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REACH

Research, Education, Achievement and Clinicians in Hand and upper limb therapy around the world.

The IFSHT is excited to present edition four of the quarterly newsletter, REACH.

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

LETTER FROM THE EDITOR

Susan de Klerk
IFSHT Information Officer (2019 – 2022), Cape Town, South Africa

Welcome to the first issue of REACH for 2022! The triennial IFSSH, IFSHT & FESSH Combined Congress is only a few months away and we are looking forward to welcoming you to London from 6 – 10 June 2022. Thank you to Helen Buchanan (SA) and Fiona Sandford (UK), IFSHT scientific committee chairs, for your hard work thus far and for providing us with a teaser as to what is in store at the Congress. Please also consider the section on the Congress Silent Auction, we count on your participation in this exciting event.

We introduce a new three-part series by Cynthia Srikesavan (UK) on the basics of understanding research data in journal articles. We continue with our levels of evidence series by Mia Erickson (USA). The new and noteworthy section highlights carpometacarpal joint (CMCJ) osteoarthritis. Thank you to Lisa Newington (UK) and Zoë Thompson (UK) for an insightful contribution on Greener Hand Therapy.

Other regular features in this issue of REACH are the summary of a previous EZINE Hand Therapy contribution, achievements in hand therapy and clinical pearls, featuring baby sharks! The spotlight on section features the Spanish Association of Hand and Upper Extremity Therapy (AETEMA).

You also have a final opportunity to submit a logo for the REACH logo competition. Voting for the winning logo will take place at the Congress in London. Thank you to Mia Erickson (USA), Cynthia Srikesavan (UK) and Toni Rippey (NZL) for contributions and content review. And finally, we encourage you to please send content ideas and contributions to informationofficer@ifsht.org.

See you in London!

Susan de Klerk
IFSHT Information Officer (2019 – 2022)
Cape Town, South Africa

Helen Buchanan

Fiona Sandford

IFSSH, IFSHT & FESSH COMBINED CONGRESS LONDON 2022

6-10 June 2022 | ExCeL, London, UK

London Congress

Submitted by Associate Professor Helen Buchanan and Dr Fiona Sandford, IFSHT Scientific Committee Chairs

We are now three months away from the triennial IFSSH/IFSHT/IFSSH congress which will be held in London, 6 - 10 June. This will be the first face-to-face meeting for many of us since the start of the COVID-19 pandemic and so comes with this added excitement.

We have a stimulating and inspirational scientific programme to lure you to London. Combined with the delights of this magical city, it is a Congress not to miss.

The congress will be held in the ExCeL Conference Centre by the historic docks. A waterside location in glorious June weather promises to be hard to match.

We are very fortunate to have some of the top speakers in the world presenting as keynote speakers and in the individual sessions. More information on this to follow soon! The Congress will be more integrated than ever before with our surgical partners, and we have over eight combined sessions. We have several peer-reviewed free paper sessions where the latest evidence will be discussed; these will also be embedded into the topic sessions. The content is themed, where possible, and is linked seamlessly between the surgical and therapy programmes. We have three parallel sessions of content running in the therapy programme alone. In addition, we have an afternoon of workshops designed to provide opportunities for further learning and knowledge sharing often in smaller groups.

Please visit the Congress website for more information: https://ifssh-ifsht2022.com/index.php. We can't wait to welcome you to London!

Silent Auction – London 2022

The legendary triennial IFSHT Silent Auction 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.

In the months leading up to the Congress, please collect items which can be sold in this auction. At this Congress, for the first time, we will be actively seeking both physical items and promises. Physical items can be, for example, scarfs, jewellery, models, books, hand therapy tools and other items. Many items are donated with a hand theme, but a wide variety of items helps to draw the crowds. Promises include the offer of, for example, one hour of teaching on a topic of your choice, free access to a paid online training module, delivery of a lecture to a hand therapy department etc. This enables therapists from around the world to connect. Please also donate items representing your country. We very much welcome surgeons to participate with donations and with purchase.

Please register your items before the Congress if possible. A link will be available on the website here.

This will take you to a form to complete to upload the item to our spreadsheet.

Please bring your items to the designated place on Monday 6 June between 4 pm – 6 pm or Tuesday 7 June between 7:30 – 8:30 am, 10:00 – 10:30 am and 12:30 – 13:45 pm.

The auction will go live on Galabid at 8:00 am on Tuesday 7 June and you can start bidding straight away. On Thursday 9 June all the physical items will be displayed. Some items will be "buy it now" with a reserve price. Further information about Galabid, and how to register will be listed on the IFSHT website here.

If you are bidding on a physical item, you will need to be able to collect the item on Thursday 9 June between 5:00 – 6:30 pm (or send a representative to bring it home to you). Successful bidders on the promises will receive an email voucher in order to redeem the item.

