Guidance Notes

Pre- assessment:
It is important to gather together appropriate information before the assessment to inform on possible starting points for the assessment.
The Pre-Assessment Form should help you gather appropriate information.

Have other access methods, been considered e.g. Joystick, Headmouse, Rollerball? From the information collated it may be felt that an alternative mouse / keyboard device with appropriate settings and strategies may also be appropriate to evaluate.

Recording:
Record relevant information on the Assessment Form following the guidance notes provided below. Always consider the overall speed, accuracy, reliability and quality of an option as the ultimate aim is to establish a switch access method that offers the easiest, quickest and the most successful method of access to an activity.
On the assessment form space is given to record two possible options to compare, however it you may need to try more than two possible options to compare and evaluate the most effective.
Ideally assessments will be carried out by an interdisciplinary team consisting of all or a combination of Occupational Therapist, teacher, Speech and Language Therapist, Physiotherapist, carer/parents, other involved professionals.

1a. **Position of Individual**
Describe the position of the individual and the postural equipment used i.e. seated in a Jenx multi chair.

1b. **Additional Positioning Adaptations**
Describe any alterations made to postural equipment during assessment i.e. adjustment of the headrest and / or any additional positioning adaptations made i.e. right forearm placed in a gutter splint

If you have any concerns about the position of the individual or postural equipment then please seek the advice of an Occupational Therapist or Physiotherapist.

2. **Activity(s):**
Describe the activities used during the assessment and the response to them in terms of motivation, enjoyment and cognitive ability. Incorporate motivating and meaningful activities into the assessment. Activities should be simple and well within an individual's cognitive, language and visual abilities.

3a   **Movement:**
Observe the individual during rest and during other activities to determine their voluntary and involuntary movement patterns.
Identify the individual's best possible movement patterns.
- o Consider
  - ROM (range of movement)
  - Ease of movement
  - Time it takes to press and release
  - Reliability
  - Accuracy
  - Effort
- o Ensure no undue abnormal muscle tone or overflow of movements e.g. increased tone (spasticity), abnormal reflexes are present with movement.

First consider upper extremity movements i.e. fingers, hands and arms (often considered the most socially acceptable) then head movements and then lower extremity movements i.e. feet, knees. Whilst evaluating the movement consider their ability to activate the switch, release the switch, and reactivate the switch plus their ability to activate the switch in a specific timed period wait and re-activate.

Specific movement patterns to consider:

	Specific movement patterns	**Example switch position**
Upper extremity:	Forward shoulder flexion and extension	Switch placed vertically in front of resting hand – whole arm movement forward (forward shoulder flexion) to activate switch
	Horizontal abduction and adduction of the arm	Switch placed vertically at edge of tray – outward movement of the arm activates the switch.
	Forearm flexion and extension	Switch placed above hand
	Forearm lateral movement	Switch placed to the outside of fist – movement of the forearm sideways activates the switch
	Forearm pronation and supination	Switch placed to the outside of fist –movement of the hand turning over activates the switch

	Wrist lateral movement	Switch placed to the outside of fist – movement of the wrist sideways activates the switch
	Wrist flexion and extension	Switch placed above hand
	Finger and thumb extension and isolation of movement	With hand resting on tray switch is placed vertically on the thumb side of the hand – movement of the thumb out away from the hand will activate the switch
Head:	Forward flexion and extension of the neck	Under chin, behind head (ensure not going into total extension)
	Lateral neck flexion	Side of head
	Neck rotation	Side of head
Lower extremity:	Hip / knee movements (adduction / abduction)	Switch placed vertically to the outside of the knee
	Foot movements (plantar flexion / dorsiflexion)	Switch placed above toes

Glossary of terms:

Abduction: the movement of an arm or leg away from the midline of the body.
Adduction: the movement of an arm or leg towards the midline of the body.
Extension: straightening of a joint.
Flexion: bending of a joint.
Internal rotation: a movement that occurs when the front (anterior surface) of the leg or arm turns inwards.
External rotation: a movement that occurs when the front (anterior surface) of the leg or arm turns outwards.
Lateral: a movement sideways
Pronation: turning the palm of the hand downwards
Supination: turning the palm of the hand upward.
Plantar flexion: extending the foot downwards toes to floor.
Dorsiflexion: flexing the foot towards the leg.

3b   Movement Concerns

Document any changes in tone and position.

Avoid movements that
- Are dominated by abnormal reflex patterns (ATNR {can the individual turn the head side to side without causing one arm too straighten and the other to bend}, STNR{can the individual move the head upward without causing the arms to straighten and the legs to bend, can the individual move the head downwards without causing the arms to bend and legs to straighten}).
- Cause a significant increase in abnormal tone e.g. total body extension (straightening and stiffening of the body)
- Are abnormal movement patterns such as excessive internal rotation of the arm (i.e. the arm turned inward and wrist deviation)
- Change in pelvic position as this can create a change in the positioning of the rest of the body.

At times it is difficult to avoid completely the influence of abnormal reflexes
When the only available reliable movement has a measure of abnormal movement associated with it, then use the abnormal movement with the objective to gradually phase away from the abnormal pattern.

