



Telesphore Pharma

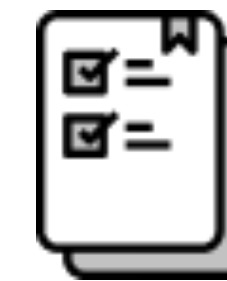
Therapeutic Solutions for Chronic Low Grade Inflammatory Disorders
With a First In Class Treatment for ME/CFS and a group of Post-Covid-19 'Long Haulers'

Business Pitch Deck

Manuel Gea & Thanos Beopoulos



Agenda



- Telesphore Pharma Mission
- Chronic Low Grade Inflammatory Disorders
- A project born from BMSystems
- Telesphore Pharma Leading Team
- Our Pioneering Project: ME/CFS
- Why ME/CFS & Why Now?
- The Covid-19 Accelerating Factor



Our mission is to provide therapeutic solutions for Chronic Low Grade Inflammatory Diseases (CLGIDs)



DIAGNOSIS



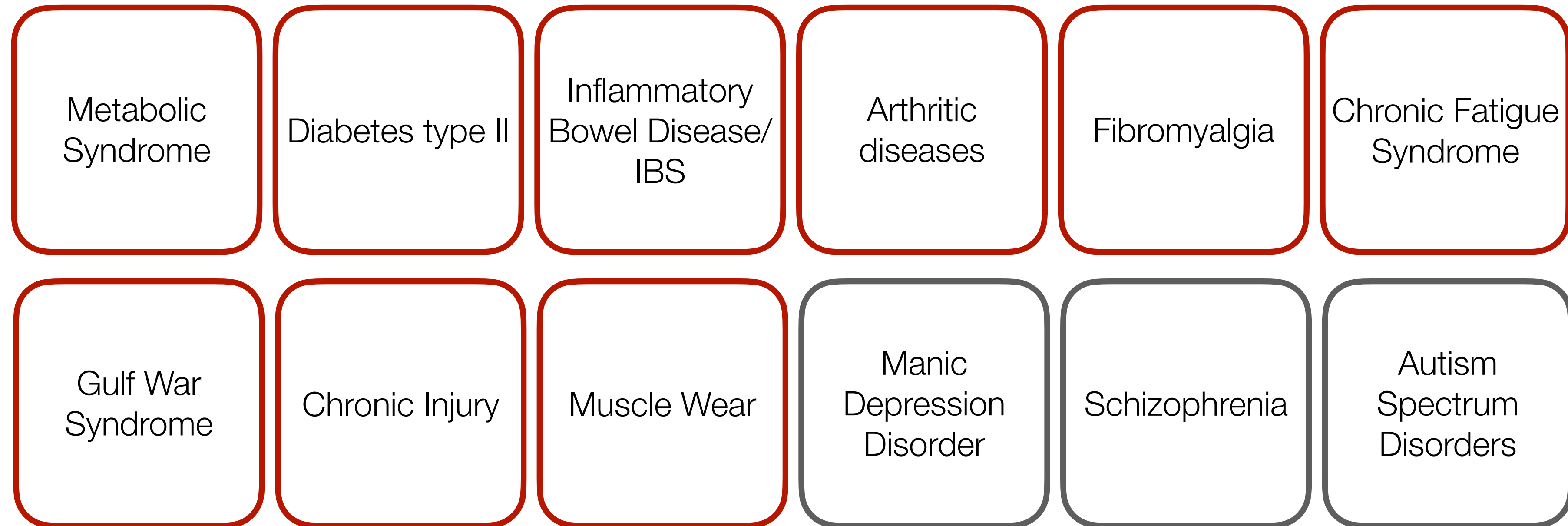
MONITORING



TREATMENT



CLGIDs include **Somatic** and Psychiatric diseases



And can lead to
autoimmune, cardiovascular and pulmonary diseases

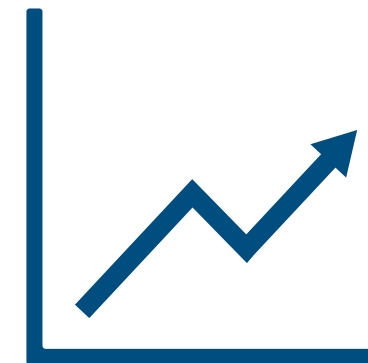


Chronic Low Grade Inflammatory Disorders are:



