

TD Snap® Core First Scanning Page Set

# Training Cards



This guide explains the use of scanning in TD Snap and offers teaching tools to assist facilitators, caregivers, clinicians, and AAC users who are learning to scan.

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# Getting Started

The TD Snap Core First Scanning page set is designed to improve speed and ease of use while decreasing cognitive load. This document is oriented toward the Core First Scanning page set, however much of the information is also applicable to use of the scanning access method with other TD Snap page sets.

## Open the Scanning page set

When you launch TD Snap for the first time, you'll go through the setup wizard and can choose the Core First Scanning page set when prompted. If you have already created a user, follow the steps below to add the Core First Scanning page set to your user.

- 1 Select the **Edit** button.



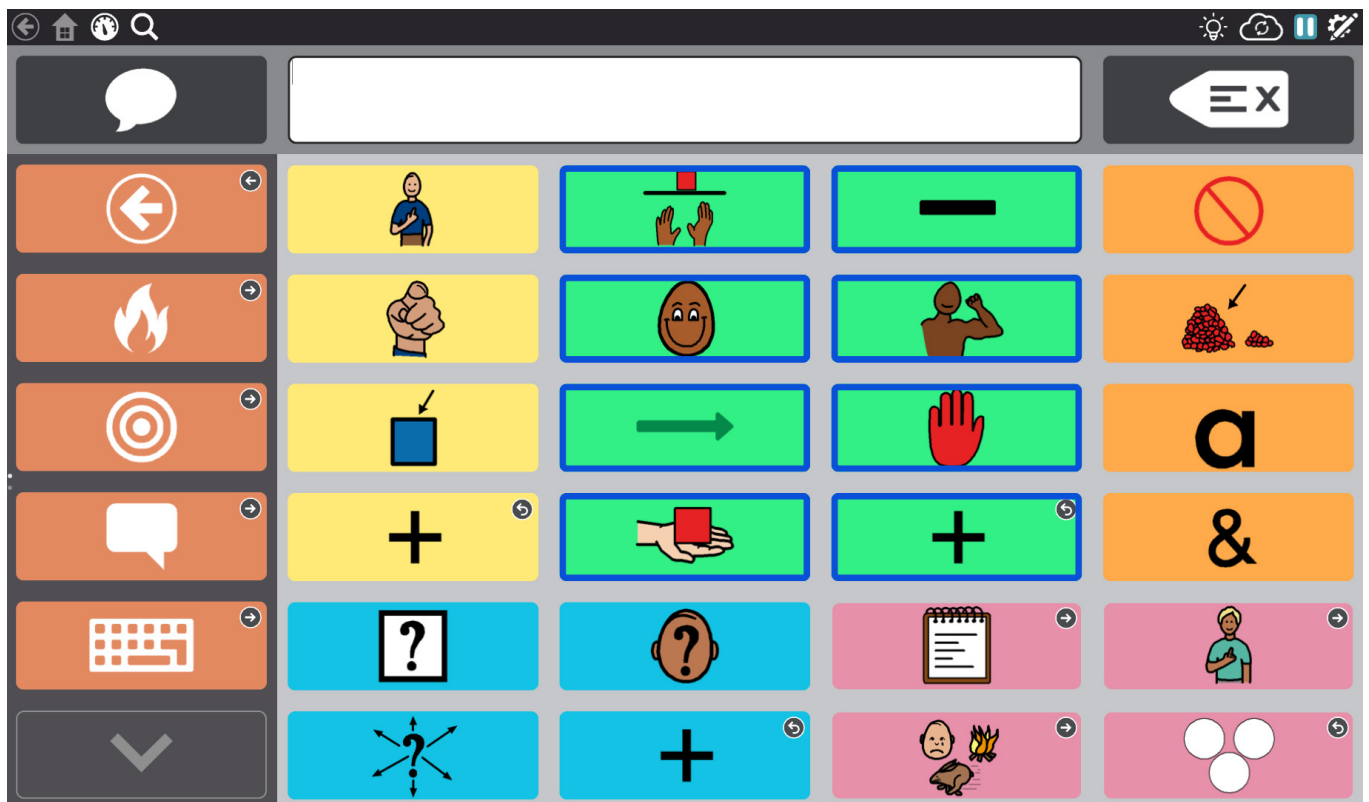
- 2 Select **Page Set**, then select your current page set.
- 3 Select **Create Page Set**.
- 4 On the Pre-Installed Page Sets tab select **Core First Scanning**, then select **Next**.
- 5 Enter the new user name.
- 6 Enter your Tobii Dynavox account information or just select Next.
- 7 Select **Needs text with symbol support**.
- 8 Select **Scanning**.
- 9 Select **Core First**.
- 10 Select **Scanning**.
- 11 Select your voice.
- 12 Select your grid size.
- 13 Enter a name for your page set, then select **Create**.
- 14 Select the page set that you just created to open it.



