



Phase 2 IGF-1 Results Summary

Trial results for the Phase 2 IGF-1 clinical trial have been published. Walter Kaufmann, MD, scientific advisor and principal investigator, of the Phase 1 and Phase 2 clinical trials of IGF-1 in Rett syndrome has provided us with highlights of the Phase 2 study's results.

Highlights of the Phase 2 IGF-1 trial

- Mecasermin (injectable human recombinant IGF-1) is well tolerated by girls with Rett syndrome, confirming the findings of the Phase 1 trial (1).
- The Phase 2 trial did not confirm the positive effects IGF-1 on anxiety and breath holding observed in the Phase 1 trial. Therefore, for FDA purposes, the trial should be considered negative due to lack of effectiveness. We are still investigating several factors that may have contributed to these negative results.
- Some symptoms, such as hyperventilation, may have worsened.
- There were positive findings from this study as well, including an indication that social communication improved substantially. A minor improvement in repetitive behavior was also noticed.
- The positive findings need to be confirmed by follow up analyses.
- Indirect benefits of the trial include the recruitment of patients to participate in the development of a new developmental cognitive test for Rett syndrome, which can be used for clinical and research assessments. This new test was published December 2017 (2).

Rettsyndrome.org's Chief Science Officer Steve Kaminsky, PhD, comments "As this clinical trial demonstrates, Rett syndrome is a complex disorder and although we had hoped for more positive results, these findings help us as we look forward. The research team built new tools to measure outcomes in Rett syndrome clinical trials as a result of this trial. In addition, we learned how to better define outcome measures as we plan and design future trials. I am proud of the families and researchers who venture down this road; they have added to our knowledge and have focused our attention."

We know it can feel disheartening to see that a trial should be considered "negative" for FDA purposes. It is so important to remember that clinical trials are just that - they are trials and *most* are not successful. We learn

from those trials as much as we learn from successful trials. Both failures and successes become critical in setting the direction for future research.

If you have further questions, please email admin@rettsyndrome.org.

The Phase 2 clinical trial of IGF-1 as a potential treatment for Rett syndrome was supported by a Rettsyndrome.org ANGEL grant and supplemental funds.

Related articles:

1. [Safety, pharmacokinetics, and preliminary assessment of efficacy of mecasermin \(recombinant human IGF-1\) for the treatment of Rett syndrome.](#)
Khwaja OS, Ho E, Barnes KV, O'Leary HM, Pereira LM, Finkelstein Y, Nelson CA 3rd, Vogel-Farley V, DeGregorio G, Holm IA, Khatwa U, Kapur K, Alexander ME, Finnegan DM, Cantwell NG, Walco AC, Rappaport L, Gregas M, Fichorova RN, Shannon MW, Sur M, **Kaufmann WE**.
Proc Natl Acad Sci U S A. 2014 Mar 25;111(12):4596-601.
2. [Adapting the Mullen Scales of Early Learning for a Standardized Measure of Development in Children With Rett Syndrome.](#)
Clarkson T, LeBlanc J, DeGregorio G, Vogel-Farley V, Barnes K, **Kaufmann WE**, Nelson CA.
Intellect Dev Disabil. 2017 Dec;55(6):419-431.