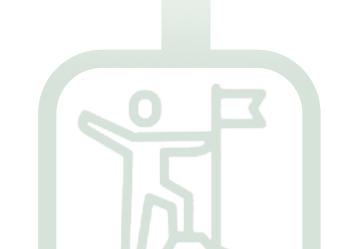
The Adaptive Clothing Resource Guide

This project is a collaboration between Vanderbilt's Wond'ry Center for Innovation, Fashion is for Every Body, & Community Partners









Mission Statement

Our goal is to educate tailors and designers about tools and techniques for altering/adapting clothing for people with disabilities and/or miobility issues, thus empowering people of all abilities to advocate and freely express themselves through fasion that fosters independence.



"Create a guide to give to tailors to show them adaptations and to explain why something needs to be done the way it's done."

-Kieran O'Brien Kern@@kieranobk



Fashion is for Every Body founder Alicia Searcy strives to give back to the disability Community with resources for helping others live their best lives. All clothing should be adaptive for whatever life brings.

"This is as much a tool for disabled people as it is for the people helping them, because it gives them a frame of reference to say I need these snaps here. I need these hooks here. I need this zipper."
-Alicia Searcy

This guide aims to help all.

This guide is written in honor of Kimmie Jones 1983-2017

"Kimmie Jones was a founding member and enthusiastic supporter of Fashion is For Every Body. Born with Muscular Dystrophy and wheelchair dependent, she participated in our inaugural runway show and was instrumental in turning an idea into an official nonprofit organization. Kimmie passed away iin 2017 but we honor her legacy through this guide."

-Alicia Searcy, fashionisforeverybody.com (o)@spashionista



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Overview of Disability Population

"Disability isn't a curse. The lack of an inclusive society is."

-Alesha Savannah



Overview of Disability Population

In 2019, the United States Census Bureau reported over 78.2M people have a disability.