If you have any concerns about the choice of movement then please seek the advice of an Occupational Therapist or Physiotherapist.

4.   Users Preferred Choice:
Always ask the individual what they feel their best movement is to utilise for switching. An augmentative communication system / device may be needed here for some individuals e.g. symbol board with body parts.

5.   Control Site
The control site refers to the part of the body that has contact with the switch e.g. if using head movement the part that makes contact with the switch i.e. side of temple will be the control site.
Any positioning adaptations that bring about improvement should be noted e.g. adjustment of the wheelchair headrest
It may be useful to indicate the control site on the diagrams provided at the end of the Switch Assessment Tool Assessment Form.

6. **Type of Switch:**
    Considering the movement and control site a suitable switch needs to be chosen. Evaluation of this includes:
    - Size depends on accuracy of movement
    - Sensitivity - pressure required for switch activation
    - Feedback given from the switch e.g. auditory click
    - The amount of travel required to make an activation
    - Robustness
    - Tactile quality– hard or soft
    - Moisture resistance (if positioned near the mouth)
    - Safety (e.g. if using head won't cause accidental damage to eye)

7. **Positioning of Switch:**
    Information from the Movement, Control Site and Type of Switch needs to be consolidated and applied to decisions relative to the placement of the switch i.e. best mounting solution
    The optimal position for a switch relative to the control site is within the individual's range of motion but not so close that accidental activations occur. Mounts must provide flexibility for positioning switches but ultimately must be safe and stable.
    Describe distance from control site, angle of switch (digital photos help!!) and mounting equipment used to achieve position e.g. Universal Switch Mounting - Variable Friction Arm

8. **Skill level:**
    Document the individual's skill level, commenting on prompting and type required.
    - Cause and effect (is able to activate)
    - Build (is able to activate, release and reactivate)
    - Reaction Timing (is able to wait, activate, release)
    - Scanning
        o Scan method – 1 switch; 2 switch with partner; 2 switch independently
        o Scan pattern – simple; row-column; other group scanning – specify
        o Scan Speed
        o Scan type – fill scan; outline scan
        o Other scanning settings – switch acceptance time; post acceptance delay
        o Auditory prompts used on the scan
        o Number of cells on scanning grid
        o Size of grid / cells
        o Layout of cells - Place most frequent item in areas quickest to access

General observations

How easily is the individual using the switch?
What is the speed of overall response?
What is the accuracy of overall response?
What is the individual's frustration / tolerance for the method?
How reliable is the method?
Does the method cause any short and/or long term fatigue

9. Users Preference

Always ask the individual their opinion regarding the best option of the options evaluated.
If the best method of access is not one the individual or his/her family likes then the likelihood of it being used is lessened.

Evaluation

From observations made conclude on:

- Best option - further evaluation of this option is then advisable to ensure the user can use it over a period of time.
- Any option that offers future potential with further practice / training.
- Any options that could be used for limited activities.
- No go option(s).

Action Plan

Following the assessment set out an action plan which should include:

o Documentation of the switch access method – photos are a great help here
o Any further evaluations required regarding the switch access method
o The present skill level e.g. cause and effect
o The next stage of skill development for the switch user e.g. developing scanning skills
o Activities and strategies to be used to develop skills
o Equipment required to achieve action plan
o Training required for staff to implement action plan and who will provide this
o Support required
  o for individual whilst working on switching skills and who will provide the support
  o to prepare resources required and who will provide the support
o In which environments will the individual be developing their switching skills
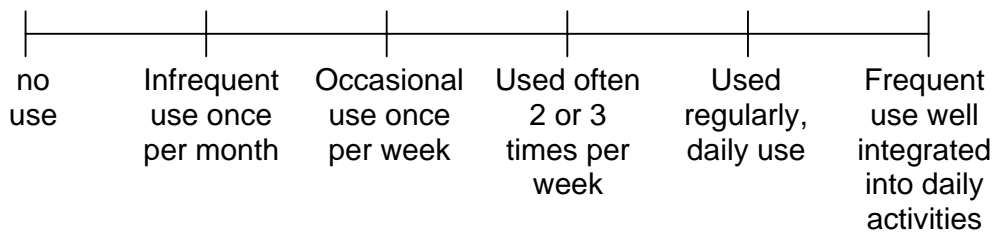
An action plan is important to ensure that all those working with the individual use a consistent approach to develop the required skills with switches.

It also allows the individual to focus on gaining proficiency with one skill at a time whilst allowing you to isolate troublesome variables.

Pre-Assessment Form

1. What do team members want to learn from this assessment?

2. What would the team like to see the person do with technology?

3. What types of postural equipment (wheelchair, seating, standing frames, other) are used throughout the individuals day?