Thank you for your support. It really makes so much difference.

New and Noteworthy

Written by Mia Erickson, PT, CHT, EdD. Midwestern University, Glendale, AZ, USA

Comparison of 2 Postoperative Therapy Regimens After Trapeziectomy Due to Osteoarthritis: A Randomized, Controlled Trial.

Hermann-Eriksen M, Nilsen T, Hove Å, Eilertsen L, Haugen IK, Sexton J, Kjeken, I. *Journal of Hand Surgery*, 2022;47(2):120-129. https://doi.org/10.1016/j.jhsa.2021.08.015

The purpose of this study was to compare the 3, 6, and 12-month outcomes between 2 post-operative protocols following trapeziectomy for carpometacarpal joint (CMCJ) osteoarthritis. In a randomized, controlled, noninferiority trial, authors compared the outcomes of an early mobilisation group to a control, or standard treatment group. The early mobilisation group started a range of motion exercise program 3 weeks following surgery, and the standard treatment group included CMCJ and metacarpophalangeal joint (MCPJ) immobilisation for 6 weeks followed by a thumb range of motion program. Compliance was recorded in an exercise log. Participants were considered compliant if they completed 5 exercise sessions per week for 3 weeks. The assessors performing the measurements at the 3-, 6-, and 12-month visits were blinded to the baseline measurements and to group assignment.

The primary outcome measure was the Canadian Occupational Performance Measure (COPM). Additional outcome measures included patient perception of surgical effects, self-reported hand function (measured by the Activity Performance of the Hand), grip and pinch strength, active range of motion (interphalangeal joint, MCPJ, and CMCJ palmar abduction) and pain. Baseline measurements were comparable for both groups except the standard treatment group had a lower mean age, and the early mobilisation group had a larger percentage of people with scaphotrapeziotrapezoidal osteoarthritis. There were no significant differences between groups on any of the outcome measures except for the early mobilisation group reporting less pain at rest than the standard treatment group at the 12-month follow-up. The number of adverse events was also similar between groups. The authors concluded that early mobilisation is as safe and effective as longer immobilisation protocol.

Here are a few other notable osteoarthritis references recently published:

Gløersen M, Steen Pettersen P, Neogi T, Slatkowsky-Christensen B, Kvien TK, Magnusson K, Hammer HB, Haugen IK. Associations of pain sensitisation with tender and painful joint counts in people with hand osteoarthritis: results from the Nor-Hand study. *RMD Open*. 2022;8(1). https://doi.org/10.1136/rmdopen-2021-001774

Pajari J, Jokihaara J, Waris E, Taimela S, Järvinen TLN, Buchbinder R, Karjalainen T. Responsiveness of different pain measures and recall periods in people undergoing surgery after a period of splinting for basal thumb joint osteoarthritis. *BMC Medical Research Methodology*. 2022; 22(1):37. https://doi.org/10.1186/s12874-022-01527-7

Millrose M, Gesslein M, Ittermann T, Kim S, Vonderlind HC, Ruettermann M. Arthrodesis of the proximal interphalangeal joint of the finger - a systematic review. *EFORT Open Reviews*. 2022; 7(1): 49–58. https://doi.org/10.1530/EOR-21-0102

Teunissen JS, Wouters RM, Bierma-Zeintra SMA, van Meurs JBJ, Schreuders TAR, Zuidam JM, Selles RW. The prevalence, incidence, and progression of radiographic thumb base osteoarthritis in a population-based cohort: the Rotterdam Study. *Osteoarthritis and Cartilage*. 2022 https://doi.org/10.1016/j.joca.2022.01.003

Singh A, Kotlo A, Wang Z, Dissanayaka T, Das S, Antony B. Efficacy and safety of hydroxychloroquine in osteoarthritis: a systematic review and meta-analysis of randomized controlled trials. *The Korean Journal of Internal Medicine*. 2022;37(1):210–221. https://doi.org/10.3904/kjim.2020.605

Fan Z, Chang L, Su X, Yang B, Zhu Z. Treatment of Mucous Cyst of the Distal Interphalangeal Joint With Osteophyte Excision and Joint Debridement. *Frontiers in Surgery*. 2021;8,767098. https://doi.org/10.3389/fsurg.2021.767098

Research data and interpretation

Written by Dr Cynthia Srikesavan, Senior Researcher in Physiotherapy, Rehabilitation Research in Oxford, Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford, UK

This is Part One of a tri-series on the basics of understanding research data in journal articles. To help understand how study findings are summarised and presented in the 'results' section of a published study, it is first important to know about different data.

What are the types of data?

There are two major classifications of data in statistics: Quantitative and Categorical.

