



**NATO CENTRE OF EXCELLENCE
FOR MILITARY MEDICINE**

Committed to the health of our forces



INTEROPERABILITY



Medical Innovation Newsletter issue June 2021



**NATO MILMED COE
Lessons Learned and
Innovation Branch (LL&IB)**

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Force Health Protection Event: 'COVID-19; A retrospective look at a turbulent time'

It will take place virtually in Munich, 3-4 November 2021.

Location: virtual event via MS Teams platform

Call for papers: 3rd May to 25th June 2021

[REGISTRATION IS OPEN
INFORMATION](#)

There are welcome presentations related to Force Health Protection and COVID-19 however, of particular interest would be those focusing on:

- Testing/Contact tracing/Surveillance
- Vaccination
- Civil/Military Cooperation
- Research and Innovation News

The NATO MILMED COE Medical Innovation Section was established to support NATO Medical Innovation efforts, as outlined in the "ACT Innovation Strategy for Medical Support to Operations." This newsletter, and the corresponding "Innovation Portal," were created to increase awareness of emerging and innovative technologies that could advance NATO medical care delivery, or that pose a potential threat to NATO operational forces. The LL&IB Staff is reviewing relevant resources, to include scientific journals, news publications and web sites, to identify technologies which may be of interest to the NATO military medicine community. If you have read an article or have other information that you think would be of interest to the community, please send the information to us **via the contribution link at the bottom of the newsletter.**

COVID – 19



Artificial Intelligence Powers Rapid COVID-19 Antibody Test

University of Utah researchers have developed a fast, easy-to-administer COVID-19 antibody test powered by artificial intelligence.

[Link](#)



FDA grants EUA to GSK and Vir's Sotrovimab for Covid-19

The US FDA grants EUA to GlaxoSmithKline and Vir Biotechnology's Sotrovimab (VIR-7831) to treat mild-to-moderate Covid-19 for those at risk of severe disease.

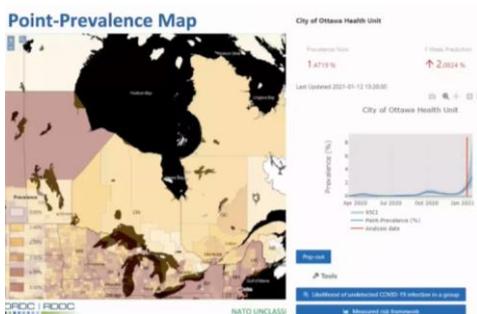
[Link](#)



Machine Learning Shows How Quarantine Measures Impact COVID-19 Rates

A machine learning model revealed a direct link between the number of people infected with COVID-19 and how effectively a state maintains quarantine measures.

[Link](#)



CAN FHS COVID-19 Toolset

This toolset was developed at the request of the Canadian Forces Health Services. Estimates made within it are intended to be used by medical advisors, e.g. to support local risk assessment and related advice provided to commanders.

[Link](#)

RESEARCH STUDIES



Gene Therapy Preserves Memory in Alzheimer's Mouse Model

Researchers used gene therapy to prevent learning and memory loss in a mouse model of Alzheimer's disease.

[Link](#)

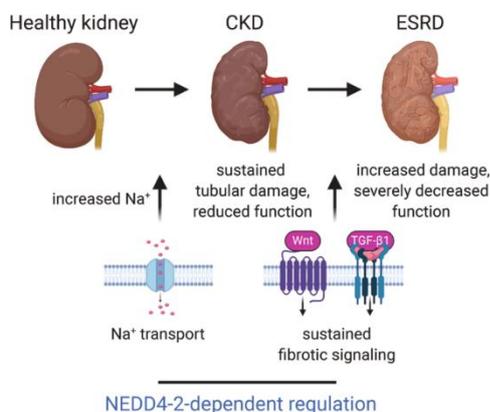


DeepMind Open Sourced. New Architecture to Improve Long-Term Memory in Deep Learning Systems.

The Compressive Transformer model and the PG-19 dataset represent important milestones to improve the memory capabilities of deep learning models.

