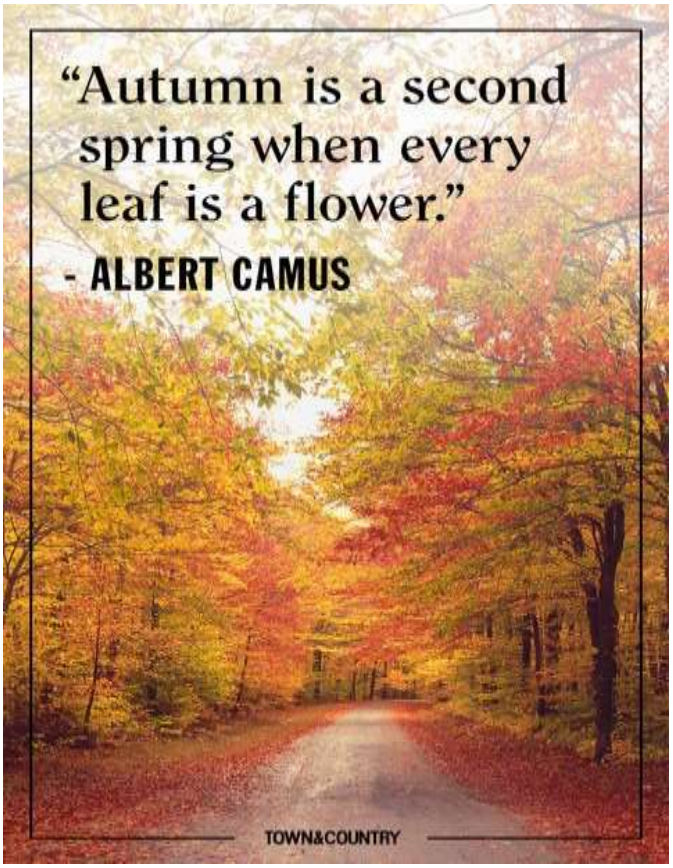
ICCrPT
INTERNATIONAL CONFEDERATION OF CARDIORESPIRATORY PHYSICAL THERAPISTS

October 2021

Welcome to the International Confederation of Cardiorespiratory Physical Therapists (ICCrPT) newsletter: October 2021



Meet the Current Executive Committee

ICCrPT Executive Committee (2019 to 2023):
President: Brenda O'Neill (United Kingdom)
Vice President: Karin Wadell (Sweden)
Secretary: Shirley Ngai (Hong Kong)
Treasurer: Alison Lupton-Smith (South Africa)
Members (in alphabetical order): Anna Christakou (Greece), Andreas Freund (Germany), Anri Human (South Africa), Kentaro Kamiya (Japan), Tania Larsen (Canada), Harriet Shannon (United Kingdom)

Please contact the executive committee via our website at info@cardioresp.physio

The executive committee member highlighted in this edition is

Dr. Shirley Ngai

Dr. Shirley Ngai is an Associate Professor of The Hong Kong Polytechnic University. She is currently the programme lead of the BSc (Hons) in Physiotherapy Programme. Her research interest focuses on management of people with chronic airway diseases, pulmonary rehabilitation and exercise physiology. Shirley is dedicated in educational research as well and is the principal applicant and co-applicant for more than 1.1 million USD$ of teaching and learning grants to develop teaching innovation to address students' learning needs. She is the recipient of several prestigious teaching awards such as 2016 UGC Teaching Award (Early Career Faculty Member), Second Prize of 2018 National Teaching Achievement Award (Higher Education) by MOE of China and 2019/20 President's Awards for Outstanding Achievement in Teaching by The Hong Kong Polytechnic University. Shirley now serves as chairman of the International Affairs and Publication Subcommittee of Hong Kong Physiotherapy Association and secretary of International Confederation of Cardiorespiratory Physical Therapists (ICCrPT).

ICCrPT Research focus

The ICCrPT would like to support research undertaken by our member organisations. For example, we can help you distribute, publicise surveys or provide advice.