Quantitative data involves numbers and is sub-divided into discrete and continuous data.

- Discrete data is finite, countable and involves whole numbers (example: 100 people in a cinema theatre)
- Continuous data can have any value on the scale they are measured, including fractional values (example: body weight of 60.5 Kgs).

Categorical data comprises words or narratives. It is sub-divided into Binary, Nominal and Ordinal data.

- Binary data involves only two categories (example: Yes/No or True/False).
- Nominal data involves categories that don't follow an order or pattern (example: What languages do you speak? French, English, Spanish and German).
- Ordinal data have a pattern in their categories like they can be ordered 1st, 2nd, 3rd and so on (example: level of agreement: Strongly agree, Agree, Neutral, Disagree, Strongly disagree).

How data are summarised?

'Descriptive statistics' is a term we often come across when reading journal articles. This refers to the summary of the characteristics of the study data, whether quantitative or categorical.

Continuous data are summarised as measures of central tendency that includes mean or median. Categorical data are summarised as the count of observations in each category and reported as percentages of the total sample (example: proportion of participants who agreed or disagreed to take part in a survey).

Mean

The standard normal (or ideal) distribution of continuous data represents a symmetrical, inverted bell-shaped curve with a single peak. This curve graphically shows a mean of 0 with standard deviation (SD) of 1, 2, and 3 on both sides. Mean is the central measure of the distribution (or simply the arithmetic average of data). SD is the measure of how the data spreads on both sides of the curve from the mean (data variability). 68% of the data lie within one SD of the mean; 95% within 2 SDs and 99.7% within 3 SDs, both sides.

Data are first checked if they follow a normal distribution using special statistical tests such as a Shapiro-Wilk normality test. If the data are normally distributed, data are summarised as mean ± SD. If the mean weight of 100 students is 55 kgs and SD is 1.5 kgs, the spread of weight about the mean is between 53.5 to 56.5 kgs. A low SD indicates that the data values are clustered closer to the mean and if high, they are spread out from the mean.

Median

When the data set is not normally distributed, we use another central measure called 'Median'. Data in such cases are summarised as median (Inter-quartile range, IQR). Median is also used to summarise ordinal data or skewed data in small sample studies.

Median is calculated by organising the data from lowest to highest and then finding the 'middle value'. Analogous to SD, IQR is a measure of data variability and indicates the spread of the middle 50% of the data. The median (or middle value) of the first half (Q1) and second half (Q3) of the data is calculated. IQR is Q3-Q1.

Range

Range is another statistic that is commonly used. It refers to the largest and smallest value in a data set. For example, if the ages of 5 study participants are 32, 30, 20, 26, and 45 years, the range is calculated as highest value minus lowest value. The range of the data set is 45-20 = 25 years. A larger range indicates a wider dispersion of data.

How data are visually presented?

Histograms, graphs and scatter plots are often used to present quantitative data. Pie charts are used to graphically describe categorical data. Tables are used to present both forms of data.

Key takeaways

- Quantitative data have numerical values. Example: Height 160 cm
- Mean and SD are used to summarise normally distributed continuous data
- Median and inter-quartile range are used to summarise non-normal or ordinal data
- Range represents the highest and lowest values in the distribution of data
- Categorical data involve words or narratives. Example: Different ethnicities
- Percentages and frequencies are used to summarise categorical data
- Data are presented in journal articles in the form of tables, histograms, pie charts etc.

References and further reading

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2. Kulkarni DK. Interpretation and display of research results. *Indian Journal of Anaesthesia*. 2016 Sep; 60(9):657. https://doi.org/10.4103/0019-5049.190622
3. Whitley E, Ball J. Statistics review 1: Presenting and Summarising Data. *Critical Care*. 2002 Feb; 6(1):66-71. https://doi.org/10.1186/cc1455. Epub 2001 Nov 29. PMID: 11940268; PMCID: PMC137399.

Research in Action – Levels of Evidence

Written by Mia Erickson, PT, CHT, EdD. Midwestern University, Glendale, AZ, USA

Level 3 Evidence

Over the last few issues, we have covered a different level of evidence within the evidence hierarchy. In this issue we will be talking about Level 3 evidence. According to the Oxford Centre for Evidence-Based Medicine,[1] Level 3 evidence includes case-control studies or a systematic review of case-control studies. A case-control study is a retrospective study where the authors look at two groups of individuals, one with an outcome of interest, such as a disease or condition (cases), and another that does not have the outcome of interest (controls). The researchers look back in time to determine how many individuals in both groups had the exposure, or risk factor of interest. In these studies,

the outcome is already known. Matched case-control studies are those that match individuals with the outcome or condition of interest with someone without the condition on some characteristic(s) such as age or sex. These studies are particularly useful when examining rare diseases, conditions, or outcomes[2] .

