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CHAIRMAN'S MESSAGE

We last published a journal in 2019 for the conference week in London – the last before the pandemic hit.
The Journal, and conference week events, were always a good time to reflect on what progress had been made and discover what was happening in research.

A great deal has happened since the pandemic began and some things have changed, although Myalgic Encephalomyelitis (ME) still faces the same issues as we have recorded over the last eighteen years since the charity was formed. This is plainly apparent from the findings of the European ME Alliance Pan-European ME Patient Survey, which was published, appropriately, on World Health Day 2024. We have the overview of findings from the report included in the Journal.

Since 2005, the charity has maintained an unwavering commitment to driving significant strides in the field of ME research. How else could it be as the charity is run by volunteers - patients or parents of children with ME - no salaries, no government funding, not controlled by outside influences - but with wonderful supporters?
As an independent UK charity facilitating and funding a strategy of high-quality biomedical research and promoting better education about ME, our journey has been marked by relentless dedication to using innovation to progress biomedical research.

In this period, we have organised and hosted sixteen influential annual conferences, thirteen annual and progressive international biomedical research colloquiums, (a sequence broken only by the pandemic), and facilitated four early career researcher workshops.

Notably, we have established the first Fellowship for ME, completed five PhDs, and are on the brink of initiating our second Fellowship.
The charity is also funding the only clinical trial for ME in the UK, and is looking to fund more research that is on the way, embodying the urgency that defines our approach in translating research into tangible outcomes, where all of our income is used to fund and facilitate biomedical research into ME.

Beyond borders, we have been involved in the recent NIH Roadmap Research programme and fostered and galvanised collaboration through the creation of European groups for patients, researchers, clinicians, and young

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PAN-EUROPE SURVEY HIGHLIGHTS

researchers, driving international initiatives that support and strengthen our shared mission. Our work has facilitated the foundations of the Centre of Excellence for ME firmly in place in Norwich Research Park,a source of hope for advancing research and developing treatments. The one missing element – adequate funding – would expedite and complete our efforts for the benefit of all patients.

In the last parliamentary debate on ME, we laid out a bold vision for research, proposing a substantial allocation to kick-start biomedical research and support the foundations that we have laid. We recently made a document to update all MPs on the opportunities that have been created.

Likewise, we have made the case for investment in the centre in Norwich Research Park in the UK DHSC/UKCRC though, unfortunately, our ideas have neither been fully distributed nor discussed, resulting in no tangible progress being achieved in two years of meetings.

Our involvement in the recent far more productive NIH Roadmap Research Programme
has guided our Colloquium planning, shaping this year's theme - "Acknowledging the acceptance by both clinicians and researchers of 'THE INFECTIOUS AETIOLOGY' of ME/CFS" focuses on uncovering the complexities of ME, exploring acute infection, chronic infection, and co-infection.
And asking What's Next?'

The conference and colloquium are ideal timing as they directly follow from the NIH Roadmap report to be published just before our International Conference Week - so much to discuss and plan.
The colloquium, especially, has proven to be important in bringing together researchers.
Last year was the first time that the charity had organised in person events in conference week since the pandemic began.

In the 2017 Colloquium, a new approach had been established for structuring the presentations in sessions to focus more effort in determining the information that was relevant to making progress.
Session chairs were tasked with asking presenters to consider -

- What we know (proven)
- What we think we know (unproven)
- What we need to know
- How (who?) should the gaps be filled?
- How does this relate to other strategies/research?

We were pleased to see that the recent NIH Roadmap of webinars during 2023-24 had adopted this same approach to use for structuring their webinars.

Our colloquiums and conferences provide an international platform for education and collaboration - uniting professionals, patients, researchers, early-career researchers, doctors, nurses, the media, and ME - and bridging the clinical and research divide to focus on benefits for patients - a testament to our commitment to fostering collaboration and knowledge exchange over almost two decades.

The name of our charity truly becomes the main calling for all interested in resolving this disease. Whatever the disappointing experiences from the last two years of the DHSC/UKCRC project we still believe there are the building blocks already in place in the UK and Europe which just require a little ambition and courage and one important factor – funding.

What better slogan to use at this point in time than the one that this small charity has uniquely been promoting for so long?
Time to #InvestinMEresearch.

Welcome to our conference week.

Kathleen McCall

Philanthropy …..

is about 'giving' - not just in terms of funding.
We are eternally grateful to those supporting the charity and to partners **The Hendrie Foundation** for their consistent and generous support for the RESTORE_ME clinical trial and other research at the centre; and to **LunaNova** for their funding of the LunaNova fellowship that begins this year. Also appreciated are non-monetary aspects, such as time, ideas, raising awareness of what the charity is trying to do, or being a volunteer.

From WE - A Community and ME
https://www.investinme.org/2019booklet.shtml

Our supporters have achieved and they deserve recognition for all their incredible support and efforts to bring change to the landscape of ME research and awareness.

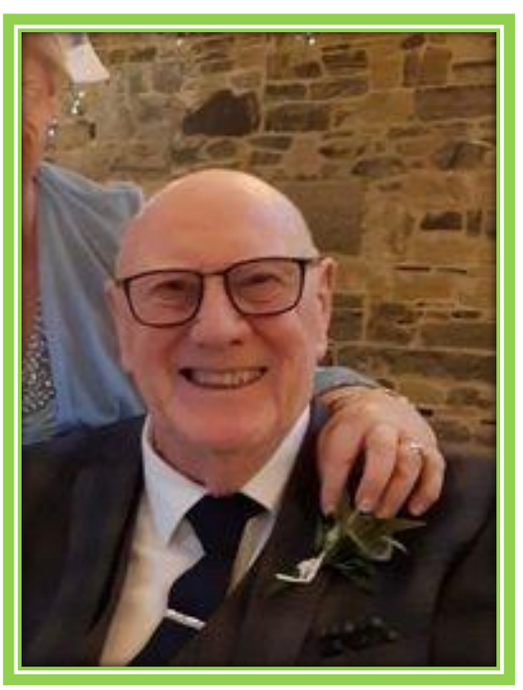
The Irish ME Trust – Sponsor of #IIMEC16

A word of thanks to the Irish ME Trust who, yet again, will be sponsoring one of the speakers to the conference. IMET have been a constant friend and supporter of IiMER, and of ME patients. They have been a leading member in the European ME Alliance. The Irish ME Trust has sponsored every single Invest in ME Research International ME Conference Week and we would like to thank them for their continued support.

We received very sad news as we planned the conference this year. Our good friend and valued and respected advocate for people with ME - **Michael O'Reilly** - had passed away.
Michael was in the Irish ME Trust and, with IMET's Declan Carroll, were one of the founder members of the European ME Alliance (EMEA). Michael regularly came to the Invest in ME Research international Conferences in London.
Michael was a wonderful person and a great storyteller.
IMET issued this statement-

It is with deep sadness that we announce the passing of our founding member and chairman Michael O'Reilly. As well as being a great family man, Michael devoted a great part of his life in helping those with ME in whatever way he could. Due to his foresight and desire to help, our ME Therapy Week was founded in 2003 and took place each year at An Grianán in County Louth until 2016. Following that event, our ME Therapy Retreat still runs to this day, currently in Adare, Co Limerick. Michael was due to attend this year's event which takes place next month.
He will be greatly missed.

Ar dheis Dé go raibh a anam díl



What we have been doing

Our research strategy is oriented to achieving the best and most rapid outcome with the resources we have – which is only possible via a coordinated, collaborative structure of biomedical research, using the capacity of Europe.
Since the charity was formed it has concentrated on prioritising biomedical research as the quickest way to improve and effect better education and to galvanise advocacy.
We concentrated, as best as we could, on setting up some of the key building blocks that would create sustainable and permanent change in how ME is researched and treated, by-

- creating solid foundations for a research programme on ME
- research based on solving scientific questions to find treatments based on research evidence
- raising standards on all levels of patient care
- facilitating European and international collaboration
- changing attitudes toward ME from within institutes and organisations via funded researchers and medical students

The Only Clinical Trial for ME in UK

The charity is fully funding the only clinical trial for ME in the UK. This is being carried out at the centre in Norwich Research Park at the Quadram Institute.
The Aim of the RESTORE-ME study is to undertake a clinical feasibility study of FMT in ME/CFS and determine if a full clinical trial is justified. This will be achieved by providing evidence for efficacy in this patient group, a mechanistic understanding of FMT in ME/CFS, the acceptability of the treatment for patients, the measurement properties of outcome measures, and to provide bounds for efficacy.
A significant proportion of ME/CFS patients date the onset of their symptoms to a GI illness. FMT may be helpful in these patients. A study undertaken in a single centre in Australia reported significant clinical improvement in 70% of ME/CFS patients administered an FMT (Borody et al., 2012).
Since gut dysbiosis might be a contributing factor in ME/CFS, particularly in those with IBS, replacing the gut microbiota could be an effective treatment. This is the hypothesis behind the RESTORE-ME clinical trial – a phase 2b, double blind and placebo controlled – which focuses on establishing safety and efficacy.

