



February 2022

Welcome to the International Confederation of Cardiorespiratory Physical Therapists (ICCrPT) newsletter: February 2022



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

Andreas Freund (Germany)



Andreas qualified as a physiotherapist from the Heart- and Diabetes centre North Rhine -Westphalia in Germany. He has been head of the Department of Physiotherapy since 1989 and is also Chair of the German Cardiovascular Working Group. His special interests are heart and heart-lung transplantation, physiotherapy in chronic heart failure and special sports cardiological working group in elite athletes. He is a member of the advisory board for the German Physio Association Physio Deutschland. Andreas is an elected representative in several National (German, Austria, Swiss) Guidelines such as ECMO, Carotis-stenosis, Mediastinitis and Delirium Management. He has presented his work at national and international congresses, specific physiotherapeutic and also multi-professional publications and lectures in physiotherapy on ICU, heart failure and whole body electrical muscle stimulation, and mobilisation with VAD Patients. As a part of the sport cardiological support staff, you can find Andreas supporting two elite handball teams of the premier German Handball League. His active research is the evaluation of return to sport after COVID and Long COVID in elite athletes of all ages.

ICCrPT Research focus

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

In patients most severely affected by COVID-19, namely Intensive Care Unit (ICU) survivors; the long-term impact of COVID-19 on neurological, pulmonary, renal, liver function and health-related quality of life is largely unknown. The AFTERCOR study is a prospective multi-centre longitudinal observational study of ICU survivors of COVID-19. It aims to address this current gap in knowledge. Patients will be followed up at regular intervals up to 12 months post-ICU discharge to monitor their ongoing condition. The study will assess a) lung function with functional tests (6MWT, spirometry, body plethysmography) and imaging (CXR and CT) b) cognitive and psychological function, quality of life (MoCA, SF-36, St George Respiratory Questionnaire and PHQ-9) c) laboratory parameters (full blood count, biochemistry) and d) admission for any organ failure. Currently, 13 centres in 10 countries (Italy, Spain, Ireland, United States, Australia, Argentina, Brazil, Colombia, Singapore, Japan) are participating with the aim of enrolling 400-500 patients by the end of 2022.

For further information please contact the CI's of the study: Dr. med. Karin Wildi (Australia) and A/Prof Gianluigi Li Bassi (Australia) E-mail: AFTERCOR@health.qld.gov.au or see <https://www.aftercorstudy.com>

Upcoming Congresses

- International Conference on Cardiology and Cardiovascular Medicine: 15-16 February 2022
Dubai, United Arab Emirates
<https://waset.org/cardiology-and-cardiovascular-medicine-conference-in-february-2022-in-dubai>
- The Thoracic Society of Australia and New Zealand (TSANZ) The Annual Scientific Meeting for Leaders in Lung Health & Respiratory Science: 31 March - 2 April 2022 Australia
<https://www.tsanzsrsasm.com/>
- ESC Preventive Cardiology: 07-09 April 2022
<https://digital-congress.escardio.org/preventive-cardiology/programme>
- Tokyo Japanese Respiratory Society Annual Meeting: 22-24 April 2022
<https://www.jrs.or.jp/jrs61/index.html>
- The Swedish Lung Congress, 27-29 April, 2022, Malmö Live, Malmö, Sweden
<https://mkon.nu/slk22>
- German Physiotherapy Congress: 13-14 May 2022
<https://physiocongress.de/bundeskongress/>
- American Thoracic Society (ATS) congress 13-18 May 2022 San Francisco, California
<https://conference.thoracic.org/attendees/>
- 30rd Panhellenic Scientific Physiotherapy Congress: 27-29 May 2022 Thessaloniki, Greece
<https://congress.psf.org.gr/>
- Intensive Care Society State of the Art (SOA22) congress 28 June - 1 July 2022, ICC Belfast, Northern Ireland
<https://soa.ics.ac.uk>
- 11th Congress of the World Federation of Pediatric Intensive & Critical Care Societies- Virtual World Congress: 12-16 July 2022 Cape Town
<https://wfpiccs.org/wfpiccs-2022/>
- European Society of Cardiology Congress: 26-29 August 2022 Barcelona Spain
<https://www.escardio.org/Congresses-&-Events/ESC-Congress/About-the-congress/esc-congress-2022>
- European Respiratory Society (ERS) International Congress: 4-6 September 2022 Barcelona, Spain
<https://www.ersnet.org/congress-and-events/congress/>

