



UNIVERSITY OF OTTAWA
HEART INSTITUTE
INSTITUT DE CARDIOLOGIE
DE L'UNIVERSITÉ D'OTTAWA

HEALTH PRACTITIONERS SERIES

PROVIDING VIRTUAL CARDIAC REHABILITATION DURING COVID-19 PANDEMIC

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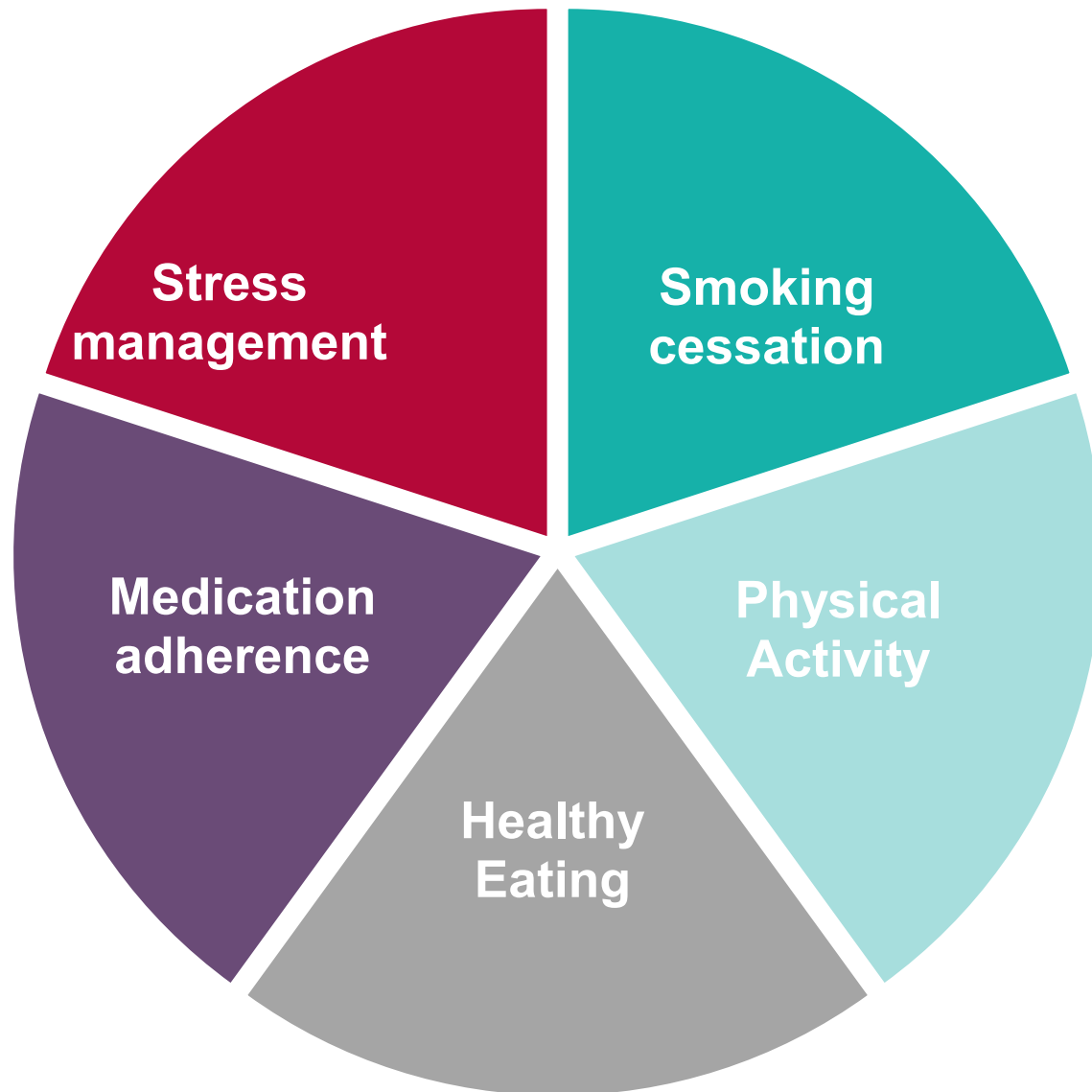
Virtual Care Program Lead, University of Ottawa Heart Institute





