# Tobii dynavox logo

# **Switch Site Location & Positioning Chart**

This document provides guidelines for linking reliable, consistent and repeatable movements to potential switch site locations and positions. It also provides some benefits and challenges for each specific movement and location. This chart is meant to be a guide. Remember, switch type selection is highly dependent on the unique profile of the person using a switch.

Note of caution: If the person using a switch is also operating their wheelchair with a body movement (i.e.: leaning their head back), you must select a different movement for the function of communication (i.e.: tilting their head to the right) in order to keep the two functions separate.

## Hand

| **What movement was selected?** | **Position of Switch** | **Benefits** | **Challenges** |
| --- | --- | --- | --- |
| **Pressing down**  hand pointed up with arrow indicating pressing down | Flat on Surface  hand pointed up with arrow indicating pressing down above flat surface | Can be mounted to table or lap tray with Velcro  Easy to consistently position the switch on a flat surface | Difficult to position when a flat surface is not accessible  Can be fatiguing if the individual tends to move their arm around  Mis-hits are common because of difficulty lifting off the switch  Accuracy may be negatively affected if the individual has difficulty reaching a specific spot consistently |
| **Pressing down**  hand pointed up with arrow indicating pressing down | Recessed into laptray  hand with bent fingers and arrow pointing down | Potential for fewer mis-hits than above position | Requires specific fabrication of laptray  and mounting of switch  Requires extra effort to hit the switch  Accuracy may be negatively affected if the individual has difficulty reaching a specific spot consistently |
| **Reaching forward**  hand with bent fingers and arrow pointing to reach forward | In front of hand  hand with bent fingers and arrow pointing to reach forward to press horizontal switch | Accommodates a variety of movements of the hand (i.e. punch, palm or finger movement)  Easy to position switch | Must target a specific spot  Release may be difficult for some individuals |
| **Lifting wrist**  fingers extended arrow indicating to lift wrist | Above hand  fingers extended arrow indicating to lift wrist to press switch positioned above wrist | Potentially good control because the movement is small and specific  Ease of release may result in reduced mis- hits | Positioning switch so it won’t move can be challenging  Difficult to position when not in wheelchair  Repetitive movement against gravity can be fatiguing |
| **Moving to the side**  hand flat with arrow to move to right  **Turning hand in or out**  Turning hand in or out | Next to hand  hand flat with arrow to move to right keeping hand flat or turning had either way to press switch mounted horizontally | Potentially good control because the movement is small and specific  Ease of release may result in reduced mis- hits | Requires additional equipment for positioning switch in each location  Difficult to position when user is not in a supported position |
| **Grasp**  hand in position to grasp | In hand  hand grasping switch | Potentially good control because the movement is small and specific  Ease of release may result in reduced mis- hits  The arm can be anywhere as long as the hand can grasp | Can be difficult to release if spasticity is present  Often requires frequent repositioning  May be difficult for others to place correctly  Interference from the cord may occur |

## Finger

| **What movement was selected?** | **Position of Switch** | **Benefits** | **Challenges** |
| --- | --- | --- | --- |
| **Pressing down**  **hand pressing down** | Flat on surface  hand pressing switch with one finger | Requires only Velcro to mount on table or lap tray  Easy to consistently position switch | Difficult to position when not in wheelchair  Can be fatiguing if the individual tends to move their arm around  Mis-hits are common because of difficulty lifting off the switch  Accuracy may be negatively affected if the individual has difficulty reaching a specific spot consistently |
| **Pressing down** hand pressing down | Recessed into laptray hand pressing switch with one finger | Accidental hits may be avoided | Requires specific fabrication of laptray and mounting of switch  Requires extra effort to activate the switch  Accuracy may be negatively affected if the individual has difficulty reaching a specific spot consistently |
| Thumb Hand upright or sideways with fingers bent | In palm  Hand upright with switch between hand thumb in palm | Takes advantage of what may be a strong isolated movement  Easy setup for others using a Velcro strap | May require repositioning  Cords may interfere with movement |
| ThumbHand upright or sideways with fingers bent | On Fingers  Fingers wrapped around switch to be pressed by thumb | Takes advantage of what may be a strong isolated movement  Easy setup for others using a Velcro strap | May require repositioning  Cords may interfere with movement |

