

# Transitioning to online research study visits for the validation of an accessible language assessment test

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## Background

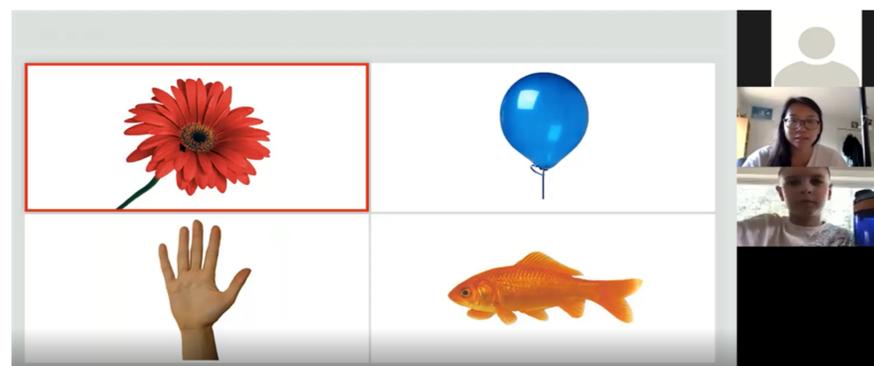
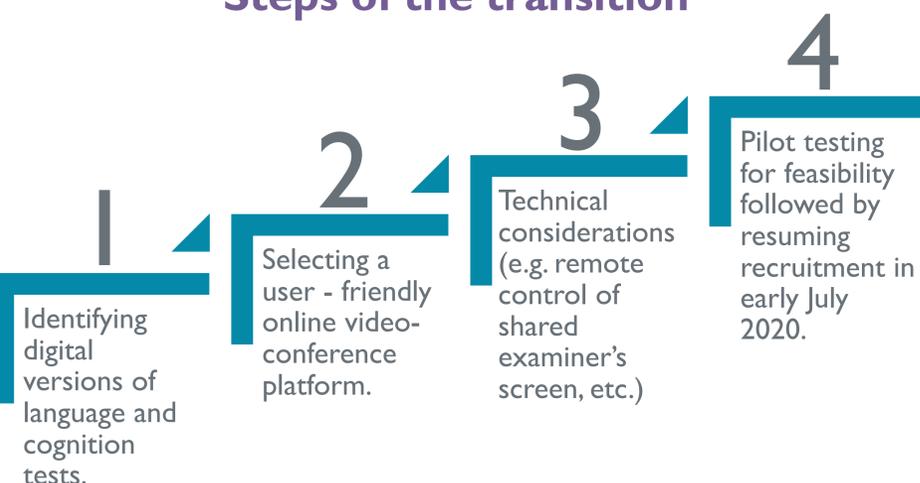
- The Computer-Based instrument for Low motor Language Testing (C-BiLLT)<sup>(1)</sup> is an innovative tool to reliably measure spoken language comprehension in children with Cerebral Palsy who have low speech and motor function<sup>(2)</sup>, originally developed in Dutch.
- A sample size of 80 typically developing English speaking Canadian children (1.5 – 8.5 years) was needed to test the validity of the English language version of the C-BiLLT.
- Study visits typically took place at the participants' schools or childcare centres. During the study visit, participants were assessed with the C-BiLLT as well as up to three other language and cognition tests.

## The challenge due to COVID-19

- On March 11<sup>th</sup> 2020, the day the WHO declared the COVID-19 pandemic, our inclusion rate was at 65% of the target (n = 52). With the Ontario school closures and in compliance with the new public health regulations, the data collection process had to be paused.
- Growing evidence shows that remote administration of neuropsychological tests yields results comparable to on-site administration<sup>(3)</sup>.

