

# MOVE TO BE STRONG!



## VON SMART NEWSLETTER



MARCH 2025

Winter is winding down and we hope you made the most of the magic of wintertime. As we eagerly await the arrival of springtime, and warmer weather, we can create ways to enhance our daily exercise routines. We hope you are able to embrace the outdoors in any weather, but it is certainly easier to enjoy the outdoors without the added step of extra layers.

The changing of the seasons is another opportunity to check in on the goals you created for yourself at the beginning of the year, how is your progress coming? No matter what your goals are, or the amount of progress you have made, celebrate yourself and the knowledge that you are working to improve your overall well-being. Be compassionate with yourself and recognize that change does not happen overnight. With Spring right around the corner, we can shake off those winter time blues and head into the new season, confident, and ready.



### The VON SMART Program

Helping to keep our community dwelling older adults active, engaged and free from falls!

For more information about SMART exercise classes and fall prevention workshops please contact:

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## TECHNOLOGY AND FALL PREVENTION: WHAT'S NEXT?

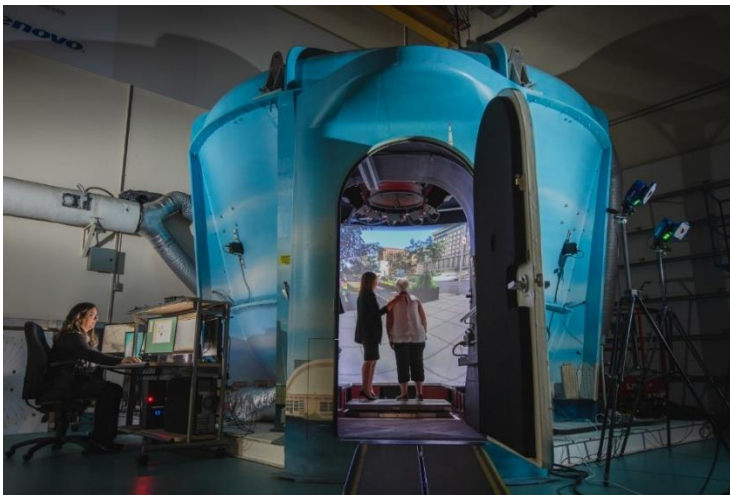
The Challenging Environment Assessment Laboratory (CEAL) at The KITE Research Institute (KITE) is much more than it appears from the curb. KITE is the research arm of the Toronto Rehabilitation Institute (TRI), which is one of the five hospitals within the University Health Network (UHN). Two-stories below TRI's University Centre's main building in downtown Toronto, you will find four state-of-the-art simulators within CEAL. These simulators are working to advance the field of fall prevention in remarkable ways. Each of the four simulators has been named to identify specific situations that they recreate: WinterLab, StairLab, DriverLab and StreetLab. The simulators are portable and can, therefore, be placed on motion platforms, which helps recreate realistic scenarios of common challenges that people face. The data that is collected not only captures the cause of the falls but also how the individual reacts and, ultimately, how the individuals fall. Analyzing the results can help to modify environments to make impactful, long-term changes and help to lower the risk of falls for everyone, not just older adults.

For example, within the StreetLab simulator, the researchers create a virtual reality of a streetscape, including sounds within this kind of environment, which adds auditory sensory input. These elements serve to replicate a regular stroll down the street, and the researchers can manipulate the environment to add common challenges such as curbs, cars, and sidewalk hazards. These elements come together to challenge the participant and possibly induce a fall to analyze the specific cause, and from the data, researchers can make recommendations to help minimize fall risks in the future. One researcher noted that "people who have cognitive declines or a sensory impairment of some kind can struggle in a setting that requires multiple decisions and exposure to many different stimuli" (KITE).

Furthermore, a study conducted within StairLab aimed to determine the optimal stair dimensions. This research directly influenced the National Building Code of Canada, leading to an increase in the required stair run from 8 ¼ inches to 10 inches. The change significantly improved safety by reducing the risk of falls. Building on this work, researchers are now studying handrails to identify the most effective shape, as well as grab bars in bathrooms to enhance accessibility and safety.