If you would like to find out more please contact us via email at info@cardioresp.physio

Upcoming Congresses

National and International Conferences for 2021

NOVEMBER

24 – 26 November British Thoracic Society Winter Meeting.

https://www.brit-thoracic.org.uk/education-and-events/

DECEMBER

5-8 December Critical Care Canada Forum

https://criticalcarecanada.com/

ICCrPT Member Organisation Focus

In this edition the ICCrPT focus is on Cardiorespiratory Physiotherapy Specialty Group in the Singapore Physiotherapy Association

The Cardiorespiratory and Exercise Special Interest Group (CPEX SIG) is a subsection under the Singapore Physiotherapy Association (SPA) to gather and promote interests in cardiorespiratory physiotherapy and exercise rehabilitation among physiotherapists and physiotherapy students in Singapore. Since the 90s, this SIG is the platform for exchanging clinical expertise and professional networking.

Our SIG committee members are physiotherapists working actively in various hospitals and university, inspired to promote professional development and advance the scope of practice in the area of cardiorespiratory and exercise rehabilitation. The SIG committee members are:

Role	**Name**
Chairperson	Dr Meredith Yeung
Vice-Chairperson	Ms Noor Diana Binte Mohamed Sani
Secretary	Ms Katherin Huang
Treasurer	Ms Jaclyn Tan
Exco member	Dr Clement Yan
	Dr Cindy Ng
	Ms Tan Chun Ju
	Ms Foong Jing Wen

Regular clinical and research sharing sessions are organised to advocate evidence-based practice. Leveraging modern technology for rapid information dissemination, a dedicated Youtube channel [1] was initiated in 2020. Additionally, several local and international research collaborations are underway to promote physiotherapy practice and articulate international standards. The CPEX SIG looks forward to more exchanges with fellow ICCrPT colleagues to advance the cardiorespiratory physiotherapy practice.

ICCrPT Presentations

ICCrPT are planning to host a series of presentations and webinars over the next year. The themes will be relevant to Cardiorespiratory practice, education and research, and we will also include more generic topics that could be of interest to our members.

The first two presentations are available via our ICCrPT Youtube channel. The titles and the links to these presentations are provided below.

"Physiotherapy in the Intensive Care Unit: Implications of ICU length of stay" by Dr. Anna Christakou (Assistant Professor in the Department of Physiotherapy, University of Peloponnese, a.christakou@go.uop.gr)

https://drive.google.com/file/d/152KW1ptgcWc5vL_D53ejIc94r8TYN1tz/view?usp=sharing

"Improving your Patient Education Interventions to Benefit both Patients and Yourself" by Dr Judy King, Associate Professor, Physiotherapy Program, University of Ottawa. Email: jking@uottawa.ca
https://youtu.be/K45YKQrh8BM

[1] https://www.youtube.com/channel/UCpjmJmW7styubc8a6ZNjNHw/featured

ICCrPT Knowledge and Transfer Subcommittee

World PT Day 2021

World Physiotherapy day is celebrated every year on the 8th of September and aims to create awareness regarding the very important role physiotherapists play in the health and well-being of their communities across the globe. This year, despite pandemic restrictions, World Physio Day was commemorated with numerous international activities of awareness and health promotion.

This year the emphasis for World Physio Day was on raising awareness about long-Covid and the rehabilitation process (including cardiopulmonary rehabilitation). World Physiotherapy developed a variety of resources that can be used to educate communities about long-Covid and rehabilitation. The materials include infographics and posters, activity sheets, an advocacy toolkit, and a resource list of facts, research findings, statistics, and articles.

This year's World PT Day materials have also been translated into almost 60 languages, including 16 languages that have not previously been available for World PT Day. Also see the following link for available resources in a variety of languages https://world.physio/toolkit/world-pt-day-2021-social-media.

Some of the activities that took place in our member organisation countries were:

In Greece the Panhellenic Physiotherapy Association (PPA) with the contribution of the Section of the Scientific Cardiovascular and Respiratory Physiotherapy and Rehabilitation (ETKAFA) translated the WCPT material (https://www.psf.org.gr/psf-news-7179.htm).
The PPA sent the translated infographics to 100 Greek hospitals. The PPA and ETKAFA of the PPA prepared a press release distributed via social media to promote the role of physiotherapy for people with Long COVID (www.tkafa.gr).

In Sweden, Malin Nygren-Bonnier, a member of the Swedish National Association for Cardiorespiratory Physiotherapists, Associate Professor and Head of the Physiotherapy Unit at Karolinska Intitutet, was awarded the prize as the Physiotherapist of the Year in Sweden. This was given to Malin thanks to her broad scientific and clinical engagement and work with rehabilitation after COVID-19.

