights. Have you ever considered how to be a more eco-friendly hand therapy practitioner? Then please read this issue of REACH for many green clinical pearls.

The Spotlight On! Section this time features the Spanish Association of Hand and Upper Extremity Therapy (AETEMA). With the triennial IFSSH, IFSHT & FESSH Combined Congress fast approaching in London (June 2022), find out more about this important event in the hand therapy calendar from the IFSHT Scientific Committee Chairs. These are just some of the highlights in this issue!

The REACH logo competition is now closed! The winner will be announced in June 2022.

We call on hand and upper limb therapy clinicians and researcher to submit any contributions for consideration to informationofficer@ifsht.org.

**IFSSH, IFSHT & FESSH Combined Congress - London, 6-10 June 2022**

London Calling! The IFSSH, IFSHT & FESSH Combined Congress is fast approaching! The British Society for Surgery of the Hand and the British Association of Hand Therapists are proud to host this event. The venue will be in the ExCeL Conference Centre in the city of London. The Congress promises a stimulating and inspirational scientific programme. Meet key opinion leaders and colleagues from far and wide this summer and join us for a safe and exciting live conference experience. The program will include a wide range of sessions, free papers, instructional lectures and industry symposia. An online only option is available for delegates outside of Europe. In numbers: 187 scientific sessions, 684 invited lectures, 989 oral free papers and 562 poster free papers.

The Congress will once again hold the legendary triennial IFSHT Silent Auction. This will take place on Thursday 9th June 2022 at the Congress in London. This is a very important date in the IFSHT diary with significant funds raised to enable IFSHT to support hand therapists from emerging countries to attend the next Congress. Please register your items before the Congress if possible, by clicking on this link.

Please visit the Congress website for more information: <https://ifssh-ifsht2022.com/index.php>.

We can't wait to welcome you to London! difference.



Member Society

SOUTH AFRICAN SOCIETY FOR SURGERY OF THE HAND (SASSH)

South Africa was the first country to report the Omicron variant of the Covid virus towards the end of 2021, and this resulted in a global shutdown of travel into and out of our country. Fortunately, it was milder than previous variants and our hospitalisation rates remained low for the duration of the wave. This was probably also helped by the vaccine rollout. The wave didn't last very long and restrictions were eased which allowed us to have our first face to face societal meeting in February since before Covid.

What a pleasure it was to meet in-person again and have good academic discussions. The meeting was held in the city of Pretoria. We had online meetings during Covid times and these were very impersonal. One is often distracted by other events going on in the immediate environment, and being able to concentrate for prolonged periods is very difficult. One of the most valuable components to academic meetings is the discussion following a presentation or talk.

People are more likely to involve themselves in discussion when present and are able to discuss face to face. The networking and socialising that comes with in-person meetings is also extremely important and enjoyable. This is lost with online meetings.

Our most recent meeting in February 2022 was a "Refresher Course" and the topic was "Nerves and Pain". Many excellent talks were delivered on peripheral nerve injuries, brachial plexus injuries and tetraplegia. Our meetings are attended by many therapists as well as surgeons (about one third therapists, two thirds surgeons).

Their talks and opinions combined with those of the hand surgeon's provide a holistic view on treatment and patient management. We were supposed to have had two world class tetraplegia- and nerve surgeons in the form of Natasha van Zyl from Australia, and Jayme Bertelli from Brazil joining us, but unfortunately due to Covid travel restrictions this was not possible. We hope they can join us at future meetings.



The SASSH Refresher Course



Social event at the Refresher Course with an African sunset

Our Society has two meetings a year. One is the "Refresher course" and the other is the Annual Congress held in September every year in conjunction with the annual SA Orthopaedic Congress. This meeting is where academic papers and research are presented. The meeting this year will be held in the beautiful city of Cape Town and we would warmly welcome any international visitors.

South Africa still has some restrictions with regards to Covid at the time of writing, but most restrictions will be dropped soon. Most private and hospital practices have returned to near pre-Covid levels. During 2020 and 2021 the numbers of surgical patients admitted to hospitals were much lower.

