

If you are viewing this course as a recorded course after the live webinar, you can use the scroll bar at the bottom of the player window to pause and navigate the course.

This handout is for reference only. It may not include content identical to the powerpoint. Any links included in the handout are current at the time of the live webinar, but are subject to change and may not be current at a later date.

SWITCH ASSESSMENT

Michelle L. Lange, OTR/L, ABDA, ATP/SMS



Lange 3.2017

2

Learning Objectives:

1. Participants will be able to describe assessment strategies for determining the best switch site for access to assistive technology.
2. Participants will be able to describe clinical criteria for 3 different switch sites.
3. Participants will be able to list 3 different mechanical switches.
4. Participants will be able to list 3 different electrical switches.

What are we covering?

- The Ideal Switch Site
- Switch Site Hierarchy
- Switch Types



Access: How?

- Switch use varies depending on what you are accessing
 - Power wheelchairs and switch toys
 - sustained contact/pressure
 - quick release
 - Scanning
 - anticipation and waiting
 - quick activation
 - timing



Let's get Practical!

- Think of a client you are working with
- As we move through the course, think of where you may try and place a switch and what type of switch for access to assistive technology

Ideal Switch Site

- An ideal switch site uses:
 - small movement
 - isolated movement
 - volitional movement
 - controlled activation
 - sustained pressure
 - controlled release
- Worksheet

An ideal switch site uses:

- A small movement
 - avoiding the “big wind-up”
 - smaller movement increases speed, accuracy in scanning
- Lauren
 - Efficiency comparison, hand vs. head



An ideal switch site uses:

- An isolated movement
 - not resulting in overflow
- Travis
 - Hip rotation with switch activation



An ideal switch site uses:

- A volitional movement
 - not part of a pattern of movement
 - not part of a reflexive movement
 - under voluntary control
 - Sarah and the boys



An ideal switch site uses:

- Controlled activation
 - activation travel
 - activation pressure
 - Brandon – midline placement, switches in close proximity, light touch
 - speed
 - accuracy
 - Spencer – could activate over right hand, but not with speed and accuracy. Solution – opened seat to back angle; reduced UE flexion

An ideal switch site uses:

- Sustained pressure
 - in power mobility
 - fatigue issues
- Julian
 - Small travel and activation pressure

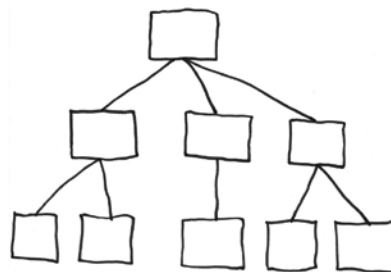


An ideal switch site uses:

- Controlled release
 - timing (particularly in power mobility)
 - consistency
 - ability to release under stress
- Amy
 - Getting stuck on switch behind head

Questions?

Switch Site Hierarchy



Switch Site Hierarchy

- Hands
- Head
- Mouth
- Feet
- Lower Extremities
- Upper Extremities
- Mind

Switch Site Hierarchy

- Hands
 - horizontal placement
 - vertical placement
 - under tray placement
 - finger movement
 - pincer
 - grasp



Horizontal placement - video



Vertical Placement



Under Tray



Finger movement



Finger movement

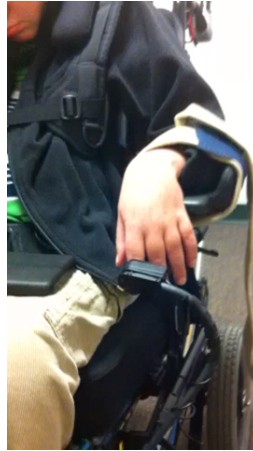


Finger movement - video



Finger Movement

- Microlight on Stealth Gooseneck



Finger movement - Video



Wrist Extension



Pincer



Grasp



Switch Site Hierarchy

- Head
 - rotational vs. lateral flexion
- cheeks
 - rooting reflex
- temple
 - glasses
 - eye injuries
- side of head



Movie Time!



Question Time...

- What do I connect the switch to while evaluating various switch sites?

Lange 3.2017

31

Side of Head



Lange 3.2017

32

Side of head



Lange 3.2017

33

Side of head



Lange 3.2017

34

Side of Head



Movie Time!