11.4M 15% Hearing difficulty

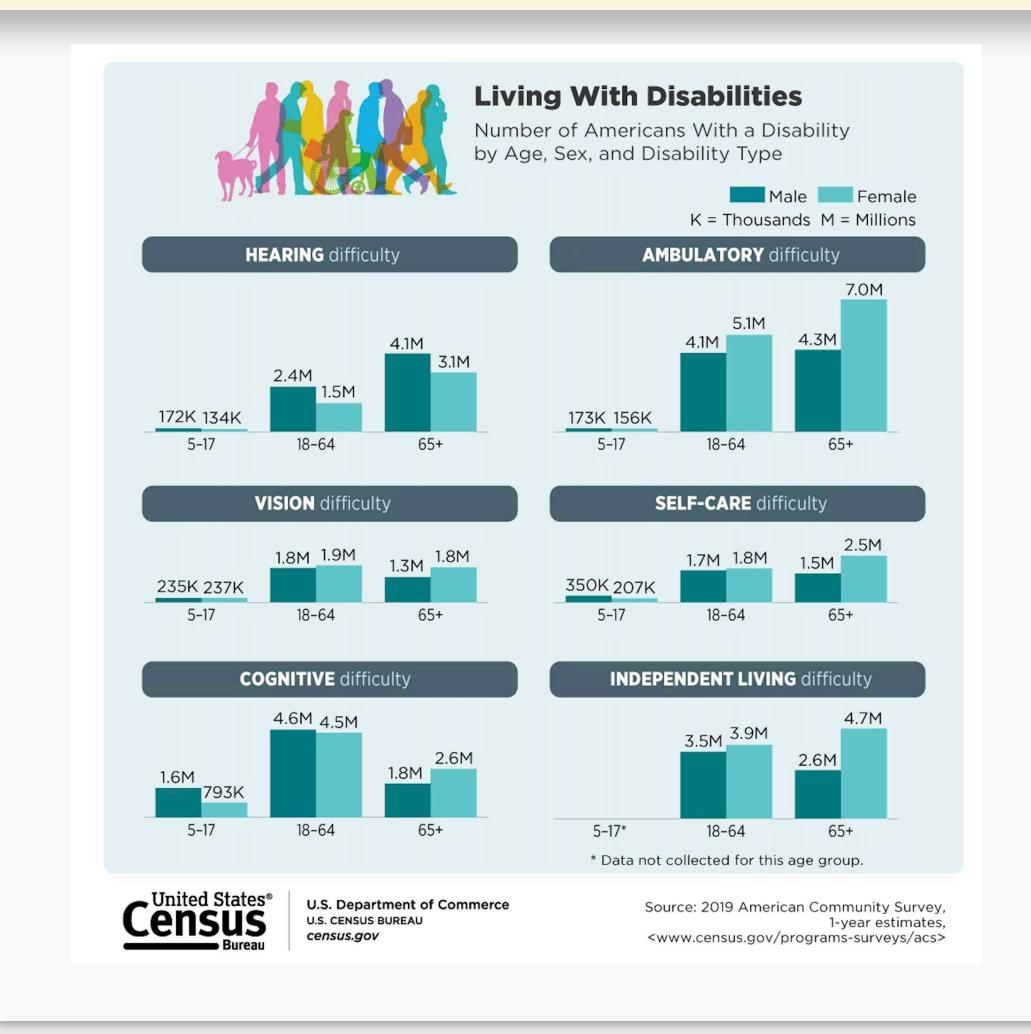
7.3M 9% Vision difficulty

15.9M 20% Cognitive difficulty

20.8M 27% Ambulatory difficulty

8M 10% Self-care difficulty

14.7M 19% Independant Living difficulty





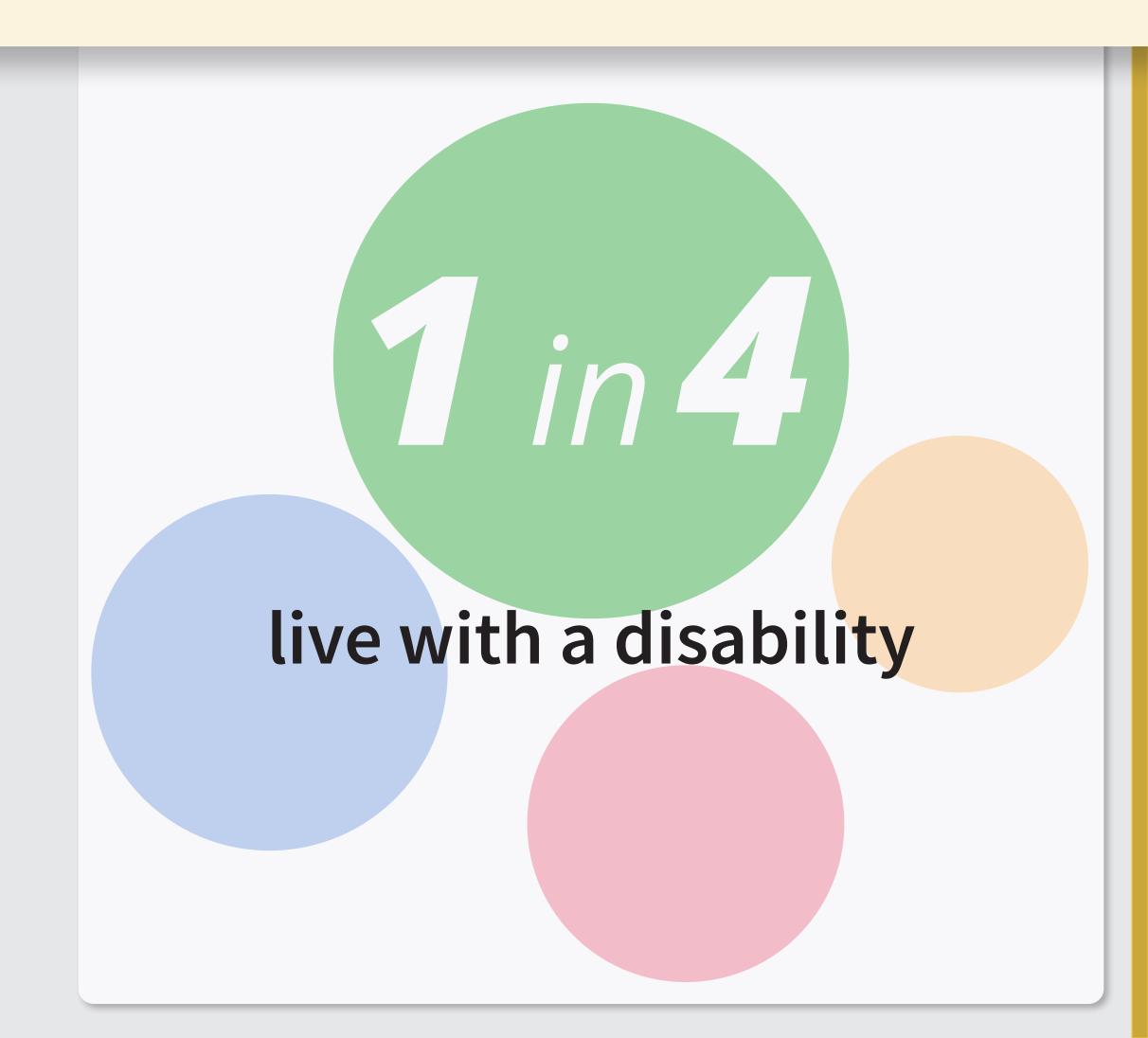
Overview of Disability Population

VOGUE BUSINESS

C#HERENT MARKET INSIGHTS

Estimates the global Adaptive Clothing market size worth \$334.5 billion in 2021 forecast to readjust size of \$400 billion by 2026 with a CAGR of 4.9%.

https://www.voguebusiness.com/consumers/adaptive-clothing-differently-abled-asos-target-tommy-hilfigerhttps://www.coherentmarketinsiahts.com/market-insiaht/adaptive-market-2294



Main Challenges with Adaptive Fashion

"My biggest issue is fatigue, after trying to get on one shirt, I have to build strength to get my pants on."

-Allie Schmidt



Main Challenges with Adaptive Fashion

- No products to help parents with disabilities
- The disability market is "Far from a monolith"
- Current adaptive solutions do not take into account the disabled community
- Tailors are often intimidated by adaptive modifications and lack of information
- People with disabilities don't dress professionally because non-adaptive clothing is so hard to get on
- Tailoring and customization is expensive and time consuming.
- Pockets are disability friendly, but many garments lack them

- Putting on non-adaptive clothing is time consuming and exhausting
- •Most people with limited dexterity can't do a pinching motion
- Online shopping often does not offer adaptive fastener options
- Some fabrics evoke anxiety in people with sensory issues
- Research falls on the consumer
- Lack of adaptive jewelry with snap on earrings/necklaces
- Difficulty in finding pants in different lengths for those with limb differences

Start with the question "How may I help you?"

"What kind of adaptations can I make that will serve your needs? It's more about the interaction than the actual words."

-Alicia Searcy on how to start the dialogue

Diminished Dexterity

"Fatigue sets in just from getting dressed. Getting dressed is exhausting."

-Lissie Cox



Diminished Dexterity

Challenge: Getting dressed takes too much time and energy

It can be mentally and physically draining for individuals with diminished dexterity to dress themselves, including difficulty using buttons, zippers, and some pockets.