Photo: Malin Nygren-Bonnier, Associate Professor and Head of the Physiotherapy Unit at Karolinska Intitutet, Sweden

Members

It is wonderful to have cardiorespiratory practice represented across the world. In line with the recent World Physiotherapy Day we would like to take a moment to celebrate our ICCrPT member organisations.

2021 Members (in alphabetical order)

- Australia
- Canada
- Denmark
- Greece
- Hong Kong
- Iran
- Japan
- Jordan
- Nambia
- New Zealand
- Norway
- Singapore
- South Africa
- Sweden
- Taiwan
- United Kingdom
- Associate Members
  - AF-Germany
  - PMA -UAE

Why Join the ICCrPT?

What are the benefits of membership of the International Confederation of Cardiorespiratory Physical Therapy (ICCrPT)? This is an official sub-group of the World Physiotherapy (WP).

WP subgroups are independent organisations in their own right. They have a specific area of interest, and promote the advancement of physical therapy in their area of speciality. More importantly, the international sub-group structure allows speciality physiotherapy groups to inform and contribute to the core business of WP. Without speciality sub-group representation at an international level, there is a risk that the speciality area interests may not be recognised or promoted. This is particularly true for the smaller sub-group organisations.

There are currently 14 WP official subgroups representing the following specialities:

- Acupuncture
- Aquatic
- Cardiorespiratory
- EPAs
- Manual Therapy
- Mental Health
- Neurology
- Occupational health and ergonomics
- Older people
- Oncology, palliative care and HIV
- Paediatrics
- Pelvic and women's health
- Private Practice
- Sports

The ICCrPT recognise that the continuity of the specialty cardiorespiratory sub-group in the short and long term is dependent on the continued support of the cardiorespiratory member organisations and associated members from around the globe who have already joined or are eligible to do so. Inherent in this support is an appreciation of the benefits of membership for the global cardiorespiratory community, and an understanding of how the existence of the ICCrPT will ensure continued Cardiorespiratory Physiotherapy representation at all levels within the World Physiotherapy. Specifically this benefit includes, but is not limited to:

1. Ensuring representatives of the *international cardiorespiratory physiotherapy community* are informing and contributing to **key World Physio platforms** including:
   - Policy and Standards
   - Policy Resources
   - Practice Resources
   - Education Resources
   - Global Health Resources
   - World PT Day Resources
   - International Campaigns
   - International Collaborations
   - Executive Management Boards

2. Ensuring that the *international cardiorespiratory physiotherapy community* is informing and contributing to **key international WP events** including:
   - Conference Planning Committees
   - International Scientific Committees
   - Abstract selection panels
   - International awards nomination and selection pathways
   - Conference prize nomination and selection pathways
   - The development and delivery of Cardiorespiratory themed focused symposium
   - The development and delivery of Cardiorespiratory themed pre and post congress courses
   - The inclusion of Cardiorespiratory themed networking sessions

3. Ensuring that the *international cardiorespiratory physiotherapy community* remain informed of, and supported in order to **access WP information sharing** including:-
   - Other professional networks
   - Other international speciality networks
   - WP information gateways
   - WP communication channels
   - The WP Experts database (DOVE)
   - WP press releases
   - WP social media
   - WP Toolkits
   - WP collated resources
   - Information about commercial partnerships
   - Publicity materials

Topical publications in Cardiorespiratory practice

The ICCrPT Knowledge Translation Committee has chosen to highlight the following 2021 publications relevant to Cardiorespiratory Physical Therapy Practice:

Functional electrical stimulation in-bed cycle ergometry in mechanically ventilated patients: a multicentre randomised controlled trial

The purpose of the study was to investigate the effect of functional electrical stimulation-assisted cycle ergometry (FES-cycling) on muscle strength, cognitive impairment and related outcomes. Mechanically ventilated patients aged ≥18 years with sepsis or systemic inflammatory response syndrome were randomised to either 60 min of FES-cycling >5 days/week while in the intensive care unit (ICU) plus usual care rehabilitation versus usual care rehabilitation alone. In the intervention versus control group, there were no significant differences for muscle strength at hospital discharge prevalence of cognitive impairment at 6 months or secondary outcomes measured in-hospital and at 6 and 12 months follow-up. The addition of FES-cycling to usual care rehabilitation did not substantially increase muscle strength at hospital discharge. At 6 months, the incidence of cognitive impairment was almost identical between groups, but potential benefit or harm of the intervention on cognition cannot be excluded due to imprecision of the estimated effect.

