

ECFS Exercise Working Group

Year of report: 2022/23

Date of initial approval of working group:
2011

Contact details of coordinator, vice coordinator and assistant (if applicable) including ECFS membership numbers:

Coordinator name Dr Thomas Radtke
Vice coordinator name Dr Don Urquhart
Assistant name Zoe Saynor

Long term aims of the working group including estimated achievement date:

- Provide forum (the working group) for sharing exercise knowledge amongst CF professionals
Ongoing – Virtual WG meeting January 2023 attended by around 80 people + planned meeting at ECFS Vienna
ECFS Exercise WG Virtual Journal Club meets every 2nd months (commenced February 2022)
- Curate technical standards and position statements for clinical practice in the fields of exercise and physical activity
- ***3 x documents published 2014-2015***
- ***New document submitted for publication in 2023 (Eur Respir Rev – accepted pending revision)***
Guidance and standard operating procedures for functional exercise testing in cystic fibrosis.
- ***New document in progress:***
Update of 2014 physical activity position statement (due for submission 2023).
- Establishment of educational package to provide support for those undertaking exercise testing and exercise counselling in persons with CF
This is well underway, and we are working jointly with the ECFS Education WG on this.
We have an agreed syllabus of exercise modules, and recording of these has begun.
- Develop Exercise WG Journal Club
Meetings every 2nd month began in February 2022.
This has been an excellent addition to the ECFS exercise EG portfolio with authors and early career researchers discussing and critically appraising papers together.
- Utilise Working Group as a Clinical Research Network for research theme of exercise in CF
Ongoing – 5 studies completed + projects ongoing

Outcomes already achieved:

- **Knowledge sharing**
- Meetings have been a great resource for CF exercise professionals since 2011
- Currently 1 x meeting at ECFS (In person, June) and 1 x virtual meeting (January)
- **Peer Support**

- Support for early career researchers to present and attend meetings
- Young career researcher prize awarded by group to allow attendance at ECFS
- ECR presentations as part of journal club activities
- Informal mentorship available within the group.

- **Technical Standards/Position Statements:**

- Exercise Testing (*Respiration* 2015)
- Physical Activity (*J Cyst Fibros* 2014)
- Exercise Recommendations (*Cardiopulm Physiotherapy J* 2015)
- Standardisation of functional exercise tests (*To be resubmitted to Eur Respir Rev following revision*)
- UPDATE: Physical activity - *In progress (Aim to submit in 2023)*

- **Education**

Previous Exercise short course (Liverpool 2019)
New Exercise short course (Vienna 2023)
Online education package underway – in collaboration with ECFS Education WG.

- **Research**

Completed studies:

1. Exercise capacity and CF genotype – *Ann Am Thorac Soc* 2018
2. Exercise capacity and mortality – *Am J Respir Crit Care Med* 2019
3. ACTIVATE-CF – *Am J Respir Crit Care Med* 2022
4. Glycaemic control sub-study of ACTIVATE-CF – *J Cyst Fibros* 2022
5. Exercise capacity and outcome in advanced lung disease
Paper submitted to Ann Am Thorac Soc, April 2023
Oral presentation of work in WS01.01, 46th European Cystic Fibrosis Conference, Vienna, June 2023.

Ongoing studies:

1. Understanding submaximal exercise measures in patients with advanced lung disease
(Radtke, Hebestreit, Urquhart, Jamieson, Burns)

Report for this year

- short term goals for the year
- current number of members
- measures taken to encourage ECFS membership
- outcomes/achievements (e.g. meetings, activities, website development, awards, publications etc).

SHORT TERM GOALS FOR THE YEAR

Knowledge-sharing

- ECFS Virtual Exercise Working Group Educational Meetings took place on June 2022 and January 2023
- ECFS Exercise Journal Club Meetings took place every 2 months.

June 2022 Exercise Working Group Meeting

This was a full-day meeting alongside the Rotterdam ECFS.

The programme included updates on ECFS exercise WG projects, and invited speakers – see below for full details.