Considerations for alterations may inlcude:

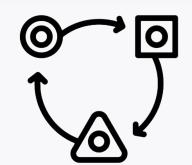
Replace buttons with magnets or velcro

Attach loops in specific locations for easy take on and off

Add loop fasteners to zippers

Include pockets to make it easier to take clothing off

Options for easy on/off products









One handed belt caregive products.com



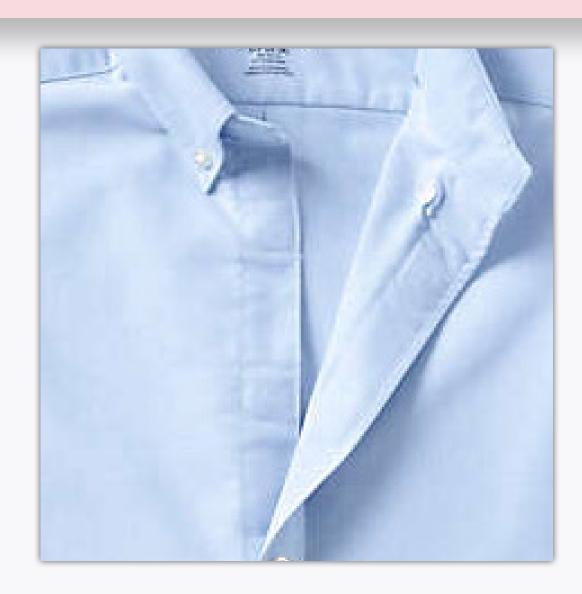
FlyEase Go nike.com



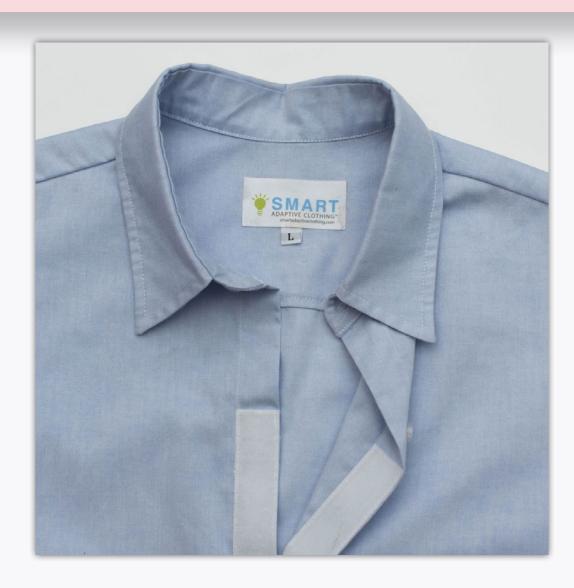
Dressing Stick aids in dressing



Diminished Dexterity Current Options



Many brands offer magnetic placket closure as an alternative to buttons, but be mindful of the neck opening for magnet placement & wearer comfort.



Some brands place hook and loop behind front button front placket for a dignified appearance without the hassle of buttons. It is difficult to align with limited decterity.



Eric Adler bespoke adaptive pants made for client Alicia Searcy. Features higher back rise and bias yoke for fit and style with accessible snap.



Challenge: Clothing is not catered to this need

Inefficiency and difficulty in daily life with ill-functioning clothes.

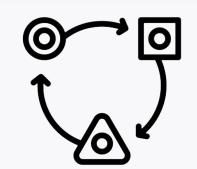
Time and energy could be focused on life rather than clothing.

Considerations for alterations may inlcude:

Slits that are placed in the correct location: Shoulders, chest, and each side of the abdomen

Include pockets to hold necessary medical supplies

Current adaptive options

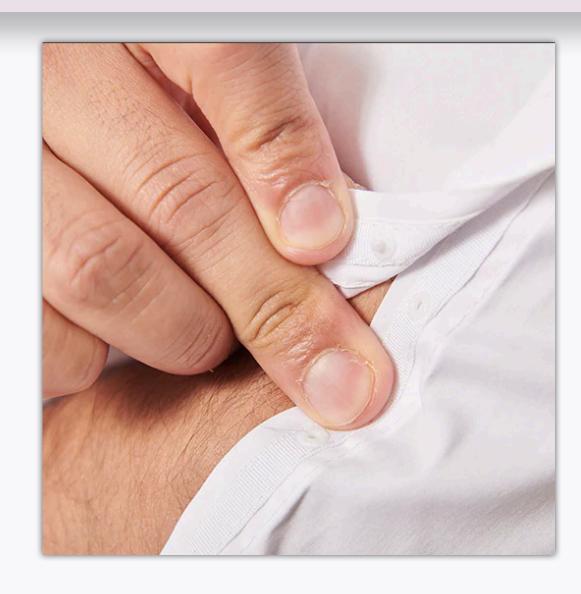


Brands offer PICC line covers and shirts with chest port access for patients

Brands offer seated trousers and double-layer dresses with port access



Medical Device Access Adaptive Options



Some brands offer full sleeve access with choice of snaps, magnets, or VELCRO® closures. Discuss the best option for end use.



Use high quality knits for softness and snaps oor other preferred closure for ease of access.



Zippers or other closures with multiple access points may be needed for different treatments.



Sensory Accomodations

"My skin is super sensitive to materials, some days my clothes hurt. Some clothes these days are made super soft. I need them without tags. The seams are super important to me, including the way the clothes are constructed. Some days clothes hurt me very very badly." -Mary Fashik



Sensory Accomodations

Challenge: Irritation from specific aspects of clothing

Seams, tags, patterning of clothing or the fabric it's made of may invoke tender spots or sores for those with sensory disabilities

Strategically place seams in altering garments to ensure:

Seams and trims aren't irritating to the wearer

Individuals who are seated in wheelchairs may have increased sensitivities

Remove tags or create heatseal versions

Current options for sensory accomodations



Seamless knits



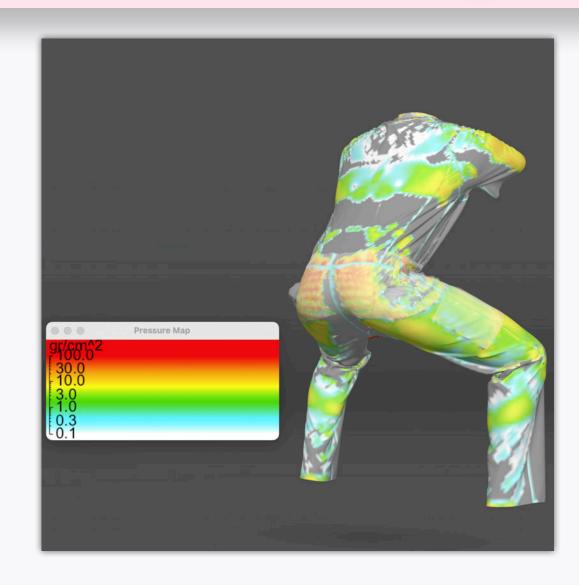
Tagless Labels



Seamless knits



Sensory Accomodations Adaptive Options



Seams may cause pressure points for those in prolonged seated positions. Mindfulness of seam placement and proper fit reduces tenderness and potential sores.



Some brands offer pants for those in wheelchairs to reduce the pressure points casued by pockets and low yoke risers. Avoid Excess fullness for aesthetics.



Studies have shown compression and weight may provide relief for sensitivities. Try incorporating in core or hemlines of garments.



Limb Differences

"Experiences with tailors may be "gruff" & "business minded." Tailors possess the knowledge & capabilities to alter clothes adaptively, but some clients prefer a more intimate, sensitive approach to their tailoring experience. Some feel vulnerable & exposed going to tailors that act in this manner."

-Elizabeth McGuire



Limb Differences

Challenge: Extra fabric on arms or legs cause discomfort & difficulty

Extra fabric may cause risk in mobility

Prosthetics need additional ease in garments to accomodate them

Garments dont fit individual needs & aren't customizable

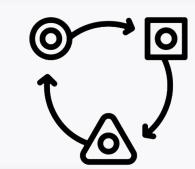
Alterations in cuff and hem lengths

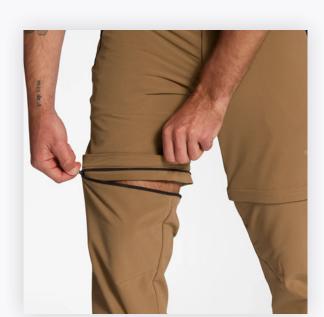
Tailors may alter lengths

Reassemble current garment details

Wearers enjoy wearing accurately fitting garments that meet their lifestyle & provide access to daily life

Current options for limb differences







Many sportswear brands offer zip off legs, like thenorthface.com & llbean.com



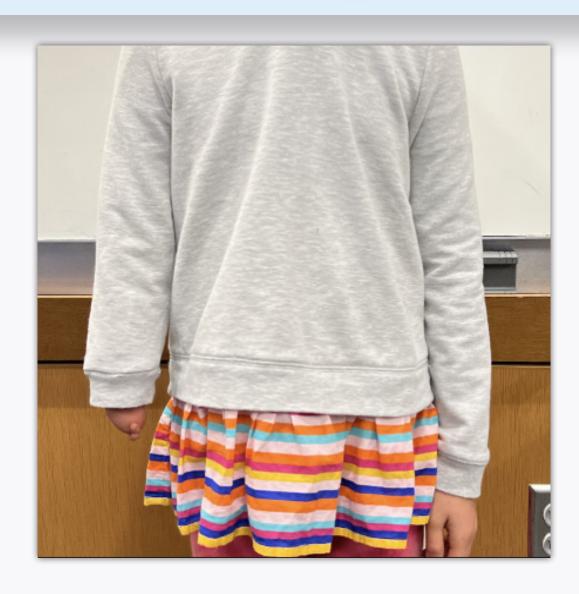
2 Long	4 Reg	4 Long	6 Reg	6 Long
30"	31"	31"	32"	32"
18"	18.5"	18.5"	19"	19"
17.75"	18"	18"	18.25"	18.25"
32"	29"	32"	29"	32"
12 Long	14 Reg	14 Long	16 Reg	16 Long
35.5"	37"	37"	38.75"	38.75"
20.5"	21"	21"	21.5"	21.5"

No-limbits.com offers access to prosthetics via vertical leg zip & dimensions that accomodate prosthetic measurements

Limb Differences Adaptive Options







Lucy's Hoodie Alteration

The goal: make the right sleeve fall at the same length of her right arm. for the cuffs shown in this garment, this involved simple seam ripping. It was a relatively simple process to cut the sleeve and sew the cuff back on.



Brands offer zippered inseams for those with prosthetics to easily get dressed and wear pants that fit over braces.



Visual Differences

"Fashion is so much more than its visual aspects. It's possible to enjoy it and have a passion for it while having low or no vision, and there are so many visually impared people out there who can advocate this message."

-Elin, myblurredworld.com

Visual Differences

Challenge: Difficulty identifying clothing

Offering different textures allows sensory definition of clothing, aiding getting dressed and having a pleasing appearance

Mismatched clothing is a concern for those with limited vision

Include mindful design in every detail

Use different textures/textiles for individuals to identify clothing

Touch becomes priority in clothing identification

Prioritize selection of fabric construction in design process

Fabric manipulations & detailed descriptions help online shoppers

Options in aiding garment recognition



Textured dobby



Textured buttons photo: Jean Noren



Hopsack Tweed



Garment details Vince pleated trousers



Visual Differences Current Options



Elin of myblurredworld.com chose a high-neck white silk blouse with vertical pleats based on the detailed online description. she feels "elegant" in the garment.



Some brands use braille as design details. QR codes enable details to be read aloud with custom apps.



Gracie Benedith created braille patches for those with visual impairments to get dressed. Find this product at Pattiandricky.com

Overview of Adaptive features

"People are waiting for us to not look good, so we have to work to go further in the other direction. I need to dress professionally for what I do. Professional clothing is harder to put on. Pople with disabilities don't dress professionally because the clothes are so hard to get on."