Berney S. et al. Thorax. 2021 Jul;76(7):653-663 doi: 10.1136/thoraxjnl-2020-215093.

Mobilization during critical illness: a higher level of mobilization improves health status at 6 months, a secondary analysis of a prospective cohort study

The purpose of the study was to determine the influence of active mobilization during critical illness on health status in survivors 6 months post ICU admission. Mobility data for 186 patients were obtained. The data were extracted from medical records and analyzed against Euro-quality of life-5D-5 Level version answers obtained from phone interviews with survivors 6 months following ICU admission. Achieving higher levels of mobilization was independently associated with improved outcomes at 6 months. Increasing the number of active mobilization sessions was not found to independently influence health status. Illness severity, total comorbidities, and admission diagnosis also independently influenced health status. In critically ill survivors, achieving higher levels of mobilization, but not increasing the number of active mobilization sessions, improved health status 6 months after ICU admission.

Paton M. et al. Crit Care Med. 2021 Sep;49(9): e860-e869 doi: 10.1097/CCM.0000000000005058.

Current practice and barriers to ICU-acquired weakness assessment: a cross-sectional survey

The purpose of the study was to investigate current practices and barriers to ICU-AW assessment among ICU staff, and provide insights to improve ICU-AW assessment in ICUs in China. Qualitative interviews were used to construct a survey questionnaire. Reported methods for ICU-AW assessment were clinical experience (53%), ICU-AW assessment tools (12%), and physiotherapy consultation (35%). Forty-three percent of respondents felt that their ICU-AW-related knowledge did not meet clinical needs, only 10% had received ICU-AW-related training, and 19% proactively assessed whether their patients had ICU-AW. In terms of frequency of assessment, 42%, 16% and 11% of respondents considered that ICU-AW should be assessed daily, every 3 days, and on ICU admission and discharge, respectively. The Medical Research Council scale, electrophysiological assessment and the Manual Muscle Testing scale were considered to be optimal tools for ICU-AW diagnosis by 79%, 70%, and 73% of respondents, respectively. The main reported barriers to ICU-AW assessment were lack of knowledge, cognitive impairment among patients, and lack of ICU-AW assessment guidelines and procedures.

Wu Y et al. Physiotherapy. 2021 Sep;112:135-142 doi: 10.1016/j.physio.2021.01.002.

Effects of Mechanical Insufflation-Exsufflation on Sputum Volume in Mechanically Ventilated Critically Ill Subjects

The present randomized crossover trial evaluated the efficacy and safety of MI-E combined to expiratory rib cage compressions (ERCC). Twenty-six consecutive subjects who were sedated, intubated, and on mechanical ventilation > 48 h were randomized to perform 2 sessions of ERCC with or without additional MI-E before tracheal suctioning in a 24-h period. In comparison to ERCC alone, median (interquartile range) sputum volume cleared was significantly higher during ERCC+MI-E. The mean ± SD respiratory compliance improved in both groups immediately after the treatment, with the greater improvement in the ERCC+MI-E group. Differences between the groups were not significant. Heart rate increased significantly in both groups immediately after each intervention. Additionally, a significant increase in oxygenation was observed from baseline to 1 h post-intervention in the ERCC+MI-E group. Finally, several transitory hemodynamic variations occurred during both interventions, but these were nonsignificant and were considered clinically irrelevant. In mechanically ventilated subjects, MI-E combined with ERCC increased the sputum volume cleared without causing clinically important hemodynamic changes or adverse events.

Martinez-Aejos R. et al. Resp Care. 2021 Sep; 66(9):1371-1379. doi: 10.4187/respcare.08641.

Effects of early respiratory physiotherapy on spontaneous respiratory activity of preterm infants: study protocol for a randomized controlled trial

The purpose of the study was to investigate the efficacy of early respiratory physiotherapy in reducing the incidence of intubation and mechanical ventilation in the first week of life (primary outcome). Preterm infants with gestational age < 31 weeks not intubated in the delivery room and requiring non-invasive respiratory support at birth will be eligible for the study. The technique of respiratory facilitation is based on reflex stimulations, applied early to preterm infant. Slight digital pressure is exerted on a "trigger point" of each hemithorax, to stimulate the respiratory activity with subsequent increase of the ipsilateral pulmonary minute ventilation and to facilitate the contralateral pulmonary expansion. This mechanism determine the concatenation of input to all anatomical structures in relation to the area being treated, to promote spontaneous respiratory activity and reducing work of breathing, avoiding or minimizing the use of invasive respiratory support

Di Polito A et al. Trials. 2021 Jul; 22(1):492. doi: 10.1186/s13063-021-05446-8.