ECFS Exercise Working Group Meeting (Hybrid)
8 June 2022

Venue: Ahoy Rotterdam, Ahoyweg 10, 3084 BA Rotterdam, The Netherlands
Location: Theatre, Room Name: Dock 6, Floor plan is available [here](#)
Zoom link: <https://uzh.zoom.us/j/67332060752?pwd=N2t3N2pUVHprNUpkZlJlZRY8RmMmHdz09>
Meeting-ID: 673 3206 0752; Code: 199990

Programme

Welcome

11:00-11:05	Introduction	Dr Thomas Radtke (CH) Dr Don Urquhart (UK)
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Session I Update on working group projects (10min plus 5)

11:05-11:20	Exercise tests – best practice statement	Dr Zoe Saynor (UK)
11:20-11:35	Update Physical activity position statement	Marysa S Blanchim (UK)
11:35-11:50	Update "Mortality II" project	Dr Thomas Radtke (CH)
11:50-12:05	Educational activities	Prof Craig Williams (UK)

Break (10min)

Session II Exercise testing and training prescription (10min plus 5)

12:15-12:30	Case 1	Dr Erik Hulzebos (NL)
12:35-12:50	Case 2	Lisa Morrison (UK)
12:50-13:05	News on A-Step test	Prof Brenda Button (AUS)

Break (10min)

Session III Invited lectures (20min plus 10)

13:15-13:45	Overview of the current physical activity landscape: insights into analysis strategies and metrics (online)	Prof Melitta McNarry (UK)
13:45 -14:15	Impact of habitual physical activity patterns on clinical outcomes in CYPwCF: Insights from Project Fizzyo	Prof Eleanor Main (UK)

Break (5min)

14:15-14:30	Wrap-up	Dr Thomas Radtke (CH) Dr Don Urquhart (UK)
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January 2023 Virtual ECFS Exercise Working Group Meeting

This was a half-day meeting attended by around 80 delegates across 3 continents via Zoom Platform.

The programme included updates on ECFS exercise WG projects, and invited speakers – see below for full details.



ECFS EXERCISE WORKING GROUP
Zoom Meeting Friday 20th January 2023

Time of meeting

16:00-18:20 CET
 15:00-17:20 GMT (UK)

Zoom Link: <https://uzh.zoom.us/j/67152582776?pwd=aTdYMDVaYjU5VXljbWJiQWpmQU4rdz09>

Meeting-ID: 671 5258 2776
Code: 024345

Meeting Outline

Welcome

16:00-16:05 Introduction
 Dr Thomas Radtke, Zurich (CH)
 Dr Don Urquhart, Edinburgh (UK)

Session 1

16:05-17:10 Update on working group projects

16:05-16:20 Overview of available exercise tests
 - Survey data
 - Best practice guideline
 - For ratification of completed guideline
 Dr Zoe Saynor, Portsmouth (UK)
 Prof Helge Hebestreit, Wuerzburg (DE)

16:20-16:40 Physical activity measurement in CF
 - Progress report
 Prof Craig Williams, Exeter (UK)
 Mayara S Bianchim, Swansea (UK)

16:40-17:10 Exercise working group education modules
 - Overview ECFS educational project
 - Exercise Working Group Syllabus
 Chris Smith, Brighton (UK)
 Dr Thomas Radtke, Zurich (CH)

Session 2

17:20-18:20 CPET in advanced lung disease

Chairs:
 Prof Chris Benden, Zurich (CH)
 Dr Don Urquhart, Edinburgh (UK)

17:20-17:40 What are best measures to evaluate short-term prognosis in CF lung disease?
 Prof Kathleen Ramos, Seattle (USA)

17:40-18:00 Does cardiopulmonary exercise testing provide short-term prognostic information in advanced cystic fibrosis lung disease?
 Dr Thomas Radtke, Zurich (CH)

18:00-18:20 Discussion
 All participants

Feedback from these meetings has been good.

June 2023 Exercise Working Group Meeting.

A half-day exercise WG meeting is planned for ECFS Vienna 2023.

This will be preceded by a 1.5 day short course that the exercise working group are jointly hosting with the physiotherapy specialist interest group. The provisional programme follows.



ECFS EXERCISE WORKING GROUP

Wednesday, 7 June 2023

Venue: Austria Center, Bruno-Kreisky-Platz 1, 1220 Wien, Austria

Time: 13:45 – 17:00 CEST

Setup: Theatre

The meeting is open to everyone who is interested in exercise.

Meeting Outline

13:45-13:50 Welcome
Dr Thomas Radtke, Zurich (CH)
Dr Don Urquhart, Edinburgh (UK)

13.50-14.30 Presentation from Young Investigator Barlo Hillen (MSc), Mainz (GER)

Title: «The impact of ETI treatment on cardiopulmonary exercise testing outcomes: results of a longitudinal, single centre study»

14.30-15.00 Break

15.00-15.30 Educational activities
- Update video recordings
- Journal club
Dr Thomas Radtke, Zurich (CH)
Dr Don Urquhart, Edinburgh (UK)
Dr Owen Tomlinson, Exeter (UK)

15.30-16.55 Turning ideas into action ALL

We would like to encourage members to discuss research ideas, large or small. The expertise and experience within the group can hopefully lead to partnership and mentoring, enabling an idea to become a live project.