4. Are there any unsolved seating and positioning issues?

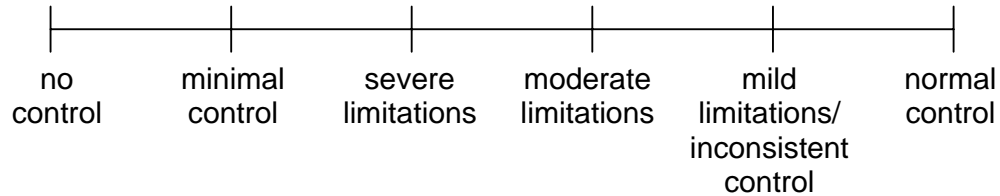5. How often are switches used currently:

no use	Infrequent use once per month	Occasional use once per week	Used often 2 or 3 times per week	Used regularly, daily use	Frequent use well integrated into daily activities

    a. are they successful

    b. detail equipment and software switches are used with

6. Are there any visual, perceptual or hearing difficulties?

7. What is the person's typical muscle tone?

severe tone	moderate tone	mild tone	normal tone
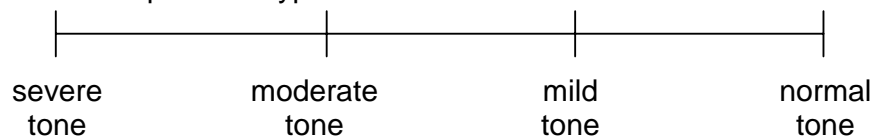
Is the tone: Hypotonic (floppy)
                  Hypertonic (spastic)
                  Mixed

8. What is the person's ability to control and coordinate his or her body movements?

| no control | minimal control | severe limitations | moderate limitations | mild limitations/ inconsistent control | normal control |

☐ Athetoid   ☐ Ataxic

☐ Mixed   ☐ Interfering refelexes

9. Describe any controlled voluntary movements the individual has:

Head

Arms

Legs

Feet

Which part of the body is best controlled?

10. What activities are motivating to the individual?

11. How long can the individual attend without undue fatigue?

12. What is the major functional goal for using a switch?

Assessment Form

Name: Date:

Assessors:

Summary of important issues: (taken from Pre-assessment form)

		Option 1	Option 2
1a	Position of individual		
1b	Additional positioning adaptations e.g. splint		
2	Activity(s)		

3a	Movement		
3b	Movement concerns e.g. muscle tone, reflexes, posture changes, fatigue		
4	Users preferred movement choice		
5	Control Site		
6	Type of switch		
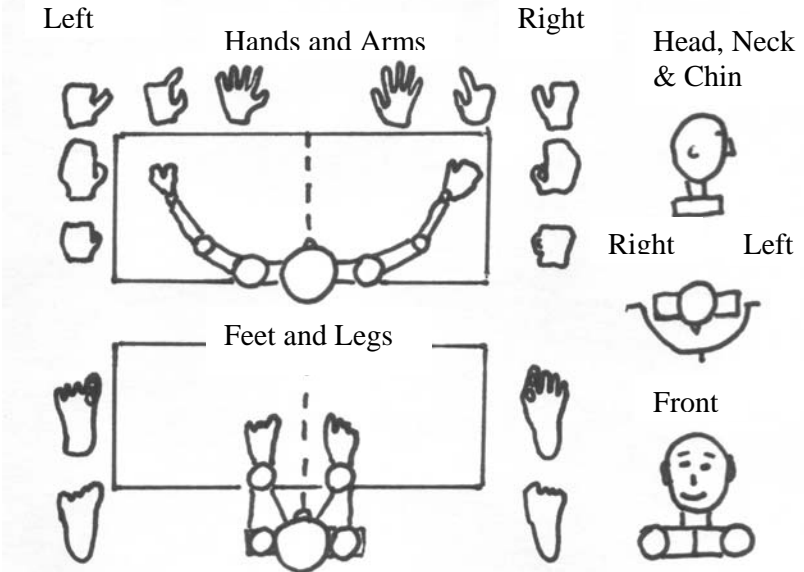
7	Positioning of switch		
8.	Skill level		
9	General observations		
10	Users preference		
	Additional comments		

Switch Assessment and Planning Framework for Individuals with Physical Disabilities

Recording movement and control sites

It may be helpful to indicate movement and control site on the diagrams below:

	Left **Hands and Arms** **Right** **Head, Neck & Chin**
	Right **Left**
	Feet and Legs **Front**
Adapted from Bain, K., Ledger, D. (1997) *Assistive Technology: An Interdisciplinary Approach.* Churchill Livingstone.	Adapted fromWilliams, W.B., Stemach, G., Wolfe, S., Stanger, C. (1994) *Lifespace Access Profile Upper Extension: Assistive Technology Assessment and Planning for Individuals with Severe or Multiple Disabilities.* Lifespace Access

Switch Assessment and Planning Framework for Individuals with Physical Disabilities

Switching Skills Action Plan:

Name:	
Date:	
Aim	
Present level	
Next stage	
Positioning (use photos) **Switch** **Equipment/device** **Individual**	
Implementation issues, strategies, activities	

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Switch Assessment and Planning Framework for Individuals with Physical Disabilities

Resources required	**Equipment required (hardware and software)**	
	Training	
	Provided by:	
	Support	
	Provided by:	
Environments	**Home**	
	School	
	Other – specify	