At the peak of the Covid waves alcohol sales were banned and curfews were implemented by the government. This led to a large reduction in trauma related admissions to our hospitals, illustrating the large role alcohol plays in inter-personal violence and general trauma. This certainly was an interesting observation and is food for thought.

Many of us from the South African Society for Surgery of the Hand will be attending the IFSSH event in London this year (Covid permitting) and we hope to see many of you there and catch up with old friends and acquaintances.

Duncan McGuire

President: South African Society for Surgery of the Hand (SASSH)

ECUADORIAN SOCIETY FOR SURGERY OF THE HAND (ECUMANO)

ECUMANO is the 60th Member Society of the IFSSH, and presently has 17 members, and is growing! During February 2022, ECUMANO held its First Ecuadorian Hand Surgery Congress. Since most of our conferences were virtual during the pandemic, this First Congress was our main in-person event organised by President Fidel Cayón in conjunction with the Latin American Federation and some Asian-Pacific countries with the help of Dr Jin Bo Tang. It thus served to strengthen the position and presence of ECUMANO not only in Latin America, but also as an active Hand Society Member in the world.



In order to incorporate our experience with virtual meetings during the pandemic, this Congress catered not only for the in-person Delegates, but was broadcasted virtually to those local and international colleagues who could not attend in person.

The speakers included 16 invited professors from 4 different countries as well as 11 national professors. The Congress was attended by 121 participants, lasted 3 days and included lectures, practical workshops and round table discussions.

This hugely successful First Congress was further supported by the International Federation of Societies for Surgery of the Hand (IFSSH), the Latin American Federation of Hand Surgery (FLACM), the Ibero-Latin American Group for Hand Surgery (ILA) and the endorsement for the arthroscopy module by the International Society for Wrist Arthroscopy (IWAS), achieving the first IWAS Symposium in Ecuador.

We as a Hand Society which is still in its infancy, is proud to have been able to establish bonds with countries world-wide, and hope to be a binding force for Hand Surgery in Latin America.



SWISS SOCIETY FOR SURGERY OF THE HAND



Schweizerische Gesellschaft für Handchirurgie SGH
Société Suisse de Chirurgie de la Main SSCM
Società Svizzera di Chirurgia della Mano SSCM

“For those really passionate about hands – without passion there is no change”



The SGH Council at the General Assembly of the Swiss Society 2021

The 54th Annual Hand Surgery and 23rd Hand Therapist Congress from 25 - 26 November 2021 was held in Zürich, hosted by Past-President Urs Hug during his last term as President. It was our first “life” Annual Congress since the start of the Corona pandemic. Over 620 participants attended the Congress and shared their knowledge between surgeons, therapists and the industry.

The main topic of the congress was: “Passion for the Hand”. There were many interactive, well moderated sessions on hands of sportsmen and -women, musicians, children and tetraplegic patients.

The newly elected President is Maurizio Calcagni who was the former Secretary General of FESSH. He will organize the next Congress entitled “360° Quality in Hand Surgery”, in Thun, close by the Bernese Alps from 24 - 25 November 2022.

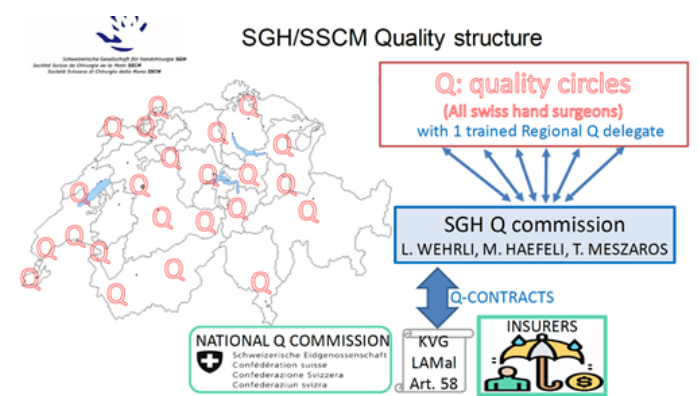


Even though we had to wear masks, everybody enjoyed the get-together!