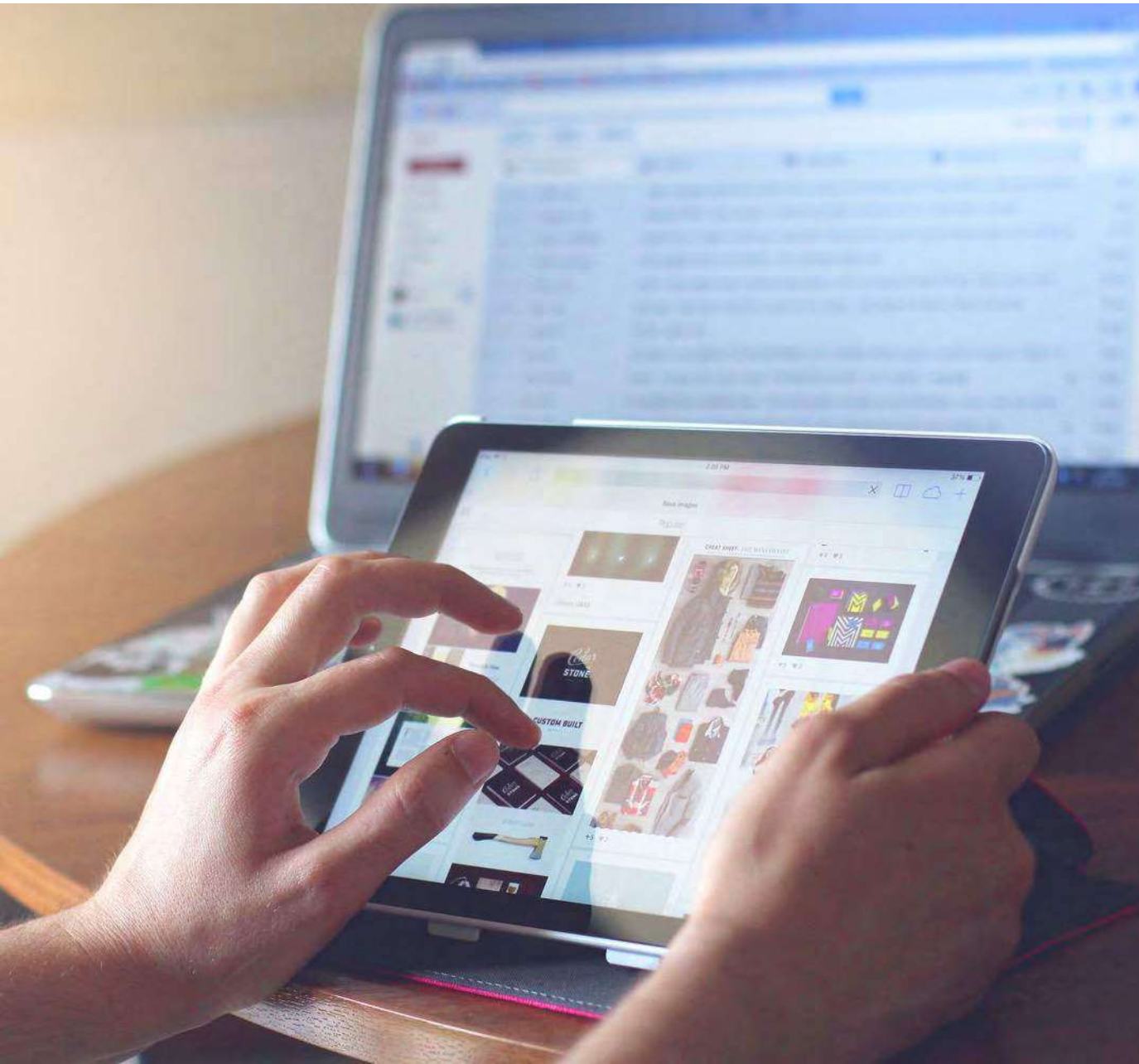
During this presentation we will be discussing certain brand name products and apps which are popular choices among our participants.

The presenters of this presentation **receive no financial reimbursement from these products.**



Cochrane collaborative reviews of CR concluded that there is low to moderate strength evidence that home-based vs centre-based CR programs have similar effects on quality of life and cost among patients with recent MI or coronary revascularization. Also they achieve similar improvements in 3 and 12 month clinical outcomes.

AACVPR/AHA released a scientific statement published in *Circulation* in July 2019 which stated that **although home based cardiac rehabilitation appears to hold promise in expanding the use of CR to eligible patients, additional research is needed to clarify, strengthen and extend the home-based cardiac rehab evidence for key subgroups including older adults, women and underrepresented minority groups.**



Virtual CR is home-based cardiac rehabilitation (HBCR) delivered by virtual care mechanisms. Virtual care refers to any interaction between patients and their care team that occurs remotely and utilizes information and communication technologies to facilitate or maximize the quality and effectiveness of care. **This includes the use of** telephone and video-conferencing communication, email, text or other messaging solutions, smartphone applications, online resources, online platforms, and wearable devices.



The Virtual Cardiac Rehabilitation program was **safe and superior to usual care in reducing CVD risk** and sustaining this reduction.

Specifically, we report **significant improvements** in exercise capacity and dietary quality with reductions in cholesterol levels.



A Norwegian study looked at using Fitness Trackers and smart watches to measure Physical activity in research. They identified 423 unique devices from 132 different brands. Out of the Brands currently available the **five most often used in research projects are Fitbit, Garmin, Misfit, Apple and Polar.**

Photoplethysmography (PPG) is a relatively new technique in wearables. PPG is optical technique to estimate heart rate by monitoring changes in blood volume beneath the skin. This eliminates the need for a chest strap.

Add **global positioning system (GPS)** and you can also track position, speed and altitude.

HOW CAN YOU MONITOR YOUR PATIENT'S PROGRESS FROM HOME?



- Fitbit
- Garmin
- Withings scale
- Nokia
- Apple watch
- Samsung gear
- Suunto
- Polar
- Strava