## Head

| **What movement was selected?** | **Position of Switch** | **Benefits** | **Challenges** |
| --- | --- | --- | --- |
| **Turning head**  **head with arrow showing turning head** | At jaw line  head with arrow showing turning head with Switch at jaw line | Tends to be movement that can be produced consistently  Will not interfere with glasses | Positioning may be difficulty especially in bed  Could interfere with maintaining gaze on target if individual tries to look at the switch or if it is positioned far from jaw  May trigger Asymmetrical Tonic Neck Reflex (ATNR) reflexes in some individuals  Partners may mistake movement for “no” response but would certainly learn to distinguish over time |
| **Turning head**  **head with arrow showing turning head** | At cheek  head with arrow showing turning head with switch beside cheek | Some individuals may prefer with this location | Position near mouth may result in saliva production or rooting behaviors in some individuals  May trigger ATNR reflexes in some individuals  Partners may mistake movement for “no” response but would certainly learn to distinguish over time |
| **Turning head**  **head with arrow showing turning head** | At temple  head with arrow showing turning head with switch beside temple | Some individuals may prefer with this location | Position near eye may interfere with glasses  Need to consider potential for damage to eye if the individual’s movement is inconsistent  Partners may mistake movement for “no” response but would certainly learn to distinguish over time  Individual could lose focus if they tend to look at the switch  Should not be considered if the individual wants to look at the switch |
| **Tilting head**  head tilted with arrow pointing to left | At jaw line  Switch positioned at jawline | Will not interfere with glasses | Positioning may be difficulty especially in bed  Could interfere with maintaining gaze on target if individual tries to look at the switch or if it is positioned far from jaw  May trigger ATNR reflexes in some individuals  Partners may mistake movement for “no” response but would certainly learn to distinguish over time |
| **Tilting head**  head tilted with arrow pointing to left | At cheek  Head with switch at cheek line | Some individuals may prefer with this location | Position near mouth may result in saliva production or rooting behaviors in some individuals  May trigger ATNR reflexes in some individuals  Partners may mistake movement for “no” response but would certainly learn to distinguish over time |
| **Leaning head back**  head leaning back with arrow pointing back | Behind head  head leaning back with arrow pointing back with switch located behind head | Switch is not obvious to others | Partners may mistake movement for “yes” response but would certainly learn to distinguish over time  Individual cannot see switch |
| **Lowering head**  head leaning forward with arrow pointing down | Under chin  head leaning forward with arrow pointing down with switch under chin | Some individuals may prefer with this location  Can be a good alternative if other head movements are problematic | Position near mouth may result in saliva production or rooting behaviors in some individuals  May result in loss of eye contact with partners or ability to see target on device  May trigger ATNR reflexes in some individuals  Partners may mistake movement for “yes” response but would certainly learn to distinguish over time |

## Shoulder

| **What movement was selected?** | **Position of Switch** | **Benefits** | **Challenges** |
| --- | --- | --- | --- |
| **Shrugging shoulders**  Shoulder with arrow pointing up | Above shoulder  Shoulder with arrow pointing up with switch located above shoulder | Tends to be movement that can be produced consistently | Positioning of switch may be challenging.  Partners may mistake movement for “I don’t know” response but could learn to distinguish over time  Potential for accidental hits with movement of the wheelchair |