Research conducted in the WinterLab helps prevent falls by allowing scientists to study how people move and react in simulated winter conditions like ice, snow, and cold temperatures, enabling them to test footwear, mobility aids, and other factors that could contribute to slips and falls, ultimately leading to the development of better fall prevention strategies for winter environments. WinterLab is utilized in KITE's "Rate My Treads" program, which provides consumers with information on the slip resistance of different winter boots through a standardized testing process.

The work being done in the CEAL is making effective, tangible, and meaningful changes to identify common fall risk factors in a variety of common settings. Using the four simulators at KITE allows researchers to gather evidence to help implement long-term change and lessen fall risks for all members of a community, regardless of age.



StreetLab



WinterLab

## DID YOU KNOW?

There are advances in technology monitoring systems that can help you stay independent and safe in your home for longer. There are many different types of technologies ranging from wearable such as, a smart watch or shoe insoles to non-wearable such as a camera monitoring system. These technologies can help you stay connected to medical professionals and emergency response teams that can detect and respond in the event of a medical emergency or fall.

### WEARABLE TECHNOLOGY

Smart Watch



Smart Phone



Smart Rings, Bracelets, Neck Gear



Shoe insoles (with built-in sensors)



### NON-WEARABLE TECHNOLOGY

Floors and/or carpets with pressure sensors



Voice recognition medical alert systems



Camera monitoring systems



Assistive robots

The above technologies are used to capture physiological and environmental information such as...

Voice distress



Gait patterns



Home routines

Blood pressure, heart rate, body temperature, etc.

Fall detection



The use of this technology comes with certain barriers (e.g. lack of reliable internet access) and there is still lots of work to be done to make these technologies accessible to everyone.

Source: <https://www.mcmasteroptimalaging.org/blog/detail/blog/2022/08/24/the-promises-of-remote-monitoring-technologies?sid=a3e2533f-9722-48f1-8c36-bfdf13de4c58&hl=Technology+and+falls>

## PARTICIPANT HIGHLIGHT

### DENNIS S.



You may recall in an earlier edition we featured the Mobility Matters initiative and the importance of testing your mobility. Dennis, our SMART Participant recently completed his Mobility Matters Checkup #2 and after receiving his results, reached out with a delightful testimonial to the VON SMART Program which we have shared below...

“Hi Khrista, Yesterday’s mobility matters checkup prompted me to write this email. Seeing my improved results put my mind at ease considering the surgeries and health challenges over the last year that reduced my normal activities and greatly affected my balance.

I attribute my current flexibility and mobility to the SMART program, the scheduled exercise structure it provides me and now specifically Chalaine’s role as an excellent instructor and a worthy pick to replace you as you grew the program. She addresses every joint in the body with movement, seems to know exactly how hard to push the group, when to introduce change and is very personable. All positive traits for the class.

I would like to also send kudos out to you for setting up, organizing and growing this program as you have. I signed up for these classes with you at the VON on Rhodes Dr. to accompany my wife and felt that it was going to be too easy or kind of a waste of time. It did not take long for me to realize the importance of these classes and realize how rigid my body seemed to be. I knew the classes were working when my daughter (a Doctor of Physiotherapy) could not believe how easily I was getting on and off the floor to play with my grandkids.

My hope and goal is to be able to participate in this program and be as stable and limber in 10 years when I am 80 as I am now. Thanks to you Khrista, to Chalaine and your team!”

**Thank you, Dennis, for your kind words! Keep moving to be STRONG!**



## SMART AND TECHNOLOGY

The VON SMART Program strives to embrace technology that enhances the programming offered both in the exercise classes as well as Fall Prevention Workshops. At the onset of the pandemic, SMART pivoted and began offering a Virtual Exercise Program (VEP) with live exercise classes via the Zoom platform. The SMART Program has continued to offer these virtual classes and has expanded the weekly schedule as the classes are well attended and enjoyed by all participants. The virtual exercise classes can be a great option in not-so-great weather.