Good for motivation



Activity tracker



Steps

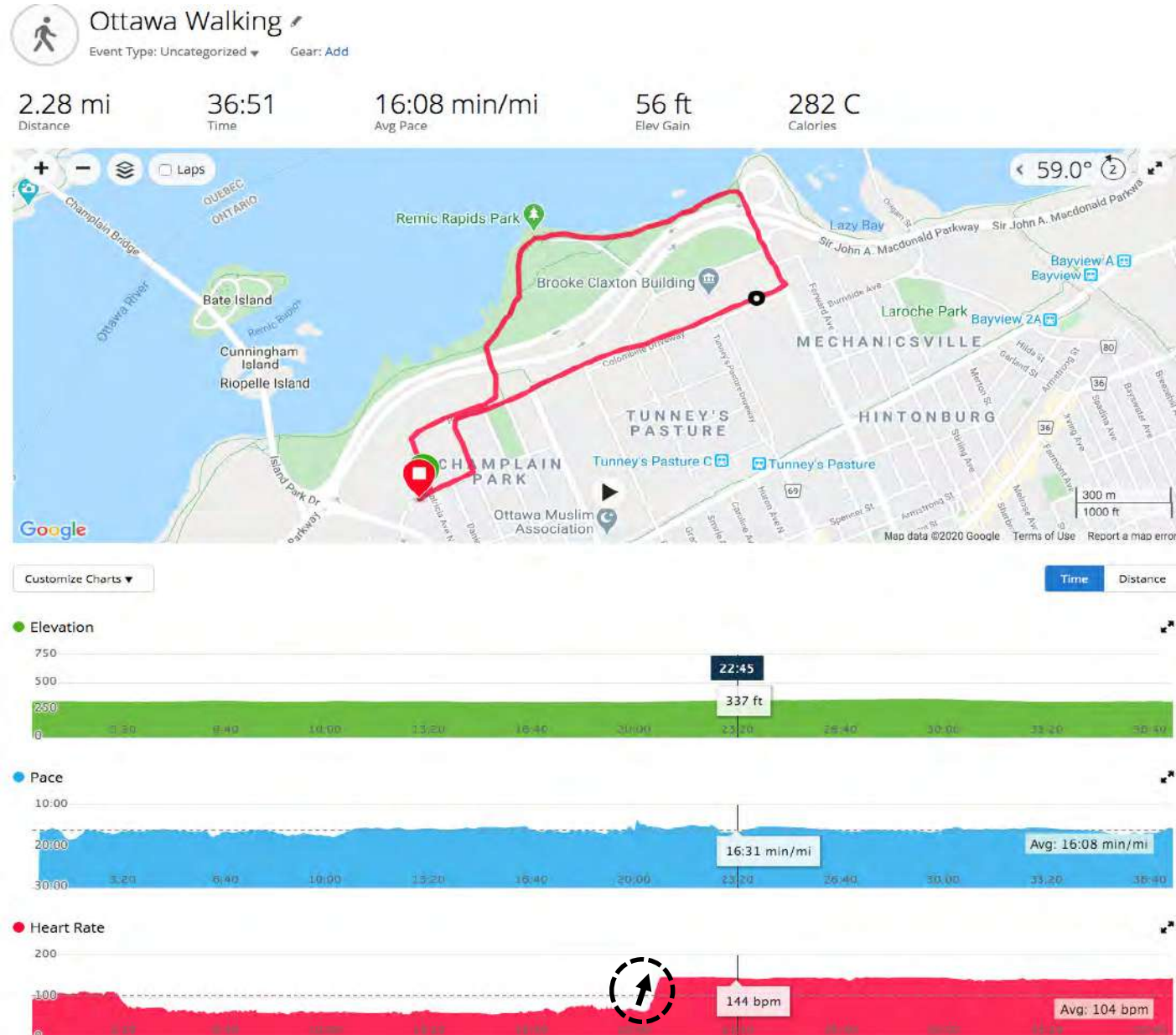


Food Log



Sleep

TRACKING... SO MUCH MORE THAN HEART RATE



DISTANCE



TIME



GPS

GREEN | Elevation

BLUE | Pace

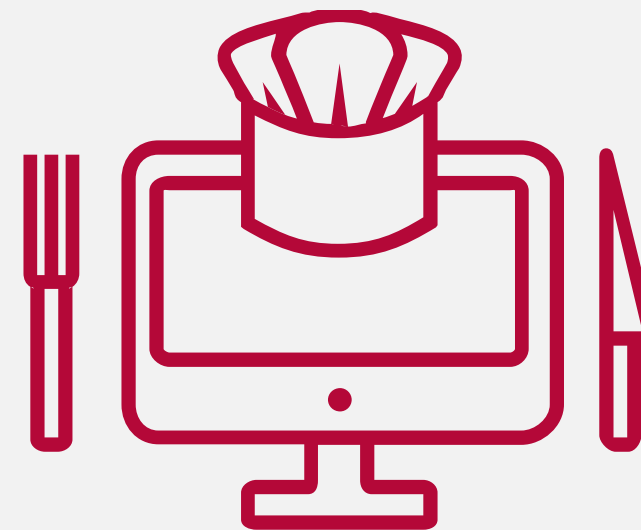
RED | Heart Rate



102 hospitalized patients were evaluated at rest using ECG with concomitant smart watch monitoring. (Fitbit and Apple)

Principle findings were Smartwatch demonstrated **strong agreements with ECG in sinus rhythm**

Smartwatch readings >100 bpm in atrial arrhythmias were closely associated with ECG-HR



[Myfitnesspal.com](https://myfitnesspal.com)

[Unlockfood.ca](https://unlockfood.ca)

[Heartandstroke.ca/get-healthy/recipes](https://heartandstroke.ca/get-healthy/recipes)

diabetes.ca



WHAT HAVE WE LEARNED FROM COVID 19 PANDEMIC?



- Adaptability
- Importance of support and encouragement
- Technology has helped us stay connected.
- Opportunity to learn new tools.
- Resilience
- Importance of collaboration and sharing

