



Wheelchair Wellness: Maintain Your Wheelchair Health During COVID-19

Sponsored by the Oregon Office on Disability and Health at OHSU
Permobil
Oregon Spinal Cord Injury Connection

Today's Presenters



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Housekeeping Information

- Webinar is being recorded. Recording housed at OregonSCI.org
- Streaming live and recording can be found on [Oregon Spinal Cord Injury Connection's Facebook page](#)
- Captioning available by clicking the captioning box
- Please mute your audio and video during presentation
- Questions: During session time and also time at end
- Pre/post poll to learn who's with us today and to evaluate the webinar

Overview

Top concerns with cushion selection with COVID-19

Cleaning vs Disinfecting, Porous vs Non-Porous Surfaces

Effects of immobility on the wheelchair user during the COVID-19 pandemic

Manual and Power Wheelchair Care and Maintenance Tips

Questions

15 Min



Top concerns

First and foremost: INFECTION CONTROL

We need to use products that can be **easily and effectively** cleaned and disinfected to stop the spread of this virus.

As well as: PRESSURE INJURIES

Patients affected with the COVID-19 virus are experiencing a higher level of immobility due to being bed bound for weeks while fighting this virus or quarantined to a small space to protect them from exposure.



Stop the Spread of Infection

COVID- 19 has changed the rules of the game. Now more than ever, we need to STOP the spread of this very contagious virus.

- Infection Control IS and SHOULD be the top priority at every organizations' list.
- **One absolute is that this virus can be spread from direct contact from a surface to an individual.**
- The CDC has released strict guidelines on cleaning and disinfection procedures that must be observed.
- **We need to use surfaces that can be easily and effectively cleaned and disinfected per CDC guidelines to minimize the risk of spread.**
- We, as manufacturers and distributors have an ethical obligation to our customers facing the COVID-19 virus to promote products that allow our clients to meet those guidelines and reduce the risk of infection.



Maintaining your Ride:

Cushion Care



clean adjective



\ 'klēn \

Definition of *clean* (Entry 1 of 4)

- 1 a** : free from dirt or pollution
// changed to *clean* clothes
// *clean* solar energy
- b** : free from contamination or disease
// a *clean* wound
- c** : free or relatively free from radioactivity
// a *clean* atomic explosion

First Step: Cleaning

Washing the cover



- Mild detergent
- Machine wash on cold
- Gentle cycle



- Neutral detergent
- Warm water



- Tumble dry on low





disinfect verb



dis·in·fect | \ ,dis-in-'fekt \

disinfected; disinfecting; disinfects

Definition of *disinfect*

transitive verb

1 : to free from infection especially by destroying harmful microorganism

broadly : CLEANSE

Second Step: Disinfecting

Disinfecting the cover



- Cold water
- 1 part liquid bleach
- 9 parts water
- Soak for 10 minutes



- Rinse thoroughly or machine wash with hot water



- Tumble dry on low



List N: Products with Emerging Viral Pathogens AND Human Coronavirus claims for use against SARS-CoV-2
Date Accessed: 04/14/2020

EPA Registration Number	Active Ingredient(s)	Product Name	Company	Follow the disinfection directions and preparation for the following virus	Contact Time (in minutes)	Formulation Type	Surface Types for Use	Use Site	Emerging Viral Pathogen Claim?	Date Added to List N
70144-2	Quaternary ammonium; Isopropanol	Opti-Cide 38 Wipes	Micro Scientific LLC	Rotavirus; Rhinovirus	3	Wipe	Hard nonporous	Healthcare; Institutional	Yes	04/09/2020
1677-259	Dodecylbenzenesulfonic acid; Lactic acid	CW32A-RIU	Ecolab Inc	Norovirus	0.5 (30 seconds)	RIU	Hard nonporous	Healthcare; Institutional; Residential	Yes	04/09/2020
1677-260	Dodecylbenzenesulfonic acid; Lactic acid	SSS Sanitizer	Ecolab Inc	Norovirus	0.5 (30 seconds)	Dilutable	Hard nonporous	Healthcare; Institutional; Residential	Yes	04/09/2020
91099-2	Hydrogen peroxide	MD1-200 Part B	Span-World LLC	Feline calicivirus	10	Dilutable	Hard nonporous	Healthcare; Institutional	Yes	04/09/2020

1 of 39

<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

Current as of: April 14, 2020

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Cleaning vs Disinfecting

Porous vs Non-porous

Considering the differences?