Verify that your access method is set to scanning before doing any editing. To view your current access method, select *Edit > User > Access Method*.

# Introduction to Scanning

Scanning is an access method that provides people with significant motor disabilities (e.g. Cerebral Palsy) a way to make selections on a communication device or computer when Touch, Mouse, and Eye Gaze Interaction are not possible.



When scanning, the device highlights items on the screen visually (e.g., blue outline), auditorily, or both.

When the highlight reaches the desired item, the individual makes a selection using a switch. Selections usually require one or more switches.

Scanning, like other indirect selection techniques, should only be used for individuals who do not have enough motor control to use direct selection methods.

Research shows that scanning can be the slowest and most difficult of all the access methods (White, et al., 2010, and Dropik and Reichie, 2008). However, scanning may be the best option for individuals with limited motor movements and/or visual issues.



Scanning is extremely customizable and can be adjusted to suit individual needs.

# Scan Types and Patterns

The Scan Type setting determines how the scan highlight advances and how selections are made. The scan highlight can move automatically, based on a set time interval, or it can be controlled by the user with a switch. The two most common types of scanning are automatic and step scanning.

## Scan Types

### Automatic Scanning

#### One Switch Autoscan

- The device scans through each target and the user hits the switch when their choice is highlighted. Typically set up with one switch.
- This method requires fewer selections and is used for individuals who cannot hit a switch consistently.
- This method requires more attention and waiting and can lead to missed selections if the user's timing is off.

### Step Scanning

#### One Switch Scan or Two Switch Step Scan

- Two Switch Step Scan: One switch to move through selections on the device and makes selections with a second switch.
- One Switch Step Scan: The individual scanning uses two different types of hits on the same switch. The user may, for example, activate the switch to move the highlight and hold down on the switch to select.
- This method is effective for an individual who needs more control over the scan. It places less emphasis on timing since the individual controls the highlight.
- The individual needs to have two possible switch sites or relatively good motor control for hitting/holding a single switch in a different way.



Many clinicians suggest using Step Scanning whenever possible as it can increase efficiency, decrease missed hits, and facilitates the individual's active attention. Your occupational therapist or speech language pathologist can help you to help decide if there is potential for two switches.

## Scan Patterns

### Linear

- Scans items individually from a left to right, top to bottom order.
- Generally used for pages with a smaller number of buttons or for individuals who are new to scanning.
- Recommended for scanners who have low vision and need to hear each option read aloud.
- Linear scanning is slow, but less cognitively demanding.

### Row/Column

- Scans items row by row, from the top of the page to the bottom. When a row is selected, the items in the row are scanned individually from left to right.
- Column/Row scanning is a similar option; columns are scanned first, then rows.

### Group

- Scans pre-defined groups of buttons as a single unit. When the user selects the group, the buttons in that group are then scanned individually.
- Group scanning can increase the speed of scanning overall.