But, in the evening, everybody forgot about masks and Covid-19

Our vision for the topic of our next Congress, the Swiss Society for Surgery of the Hand plans the “Quality Circles” program. This will focus on group discussions between surgeons and hand therapists and their medical records, including details about complications, using the “patient reported operative goal attainment” method (PROGA). PROGA is a quick method to document the gap between the desired health and final perceived outcomes.



Board meeting of the Swiss Society for Surgery of the Hand. (from the left) Maurizio Calcagni (President), Ivan Tami, Michaela Winkler, Torsten Franz, Urs Hug (Past Preident), Philipp Honigmann (online), Laurent Wehrli, Silvia Saskia Kamphuis, Stephan Schindele.

Past President Urs Hug and the Present President Maurizio Calcagni, in an interview in November 2021, talked about the difficulty of promotion of young hand surgeons in Switzerland. It seems to be more difficult to strategically position Hand Surgery in Switzerland, because we have difficulties to find senior physicians in Hand Surgery to stay in the public hospitals. As soon as a doctor gets his 'specialist title', s/he becomes a senior physician. Six months later, however, s/he is already in her/his own practice. All public hospitals are looking for senior physicians.

But for doctors, it is more interesting to work in the private sector. Nowadays, career thinking or the desire to be able to flexibly arrange one's workday is more important.

But this phenomenon affects many other professional groups as well, even outside medicine, and probably corresponds to the current spirit of the time. The tension between work-life balance and career considerations is not balanced. The finances, the tariff discussions and the difficulty to perform science in Hand Surgery are important issues apart from measuring the quality of the practice of Hand Surgery. Quality is our lifeline; we have to talk not only about costs but also about the quality of delivery.

We are under public scrutiny.

Esther Vögelin, Stephan Schindele, Urs Hug and Maurizio Calcagni

SINGAPORE SOCIETY FOR HAND SURGERY (SSHS)

As embodied in Darwin's "On the Origin of Species", it is neither the strongest nor the most intellectual of the species that survives, but the one best able to adapt and adjust to its changing environment. The past year has been a test of our resilience and ability to demonstrate this life-affirming tenet.

We started 2022 with a bang, hosting our first in-person arthroscopy course since the advent of Covid-19. The 2 day socially distanced cadaveric workshop was held from 8-9 January 2022 and was fully subscribed, receiving overwhelmingly positive feedback.

SSHS continued its tradition of hosting quarterly educational symposia, though adapted to a different setting due to size limitations on in-person gatherings. The Society conducted 4 online teaching sessions from 2021-2022:

- 3 July 2021: Peripheral Nerve Problems (Tan Tock Seng Hospital)
- 18 Sept 2021: Congenital Hand (National University Hospital)
- 30 Oct 2021: Reconstructive Wrist Surgery (Seng Kang Hospital)
- 19 Mar 2022: Extensor Tendon Reconstruction (Singapore General Hospital)

Upcoming events include a SSHS-BSSH combined meeting that has been postponed from earlier in the year due to restricted travel.

Looking ahead to 2023, we hope to welcome everyone to the 13th APFSSH/ 9th APFSHT/8th APWA Congress. It will be the largest in-person meeting SSHS has organised in 30 years, and the Society is working tirelessly to ensure its success. Join us in Singapore from 31 May - 3 June 2023 to enjoy our dynamic scientific program, iconic landmarks, and world class facilities!

Mark E. Puhaindran

President

Singapore Society for Hand Surgery



AMERICAN SOCIETY FOR SURGERY OF THE HAND (ASSH)

Join us in Boston!

The American Society for Surgery of the Hand (ASSH) welcomes the participation of hand surgeons from throughout the world to our 77th Annual Meeting to be held from 29 September – 1 October 2022, in Boston, Massachusetts, USA. This is the first time since 2019 that all meeting attendees will be in-person. No video conferences, no online meetings, just old fashioned, face-to-face learning with our colleagues.