Porous surfaces

Open cell materials that allow the virus to easily enter and contaminate the material. Once contaminated, a porous surface must be:

- Cleaned with appropriate cleaners indicated for use on these surfaces;
- Laundered with the manufacturer's instructions using the warmest appropriate water setting for the items;
- Dried completely.

However, many porous surfaces, cannot be laundered.

Non-porous surfaces

Non-porous- a “closed” surface that does not allow the virus to enter the medium. Can simply be cleaned and disinfected per the CDC:

- Clean using a detergent or soap and water prior to disinfection;
- Disinfect by using either of the following:
 - Diluted household bleach solutions (at least 1000ppm sodium hypochlorite)
 - Common EPA-registered household disinfectants
- Use non-porous surfaces that can be EFFECTIVELY cleaned and disinfected reduce anxiety during these challenging times.

Permobil's non-porous surfaces can be both spot cleaned and disinfected per CDC guidelines AND laundered to stop the spread of infection.



Non-Porous Seating Solutions

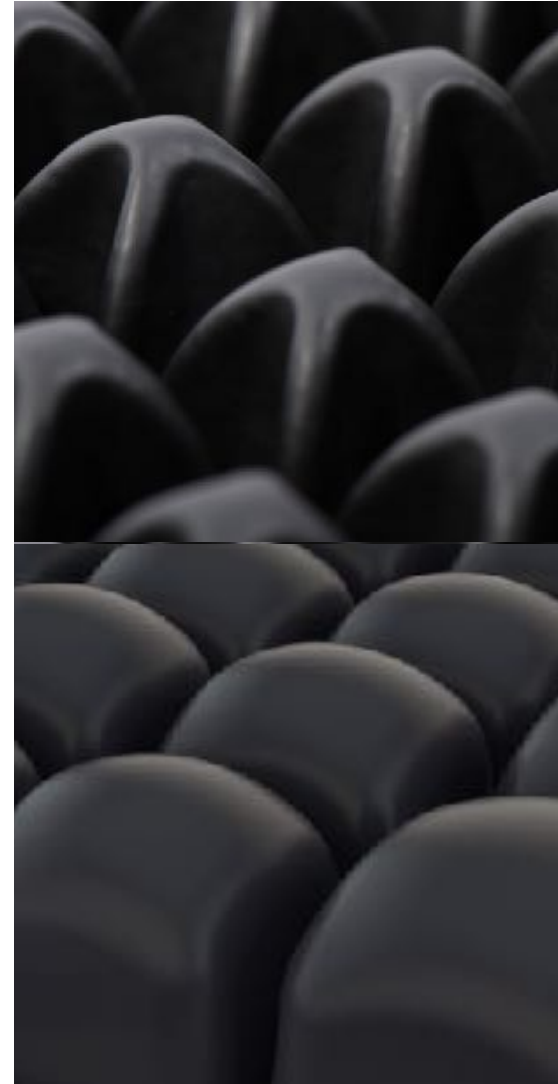
Non-Porous Seating Solutions

To Clean:

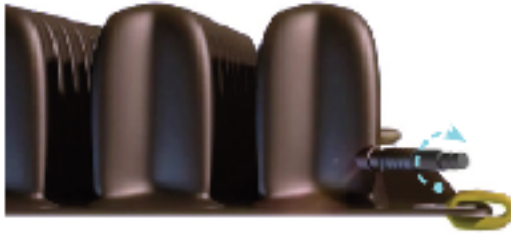
- Wipe all exposed surfaces with neutral detergent and warm water.
- Rinse thoroughly with clean, warm water.

To Disinfect:

- Wipe all exposed surfaces with CDC approved bleach to water ratio solution (*50:1, equivalent to 1000 ppm*) This can be achieved by mixing:
 - 5 tablespoons (1/3 cup) bleach per gallon of water
 - or 4 teaspoons bleach per quart of water
- **Keep the product wet with the bleach solution for 10 minutes.**
- Rinse thoroughly with clean warm water.
- Air dry.



3 Cleaning the ROHO Cushion



Close the valve(s).