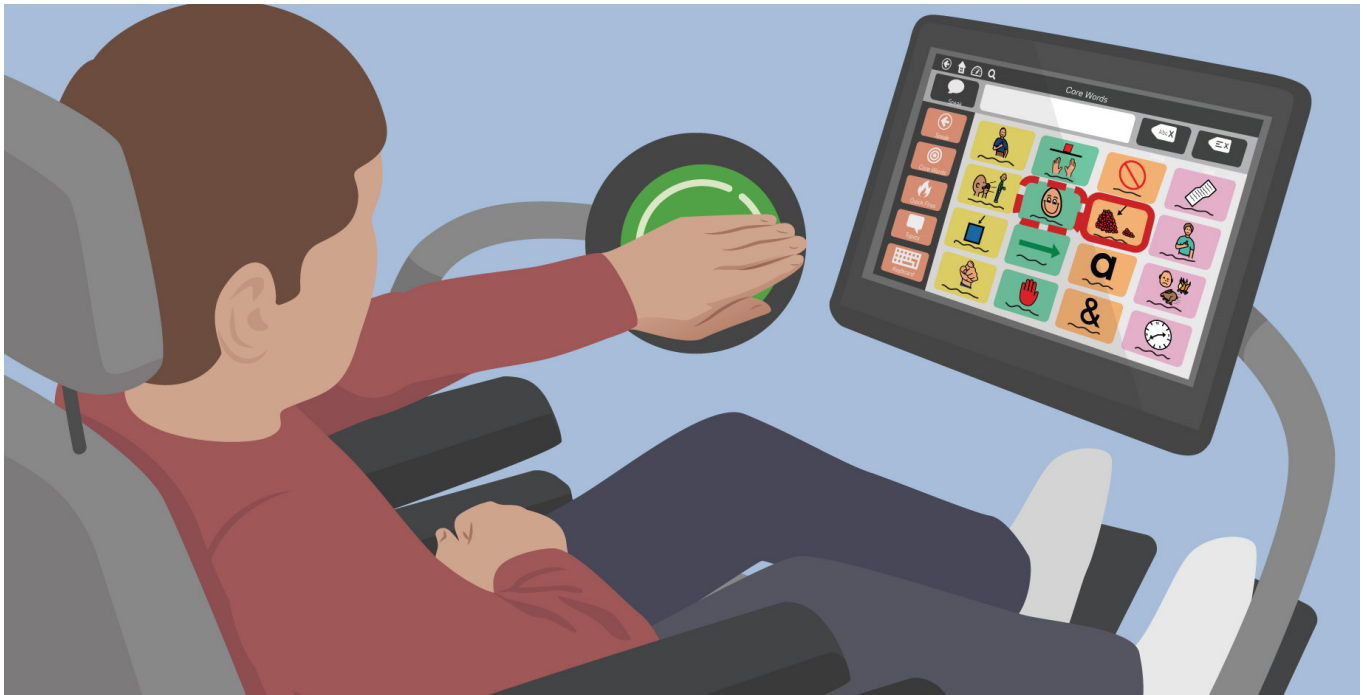


You can set auditory cues for groups (e.g., colors) and individual buttons (e.g., red, yellow, blue, etc.). For more information, see the Auditory Scanning section on page 8.

# Switch Positioning

Individuals who use the Scanning access method all have motor impairments. Therefore, it's important to be sure that hitting a switch is not another difficult motor task. Your goal is to find the most natural, least fatiguing switch placement for the individual. Finding a switch site may require help from an Occupational Therapist or Physical Therapist familiar with access methods to ensure the best choice.

When trialing switch sites, make sure that the individual is in a supported, comfortable position. Try to recreate the positions they are in throughout the day. Consider how will they hit the switch in their wheelchair as well as how will they access it in bed or their favorite recliner. Switch mounts are available and more than one may be necessary.



## Use these tips to trial various switch positions:

- Focus on supported positioning before you begin.
- Avoid muscles with high tone, don't use uncontrolled spasm movement for activation.
- Select the body part and movement with the best motor control and least used movement.
- Ask the individual for their opinion and trial the switch during motivating activities.
- Remember that different seating throughout the day may require different switch sites.
- Modify the switch, the settings within the system, or the mounting as needed.
- Consult with an Occupational Therapist, Physical Therapist, or Assistive Technology professional whenever possible.



Switch sites are as variable as switches. Some individuals use their head, shoulder, elbow, hand, knee, foot, and more.

## Switches and Accessories

Many kinds of switches are available for scanning. Contact an Assistive Technology professional near you to trial various options. Don't try to find the perfect switch or switch position right away; there is a learning curve for everyone.