Additionally, the SMART Program has a tablet lending program that provides tablets to those who may benefit from their use. Each tablet is loaded with curated exercise videos, narrated fall prevention presentations, and the Zoom app to allow users to join the live VEP classes (if Wi-Fi is available). If you think you could benefit from one of the tablets, please reach out. The SMART Program strives to stay up to date with the latest technology as it relates to the field of fall prevention.

## WHAT'S IN A WALK?

Gait is classified as the normal walking pattern in humans. Normal human gait requires various parts of the human body – nervous, musculoskeletal and cardiorespiratory systems – to be working simultaneously in order to create movement. Safe walking requires intact cognition and good motor function and control.

Normal gait includes two phases: stance phase and swing phase with each phase being broken out into eight sub-phases:

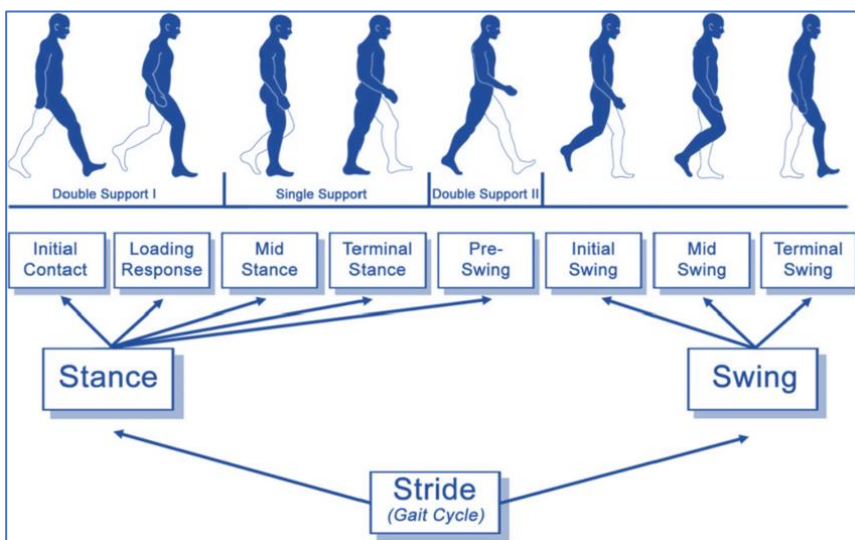
### Stance Phase (60% of total gait cycle)

1. Initial contact (heel strike) [0%]
2. Loading response (foot flat) [0-10%]
3. Mid-stance [10-30%]
4. Terminal stance (heel off) [30-50%]
5. Pre-swing (toe off) [50-60%]

### Swing Phase (40% of total gait cycle)

6. Initial swing [60-75%]
7. Mid-swing [75-85%]
8. Late swing [85-100%]

In a complete, two-step gait cycle, we notice that we are only in two-leg support for 20% of the time, the rest of the cycle – 80% – we are in a single leg support. Did you realize that several times throughout your day you were balancing on one foot? With this in mind, it is important to incorporate balance training into your daily routines and why the SMART Program incorporates it into our exercise classes. Improving your balance and being able to adapt to different balance challenges can help you stay on their feet and prevent falls.



Source: [https://www.physio-pedia.com/The\\_Gait\\_Cycle?utm\\_source=physiopedia&utm\\_medium=related\\_articles&utm\\_campaign=ongoing\\_internal](https://www.physio-pedia.com/The_Gait_Cycle?utm_source=physiopedia&utm_medium=related_articles&utm_campaign=ongoing_internal)

## HAPPY ST. PATRICK'S DAY!

May peace and plenty bless your world  
With a joy that long endures  
And may all life's passing seasons  
Bring the best to you and yours.

~ Irish Blessing, Author Unknown ~



## REMINDER

### NO CLASSES

Friday, April 18, 2025

Monday, April 21, 2025

DUE TO GOOD FRIDAY & EASTER MONDAY