# 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 Surfacehand pointed up with arrow indicating pressing down above flat surface  | Can be mounted to table or lap tray with VelcroEasy to consistently position the switch on a flat surface | Difficult to position when a flat surface is not accessibleCan be fatiguing if the individual tends to move their arm aroundMis-hits are common because of difficulty lifting off the switchAccuracy 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 laptrayhand with bent fingers and arrow pointing down | Potential for fewer mis-hits than above position | Requires specific fabrication of laptray and mounting of switchRequires extra effort to hit the switchAccuracy 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 handhand 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 spotRelease may be difficult for some individuals |
| **Lifting wrist**fingers extended arrow indicating to lift wrist | Above handfingers extended arrow indicating to lift wrist to press switch positioned above wrist | Potentially good control because the movement is small and specificEase of release may result in reduced mis- hits | Positioning switch so it won’t move can be challengingDifficult to position when not in wheelchairRepetitive 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 handhand 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 specificEase of release may result in reduced mis- hits | Requires additional equipment for positioning switch in each locationDifficult to position when user is not in a supported position |
| **Grasp**hand in position to grasp | In handhand grasping switch | Potentially good control because the movement is small and specificEase of release may result in reduced mis- hitsThe arm can be anywhere as long as the hand can grasp | Can be difficult to release if spasticity is presentOften requires frequent repositioningMay be difficult for others to place correctlyInterference from the cord may occur |

## Finger

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

## Head

| **What movement was selected?** | **Position of Switch** | **Benefits**  | **Challenges** |
| --- | --- | --- | --- |
| **Turning head****head with arrow showing turning head** | At jaw linehead with arrow showing turning head with Switch at jaw line | Tends to be movement that can be produced consistentlyWill not interfere with glasses | Positioning may be difficulty especially in bedCould interfere with maintaining gaze on target if individual tries to look at the switch or if it is positioned far from jawMay trigger Asymmetrical Tonic Neck Reflex (ATNR) reflexes in some individualsPartners may mistake movement for “no” response but would certainly learn to distinguish over time |
| **Turning head****head with arrow showing turning head** | At cheekhead 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 individualsMay trigger ATNR reflexes in some individualsPartners may mistake movement for “no” response but would certainly learn to distinguish over time |
| **Turning head****head with arrow showing turning head** | At templehead with arrow showing turning head with switch beside temple | Some individuals may prefer with this location | Position near eye may interfere with glassesNeed to consider potential for damage to eye if the individual’s movement is inconsistentPartners may mistake movement for “no” response but would certainly learn to distinguish over timeIndividual could lose focus if they tend to look at the switchShould not be considered if the individual wants to look at the switch |
| **Tilting head**head tilted with arrow pointing to left | At jaw lineSwitch positioned at jawline | Will not interfere with glasses | Positioning may be difficulty especially in bedCould interfere with maintaining gaze on target if individual tries to look at the switch or if it is positioned far from jawMay trigger ATNR reflexes in some individualsPartners may mistake movement for “no” response but would certainly learn to distinguish over time |
| **Tilting head**head tilted with arrow pointing to left | At cheekHead 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 individualsMay trigger ATNR reflexes in some individualsPartners 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 headhead 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 timeIndividual cannot see switch |
| **Lowering head**head leaning forward with arrow pointing down | Under chinhead leaning forward with arrow pointing down with switch under chin | Some individuals may prefer with this locationCan be a good alternative if other head movements are problematic | Position near mouth may result in saliva production or rooting behaviors in some individualsMay result in loss of eye contact with partners or ability to see target on deviceMay trigger ATNR reflexes in some individualsPartners 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 shoulderShoulder 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 timePotential 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 elbowelbow bent with arrow pointing back with switch mounted behind | Takes advantage of strong one directional movement | Positioning of switch may be challengingPartners may mistake movement for “I don’t know” response but could learn to distinguish over timePotential 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 elbowelbow 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 challengingCan be difficult to release switchCannot see target |
| **Toward body**elbow bent with arrow pointing towards body | Vertical between body and elbowelbow 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 challengingCan be difficult to release switchCannot see target |

## Knee

|  |  |  |  |
| --- | --- | --- | --- |
| **What movement was selected?** | **Position of Switch** | **Benefits**  | **Challenges** |
| **Movement: Open**Sitting position with knees apart | Next to kneeSitting 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 kneesSitting position with knees apart and switch located between knees | Takes advantage of strong one directional movement | Positioning of switch may be challengingCan be difficult to release switch |
| **Movement: Lift**Lifting bended knee, arrow pointing up | Above kneeLifting bended knee, arrow pointing up and switch located above | Takes advantage of strong one directional movement | Positioning of switch may be challengingMis-hits may occur if startle reflex is presentPotential 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 legSitting 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 legSitting 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 switchMis-hits may occur if startle reflex is present |
| **Lifting foot**foot lifted up with arrow pointing up | Above footfoot lifted up with arrow pointing up, switch is above foot | Takes advantage of strong one directional movement | Positioning of switch may be challengingMis-hits may occur if startle reflex is present |
| **Pushing down with foot**Foot pushing down on round object | Below footFoot pushing down, arrow pointing down, switch below foot | Takes advantage of strong one directional movement | Positioning of switch may be challengingCan be difficult to release switchStrong pressure could break a switchMis-hits may occur if startle reflex is present |
| **Foot/Pushing down with toes**Front of foot pushing down on round object | Below toesToes 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 areasRecommended for use in bed because gravity is not impacting activationCan be difficult to release switchMis-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 challengingCan 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 intentionalCan 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 wornPositioning of switch may be challenging initially and for caregiversConsistency may be challenging if contraction is not strong |

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