Buddy Buttons and Jelly Bean switches are common switches. Light touch switches, such as the Micro Light, are extremely sensitive to even small movements. There are also pneumatic (controlled by breath), joystick, cordless, wobble, pillow, grasp, eye blink switches, electronic switches and many more! Find the switch that is the easiest and most accurate for the individual.



The I-Series and TD Pilot devices have two switch ports. When switch ports are not an option, look for USB interface switches and Bluetooth switches.



If a switch is not worn on the body, switches can be positioned with a mounting plate and mounting arm. Mounting accessories are available through Tobii Dynavox.

## Choosing a Switch

There are several important considerations when you are choosing a switch:

- Focus on one body part or movement.
- Decide how to mount a switch for the chosen movement. Should it strap onto the user, attach to the lap tray, or be placed on a stable mount close to them? Trial various switch positions.
- Select the best switch size for the chosen body part, movement, and mounting need.
- Different switch types are activated by varying degrees of pressure. Choose a switch that fits the motor needs of the individual.
- Practice with the switch and customize as needed. Adjust the switch settings in TD Snap to prevent accidental hits and customize switch sensitivity.

# Teaching Scanning

Many people use partner-assisted scanning as an introduction to scanning. This method allows a communication partner to list or scan through possible choices for individuals who are non-verbal. This method is very limiting, though, and the communicator depends completely on the choices the partner offers. Therefore, moving on from this method is important.

An individual does not need to master low tech or partner-assisted scanning before learning to scan on a device. Sometimes technology makes it easier and more accurate for an individual to use scanning to communicate. This may be due to switch sensitivity, the timing settings within the device, the visual feedback on the screen, or simply the motivation and clarity that comes from using a voice output device.

There is no need to work on each scanning skill separately. While you work on improving cause and effect with the switch, you can also model how to use switches for choice making. Instead of turning on the same switch-adapted toy over and over, try using a low tech speech device with a recorded message to play an individual's favorite song on Alexa, watch a fun video online, or tell a joke.



Use motivating activities or switch games to introduce communication through scanning early on.



When you are teaching a beginning scanner to move from low tech or partner-assisted scanning to high tech scanning on an AAC system, try the following suggestions (McCarthy, J. 2019):

- **Visual scanning:** Scanning on high-tech devices often uses an outline or frame to highlight items on the screen. Re-create this experience in real life by making a large empty frame out of cardboard in the same color as the outline on the high-tech device. Next, move around the room and put the frame around choices in the room (e.g., computer, blocks, bookshelf). Ask the individual to hit their switch when you put the frame around what they want.
- **Auditory scanning:** For scanners with low vision, place a few people in a semi-circle around the individual. Ask each person to say a word or phrase aloud. Then, ask the user to hit a switch when they hear the target word. This “surround sound” example might help individuals to understand the idea of auditory scanning.
- **Movement:** Lay out squares on the floor and move the individual's wheelchair over each choice as you read them aloud. When the individual hits the switch, stop the chair and read out the selection.
- **Motivating activities:** Find age-appropriate switch games online or create a PowerPoint with motivating photos, videos, or sound effects. Use these or other activities to introduce automatic scanning or step scanning. Computer adapters can turn mouse clicks into switch hits.



# The Learn to Scan pages

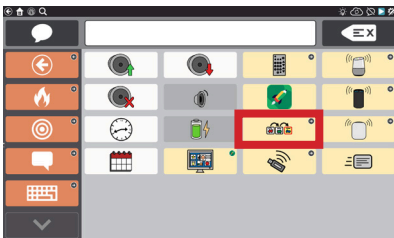
The Learn to Scan pages help teach scanning right in TD Snap. These pages help introduce scanning to an individual but should not be their only communication page set. Use the Learn to Scan pages during direct instruction, in play time, or in therapy. The rest of the time, use the communication tools within the Core First Scanning page set (e.g., Core, Topics, Quickfires, etc.) as the individual's primary pages.

## To access the Learn to Scan Pages:

- 1 Select the **Dashboard**.



- 2 Select **Learn to Scan**.



- 3 Select a grid size.



