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In addition, a short title of maximum 45 characters should be submitted.	Konectom digital outcome assessments in MS
Authors	Aurélie Ruet, Alf Scotland, Zhaonan Sun, Rajani Rajbhandari, Bruno Brochet, M. Deloire, J. Charre-Morin, Gautier Cosne, Clément Dulong, Oussama Tchita, Angéline Plaud, Dawei Liu, Ali Neishabouri, Changyu Shen, Loïc Carment, Matt Scaramozza, Thibaud Guymard, Johan van Beek, Marta Ruiz, Christine Guo, Shibeshih Belachew, Patrizia A. Chiesa
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Title

DigiToms Study: preliminary findings on Konectom™ digital outcome assessments in MS

Short Title

Konectom digital outcome assessments in MS

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Digital outcome assessments (DOAs) delivered by mobile devices are convenient, objective, and meaningful to persons' life. The Konectom smartphone-based DOA application includes a Cognitive Processing Speed Test (CPST), manual dexterity (Pinching, Drawing, and Grip Force) and ambulation tests [U-turn (UTT), Static Balance (SBT), and 6-minute walk tests (6MWT)]. We report interim results on the reliability and convergent validity of Konectom DOAs measuring neurological functions in persons living with multiple sclerosis (PwMS).

The DigiToms study (NCT04756700) includes PwMS aged 18–64 years with Expanded Disability Status Scale (EDSS) score ≤ 6.0. Participants perform Konectom assessments at two clinical visits (4 weeks apart) as well as remotely in-between the two visits. Test-retest reliability was assessed using intraclass correlation coefficient (ICC). Association between conventional clinical outcome assessments and Konectom DOAs was assessed using Spearman's Rank (ρ) or generalized linear model whichever appropriate.

At interim data cut, 42 PwMS completed the study (mean age=41.3; 80% female; median EDSS=2.0) with 83% adherence to the daily schedule of remote testing. Test–retest reliability [ICC] of Konectom DOAs for PwMS was good (0.5-0.83) for all the tests.

Significant correlations were observed between Konectom DOAs and conventional clinical outcome assessments at baseline visit: Correct Responses CPST vs Symbol Digit Modalities Test (SDMT) (ρ=.70, p<.0001, n=34), double touch asynchrony of Pinching vs 9-Hole Peg Test (9HPT) (ρ=.46, p=.004, n=37); Drawing accuracy-normalized duration vs 9HPT (ρ=-.61, p<.0001, n=37), and SBT sway path vs EDSS Cerebellar functional system score (F=8.42, p=<.001, n=33); Mean step time of Konectom 6MWT vs distance walked for 6MWT (ρ=-.54, p=.003, n=28), and UTT turn speed vs Timed 25-foot Walk (ρ=-.43, p=.01, n=35).

Preliminary results of the study showed good to excellent reliability and convergent validity of Konectom DOAs. These findings support the potential of Konectom to remotely provide meaningful, reliable and patient-centric outcomes in PwMS.

Reference

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Changyu Shen: Employee of Biogen.

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Thibaud Guymard: Employee of Biogen.

Johan van Beek: Employee of Biogen.

Marta Ruiz: Employee of Biogen.

Shibeshih Belachew: Employee of Biogen.

Christine C. Guo: Employee of Biogen.

Patrizia A. Chiesa: Employee of Biogen.