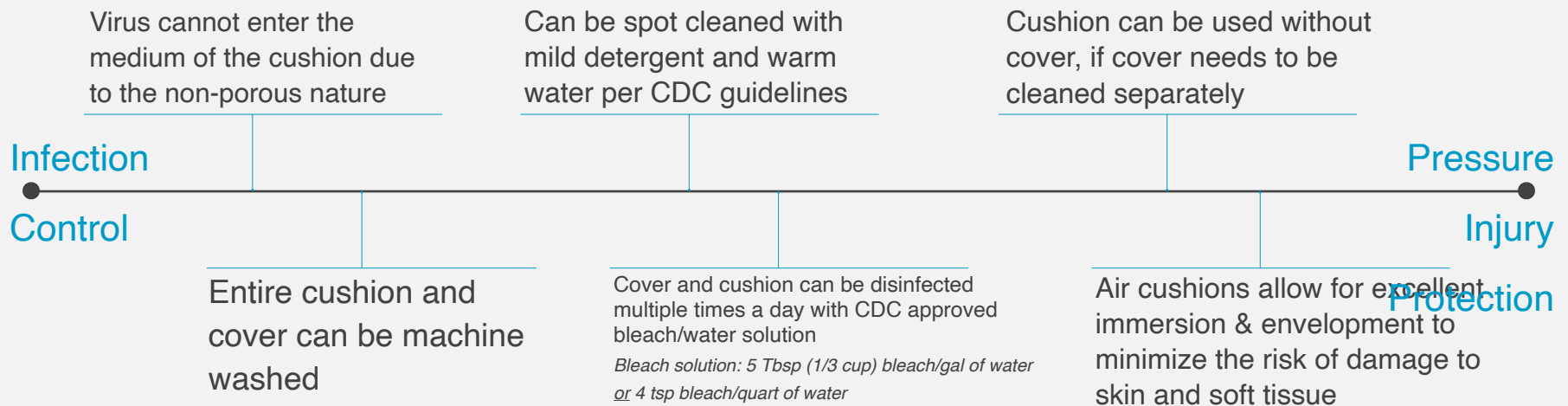
Begin by rinsing and removing anything between the cushion cells.



Take care while cleaning. If a substance has dried on the cushion and sticks cells together, do not attempt to separate the cells when they are dry. This may damage the cushion.

Non-porous skin protection seating surfaces

The benefits



Handwashing foam cushion



- Damp cloth
- Do NOT use soap



- Air dry

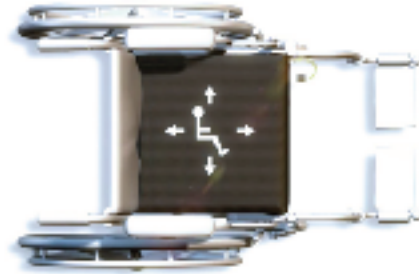


Please note

Disinfectants are not effective on porous surfaces such as foam



Once the cushion and cover are both dry, replace the cushion inside the cover. Use the directional labels on the side of the cushion cover to be sure the cushion is inserted correctly.



Zip the cover and place the cushion on the wheelchair. Again, refer to the directional labels on the side of the cushion cover to be sure it is placed properly on the wheelchair.

Note: Follow cushion setup instructions in the product operation manual provided with the cushion.

Disinfecting shell & hardware



- Household disinfectant
- Wipe with dampened cloth



- Rinse with clean water



- Wipe dry with cloth



- Air dry



Problem: Significant reduction in mobility

How will that impact the skin and soft tissue of a wheelchair user?

Many states have implemented stay-at-home orders that could last several months.

- What are the short-term changes and long-term ramifications to the wheelchair user?

Prior to the pandemic, wheelchair users left the house or their room if living in a community, numerous times a day to sustain a level of activity that helped maintain:

- muscle strength
- balance
- endurance
- allowed for multiple weight shifts or transfers while performing MRADLs

That all has changed with the COVID-19 pandemic.