PREVENTION & WELLNESS CENTRE

PROGRAMS &
SERVICES >

EDUCATION >

RESOURCES >

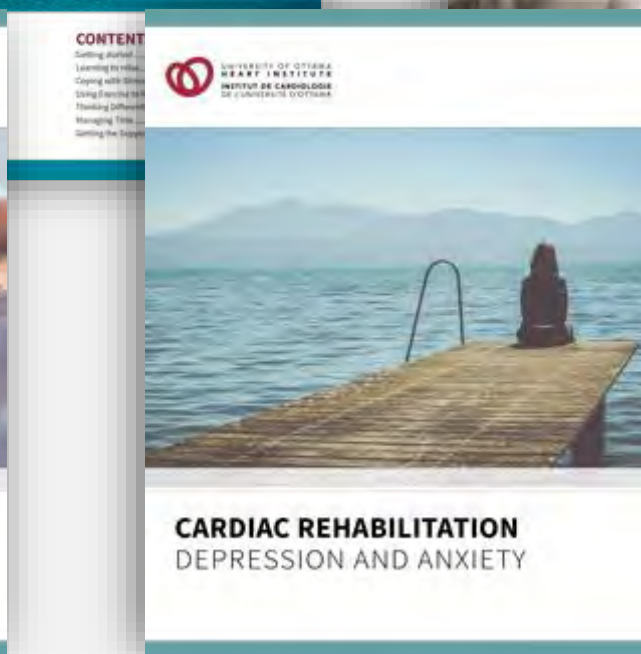
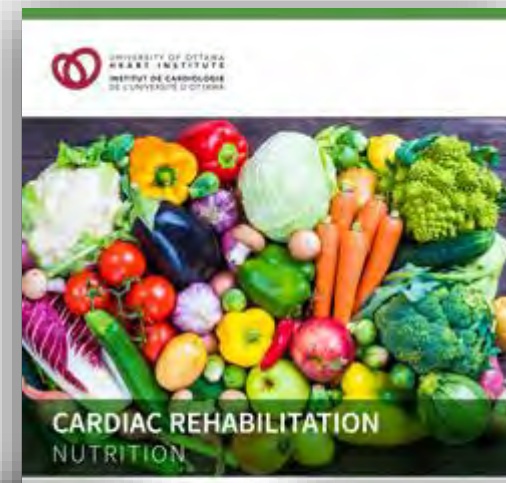


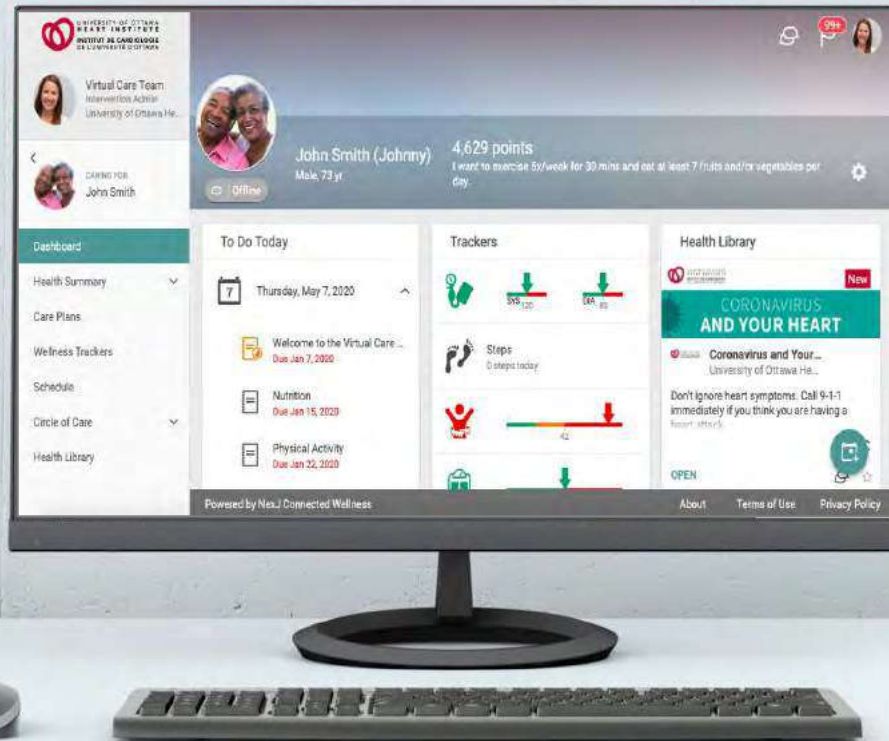
COVID-19 Resources for Cardiac Patients

Information and resources for
cardiac patients for staying active
and healthy.

[Learn More](#)







THE VIRTUAL CARE PROGRAM

CMAJ **RESEARCH**

Effect of an intervention to improve the cardiovascular health of family members of patients with coronary artery disease: a randomized trial

Robert D. Reid PhD MBA, Lisa A. McDonnell MSc, Dana L. Riley PhD, Amy E. Mark PhD, Louise Beaton MSc, Sophia Papadakis PhD MHA, Chris M. Blanchard PhD, Heidi Mochari-Gre, Patricia O'Farrell RN, George A. Wells PhD, Monika E. Slovynec D'Angelo PhD, Andrew L. Pipe



An evaluation of cardioprevent: a technology-enabled, health-behavior change program for the global reduction of cardiovascular risk

Stephanie A. Prince, Robert D. Reid, Andrew L. Pipe, and Lisa A. McDonnell

Original scientific paper


European Journal of Preventive Cardiology 

Randomized trial of an internet-based computer-tailored expert system for physical activity in patients with heart disease

Robert D Reid¹, Louise I Morrin², Louise J Beaton³, Sophia Papadakis¹, Jana Kocourek¹, Lisa McDonnell¹, Monika E Slovynec D'Angelo¹, Heather Tulloch¹, Neville Suskin⁴, Karen Unsworth⁵, Chris Blanchard⁵ and Andrew L Pipe¹

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 sagepub.com/journalsPermissions.nav
 DOI: 10.1177/1741826711429988
 ejpc.sagepub.com
 SAGE

Original scientific paper

European Journal of Preventive Cardiology 

Motivational counselling for physical activity in patients with coronary artery disease not participating in cardiac rehabilitation

Robert D Reid¹, Louise I Morrin², Lyall AJ Higginson³, Andreas Wielgosz⁴, Chris Blanchard⁵, Louise J Beaton¹, Chantal Nelson¹, Lisa McDonnell¹, Neil Oldridge⁵, George A Wells¹ and Andrew L Pipe¹

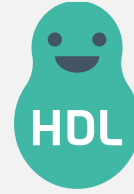
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HISTORY