Side of Head: mounting idea

- Stealth headrest
 - Replace lateral pad with switch



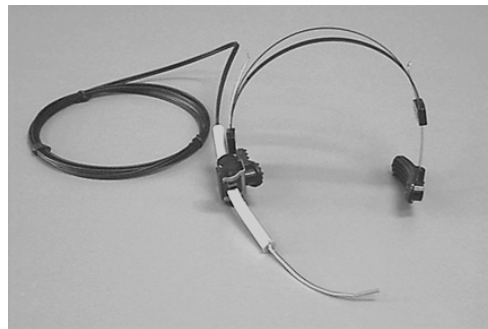
Stabilizing against the lateral spot pad

Movie time!



Switch Site Hierarchy

- Head
 - chin
 - under chin
 - side of chin - Abby
 - can use jaw or
 - head movement



Switch Site Hierarchy

- Head, less used sites
 - behind head
 - Forehead - Tom
 - eye brow
 - eye blink

Switch Site Hierarchy

- Mouth
 - sip and/or puff
 - lip closure
 - intra oral pressure/control
 - tongue
 - protrusion against cheek
 - protrusion forward - Vincent



ASL sip n
puff mount

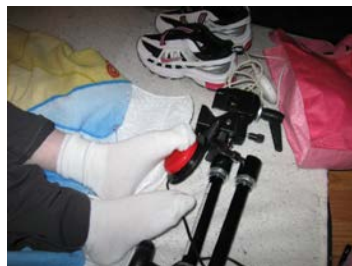
ASL mini fiberoptic
mount

Question Time...

- My client can access switches in several areas. How do I pick which is best?

Switch Site Hierarchy

- Feet
 - above foot (dorsiflexion) - Kelly
 - below foot (plantar flexion)
 - sides of foot



Foot placement - Video



Switch Site Hierarchy

- Lower extremities
 - medial knee
 - lateral knee - Alexi
 - superior knee - Jacob

Lange 3.2017

45

Medial Knee



Lange 3.2017

46

Medial Knee



Lateral Knee



Question Time...

- My client needs more than 1 switch. How do I choose where to put each switch?
 - PWC – strongest Forward, weakest Reset

Switch Site Hierarchy

- Upper extremities
 - above shoulder
 - behind elbows
 - forearms



Above Shoulder



Movie Time!



Movie Time!



So what's the most unusual spot you put a switch?

- Anyone?
- Me - Tammy

How Does This Apply to the Classroom?

- If the client does not have independent switch access, it is difficult for team members to accept that any assisted access is intentional
- The optimal switch location can make the difference between dependent, assisted and independent access
- Goal is automaticity so that the student can focus on the task, not where the switch is
- No matter where the switch is located, it can access technology for education and communication

Let's get Practical!

- Where do you think you might try and place a switch on the client you identified?

Questions?

Switch Types



Switch Types

- Mechanical
 - activation pressure
 - travel
- Electrical
 - no pressure
 - travel often required
 - less feedback

Mechanical Switches

- Plate
- Light Touch Plate
- Lever
- Pneumatic
- Other

Plate Switches

- AbleNet
 - Big Red
 - Jelly Bean
 - Spec



Michelle's Tool Bag Item

Plate Switches

- AbleNet
 - Buddy and Big Buddy Switches
 - Formerly Tash
 - Trigger



Plate Switches

- Adaptation/Origin
 - Orby Switch



Plate Switches

- Don Johnston
 - Bass switch



Plate Switches

- Enabling Devices
 - Pancake
 - Jumbo
 - Gumball
 - Mini Gumball



Lange 3.2017

65

Plate Switches

- Enabling Devices
 - Plate
 - Compact



Lange 3.2017

66

Plate Switches

- Inclusive TLC
 - Smoothie
 - Adjustable Pressure



Light Touch Plate Switches

- AbleNet Microlite
- Personalize with Color

Michelle's Tool Bag Item



Light Touch Plate Switches

- Adaptation Pal Pads



Light touch Plate Switches

- AMDi
 - Moon Switch



Light Touch Plate Switches

- Enabling Devices
 - Saucer
 - Mini saucer



Light Touch Plate Switches

- ASL
- Ultra Light switch
- Extremely light touch
- Various color strips for top
- 2 tap holes