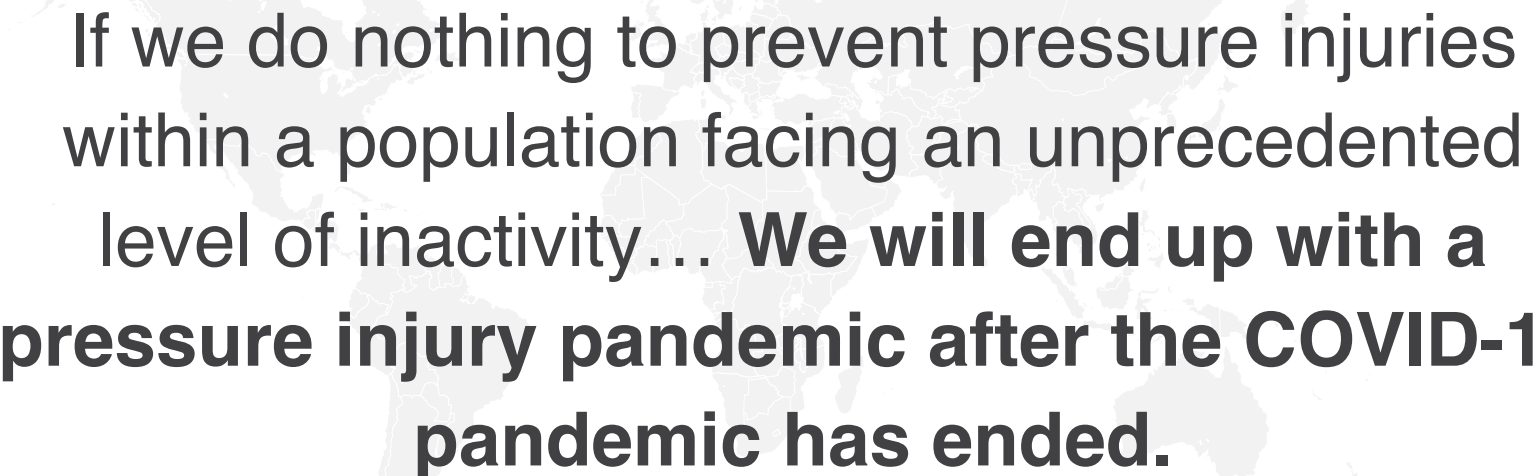
Wheelchair users are facing a level of immobility as never seen before.

- Worst case scenario - diagnosed with the COVID-19 virus, will result in the individual to be bed bound for multiple weeks
- Less severe scenario - non-ill individuals will be quarantined with a significant decrease in activity level

Implications from forced inactivity for long periods will result in:

- muscle atrophy
- changes to skin and soft tissue integrity
- higher risk for pressure injury development

Forced immobility & pressure injury



If we do nothing to prevent pressure injuries within a population facing an unprecedented level of inactivity... **We will end up with a pressure injury pandemic after the COVID-19 pandemic has ended.**

Maintaining your Ride:

Wheelchair Care and Maintenance



Things We Maintain ... self, home, car, bike

Why would wheelchair and seating components be any different?

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User's Manual

American English

F3 Corpus

ROHO

ROHO® DRY FLOATATION® Wheelchair Cushions
(Operation Manual)



Read this manual and its parts before use of the product.
Read the Distribution Company's manual using the product, and the relevant parts and accessories.

shape fitting technology®



**TRA
AERO T**

OWNER'S MANUAL

Owner's Manual

Handwashing powered wheelchairs



- Hot water
- Mild detergent
- Sponge



- Rinse thoroughly with clean water



- Wipe dry with a clean cloth
















maintenance noun

 Save Word

main-te-nance | \ 'mänt-nən(t)s |, 'män-tə-nən(t)s \

Definition of *maintenance*

- 1** : the act of *maintaining* : the state of being maintained : SUPPORT
// The building has suffered from years of poor *maintenance*.
- 2** : something that maintains
// at least half of them are living parasitically on the other half instead of producing *maintenance* for themselves
— G. B. Shaw

New Step: Maintaining



56% of PWC users have had parts of their power wheelchair break or malfunction

Has any part of your power wheelchair ever broken or malfunctioned?