▲ FRUITS &
VEGETABLES



▲ HDL



▲ MINS OF
EXERCISE



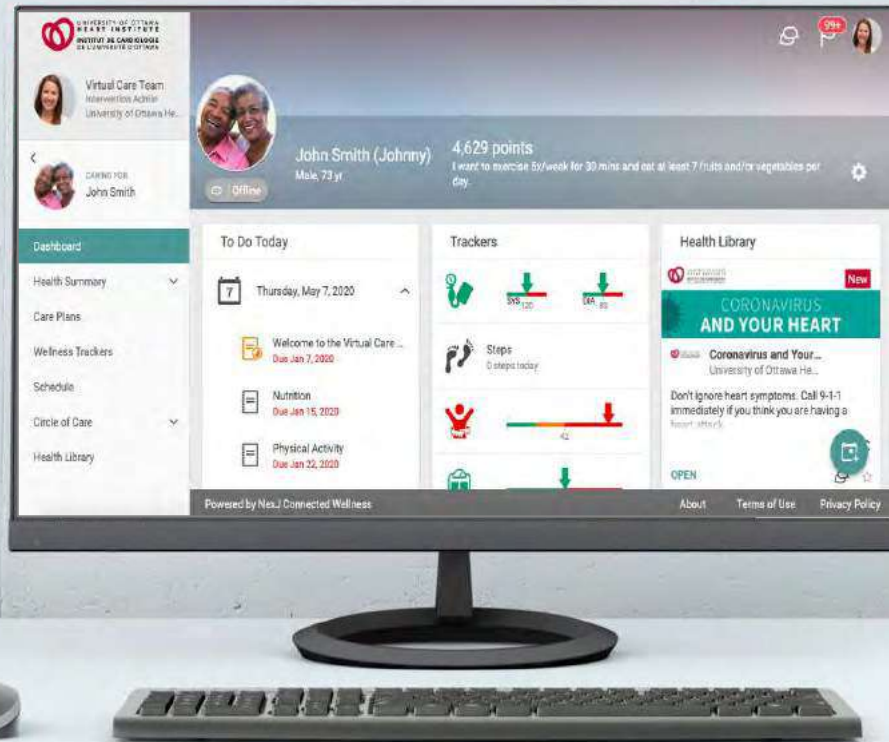
▼ ANXIETY



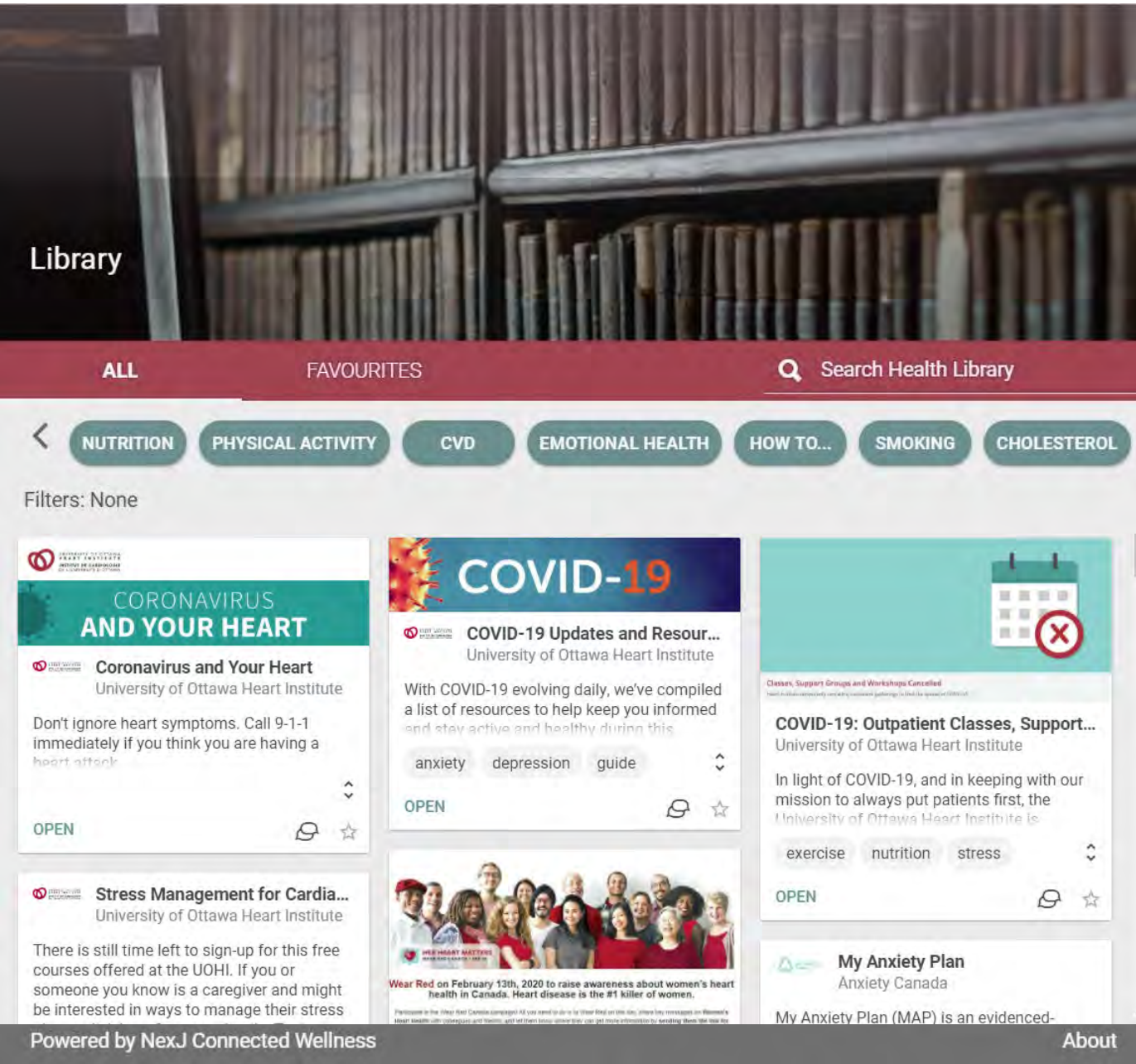
▼ TC/HDL RATIO



▼ WAIST



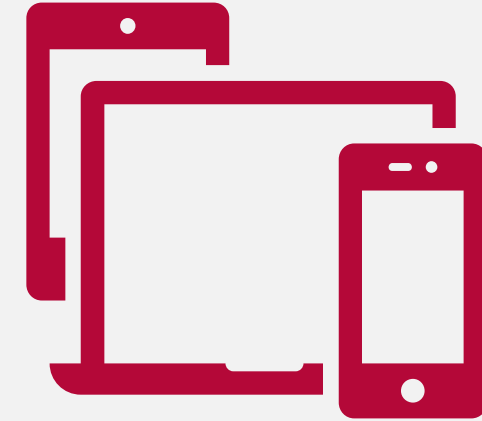
THE VIRTUAL CARE CARDIAC REHAB PROGRAM



The screenshot shows the 'Library' section of the Health Library website. The background is a blurred image of a bookshelf. The interface includes a navigation bar with 'ALL' and 'FAVOURITES' tabs, and a search bar labeled 'Search Health Library'. Below the navigation bar are several category buttons: 'NUTRITION', 'PHYSICAL ACTIVITY', 'CVD', 'EMOTIONAL HEALTH', 'HOW TO...', 'SMOKING', and 'CHOLESTEROL'. A 'Filters: None' indicator is visible. The main content area displays three featured articles:

- CORONAVIRUS AND YOUR HEART**: A card with a green header and white text. It includes the title 'Coronavirus and Your Heart' and a sub-header 'University of Ottawa Heart Institute'. The text reads: 'Don't ignore heart symptoms. Call 9-1-1 immediately if you think you are having a heart attack.' There is an 'OPEN' button at the bottom left.
