

What is included in brain / mind access needs?¹

This pamphlet discusses:


- Cognitive disabilities
 - Overstimulation
- Psychological disabilities
- Seizure disabilities

Persona Highlights include:

- P1: Surussation (Overstimulation)
- P3: Halea Silver (Photosensitive Epilepsy)
- P7: Rorobytes (Cognitive support for tasking, tolerance for error)
- P8: Whirry (Functional Seizures)

Each section has some basic information around conditions, then some **DISCO-Do's** (accessibility practices that will help make an environment more inclusive to folks with a given condition) and **DISCO-Don'ts** (common barriers that exist on Earth that we don't repeat in our spaceships). Each section ends with a couple social media accounts, projects, or books that center perspectives of disability community members that share one or more of the conditions in that section. Where information is relevant to a crew member in the crew persona deck, there may be a **persona highlight** added with information about a species, particularly relevant adaptive designs that would fit their bodies, etc.

Facilitators are welcome to share this information to help guide participants in researching adaptive design to inform their spaceships, especially the disabled-authored sources. **We strongly encourage you to share at least the persona highlights with your participants.**



The most important thing to stress during the research-about-access-needs phase is that **some things pitched as solutions are not actually desired by a disabled person**. Technology can also function imperfectly compared to how it is advertised. **Look for disabled-centered articles when considering real-world research.** What do disabled people seem to prefer? What flaws do they point out with current tech, and can you use that to iterate or improve your designs?

¹ The outline of conditions and barriers/adaptations to consider largely stems from the **Certified Professional in Accessibility Core Competencies (CPACC) certification exam's Body of Knowledge**, written by the International Association of Accessibility Professionals (IAAP).

We have chosen to cluster some categories together, summarizing considerations to a list of highlights (unless directly quoted), and have added in disabled centered sources/information in attempts to keep holistic accessibility at the forefront, rather than checklist/compliance based accessibility.

If any information is sourced from outside of the CPACC Body of Knowledge, there is a direct link to that source.

Cognitive Disabilities

Cognitive disabilities may impact various mental functions, including:

- Attention/perception
- Memory
- Coordination
- Emotions
- Thought/reasoning
- Math/computation
- Reading
- Task management/executive function
- Communication

Cognitive disabilities can include a combination of effects on these categories, and each individual's needs vary. So **adaptive strategies are often based on cognitive functions affected, rather than a specific diagnosis.**

Persona highlight – Rorobytes!

Place PH7 Brain / Mind bookmark here!

◆ DISCO Do's [what to add]:

- Allow ample time to prep/complete tasks and learn new info
- Provide feedback and guidance through interfaces (UD principle 3 callback: keep things simple and intuitive!)



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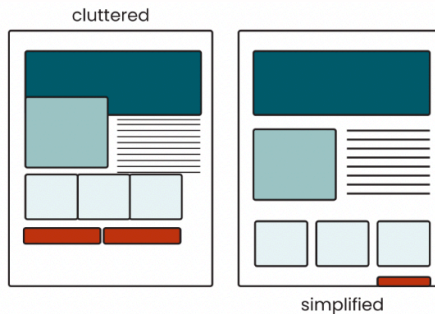
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- Limit background distractions/noise
- Use Plain Language/minimize jargon where possible
- Clear navigational cues (including signage) to get to important spaces
- Provide information in a variety of formats – text, audio, images (try to avoid walls of paragraph text)
- **Digital options:**
 - Digital prompting to help keep focus on current task and/or assist with memory
 - Productivity/organizational apps to assist with executive functioning
 - Auto-complete for forms / passwords
 - Note-taker/reminder apps
 - Augmentative and alternative communication (AAC) devices



◆ DISCO Don'ts [what to avoid]:

- Cluttered design or large chunks of text, which can cause information overload



- Timers that do not allow pausing and time-out mid-task if a user cannot work fast enough



Overstimulation²

Overstimulation occurs when one or more senses are overloaded within the body (music being too loud, lights being too bright, a perfume being too strong, etc.), and the brain cannot process that amount of sensory input. This can result in discomfort, anxiety, irritability, loss of focus, and more.

Overstimulation is more common for folks with certain conditions like Autistic individuals, those with ADHD, and people with PTSD.

Persona highlight – Surussation

Place PH1 Brain / Mind bookmark here!

² **Access needs often have overlap between categories!**

Overstimulation, for example, is often a sensory-based experience with sensory-based and communication-based access needs, often stemming from a neurodivergent root (but it doesn't have a definitive or singular diagnosis that causes it!). We've done our best to organize information in a way that helps guide on where access needs might likely overlap, but consider these categories fluid rather than rigid.
[Source for Overstimulation](#)

Psychological Disabilities

There are a variety of categories of **mental health issues that can alter someone's mood, and/or how they act, feel, and think**. This includes anxiety disorders, mood disorders, psychotic disorders, and more. When a mental health issue impacts an individual's daily life functioning, it becomes a disability.

“Since psychological disabilities affect mental functions and cognition, many solutions for people with cognitive disabilities can also benefit people with psychological disabilities.”
(CPACC BoK, p.40)

◆ DISCO Do's [what to add]:

The below list is copied directly from the CPACC BoK, p. 40 as well:

- “Apps with mood, stress, and anxiety management functions
- Memory aids
- Text-to-speech software
- Reminder devices
- Voice recognition software
- Noise monitoring devices”

³ Ashley Firth discusses dark patterns and their relation to mental health accessibility in his book, *Practical Web Accessibility*. [Source: Firth, Ashley. *Practical Web Accessibility: A Comprehensive Guide to Digital Inclusion*. First, Apress, 2019, [learnally.com](https://www.learnally.com/).]

◆ DISCO Don'ts [what to avoid]:

- “Dark Patterns” that manipulate users into actions they wouldn't do without the design's deception³
- Most barriers for psychological disability often stem from social stigma and lack of healthcare/societal support and understanding.

Seizure Disabilities

Seizures can affect levels of consciousness, movement, and more. They become a disability when the seizures impact someone's regular activities. Different conditions can cause seizures, including epilepsy, Functional Neurological Disorder (FND),⁴ and serious illness/infections.⁵

Persona highlight - Whirry

Place PH8 Brain / Mind bookmark here!

Photosensitive epilepsy is particularly important for digital designers to be aware of, as it is a condition in which people have seizures **triggered by flashing or flickering lights or patterns**.

Persona highlight – Halea Silver

Place PH3 Brain / Mind bookmark here!

Medical alert service animals can detect seizures ahead of time and alert their handler to get to safety and/or bring medication. Not all folks with epilepsy have service animals, some use biomedical devices to detect them.

⁴ American Brain Foundation's page on FND

⁵ Mayo Clinic's page on Seizures

✦ DISCO Do's [what to add]:

- “Web pages that do not contain anything that flashes more than three times in any one second period, or the flash is below the general flash and red flash thresholds.” (CPACC BoK p. 37)
- Wearables that can alert to seizures, send out alerts with GPS location to contacts, or has an alert button to call for help
- Gear that can support/protect individual if they fall during a seizure
- Digital screens that are flicker/glare free

✦ DISCO Don'ts [what to avoid]:

- Moving or blinking content in digital media
- Having no controls to stop or turn off video or animations



Disabled & Neurodivergent-led Accounts & Sources:

- Kaelynn Partlow @kaelynnvp on Instagram
- Hayley Honeyman @hayley.honeyman on Instagram