56%



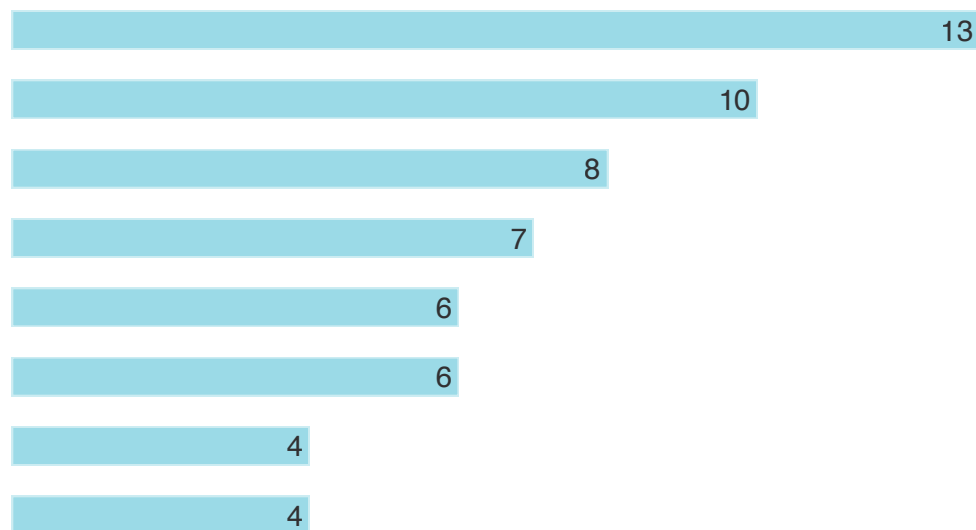
Yes

44%



No

Which part broke or malfunctioned most recently?



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Online survey conducted in 2017 by PatientsLikeMe on 121 Power Wheelchair Users diagnosed with ALS, MS or SCI.

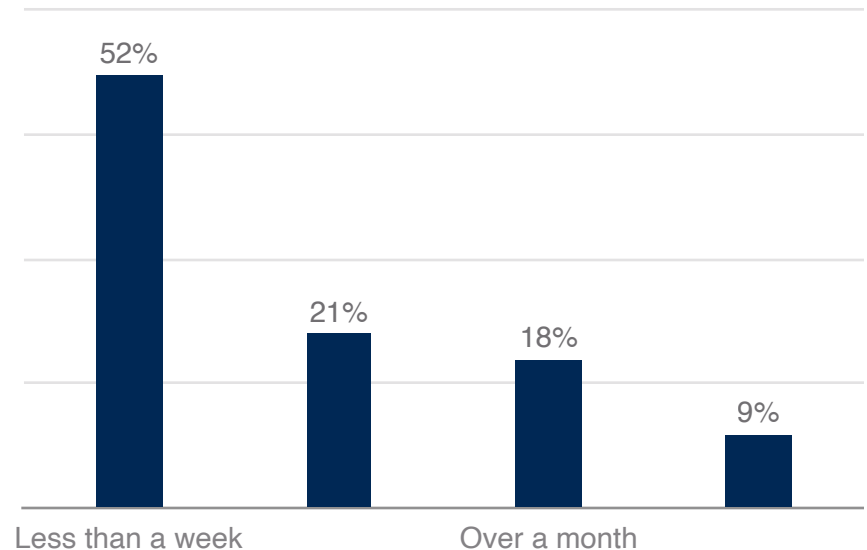
Half of PWC users could not use their chair at all because of the broken part

For how many days were you without the use of your power wheelchair when it broke down most recently?

Did this broken part completely prevent you from using the PWC?
(n=68)

Yes	33 (49%)
No	35 (51%)

Online survey conducted in 2017 by PatientsLikeMe on 121 Power Wheelchair Users diagnosed with ALS, MS or SCI.



Power Wheelchairs: What to Do?

Clean Power
Wheelchairs Often

Tighten Hardware:
Headrest
Seating
Components

Adjust as
Needed

Inspect for
Wear & Tear

Inspect Cushions
and Backrests

Be Proactive with
Replacement Components,
including batteries

Maintenance and inspection schedule		Daily	Weekly	Monthly	Yearly
Check battery level indicator and charge if necessary.		X			
Check that the joystick panel and other control panels are not damaged.		X			
Make sure all removable parts are securely fastened.		X			
Check positioning belts for wear and make sure buckles work.		X			
Check tires and inflate as necessary.			X		
If the wheelchair is equipped with lights and turn signals, make sure they are operational and clean.			X		
Clean the wheelchair and upholstery.				X	
Check upholstery, seating, headrest, arm pads and calf pads for wear.				X	
Check that the brake release and the brake release lever work properly.			X		
Complete inspection, safety check and service performed by an authorized wheelchair dealer.					X

Manual Wheelchairs: What to Do?