Data analysis in a case-control study includes reporting an odds ratio (OR). Odds ratios have been defined as the measure of association between an exposure and an outcome. It represents the odds an outcome will occur given a particular exposure[3]. Odds ratios greater than 1 indicate higher odds with the given exposure and those less than 1 suggest lower odds. Odds ratios equal to 1 indicate the exposure does not influence the odds of an outcome. In scientific literature, the odds ratio should be reported with the confidence interval (CI). The CI helps to show how precise the odds ratio is. For example, if the CI is wide, the OR would not be very precise; whereas if the CI was very narrow, one could conclude that the OR has higher precision. CIs that span 1, or the null value, indicate evidence for lack of an association between the outcome and the exposure[3].

Let's look at an example in rehabilitation. In 2020, Qian et al[4] examined risk factors for developing elbow stiffness following upper extremity trauma. There authors included 461 people with stiffness (cases) and 227 patients without stiffness (controls). They analysed data from the medical records to determine risk factors associated with developing stiffness. Results showed that increased cast immobilization time (OR=2.02, CI95=1.15, 3.54), multiple surgeries (OR=1.94, CI95=1.081, 3.490), and alcohol abuse (OR=3.08, CI95=1.153, 8.237) may be risk factors for developing elbow stiffness following trauma. For all of these risk factors, the OR is greater than 1 and the CI is relatively narrow for cast immobilization time and having multiple surgeries. The CI for alcohol abuse is much larger suggesting the OR estimate is less precise for this risk factor.

Lawallen and Courtwright[2] outlined benefits of case-control studies. First, they are relatively inexpensive, quick, and easy to do. Also, since the outcome is already known, enrolment is easier. They may be particularly useful for preliminary investigations of risk factors, and their conclusions may help in justifying longitudinal studies[2]. There are some disadvantages of case-control studies. For example, retrospective studies can be difficult if data records are inadequate or incomplete, control participants may be difficult to find, and one is unable to calculate incidence and prevalence of the condition because there are no data taken from the population[2]. Other references have included different study designs under the heading of Level 3 evidence. According to the Johns Hopkins Nursing Evidence Based Practice Levels, non-experimental, qualitative, and mixed-method (quantitative and qualitative) studies are considered Level 3 evidence[5]. Future issues of REACH will focus on qualitative studies.

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2. Lewallen S, Courtright P. Epidemiology in practice: case-control studies. *Community Eye Health*. 1998;11(28):57-58.
3. Szumilas M. Explaining odds ratios. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*. 2010; 19(3):227-229.
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Compiled by Toni Rippey

The "One-80 Pronosupinator": regaining forearm rotation

Jeffery Sanderson and Brodwen McBain present their splint design and relevant research in regards to maximising rotation in the forearm following surgery or injury. This splint was a finalist in the IFSHT Cristina Alegri award nominations for innovation in 2019 and the winner of the Physiotherapy Research Foundation's inaugural Pitchfest in 2019.

Acknowledging the large part forearm rotation has to play in everyday function, the authors sought to find a light weight, low-profile functional splint that would enhance adherence by increasing total end range time, while one size can be adjusted to fit most people. Function was a key component in the splint's design to allow everyday activities to be participated in while wearing the splint.

Early reports from clinical feedback in relation to this One-80 Pronosupinator splint indicate that gains in rotation are being made in keeping with recent literature regarding other static progressive and dynamic splinting options ie. Colello.

Click here for the full article

Questions:

1. What do the authors describe as 'the key to function'?
   a. Rotation
   b. Flexion
   c. Extension
   d. Grip

2. What is the commonly reported functional range for rotation (Referenced from Morrey et al, 1981)?
   a. 30 degrees supination; 70 degrees pronation
   b. 70 degrees supination; 30 degrees pronation
   c. 20 degrees of each supination and pronation
   d. 50 degrees of each supination and pronation

3. Which joints are involved during forearm rotation?
   a. Radiocarpal joint only
   b. Proximal and distal radioulnar joints
   c. Proximal radioulnar joint only
   d. Distal radioulnar joint only

4. What is the greater contributor to loss of movement at the elbow in many cases (Kleinman and Graham, 1998)?
   a. Soft tissue contracture
   b. Malunion
   c. Both soft tissue contracture and malunion

5. Sustained stretching with orthoses shows substantial change can be achieved despite hard end-fee, malunion, chronicity or plateau.
   a. True
   b. False

6. What are 2 of the key components when considering the success of this orthoses? Consider the following four options:
   1. Forearm position within the orthosis
   2. Fit of the orthoses
   3. Duration of wear
   4. Appearance of the orthoses
   a. 1 and 2
   b. 3 and 4
   c. 1 and 3
   d. 2 and 4