- COVID-19 Updates and Resour...**: A card with a blue header and white text. It includes the title 'COVID-19 Updates and Resour...' and a sub-header 'University of Ottawa Heart Institute'. The text reads: 'With COVID-19 evolving daily, we've compiled a list of resources to help keep you informed and stay active and healthy during this...'. There are tags for 'anxiety', 'depression', and 'guide'. There is an 'OPEN' button at the bottom left.
- COVID-19: Outpatient Classes, Support...**: A card with a teal header and white text. It includes the title 'COVID-19: Outpatient Classes, Support...' and a sub-header 'University of Ottawa Heart Institute'. The text reads: 'In light of COVID-19, and in keeping with our mission to always put patients first, the University of Ottawa Heart Institute is...'. There are tags for 'exercise', 'nutrition', and 'stress'. There is an 'OPEN' button at the bottom left.

At the bottom of the page, there is a footer with the text 'Powered by NexJ Connected Wellness' and an 'About' link.



LEARN ABOUT HEART HEALTH

Wellness Plan

TRACK

COMPARE



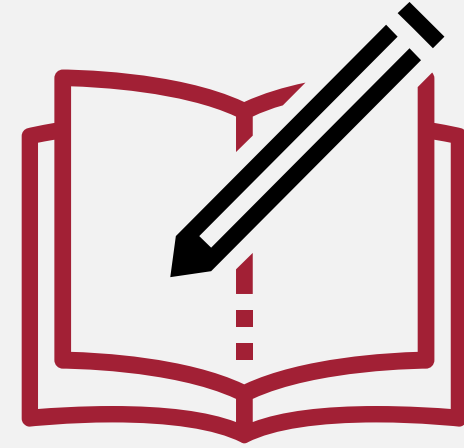
I want to exercise 5x/week for 30 mins and eat at least 7 fruits and/or vegetables per day!