This year's honored guest Society will be the Brazilian Society for Surgery of the Hand (BSSH). Posters submitted by the BSSH will be featured at this year's meeting and several speakers from the BSSH will enrich our program.

The program includes:

- pre/post courses,
- labs/demos,
- special keynote lectures,
- symposia,
- paper presentations,
- instructional courses,
- industry forums,
- Handapalooza: The AFSH International Event and more!

Consider bringing a young colleague to the meeting as your guest. Our International Bring a Young Surgeon program allows for a free registration when a qualified surgeon has paid for a full registration to the meeting. This opportunity allows for two surgeons to attend the ASSH Annual Meeting for \$550 USD!

This year's program chairs, Peter C. Rhee and R. Glenn Gaston have put together a robust program, and we hope you will join us!



VENEZUELAN SOCIETY FOR SURGERY OF THE HAND AND UPPER LIMB RECONSTRUCTION

In March 2020 the World Health Organization declared the Covid-19 pandemic which is caused by the SARS-CoV-2 virus. The Traumatology and Orthopedics Service of the Dr. Vicente Salías Sanoja Military Hospital located in the city of Caracas, also implemented strict protocols according to the international standards in order to protect patients and staff, both in the outpatient clinic and in the operating room.

However, even with the limitations and restrictions resulting from the pandemic, there was an exponential increase in injuries to hands and upper limbs. Since people were confined at home, many undertook activities without the necessary experience, practicing sports without specialized supervision and abuse and overuse of technological equipment.



Dr. Vicente Salías Sanoja Military Hospital. Caracas, Venezuela.

For this reason, as of 22 February 2022, the Director of the Hospital G/B Alfredo García Parra, together with the Medical Director Dr. Henry Molina Molina, created a separate Hand Surgery and Upper Limb Reconstructive Service.

This autonomous administrative Unit is the 6th such Service in Venezuela, based on the concepts of Dr. Sterling Bunnell (1944).

The foremost concept is that the hand starts biomechanically at the elbow, but functionally in the cerebral cortex. Because of this viewpoint, the Hand and Upper Limb Services in Venezuela include all injuries, pathologies and congenital conditions of the hand and upper limb, from the roots of the brachial plexus in the spinal cord to the finger tips, as an inter-related indivisible unit.



Doctor: José Vicari Méndez (Head of service), Ymaru Rodríguez Perez (Teaching coordinator), Heydi Angarita Balaguera and Manuel Montana Lopez (Specialist doctors) and Caroline Guarate Gomez (Postgraduate medical resident).

This Service is made up of surgical specialists in hand and upper limb, and shoulder surgery (Drs. Gustavo García Hernández and Jorge Contreras Duran). This comprehensive service provides the best medical care to patients from the military, affiliated and civilian personnel, as well as the public.

DR. JOSE VICARI M
President: SVCMRMS

SPANISH SOCIETY FOR HAND SURGERY (SECMA)

New Board of the SECMA.

Our new President is Adolfo Galan and General Secretary is Clarisa Simon. The rest of the Council members elected are: Pedro Delgado (President Elected), Eduardo Blanco (Treasurer), Pedro Hernandez (Secretary Elected), Vicente Carratala (Director and Editor in chief of The Ibero-American Journal of Hand Surgery), Samuel Pajares and Eduardo Vaquero (Chair of the Council of Social and Media Service and website manager), Francisco Martínez (Council of Teaching Committee), Luis Aguilera (Council of Research Committee), M^a Ángeles García Frasset (Council of Accreditations and Transparency) and R. S. Rosales (International Delegate & Council of Institutional Relations Committee).

SECMA & RICMA (The Ibero-American Journal of Hand Surgery).