A pilot study, called **Light ME Up**, is being supported by Invest in ME Research to assess the acceptability, safety and potential benefit of red light exposure in ME patients. It is a remote feasibility study that patients can undertake from their home.
People with ME are reported to have reduced function of mitochondria, the powerhouses in our bodies' cells that generate energy.
Mitochondria can absorb red light and use this to boost energy production, so there is interest in using red light therapy to treat ME. This has been used to manage the symptoms of acne, muscle and joint pain, arthritis, blood circulation issues and hair loss; this will be the first study to assess the use of red light therapy on ME.
Symptoms will be monitored for a couple of weeks before and after this period, to see whether the red light therapy provides any benefits. The Light ME Up study will trial objective

assessments of cognitive function and physical activity levels and an online clinical trial management platform.

A Centre of Excellence for ME

Already functioning with world class research, facilities, projects and international collaboration, university and university hospital, collaborations with other groups and local clinic for people with ME.
The place to invest.

Invest in ME Research asked MPs to consider the following document for last year's' APPG for ME November meeting (which Invest in ME Research are not allowed to attend).
We felt that MPs should be made aware of developments and status at the centre in Norwich Research Park rather than the sanitised input they receive.

We also updated the Executive Summary for MPs regarding our Centre of Excellence for ME.
All available on our web site at investinme.org/centre

PhD students introduced to research

The charity has funded five PhDs to perform research into ME - including the first crowd-funded PhD for ME - another first. The latest PhD project is with Rik Haagmans, whose research project focuses on the relationship between gut viruses and ME.
During the project Rik will be working on the RESTORE-ME clinical trial and look at virology and gut viruses, a field that has gained a lot of public attention in the past years with the outbreak of SARS-CoV-2.
While one normally is able to recover from most viral infections, recovery from an infection does not always mean a rapid and full return to health.
For example, many COVID-19 patients suffer for a long time after the initial infection from what is sometimes called “Long COVID”.
This is something that many ME patients are familiar with.

Leading up to the development of ME, many patients experience a viral infection.
Various viruses are associated with ME and some of these viruses are also associated with gastrointestinal diseases and dysbiosis.
This suggests that, at least in a subgroup of ME patients, gut viruses could play an important role.
To investigate this, Rik has aimed to:

- Identify viruses in faecal samples DNA through sequencing technologies
- Define the collection of viruses in the gut of ME patients
- Determine if ME patients have unique viruses in their gut
- Determine whether FMT leads to a change in gut viruses and how this relates to improvement of symptoms
- This has involved preparing experiments that allow us to optimise this process and ensure we can obtain high quality data. Underlying this is the aim to gain valuable information about the mechanism underlying ME and the role of gut viruses in human health.

Invest in ME Research Fellowships

The first Fellowship for ME was launched in collaboration with Quadram Institute followed soon after by the second fellowship.
The charity decided to name the first fellowship as The Ian Gibson Fellowship for ME – in agreement with Dr Ian Gibson's wife. Dr Gibson passed away in 2021 and was a great supporter of people with ME and of the charity.

This first fellowship for ME recognises Dr Gibson's great influence in supporting people with ME and in helping the charity move ahead with facilitating the research programme and centre for research into ME.

Dr Gibson was a unique MP in that he understood the science and politics and was always interested in all kinds of views, and was consistently engaged in debates spanning diverse issues.
He was a steadfast advocate for the underdog, lending his voice to those often ignored.
This profound commitment to fairness and justice manifested not only in his advocacy but also in his resolute support for organisations that echoed his ethos. It is why he aligned himself with a volunteer-driven charity such as Invest in ME Research.

In recognising the intrinsic value of every effort, regardless of size or financial backing, he embodied the transformative power of standing alongside those tirelessly working for change, emphasising that true impact arises from the heart, not just the spotlight - something that perfectly describes our supporters.
The Ian Gibson Fellowship is being performed by Dr Katharine Seton and continues her career in research into ME at Quadram Institute.
Recently, Dr Seton completed her PhD that was funded by Invest in ME Research and the University of East Anglia [2].

This is an important step in supporting the continuity of the research strategy for ME that has been well established and is being performed and planned at Quadram Institute and University of East Anglia.

Details of some of Dr Seton's planned research will include determining the contribution of the intestinal microbiome to oxidative stress in ME patients and whether this can cause alterations in immune function, accelerating premature immune ageing in patients.
She also plans to determine the impact of microbiota replacement therapy (MRT) on intestinal and systemic oxidative stress in ME patients.

This will be the first study to directly assess intestinal microbiome contribution to oxidative stress in ME patients.
Identifying the source of oxidative stress and its impact on immune cell function will enable the development of treatment options to break this cycle.

The Invest in ME Research ‘LunaNova’ Fellowship for ME

Invest in ME Research also unveiled the launch of the 'The Invest in ME Research ‘LunaNova’ Fellowship for ME, a new research initiative that will be undertaken at the Quadram Institute, with UK and European collaboration.

This fellowship, made possible through the remarkable generosity of LunaNova, the brand of a small UK technology company, underscores the commitment to advancing the Centre of Excellence for ME approach and the benefits it provides.

This marks the second fellowship championed by Invest in ME Research, focusing on elevating ME research efforts. The 'LunaNova' Fellowship seeks to deepen our understanding of ME and accelerate progress toward effective treatments. The two-year 'LunaNova' Fellowship exemplifies a pivotal investment in ME research, reinforcing commitment to driving progress in the field.

The fellowship leverages Quadram Institute's world-class facilities, incorporating collaboration with European ME Research Group (EMERG) member, Professor Elisa Oltra from the Catholic University of Valencia, Spain, and immune ageing specialists at the University of Birmingham.

This collaboration extends our dedication to international partnerships in advancing ME research.

Mike Buckingham, CEO of LunaNova’s parent company, said:

“We have seen first-hand the devastating impact ME has on patients’ lives. Even at its mildest, it is a condition that can completely stunt a person’s potential and at its severest is nothing short of a living death that persists for decades.”

“Biomedical research is the only path that can credibly solve this, yet it has been spectacularly neglected over the last few decades in favour of now debunked psychological approaches. During this time the global economic impact of this condition has run into trillions of US dollars.”

“Whilst we wait for Governments and policymakers to wake up to the gravity of the situation and begin to fund biomedical research at a scale and pace truly commensurate with the condition’s impact, it is largely charities that have been driving progress. Invest In ME Research (IIMER) are one such charity. They have worked tirelessly in the UK to raise awareness and promote funding of biomedical research.”

European Infrastructure for ME

The charity has instigated several initiatives to begin to build this presence in the absence of any official European strategy - a European ME Alliance of ME Patient Groups, a European ME Research Group, a European ME Clinicians Group and a European Young ME Researchers Network. Researchers, clinicians and carers – coming together.

Young EMERG

The European ME Research Group early career researcher network, formed last year, brings together the new wave of researchers to form a European support base that can facilitate collaboration with early career investigators in other continents.

This group published a well-received paper last year – **Advancing Research and Treatment: An Overview of Clinical Trials in Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) and Future Perspectives** - https://www.mdpi.com/2077-0383/13/2/325

Advocacy

The charity has not forgotten the need for advocacy and has regularly commented and acted on issues affecting ME - in parliament, CMO, UKRI, NHS, DHSC. NICE, and abroad.

In the 2018/2019 UK parliamentary debates on ME, Invest in ME Research produced a document that summarised the status of ME. It also laid out a bold vision for research - proposing that £20 million be allocated every year for five years to kick-start biomedical research and support the foundations that this small charity has laid.
More recently, the charity was involved in the DHSC/UKCRC Delivery Plan for ME that was set up by an ex-health minister – some time after he left that position, where he actually could have made a difference. Sadly, our final report from that two-year project is not optimistic for any breakthrough.

The charity had submitted proposals at the first meeting that we attended – proposals meant to take rapid action and address existing issues - but these proposals were not even discussed as the working group exhibited limited vision or ambition and a continual lack of urgency.
A two-year project seemed far too long to determine already known issues and provide resolutions – until one realises that two years ago it was well known that a general election would be coming in exactly two years, allowing this particular can to be well and truly kicked down the road on its continuing odyssey to nowhere. Our comments on this initiative are under our **Campaigning** web page. During the hiatus caused by the pandemic we updated our 5-year plan – leaving major funding now the one missing element.


Findings from the
European ME Alliance
PAN-European
ME PATIENT Survey

Findings from the European ME Alliance PAN-European ME PATIENT Survey

On World Health day 2024, the long-awaited findings of the European ME Alliance (EMEA) Pan-European ME Patient Survey were unveiled, painting a distressing picture of neglect and suffering endured by millions across Europe.