7. What, according to the authors, is critical to assess when applying a mobilisation orthosis?
   a. Whether it is aesthetically pleasing
   b. Whether it is holding the patient in a position of stretch
   c. Whether it is made of neoprene or thermoplastic
   d. Whether it includes the wrist

8. TERT stands for...
   a. Tasks Energy Resulting Torque
   b. Total Energy Reliably Torsional
   c. Total End Range Time
   d. The End Rotation Theory

9. What are the barriers to orthotic use?
   a. Cumbersome Design
   b. Reliable Design
   c. Accessibility
   d. All of the above

10. What are the benefits of the One-80 Pronosupinator orthoses?
    a. Hinged elbow articulation allowing free elbow flexion and extension
    b. Wearers digits are free, allowing them to hold items in their hand and perform tasks
    c. One size can be adjusted to fit most people and easy to adjust in 2-3 minutes
    d. All of the above

Answers on Page 20

Striving for a greener hand therapy

Submitted by:
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Awareness of planetary health is growing at all levels. Internationally, governments are initiating wide-scale bans of single use plastics, such as the EU Single-Use Plastics Directive [1]. Nationally, countries are investing in renewable energy solutions and greener transport, with Sweden aiming to completely eliminate the use of fossil fuels for electricity generation by 2040 [2]. At an individual level, consumers are being urged to change their behaviour both within and outside the home. For example, by eating less meat and dairy, flying and driving less, supporting local green spaces, and championing sustainability among our personal networks and to those in power [3].

Human impact on the environment is detrimental to personal and population health. Direct links have been established between air pollution exposure and the development of acute and chronic respiratory conditions [4], while climate change affects both the social and environmental drivers of health, including access to secure shelter, safe drinking water and sufficient food [5]. Additionally, healthcare is responsible for approximately 5% of total global environmental impacts. This includes greenhouse gas emission, generation of particulate matter and nitrogen oxides, and water use, particularly in regions of scarcity [6]. These impacts are not just the results of supply chains and transportation: 80% of carbon emission from the English National Health Service (NHS) are associated with treatment and care, and of these, 60% relate to equipment and consumables [7].

As individuals, we need to all play our part in reducing the environmental impact of our activities. As healthcare professionals, we have the added responsibility of taking steps to mitigate the negative environmental impacts of the services we provide. This includes making changes to healthcare delivery, while also ensuring that our patients, colleagues, students, and employers are encouraged to think about their own impacts on planetary health.

In this report, we suggest four areas where we, as hand therapists, can bring environmental sustainability into our everyday practice. We welcome ongoing discussion on this issue and hope to see future knowledge sharing and collaboration through IFSHT.

1. Discuss the environment with your patients

Within the UK NHS, we are encouraged to take a holistic approach to healthcare, using a 'making every contact count' approach to nudge patients to make positive lifestyle changes for their health. To date, this has focused on suggestions to quit smoking, reduce alcohol intake, eat healthily, increase physical activity, and take steps to aid mental health and wellbeing [8]. Now is the time to also discuss the environmental benefits associated with these activities. Making every contact count can be used to emphasise the links between planetary health, community health and individual health and place this in the collective consciousness.

A good starting point might be when discussing smoking with our patients. We know that smoking affects vascularity in the hands, delays wound healing and can be associated with increased risk of infection [9], so as hand therapists we regularly discuss this with our patients. Can we also raise

the issues of air pollutants, residues in discarded cigarette butts, water consumption required to grow tobacco and widespread pesticide use?

Similarly, encouraging our patients to walk or cycle for shorter journeys is beneficial for their cardiovascular fitness, while also reducing vehicle emissions.

We can let our patients know about the changes we are making to be more sustainable. Posters on the wall or information included in handouts can inspire patients and spark conversations and new enthusiasm. If you don't feel confident in discussing planetary health, seek out additional resources. The Centre for Sustainable Healthcare [10] and Planetary Health Alliance [11] are great starting points.

2. Become involved in environmental healthcare initiatives

The Environmental Physiotherapy Association, which is also open to occupational therapists, has been a driving force in championing alternative approaches to healthcare and healthcare education [12]. We have previously written a blogpost highlighting sustainable hand therapy, which was published through their Clinical Practice, Environmental Sustainability blog [13].

The Environmental Physiotherapy Association have also established Agenda 2023, a global call to action to integrate environmental and sustainability perspectives into entry-level physiotherapy education world-wide [14]. The British Association of Hand Therapists is a named supporting organisation; is this something that you, your national hand therapy body, or the IFSHT would be willing to endorse? A scoping review looking specifically at environmental sustainability within OT reached similar conclusions, namely that we have a role in advocating for planetary health and working with our patients to create environmentally sustainable occupations, and we should strive for sustainability in both practice and education [15].