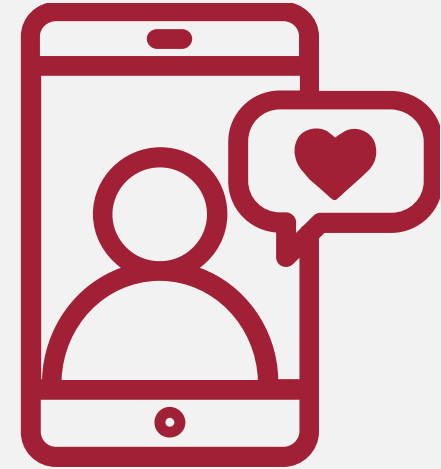
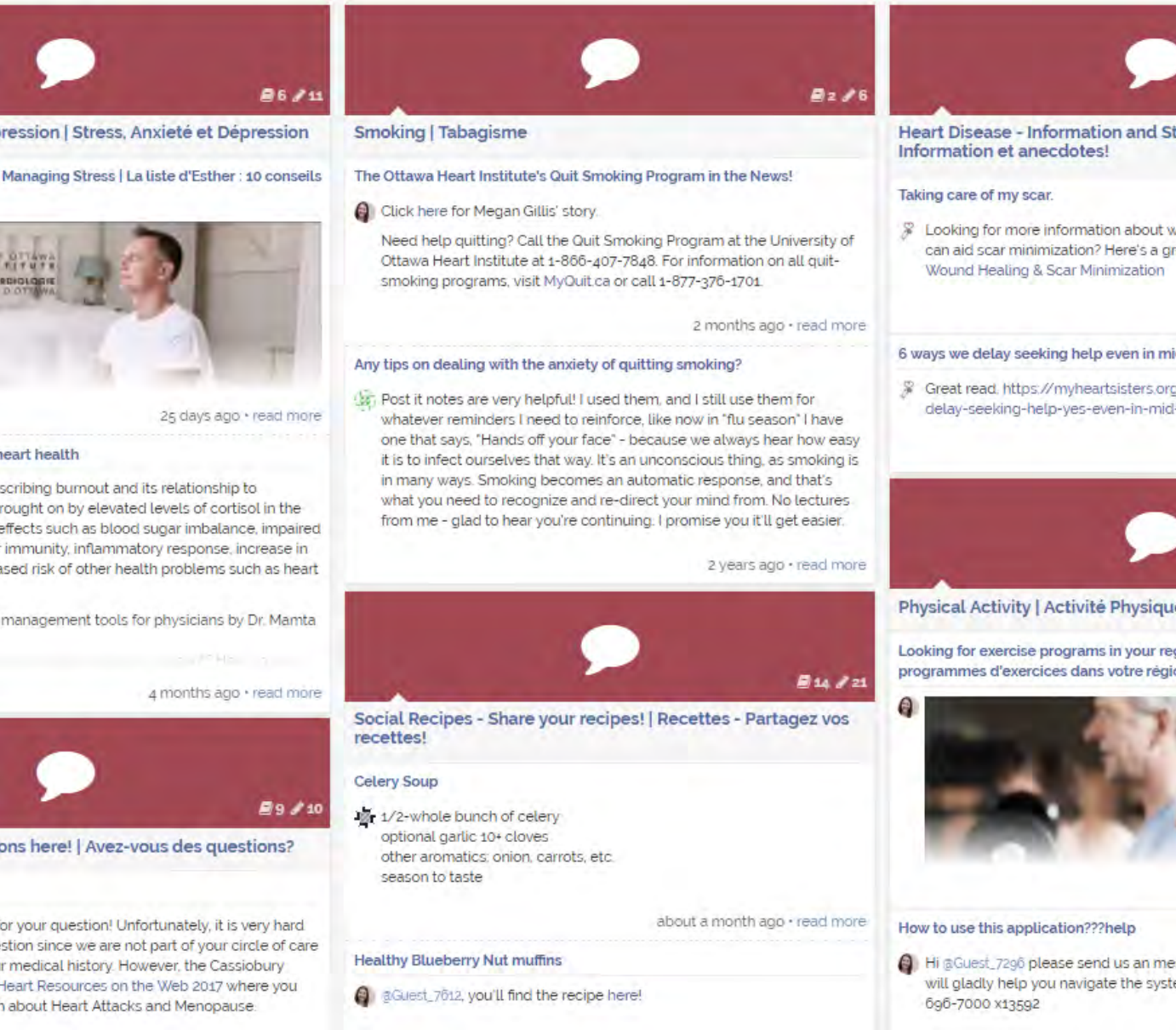
Aerobic Exercise
35 minutes of physical activity (A moment ago)



