

Let's Read! A unique iPad 2® application for evaluating reading skills in Fragile X Syndrome

Riley K¹, Lopez Lopez C², Hammond K², Jaeger J³, Alhas S², Merrien F², Zhu L⁴, Apostol G²

¹The University of Denver, Denver, CO, USA

²Novartis Pharma AG, Basel, Switzerland

³Cogstate Clinical Trials, New Haven, CT, USA

⁴Novartis Pharmaceuticals Corporation, East Hanover, NJ, USA

Abstract

Testing for cognitive change as a result of a new treatment in individuals with Fragile X Syndrome (FXS) is challenging because few validated measures are sensitive to change in the performance range typical of FXS. A software application ('App') called Let's Read! has been co-developed by Prof. Karen Riley and CogState Inc. for use with the iPad 2® platform, to deliver an intensive reading intervention program with a view that successful treatments would accelerate the pace of learning. This application is a sight-word, visually based approach to learning how to read. This unique, educational App and its associated assessment tool has been tested in a small pilot study at 2 sites in the US that included 8 individuals with FXS.

The individuals and their caregivers were given an iPad 2 with 3G loaded with the "Let's Read!" program and a manual. The iPad 2 were locked for any other use, and could only be used for the study. The Let's Read! App was designed to utilize errorless learning by ensuring that an individual was not able to choose the incorrect answer. The Let's Read! App comprised 120 words, divided into 4 modules each reflecting a distinct theme (Let's Go!, Let's Play!, Let's Cook!, Let's be Safe!). Only the modules that were unlocked by the research team were available for selection. Each module was further divided into 10 lessons with 3 words in each lesson. The intervention comprised 3 different types of exercises (matching [picture to picture/word to word/picture to word], word identifying, and word naming). Once each lesson was completed for the first time, the next lesson in the list was unlocked. The individuals could return to a previous

lesson at any time, or try the lesson again. The “Let’s Read!” App was used 5 days a week. An individual had a time limit of 10 minutes per day to work within the “Let’s Read!” App. The daily training was completed under caregiver supervision and supported on a weekly basis by a research support team.

This iPad 2® App is a unique, electronic learning tool, designed to encourage learning skills specifically in the individuals with FXS. Since the Let’s Read! content has been designed for the US users, cultural and language adaptations may be required for use in other countries.

Conflict of interest

Authors who are employees of Novartis may be eligible for Novartis stock and stock options. Jaeger J is Professor of Clinical Psychiatry and Behavioral Sciences at Albert Einstein College of Medicine in New York and Honorary Professor at University of Manchester, UK. This study is funded by Novartis Pharma AG.