At a local level, many healthcare organisations have released mission statements advocating for environmental sustainability, with the creation of national centres for sustainable healthcare. Now is the time to find out what strategies are in place in your organisation and advocate for the environment within your healthcare community.

If you don't have a sustainability group in your own workplace, think about starting one. By building sustainability into clinical governance meetings, making small changes in our own departments and sharing the message that this is a priority for patient care, we can all contribute to the long-term vision for future health. Going it alone isn't easy and climate anxiety is a real thing; it doesn't take much internet browsing to get overwhelmed by the causes of climate change [16]. Having a community of like-minded people is key to stay hopeful and motivated.

3. Work towards sustainable pandemic responses

Personal protective equipment (PPE) has become an important part of our lives, both in and out of work. PPE consumption and litter are global problems that require sustainable solutions [17,18]. Within the UK, Revolution-ZERO is one company working with the UK NHS and academia to develop effective zero-carbon and zero-waste masks and other PPE [19]. Are there steps being taken in your area to limit the negative impacts of plastic PPE, and if so, can you get involved?

One benefit of the pandemic has been the rapid move to offer virtual hand therapy appointments[20,21]. Telephone or video appointments may not be suitable for all patients, but these alternative formats may offer a lasting solution to reduce the environmental impact of travel for both patients and clinicians (if able to work from home).

Revolution-ZERO reusable face masks

4. Champion alternative hand therapy practices and equipment

Procurement

Do you know the supply chain of the materials and equipment used in your department? Do the suppliers have clear ethical production and sustainability criteria? In reality, it is incredibly difficult to find this information, but by starting to ask the questions and thinking about the supply chain, we can help shift priorities towards ethical and sustainable manufacture and purchasing.

Splinting

Splinting is an important component of hand therapy interventions. Unfortunately, much of the available splinting material is plastic and often packaged in non-recyclable plastic film. However, there are several steps we can take to reduce this impact. First, only splint when clinically indicated. This may involve reviewing the literature and changing current practices, for example moving away from splinting for all patients with first carpometacarpal joint osteoarthritis [22] or fifth metacarpal boxer's fractures [23]. In both cases, the addition of a splint to hand therapy advice and home exercise programme does not appear to offer clinical benefit, but it does consume single-use resources.

Secondly, we can also think about alternative splinting materials. There are recycled and biodegradable plastics on the market [24], with a more recent development of compostable materials made from surplus woodchip [25]. In addition, some Velcro products are made from recycled material[26]. Now is the time to seek out these alternatives and move away from the traditional plastic materials. When using these environmentally friendly splinting materials, we also need to be mindful of supporting our patients to discard their splints appropriately. While the splint material biodegrades, all Velcro, tape, lining and other strapping needs to be removed before composting. Plaster of Paris (gypsum) is another non-synthetic alternative to splinting. Methods of recycling and reusing plaster of Paris are currently being explored [27].

Woodcast short thumb spica splint

Thirdly, many providers of splinting materials offer free services to collect and recycle thermoplastic off-casts. Is this something that can be explored as we transition away from the traditional thermoplastics?

Finally, can we re-use as much of the splint as possible for each patient. Remoulding and modifying as treatment progresses, rather than starting from new?

Exercise programmes

Do you use plastic exercise sponges, therapy putty, TheraBand or other resource-intensive short–life-cycle products as standard within your department? Now is the time to think sustainably about other methods of rehabilitation. For example, using equipment that is already available to patients at home, at work or during their leisure activities, such as toys, kitchen or maintenance items, or weights and bands available at the gym. Where specific rehabilitation equipment is needed, one solution could be to develop an equipment library to loan to patients, clean and reuse.

Clinic environment

General steps for household sustainability can be equally applied to the clinic. For example, turning off the lights when rooms are not in use and at the end of the day, only using heating when the temperature falls, and optimising recycling. We should also think about printed material. Some patients may need printed exercise programmes and appointment letters, but the majority may be happy, or even prefer, for this material to be available via email, text or through an app.

This is not an exhaustive list, and we realise that not all points will be applicable to the wider hand therapy community. However, we believe it is important to think about planetary health and environmental sustainability within hand therapy practice. We welcome knowledge sharing from those further along the sustainability pathway and ask for resource-use and sustainability to be considered alongside health economics within hand therapy research.

Please click here for references and further reading.

Clinical Pearls

In this section we feature clinical pearls which should be applicable to most hand therapy settings. **We welcome your ideas.**

Add Rhythm to your Modified Mallet classification

Submitted by Jessica Montoya, OT, MOT, OTD, Houston Methodist, Orthopedics and Sports Medicine, Houston, TX, USA

Do you treat children with brachial plexus conditions, and do you use the Modified Mallet Classification to rate upper extremity function? Some kids may need encouragement to follow instructions for completing this assessment to their full capacity.