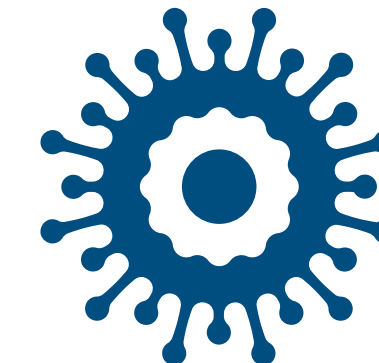
The leading cause of death worldwide

causing with 3 out of 5 deaths



Anticipated increase for the next 30 years

WHO predicts their prevalence to increase persistently due to genetic, environmental, societal and infectious factors.



Set to surge due to the COVID-19 pandemic

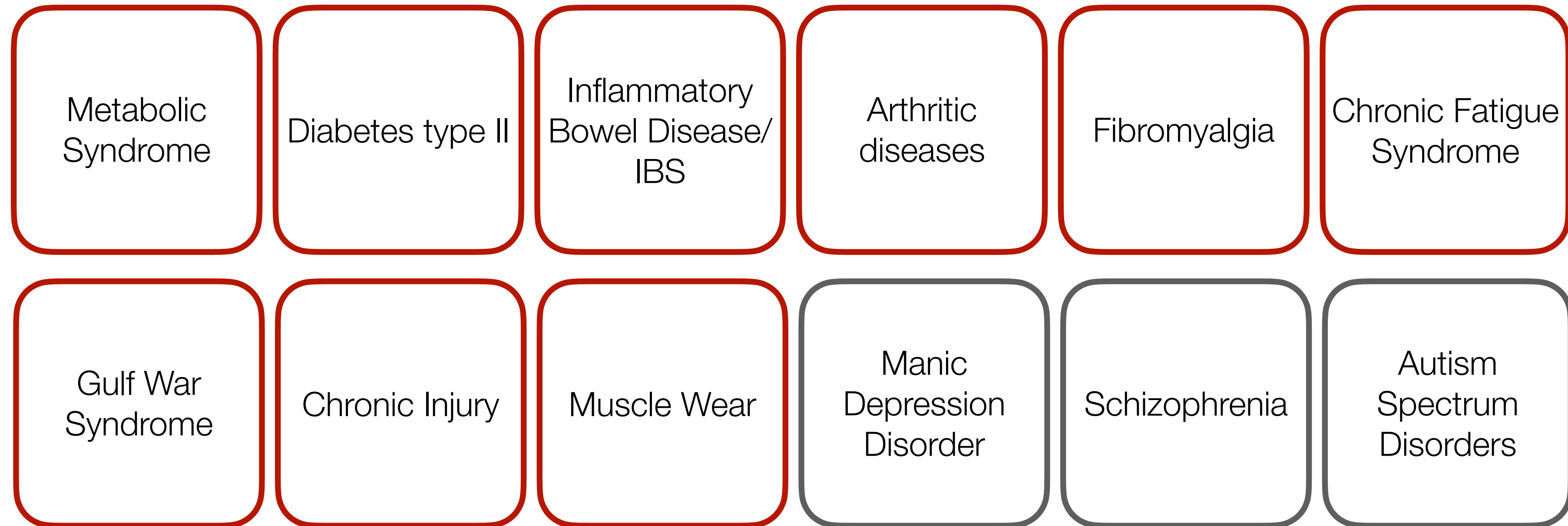
Sars-CoV-2 is already causing severe and chronic inflammatory syndromes.



There is no early diagnosis
no effective treatment
no cure.



We've created pathological models for:



thanks to our long-time expertise
with Bio Modeling Systems



We've identified potential therapeutic solutions for:



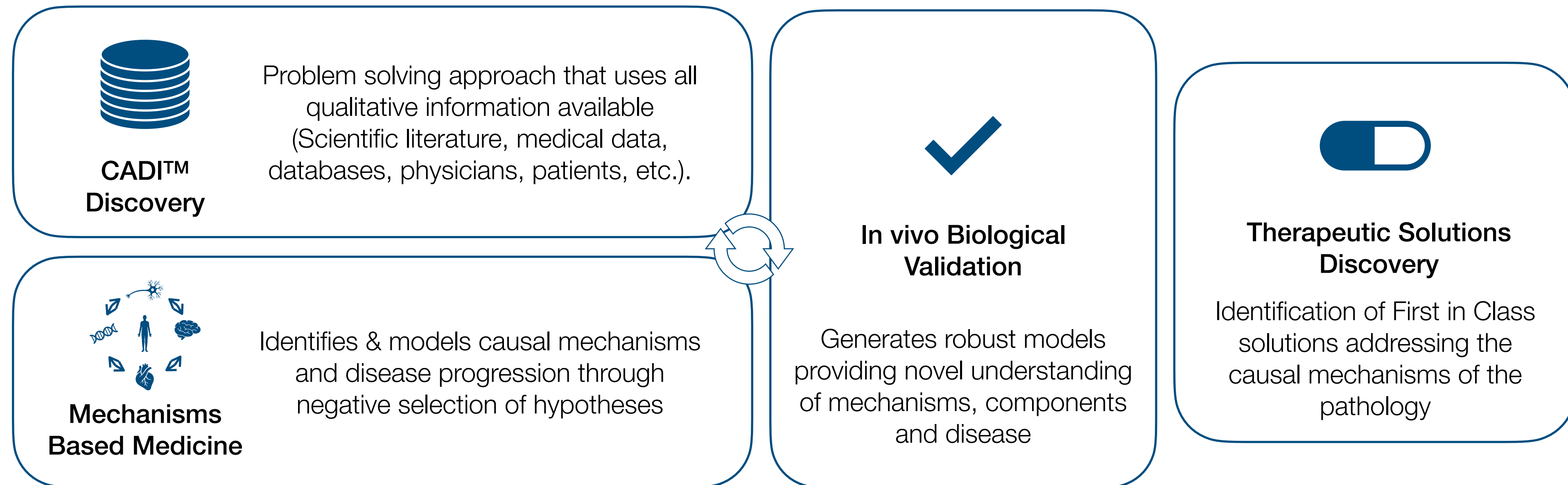
and we've identified resilient First in Class treatments for:



that consist the basis of the therapeutic treatment of the other pathologies



At BMSystems, we generate novel understanding of diseases



BMSystems at a glance

Independent Private Company incorporated in 2004. 100% owned by its founders

Profitable since 2006, thanks to our recurrent clients

100% biology driven company focused on discovery and critical high impact decisions making

A unique proprietary **CADI™** Knowledge Database of mechanisms & interactions

Markets: Pharma, Cosmetics, Nutrition, Health Technologies, Connected health

Highly productive 24 vFTE* of which 9 vFTE on CADI™ Discovery programs only

Strong & long term strategic R&D collaborations

Dual business model: Contractual or Collaborative R&D programs



BMSystems collaborative network



BMSystems CADI™ discovery models were the laureates of two awards: Bio IT World Best Practice Award 2009 & European Commission 2010 as “State-of-the-Art Systems Biology applications in Medicine”.



BMSystem's therapeutic pipeline

Program Name	Indication	Pre-clinic	Phase I	Phase 2a	Phase 2b	Comp. Use
COMBO-THERAPIES						
CADI-T1011	Multi-resistance infectious diseases	Ready	Ready			Started
CADI-T1031	CFS/ME low-grade chronic inflammation					
CADI-T1032	Gulf War Syndrome					
CADI-T2011	Attenuation of the Core Symptoms of Autism		Ready			
CADI-T3021	Parkinson's Disease		Ready			
CADI-T4021	Attenuation of Developmental Consequences of Children Malnutrition		Ready			
CADI-T4031	Metabolic Syndrome		Ready			
Internal Program Name	Indication	Pre-clinic	Clinic			
COMBO-DIAGNOSTICS						
CADI-D3041	Alzheimer's Disease Early Diagnostics		Ready			
Internal Program Name	Program Domains	Partners	CADI™ vers. 0	Ind. Valid.	Conf/Patent/ Pub.	First Proof of Concept (POC)
CADI™-BIOPRODUCTION						
CADI-B8011	Program Synthons (16 molecules study)	ARD-IBT-L'Oréal-Arkema-Solvay				Completed
CADI-B8021	Full Human Protein Glycosylation in yeast	Open		Ready		



BMSystems' outstanding operational PoC examples



World's first in vivo validation of Creutzfeldt-Jakob's disease mechanisms

BMSystems/CEA collaborative research in neurodegenerative diseases was awarded for the first in vivo validation of the mechanisms of Creutzfeldt-Jakob disease pathogenesis & progression (Bio IT World Best Practice Award 2009 and European Commission 2010).