Two grid sizes are available, but we recommend starting with the 3x3 grid to provide access to more vocabulary.

- 4 To decrease the complexity further, turn off the Message Window, Tool Bar, and Group Scanning while practicing here.

## Customize and personalize

The default settings in the Core First Scanning Page Set are linear scan without auditory feedback. However, the content can be scanned in any pattern and auditory feedback can be turned on for users with visual difficulties. Each page has a Favorite button that can be customized. Edit the Favorite button to say the individual's favorite thing in that selected area. For example, customize the Favorite button in the music activity with a favorite artist or song.

If the provided content is not motivating to the individual, add pages to include activities, routines, or games that are preferred and engaging. Blank templates are available in the higher grid sizes.

TD Snap allows for quick editing, so you can personalize in the moment.



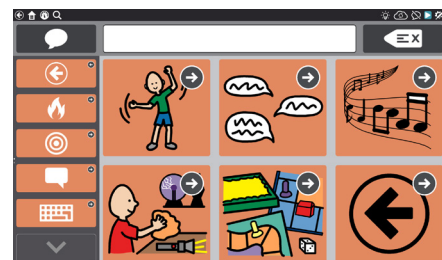
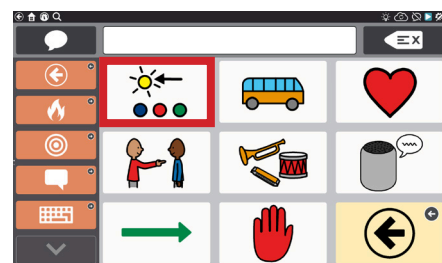
### Note

The Learn to Scan pages are exclusive to the Core First Scanning page set.



Watch this video to learn how to edit a button:

<https://qrco.de/bdsXKJ>



# Auditory Scanning

Individuals who need to use scanning on their AAC system may have visual impairments. If those impairments impact their ability to see or visually attend to the screen, auditory feedback is recommended.



When you are using the Core First Scanning Page Set, the **Learn to Scan** tool in the Dashboard may be a good place to start practicing auditory scanning.

Try to use a **step scanning** method whenever possible. If it is too challenging to an individual's motor skills, then Autoscan may be a better solution.

If you are using **Autoscan**, you may want to slow your speed or transition time if the individual is a bit late to select a target.

In that same settings menu, be sure to set **Speak Full Audio Cue before Advancing** to ON. This will keep the device from moving onto the next option before the last audio cue is completely spoken.

## Suggested settings for a first-time user:

- **Group Scan:** ON (This separates the toolbar and the message bar into their own scan groups.)
- **Scan Pattern:** Linear
- **Audio Feedback:** ON



Auditory partner-assisted scanning with a communication book is one way to introduce auditory scanning. Scan the QR code to access a sample video from our friends at the Ace Centre:

<https://qrco.de/bfvlHV>

# Modeling and Training

Research shows that modeling is the best way to teach people to communicate through AAC. When you model AAC, you use the device yourself as you talk and interact with an individual.

When you are working with a scanner, use the individual's switches and device. You can also touch the device directly but speak aloud as you navigate and make selections.

If you watched the video on the Auditory Scanning card, you saw the therapist say "No" when she listed the choices she didn't want and "Yes" once she found the correct target.

Scanning requires attention, so be patient and help the individual focus by decreasing distractions. Use headphones for auditory cueing in a noisy environment and remind communication partners to wait patiently and not disturb the individual's attention while they are scanning.



## **Remember the following key points about modeling:**

- Modeling is about showing an individual how to communicate.
- Modeling does not require imitation.
- Model key words instead of every word you say.
- Speak aloud as you navigate and find vocabulary.
- Remember that mistakes are OK. They give you the chance to model correction strategies.
- Modeling is not quizzing or testing.
- If access is the target, model with the same equipment they use. If language is the target, you can model by touching the screen instead.

## **People who have daily contact with an individual using scanning must understand the following:**

- How to turn on the device.
- How to position and set up the device and switches.
- Basic troubleshooting.
- Strategies for being patient and modeling when necessary.
- How to be a good communication partner.