Clean Manual
Wheelchairs Often

Tighten Hardware:
Seating Components
Caster/Forks

Adjust as Needed
Wheel Locks
Tire Pressure

Inspect for
Wear & Tear

Inspect Cushions,
Seat Sling and
Backrests

Proactive Replacement
Tires & Casters
Upholstery

CHAPTER 2: SAFETY INSPECTION, MAINTENANCE & TROUBLESHOOTING

Inspection Item	Initially	Weekly	3 Months
Rear Tires <ul style="list-style-type: none"> • Check for proper inflation as per sidewall of pneumatic tire • Inspect for cracks, wear and flat spots 	√ √	√ √	
Camber Tube/Axle Sleeves <ul style="list-style-type: none"> • Make sure camber plug clamps are securely tightened • Make sure camber plugs are secure in camber plug clamps and axle sleeves are secure in camber plugs 	√ √	√ √	
Handrims <ul style="list-style-type: none"> • Inspect for signs of rough edges or peeling • Make sure handrims are securely attached to rim 	√ √		√ √

Inspection Item	Initially	Weekly	3 Months
General <ul style="list-style-type: none"> • Make sure chair rolls straight (does not drag or pull to one side) Inspect for loose/missing/broken/worn/damaged hardware 	✓ ✓	✓ ✓	
Rear Wheels <ul style="list-style-type: none"> • Inspect for cracked, bent or broken spokes • Make sure all spokes are uniformly tight • Inspect hubs and rims for cracks and wear • Inspect for "trueness" (excessive side movement when wheel lifted and spun indicates lack of "trueness") 	✓ ✓ ✓ ✓	✓ ✓	✓ ✓
Quick-Release/Quad-Release Axles <ul style="list-style-type: none"> • Make sure axles are free of dirt and lint • Wipe axle with cloth using either a "dry" silicone spray or a "dry" Teflon[®]-based lubricant • Make sure that axles lock properly in axle sleeve 	✓ ✓	✓ ¹	✓ ✓

Rear Wheels

- slop in axles
- quick release button functioning
- bearings (missing)
- bearings spinning properly
 - hair in bearings
 - oil
 - damaged bearing shield



Rear Tires

- pressure checks are very important:
 - Low pressure robs performance
 - Increases tire wear
 - Can be a safety issue with wheel locks functioning
- wear patterns
 - Toe in will wear the outside edges of the tires
 - Toe out will wear the inside edge
- solid tire vs pneumatic



Rear Tires

- travel tips
 - manual air pump
 - tire levers
 - tube patch kit



Caster Wheels

Caster Wheels:

bearing issues

- hair, needs oil, bearing seals

loose axles

- missing screws
- hardware loose

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Caster Forks

loose forks: bearing maintenance

- oil them
- replace if needed

forks not spinning freely

- overtightened fork stem unit
- bent fork stem

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Frame Components

- upholstery: seat or back
 - screws
 - frayed seat
 - sagging sling
 -
- footrest
 - angle adjustment loose

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Frame Accessories

side guard brackets

- rattling/rubbing

wheel locks

- adjusted correctly

armrests

- brackets
- height adjusted
- armrest pads tight

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Responsibilities of User

—“CMS considers it reasonable to expect that beneficiaries will perform the maintenance.”

University of Pittsburg, 2017
<http://www.upmc-sci.pitt.edu/wmtp-landing>

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Read and use the owner's manual

Perform routine maintenance

- Cleaning
- Tighten wheel locks
- Tighten loose bolts and nuts



Provide Client Education

“Contact your supplier or manufacturer to determine the appropriate maintenance to keep your mobility device in good working order.”

University of Pittsburg, 2017
<http://www.upmc-sci.pitt.edu/wmtp-landing>

Education on routine maintenance

- Cleaning the chair
- Basic maintenance
- Tightening the wheel lock
- Loose bolts or nuts





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University of Pittsburgh Model Center on Spinal Cord Injury



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Wheelchair Maintenance Training Program



<http://www.upmc-sci.pitt.edu/wmtp-landing>

(Google: wheelchair maintenance training program)

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Web-Based Maintenance Training



Thank you for visiting our page on web-based maintenance training!

<http://www.upmc-sci.pitt.edu/wmtp-landing>

(Google: wheelchair maintenance training program)

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Wheelchair Maintenance Training Program

Thank you for your interest in our wheelchair maintenance training materials. Below you will find materials designed for clinicians to teach wheelchair users how complete maintenance on their wheelchairs.

- [Clinician reference manual \(Español\)](#)
- Hands on activity checklist for [manual \(Español\)](#) and [power](#) wheelchairs
- Maintenance cards for [manual](#) and [power](#) wheelchairs
- Powerpoint presentations for [manual \(Español\)](#) and [power](#) wheelchairs
- [Manual wheelchair video \(Español\)](#)
- [Power wheelchair video](#)
- [Recordatorios en Español](#)

If you have questions about these materials, please [contact us](#).



Find us on 



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Thank You!



Questions?

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