The report - **EMEA survey of ME/CFS patients in Europe: Same disease, different approaches and experiences** - was the result of excellent work by the authors, Arild Angelsen and Trude Schei. Some of the items from the report, authored by Arild and Trude, are shown below.

The report is available in full from this link - https://europeanmealliance.org/documents/emeaeusurvey/EMEAMEsurveyreport2024.pdf

EMEA Pan-European ME Patient Survey Key Messages

'***ME/CFS is a serious and debilitating disease*** '

'***... profound disability levels and unmet needs among European ME/CFS patients***'

' ***underscore the urgent priority for healthcare systems to recognise ME/CFS as a serious physical illness and provide better medical care, financial support, and social services***'

'***Keeping the activity level within the energy envelope (pacing) is the most helpful strategy*** '

'***Activity-based therapies do more harm than good***'

' ***Almost half of survey respondents report a deteriorating course of illness*** '

' ***Early diagnosis, activity management (pacing) and avoidance of over-exertion are key to preventing progression to severe disease*** '

' ***Biopsychosocial (BPS) model - a failed and harmful approach to ME/CFS*** '

' ***Therapies involving fixed increases in activity tend to worsen symptoms and risk a deteriorating course of the illness, rather than leading to improvement*** '

'***Access to medical care and social support varies across Europe, with different approaches taken by national health authorities impacting the course of illness and disease outcomes*** '

'***The health care system fails ME/CFS patients – and that has serious consequences*** '

Foreword from the 'EMEA survey of ME/CFS patients in Europe: Same disease, different approaches and experiences' Report

In the world of Myalgic Encephalomyelitis (ME or ME/CFS), where decades of misinformation, ignorance, bias and stigma have been allowed to develop and grow without challenge, and eventually influence and then swamp healthcare systems, government policies and media prejudice, people affected by this disease have been left without moral, economic and healthcare support.
The advent of social media has levelled the field somewhat, allowing patient groups to challenge the orthodox view of ME/CFS.

However, the continued lack of any adequate funding for research into the disease, and no serious attempt to find the cause of the disease by national research agencies or policymakers, has led to the lack of the one essential element that is needed to change policies in government.
That element is evidence.

The **European ME Alliance (EMEA) survey of ME/CFS patients in Europe** is a first attempt by patient organisations to bring forward information that can be applied by governments in Europe, and by EU institutions, in order for them to take responsibility for addressing this high burden, under prioritised disease and provide the needed research funding, medical education of physicians, and social support for patients.

The objective behind the survey was to find out whether the situation for ME/CFS patients was similar across European countries.

The survey originated from the excellent work already performed by the authors of this report – Arild Angelsen and Trude Schei – and their impressive work with Norges ME-forening (Norwegian ME Association), an EMEA member, where they have previously surveyed and reported on the situation with ME/CFS in Norway and Denmark and identified similarities between the onset of ME/CFS and other factors impacting people with this disease.

Building upon their work, EMEA members came together to assist in conducting this 'first ever' European patient survey.

The results show that patients everywhere in Europe face similar stigma regarding recognition and knowledge of the disease, with huge delays in diagnosis that may take up to 12 years in some cases. With patients in Europe often being forced into taking deleterious and flawed biopsychosocial-based therapies that are still recommended by some national healthcare authorities, it may be no surprise that the report shows only 7% of patients reporting improvement over the years, with many having to face health deterioration that can last a lifetime.
The survey also indicated that patients who received early diagnosis had better outcomes and were able to manage their energy use earlier by using pacing techniques to avoid over exertion and repeated 'crashes'. The lack of educated medical professionals leads to a failure of healthcare and welfare systems to provide adequate support – the report highlights the poor level of support for this disease being experienced everywhere.

The results compiled here by Arild Angelsen and Trude Schei demonstrate that it is important that information about this disease is also to be collected from patients – to document their '*lived experience*' as is the currently popular buzzword.

The survey provides evidence.
The survey results should be a call for action.
Investing in ME research will greatly benefit not only the patients, but also the healthcare and social systems as, currently, it takes patients years of medical visits to receive a diagnosis or receive any symptom relief, and their inability to workplaces heavy strains on national insurance and welfare systems.

It is important to note that the research community has the interest and the potential to tackle this disease. EMEA member organisations have established a network of experts – researchers and clinicians, namely the European ME Clinicians Council (EMECC), the European ME Research Group (EMERG), as well as an Early Career Researcher Network (Young EMERG). These are well connected internationally with world-renowned research institutes and already have the capability to coordinate the necessary research that can lead to a correct diagnosis and appropriate treatments for ME/CFS patients. In addition, EMEA supports the annual Invest in ME Research International ME Conference (IIMEC) which brings together world renowned researchers and also includes a 'patient day' which is open to the public where the latest advances related to ME/CFS are presented in a language patients can understand.

Patient organisations play a key role in providing information, guidance and support to ME/CFS patients. EMEA is committed to continue surveying patients in order to provide ongoing data to support urgent and decisive action from policymakers in Europe in order to improve the situation for p eople with ME and their families in Europe.

The **EMEA survey of ME/CFS patients in Europe** is a valuable part of the resources required as EMEA works to support the implementation of the UN Universal Declaration of Human Rights, the UN Convention on the Rights of Persons with Disabilities, and the UN Political Declaration on Universal Health Coverage, to respect patients' rights and ensure that European government policies do not leave ME/CFS patients behind.

Executive Committee, European ME Alliance

Executive summary from 'EMEA survey of ME/CFS patients in Europe: Same disease, different approaches and experiences' Report

by Arild Angelsen and Trude Schei

This survey of ME/CFS patients in Europe has been conducted by the European ME Alliance (EMEA), which gives a voice for people with ME/CFS in Europe and is the European partner for facilitating high-quality biomedical research. This report presents the findings from the survey of more than 11 000 ME/CFS patients. The aim was to compare patients' experiences across countries regarding disease characteristics, course of illness, and access to healthcare and support.

The survey

The data are based on an online survey, conducted in May - August 2021. The questionnaire was translated into 15 languages, and the survey was promoted via patient organisations in European countries. The respondents spanned 44 countries, including responses from a few non-European countries. A total of 11 297 responses were analysed.

The questionnaire covered illness characteristics, factors affecting disease course, therapies tried, and support received from healthcare and personal contacts.

Potential biases due to non-random sampling are acknowledged. Severely ill and undiagnosed patients are likely to be underrepresented. However, the large sample size is viewed as providing useful insights into patients' experiences across European countries.

ME/CFS is a serious and debilitating disease

ME/CFS is typically categorised into four degrees of severity: mild, moderate, severe, very severe It can be argued that the use of the term "mild ME/CFS" is an oxymoron, as even "mild" ME/CFS is a severe disease, with a major loss of function compared to before disease onset. Most patients cannot work and rely heavily on support.

In the survey, 24.0% answered that they had mild ME/CFS, 53.8% had moderate ME/CFS (mostly housebound), 16.0% had severe ME/CFS (mostly bedbound), while 2.4% had very severe ME/CFS (bedbound and in need of continuous care). 3.7% described their severity as "better than mild", while only 0.2% said they had recovered. Strong similarities were found among countries for several factors such as the distribution of degrees of severity, the positive correlation between early onset and disease severity, and the factors associated with a better course of illness, such as coping and support from family and friends.

Almost half report a deteriorating course of illness

Persistent myths exist about ME/CFS being an illness that gradually "burns out". Some patients do indeed get much better or even recover, but most do not. As high-quality prospective studies on typical courses of illness are lacking, large patient surveys such as the present one may provide the best information available. Whether ME/CFS is seen as a temporary or chronic condition has major implications for welfare benefits and other services provided.

In the survey, 46% described mainly deterioration (26% had initial fluctuations and then deterioration, and 20% have experience mainly deterioration), while 24% answered that they had experienced major fluctuation throughout their course of illness. In total, 70% of respondents described either deterioration or large fluctuations. Only 7% reported improvement. Many patients have a severe or very severe degree of ME early on. 33% among the very severely ill had an onset before turning 20 years old, compared with 14% among those with a mild degree.

The health care system fails the ME/CFS patients – and that has serious consequences
3 out of 4 patients (74%) felt they received little or no health care support, while only 1 out of 8 (12%) had experience good or very good support. The dissatisfaction is high across most countries, and even in the best scoring countries (Norway, Iceland and Sweden), about 65% state that they received poor health care support. Yet some differences are notable, indicating that the public approach matters. This is illustrated by the difference found in an otherwise rather homogenous Nordic region. The portion of respondents reporting that they received no help varies from 15-21% in Iceland, Norway and Sweden, to 35% in Finland and more than half (53%) in Denmark. The latter is known for a strong biopsychosocial approach, where ME/CFS is considered a functional illness by the Danish health authority.
On the positive side, patients with a more recent onset or diagnosis are less dissatisfied with the health care provided, which may suggest a modest improvement over time.
While no objective diagnostic tests, verified biomarkers, curative medications or treatments for ME/CFS exist, health care support matters for the management of the symptoms and the improvement of functional capacity, and thus the course of illness. Respondents experiencing good support from the health care system in their country were more likely to report improvement and less likely to report deterioration.