ICCrPT Member Organisation Focus



Pan-Hellenic Physiotherapists' Association (P.S.F.) created Cardiovascular and Respiratory Physiotherapy – Rehabilitation Scientific Section (T.K.A.F.A.) on March of 2014, in response to the public, scientific and social needs, according to European and International standards. The Section aims: (a) to prevent and treat cardiorespiratory diseases and (b) to promote the clinical application, recognition, research and education of Cardiovascular and Respiratory Physiotherapy – Rehabilitation in Greece and abroad.

Structure

Cardiovascular and Respiratory Physiotherapy-Rehabilitation Section includes the following three main directions:

- I. Cardiovascular
- II. Respiratory and
- III. Intensive Care Unit (I.C.U.).

These create a network of collaboration amongst physiotherapists, scientific associations and health care societies with main interest in cardiovascular and respiratory physiotherapy and with the following objectives:

Clinical application

- To promote the implementation of Cardiovascular and Respiratory Physiotherapy-Rehabilitation in accordance with the existing professional guidelines
- To increase the public awareness of the role, responsibilities and benefits of physiotherapy.

Recognition

- To inform the National health authorities about the current evidence and the importance of Cardiovascular and Respiratory Physiotherapy-Rehabilitation as a means of prevention and treatment of cardiovascular-respiratory diseases.

Research

- To support research and disseminate research findings
- To develop national clinical guidelines for the prevention and management of cardiovascular and respiratory diseases.

Education

- To develop training programs, seminars and workshops.
- To organize conferences and other events aiming to inform and educate in the field of Cardiovascular and Respiratory Physiotherapy-Rehabilitation.

The Cardiovascular and Respiratory Physiotherapy – Rehabilitation is consisted of 100 members in Greece and has 5 members in its Executive Committee.

The members of the EC are:

Anna Christakou, Coordinator, Assistant Professor in the Department of Physiotherapy, University of Peloponnese who is member of the EC from 2014

Irini Patsaki, Vice Coordinator, Physiotherapist MSc PhD general Hospital of Evagelismos, Department of Physiotherapy University of West Attica, Athens Greece

Athina Seitaridi, Secretary, MSc. Physiotherapist

Kostas Grigoriadis, Public Relations, MSc. PhD, Physiotherapist, University Hospital of Attikon, Athens Greece

Petros Aftzoglou, Member, MSc, Attica Rehabilitation Centre, Athens Greece

Examples of the Section's work since 2014 are:

1. Translating and publishing to 3 different Greek Scientific Journals the Official Guidelines for Pulmonary Rehabilitation, Cardiovascular Rehabilitation and Physiotherapy in ICU
2. Publishing a research article which is entitled "Current Physiotherapy Practice in Greek Intensive Care Units" in the European Journal of Physical Therapy (Christakou et al., 2018)
3. Publishing 2 scientific papers in Geek Journals PNEUMON, Archives of Hellenic Medicine
4. Publishing informative articles and leaflets in the social media for the public about

important World Health Days (Word days press release)

5. Writing informative leaflets for patients and their families for relevant issues as Hypertension, Cystic Fibrosis, COPD, asthma, at home care of the patient in mechanical ventilation etc,
6. Organizing 10 Conferences/Seminars with invited speakers such as Pr. Clini, Pr. Gosselink and Pr. Moxham.
7. Organizing 3 Webinars in the last 2 years of COVID-era
8. Organizing meetings in the Retirement home-Elderly Care Centers in Athens Greece for COPD treatment
9. Participating each year in Panhellenic Medical Conferences in Greece such as Panhellenic Pulmonary Congress, Panhellenic Congress of ICU, and Panhellenic Cardiology Congress
10. Greek Translations of the PT Guidelines of COVID -10 2020 and 2022
11. 5 Journal clubs each year (critical analysis of a research article)
12. Published every 4 months Our “CardioRespiratoy Magazine”
13. Social meetings-parties in Halloween period-!