**Aim: To transition from in-person to virtual research study visits in response to the COVID-19 pandemic**

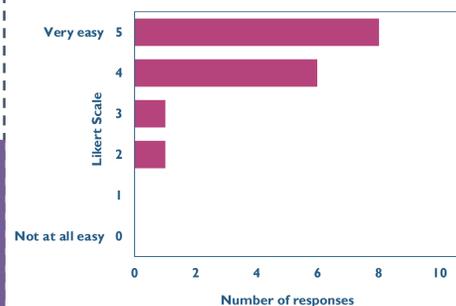
## Steps of the transition



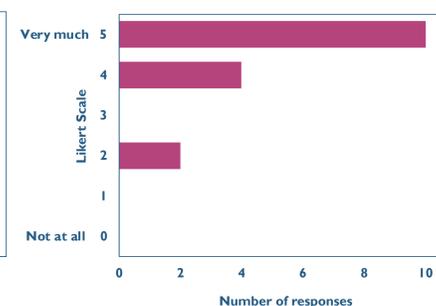
**Figure 1.** The C-BiLLT trial items are presented to the participant through Zoom. The participant has control over the screen and can select their answer by clicking on the picture of their choice.

## Parent perspectives of the virtual visits

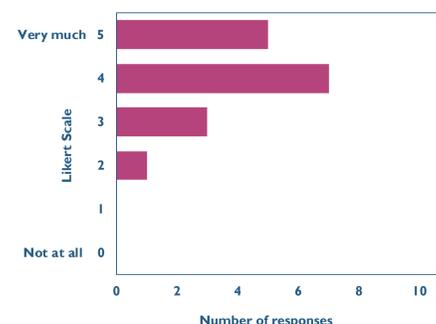
**1 - How easy was it for you and your child to participate in the virtual C-BiLLT study?**



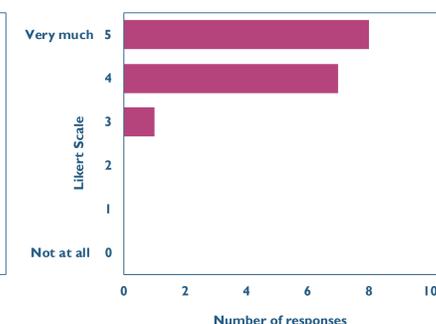
**2 - The virtual assessment with the C-BiLLT was acceptable for my child.**



**3 - My child responded to the questions and pictures the way I expected him/her to.**



**4 - My child was able to show what he/she understands.**



**Figure 2.** Results of a Virtual C-BiLLT Study participation questionnaire (n = 16)

“We didn’t have to travel anywhere. My daughter is shy and happier in her home environment.”

“Easy communication between my son and the tester. Easy setup, quick start up and easy to do from home.”

“Duration was a bit high for a 4 year old, but the option of breaks made it manageable.”

## Benefits and challenges of virtual visits

- Participation retention during lockdown
- Allows participation from all over Canada
- Saves travel time and costs
- Flexible scheduling of visits
- Convenience
- Enjoyable experience for the child participants
- No potential exposure to COVID-19
- Most participants require parental assistance
- Some devices do not support sharing screen controls
- Mental fatigue and boredom if testing runs long
- Possible distractions at home
- Internet instability

## References

- Geytenbeek, J. J., Mokkink, L. B., Knol, D. L., Vermeulen, R. J., & Oostrom, K. J. (2014). Reliability and Validity of the C-BiLLT: A new Instrument to Assess Comprehension of Spoken Language in young Children with Cerebral Palsy and Complex Communication Needs. *Augmentative and Alternative Communication, 30*(3), 252–266.
- Geytenbeek, J. J. M., Heim, M. M. J., Vermeulen, R. J., & Oostrom, K. J. (2010). Assessing Comprehension of Spoken Language in Nonspeaking Children with Cerebral Palsy: Application of a Newly Developed Computer-Based Instrument. *Augmentative and Alternative Communication, 26*(2), 97–107.
- Brearily, T. W., Shura, R. D., Martindale, S. L., Lazowski, R. A., Luxton, D. D., Shenal, B. V., & Rowland, J. A. (2017). Neuropsychological Test Administration by Videoconference: A Systematic Review and Meta-Analysis. *Neuropsychology Review, 27*(2), 174–186.

## Acknowledgements

This poster is presented on behalf of the Canadian C-BiLLT study group, which also includes F. Campbell, T. Chau, K. Oostrom, D. Grahovac (Parent Partner), M. Phoenix, and B.J. Cunningham. We are grateful to Pearson Canada for providing free access to the digital versions of the tests and to all participating families and children. This project is funded by a Hamilton Academic Health Sciences Organization Innovation Grant (HAH-18-003).