I use song to turn the movements into a "dance" using a popular song from my country, called "Baby Shark". When singing "Dad shark doo, doo, dooo." I encourage the child to switch arms when moving shoulders into flexion as a way to mimic the shark's moving mouth. I use "Grandpa shark" for external rotation as a way of clapping two fisted hands in the centre. This is the link I use https://m.youtube.com/watch?v=XqZsoesa55w or use your own song!

Be silly and energetic to encourage the desired motion.

The classification is available online or in reference: Russo SA, Kozin SH, Zlotolow DA, Thomas KF, Hulbert RL, Mattson JM, Rowley KM, Richards JG. Scapulothoracic and glenohumeral contributions to motion in children with brachial plexus birth palsy. *Journal of Shoulder and Elbow Surgery*. 2014 Mar;23(3):327-38.

Modified Mallet classification
(grade I = no function, Grade V = normal function)

		Grade I	Grade II	Grade III	Grade IV	Grade V
Global abduction	Not testable	No function	<30°	30° to 90°	>90°	Normal
Global external rotation	Not testable	No function	<0°	0° to 20°	>20°	Normal
Hand to neck	Not testable	No function	Not possible	Difficult	Easy	Normal
Hand on spine	Not testable	No function	Not possible	S1	T12	Normal
Hand to mouth	Not testable	No function	Marked trumpet sign	Partial trumpet sign	<40° of abduction	Normal
Internal rotation	Not testable	No function	Cannot touch	Can touch with wrist flexion	Palm on belly, no wrist flexion	

Modified Mallet Classification System

Lifetime Achievement Awards

IFSHT celebrated the careers of a number of Hand Therapists at the 2019 IFSHT Congress. Each of them was presented with the prestigious IFSHT Lifetime Achievement Award for Contribution to Hand Therapy. In the REACH newsletter, we profile those therapists who, as you will see, have trail blazed and left an enduring mark on the specialism.

Compiled by Toni Rippey

Evelyn Mackin

Evelyn Mackin had more than 40 years of clinical experience as a Physical Therapist and Hand Therapist. Evelyn over the years has become a 'household' name as the editor and contributor to the Rehabilitation of the Hand Publication which is a central resource for Hand Therapists worldwide.

Whilst Evelyn's credentials, contributions and publications could provide a lengthy spotlight, a comprehensive overview of her Hand Therapy contributions is as follows.

In 1977 Evelyn was a founding director of the American Society of Hand Therapy (ASHT) closely followed in 1982 by serving as the President of the ASHT. Evelyn served in 1989 as the President for the IFSHT and was the first editor of the American Journal of Hand Therapy in 1987.

Evelyn was the first director and founder of the Hand Rehabilitation Centre in Philadelphia in 1972. This centre has grown over the years and currently her legacy has grown to 18 different offices, over 30 Hand Therapists and 17 Hand Surgeons. The well-known annual Philadelphia Surgery and Rehabilitation of the Hand Symposium was introduced when Evelyn was the Executive Director, and this symposium has in recent years celebrated its 45th year anniversary.

Evelyn was a mentor and inspiration for Hand Therapists throughout the world. Please also revisit the Evelyn Mackin tribute published in the EZINE of May 2020, here.

Lifetime Achievement Awards

Pat McKee

Pat is an internationally recognised Hand Therapist and Occupational Therapist. The Canadian Society of Hand Therapists presented her with a Life Membership Award in 2017.

Pat has taught anatomy, hand therapy, biomechanics, orthotics (splinting), and occupational therapy for musculoskeletal conditions to students and therapists worldwide for more than 40 years. She is an Associate Professor in the Department of Occupational Science and Occupational Therapy at the University of Toronto, Canada

In addition to many peer-reviewed articles, Pat co-authored the popular textbook "Orthotics in Rehabilitation: Splinting the Hand and Body", as well as authored a chapter in the 7th edition of the "Rehabilitation of the Hand and Upper Extremity" titled "Client-centered Bio-occupational Framework for Orthotic Intervention".

Pat has been an invited lecturer, keynote/guest speaker and instructor at many national and international conferences including the Philadelphia Hand Meeting, European Federation of Societies of Hand Therapy, the Council of Occupational Therapists for the European Countries, the International Federation of Society of Hand Therapist Congress (2016 and 2019), and the Brazilian Congress of Hand Surgery.

Pat is also a guitar-playing singer-songwriter and recorded "Look Beyond", Canada's Official Song for International Year of Disabled Persons in 1981, and has delighted many workshop attendees with her song "The Crazy Hand Anatomy Blues".