For more information regarding T.K.A.F.A. P.S.F.

www.tkafa.gr

Email: info@tkafa.gr.

<https://www.facebook.com/groups/1602644776668485>



2rd Seminar of Physiotherapy in ICU, Athens



Retirement Home in Athens



Celebration World Day of Physiotherapy in Athens 2017

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 World Physiotherapy (WP) (previously known as WCPT).

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 specialty. More importantly, the international sub-group structure allows specialty physiotherapy groups to inform and contribute to the core business of WP. Without specialty sub-group representation at an international level, there is a risk that the specialty area interests may not be recognised or promoted. This is particularly true for the smaller sub-group organisations.

There are currently 14 official subgroups of WP:

- Acupuncture
- Aquatic
- Cardiorespiratory
- Electrophysical
- HIV/AIDS, oncology, hospice and palliative care
- Manual/musculoskeletal physiotherapy
- Mental Health
- Neurology
- Occupational health and ergonomics
- Older people
- Paediatrics
- Pelvic and women's health
- Private Practice
- Sports

The ICCrPT recognises 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, these benefits include, but are not limited to:

1. Ensuring representatives of the *international cardiorespiratory physiotherapy community* are informing and contributing to **key World Physiotherapy 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 and 2022 publications relevant to Cardiorespiratory Physical Therapy Practice:

ERS Monograph has a quite new publication on pulmonary rehabilitation:

Edited by Anne E. Holland, Simone Dal Corso and Martijn A. Spruit.

Pulmonary rehabilitation is an effective treatment for people with a range of chronic lung diseases. In recent years, there have been substantial advances in the science underpinning pulmonary rehabilitation. Advances have been seen in the patient groups in whom it is indicated; in the breadth of programme content; in new methods of delivery; and not least, in important outcomes. This *Monograph* brings together scientific and clinical expertise in pulmonary rehabilitation, with the aim of optimizing its delivery in clinical practice.

<https://books.ersjournals.com/content/pulmonary-rehabilitation-2>

S3 Guideline of Extracorporeal Circulation (ECLS/ECMO) for Cardiocirculatory Failure (German language)

*Boeken U et al. Thorac Cardiovasc Surg 2021; 69(S 04): S121-S212
doi: 10.1055/s-0041-1735490*

Effect of high-intensity interval training, moderate continuous training, or guideline-based physical activity advice on peak oxygen consumption in patients with heart failure with preserved ejection fraction: A randomized clinical trial

Among patients with HFpEF, there was no statistically significant difference in change in peak $\dot{V}O_2$ at 3 months between those assigned to high-intensity interval vs moderate continuous training, and neither group met the pre-specified minimal clinically important difference compared with the guideline control. These findings do not support either high-intensity interval training or moderate continuous training

compared with guideline-based physical activity for patients with HFpEF.

Muller S et al. JAMA. 2021 Feb 9;325(6):542-551. doi: 10.1001/jama.2020.26812.

Effects and tolerability of exercise therapy modality on cardiorespiratory fitness in lung cancer: A randomized controlled trial

Aerobic training and combination training (aerobic plus resistance training) the CT significantly improved VO_2 peak in lung cancer survivors; however, the tolerability-to-benefit ratio was superior for Aerobic training and hence may be the preferred modality to target impaired cardiorespiratory fitness. Cardiorespiratory fitness in post-treatment lung cancer survivors.