-Gabrielle Ficchi



"Very few of my purses work with my scooter. I need an external pocket to hold my phone, keys, and metro card. As a wheelchair user and a small female, I don't want to attract attention by looking for something too long."

-Kieran O'Brien Kern



Challenge: Hand-warmth & Storage

Individuals can be hands-free, removing the need for a handbag

Carrying things; storage

Alterations: Adding functional pockets

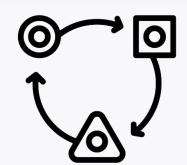
Curved pockets

Magnetic fasteners

Add lining for extra warmth

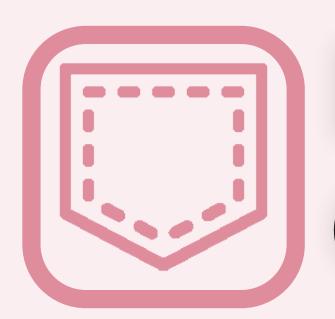
Support and relief for upper body

Current options

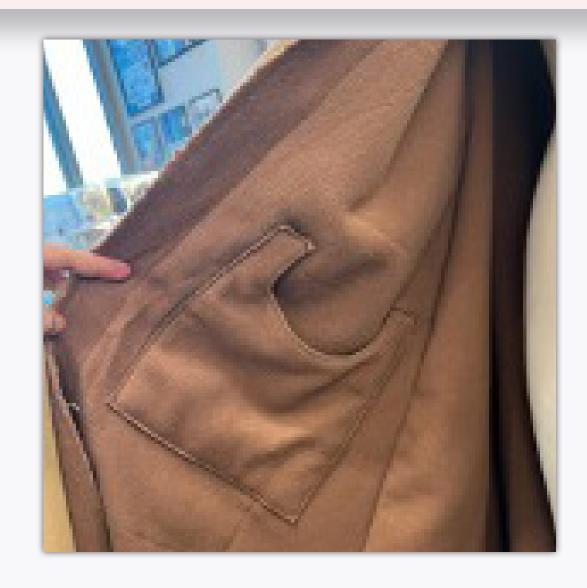




Open Style Lab Hack+Ability Pocket Kit: www.openstylelab.org



Pocket Adaptive Options



Adaptive pockets provide storage & hand warmth. Pockets allow one to be hands-free while removing the need for a bag. Consider luxurious linings for wearer comfort & joy.



Some brands offer pants with pockets on the front thigh. Consider these design inspirations for easy access for those seated all day. Side thigh pockets aren't accessible.



Peach's Bag is custom made to buckle around her waist, strap to her chair, or attach to her bike for ultimate access and adaptability.



Magnets and magnetic snaps

"Magnetic snaps can have different strengths. This is important as those with limited dexterity may find it difficult to separate stronger magnets. There's a balance between finding which magnets need to be strong & which need to be easily removable."

-Alex Sargent Capps



Magnets and magnetic snaps

Challenge: Closures can be difficult for those with diminished dexterity

Magnetic force can stick to metal sewing tools

Magnetic strength can affect medical devices

Magnets may stick to metal washers and dryers in laundering

Alteration: Finding balance of strength

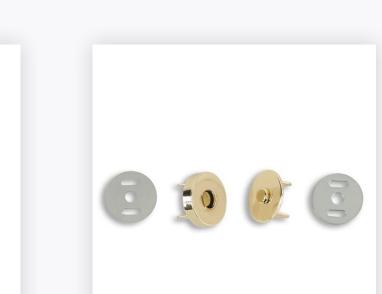
Each individual will have specific needs depending on strength

Strongly fastened but not too strong that it can't be opened

Plastic covering around magnetics to instert it easier in the fabric, protecting against degredation, and make it easier to sew

Strength of magnet depends on fabric type, weave, and stretch

Options for magnets of and magnetic snaps



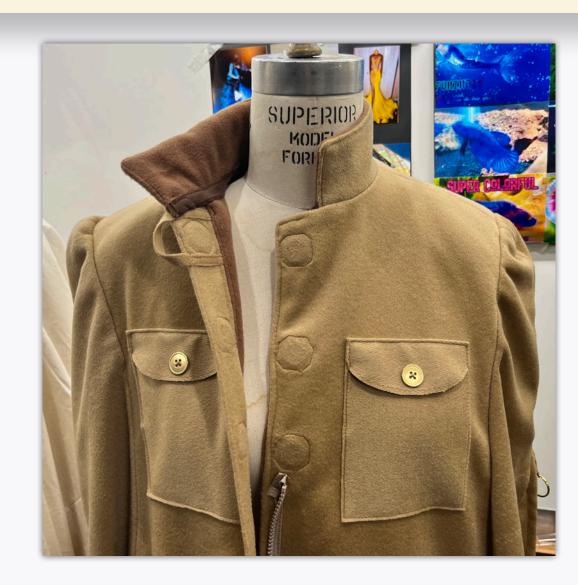


https://www.wawak.com provides square, round, and sewable magnetic snaps

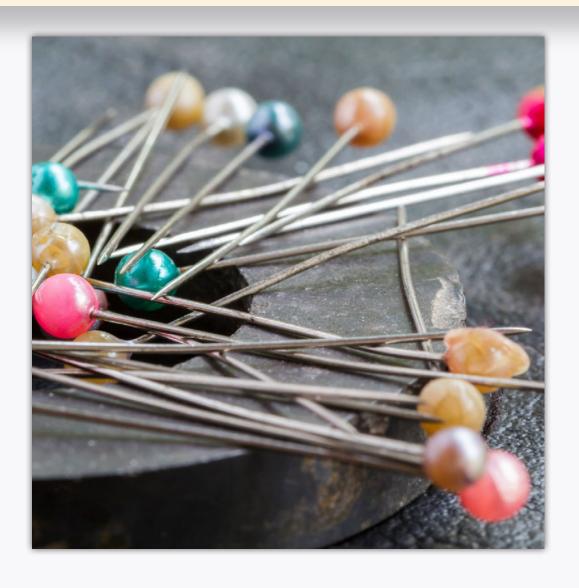
Magnet Adaptive Options



This shirt cuff had to be shortened to accomodate the difference in the length of a person's arm. A magnet replaces the button while a piece of felt lessens the attraction.