Early diagnostics and disease management critical to improve the course of illness
Long delays in the diagnosis were common, with the diagnostic period (from onset to diagnosis) averaging 6.8 years across Europe and large variations across countries. Men are, on average, diagnosed one year earlier than women. Longer delays were associated with a worse course of illness. The risk of experiencing a course of illness characterised by deterioration is more than 50% higher among those with a late diagnosis (10 years or more) compared with those who received an early diagnosis (within 3 years).
The survey confirms what several studies (with smaller samples) have found: delayed diagnosis is a risk factor for severe disease. Early and sound advice on the management of the disease, including pacing to avoid Post-Exertional Malaise (PEM), improves the prospects.

Patients much more satisfied with support from family, friends and fellow patients
3 out of 5 (60%) stated that they received good or very good support from family members, while 1 out of 4 (25%) had received little or no support. There is a clear relationship between good family support and a lower probability of a deteriorating course of illness (similar to what is observed for health case support); good support in providing daily care and moral support helps staying within the “energy envelope” and avoiding PEM. A similar relationship is observed for support from friends and fellow patients.

Keeping the activity level within the energy envelope (pacing) is the most helpful strategy
Pacing to avoid post-exertional malaise (PEM) was viewed as the most helpful strategy. 3 out of 4 respondents (75%) considered pacing to have a positive or very positive impact on their course of illness. Successful pacing also requires that the patient knows what pacing is, and – critically – have sufficient help and support from the environment to make pacing possible.
While pacing is critical to stabilise the illness, many struggle to find the right balance and adequate support, and experience regular “crashes” and deterioration of their symptoms (PEM). Caring for their family, their financial situation, and stress and worries are factors contributing to the worsening of their symptoms and the overall situation.

Activity-based therapies do more harm than good

With PEM being a characteristic symptom of ME/CFS, meaning that symptoms worsen upon even the slightest physical or mental exertion, therapies focused on increasing activity levels (Graded Exercise Therapy - GET) or changing illness beliefs (Cognitive Behavioural Therapy - CBT) were pe rceived as harmful by most patients. CBT is a highly controversial as a treatment for ME/CFS. In the survey we distinguished between CBT as a cure and CBT as coping. 3 out of 4 patients experienced a (very) negative effect of CBT as a cure, while 1 in 4 had a negative experience of CBT for coping. Only 5% reported that CBT as a cure to have had a positive effect, compared to 38% in the case of CBT for coping. The more severe the illness, the more negative experiences with CBT, both as cure and as coping.

In short, CBT and GET are not only unsuccessful in improving the condition of ME/CFS patients but have a very negative impact on the course of illness. Both the CDC in the US and NICE in the UK have removed advice on CBT and GET from their guidelines for ME/CFS.

The Biopsychosocial Model (BPS) – a failed and harmful approach to ME/CFS

The dire situation for most ME/CFS patients across Europe is, in part, the result of both ignorance and lack of knowledge among health professionals, social workers, and policy makers. Moreover, the biopsychosocial (BPS) model claims ME/CFS to be psychological and linked to dysfunctional illness beliefs, a pathological focus on symptoms, fear of activity and resulting deconditioning. According to this model, the cure is teaching the patient to ignore, or not to focus on symptoms, and “push through” and follow an exercise program with set increments. This approach has not only failed to get support from interventional studies, or from research that finds critical biological anomalies in people with ME/CFS. It also lacks support from patients and has done harm in its promotion of CBT and GET. The model places the responsibility for both having ME/CFS and for recovery squarely on the patient. This may result in a lack of empathy and sympathy from others, both in healthcare and welfare institutions and within the patient’s family.

Conclusions

- The survey highlights profound disability levels and unmet needs among European ME/CFS patients. Findings underscore the urgent priority to recognise ME/CFS as a serious illness and provide better medical care, financial support, and social services.
- Access to medical care and social support varies across Europe, resulting in both a general but dangerous neglect of the illness, with different approaches taken by national health authorities, impacting courses of illness and disease outcomes.
- Therapies involving fixed increases in activity tend to worsen symptoms and risk a deteriorating course of the illness, rather than leading to improvement.
- Early diagnosis, activity management (pacing) and avoidance of over-exertion (PEM) are key to preventing progression to severe disease.

The full report is available in full from this link -
europeanmealliance.org/documents/emeaeusurvey/EMEAMEsurveyreport2024.pdf

World Health Organization
REGIONAL OFFICE FOR Europe

The European ME Alliance has received ‘official Non-State Actor accreditation’ status from WHO’s Regional Office for Europe. This allows EMEA to participate in WHO Europe Regional Meetings and to make official statements on agenda topics of interest – allowing EMEA to increase awareness, recognition, and action on ME by WHO Europe’s 53 member countries.

EMEA Commentary on Pan-European ME Patient Survey

The long-awaited findings of the European ME Alliance Pan-European ME Patient Survey, initiated in 2021, have finally been unveiled, painting a distressing picture of neglect and suffering endured by millions across Europe.

Drawing upon input from over 11,000 individuals, the report
[' **EMEA survey of ME/CFS patients in Europe: Same disease, different approaches and experiences**'] lays bare the systemic failures and institutional neglect that have perpetuated the suffering for far too long and serves to sound the alarm to all stakeholders - including governments, healthcare providers, research agencies, policy makers, and global organisations - of the urgent need for concerted action to address the humanitarian crisis facing people with ME and their families.

The report is an indictment of the status quo. Yet, by shining a spotlight on these issues, the report also seeks to catalyse meaningful dialogue and concrete steps towards redressing the injustices faced by ME patients.

The stark revelations underscore the urgent need for concerted action.

Key messages extracted from the report highlight the severity of the disease, with profound disability levels and unmet needs prevalent among European ME/CFS patients. Despite mounting evidence, healthcare systems continue to overlook ME/CFS as a serious physical illness, failing to provide adequate medical care, financial support, and social services. Incomprehensibly, it is not even recognised in some European countries despite it being listed under the World Health Organization's ICD Codes, ICD-10 G93.3 and (later) ICD-11 8E49 as a neurological condition since 1969.

This is a clear failing of EU healthcare provision and has resulted in the continued violation of patients' human rights, especially to the best attainable health, a topic that EMEA is raising with the EU and WHO Europe.

In response to these findings, the European ME Alliance has proposed a series of crucial actions to be undertaken.

Action 1
EMEA urges all European countries to take immediate action in addressing Myalgic Encephalomyelitis and recognise ME/CFS as a somatic illness, as defined by the World Health Organization (WHO). ME/CFS requires standardised diagnosis and treatment protocols. It is imperative that all European governments swiftly adopt and implement WHO International Classification of Diseases (ICD) codes specific to ME/CFS within their healthcare systems.

Action 2
EMEA urges a pan-European strategy of coordinated, collaborative biomedical research to be initiated across Europe, by all governments, using established or developing Centres of Excellence for ME.
These centres would be adequately funded and perform translational biomedical research that will look at developing a full understanding of the disease and development of effective treatments to mitigate or cure the disease.

Action 3
EMEA urges all European countries to take decisive action in establishing a specialist discipline for ME/CFS by creating academic consultant roles dedicated to ME/CFS and establishing at least one specialist clinical centre aligned with centres of excellence.
Recognising the dangerously insufficient awareness and knowledge of ME/CFS, leading to misdiagnosis, missed diagnosis, or very late diagnosis (with an average delay of 6.8 years across Europe), concerted efforts are needed to include the latest scientific evidence on ME/CFS in medical curricula.
Academic consultant roles specialising in ME/CFS would play a pivotal role in this effort, providing expertise and guidance to ensure the integration of ME/CFS education and research into medical curricula while utilising standardised diagnostic and treatment protocols for ME/CFS.

Action 4
EMEA urges the EU to initiate a pan-European effort to implement accurate and correct recording of cases of ME/CFS, utilising the most up-to-date diagnostic criteria. This is crucial for understanding the full economic burden of the disease.
As demonstrated in previous EMEA 'ME/CFS in Europe' webinars, EMEA has highlighted the feasibility for all European countries to implement SNOMED CT to record properly occurrences of ME/CFS, facilitating accurate prevalence figures.
EMEA welcomes the opportunity to collaborate with EU institutions, European governments, and other stakeholders, leveraging the achievements of the EMEA pan-European survey, to ensure a thorough evaluation of ME/CFS prevalence and its economic ramifications.

By taking these proactive steps, European governments can demonstrate their commitment to addressing the urgent needs of ME patients and improving their quality of life.