Pherecydes-Pharma, BMSystems' first therapeutic spin-off.

Novel anti-bacterial, nano-agents biotherapies technology using phages. Pherecydes Pharma develops innovative and adaptive solutions to fight multi-resistant bacterial infections. Compassionate use success.



CEA/BMSystems exclusive license to Theranexus, a CEA's spin-off.

Our collaborative research in psychiatric and neurological disorders, led to the co-owned worldwide patent WO20102913 exclusively licensed to Theranexus for the treatment of CNS disorders.



Telesphore Pharma leading Team

An experienced and multidisciplinary leading team **with a robust experience in ME/CFS**



François Iris
Founder & Chief
Scientific Officer

Geneticist, physiologist & molecular biologist. 40 years of experience in life sciences in academia and industry : Dept. of Medicine University of Otago, The Christchurch School of Medicine (NZ) Millennium Pharmaceuticals' (USA) collaborator of Nobel Laureate Prof. Jean Dausset. Inventor of CADI™ and of new technologies in molecular biology. MRC Overseas fellow, Member of H.U.G.O., Wellcome Trust, and other. Chairman, CSO & CTO of BMSystems.



Manuel Gea
Founder & Chief
Executive Officer

Pharma operations: 30 years of experience in IT and life sciences. Scientific Engineering Degree from Ecole Centrale Paris. Various experiences R&D and business from consumer goods Industry to cosmetics, biotechnology & pharmaceutical companies: Colgate-Palmolive McKinsey, Boehringer Ingelheim, HemispherX Biopharma (ME/CFS, Pherecydes-Pharma, BMSystems, and other. Vice-President & CEO of BMSystems.



Thanos Beopoulos
Founder & Chief
Development Officer

Biologist - Biochemist with a PhD in Biotechnology from INA-PG, France. 11 years of experience in metabolic engineering at CNRS, INRA & MIT. Predictive biological models developer for identifying therapeutic mechanisms for (auto) immune, inflammatory, neurological, metabolic and cancer-related pathologies. Integrative Biology director of BMSystems.



Dr. Gérard Dine
Founder & Chief
Medical Officer

Physician, biologist. 35 years of experience in clinical and medical research. Former Head of hospital's Hematology Dept. Former President of the Institute for Sports Medicine; IRMES - Institute for Research in bio Medecine and Epidemiology of Sport. Author: Biological monitoring of the athlete: Biological measurements, pathologies, biological passport of the athlete, genomics. CMO BMSystems. ME/CFS medical experience.



Isabelle Fornasieri
Founder & Member of
the Scientific board

ME/CFS Expert: Senior Lecturer, University of Strasbourg, Faculty of Psychology. Member of the Scientific Council of the French Association for Chronic Fatigue (ME/CFS) 1991: Doctorate University of Strasbourg 1 University, Ethology Specialty. "Scientific communications and social relations in two species of lemurs • DEA "Physiological and Behavioral Regulations"



Telesphore Pharma's first objective:



Transform Myalgic Encephalomyelitis/ Chronic Fatigue Syndrome from a syndrome that lacks concrete diagnostic criteria and treatment, into **a universally recognisable, diagnosable and treatable organic disease.**



Why ME/CFS and why now?

FACTSHEET



CFS/ME affects children, women and men (W/M: 2/1)



About 50% CFS/ME patients quit their employment activity



About 25% percent of patients remain bedridden



CFS/ME is
debilitating CLGID

SYMPTOMS



brain fog



extreme tiredness



muscle / joint pain



sleep disturbance



flu-like symptoms



Why ME/CFS and why now?



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debilitating CLGID



0,5% of the
population suffer
from ME/CFS



Why ME/CFS and why now?



0,5% of the
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from ME/CFS



0.8 – 2.5M Americans suffer from the disease (CDC)



0.7 - 4.1M Europeans could be affected (Euromene)



CDC estimates that ME/CFS
can concern between 7,6 to
38M people worldwide.



CFS/ME costs the U.S.
economy about \$17-\$24
billion annually in medical
bills and lost incomes



Why ME/CFS and why now?