16.55-17.00 Wrap up
Dr Thomas Radtke, Zurich (CH)
Dr Don Urquhart, Edinburgh (UK)

ECFS Journal Clubs:

The following papers have been discussed at journal club on the following dates.

Presenter	Institute	Paper	Date	Attendees
Maire Curran	University of Limerick, Ireland	Accuracy of the ActivPAL and Fitbit Charge 2 in measuring step count in Cystic Fibrosis 10.1080/09593985.2021.1962463	February 2022	25
Barlo Hillen	Johannes Gutenberg University, Mainz, Germany	Feasibility and implementation of a personalized, web-based exercise intervention for people with cystic fibrosis for 1 year 10.1186/s13102-021-00323-y	April 2022	28
Laurie Smith	University of Sheffield, UK	The effect of acute maximal exercise on the regional distribution of ventilation using ventilation MRI in CF 10.1016/j.jcf.2020.08.009	June 2022	37
Mayara Bianchim	Swansea University, UK	A Compositional Analysis of Physical Activity, Sedentary Time, and Sleep and Associated Health Outcomes in Children and Adults with Cystic Fibrosis 10.3390/ijerph19095155	July 2022	16
Kieren Lock	Addenbrookes Hospital, Cambridge, UK	Is there a link between the activity levels of parents and their children with cystic fibrosis? A scoping review https://bit.ly/41HBQNR	August 2022	13
James Shelley	Lancaster University, UK	Developing an ecological approach to physical activity promotion in adults with Cystic fibrosis 10.1371/journal.pone.0272355	September 2022	17
Craig Williams	University of Exeter, UK	The Exeter Activity Unlimited statement on physical activity and exercise for cystic fibrosis: methodology and results of an international, multidisciplinary, evidence-driven expert consensus 10.1177/14799731221121670	October 2022	19
John Lowman & Steffi Krick	University of Alabama at Birmingham, USA	Effects of Exercise on Nutritional Status in People with Cystic Fibrosis: A Systematic Review 10.3390/nu14050933	November 2022	16
Raquel Iniesta	University of Exeter, UK	The impact of plasma 25-hydroxyvitamin D on pulmonary function and exercise physiology in cystic fibrosis: A multicentre retrospective study 10.1111/jhn.12906	December 2022	12
Zoe Saynor	University of Portsmouth, UK	Elexacaftor–Tezacaftor–Ivacaftor improves exercise capacity in adolescents with cystic fibrosis 10.1002/ppul.26078	February 2023	33
Manon Kinaupenne	Ghent University, Belgium	Physical activity and its correlates in people with cystic fibrosis: a systematic review 10.1183/16000617.0010-2022	March 2023	16
Maryam Almulhem	Newcastle University, UK	Exploring the impact of elexacaftor-tezacaftor-ivacaftor treatment on opinions regarding airway clearance techniques and nebulisers: TEMPO a qualitative study in children with cystic fibrosis, their families and healthcare professionals 10.1136/bmjresp-2022-001420	April 2023	17
			TOTAL	249

Journal club feedback has been generally good.

Detailed feedback has been collated and can be shared if required.

- Technical Standards/Position Statements:

The group have been actively working on two standardisation documents:

i. **ONGOING WORK ON A NEW TECHNICAL STANDARD:**

Guidance and standard operating procedures for functional exercise testing in cystic fibrosis

Leads – Zoe Saynor, Don Urquhart and Thomas Radtke

Co-authors – Helge Hebestreit, Brenda Button, Mathieu Gruet, Melitta McNarry, Lisa Morrison, Marlies Wagner, Abbey Sawyer

This document has been completed and submitted to European Respiratory Review.

After peer review, some revisions have been requested and resubmission is imminent.

ii. **UPDATE OF PREVIOUS POSITION STATEMENT:**

Physical activity in Cystic Fibrosis: A Systematic Review

Leads – Craig Williams and Mayara Silveira Bianchim

Co-authors – Kelly McIntosh, Melitta McNarry, Helge Hebestreit, Brenda Button, Tiffany Dwyer, James Shelley, Judy Bradley, Elpis Hatziagorou.

This will be a combination of an up-to-date review of the evidence along with expert recommendations.