While we recognise that it will take time to deliver and implement these recommendations their overarching aim is clear: to drive tangible change and improve the lives of ME patients across Europe.
The urgency of this call to action cannot be overstated and demands immediate attention and intervention.
Failure to act not only perpetuates the suffering of ME/CFS patients and their families but also undermines the integrity of our European healthcare systems.

As part of its ongoing efforts to raise awareness and advocate for change, EMEA will also be hosting a webinar to delve deeper into the report's findings and explore potential pathways forward. This EMEA webinar will, again, bring stakeholders together, exchange ideas, and propose a course towards a more compassionate and inclusive healthcare system for all.

The release of the report from the EMEA Pan-European ME Patient Survey marks a significant moment in the fight for recognition and support for ME patients in Europe and should be used by policy makers to enact change.
It is incumbent upon all stakeholders to heed its findings, heed the call to action, and work collaboratively towards a future where the needs of ME patients are prioritised and their voices are heard.

Background to the survey
The idea for a pan-European survey among ME-patients originated when a patient survey carried out by Norges ME Forening - later supplemented with a similar survey in Denmark - identified strong similarities in the time of onset of the illness among ME-patients. This then led to a discussion and posed other questions on the similarities and differences across European countries.

EMEA performed the pan-European survey in 2021 and, due to resource limitations with analyses, is now publishing the finalised report.

We sincerely thank the authors, Arild Angelsen and Trude Schei, and Norges ME Forening for their support of the survey, analysis of the results, and production of the survey report.

This survey was the first of its kind comparing the situation and experiences of ME-patients across European countries.
As such, it permits cross-country comparison of a number of aspects,

The results from the survey confirm much of what has been known by patients and, indeed, healthcare systems for many years but has been ignored.

European ME Alliance

EME
European ME Alliance

The STOCKHOLM DECLARATION

Response to the 2023 Article in Scandinavian Journal of Public Health

In September 2023, a group calling itself the 'Oslo Chronic Fatigue Consortium' issued a statement [**OR1**] entitled - ***Chronic fatigue syndromes: real illnesses that people can recover from*** - and supposedly concerning ME.
This consortium ventured the notion that - "...the symptoms are more likely to persist if they are perceived as threatening, and all activities that are perceived to worsen them are avoided. We also question the idea that the best way to cope with the illness is by prolonged rest, social isolation, and sensory deprivation. Instead, we propose that recovery is often possible if patients are helped to adopt a less threatening understanding of their symptoms and are supported in a gradual return to normal activities."

One wonders from where this group of 'dedicated' researchers seemed to have arrived at the idea that people with ME are in favour of 'prolonged rest, social isolation and sensory deprivation'.
As though patients had some choice in the matter.
The article conveniently perpetuates the age-old gaslighting of patients by decrying an imagined 'dominant narrative' that - 'the prediction that patients cannot recover and that activity is harmful. This narrative is most commonly expressed by campaigners concerned with chronic fatigue syndrome (CFS)/myalgic encephalomyelitis (ME), but more recently by those writing about post-covid-19 condition '

Of course, this fits the same actual narrative that has been trotted out year after year for decades - and received the lion's share of funding from government agencies (oblivious to the needs and experiences of patients) - that try to prove the efficacy of the biopsychosocial ideology for ME.
If it is not the patients who are causing themselves to be ill by their false beliefs then it is those patient organisations who have tried to do something to support the parlous status of treatment of people with ME in Europe!

People with ME and their carers, along with most ME charities, will already be aware of the work of some of the people associated with this Oslo Chronic Fatigue Consortium.
A handy reference to educate oneself on what has transpired over the years is available in the work of Margaret Williams over many years [**OR3**]- describing some of what patients have had to endure with these false ideologies.

Nowadays the denigration of vulnerable patients is extended to include long covid - grudgingly acknowledged as an 'often referred' to condition.
It would be expected that the European ME Alliance, as one of the oldest of patient organisations, would challenge this *'Oslo Declaration'*.
Therefore, instead of contending this latest misinterpretation of reality it was decided to support a counter-statement organised by researchers who were performing research into this disease or who were experienced in the real world of dealing with this disease.

Last year Dr Jesper Mehlsen - co-chair of the European ME Research and Clinicians Groups (EMERG) - organised a reply to the Scandinavian Journal and EMEA helped coordinate signatories in support of this reply – '**The Stockholm Declaration**' – recognising the genesis of the article

coming from EMEA Sweden member RME, at their conference in that city last year.
The response was submitted to the Journal last year - but no reply was received.
Another response was sent and this will be published shortly - albeit forced into an abbreviated form before being accepted for publication.

The original response, which was authored and co-signed by a long list of researchers, is shown below for all to see.
This letter will be published on the EMEA web site when the abbreviated version has been published in the Scandinavian Journal of Primary Health Care.

References:

OR1 Scandinavian Journal of Primary Health Care Article
https://www.tandfonline.com/doi/full/10.1080/02813432.2023.2235609

OR2 Scientific American 2024: People with Myalgic Encephalomyelitis/Chronic Fatigue Syndrome May Have an “Exhausted” Immune System
https://www.scientificamerican.com/article/people-with-myalgic-encephalomyelitis-chronic-fatigue-syndrome-may-have-an-exhausted-immune-system

OR3 Margaret Williams Articles on ME
https://www.margaretwilliams.co.uk

The Stockholm Declaration

The authors initially claim that the current public narrative on severe, persistent fatigue conditions are “most commonly expressed by campaigners concerned with chronic fatigue syndrome (CFS/myalgic encephalomyelitis (ME/CFS)), but more recently by those writing about post-covid-19 condition”.

These “campaigners” include the Institute of Medicine and their 400-page review of ME/CFS [1] and the recent guidelines by the National Institute for Health and Care Excellence [2].
The prognosis of ME is not a question of “narratives” but of good, transparent, and reproducible empiric evaluation. The results of research are consistent, suggesting low rates of full recovery of between 5-10 % for adults [3-6].

In claiming a lack of specificity in the newer criteria including post exertional malaise (PEM) as a mandatory symptoms [2, 7], the authors are unaware of recent research, finding lower thresholds for lactate production8 and lower oxygen extraction9 during exercise in ME/CFS-patients as contributors to ME/CFS exertional intolerance-and thus to PEM. Other publications have identified mitochondrial dysfunction to be a likely explanation for PEM10 and have shown a correlation between severity and mitochondrial damage [10, 11].

The authors propose an alternative explanation based on questionable scientific evidence that purports to offer realistic hope of improvement and recovery. This scientific evidence comprises a study in 19 female CFS patients and 21 normal healthy controls showing significant changes in a single measure of heart rate variability after cognitive therapy [12], and a study of long-term follow-up in children and young adults13 that may have a much

better prognosis. However, the latter study relies on limited data and is contradicted by a more recent and larger study [14]. Cognitive treatment plays a limited role in ME/CFS as pointed out in the NICE-guidelines [2].
In lumping patients with a diagnosis of ME/CFS in to one non-specific group of patients with fatigue clearly demonstrates the authors' limited clinical and scientific experience in ME/CFS and the fact that several of the manifestations of this disease may be alleviated by targeted treatment [15-17].

The authors state that the approach often recommended by the public narrative of inactivity, isolation, and sensory deprivation, risks worsening symptoms and associated disability. Firstly, such a statement discloses the authors' lack of clinical experience with the range of severity and phenotypes in ME/CFS requiring modifications in the therapeutic approach. Secondly, it is an unsubstantiated claim (no references) and for the potential risks, the authors refer to a meta-analysis on bed rest as a primary treatment in conditions such as acute low back pain, preeclampsia, and myocardial infarction [15] and to an unpublished study on long-term sensory deprivation related to space flights [16].

Sensory deprivation is not a choice but a necessity in ME/CFS-patients due to the general increased sensitivity of the nervous system to afferent input secondary to neuro-inflammation. Symptoms of neuroinflammation are essential in the diagnosis of ME/CFS and different imaging techniques have shown neuroinflammation to be present in several studies [17,18] and that neuroinflammation is a common denominator in ME/CFS and long-COVID19.

In the "Oslo Declaration's" justification for a new perspective, the authors refer to chronic pain, fibromyalgia, and post COVID syndrome for support, but recent advances do not support their narrative.

The "Oslo Declaration" is flawed, and the dismissal of biological evidence as non-specific associations is bewildering, with the authors seeking to replace it with a biopsychosocial model entirely based on associations.
A recent study in fibromyalgia has demonstrated that patient autoantibodies mediate the sensory, motor, and anatomical symptoms and signs that patients present with [20]. Similarly, studies have revealed pathophysiological mechanisms including immune cell dysregulation and altered cortisol levels in post COVID patients [21].

The authors claim "After 40 years of research into CFS/ME … neither a specific biological defect or pathology, nor a specific biomarker, has been identified".