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There is no
diagnostic test, no
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Why ME/CFS and why now?



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Diagnosis of ME/CFS is based on exclusion of other pathologies
From 1986 to 2020 13 different definitions and guidelines are used worldwide



Physicians often
confuse ME/CFS
with psychological
disorders

There is no approved treatment for CFS/ME. Non-specific treatments poorly address the symptoms

Highest Market Share

- NSAID
- Sleep Aids
- Antidepressants (SSRIs, SNRIs & Tricyclic)

ME/CFS specific 2019-2023 Projection:

CAGR



Incremental growth



Other Markets include antimicrobials, anti anxiety drugs and nutritional supplements.



Why ME/CFS and why now?



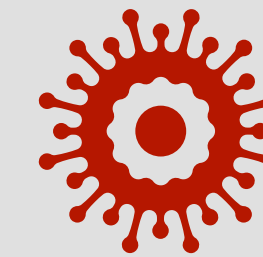
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Is often manifested
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syndrome (WHO)

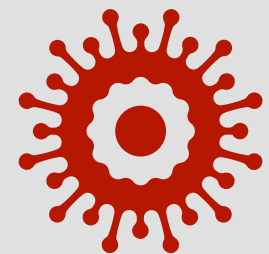
Why ME/CFS and why now?

our research shows:

TRIGGER 1: inflammatory background

The inflammatory background for ME/CFS can be set by chronic dsDNA viruses as Herpes, Epstein-Bar or Cytomegalovirus.

90% of the population is exposed to chronic dsDNA viruses. For some, these can set the inflammatory background for CFS/ME depending on genetic and environment factors that shape the immune system.



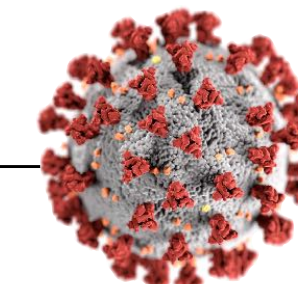
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TRIGGER 2: onset

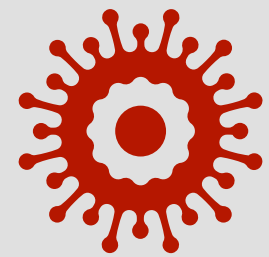
ME/CFS can be then triggered by acute infections from ssRNA viruses like coronaviruses.

Influenza and coronaviruses like Sars-Cov-1, Mers-Cov and Sars-Cov-2 are known to cause very acute infections and inflammatory syndromes.