*Scott J.M. et al. J Cachexia Sarcopenia Muscle 2021Dec;12(6):1456-1465.
doi: 10.1002/jcsm.12828*

The importance of physical activity and cardiorespiratory fitness for patients with heart failure

The strong association between heart failure and traditional risk factors, physical inactivity and low fitness, underlines the importance of regular physical activity and exercise for prevention and treatment of heart failure. This is illustrated by cardiac stiffness which typically accelerates in middle-life and could be reversed by aerobic exercise. In patients with Heart failure pEF, regular physical activity counteracts many of the changes observed, both metabolic and functional. Indeed, exercise-based cardiac rehabilitation has received a class 1A recommendation in current guidelines in order to improve functional capacity, quality of life and lower the risk of re-hospitalization. An individually tailored plan based on risk stratification, clinical assessment and cardiopulmonary exercise testing is encouraged before initiation of exercise training in patients with heart failure. In general, a combination of aerobic exercise and resistance training protocols is recommended preferably throughout life.

*Lindgren M. & Börjesson M. Diabetes Res Clin Pract 2021 Jun;176:108833.
doi: 10.1016/j.diabres.2021.108833.*

Telerehabilitation in subjects with respiratory disease: A scoping review

Telerehabilitation may be safe and feasible and may lead to reduced face-to-face rehabilitation therapy; in addition, remote rehabilitation assessment should be considered during the COVID-19 pandemic. Further research that targets a more diverse range of respiratory tract diseases and considers telerehabilitation in a hospital setting is required.

Taito S. et al. *Respir Care* 2021 Apr; 66(4):686-698. doi: 10.4187/respcare.08365.

Respiratory muscle training improves exercise tolerance and respiratory muscle function/structure post-stroke at short term: A systematic review and meta-analysis

The meta-analysis provided moderate-quality evidence that RMT improves exercise tolerance, diaphragm thickness and pulmonary function (i.e., peak expiratory flow) and low-quality evidence for the effects on inspiratory muscle strength and endurance in stroke survivors in the short-term. None of these effects are retained in the medium-term. Combined inspiratory and expiratory muscle training seems to promote greater respiratory changes than inspiratory muscle training alone.

Fabero-Garrido et al. *Ann Phys Rehabil Med* 2021 Nov 18;65(5):101596. doi: 10.1016/j.rehab.2021.101596.

Cardiorespiratory response to early rehabilitation in critically ill adults: A secondary analysis of a randomized controlled trial

The study determined the cardio-respiratory response to rehabilitation and investigated the effect of explanatory variables on physiological changes during rehabilitation and recovery. This study found a large range of variation within and across participants' sessions with clinically relevant variations (>10%) occurring in more than 1 out of 4 sessions in mean arterial pressure, minute ventilation (MV) and oxygen consumption (VO₂), although early rehabilitation did not generally affect physiological values from baseline to training or recovery. Active patient participation increased MV and VO₂ during training when compared to

passive participation. Similarly, session type 'mobilisation' increased heart rate during recovery when compared to 'exercise'. Other modifiable explanatory variables included session duration, mobilization level and daily medication, while non-modifiable variables were age, gender, body mass index and the daily Sequential Organ Failure Assessment. A large range of variation during rehabilitation and recovery mirrors the heterogeneous interventions and patient reactions. This warrants close monitoring and individual tailoring, whereby the best option to stimulate a cardiorespiratory response seems to be active patient participation, shorter session durations and mobilization.

Eggmann S. et al. *PLoS One*. 2022 Feb 3;17(2):e0262779. doi: 10.1371/journal.pone.0262779.

Cardiac rehabilitation based on the walking test and telerehabilitation improved cardiorespiratory fitness in people diagnosed with coronary heart disease during the covid-19 pandemic

This study investigated an alternative home-based cardiac telerehabilitation model in consideration of the recommendations for the COVID-19 quarantine of people diagnosed with coronary heart disease (CHD). Home-based telerehabilitation based on 200 mFWT effectively increased the cardiorespiratory fitness in people with CHD with a low to moderate cardiovascular risk. This paper may serve as an alternative method of providing healthcare during the COVID-19 pandemic and as a basis for further upcoming randomized controlled trials.