Large magnets may be used on thicker garments, including outerwear. Be mindful of the placement; the magnet may be a design feature in the garment.



Magnets attract ferromagnetic metals such as iron, cobalt, steel, nickel, manganese, gadolinium, and lodestone. Be mindful of pacemakers.



Hook & Loop Fasteners

"Fashionable adaptive clothing for individuals with special needs should be an ongoing project with careful attention to different shapes, manipulative skills, and degrees of mobility."

- Hyun-Shin Na



Hook & Loop Fasteners

Challenge: Closures can be difficult for those with diminished dexterity

Hook & Loop fasteners can be too thick and scratchy, causing discomfort

Hook may scratch a wearer's skin if not applied properly

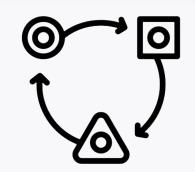
Strips are hard to align

Alteration:

Consider areas on the garment that may benefit the wearer modesty or easy access (pockets, garment alignment)

Be mindful of lint disposition & quality of the material

Current Options:



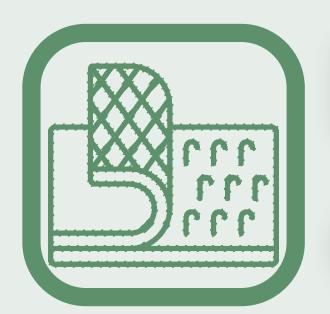




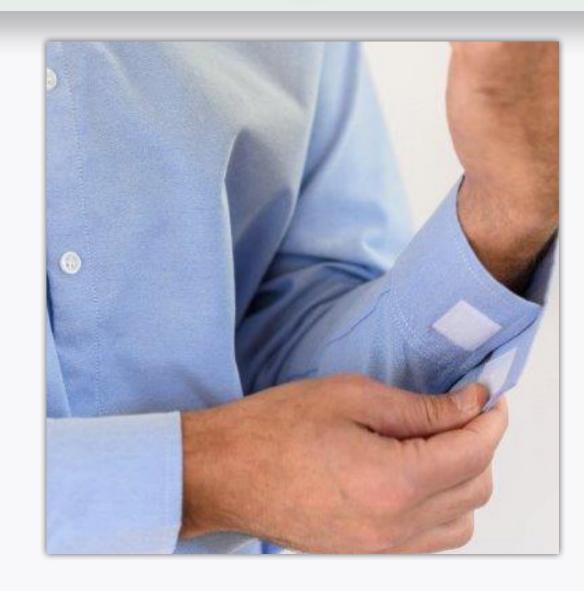
Molded Nylon VELCRO® 511



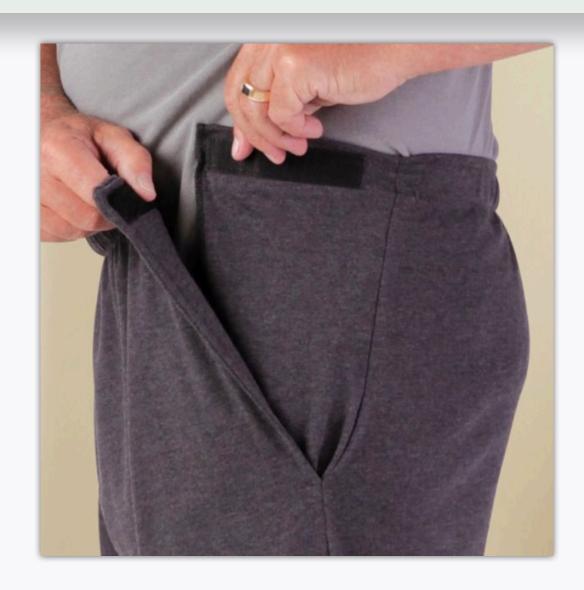
SPEEDWRAP® low profile VELCRO®



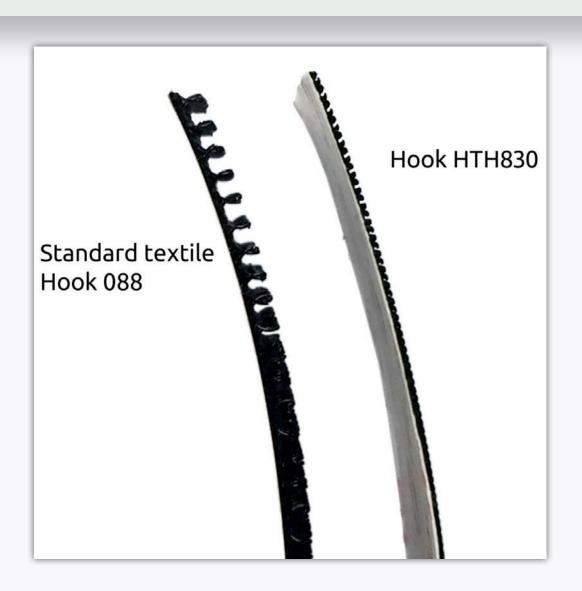
Hook & Loop Adaptive Options



Hook and loop behind the button may be used for a professional appearance with added ease of getting dressed. Keep in mind the abraisive properties.



Some brands use VELCRO® side closures concealed by the pocket to provide easy on and off. VELCRO® tends to attract lint and lose attraction after wear.



Low profile VELCRO® provides a softer surface for sensitive skin and reduced thickness, ideal for shirt placket closure.