The new editorial board is Vicente Carratala (Editor-in-Chief), Montserrat Ocampos, Belén García Medrano and Cristóbal Martínez (Associate Editors), Roberto S Rosales (Statistical Advisors), Sergi Barrera Ochoa (Social Media Advisor) and Pedro J. Delgado Serrano (International advisor). They have reached the goal of

publishing all scientific original articles in English and Spanish at the same time. (<https://www.thieme.com/books-main/orthopaedic-surgery/product/4022-ibero-american-journal-of-hand-surgery>).

XII INSTITUTIONAL SECMA COURSE

SECMA offers a two-day institutional Instructional Course every year, with lectures and laboratory cadaver sessions. The Course took place in Madrid under the direction of Francisco Martínez on 16-17 December 2021.

VIII INSTITUTIONAL SECMA COURSE IN METHODOLOGY OF CLINICAL RESEARCH and DATA ANALYSIS IN HAND SURGERY

SECMA offers a day course in clinical research methodology and data analysis. The Course was organized by Pilar Pradilla and took place in Seville on 12 November 2021. The 10 hours course is free of charge for SECMA members. Dr. R S Rosales was the course professor.

SECOND EDITION OF DECIM

The second edition of "The National Training Program in Hand Surgery", for obtaining the Spanish Diploma in Hand Surgery (DECIM), will start on 2 November 2022 and end on 31 May 2023.



XII Institutional SECMA Course. Assistants to the two-day Institutional Instructional Course with lectures and laboratory cadaver sessions 16 - 17 December 2021 at the School of Medicine, University " Ceu San Pablo", Campus de Boadilla del Monte, Madrid.



VIII Institutional SECMA Course in Methodology of Clinical Research and Data Analysis in Hand Surgery in Seville. The Course combined the theory of the different clinical designs, level of evidence, the use of patient reported outcome instruments and practical data analysis, using SPSS, Excel and Stata Statistics software.

XXV CONGRESS OF THE SECMA

After the delay because of the COVID-19 pandemic, the XXV Congress of the Spanish Society will take place in Segovia from 26-29 April 2022. The President of the Congress Organization is Fernando García de Lucas (Past President of SECMA) and the President of the Scientific Committee is Alex Studer.

Roberto S. Rosales MD, PhD

International Delegate of the Spanish Society

THE AMERICAN ASSOCIATION FOR HAND SURGERY (AAHS)

The American Association for Hand Surgery (AAHS) is pleased to again share an update with the IFSSH community.

The AAHS hosted a successful in-person Annual Meeting this past January in California. Under the sage leadership of Nash Naam and his program chairs, Julie Adams, MD, Cindy Ivy, OTR/L, CHT, Mark Rekant, MD and Vanessa Smith, PA-C, attendees were treated to an excellent scientific program. The meeting required masks, social distancing, and outside activities, and AAHS saw 72% of its registrants in person. Those who were unable to be in California for the meeting are able to view all educational session recordings on-demand. We were treated to a wonderful presidential address by Dr. Nash Naam on The Magic Power of Gratitude. It is appropriate now that we pay a debt of gratitude to Nash for two years of focused, calm, professional leadership through COVID craziness. Thank you, Nash, for a job well done!

Looking forward to the 2023 Annual Meeting, Nick Crosby, MD, Josh Gillis, MD, Gayle Severance, OTR/L, CHT and Vanessa Smith PA-C, are hard at work on a program that will fulfill AAHS's tradition of combining an excellent educational experience with time for leisure activities. The Marriott Turnberry in Florida offers a world class golf course along with a recently completed water park for kids. See you there! Please visit the AAHS website for meeting information. AAHS will continue to provide education between this year's Annual Meeting and January 2023 through a new webinar series to launch later this year being organized by Sonu Jain, MD. This series is being designed with Hand Association core values of inclusion and synergy in mind, and will again feature collaboration with affiliate societies to strengthen the education delivered to our hand care community. Information will be available on <https://meeting.handsurgery.org> in the near future.

Be sure to follow AAHS on social media to participate in the Weekly AASHk program which challenges the community's hand care knowledge each week as well as other tips, tricks, and updates.