ADD TRACKER



MANAGE YOUR RISK



**CONNECT
WITH
OTHERS**

PARTICIPANTS

INVITATIONS



ADD FILTER CLEAR ALL RE-RUN

Registered: On or after Jan 1, 2019 ✕

Nutrition ✕



Physical Activity ✕



2 of 380 participants are visible ⓘ

Results as of May 7, 2020 8:52 AM



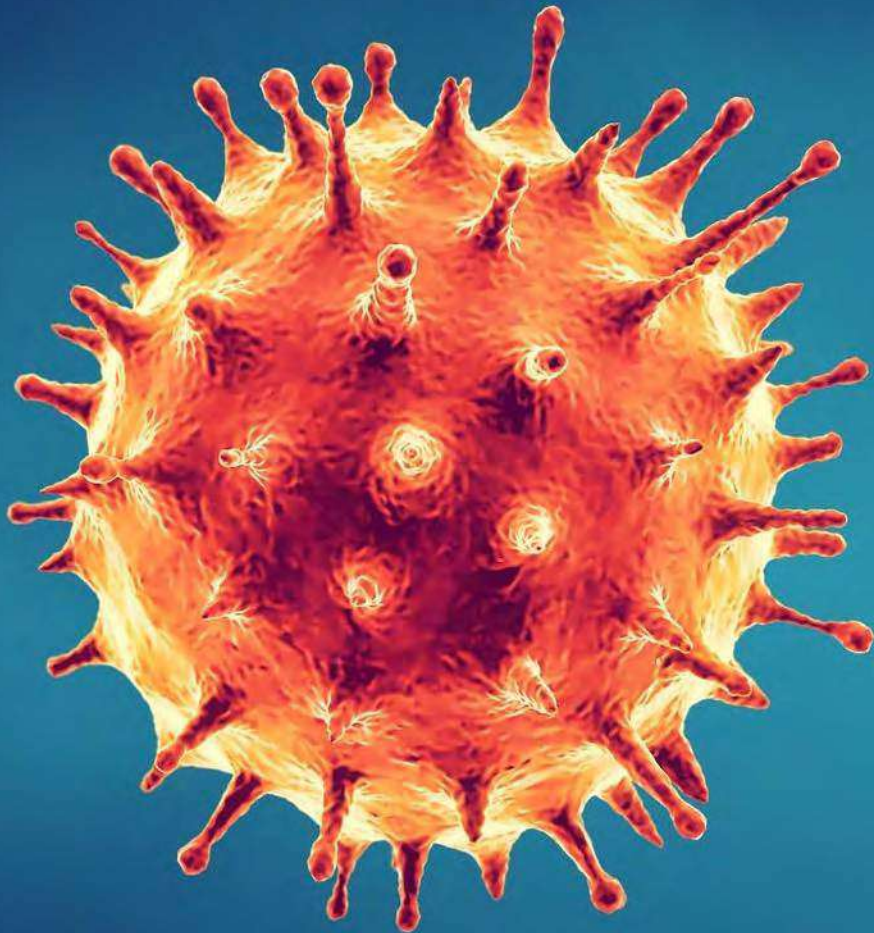
Jane Smith
Female, 69 years old



John Smith
Male, 73 years old



POPULATION MANAGEMENT



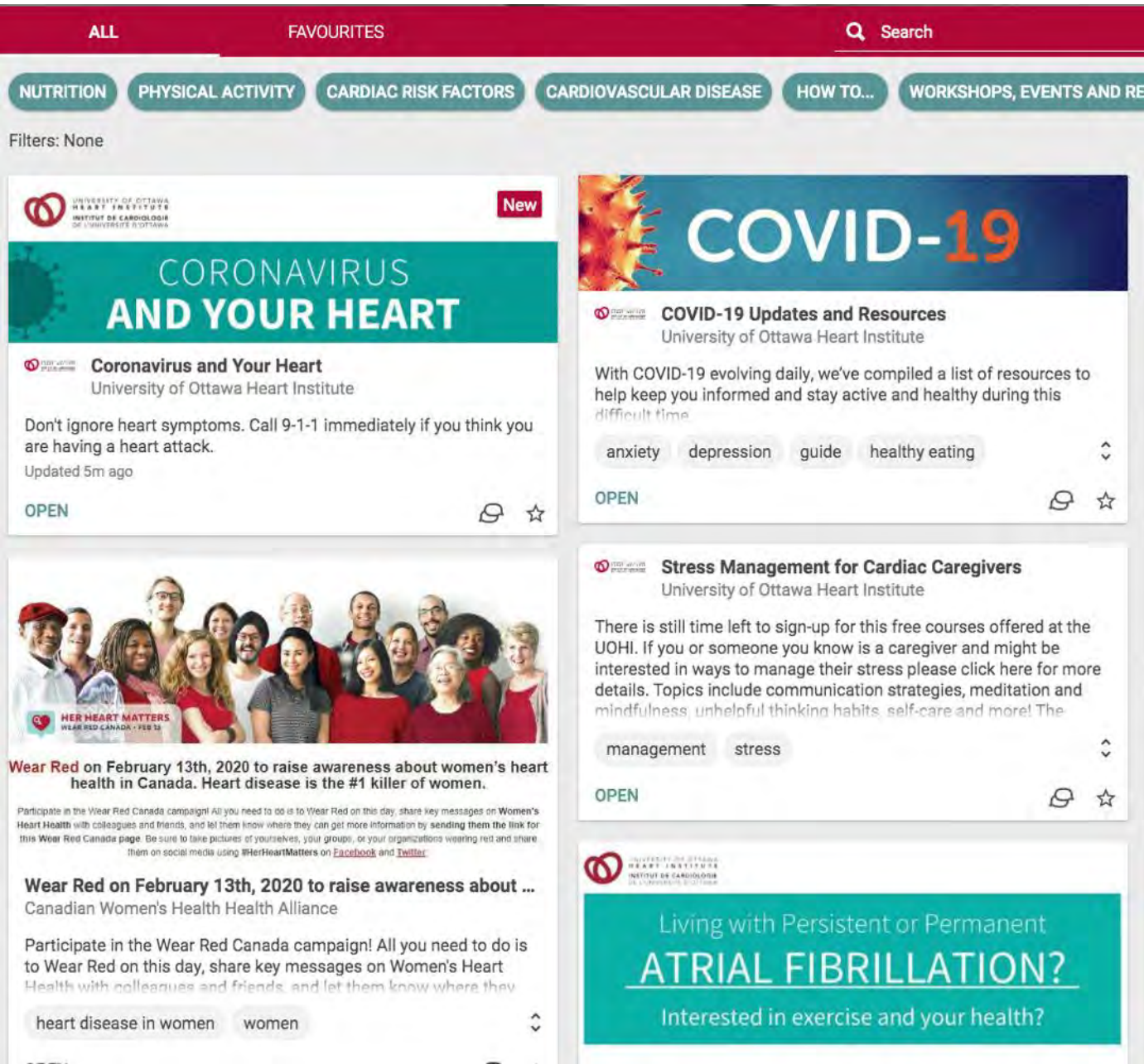
Due to COVID 19 currently we are not able to assess blood work or do stress testing.



Instead we are discussing cardiac risk factors and giving people general recommendations for exercise and strength training.



Our randomized trial to compare two home program options is on hold.



ALL FAVOURITES Search

NUTRITION PHYSICAL ACTIVITY CARDIAC RISK FACTORS CARDIOVASCULAR DISEASE HOW TO... WORKSHOPS, EVENTS AND RES

Filters: None

CORONAVIRUS AND YOUR HEART New
Coronavirus and Your Heart
University of Ottawa Heart Institute
Don't ignore heart symptoms. Call 9-1-1 immediately if you think you are having a heart attack.
Updated 5m ago
OPEN

COVID-19 Updates and Resources New
University of Ottawa Heart Institute
With COVID-19 evolving daily, we've compiled a list of resources to help keep you informed and stay active and healthy during this difficult time.
anxiety depression guide healthy eating
OPEN

Stress Management for Cardiac Caregivers
University of Ottawa Heart Institute
There is still time left to sign-up for this free courses offered at the UOHI. If you or someone you know is a caregiver and might be interested in ways to manage their stress please click here for more details. Topics include communication strategies, meditation and mindfulness, unhelpful thinking habits, self-care and more! The
management stress
OPEN

Living with Persistent or Permanent ATRIAL FIBRILLATION? New
Interested in exercise and your health?

- Personalized model
- Support and encouragement
- Portable
- Accountable
- Easy to access reliable information in online Library



- Convenient
- Flexible
- Trackers allows technology to tell us about every day
- No parking hassles, no need to drive
- Messenger makes contact very easy
- “Whole picture in one place”



- Onsite CR Proven effective
- Practice monitoring skills
- Social aspect/ camaraderie
- Safety
- Volume of contacts made
- Dedicated time can create structure
- Onsite better when not comfortable with technology, can be overwhelming



- Use Technology
- Use Motivational interviewing
- Shape behaviour
- Gradual habit change
- Support and encouragement
- Continue to follow guidelines and recommendations for specific cardiac populations
- Research opportunities