The systematic review has been registered "Physical Activity Assessment in Cystic Fibrosis: A Systematic Review" to the PROSPERO register (CRD42022292165).

It is hoped that this work will be completed in 2023.

- Education

The group have planned a comprehensive online exercise teaching and training resource comprising of a series of themed presentations with embedded questions and answers.

A comprehensive syllabus has been developed by members of the Exercise WG (Professor CA Williams + Drs Urquhart and Radtke) in association with the Education Working Group.

This syllabus has been approved by the WG membership and includes learning resources on:

- Exercise Physiology
- Exercise Testing
- Physical Activity
- Exercise Counselling and Advice
- Preparation for Exercise
- Exercise and specific situations

The first talks have been prepared.

The finalised curriculum is attached.

- Research

Recently completed studies:

1. Does cardiopulmonary exercise testing provide short-term prognostic information in advanced cystic fibrosis lung disease?

Leads – Thomas Radtke, Helge Hebestreit

Study sites in Australia, Austria, Canada, France, Germany, Greece, Israel, Serbia, Spain, Switzerland, UK, USA

This is a study assessing the prognostic value of exercise parameters in subjects with CF with FEV₁<40% predicted. Data entry is now complete. A total of 177 separate data records were analysed including 44 cases where an adverse event has occurred including 11 deaths and 33 who have undergone lung transplantation. Data analysis is complete, and paper is currently under review at *Annals ATS*.

Studies in progress:

1. Understanding submaximal data in advanced CF lung disease

This is a sub-analysis of the completed study above looking at the ability to quantify the timing of onset of anaerobic threshold (AT), and the utility of measures at AT (VO₂, breathing reserve, etc.) in predicting mortality and morbidity in people with CF.

- Peer support

The group are mindful of the need for succession planning within the field of exercise and CF.

It is necessary to nurture the younger members of the group, to involve them in research and presentation, to enthuse them and to offer mentorship from senior group members.

a) Encouraging presentations:

Early career researcher slots are available at all of our meetings, and the journal club is also another forum for ECR presentations.

b) Establishment of junior researcher award:

The first 'Junior researcher Award' was won by Dr Myara Bianchim for a presentation entitled:

"Compositional Analysis of Physical Activity, Sedentary Time and Sleep and Associated Health Outcomes in Children and Adults with Cystic Fibrosis" - The prize was registration for the ECFS 2022 conference.

CURRENT NUMBER OF MEMBERS

The exercise working group has 76 current members

These have been provided as an Excel spreadsheet of:

- Member
- Institution
- ECFS membership status*

****Up to date as far as last ECFS-provided membership data***

MEASURES TAKEN TO ENCOURAGE ECFS MEMBERSHIP

The working group highlights the benefits of ECFS membership when communicating with members.

The holding of a meeting (face to face) at ECFS conference is encouraging attendees to join ECFS.

Our logo (see below) makes it very clear that the Exercise Working Group is a sub-group of the ECFS.



OUTCOMES/ACHIEVEMENTS

- Meetings

- i. ECFS Exercise Working Group Meeting [Rotterdam] 8th June 2022
- ii. ECFS Exercise Working Group Meeting [Virtual] 21st January 2023
- iii. ECFS Exercise Working Group Meeting [Vienna] 7th June 2023

Agendas as listed above

- Developments

The instigation of the ECFS CF and Exercise Journal Club in early 2022 has been a good new development. This initiative is being led by one of the Early Career Researchers (Dr Owen Tomlinson, Exeter, UK), which is great for the sustainability of our group.

- Presentations 2022/23

Oral presentations:

Radtke T, Kriemler S, Stein L, Karila C, Urquhart DS, Orenstein DM, Lands L, Schindler C, Eber E, Haile S, Hebestreit H, ACTIVATE-CF Study Working Group.

Cystic fibrosis related diabetes is not associated with maximal aerobic exercise capacity in cystic fibrosis: a cross-sectional analysis of an international multicentre trial (ACTIVATE-CF).

WS 14.03, 45th European Cystic Fibrosis Conference – Rotterdam, June 2022.

Radtke T, Urquhart DS, Braun J, *et al.*

Cardiopulmonary exercise testing provides prognostic information in advanced cystic fibrosis lung disease.

WS01.01, 46th European Cystic Fibrosis Conference, Vienna, Austria, June 2023.

Saynor ZL, Gruet M, McNarry M, Button B, Morrison L, Wagner M, Sawyer A, Hebestreit H, Stanford GE, Radtke T, Urquhart DS.