Richard A. Berger, MD, PhD (1954 - 2022)

The Hand Association is saddened to announce that Dr. Richard Berger passed in March 2022. Dr. Berger embodied all the principals and values of the AAHS and his presence will be sorely missed. Peter Amadio worked with Dr. Berger for many years and offered the following thoughts.

Richard A. (Dick) Berger, MD, PhD, past President (2004) of AAHS, died too soon at the age of 68 on March 1, 2022. He spent his entire 30 year professional career at Mayo Clinic, where he was recognized near and far as a consummate clinician, scientist, medical artist, teacher and leader.

Once established at Mayo, Dick put his knowledge to work on new anatomical studies, focusing on the wrist, where his clinical and research observations were rapidly recognized worldwide as setting a new standard of excellence and insight, and led to the development of many elegant "Berger procedures" that addressed theretofore unsolved surgical problems at the wrist, and which, because of their effectiveness and Dick's teaching, rapidly disseminated around the world. Due to the public thanks of his patients we know that more than one athletic championship was won thanks to Dick's surgical skills.

One key attribute of an educator is the ability to mentor and serve as a role model to others. And there is no better evidence of that ability than the quality of Dick's mentees, who are now leaders and department chairs around the world. But whether a leader in the field or a community practitioner, Dick's students all kept in touch with him regularly, seeking his advice not only for patient care problems, but also those more personal problems that arise in everyone's life. And they visited him often as well.

It was natural for Dick to be asked to take charge of Mayo's Hand Surgery Fellowship program, at an important time when Board certification in Hand Surgery had just begun, and the requirements for ACGME certification were changing dramatically.

Once again, Dick excelled, and we were thrilled when he agreed to subsequently Chair our Hand Surgery Division. Later, Dick was appointed Dean of Mayo's School of Continuous Professional Development. Among many other achievements in this role, Dick worked with AACME and ABMS leadership to allow quality improvement programs to count towards ABMS Maintenance of Certification programs, greatly easing the recertification burden for clinicians. In 2017 he was honored with Mayo's Distinguished Educator Award.

Dick's deep and loving relationship with his wife, Evelyn, was well known. But Evelyn was obliged to share- everyone who knew him had a deep affection for Dick Berger. And with cause. Dick was incredibly caring and extremely generous- not only professionally with his time and wisdom, but also personally. It seems that Dick just couldn't have a good time without sharing it. Whether it was a lavish party at his home, a fine meal at a restaurant, or a rock concert, you could be sure that Dick would be a fantastic host. If you were lucky, and very fast, you might be able to tip the limo driver; otherwise, the best advice was always to just sit back and enjoy Dick's company.

Another endearing aspect of Dick's personality was his dry and ironic sense of humor, with an impeccable sense of timing, knowing just when a bit of levity would get everyone back on an even keel. Finally, in addition to being an excellent artist, Dick was a talented musician, facile with piano, banjo, trumpet and harmonica. I'm not sure what connects all those, other than they all seem like fun instruments to play, and could be used to express Dick's characteristic exuberance, and joie de vivre.

Dick's last few years were filled with health challenges, which he met with his characteristic grit and determination. He never let the difficulties he faced define the person he was. While he will be mourned, and missed, I am quite sure Dick is already planning some special event for us, whenever we join him on the other side of the pearly gates. Rest in peace, my friend.

COLUMBIAN SOCIETY FOR SURGERY OF THE HAND (ASOCIMANO)

The 38th National Congress of the Columbian Society for Surgery of the Hand which will be held from 24 to 27 August 2022 in Pereira, Columbia.



Pereira is the capital of Risalada, situated in the mountainous coffee region in western Colombia, known for mild Arabica coffee. It is part of the territory that in was declared a World Heritage Site 2011 by UNESCO. The Colombian Coffee Cultural Landscape, is the result of the Antioquian colonization, and its inhabitants retain features of the culture of the muleteers, such as friendliness and entrepreneurship!

The academic program will be of the highest quality, with the best national and international speakers in each subspecialty.