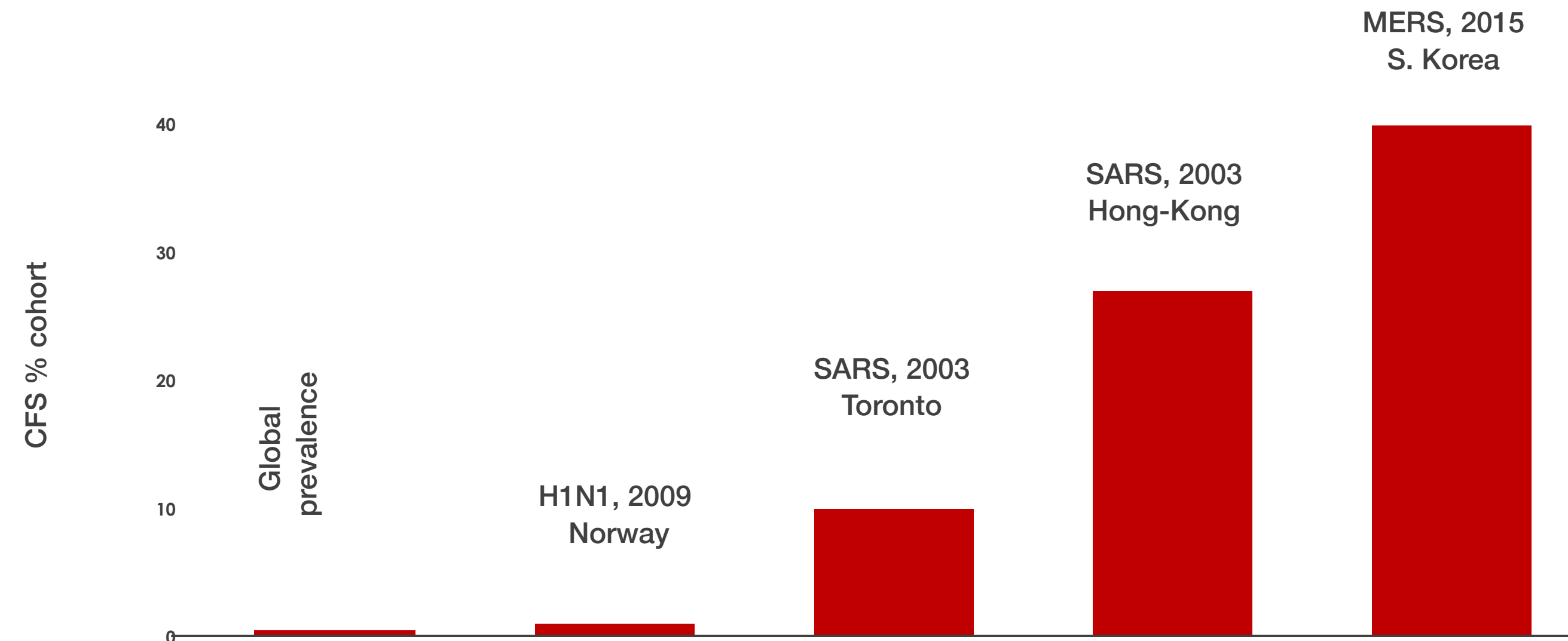


Why ME/CFS and why now?

What we've learned from previous acute ssRNA virus pandemics



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Worldwide ME/CFS prevalence : 0,5 %

CFS/ME occurrence after ssRNA virus epidemics:

2009 influenza A (H1N1) pandemic in Norway: 2%

2003 SARS epidemic survivors in Toronto: 10%

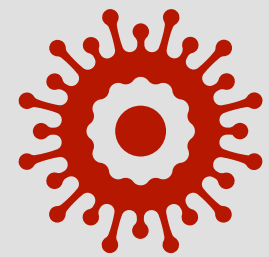
2003 SARS epidemic survivors in Hong Kong: 27%

2015 MERS survivors in South Korea: 40%

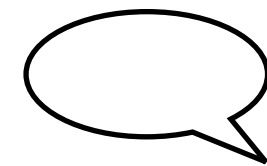


Why ME/CFS and why now?

COVID-19 & ME/CFS: it's already happening

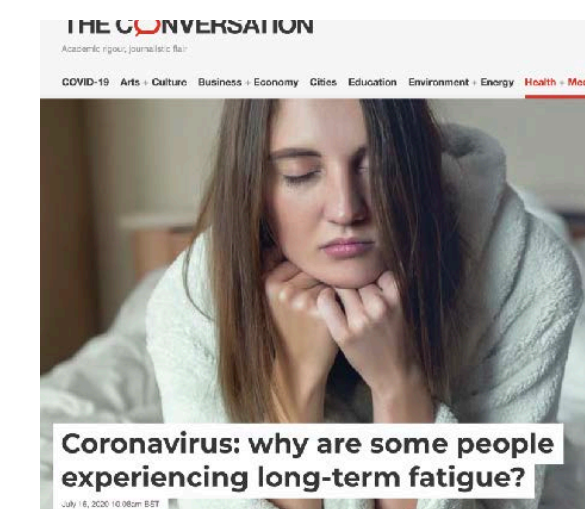
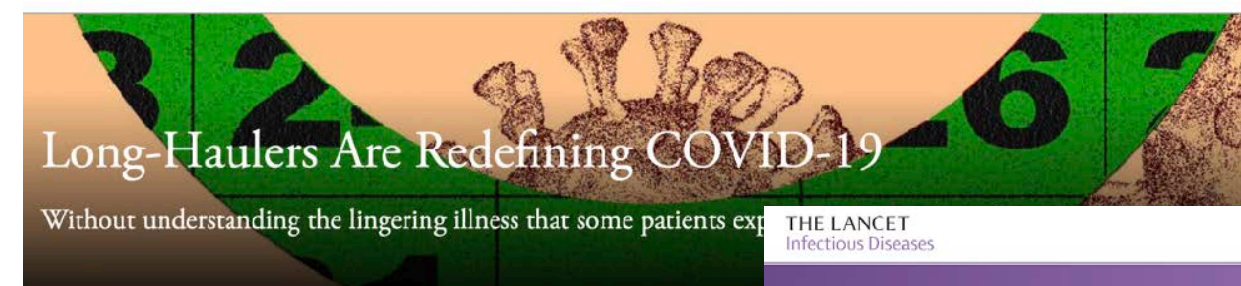