You can take photos of the switch and mount setup for caregivers, and label ports as needed.

# Editing a Scan Group

The Core First Scanning Page Set has default scan groups in all grid sizes. If you don't see groups while scanning, use the following steps:

- 1 Select the **Edit** button.



- 2 Select the **User** tab.
- 3 Verify that you are in the Scanning Page Set, and then select Access Methods.
- 4 Under Scan Behaviors, set Group Scanning to ON.

## Edit the scan groups:

- 1 Select the **Edit** button.



- 2 Select the **Page** tab.
- 3 Select the **Scan Groups** tool.



- 4 Each group has a color outline. To modify a group, select its color circle at the bottom of the screen.
- 5 To create a new group, select **+** and touch the buttons you want to add to the group.
- 6 Select **Done** to save changes

## Change the scan group auditory cue:

- 1 Select the color circle that matches the group.
- 2 Select the white text box on the bottom of the screen.
- 3 Type in text that will be spoken by the device auditory feedback voice, or record your own voice cue.
- 4 Select **Done** to save changes.

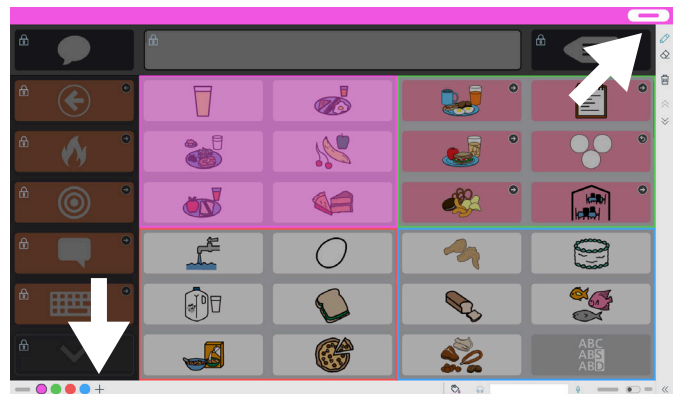


When editing for a scanning user, select Scanning as your access method (you can still touch the screen while editing). If you switch the method to Touch, your changes will not appear when you return to scanning.

You can swap buttons and move buttons in Edit Mode without disturbing scan groups. The groups are based on location, not on the individual buttons.



When Stay in Group is enabled, the scan will re-start within the scan group after a selection is made. This allows users to easily make multiple selections within the same group, such as when making a list.

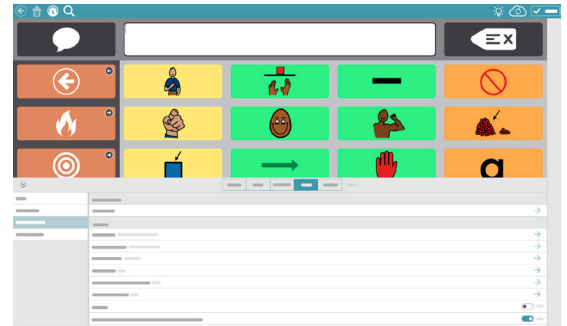


Remember to keep auditory cues brief. A long cue slows down the scan or is cut off, depending on the feedback settings you chose. We recommend three words or less, but the cue may need to be shorter if the individual is scanning very quickly.

# Modifying Scanning Settings

AAC should be customized for all users, but especially for individuals who use Scanning as their access method. Scan settings are very important and require trial and error to get right.

Adjust the scan settings to make scanning more efficient, less fatiguing, and more accurate. The following table highlights some specific scan settings in the Access Method menu, but we suggest that you experiment with each setting to see the adjustments they make.



The Page Set Preferences menu offers more options, such as scan ordering.