MANOS A LA OBRA, is a "health brigade" created by the Colombian Society for Surgery of the Hand ASOCIMANO. A group of expert Colombian surgeons in collaboration with surgeons from Germany and Brazil seek to give a smile to low-income children with congenital diseases of the hands, elbows, arms and shoulders,

For this humanitarian journey, free medical consultations will be made a few months before the Congress and they will be operated two days before the Congress with all expenses paid, including the necessary post-surgical medications.

We are confident that the good news will echo, and we feel it is our responsibility to set an example so that more and more Colombians will do good things and show more solidarity with others.



<https://ifssh-ifsht2022.com>

IFSSH, IFSHT & FESSH COMBINED CONGRESS LONDON 2022

6-10 June 2022

ExCeL, London, UK

This year the UK will host the joint congress of the International Federation of Societies for Surgery of the Hand with the International Federation of Societies for Hand Therapy and the Federation of European Societies for Surgery of the Hand, in London.

This is, of course, the most prestigious hand surgery event... on the planet!

The venue is the ExCeL Conference Centre in Docklands, East London, one of the venues for the London Olympics. Accommodation (and restaurants) for delegates in the immediate vicinity of ExCeL are plentiful and less expensive than in central London. If delegates decide that they would prefer to stay in central London, then transport options from the centre to ExCeL are good. There is the Docklands Light Railway and also an underground tube connection, due to be completed hopefully soon. There are also river boats departing from major London piers every 20 minutes...





Adjacent to the ExCeL is the Royal Victoria Dock with the London Cable Car. Enjoy amazing views and a unique ride across the River Thames. Linking The O2 and ExCeL, the gondolas will take you 90 metres into the air to experience spectacular views of London, from St Paul's Cathedral to the west, to the Olympic Park and Thames Barrier in the east (tickets from £4.00). A great way to explore the local area which is packed with things to visit: the Royal Naval College, the Cutty Sark, Greenwich Market and of course the Royal Observatory, home to Greenwich Mean Time.....and much more!

Scientific Program

There is a wide-ranging program of instructional lectures and courses with 614 invited talks.

On the Monday prior to the main congress, FESSH will run a training day.

There are two prestigious named IFSSH lectures: The Swanson lecture will be delivered by Professor Tim Davis who will present his work on scaphoid fractures. The Presidential lecture

Will be delivered by Professor Gus McGrouther and will be on developments in treating hand infection.

The BSSH Douglas Lamb lecture will be given by Professor David Ring who will present on the importance of psychological factors in hand surgery.

There is also a keynote talk on Diversity to be given by Niki Moffat CBE, the first woman to make the rank of Brigadier in the British army.

There will be a core series of plenary instructional lectures, the topic for which is "Tendon Disorders of the Hand and Wrist". A publishing deal has been negotiated with Thieme to produce an accompanying book, which will be included in the registration fee for surgeons.

In addition, 1619 surgery and 179 therapy free papers have been submitted.

Those who have pre-accepted abstracts have been asked to prepare a 3 minute video.

Based on the video, the review panel will make a final decision on whether the presentation is accepted as a podium or an electronic presentation. Authors will be informed by 28 February.

Social Programme

We invite you to join us and take advantage of the many opportunities for learning, networking and socializing.

Monday, 6th June - Opening Ceremony & Welcome Reception

On the first evening of the Combined Congress, the British Society for Surgery of the Hand and the British Association of Hand Therapists have the pleasure to invite you to meet friends, connect with hand surgeons and therapists from all over the world after the long months of pandemic.

The Opening Ceremony will include induction of the IFSSH Pioneers in Hand Surgery and will continue with a reception with food and drinks in the exhibition area.



Wednesday, 8th June - Pub Night

There will be a less formal social event for the Wednesday evening with music, dancing, food and drink at the Revolution Bar ...