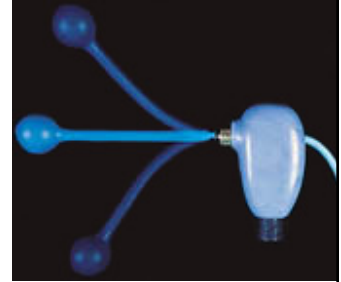
Lever Switches

- AbleNet
 - Leaf
 - Flex



Lever Switches

- Enabling Devices Ultimate



Pneumatic Switches

- AbleNet
 - Grasp
 - Pneumatic



Lange 3.2017

75

Pneumatic Switches

- AMDi Squeeze



Lange 3.2017

76

Pneumatic Switches

- ASL

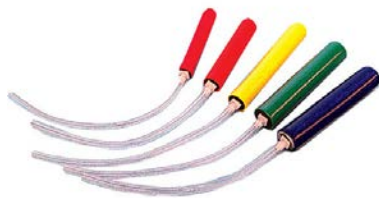


Lange 3.2017

77

Pneumatic Switches

- Enabling Devices
 - Sip and Puff
 - Grip



Lange 3.2017

78

Lip switch

- ASL
- Designed for end of pneumatic switch
- Depressed by lip or tongue



Questions?

Electronic Switches

- Proximity
- Fiberoptic
- Infrared
- Touch
- Sensor
- Photocell/Photoelectric
- Sound activated
- Piezo Electric Film (detects vibration)

Proximity Switches

- AbleNet Candy Corn



Proximity Switches - adjustable

- Adaptive Switch Laboratories
- AMDi
- Stealth Products
- Switch It!

Michelle's Tool Bag Item



Fiberoptic Switches

- Adaptive Switch Laboratories
 - AMDi
- Stealth Products
- Switch It!

Michelle's Tool Bag Item



LocLine for
mounting



Infrared Switches

- AbleNet
 - SCATIR (Self-Calibrating Auditory Tone Infrared)



Infrared Switches

- Enabling Devices
 - Eye Blink Switch



Touch Switch

- AbleNet Plate Switch



Touch Switches

- Adaptation Taction Pads



Touch Switches

- AMDi
 - Membrane switch



Sensor Switches

- A sensor picks up muscle activity
- Not recommended for power mobility as vibration of the power wheelchair may activate the switch

Sensor Switch

- Don Johnston



Lange 3.2017

91

Sensor Switches

- Enabling Devices



Lange 3.2017

92

Sensor Switches

- Tinkertron EMG Switch



Piezo Electric Film

- Vibration of a piece of film causes activation
- Not recommended for power mobility as vibration of the power wheelchair may activate the switch

Piezo Electric Film Switches

- Adaptation
 - TableTapper
 - Also a switch latch and timer



Piezo Electric Film Switches

- AMDi

AMDi Piezo



Piezo Electric Film

- Enabling Devices
 - Twitch
 - Vibration Switch Latch Switch



Questions?

How Does This Apply to the Classroom?

- The optimal switch type can also make the difference between dependent, assisted and independent access
- Goal is automaticity so that the student can focus on the task, not where the switch is
- No matter where the switch is located and what type of switch it is, it can access technology for education and communication

Let's get Practical!

- What switch type do you think might work for the client you identified?

Wireless Switches

- AbleNet
 - Mini beamer
 - Jelly Beamer
 - Jelly Beamer with SLAT



M. Lange 4.2014

Wireless Switches

- AMDi
 - Wireless switch converter



Wireless Switches

- Enabling Devices
 - Wireless gumball
 - Wireless saucer
 - Wireless Ultimate
 - Wireless switch adaptor



Bluetooth Switches

- Allows access to iPad (iOS7 and above)
- AbleNet
 - Blue2
- AMDi
 - Picture Plate bluetooth switch



Resources

- Ablenet/Tash/Possum
 - www.ablenetinc.com
- Adaptive Switch Labs
 - www.asl-inc.com
- Adaptivation
 - www.adaptivation.com

Resources, cont.

- AMDi
 - www.amdi.net
- Enabling Devices
 - www.enablingdevices.com
- Stealth
 - www.stealthproducts.com
- Switch It!
 - www.switchitinc.com

Take Home Message

- Optimal switch access is very dependent on optimal positioning
- Optimal switch access is dependent on switch training
 - Motor skills – 300 hits a day!
 - Scanning concepts
- Optimal switch access can make or break AT use and subsequent function, subsequent, participation and socialization

Lange 3.2017107

Questions?

Lange 3.2017108

Thank You!

Contact Information:

Michelle Lange
MichelleLange@msn.com
www.atilange.com