In recent years, she has collaborated with Anne Agur, an anatomy professor at the University of Toronto to develop educational media called the Anatomy Glove Learning System, which is now being used by medical and allied health professionals and students in 28 countries.

Pat has served as a continued mentor and educator throughout her Hand Therapy career and her contributions are far reaching within the Hand Therapy community.

SPOTLIGHT ON:

Spanish Association of Hand and Upper Extremity Therapy (AETEMA)

Submitted by: Raquel Cantero, IFSHT Delegate for Spain

AETEMA is a relatively new association that was created thanks to a small group of physiotherapists and occupational therapists with a passion for hand therapy. Let's review a bit of the history... I will transport you to 2007, to the city of Zaragoza, Spain. A group of four therapists interested in the specialty, who trained in European countries such as Italy and France, met at the National Congress of Hand Surgeons.

Because hand therapy was not recognised in our country, the Congress did not have a way for therapists to register for congresses, so we decided to attend the surgeons' congress without paying the registration fee! The board of the National Congress of Hand Surgeons gave us the opportunity to do both oral and poster presentations. This allowed us to interact with well respected, national hand surgeons which gave us the courage to work towards a hand therapy association in Spain.

In 2009, the Spanish association of hand therapy (AETEMA) was brought to fruition in the city of Málaga with only six members. We organised the first joint Congress with the Spanish Association of Hand Surgeons (SECMA) in the city of Cadiz. The extensive international experience of some members of the association allowed AETEMA to be recognised first by the EFSHT and later by the IFSHT. The specialisation of hand therapy is still not widely recognised in Spain, and we continue to lack specialised training.

Although the beginning was not easy, challenged by the differences between the fields of physiotherapy and occupational therapy in Spain, I will always remember the words of encouragement from Dr. Garcia-Elias in 2009 when he saw me overwhelmed

First international Meeting at 2010 in Palma de Mallorca. Organized by Margarita Boy Payeras and Dr Carlos Diago.

AETEMA Congress 2017. Exco with Kristin Ann Valdes, the international Speaker.

by the situation: "With patience, work and insistence you go to achieve what you propose, because hand surgeons need occupational therapists with knowledge of biomechanics and manual therapy, and physiotherapists with knowledge of hand orthoses ". Working together allow us to learn from one another.

In 2011, AETEMA had only 11 members, that however did not stop us from organising conferences with international speakers such as Giulia Giudi, Tracy Fairplay, Rose Luciano and Kristin Valdes. Their contributions made the association grow. The co-founders of AETEMA (Raquel Cantero and Vicens Punsola) spread the word about the specialty of hand therapy through training courses in collaboration with other members, in this way promoting hand therapy throughout the country.

Today, AETEMA has 50 members, of which 28 are occupational therapists and 22 are physiotherapists. We currently have only three members accredited as hand therapists in our country, but this number will grow in the coming years thanks to the numerous training courses and universities that offer postgraduate training with specialisation in hand therapy. Since 2009, AETEMA has organised a biannual Congress with the SECMA (Spanish Society of Hand Surgeons) and specialisation courses with special prices for members in attendance. During the COVID 19 pandemic, we presented courses on-line, often with free access.

New AETEMA Exco in the last face to face congress before the COVID 19 Pandemic. Carmen Valero, Roberto Ucero, Ana Domingo, Jesús Agüero, Raquel Cantero, Carlos Llobregat, Cristina Adillon, Jonas Cortijo, Miriam Jover and international speakers.

I hope and wish that the experience and trajectory of our association could be helpful to encourage professionals from countries who maybe think that it is not possible because there are too few hand therapists or because the specialty is not recognised. I encourage you to move forward and fight for what you believe in, build a path for hand therapy, count on the collaboration of international hand therapists, and start walking in this wonderful world, hand in hand together. The will to achieve is powerful, so let's go!

Do you know an accountant that would like to volunteer a little time to the IFSHT? The IFSHT financial review committee is looking for a volunteer accountant to be a member of said committee. It is not likely to be a commitment of more than 10-20 hours per year and a few Zoom calls. A person with experience in non-profit associations would be preferable, but those without are also welcome. If you know of somebody, please email Stacey Doyon at treasurer@ifsht.org or Maureen Hardy at secretarygeneral@ifsht.org.

Thank you for your help!

Closing date: 31 March 2022

LOGO COMPETITION

With the new newsletter we introduce a competition for our members to come up with a logo for REACH. Entries can be emailed to informationofficer@ifsht.org by 31 March 2022. Voting will take place in June 2022.

GOOD LUCK!

Answers to questions: 1. A 2. D 3. B 4. A 5. True 6. C 7. B 8. C 9. D 10. D

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