It is estimated that at least 10,000 scientific papers have been published on ME/CFS and several distinct biological changes have been discovered resulting in targeted interventions and thorough descriptions of the pathobiology of ME/CFS [22, 23].
In opposition to the vast amount of biopathological evidence, the authors refer to a publication where the initial part of the summary reads:

"The basic assumption underlying the model presented here is that the brain makes sense of the internal state of the body by being sensitive to statistical regularities in its own neural activity" [24]. The publication title seems to state the validity of this concept by "Taking the inferential leap" perhaps not knowing that inferring denotes either a conclusion based on known facts or the act of passing from statistical sample data to generalization. The authors fail to provide any of these.

Conclusion:
The “Oslo Declaration” epitomises the dangers of extrapolating findings from a small under-powered, narrowly focused study with data from unrelated studies (disorders) to explain a complex multi-factorial disease comprising different clinical subtypes that ME/CFS represents.

To quote the American literary critic HL Mencken:
“For every complex problem there is an answer that is clear, simple, and wrong.”

References:

1. Institute of Medicine. Beyond myalgic encephalomyelitis/chronic fatigue syndrome: redefining an illness. Washington, D.C: National Academies Press; 2015.
2. National Institute for Health and Care Excellence. Myalgic encephalomyelitis (or encephalopathy)/chronic fatigue syndrome: diagnosis and management. 2021
3. Cairns R, Hotopf M. Occup Med (Lond). 2005 Jan;55(1):20-31.
4. Wilson A, et al. BMJ. 1994 Mar 19;308(6931):756-9.
5. Andersen MM, et al. J Psychosom Res. 2004 Feb 1;56(2):217–29.
6. Ghali A, et al. Diagnostics 2022, 12, 2540.
7. Carruthers BM, et al 2011 Oct;270(4):327-38.
8. Lien K, et al. Physiol Rep. 2019 Jun;7(11): e14138.
9. Joseph P, et al. Chest. 2021 Aug;160(2):642-651.
10. Booth NE, et al. Int J Clin Exp Med. 2012;5(3):208-20.
11. Tomas C, et al (2020) PLoS ONE 15(4): e0231136.
12. Hansen AL, et al. J Psychophysiol. 2013;27(2): 67–75
13. Rowe KS. Front Pediatr. 2019; 7: e00021.
14. Josev EK, et al. J Clin Med. 2021 Aug 16;10(16):3603.
15. Allen C, et al. Lancet. 1999;354(9186):1229–1233.
16. Arias D, Otto C. 2011 http://www.medirelax.com/v2/wp-content/uploads/2013/11/F.-Scope-of-Sensory-Deprivation-for-Long-Duration-Space-Missions.pdf
17. Nakatomi Y et al.J Nucl Med 2014; 55:945–950 DOI: 10.2967/jnumed.113.131045
18. Mueller C, et al. Brain Imaging and Behavior 14, 562–572 (2020).
19. Tate W, et al. Front Neurol. 2022;13: 877772.
20. Goebel A, et al.: J Clin Invest. 2021;131(13):e144201.
21. Klein J, et al. Nature (2023). https://doi.org/10.1038/s41586-023-06651-y
22. Sotzny F, et al. Autoimmunity Reviews Volume 17, Issue 6, June 2018, Pages 601-609
23. Stanculescu D, Bergquist J. Front Med (Lausanne). 2022 Mar 8;9:818728.
24. Fedorowski, A., Sutton, R. Nat Rev Cardiol 20, 281–282 (2023).
25. Franke, C., Berlit, P. & Prüss, H. Neurol. Res. Pract. 4, 28 (2022).
26. Möller M, et al.. J Intern Med. 2023 Sep 27.

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16th International ME Conference - Presenters

Professor Simon Carding

Research Leader, Quadram Institute Bioscience, Norwich Research Park, UK

Professor Simon Carding Professor of Mucosal Immunology at University of East Anglia and Institute of Food Research. Following his PhD at London he held postdoctoral positions at New York University School of Medicine, New York and at Yale University School of Medicine, New Haven, USA. He then moved to the University of Pennsylvania, Philadelphia, USA as Assistant and later Associate Professor. He joined University of Leeds as Professor of Molecular Immunology in the Institute of Molecular and Cellular Biology in 1999. His scientific interests are in understanding how the immune response in the gut functions and in particular, is able to distinguish between the commensal microbes that reside in the gut and environmental microbes that cause disease, and in the mechanisms by which the body's immune system no longer ignores or tolerates commensal gut bacteria and how this leads to immune system activation and inflammatory bowel disease.

Dr Vicky Whittemore

Program Director in the National Institute of Neurological Disorders and Stroke at the National Institutes of Health in the United States

Dr. Whittemore is a Program Director in the Synapses, Channels and Neural Circuits Cluster. Her interest is in understanding the underlying mechanisms of the epilepsies including the study of genetic and animal models of the epilepsies.

Dr. Whittemore received a Ph.D. in anatomy from the University of Minnesota, followed by post-doctoral work at the University of California, Irvine, and a Fogarty Fellowship at the Karolinska Institute in Stockholm, Sweden.

She was on the faculty of the University of Miami School of Medicine in The Miami Project to Cure Paralysis prior to working with several non-profit organizations including the Tuberous Sclerosis Alliance, Genetic Alliance, Citizens United for Research in Epilepsy (CURE), and the National Coalition for Health Professional Education in Genetics (NCHPEG). She also completed a four-year term on the National Advisory Neurological Disorders and Stroke Council.

Recently Dr Whittemore completed the NIH Roadmap for ME/CFS project having taken a leading role in developing the programme and project management.

Dr Avindra Nath, NIH, USA

NIH National Institute of Neurological Disorders, Bethesda, Maryland, USA

Dr. Nath received his MD degree from Christian Medical College in India in 1981 and completed a residency in Neurology from University of Texas Health Science Center in Houston, followed by a fellowship in Multiple Sclerosis and Neurovirology at the same institution and then a fellowship in Neuro-AIDS at NINDS.

He held faculty positions at the University of Manitoba (1990-97) and the University of Kentucky (1997-02).

In 2002, he joined Johns Hopkins University as Professor of Neurology and Director of the Division of Neuroimmunology and Neurological Infections.

He joined NIH in 2011 as the Clinical Director of NINDS, the Director of the Translational Neuroscience Center and Chief of the Section of Infections of the Nervous System.

His research focuses on understanding the pathophysiology of retroviral infections of the nervous system and the development of new diagnostic and therapeutic approaches for these diseases.

Professor Lutz Schomburg

Charité University Hospital, Germany

Prof. Dr. Lutz Schomburg received his training in biochemistry at the University of Hanover, Germany. He completed internships at the Max Planck Institute for Biochemistry in Munich, the Waite Agricultural Research Institute, Adelaide, Australia, and King's College London, UK.

He worked at the Max Planck Institute for Experimental Endocrinology in Hannover, Germany, and received his PhD in 1994. As a postdoctoral fellow, he worked at Brigham and Women's Hospital, Harvard Medical School, Boston, USA, with Prof. William W. Chin and at Julius Maximilians University, Würzburg, Germany, with Prof. Josef Köhrle.

He is currently President of the International Society for Selenium Research and Deputy Director of the Institute for Experimental Endocrinology at Charité Universitätsmedizin Berlin.

Professor Nancy Klimas

Director, Institute for Neuro Immune Medicine, Professor of Medicine, Department of Clinical Immunology, College of Osteopathic Medicine, Nova Southeastern University

Professor Emerita, University of Miami

Nancy Klimas, MD, has more than 30 years of professional experience and has achieved international recognition for her research and clinical efforts in multi-symptom disorders, Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS), Gulf War Illness (GWI), Fibromyalgia, and other Neuro Immune Disorders. She is immediate past president of the International Association for CFS and ME (IACFS/ME), a professional organization of clinicians and investigators, and is also a member of the VA Research Advisory Committee for GWI, the NIH P2P CFS Committee, and the Institute of Medicine ME/CFS Review Panel. Dr. Klimas has advised three Secretaries of Health and

Human Services, including Kathleen Sabelius, during her repeated service on the Health and Human Services CFS Advisory Committee. Professor Klimas has been featured on Good Morning America, in USA Today and the New York Times.

Dr Rob Wüst

Vrije University Amsterdam, Netherlands

Rob Wüst is currently assistant professor at the Department of Human Movement Sciences at the VU University Amsterdam. He received a PhD in Physiology from the Manchester Metropolitan University and VU University Amsterdam, and completed postdoctoral training at the University of Leeds and Amsterdam University Medical Center. His research interest is in cardiac and skeletal muscle metabolism and mitochondrial physiology, in health and disease.
Rob uses research methods, ranging from MR imaging and spectroscopy, fluorescence microscopy and cellular and molecular techniques.