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There are a considerable number of individuals who develop a post-viral syndrome. They report symptoms such as brain fog, difficulty concentrating and fatigue that resemble the symptoms of CFS/ME

- Anthony Fauci, Head of NIAID & White House Coronavirus Task Force



Why ME/CFS and why now?



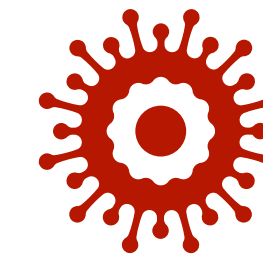
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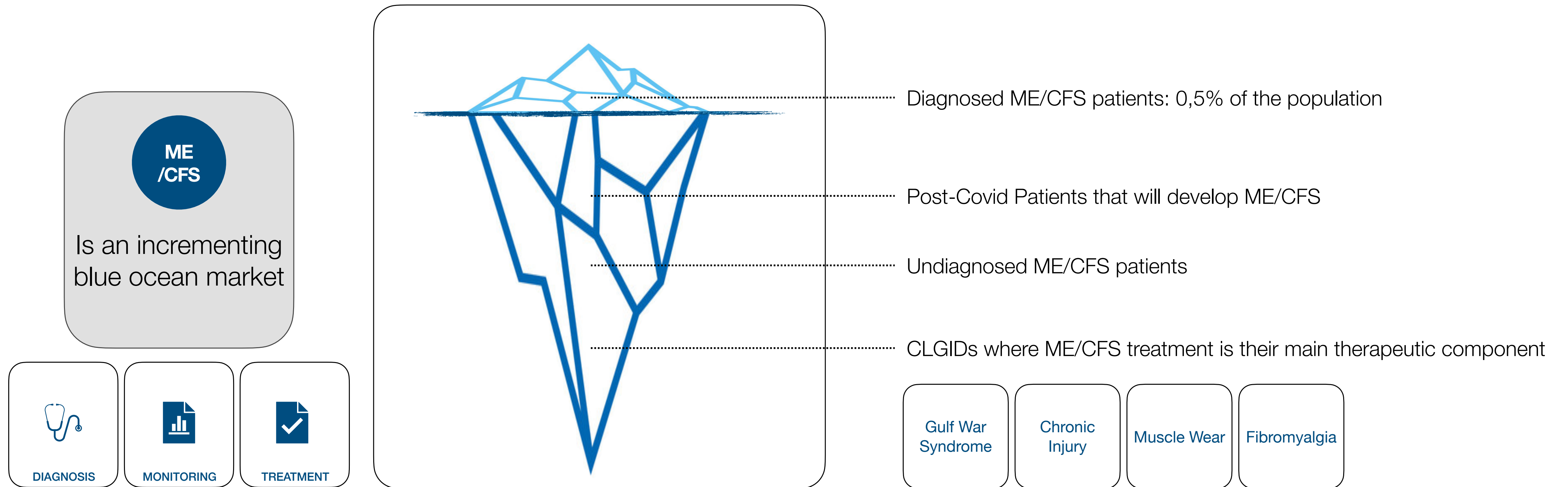
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Is an incrementing
blue ocean market



Why ME/CFS and why now?



Why ME/CFS and why now?

The Covid-19 crisis is the unique opportunity to help people suffering from ME/CFS, provide the healthcare system with the tools for its diagnosis, monitoring and treatment and prevent as many "Post Covid-19" patients as possible from therapeutic wandering they're already experiencing.



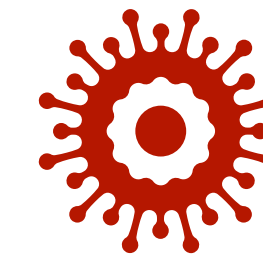
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Is an incrementing
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Telesphore Pharma aims to become the worldwide golden standard for the
treatment and diagnosis of the disease.



Q&A

Thank You.

Contact  manuel.gea@telesphore-pharma.com