The current state of play regarding exercise testing in cystic fibrosis: co-development with the community.

WS01.02, 46th European Cystic Fibrosis Conference, Vienna, Austria, June 2023.

Poster presentations:

Smith C, Chadwick HK, Farinha C, Southern K, Havermans T, Borawska-Kowalczyk U, MacDuff N, Shaw N, Declercq D, Wagner M, Dunlevy F, Hayes/Hill K, Stanford G, Bentley S, Urquhart DS, Radtke T, Williams C, De Wachter E, Peckham DG.

ECFS syllabuses for the multidisciplinary team: a guide for comprehensive education.

Poster presentation at 46th European Cystic Fibrosis Conference, Vienna, Austria, June 2023.

- Publications 2022/23

Original articles:

Hebestreit H, Kriemler S, Schindler C, Stein L, Karila C, Urquhart DS, Orenstein DM, Lands L, Schaeff J, Radtke T, ACTIVATE-CF Study Working Group.

Effects of a partially supervised conditioning program in cystic fibrosis: an international multicenter randomized controlled trial (ACTIVATE-CF).

Am J Respir Crit Care Med 2022; **205**:330-339. doi: 10.1164/rccm.202106-1419OC.

Radtke T, Kriemler S, Stein L, Karila C, Urquhart DS, Orenstein DM, Lands LC, Schindler C, Eber E, Haile SR, Hebestreit H, on behalf of the ACTIVATE-CF Study Working Group*. Cystic fibrosis related diabetes is not associated with maximal aerobic exercise capacity in cystic fibrosis: a cross-sectional analysis of an international multicentre trial [ACTIVATE-CF]. *J Cyst Fibros* 2023;**22**:31-38.

Letters to Editor:

Urquhart DS, Hebestreit H, Saynor Z, Radtke T. 'Gold standard field test is a non-sequitur. *Pulmonology* 2023;**29**:173.

Review Articles:

Gruet M, Saynor ZL, Urquhart DS, Radtke T. Rethinking physical exercise training in the modern era of cystic fibrosis: a step towards optimising short-term efficacy and long-term engagement. *J Cyst Fibros* 2022;**21**:e83-e98.

Saynor ZL, Gruet M, McNarry MA, Button B, Morrison L, Wagner M, Sawyer A, Hebestreit H, Radtke T, **Urquhart DS**, on behalf of the European Cystic Fibrosis Society Exercise Working Group.

Guidance and standard operating procedures for functional exercise testing in cystic fibrosis. *Eur Respir Rev* 2023; *Under review*.

Abstracts:

Radtke T, Kriemler S, Stein L, Karila C, Urquhart DS, Orenstein DM, Lands L, Schindler C, Eber E, Haile S, Hebestreit H, ACTIVATE-CF Study Working Group. Cystic fibrosis related diabetes is not associated with maximal aerobic exercise capacity in cystic fibrosis: a cross-sectional analysis of an international multicentre trial (ACTIVATE-CF). *J Cyst Fibros* 2022;**21(Supplement)**:S27-S28.

Radtke T, Urquhart DS, Braun J, Barry P, Waller I, Petch N, Mei-Zahav M, Kramer MR, Hua-Hut T, Dinh-Xuan AT, Innes A, McArthur S, Sovtic A, Gojsina B, Verges S, de Maat T, Morrison L, Wood J, Crute S, Williams CA, Tomlinson OW, Bar-Joseph R, Hebestreit A, Quon BS, Kwong E, Saynor, ZL, Causer AJ, Stephenson A, Schneiderman JE, Shaw M, Dwyer T, Stevens D, Remus N, Douvry B, Foster K, Benden C, Ratjen F, Hebestreit H, for the Prognostic value of CPET in CF study group. Cardiopulmonary exercise testing provides prognostic information in advanced cystic fibrosis lung disease. *J Cyst Fibros* 2023; *In press*.

Saynor ZL, Gruet M, McNarry M, Button B, Morrison L, Wagner M, Sawyer A, Hebestreit H, Stanford GE, Radtke T, Urquhart DS. The current state of play regarding exercise testing in cystic fibrosis: co-development with the community. *J Cyst Fibros* 2023; *In press*.

Smith C, Chadwick HK, Farinha C, Southern K, Havermans T, Borawska-Kowalczyk U, MacDuff N, Shaw N, Declercq D, Wagner M, Dunlevy F, Hayes/Hill K, Stanford G, Bentley S, Urquhart DS, Radtke T, Williams C, De Wachter E, Peckham DG. ECFS syllabuses for the multidisciplinary team: a guide for comprehensive education. *J Cyst Fibros* 2023; *In press*.