Setting	Function
<b>Scan Type</b>	See the Scan Types and Patterns section on page 5.
<b>Scan Behaviors</b> (The Scan Behaviors options vary depending on the Scan Type setting)	<p><b>Scan Pattern:</b> See the Scan Types and Patterns section on page 3.</p> <p><b>Number of Passes:</b> Sets the number of passes (or scans past a target or group) that occur before returning to the top level.</p> <p><b>Group Scan:</b> When this setting is on, the device groups the Toolbar and Message Window separately from the content and allows for auditory cueing for each group. Activate this setting to use the default groups or create your own.</p> <p><b>Scan from Last Selection:</b> When enabled scanning resumes where the last selection was made. Disable this setting to resume the scan at the top of the page.</p>
<b>Highlighting</b>	Select an outline, overlay, or invert as a visual cue. Customize the overlay color and thickness. This can increase attention and improve visual cueing.
<b>Hold Time/Delay Between Selections</b>	Decrease the sensitivity of the switch to reduce over-hitting. Hold time is the amount of time the switch must be pushed to activate. Delay between selections is helpful for users with tremors or anyone who accidentally gets double hits on the switch.
<b>Audio Feedback</b>	Use audio feedback for users with visual issues. In audio scanning, the device reads the button label or a set audio cue as each button is scanned. Choose a voice for audio scanning that is different than the user's output voice. This decreases confusion for everyone if headphones are not in use.
<b>Zoom</b>	This setting zooms in on the button that is being scanned. Note: Zoom will only zoom one button, not an entire group.
<b>Selection feedback sound</b>	Play a sound when a selection is made.



In the 3x4 Grid Size, the Toolbar requires scrolling to access all the tools. If the Toolbar scroll buttons are slowing down or confusing the user, try adding rows to the Toolbar so that more buttons are visible at a time. In Edit mode, go to **Page Set > Preferences**, under Toolbar Rows disable the **Match Page Set** setting, then increase the number of rows.

In Page Set Preferences, you can also change the Page Set Scan Groups order and Audio Cues.

# Troubleshooting

Problem	Solution
User cannot activate a switch accurately, consistently, or in a timely manner	<ul style="list-style-type: none"><li>▪ Check switch position.</li><li>▪ Try a different switch.</li><li>▪ Try a different body part (e.g., hand, finger, head, shoulder, elbow, knee, foot, isolated muscle movement, etc.)</li></ul>
User hits switch too early or too late	<ul style="list-style-type: none"><li>▪ Check switch placement.</li><li>▪ Increase scanning speed.</li><li>▪ Add auditory feedback.</li><li>▪ Adjust hold time. Increase hold time if the user is hitting too early and decrease hold time if the user can't hold the switch down.</li><li>▪ Adjust release time. Increase release time if the user is hitting the switch multiple times in a row and decrease release times if the user does not select after hitting the switch multiple times.</li></ul>
Switches are not working	<ul style="list-style-type: none"><li>▪ Make sure the switches are completely plugged in to the device.</li><li>▪ Check your Bluetooth connection (if applicable).</li><li>▪ Make sure the access method is set to Scanning.</li><li>▪ Restart the device.</li></ul>
Audio feedback is not working	<ul style="list-style-type: none"><li>▪ Make sure that audio feedback is enabled in the Access Method Settings menu.</li><li>▪ Turn the volume up.</li><li>▪ Make sure the hardware isn't muted.</li><li>▪ Check the Audio Feedback Output Device setting.</li><li>▪ Go into Edit Mode and verify that the scan groups have audio cues.</li></ul>
Scanning takes too long	<ul style="list-style-type: none"><li>▪ Increase the scanning speed.</li><li>▪ Change the scan pattern.</li></ul>
User loses attention during a task	<ul style="list-style-type: none"><li>▪ Change the scan pattern.</li><li>▪ Set the highlight to invert rather than outline.</li><li>▪ Add auditory feedback.</li><li>▪ Try a step scanning method.</li></ul>

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# Additional Support



## TD Snap Support Page

<https://qrco.de/SnapHelp>



## TD Facebook Community

<https://qrco.de/TDFB>



## North America Technical Support

1-800-344-1778 ext. 1  
[support.na@tobiidynavox.com](mailto:support.na@tobiidynavox.com)

**Learn how to edit buttons, back up and share Page Sets, and use other TD Snap features:**



## TD Snap Basics Training Cards

<https://qrco.de/bdPliQ>



## TD Snap User's Manual

<https://qrco.de/bdDScg>



## Tobii Dynavox Learning Hub

<https://learn.tobiidynavox.com>