Professor Maureen Hanson

Cornell University, USA

Maureen Hanson is Liberty Hyde Bailey Professor in the Department of Molecular Biology and Genetics at Cornell University in Ithaca, NY. Previously she was on the faculty of the Department of Biology at the University of Virginia in Charlottesville and an NIH NRSA postdoctoral fellow at Harvard, where she also completed her Ph.D. degree.
While most of her prior research has concerned cell and molecular biology in plant cells, she began a research program on ME/CFS after noting at a 2007 IACFS meeting the paucity of molecular biologists studying the illness.
Her lab was part of the 2012 multicenter study organized by Ian Lipkin's group at Columbia University to assess the actual role of XMRV in ME/CFS.
Dr. Hanson has a current project to examine the microbiome of ME/CFS patients and controls, in collaboration with Dr. Ruth Ley (Cornell Microbiology) and Susan Levine, M.D. (Manhattan, NY). Dr Levine is also collaborating with Dr. Hanson on an immune cell gene expression project that involves Dr. Fabien Campagne and Dr. Rita Shaknovich at Weill Cornell Medical School in New York City.
Dr. Hanson's third project concerns analysis of blood samples from individuals performing a two-day cardiopulmonary exercise test at Ithaca College under the supervision of Dr. Betsy Keller.

Dr Irina R Rozenfeld / Dr Violetta Renesca

Institute for Neuro-Immune Medicine, Depart. of Clinical Immunology, Dr. Kiran C. Patel College of Osteopathic Medicine, Nova Southeastern University, USA

Irina Rozenfeld is a Board Certified Nurse Practitioner committed to the health of her patients. Irina emphasizes patient-practitioner relationships, critical thinking and patient education to develop an optimal treatment plan and achieve sustainable results. She obtained her Bachelor's of Science degree from Nova Southeastern University and a Master's of

Science in Nursing Studies from Florida International University. Additionally, she has obtained a Master's degree in Integrative Medicine from George Washington University School of Medicine and a Doctoral degree at the University of North Florida. Before joining the INIM, Irina worked for more than twenty years as a physician assistant in Russia. After relocating to Florida, she worked as a Clinical Research Nurse at Nova Southeastern University. Irina obtained an international certification as a Clinical Research Professional and has been involved in research in many roles. Irina teaches at Nova Southeastern University College of Nursing as an adjunct faculty.
Irina's focus at the INIM includes myalgic encephalomyelitis/chronic fatigue syndrome, chronic infections, vector-borne illnesses, metabolic syndrome, chronic pain, environmental issues, detoxification and auto-immune diseases and her research interests include neuroinflammation, biotoxin exposure, detoxification, immune dysfunction, the stress response, neuroendocrinology and implementation of integrative medicine modalities.

Violetta Renesca is a Board Certified Adult Nurse Practitioner focusing on functional and integrative approaches to treat patients with complex neuro-inflammatory conditions. She obtained a Bachelor of Science degree in Nursing from Nova Southeastern University and worked as a staff nurse and charge nurse on the Progressive Care Unit at Broward Health.
After receiving her Master's Degree from Florida International University as an Adult Nurse Practitioner, she joined a large multi-specialty geriatric center in Fort Lauderdale. Violetta obtained a Doctorate in Nursing Practice from the University of North Florida.
Violetta's focus at the INIM includes myalgic encephalomyelitis/chronic fatigue syndrome, Gulf War illness, chronic infections, metabolic syndrome, chronic pain, environmental illness, detoxification, and autoimmune diseases. As a certified practitioner for the Institute for Functional Medicine, she works with patients to create personalized treatment plans that addresses root causes of chronic illness. She is also the Director of the Veterans Clinic where she sees patients with Gulf War illness. Additionally, she is a member of the American Association of Nurse Practitioners as well as the Institute for Functional Medicine.

Dr Jesper Mehlsen

Copenhagen University Hospital, Denmark / EMERG

Dr Jesper Mehlsen graduated as a medical doctor in 1979 and finished his specialist training in 1990. He has published more than 140 scientific papers in peer reviewed journals, mainly on the autonomic nervous system and more recently on complex diseases possibly resulting form HPV-vaccination.
For more than 35 years, he has worked clinically and in research with dysfunction of the autonomic nervous system. Such dysfunction may lead to symptoms from a number of different organs often dominated by diminished control of blood pressure and heart rate. Over the past 5 years, he has worked clinically and in research with patients who suspect side effects due to HPV vaccination to be the cause of a number of symptoms, common to those seen in chronic ME.
Dr Mehlsen is co-chair of the European ME Research Group (EMERG).

Dr Dezső Modos,

Imperial College London, UK

Dr Dezső Modos is an Imperial College Research Fellow in the Systems Medicine division of the Department of Metabolism, Digestion and Reproduction.
He completed his medical degree at Semmelweis University and a minor in bionics at the Pázmány Péter Catholic University. Later he obtained his PhD at the Semmelweis University on network biology.
His primary focus was the intracellular signalling network in cancer and understanding the role of paralogues in signalling.

After his PhD he moved to Cambridge and learned cheminformatics. He used network biology to understand and predict compound synergy in cancer. Here he also learned about various cheminformatic techniques, which he is adapting for his fellowship. The current inflammatory bowel disease (IBD) therapies maintain remission only in around 30% of cases forming therapeutic celling. His fellowship aims to find the right drug to the right patient in IBD. Similarly, we can use the targets of IBD drugs as a source node and build a drug specific network footprint. The comparison of patient-specific disease and drug networks, much like connectivity mapping, can aid in identifying the correct drug for each patient. Single nucleotide polymorphisms (SNPs) in inflammatory bowel disease are often in the non-coding region of the genome. He and his colleagues developed a tool called iSNP (https://github.com/korcsmarosgroup/iSNP) which can map these single nucleotide polymorphisms to regulatory regions and through that SNP affected genes.
From the SNP affected genes, patient specific signalling networks, individual pathogenetic pathways and patient specific network footprints can be constructed.
Already, he has used this method to understand ulcerative colitis pathogenesis.

Precision Life, UK

PrecisionLife is a precision medicine company focused on finding better, more personalised treatment options for complex chronic diseases such as Alzheimer's, diabetes, and endometriosis. It analyses large amounts of data from sources such as clinical trials, patient charities, biobanks, and research organisations to stratify, or segment, patients into clinically relevant subgroups. It can then identify potential drug targets based on the cause of each subgroups' condition and help healthcare providers diagnose these conditions more accurately and effectively.

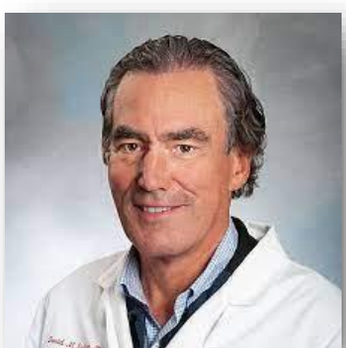
PrecisionLife received an Advancing Precision Medicine grant from Innovate UK to investigate the causes of ME and long Covid. One of the first project objectives will be for PrecisionLife to use its precision medicine approach to identify the biological mechanisms driving disease in different groups of patients.

The results will be used to create the first predictive diagnostic tools and risk models that can rapidly triage patients presenting to a doctor with potential ME/CFS or long Covid symptoms.

Dr Gunnar Gottschalk,
Simmaron Research Inc., USA

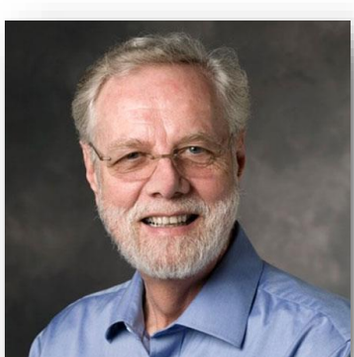
Carl Gunnar Gottschalk completed his BS in biology at Sierra Nevada College and MS in Biotechnology at Rush University Medical Center. He received his Ph.D. in Neuroscience from Rush University Medical Center. Prior to attending graduate school, Dr. Gottschalk was the lead research coordinator for Sierra Internal Medicine and was responsible for the execution of several large multi-centered investigations in ME/CFS.
Dr. Gottschalk has been with Simmaron Research since its formation. In 2020, he was named the Foundation's Executive Director. Since then, Dr. Gottschalk has served a dual role in the organisation as the Executive Director and Principal Investigator.
At present, Dr. Gottschalk is the PI for Simmaron's multi-centered clinical trial of Rapamycin in ME/CFS. His laboratory is located at the Indiana Center for Biomedical Innovation (ICBI) on the campus of the Indiana University Methodist Hospital in Indianapolis, IN.