Price, including "finger-food" and drink vouchers:
Before 1st March: £35 | After 1st March: £45

Thursday, 9th June - Congress Dinner

There will be a Gala Dinner on the Thursday evening. We have booked the Old Billingsgate Market for this. This is a fantastically characterful and historic venue, in a great position. Until 1982, this Victorian Grade II listed building was a world famous fish market. The Grand Hall (the former market floor) will hold the Congress Dinner.

There will be a sparkling wine and Summer cocktails reception, prior to dinner, served on the terrace with its stunning vista. The three-course seated dinner will be accompanied by inclusive wine, beer and soft drinks.

After dinner, until 2:00am, the dance floor beckons.....



We are looking into the possibility of riverboat transport from ExCeL to the venue.
Maximum seating is 1800 but it is likely to be heavily subscribed – book early!

Prices:

Before 1st March 2022: £150 | After 1st March 2022: £180

Global Training Survey

How DO we train? How SHOULD we train?

Trainees and established hand surgeons are invited to complete a short survey on their training for a chance to win free congress registration.

Join the training debate in London...

<https://www.surveymonkey.co.uk/r/TH96QJQ>

Join our mailing list

Mark your calendar now and stay tuned for more details....

Subscribe to our congress newsletter: <https://ifssh-ifsht2022.com/#signup>

To wet your appetites, here is a link to our cinematic “trailer” video....

https://www.dropbox.com/sh/z5h8hi1rpbnt62/AABmrmxbeBQ2sDL3RAyzNhw1a/videos?dl=0&preview=Promotional_video_Long.mp4&subfolder_nav_tracking=1

Registration

....is now open: <https://ifssh-ifsht2022.com/#registration>

Although we would prefer to welcome delegates in person, online rates are available for those outside Europe who are unable to travel but wish to participate.

Please visit the website to view the various rates for face-to-face and online registrations.

The “early bird” registration deadline is 1st March.

See you in London...!



David Shewring

Consultant Hand Surgeon, University Hospital of Wales, Cardiff
Chair, Organising Committee IFSSH/IFSHT London 2022



Jonathan Hobby

Consultant Orthopaedic Hand Surgeon, North Hampshire Hospital, Basingstoke
Chair, Programme Committee IFSSH/IFSHT London 2022

Scandinavian Society for Surgery of the Hand (SSSH)

the 28th Scandinavian Society for Surgery of the Hand Congress

SSSH 2022

AUGUST 24-26, MALMÖ, SWEDEN



Lectures, poster sessions, free sessions, doctoral dissertations at a glance, and much more. Broaden your local network.

Registration and abstract submission opens December 1st, 2021

Welcome!







SSSH2022.se

The Scandinavian Society for Surgery of the Hand will host its 28th Congress from 24-26 August 2022.

The SSSH is the world's second oldest Hand Society, and is a collaboration between the Societies of Sweden, Denmark, Norway, Finland, the Baltic States and Iceland..

We are proud to have a fine scientific program for both Surgeons and Therapists, is open to all IFSSH members and will be held in English

38^o
 CONGRESO NACIONAL DE LA ASOCIACIÓN COLOMBIANA DE CIRUGÍA DE LA MANO

13^o
 CONGRESO NACIONAL DE LA ASOCIACIÓN COLOMBIANA TERAPEUTAS DE LA MANO Y DEL MIEMBRO SUPERIOR




2022
ExpoFuturo
PEREIRA
 24 A 27 DE AGOSTO

+57 316 646 4988 secretaria@asocimano.com
www.asocimano.com

Brazilian Society for Surgery of the Hand



The Brazilian Society for Surgery of the Hand (SBCM) will host the 42nd Brazilian Congress of Hand Surgery in Campinas, São Paulo, Brazil from 4 - 6 August 2022.

For more information, please visit: www.mao2022.com.br

Dr. Samuel Ribak
President: SBCM

email: mao@atepeventos.com.br



Will we see you in Sydney? or virtually?

ahta.com.au/conference | enquire@ahta.com.au



— **TRAUMA** —
HAND | BRAIN | PERSON
2022 AHTA CONFERENCE
SYDNEY 25-28 AUGUST