Respiratory Muscle Weakness and its Association with Exercise Capacity in Patients with Chronic Obstructive Pulmonary Disease

The aim of this study was to assess whether patients with muscle weakness, characterized as a reduction in Maximal Inspiratory Pressure (PImax) below 70% of predicted value, have a good relationship between the assessed respiratory muscle strength and the exercise capacity measured by the 6-minute walk test (6MWT) in patient with COPD. Data from 81 patients was analyzed. There was a strong correlation between the distances of the 6MWD with the PImax. When separating the sample by the 350m cut in the 6MWD, the patients with the worst performance in the test were those who present the greatest respiratory muscle weakness. PImax correlated well with exercise capacity and patients with respiratory muscle weakness could be referred to a pulmonary rehabilitation protocol tied to inspiratory muscle training.

de Souza Y. et al. Clin Respir J. 2021 Sep 22; doi: 10.1111/crj.13449Online ahead of print.

Rehabilitation Effects of Acupuncture on the Diaphragm Dysfunction in Chronic Obstructive Pulmonary Disease: A Systematic Review

The purpose of the study was to evaluate the rehabilitation effects of acupuncture on diaphragm dysfunction in patients with COPD.

Nine articles were finally obtained. Seven studies added acupuncture to standard treatment for patients with diaphragm dysfunction in COPD and found statistically significant changes in the maximum inspiratory pressure and the scale for accessory respiratory muscle mobilization. Two studies have proved that use acupuncture combined with other Traditional Chinese Medicine methods in the rehabilitation for COPD can effectively improve the diaphragm strength and diaphragmatic motor performance. Seven studies showed that acupuncture has obvious improvement in pulmonary ventilation function. Seven studies reported significant differences in arterial blood gas pre- to post-intervention. This systematic review found that acupuncture can effectively enhance the diaphragm strength, relieve respiratory muscle fatigue, it can also play a promoting role in improving lung function, hypoxia, and carbon dioxide retention, as well as preventing and alleviating respiratory failure. The generalizability of these results is limited by the design of the included studies.

Liu Q. et al. Thorax. Int J Chron Obstruct Pulmon Dis. 2021 Jul 7;16:2023-2037 doi: 10.2147/COPD.S313439.

Cardiorespiratory and skeletal muscle damage due to COVID-19: making the urgent case for rehabilitation

The present narrative review were focused on discussing the essential role of exercise and rehabilitation health professionals in the COVID-19 recovery process, from hospitalization to hospital discharge, addressing strategies for professionals to mitigate the cardiac and pulmonary impairments associated with hospitalization to home or ambulatory rehabilitation, purposing ways to conduct rehabilitation programs to restore their functional status and quality of life after the infection. These findings further point to the vital role of rehabilitation health professionals in the coming years and the urgent need to develop strategies to assist COVID-19 survivors.

Nunes Silva R. et al. Expert Rev Respir Med. 2021Sep;15(9):1107-1120.doi: 10.1080/17476348.2021.1893169.

Evaluation of respiratory and peripheral muscle training in individuals undergoing myocardial revascularization

The purpose of the study was to investigate the effect of peripheral muscle strength training (PMT) and respiratory muscle strength training (RMT) muscle strength training associated with conventional physical therapy on the respiratory muscle strength, functional capacity, and quality of life in the immediate postoperative period of patients undergoing coronary artery bypass graft (CABG). This was a randomized controlled trial. Eighty-three patients undergoing CABG were divided into two groups: Intervention group, patients that received PMT and RMT associated with conventional physical therapy. Conventional physical therapy combined with PMT and RMT may reduce inspiratory muscle strength loss and improve pain and vitality perception in the immediate postoperative period after CABG.

Nema de Aquino T. et al. J Card Surg. 2021 Sep;36(9):3166-3173 doi: 10.1111/jocs.15698.

Is the Training Intensity in Phase Two Cardiovascular Rehabilitation Different in Telehealth versus Outpatient Rehabilitation?

