

# Is objective ADHD assessment achievable with adolescents and adults via Telehealth?

---

An international audit and comparison of technical feasibility and test-taker usability of QbCheck in the home and clinic settings

Presented by  
[Lisa Cordeiro](#),  
Mikkel Hansen,  
Charlotte Cooper  
and Mallory Garcia



## Disclosure Information

I hereby declare that I have had business or personal interests in the following industrial enterprises since 1 Apr 2020:  
Qbtech AB // Head of Global Clinical Research

# Background and Methods



**An international audit was conducted March 2020 to March 2021 to compare test-taker usability and technical feasibility of QbCheck in-clinic and in-home among adolescents and adults in Europe and the U.S.**

- During this audit trained test administrators gave the test in-clinic or patients completed the test via Telehealth at home via their personal laptop.
- Test-takers were asked 10 questions about their test experience.
- Tests of proportions<sup>1</sup> were used to examine potential significant differences between in-clinic and in-home test issue monitoring.

QbCheck objectively measures the three core symptoms of ADHD (**hyperactivity, inattention and impulsivity**)<sup>2</sup>. The online platform includes a DSM-V based rating scale of ADHD behaviors.

Recent reports have found:

- **High equivalency** across all parameters measured in-clinic and in-home<sup>3</sup>.
- **Clinical validity for the prediction of ADHD diagnosis** with in-home testing (83.1% sensitivity; 80.6% specificity)<sup>4</sup>.

[1] R Stats Package Documentation: Test of equal or Given Proportions. Retrieved April 28, 2021, from <https://stat.ethz.ch/R-manual/R-devel/library/stats/html/prop.test.html>; [2] FDA cleared, K143468, K133382, K122149; [3] Ulberstad F, Boström H, Chavanon M-L, et al. Objective measurement of attention deficit hyperactivity disorder symptoms outside the clinic using the QbCheck: Reliability and validity. Int J Methods Psychiatr Res. 2020;e1822. <https://doi.org/10.1002/mpr.1822>; [4] Ulberstad, F., Bostrom,H., Christiansen, H., et al. Clinical validity of the QbCheck,a home based online test of objective markers associated with ADHD. Poster presented at 7<sup>th</sup> ADHD World Congress.

# Results: Technical Feasibility



Of 9,213 in-home tests and 3,444 in-clinic tests, the majority of both in-home (89.3%) and in-clinic (83.7%) tests were successful.

**'After Test' issues were very low** and did not significantly differ between test settings ( $p=.058$ ).

**In-clinic 'During Test' issues were significantly higher compared to in-home testing** ( $p<.0001$ ). All 'During Test' issues occurred more frequently in-clinic.

**A greater percentage of in-home tests were cancelled** compared to in-clinic ( $p<.0001$ ).

Percentage of Issues In-Clinic and In-Home

	In-clinic	In-home
<b>Issue Identified After Test**</b>	<b>1.54%</b>	<b>1.39%</b>
Camera too slow to follow movement	0.07%	0.29%
Camera unable to track face*	0.84%	0.56%
Stimuli presentation delayed	0.07%	0.15%
<b>Issue Identified During Test**</b>	<b>13.53%</b>	<b>6.84%</b>
Responses recorded without face detection**	11.80%	5.95%
No responses recorded and no face detection	0.14%	0.09%
No responses recorded**	1.49%	0.80%
No camera feed	0.41%	0.38%
<b>Cancelled Test (aborted by test-taker)**</b>	<b>1.27%</b>	<b>2.49%</b>

\* $p<.05$ ; \*\* $p<.0001$

# Results: Test-taker Usability

The majority of test-takers reported that they were **able to correctly establish each of the test environment conditions in the home.**

The majority of test-takers reported **in-home testing as attainable.**

✓ Appropriate lighting **88%**

✓ No distractions **93%**  
(TV, phone, etc.)

✓ Correct seating **74.8%**

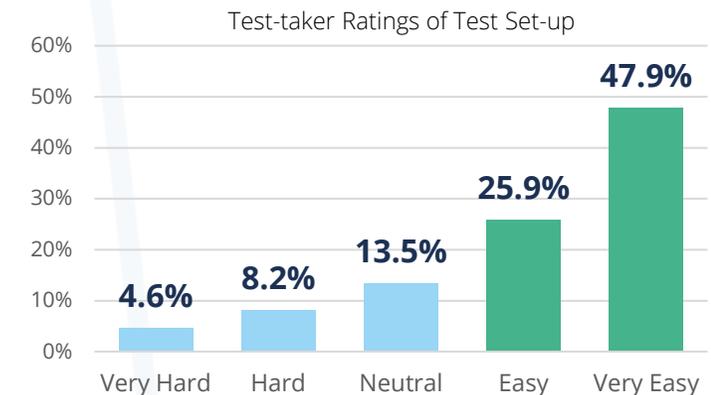
✓ Steady table **94.1%**

✓ Seated corrected distance from laptop **92.4%**



**94.5%** found the test **instructions easy to understand** and follow

**73.8%** rated the test **easy or very easy** to set-up and follow through



# Is objective ADHD assessment achievable with adolescents & adults via Telehealth?



**Yes.**

The results of this year-long international audit of more than 9,000 in-home tests found that:

The majority of in-home **tests were successfully completed and technically sound.**

The majority of test-takers **rated the in-home testing process as 'easy'** and completed within standardized test conditions.

**These results, combined with previous findings of the equivalency<sup>1</sup>, validity<sup>2</sup> and role of QbTest Telehealth in patient access to ADHD care<sup>3</sup>, support the utilization of QbCheck for in-home objective ADHD assessment.**

[1] Ulberstad F, Boström H, Chavanon M-L, et al. Objective measurement of attention deficit hyperactivity disorder symptoms outside the clinic using the QbCheck: Reliability and validity. Int J Methods Psychiatr Res. 2020;e1822. <https://doi.org/10.1002/mpr.1822>; [2] Ulberstad, F., Bostrom,H., Christiansen, H., et al. Clinical validity of the QbCheck, a home-based online test of objective markers associated with ADHD. Poster presented at 7th ADHD World Congress.; [3] Doolin, J. and Cordeiro, L. Impact of the COVID-19 Pandemic on Objective ADHD Assessment and Telehealth Adoption: An Audit of U.S.-based Clinics and Global Investigation of Usability and Feasibility Among Pediatric and Adult Clinics Adopting QbTest Telehealth. Presented at the APSARD Annual Conference, January 15, 2021. Virtual.