Challenge: Pinching motion can be difficult with diminished dexterity

Pulls without holes don't allow tool access or provide space for additional loop configurations

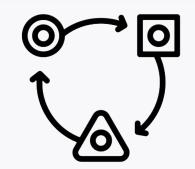
Alteration: Swap out zipper pulls or zippers

Include hook for fingers to loop through the zipper

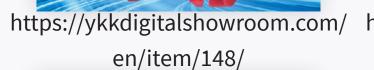
Metal zippers are durable, if using plastic zippers change pull to accessible with keyring, loop, or zipper tool

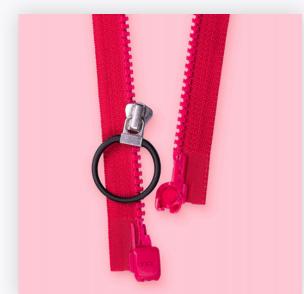
Magnetic zippers provide one handed operation

Current Options:









https://ykkdigitalshowroom.com/ https://ykkdigitalshowroom.com/ en/article/344?-

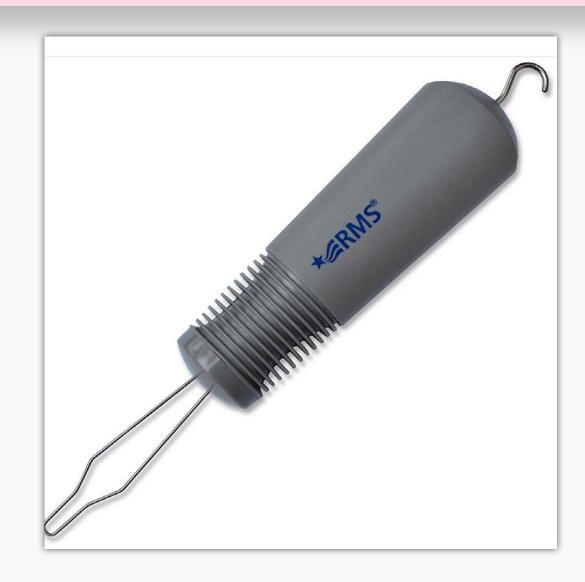




https://www.strokeaids.com/dress-independently-with-superhandy-zipper-rings/

THE REPORT OF THE PARTY OF THE

Zippers Adaptive Options



RMS Zipper & Button Tool allows one to zip zippers using provided hook and thread buttons through button holes.



Adding a keyring to the zipper pull enables greater dexterity. The ring may be placed over the button to hide the adjustment and provides security for the zipper.



Loops and magnets provide dexterity support. A loop allows a finger to pull the waistband closed for the magnets to connect.



"Bunching and flipping of elastic is uncomfortable. Too much and it can look like a diaper."

- Alicia Searcy



Challenge: Discomfort when elastic is used improperly

Waistbands constrict if too tight and fall if too large Sleeves limit motion if too tight and snag if too large

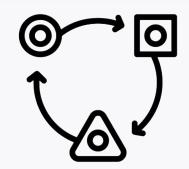
Alteration: Width of the elastic determines comfort or pain

Waistband: Width at least 2 inches with flat front and stretch in back

Sleeves: 1 inch width with matching circumference

Stretch is needed for getting dressed; be mindful of long periods of pressure

Current Options:

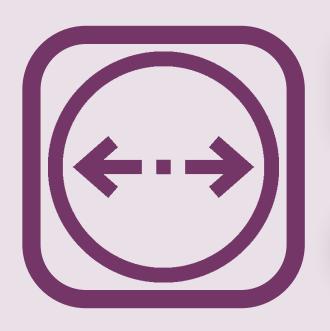




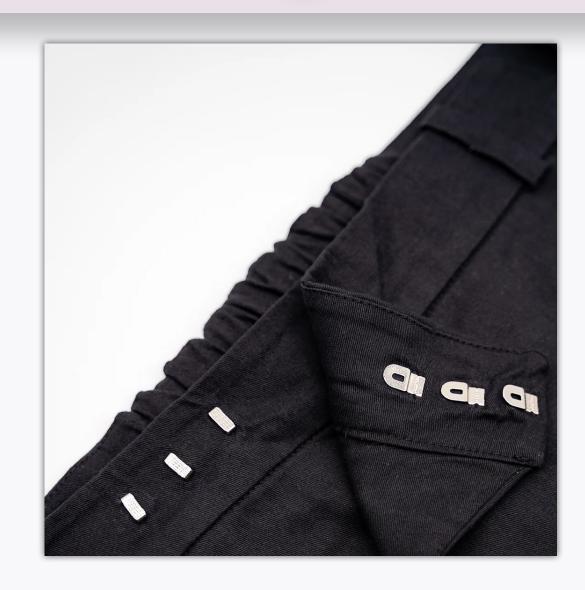
VELSTRETCH® Elastic Loop VELCRO® Loop 151



2' Ribbed Non-Roll Elastic works best for waistbands



Elastic Adaptive Options



Some brands offer pants with smooth fronts and ample stretch back for optimum style, comfort, and fit. Hook and eye provide adjustability.



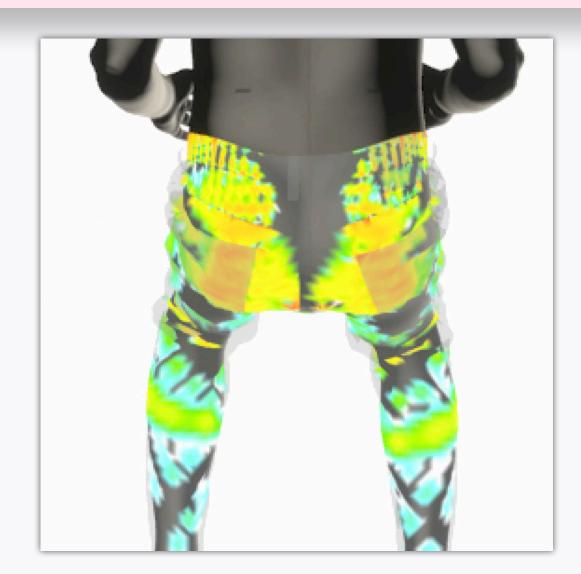
Some brands offer pants with smooth elastic fronts, faux front fly and soft stretch back elastic for style without compromising comfort. Featherweight stretch fabric increases ease.

