



IDEaS
INNOVATION FOR DEFENCE
EXCELLENCE AND SECURITY

ON THE FRONT LINES OF POST-TRAUMATIC STRESS DISORDER TREATMENT

THE CHALLENGE

The Department of National Defence (DND) requires novel tools and methods to assess, address and treat Post Traumatic Stress Disorder (PTSD) resulting from defence and security operations.

CHALLENGE AT A GLANCE:

90 PROPOSALS
EVALUATED

8 2ND PHASE
PROJECTS FUNDED

9 1ST PHASE PROJECTS
COMPLETED

\$9.2 MILLION
COMMITTED



MILITARY BENEFITS

As the Chief of Psychiatry for the Canadian Armed Forces, IDEaS has been an exciting opportunity to advance our understanding of PTSD with the promise of improving diagnosis and treatment and ultimately reducing suffering of our psychologically injured members. IDEaS has been a timely welcome boost to our research program.

— Col Rakesh Jetly, Chief of Psychiatry, CAF
OMM, CD, MD, FRCPC

PUTTING THE PIECES TOGETHER

IDEaS has challenged researchers to help build a comprehensive approach to treating PTSD which includes:

- new tools and methods for the diagnosis of PTSD;
- advances in brain scanning/imaging;
- new programs for CAF members and their families;
- training and resiliency programs to prevent operational stress injuries; and
- novel and efficient methods and programs to treat CAF members and public safety personnel who develop stress injuries or suffer from other brain injuries or trauma.

APPROACH

NOVEL TECHNOLOGIES

Innovation: Understanding and influencing the stress process through biofeedback, wearable and mobile technologies to prevent and address PTSD

Goal: Inform and monitor resiliency to help prevent operational stress injuries before they occur.

Innovator: University of Waterloo

Innovation: Virtual Reality (VR) exposure therapy and VR well-being and mastery to improve psychological treatment

Goal: Develop a highly novel and effective approach for the use of VR to treat PTSD.

Innovator: University of Western Ontario

Innovation: Pathophysiological understanding and treatment of PTSD using Transcranial magnetic stimulation (TMS)

Goal: Change regional brain function to improve the neurological/psychiatric symptoms of PTSD

Innovator: University of Calgary

BIOMARKERS AND BIOINFORMATICS

Innovation: Identify biomarkers for post-traumatic stress disorder (PTSD) by combining state-of-the art brain imaging, genetic and behaviour-based data

Goal: Improve diagnostic accuracy of PTSD severity and assessment of treatment response so CAF members get the appropriate treatment they need with less trial and error.

Innovator: IWK Health Centre Team

Innovation: Develop and implement a bio-informatics platform leveraging advanced brain imaging and deep learning algorithms to better diagnose PTSD.

Goal: Identify cases that may be able to benefit from particular types of treatment and help clinicians evaluate remission.

Innovator: The Hospital for Sick Children (SickKids) Toronto

Innovation: Identifying different sub-types of PTSD into treatment decisions.

Goal: Using biomarkers, identify and compare Hyperarousal PTSD, and Dissociative PTSD to help personalize treatment.

Innovator: Royal Ottawa Health Care Group

HELPING FAMILIES

Innovation: Internet-delivered, and Coach-guided self-help intervention for CAF members with PTSD symptoms and their partners (Couple HOPES)

Goal: Improve PTSD symptoms, relationship function, and health and well-being of CAF members and their families.

Innovator: Ryerson University

Innovation: Understand recovery from the individual and their significant other's perspective

Goal: To better inform clinicians on what constitutes and predicts full PTSD remission in order to optimize treatment and support for patients with PTSD and other operational stress injuries (OSIs)

Innovator: MacDonald Franklin OSI Research Centre (Lawson Health Research Institute)



NEXT STEPS

- Military members will be tested in Phase 2 of the projects.
- Knowledge will be translated to allied militaries and the broader civilian mental health care communities.