It's that time of year again—runny noses, multiple layers of clothing, overflowing bowls of Grandma's chili to thaw out frozen bones...oh, and the snow! Unless you have been hibernating over the month (which I wouldn't blame you), you can understand how difficult this can make everyday life. For someone who uses a wheelchair as primary means of mobility and functioning, especially a power chair, this time of year can prove to be particularly more challenging. But what can be done to make life easier, more efficient, and safer? Our friends at Permobil (Randy Pesich and others) and Quantum (Mark Smith) have provided some helpful information to shed some light on the matter.

Much like your vehicle, while water resistant, power wheelchairs are not fully waterproof (Smith, 2017). So when the battery and/or motor gets submerged in water, damage can happen. To best prevent this from happening, large puddles should be avoided as the motor rides close to the ground (Smith, 2017). In addition, the hand control (joystick) should be protected from heavy downpours (Smith, 2017).

Power wheelchairs are rated to work in different climates, but always make sure to use the equipment within its rated means (Smith, 2017). Just as with typical weather conditions, using best judgment when operating power wheelchairs is always essential. But if absolutely necessary, many of today's power wheelchairs can operate in 1” of snow (Smith, 2017). For a large sample of the Veterans that come to the Richmond VAMC, operating a power wheelchair in irregular, some-times snowy terrain, is a fact of life. To ensure safety, do not venture out alone in a power wheelchair alone in snowy conditions and avoid icy areas (Smith, 2017).

Have you noticed your car sometimes takes a while to start in cold temperatures? The battery range of your wheelchair can also be affected by temperature (Smith, 2017). For every decrease of 1° F, battery life is also decreased by 1% (Smith, 2017). When temperatures become frigid, much like they have been over the past few weeks, one can imagine how significant it can decrease the life of a battery outdoors. In addition, it is recommended to always store a power chair inside the home (excluding a garage). It is not recommended to store outside, not even overnight (Pesich, 2018). Keeping consistent with themes related to auto maintenance, there are also some practical measures that can be performed to keep problems from happening. “Charging [the battery] every night and proactive maintenance is a must, more so than in summer months and warmer climates” (Pesich, 2018). When entering indoors from outside where salt is on the ground mixed with snow, make sure to wipe off any snow you see as the snow/salt mixture “WILL corrode” and cause damage to the chair (Pesich, 2018). Furthermore, having your vendor create a “1st gear” or “ice” package within the joystick software to use with pneumatic (air) tires in combination with low speed/acceleration can help increase traction. Note that this drive package would not be used for regular driving (Pesich, 2018). Lastly, ensuring the tires of the chair have appropriate levels of tread can lower the risk of getting stuck outside in muddy/snowy terrain (Pesich, 2018).
The University of Pittsburgh Department of Rehabilitation Science and Technology and McGuire VA Medical Center’s Assistive Technology Program hosted the Wheelchair Skills Assessment Training on November 6, 2017. The training workshop was presented by Dr. Lee Kirby and Cher Smith from Division of Physical Medicine & Rehabilitation at Dalhousie University and Department of Occupational Therapy, Capital District Authority in Halifax, Nova Scotia, Canada. The Wheelchair Skills Program (WSP) includes low-tech, high-impact evaluation and training tools to help practitioners translate research evidence into clinical practice. The full day workshop started with a one hour lecture discussing the rationale and evidence in supporting WSP. The rest of the day was mainly a practical experience, providing therapists the opportunities to experience a range of caregiver and manual wheelchair users skills. These skills included spotting techniques, assessment methods and training techniques.

There were 22 attendees and here are a few comments about their experience:

- Energetic, engaging presenters
- Evidence-based, good information, professional presenters who are experts in the field
- The class was excellent!!!! Thanks to all for arranging this.
- Interactive experience for therapists: chance to try wheelchair skills, trainer skills – inside and outside, including fall and fall recovery. Nice to have kinesthetic learning opportunity
- This was most hands on, interactive wheelchair skills course I’ve ever been able to take. The information was applicable to my day to day job – I believe it will improve my treatments and approach to teaching wheelchair skills.
- I felt the instructors were incredibly knowledgeable and able to answer any and every question we as a group had for them.
- I feel the information we learned will be incredibly helpful for our veterans. We’ve had a few vets recently who are w/c level but also want to live more independent lives and I feel these tools are a way for us to make that happen.

VACO Rehabilitation & Prosthetics Program Office launched a new website specific to Assistive Technology (AT) called VA ATECH: https://www.vaatech.org/

The website provides information about different AT categories such as electronic cognitive devices, computer access to name a few. In addition, the AT device reviews are posted on this website which provides an objective view of the newest AT devices offered to our veterans. Other tabs include: resources, access to educational webinars and VA AT Connect and VA AT locator which are ways to locate an AT provider.
Veterans’ Stories...

Christopher Scott

Tell us about your experience with the Assistive Technology Program (Speech, driving rehab, OT/PT/RT). It’s been a great help, both physically and mentally for me. I don’t know what I would have done without them. It strengthened my will to move forward.

What challenges were you having that had you referred to the program? I had a severe spinal cord injury that left me paralyzed in 2016. I had trouble with the ability to communicate and express myself; doing things on my own, the ability to use the telephone, to navigate a wheelchair on my own.

Who did you see? I saw John [AT], Jenna [OT], and Laurel [PT].