Batalik L. et al. *Int J Environ Res Public Health* 2021 Feb 24;18(5):2241. doi: 10.3390/ijerph18052241.

Effectiveness of pulmonary rehabilitation in COVID-19 respiratory failure patients post-ICU

The study examined the effects of pulmonary rehabilitation (PR) post-ICU in COVID-19 patients. Twenty-one COVID-19 patients were evaluated pre- and post-PR and compared retrospectively to a non-COVID-19 group of 21 patients rehabilitated after ICU admission due to

respiratory failure. PR induced greater 6-min walking distance improvement in COVID-19 patients than in other respiratory failure patients post-ICU. The sooner PR was performed post-ICU, the better patients recovered. PR induced large functional improvements in COVID-19 patients post-ICU although significant physical and psychosocial impairments remained post-PR.

*Chikhanie Y Al. Respir Physiol Neurobiol 2021 May;287:103639.
doi: 10.1016/j.resp.2021.103639.*

Physical rehabilitation in Intensive Care Unit in acute respiratory distress syndrome patients with COVID-19

The purpose of the study was to evaluate the effects of early rehabilitation program in intensive care unit in patients with acute respiratory distress syndrome secondary to COVID-19. Rehab group had higher prevalence of chronic pulmonary diseases and neurologic diseases. There was no difference in hand grip or manual muscle strength following discharge between rehab and non-rehab groups. No adverse event was noted. The results did not support the beneficial effects of early rehabilitation in intensive care unit on improving muscle strength. More patients with pulmonary and neurologic diseases in rehab group might impede the impact of rehabilitation on outcomes. On the other hand, these comorbidities underline the role and need of rehabilitation. It is safe both for the patients and the health care workers when necessary precautions are taken.

*Taskiran O.O. et al. Eur J Phys Rehabil Med 2021 Jun;57(3):434-442.
doi: 10.23736/S1973-9087.21.06551-5*

Muscle strength and functional outcome after prone positioning in COVID-19 ICU survivors

The aim of the study was to examine the muscle strength and functional level of patients

discharged from intensive care unit (ICU) in relation to the swimmer position as a nurse intervention during pronation. Over the 128 patients admitted to ICU, 87 patients were discharged alive from ICU, with available follow-up measures at hospital discharge. Thirty-four patients (39.1%) were treated with prone positioning as rescue therapy, for a total of 106 pronation cycles with a median duration of 72 hours. Prone positioning did not influence the odds of showing particular level of muscle strength, in any of the evaluated districts, namely shoulder elbow and wrist. Only in the shoulder district, age showed evidence of association with strength, affecting people as they get older. No significant sequelae related to swimmer position were reported by physiotherapists or nurses. Swimmer position adopted during prone ventilation is not associated with worse upper limb strength or poor mobility level in COVID-19 survivors after hospital discharge.

Binda F et al Intensive Crit Care Nurs 2021 Oct 28;103160. doi: 10.1016/j.iccn.2021.103160.

Effectiveness of different physiotherapy protocols in children in the intensive care unit: a randomized clinical trial

This study aimed to investigate the effectiveness of different physical therapy protocols on the autonomic modulation of heart rate, time of invasive mechanical ventilation (IMV), and length of hospital stay. Higher values of heart rate variability were found in the experimental group, both in individual and intergroup analyses. There was a significant reduction in the time of IMV and ICU stay. There was an improvement in heart rate variability, reduced time on mechanical ventilation and length of stay in the ICU in individuals who performed the study protocol.

*Sousa Barros Souza G et al. Pediatr Phys Ther 2022 Jan 1;34(1):10-15
doi:10.1097/PEP.0000000000000848.*

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