Dr David Systrom,
Assistant Professor of Medicine, Brigham and Women's Hospital, Harvard Medical School, USA



Dr. David M. Systrom is a physician at Brigham and Women's Hospital. He is also an assistant professor of medicine at Harvard Medical School where he directs the Dyspnea Clinic and the Advanced Cardiopulmonary Exercise Testing Program. He received his medical degree from Dartmouth Medical School (now known as Geisel School of Medicine).
He has been on the Harvard faculty for over 35 years. He has used invasive cardiopulmonary exercise testing to investigate mechanisms underlying fatigue and orthostatic intolerance in ME/CFS and PASC. His recent work suggest commonality between the two, in particular neurovascular dysregulation and related hyperventilation underlying symptoms during exercise. He is the Principal Investigator of an ongoing $8 million study of limb skeletal muscle mitochondrial dysfunction and just completed the first ever randomised clinical trial of pyridostigmine, both in ME/CFS.

Professor Ron Davis
Professor of Biochemistry and Genetics at the Stanford School of Medicine in Stanford, California, USA



Ronald W. Davis, Ph.D., is a Professor of Biochemistry and Genetics at the Stanford School of Medicine in Stanford, California.
He is a world leader in the development of biotechnology, especially the development of recombinant DNA and genomic methodologies and their application to biological systems. At Stanford University, where he is Director of the Stanford Genome Technology Center, Dr. Davis focuses on the interface of nano-fabricated solid state devices and biological systems. He and his research team also develop novel technologies for the genetic, genomic, and molecular analysis of a wide range of model organisms as well as humans. The team's focus on practical application of these technologies is setting the standard for clinical genomics.

#BRMEC13 PROGRAMME – Day 1 26th June 2024		
Arrival Refreshments		
08:55	Welcome to *BRMEC13*	Chair: Simon Carding, *Quadram Institute*
Chronic Infection Aetiology Starter (viral / non viral): Chair Fridbjorn Sigurdsson		
09:10	How infectious diseases (IDs) together with environmental and genetic factors trigger the onset of noncommunicable diseases (NCDs)	Thomas Vogl, *Medical University of Vienna, Austria*
09:35	Underlying Mechanisms of Long Covid	David Price, Cardiff University
10:00	ME/CFS and Long Covid: NIH study	Avindra Nath, NIIH
10:25	A Systems Biology Approach to ME / AI and Phenotypes	Tamas Korcsmaros, Imperial College London
10:45	Chaired Discussion	Discussion
11:05 BREAK		
Physiology: Chair Jonas Bergquist		
11:40	Acute and chronic infections in patients with post–infectious syndromes	Branislav Milovanović, Institute for cardiovascular diseases-Dedinje Department of Cardiology, Serbia
12:05	Insights from Invasive Cardiopulmonary Exercise	David Systrom, Harvard Medical School
12:30	Diagnostic and potential relevance of autoantibodies for fatigue symptoms	Lutz Schomburg, Charite Berlin
12:55	Dysautonomia and Results from ICOSS	Markku Partinen, University of Helsinki
13:15	Chaired Discussion	Discussion
13:30 LUNCH		
Nervous System and Neuroinflammation: Chair Jon Brooks		
14:30	Chair: Opening	Jon Brooks, UEA, UK
14:35	fMRI Observations from NIH Intramural Study	Avi Nath, NIH
15:00	Innate immune activation in the whole body and CNS of ME patients using PET/MRI	Michelle James, Stanford University School of Medicine, USA
15:25	Using fMRI and PET imaging to study neuroinflammation in ME	Michael van Elzakker, Harvard Medical School & Massachusetts General Hospital/Tufts University
15:50	Chaired Discussion	Discussion
16:10 BREAK		
Metabolism Body and Cell *Chair: Rikke Olsen*		
16:35	Ancestral allele of DNA polymerase gamma modifies antiviral tolerance	Yilin Kang, Suomalainen-Wartiovaara Group, University of Helsinki
17:00	Mitochondrial dysfunction in ME/CFS	Rob Wust, Virje University, Amsterdam,
17:25	Genetic predisposition to metabolic disturbances in individuals severely affected by long-COVID	Kristoffer Hansen, Aarhus University
17:50	Chaired Discussion	Discussion
18:00	Adjourn	

#BRMEC13 PROGRAMME – Day 2 27th June 2024		
Arrival Refreshments		
08:55	Welcome to *BRMEC12 Day 2*	Chair: Simon Carding, Quadram Institute
Immune System Primary and Secondary *Chair: Eva Untersmayr-Elsenhuber ,* Medical University of Vienna		
09:05	Chair: Opening	Eva U, Medical University of Vienna
09:10	Regulatory T cells in the brain	Adrian Liston, University of Cambridge
09:35	tbc	Simon Carding, Quadram Institute
10:00	Plasma Proteomics in Response to Exercise	Maureen Hanson, Cornell University
10:25	Autoantiboidies in ME and Long Covid	Nancy Klimas, Nova Southeastern University
10:50	tbc	Johanna Rohrhofer, Medical University of Vienna
11:05 BREAK		
11:35	Discussion	Discussion
Epigenomes and Transcriptomes: Chair Elisa Oltra, Univ. of Valencia		
12:00	Single cell transcriptomics to reveal the role of thymus in autoimmune diseases, and potential implications for ME/CFS	Benedicte Lie, University of Oslo, Norway
12:25	Single-cell transcriptomics of the immune system in ME/CFS	Andrew Grimson, Department of Molecular Biology and Genetics, Cornell University, USA
12:50	Human endogenous retrovirus expression in the immune system of ME/CFS	Karen Gimenez-Orenga, Department of Pathology, Universidad Católica de Valencia San Vicente Mártir, Spain
13:10	Chaired Discussion	Discussion
13:30 ***LUNCH***		
14:35	NIH / CDC /EMERG Phenotypes	Beth Unger, CDC
14:55	Longitudinal Study of ME Patients	Leonard Jason, Chicago De Paul University, USA
15:10	Identifying potential candidates for clinical trials using AI network medicine	Wenzhong Xiao, Harvard Medical School, USA
Clinical Trials: Chair Jesper Mehlsen, Copenhagen University Hospital, Denmark / EMERG		
15:30	Clinical Trials Design and Standards for ME	*Various Speakers building standards for clinical trials* NIH / CDC / EMERG
16:00 BREAK		
16:30	Clinical trials	*Continued + action plan + document*
Ad-hoc Presentations:		
17:00	Involvement of BH4, NO and Oxidative Stress in ME/CFS	Ron Davis, Stanford School of Medicine in Stanford, USA
17:25	Clinical Trial of Rapamycin	Gunnar Gottschalk, Simmaron Research Inc., USA
17:50	Flash Talks	Various speakers
18:00 *Summary Day 2 – Chaired Discussion*		
1815 Adjourn - *Discussions continue at the informal Researchers' Evening*		

#IIMEC16 PROGRAMME – 28th June 2024 Time		
Arrival Refreshments		
09:00	Updates on research into ME	Chair: Professor Simon Carding, *Quadram Institute, UK*
09:15	NIH Roadmap - Future Directions	Dr Vicky Whittemore, NIH, USA
09:40	Insight into mechanisms of ME/CFS	Dr Avi Nath, NIH, USA
10:05	Autoantiboidies in ME	Professor Lutz Schomburg Charité University Hospital, Germany / EMERG
10:30 BREAK		
11:00	Explaining skeletal muscle-related symptoms in patients with ME/CFS: from skeletal muscle to exercise immunology	Dr Rob Wüst, Vrije University Amsterdam, Netherlands
11:25	Immune Exhaustion in ME	Professor Maureen Hanson, Cornell University, USA
11:50	Comparing Long Covid and ME Phenotypes	Professor Nancy Klimas, Nova Southeastern University, USA
12:15	Discussion	Panel discussion
12:25 LUNCH		
13:35	Treating ME in USA - A Clinician's Approach	Dr Irina R Rozenfeld / Dr Violetta Renesca Nova Southeastern University, USA
14:00	Treating ME in Europe - A Clinician's Approach	Dr Jesper Mehlsen Copenhagen University Hospital, Denmark / EMERG
14:25	Diagnostic Criteria and Challenges How to manage severe ME in hospital/care environment	Panel discussion
14:45 BREAK		
15:15	Precision medicine in complex diseases and AI	Dr Dezső Modos, Imperial College London
15:40	Identifying Genetic Risk Factors for ME/CFS and Long COVID: First Genetic Associations, Novel Targets, Actively Protective Biology, Diagnostics and Repurposing Opportunities	Precision Life, UK
16:05	Update on Clinical Trial of Rapamycin in ME	Dr Gunnar Gottschalk, Simmaron Research Inc., USA
16:20	Clinical Trial of LDN and Mestinon	Dr David Systrom Harvard Medical School, USA
16:45	Involvement of BH4, NO and Oxidative Stress in ME/CFS	Professor Ron Davis Stanford School of Medicine in Stanford, USA
17:15	Plenary	*Panel Discussion*
17:30	Adjourn	