What device/program did you get? It’s a long list. I got accessible switches to control things, a chime to alert my caregivers at home, a Primo! loaner in the hospital, I’m getting Alexa for my apartment, a phone mount, and things on my wheelchair like a special arm to mount my chin joystick that flips out of the way.

How has the device changed your life or impacted your life? The Primo! here gave me the ability to maintain my will to move forward to better things. I could independently operate the TV as well as call for help in an emergency. I’ll do the same things with Alexa at home.

What activities (things) are you doing now that you were not able to do before? Everything. I can drive and go places on my own by navigating my wheelchair without assistance. I can access my phone on my own. AT gave me independence.

Would you say your quality of life has improved? 100%.

Is there anything we have not covered that you would like to include? I would like to say that the [AT] program has benefited me greatly, and that I hope you all continue to help the veterans that come behind me so that they can benefit from AT.

Winter Power Wheelchair Safety, cont.

While these recommendations cover multiple topics related to power wheelchair safety in winter weather, it is by no means a comprehensive list. As always, consult your owner’s manual for additional recommendations/ratings for any powered mobility equipment. The winter time can be a season of difficulty and angst…but it can also be a season of joy and liberation. Even if you are using powered mobility, don’t let the elements keep you from participating in your valued occupations…the things you want to do and need to do every day!

Special thanks to Randy Pesich and others from Permobil and Mark Smith and Phil Vaughan from Quantum for providing valuable input to make this article!

Sources:

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In the tale, Ali Baba and the Forty Thieves, a passageway is opened without a key, lock, or handle. The Open Sesame App - for Android devices, by Sesame Enable, allows [Android] users to “operate any mobile device simply by using head movements.”

Many Veterans suffer from disabilities that limit the use of their hands and prevent them from doing activities that most of us take for granted – like using our mobile devices. With Open Sesame, that freedom and control is restored. Using the front-facing camera of any Android device, Open Sesame tracks head movement to unlock touch-free texting, social activity, searching the web and more.

Open Sesame offers touch-free control for those who cannot use their hands to access a smartphone or a tablet. It also offers extended voice commands, like voice answering and dismissing calls, as well as the option to end a conversation by a voice command.

The app is available in a 30-day free trial, on a subscription basis ($19.99/month) or as a package ($1,095.00 includes a Smartphone or Tablet, 2-Year License, Updates to the Latest Version, Premium Support; the optional Bamboo Mounting Kit costs an additional $250).

This is comparable to the cost of a headmouse (~$1000 for the Nano or SmartNav), if you are purchasing the package. If you are using your own phone or tablet, the monthly fee is a more affordable option than a one-time payment of nearly $1000.

Currently, the Open Sesame App only works on Android based devices. For now, sorry Apple users. It’s a relatively simple installation from the Google play store. The user’s device should be mounted 1.5-2’ from their face. After that there is some minimal setup of the app, and calibration for the individual patient. The supplier provides easy to read instructions on how to get started. If your device is not already setup for google assistant, you will need to turn that feature on. Again, the vendor provides instructions on how to do that. Typical setup, calibration, and training (barring mounting concerns) takes less than an hour.

Take the tutorials/training to learn how to click, swipe, go back, go to the homescreen, select menu, and to learn the various voice commands. Issues have been reported where the lighting, background, and clothing affected the way the application recognizes a user’s face. It is important to have adequate lighting, high contrast background and clothing, so the individual’s face is not washed out or too dark to be recognized by the front facing camera. Otherwise, it is very predictable. If, for some reason the user shifts position, the user can use the verbal command “ok google, reposition” to re-center the camera view on their head.

As with any app, to stay ahead of vulnerabilities and threats, as well as to be compatible with many different devices and platforms, it requires regular updates.

Settings are adjustable to manipulate the cursor size, color, and timing. It is an app for android devices, so if a user already has an android device it should be compatible. There is a small learning curve to memorize the verbal commands for google and Open Sesame, and how to manipulate the cursor selection options, locking/unlocking the pointer, etc. After some practice, it becomes second nature. Once calibrated properly, it responds well (device performance will play a part here). If the user’s device is out-of-date, bogged down with a multitude of other apps, or many apps are running at the same time, performance will suffer, and it may not be as responsive. Most people are using tablets or smartphones these days, so aesthetically it is no different, and quite mainstream to interact with your smart-device via voice commands. So, if you hear someone saying “open sesame”, you’re either in the Arabian desert, or within earshot of an Open Sesame App user.

Sesame Commands
OK Google + Open Sesame - Activates Sesame Tracking, begins face-tracking
OK Google + Turn Off Sesame - Turns off just the Sesame Tracking, not the screen
OK Google + Reposition - Re-calibrates face-recognition
OK Google + Lock Pointer - Pauses head-tracking
OK Google + Unlock Pointer - Resumes head-tracking
Android Phone Commands:
OK Google + Wake Phone - Wakes phone from sleep mode, without turning on Sesame Tracking
OK Google + Go Back - Equivalent to pressing ‘Back’ Button
OK Google + Go Home - Equivalent to pressing ‘Home’ Button
• Non OK Google Commands (say the command WITHOUT OK Google)

Phone Call Commands
Sesame Answer - Answers phone call
Sesame Dismiss - Dismisses a call
Sesame End Call - Ends phone conversation

Content Source: https://sesame-enable.com/