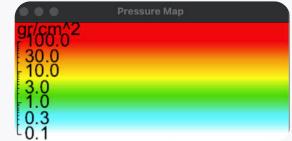


Some brands provide higher waisted pull on pants with stretch knit fabric allowing flat, roll-free waistbands.



Pant modifications for seated position



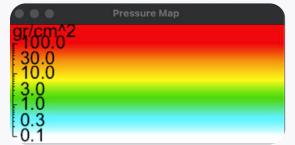


Red areas indicate pressure.

White areas indicate looseness.

Standard pants create pressure points at yoke, pocket, beltloops, and knees. Notice the dip at the center back due to stress of the limited rise length.

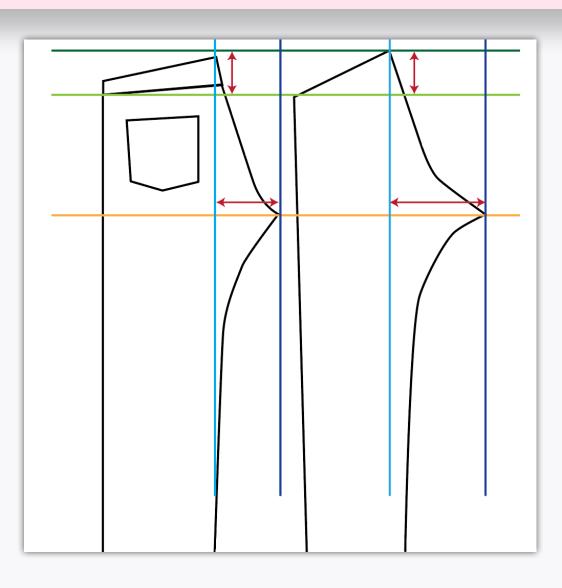




Red areas indicate pressure.

White greas indicate looseness.

Adaptive pants remove pressure points at yoke, pocket, beltloops, and knees by removing them and increasing the back rise. Notice the straightened center back waistband.



Yoke blended to back panel. Pocket removed. Rise increased vertically & horizontally ~20-25%.

Pattern Adaptations: Note the difference in the original pattern on the left & adaptations on the right including increased back rise.

Shirt modifications for seated position



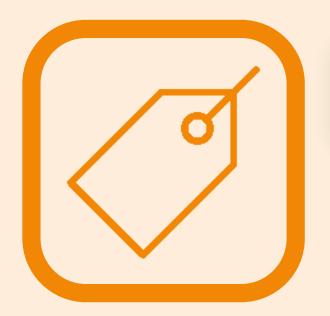
Adaptive shirt options have shorter fronts than backs. This provides wearing ease and modesty for the wearer. Some prefer shirts cropped front & back.



Flatlock seams provide smooth surface and limit abrasion to skin. Use wooly nylon thread for softness and comfort.



Soft fabrics provide comfort and perforamce for the wearer. Tag free designs limit irritation.



Brand Resources

"How do you want to educate someone to help them treat me with diginity? I'm wearing tights to be warm, and I'm wearing leopard because I'm a fierce bitch."

-Kieran O'Brien Kern @@kieranobk

Brand Resources

Medical













Ready to Wear BUCK & BUCK We Make Dressing Easier* LIFE STYLE ADAPTIVE CLOTHING & FOOTWEAR



B S Clothing

PETAL BACK CLOTHING

Dignity · Innovation · Quality · Comfort



















NO LIMBITS







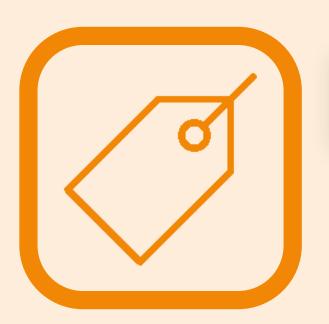
Personalized











Brand Resources





EP Contributers



Alicia Searcy

Co-founder and Executive Director of the nonprofit organization Fashion is for Every Body. Our mission is to normalize inclusion in fashion and in life. We use fashion as a language to promote body postivity and self-esteem while seeking inclusion for adults of all ages, sizes and physical abilities within the fashion industry.



Alex Sargent Capps

Director of The Wond'ry FAB (Fiber Arts Build) Lab, specializing in collaboratively prototyping innovations, including adaptive fashion solutions that positively serve people with physical disabilities.



Shannon North

Design Technology leader with over 25 years of experience in functional clothing design with specialization in 3D Fashion Design. Recent Fashion MFA graduate from Savannah College Art & Design.



Zoe Sophia Potter

Vanderbilt University Human & Organizational Development major minoring in Psychology and Business with interests in wealth management, financial consulting, marketing & sales. Sophia is passionate about creating an accessible world through fashion.



Allie Schmidt

is a marketing consultant dedicated to solving accessibility challenges in the disability community. After acquiring a physical disability at 26, she quickly realized the gap in the market. She launched Disability Dame in 2020 and continues to help brands navigate this complex market and increase ROI.



Tyler Schoenecker

Skidmore College Studio Art major with concentrations in Communcation Design and Metalworking. With a passion for graphic design, he believes art should be easily available to everyone and aims to make designs accesible, legible, and engaging.



Trieu Vy Truong Vanderbilt University

Human & Organizational Development and Computer Science major with interests in fashion & functional design.



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