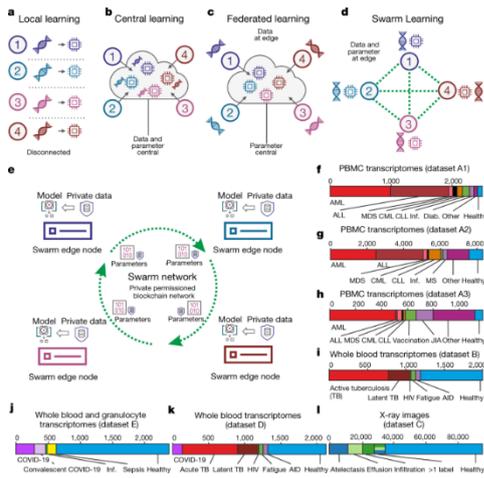
[Link](#)

The ubiquitin ligase NEDD4-2/NEDD4L regulates both sodium homeostasis and fibrotic signalling to prevent end-stage renal disease



Chronic kidney disease (CKD), defined as a decline in kidney function over time, affects nearly 10% of the global population. Mounting evidence suggests that excessive Na⁺ consumption can hasten the progression of CKD and contribute to end-stage renal disease (ESRD) via several mechanisms, including increased arterial pressure caused by hypertension. High levels of Na⁺ can also influence CKD by compromising endothelial cell health and affecting tissue remodelling and fibrosis

[Link](#)



Swarm Learning for decentralized and confidential clinical machine learning

Identification of patients with life-threatening diseases, such as leukaemia's, tuberculosis, or COVID-19, is an important goal of precision medicine. The measurement of molecular phenotypes using 'omics' technologies and the application of artificial intelligence (AI) approaches will lead to the use of large-scale data for diagnostic purposes.

[Link](#)



Daily Cup of Coffee Cuts Type 2 Diabetes Risk by About 5%

Drinking one cup of coffee each day lowered individual risk for developing type 2 diabetes 4%–6%, according to data from a pair of large, population-based cohorts.

[Link](#)



Using nanobodies to block a tick-borne bacterial infection

Tiny molecules called nanobodies, which can be designed to mimic antibody structures and functions, may be the key to blocking a tick-borne bacterial infection that remains out of reach of almost all antibiotics, new research suggests.

[Link](#)

INNOVATION NEWS ARTICLES



New in 2021: Futuristic do-it-all goggle for soldiers, Marines will begin fielding in 2021

Soldiers and Marines completed a company-sized field exercise, testing the new Integrated Visual Augmentation System. The IVAS is expected to begin fielding in 2021.

[Link](#)

Gel under development could improve battlefield wound treatment, military researchers say



Medics can apply coagulants like QuikClot to wounds to stem blood loss long enough for a service member to get to a field hospital. But arterial wounds can be hard to treat in the field. Troops dying from blood loss to parts of the body where bandages or tourniquets can't be applied has been a persistent problem during battles of the past two decades. The researchers say that StatBond, a clear, silicon-based gel, may help.

[Link](#)

Alaska brigade wears device to learn about resiliency, recovery in extreme conditions



About 1,000 soldiers from the 4th Infantry Brigade Combat Team, 25th Infantry Division at Joint Base Elmendorf-Richardson in Anchorage, Alaska, were issued in January a wearable device to measure their physiological data in an effort to improve the resiliency of soldiers operating in harsh conditions.

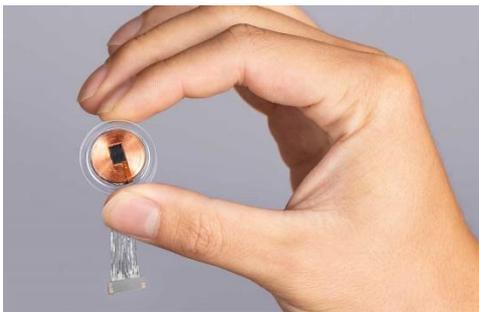
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The 'Iron Man' body armour many of us may soon be wearing

Exoskeletons give the wearer more power and endurance. Such technology sounds like the preserve of the Iron Man series of superhero movies. Yet the equipment is increasingly being worn in real life around the world. And one manufacturer - California's SuitX - expects it to go mainstream.