## Elbow

|  |  |  |  |
| --- | --- | --- | --- |
| **What movement was selected?** | **Position of Switch** | **Benefits** | **Challenges** |
| **Backward**  elbow bent with arrow pointing back | Vertical behind elbow  elbow bent with arrow pointing back with switch mounted behind | Takes advantage of strong one directional movement | Positioning of switch may be challenging  Partners may mistake movement for “I don’t know” response but could learn to distinguish over time  Potential for accidental hits with movement of the wheelchair |
| **Away from body to side**  elbow bent with arrow pointing away from body | Vertical between body and elbow  elbow bent with arrow pointing towards body and switch located between body and bent elbow | Takes advantage of strong one directional movement | Positioning of switch may be challenging  Can be difficult to release switch  Cannot see target |
| **Toward body**  elbow bent with arrow pointing towards body | Vertical between body and elbow  elbow bent with arrow pointing towards body and switch located between body and bent elbow | Takes advantage of strong one directional movement | Positioning of switch may be challenging  Can be difficult to release switch  Cannot see target |

## Knee

|  |  |  |  |
| --- | --- | --- | --- |
| **What movement was selected?** | **Position of Switch** | **Benefits** | **Challenges** |
| **Movement: Open**Sitting position with knees apart | Next to knee  Sitting position with knees apart and switch located next to knee | Takes advantage of strong one directional movement | Positioning of switch may be challenging |
| **Movement: Close**  Sitting position with knees apart | Between knees  Sitting position with knees apart and switch located between knees | Takes advantage of strong one directional movement | Positioning of switch may be challenging  Can be difficult to release switch |
| **Movement: Lift**  Lifting bended knee, arrow pointing up | Above knee  Lifting bended knee, arrow pointing up and switch located above | Takes advantage of strong one directional movement | Positioning of switch may be challenging  Mis-hits may occur if startle reflex is present  Potential for fatigue to interfere with use |

## Leg and Foot

| **What movement was selected?** | **Position of Switch** | **Benefits** | **Challenges** |
| --- | --- | --- | --- |
| **Lifting lower leg**  Sitting with one leg straight and arrow pointing up | Front of lower leg  Sitting with one leg straight and arrow pointing up, switch is located above lower leg | Takes advantage of strong one directional movement | Positioning of switch may be challenging.  Can be difficult to release switch.  Mis-hits may occur if startle reflex is present |
| **Pushing backward with lower leg**  Sitting with one leg pulled back, arrow is pointing back | Behind lower leg  Sitting with one leg pulled back, arrow is pointing back, switch is behind lower leg | Takes advantage of strong one directional movement | Positioning of switch may be challenging.  Can be difficult to release switch  Mis-hits may occur if startle reflex is present |
| **Lifting foot**  foot lifted up with arrow pointing up | Above foot  foot lifted up with arrow pointing up, switch is above foot | Takes advantage of strong one directional movement | Positioning of switch may be challenging  Mis-hits may occur if startle reflex is present |
| **Pushing down with foot**  Foot pushing down on round object | Below foot  Foot pushing down, arrow pointing down, switch below foot | Takes advantage of strong one directional movement | Positioning of switch may be challenging  Can be difficult to release switch  Strong pressure could break a switch  Mis-hits may occur if startle reflex is present |
| **Foot/Pushing down with toes**  Front of foot pushing down on round object | Below toes  Toes pressing switch located beneath, arrow pointing down | Takes advantage of strong one directional movement | Not recommended for those with excess tone in the foot or toe areas  Recommended for use in bed because gravity is not impacting activation  Can be difficult to release switch  Mis-hits may occur if startle reflex is present |

## Isolated Muscle Movements

|  |  |  |  |
| --- | --- | --- | --- |
| **What movement was selected?** | **Position of Switch** | **Benefits** | **Challenges** |
| **Eyebrow lift** | **On/near eyebrow**  Arrow above eyebrow pointing up | Takes advantage of strong one directional movement | Positioning of switch may be challenging  Can interfere with use of facial expression and eye gaze/contact for communication |
| **Eye Blink** | **Near eye**  Arrow near eye to use eye blink | Takes advantage of strong one directional movement | Positioning of switch may be difficult to permit natural eye blinks versus intentional  Can interfere with use of facial expression and eye gaze/contact for communication |
| **Contraction** | **On muscle**  Arm muscle to show contraction | Can be an option when success is not met through typical movement patterns | Sensors to control switch must be worn  Positioning of switch may be challenging initially and for caregivers  Consistency may be challenging if contraction is not strong |

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