Aims for the coming year (please state year) (max 50 words):

The aims for the coming year are as follows:

- **Knowledge-sharing**
Short course prior to ECFS Vienna June 2023 (jointly with PhysioSIG).
Undertake face-to-face meeting at ECFS Rotterdam in June 2023
Plan to continue 2 meetings per year thereafter
 - a) Virtual - January 2024
 - b) Face-to-face at ECFS June 2024ECFS CF and Exercise Journal Clubs (Virtual) every 2 months
- **Technical Standards/Position Statements:**
Publication of guideline for undertaking and reporting functional exercise testing (with ERR).
Complete Physical Activity position statement update
Ratify within ECFS WG at June 2023 or January 2024 meeting.
- **Education**
Continue to build online knowledge network for exercise in CF.
This is a 3-5 year workstream.
- **Research**
Publication of completed research project on exercise testing in advanced lung disease
- currently with *Annals ATS*.
Completion of sub-study looking at submaximal exercise data in advanced CF lung disease
- aiming to present at ECFS 2024 and publish thereafter.

Summary (maximum 100 words):

The ECFS Exercise Working Group is now 12 years old.

The group has been a fertile ground for knowledge-sharing and developing collaborations.

Group output:

Published international technical standards and position statements on:

- 1) Exercise Testing (Respiration 2015, Eur Respir Rev 2019)
- 2) Physical activity (J Cyst Fibros 2015)
- 3) Exercise recommendations (Cardiopulm Physiotherapy J 2015)
- 4) Functional exercise testing – guidelines (under review at Eur Respir Rev 2023)

Letters to Editor published on behalf of ECFS exercise WG regarding exercise testing practice:

- Hebestreit *et al.* Respiration 2016
- Urquhart *et al.* Pulmonology 2023

Investigator-initiated research:

Exercise Capacity and CFTR genotype (published Ann Am Thorac Soc 2018)

Exercise Capacity and Mortality (published Am J Respir Crit Care Med 2019)

Exercise testing in advanced cystic fibrosis lung disease (study ongoing)

Randomised, controlled trial of exercise intervention - ACTIVATE-CF (published Am J Resp Crit Care Med 2022)

Glycaemic substudy from ACTIVATE-CF (published J Cyst Fibros 2023)

Mortality II study – Paper submitted to Ann Am Thorac Soc 2023

Education:

Pre-course workshop on exercise testing at ECFS Liverpool (2019).
Pre-course workshop on exercise testing and training in the post-ETI era at ECFS Vienna (2023).
Online modular education resource
- Curriculum agreed and process of laying down information now underway
Regular Exercise Journal Club held virtually every 2 months.

Ongoing:

Current projects include ongoing education resource development and research in advanced CF lung disease.

We would value your ongoing support to complete these projects and to develop new ideas.

Breakdown of expenses (please include total amount received as well as expenditure and, if applicable, the outstanding balance (Euros)). Please refer to the WG TOR for examples of budget expenses:

Total amount received: 10'000 Euro

Expenses (expected)

- ECFS Physio course – support for faculty attendance: **€2000-2500**
- Publication fees (open access) for European Respiratory Review: **~€1200**
- Fees for Mind the Graph (access to high quality medical pictures for video recordings & presentations): **€90**
- Fees for preparation of Working Group graphical images: **€1000**

Budget amount requested for next year (please give the amount in Euros and the year): **€5090**

Junior Researcher Award - €1000

Flights from within Europe and registration for ECFS 2024 for winner of best early career researcher presentation at ECFS Exercise Working Group virtual meeting in January 2024.

ECFS Exercise Working Group Core Group Meeting €3000 approx.

Plan for 1 day face-to-face meeting at airport hotel (e.g. Amsterdam, Frankfurt, London)
Proposed attendees would be: Thomas Radtke (Co-ordinator), Don Urquhart (Deputy Co-ordinator), Helge Hebestreit (Chair of group from 2011-2019), Zoe Saynor (Lead for ECFS exercise guideline updates)

Proposed agenda for meeting would include:

- Group peer review of received education videos
- Prioritisation exercise to guide direction of future projects
- Succession planning for DU/TR reaching end of 3-year term as group co-ordinators

Airport hotel would allow all to attend for 1-day meeting with 1 night of overnight accommodation

Cost - €750 per person approximately.

Fees for Mind the Graph: **€90**

Preparation of video abstracts/factsheets by professionals: **€1000**