The purpose of the study was to evaluate and compare training intensity adherence through 12-week phase II cardiac rehabilitation (CR) in telehealth and outpatient CR. A sample of 56 patients with coronary artery disease (CAD) with a mean age of 56.7 ± 7.1 entering comprehensive secondary prevention phase II was randomized into telehealth CR (n = 28) and control outpatient CR (n = 28) groups. As a result, the parameter HR reserve percentage as the total average of the training intensity during the telehealth intervention and the outpatient CR did not differ statistically (p = 0.63). There was no death case, and all severe adverse cases required medical admission throughout an exercise training session in study subjects in both groups. This research evidence demonstrated that the telehealth CR model is similar in training intensities to the conventional outpatient CR in CAD patients with low to moderate cardiovascular risk.

Batalik L. et al. J Clin Med. 2021 Sep 9; 10(18):4069. doi: 10.3390/jcm10184069.

Impact of the COVID-19 pandemic on biopsychosocial health and quality of life among Danish children and adults with neuromuscular diseases (NMD) — Patient reported outcomes from a national survey

The purpose was to investigate the impact of the COVID-19 pandemic on biopsychosocial health, daily activities, and quality of life among children and adults with neuromuscular diseases, to assess the prevalence of COVID-19 infection and the impact of this in patients with neuromuscular diseases. Many patients reported decreased health or physical functioning, and changes in access to physiotherapy or healthcare due to the pandemic. Participants generally perceived themselves or their child to be at high risk of severe illness from COVID-19, but only 15 patients had suffered from COVID-19 and experienced mild flu-like symptoms. 25.3% of adults and 46.6% of parents experienced anxiety. 20.4% of adults and 27.6% of parents experienced symptoms of depression. In general, the pandemic contributed to anxiety, a depressed mood as well as to fewer leisure activities, less social contact, isolation from work/school and a reduced quality of life, in particular for patients who perceived themselves to be at high risk of severe illness. The results demonstrate that the pandemic has had a negative impact on biopsychosocial health and quality of life of patients with neuromuscular diseases.

Handberg C. et al. PLoS ONE. 2021; 16(6):e0253715. https://doi.org/10.1371/journal.pone.0253715

Effectiveness of inspiratory muscle training on respiratory muscle strength in patients undergoing cardiac surgeries: a systematic review with meta-analysis

The purpose of the study was to determine the effect of inspiratory muscle training (IMT) on pulmonary function, respiratory muscle strength (RMS), and functional capacity in patients undergoing cardiac surgery. Randomized controlled trials (RCTs) that evaluated patients who underwent cardiac surgery were included in this review. Meta-analysis performed using a random-effects model showed that the mean difference in forced vital capacity, forced expiratory volume in 1 second, 6-minute walk distance, and RMS was 3.47% (95% confidence interval [CI], 0.57 to 6.36), 5.80% (95% CI, 2.03 to 9.56), 78.05 m (95% CI, 60.92 to 95.18), and 4.8 cmH2O (95% CI, -4.00 to 13.4), respectively. There is strong evidence that IMT improves inspiratory muscle strength, pulmonary function, and functional capacity, and reduces the length of hospital stay in patients undergoing cardiac surgery. rates of physical restraint among ICU patients.

Verdine Dsouza F. et al. Ann Rehabil Med. 2021 Aug; 45(4):264-273. doi: 10.5535/arm.21027

Inspiratory muscle training in children and adolescents living with neuromuscular diseases: A pre-experimental study

The aim of the present study was to describe the safety and feasibility of a 6-week IMT programme using an electronic threshold device (Powerbreathe®). A convenience sample of eight participants (age: 12.21 years) with various NMD were included in a pre-experimental, observational pre-test post-test feasibility study. Training consisted of 30 breaths, twice daily, 5 days a week, for 6 weeks. There were significant pre- to post-intervention improvements in upper limb function and coordination and inspiratory muscle strength: maximum inspiratory mouth pressure (Pimax); strength-index; peak inspiratory flow (PIF), with no evidence of change in spirometry, PECF or HRQoL. No adverse events occurred and participant satisfaction and adherence levels were high. Inspiratory muscle training (at an intensity of 30% Pimax) appears safe, feasible and acceptable, in a small sample of children and adolescents with NMD and was associated with improved inspiratory muscle strength, PIF and upper limb function and coordination.

Human A, Morrow BM. S Afr J Physiother. 2021 Aug 31;77(1):1577. doi: 10.4102/sajp.v77i1.1577.

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World Confederation for Physical Therapy