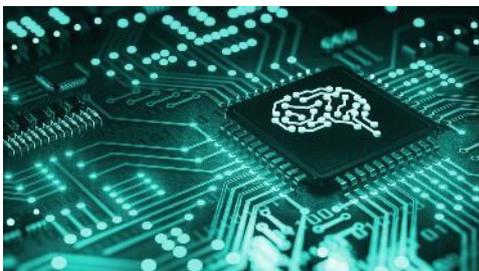
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Neuralink: Elon Musk's brain implant

The South African-born business magnate and self-proclaimed 'Mars Imperator' Elon Musk hopes you'll use Neuralink to operate your iPhone with your mind.

[Link](#)



Artificial intelligence leads NATO's new strategy for emerging and disruptive tech.

STUTT GART, Germany — NATO and its member nations have formally agreed upon how the alliance should target and coordinate investments in emerging and disruptive technology, or EDT, with plans to release artificial intelligence and data strategies by the summer of 2021.

[Link](#)



MOBILE INFRASTRUCTURE FOR TEMPORARY MEDICAL NEEDS

Foldable Containers which can be used for medical needs.

The base products of Continest are the CN10 (10') and CN20 (20') foldable containers. A significant advantage of these containers is that they can be easily folded, which facilitates their transport and storage. They have found several applications in medicine: mobile laboratory, vaccination point, medical treatment facilities.

[Link](#)



CONFERENCES, WEBINARS, etc.

ACT
The Innovative Solutions to Improve Cognition workshop



The ACT Innovation Hub WS will be held from Tuesday, **June 01, 2021 1:00pm** to Thursday, **June 03, 2021 7:00pm**, Time zone: EDT
 In the Innovative Solutions to Improve Cognition workshop insights shared in the forum will be further discussed, innovative ideas will be presented, and new solutions to develop by this project will be identified.

The workshop report will inform NATO capability development and will be shared with participants.

Agenda.

- Jun 09:00-13:00 EDT: Information Disrupted
- Jun 09:00-13:00 EDT: Decision Making (Psychology, Processes, Technology)
- Jun 09:00-13:00 EDT: Neuroscience-Ethics

[Link](#)

It will take place on **June 3rd**, 2021

Timing: 13.45 – 17.20 CET

The webinar is divided into the three main themes that are central to Warrior Care - resilience, recovery/ rehabilitation, reintegration.

STO

Warrior Care in the 21st Century



"Warrior Care in the 21st century is a webinar about military-medical developments for the (post) active military and veteran. The theme "Once a Warrior always a Warrior" resonates to the title of a book that was written ten years ago by American psychiatrist / internist Col (ret) Charles Hoge. It concerns the entire chain of care, preparation, care during secondment and aftercare during and after transition. We will have series of conversations with a range of disciplines, from sports medicine, (trauma) surgery, rehabilitation to mental health care.

[Link](#)

EDA

The International Forum on Advanced and digitalised Smart Textiles (IFAST)



It will take place online, **on 15 and 16 June 2021**, with the objective to evaluate the development of advanced smart textiles in the European defence sector, aiming at laying the foundation of a possible European future dual use programme for multifunctional smart textiles. Smart textiles are a new generation of materials and systems with very interesting multifunctional properties (camouflage, moisture management, electronics integrated in textiles, etc.). These properties, together with the possibility of being integrated into uniforms and platforms have drawn the attention of the defence stakeholders.

[Link](#)

Remote patient monitoring virtual summit



The event will take place online, **on 13 and 14 July 2021. (1100 – 1600 EDT)**.

As health systems and hospitals continue their quest to shift care to the home setting, they're looking at remote patient monitoring programs to facilitate that care. Using a mixture of telemedicine platforms, mHealth tools and in-person care, RPM programs hold the promise of improving patient engagement and outcomes while reducing costs and waste by making the best use of hospital resources. In this virtual event, it will be featured a keynote from a health system that has launched an RPM program.

[Link](#)

"NATO MILMED COE INNOVATION PORTAL"

The portal currently contains a number of articles on technology developed as solutions to problems encountered during the COVID-19 pandemic. And there are many articles posted on topics other than COVID-19, that cover a broad range of technological fields.

Although we strive to collect on the portal as much as possible the latest and valuable information about medical innovations, we will be more than happy if other nations, scientists or entrepreneurs will also want to share their studies in the field of modern medicine.

E-mail address to submit the articles or innovative ideas: [Contribution](#)

Innovation Portal [Registration](#)

Sign up for [MILMED COE Medical Innovations newsletter](#).

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