Stoke Therapeutics

NASDAQ: STOK

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Forward-Looking Statements and Other Legal Notices

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This presentation contains forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, including, but not limited to: the ability of zorevunersen to treat the underlying causes of Draven syndrome and reduce seizures or show improvements in behavior or cognition at the indicated dosing levels or at all; the design, timing and results of clinical studies, data readouts, regulatory decisions and other presentations for zorevunersen and STK-002; the potential for zorevunersen to be a first-in-class, disease-modifying therapy for Draven syndrome; our confidence in the demand for and the timing of enrollment in EMPEROR; the timing of regulatory interactions or the outcomes thereof; the characterization of our meeting and discussions with the FDA; our ability to achieve an NDA submission or approval on the expedited timeframe disclosed or at all; the ability of STK-002 to treat the underlying causes of Autosomal Dominant Optic Atrophy (ADOA) and maintain or improve vision; the potential for us to advance and develop our research and development programs; our expectations, plans, aspirations and goals, including those related to the potential of zorevunersen and our collaborations with Biogen and Acadia; the anticipated market for zorevunersen; our future operating results, financial position and cash runway and ability to fund operations into 2028. Statements including words such as "anticipate," "believe," "hope," "plan," "will," "continue," "expect," "ongoing," or "potential," and statements in the future tense are forward-looking statements. These forward-looking statements involve risks and uncertainties, as well as assumptions, which, if they prove incorrect or do not fully materialize, could cause our results to differ materially from those expressed or implied by such forward-looking statements, including, but not limited to, risks and uncertainties related to: our ability to advance, obtain regulatory approval of, and ultimately commercialize our product candidates, including zorevunersen and STK-002; the timing of data readouts and interim and final results of nonclinical and clinical studies; nonclinical and clinical data are voluminous and detailed, and regulatory authorities may interpret or weigh the importance of data differently and reach different conclusions than us or others, request additional information, have additional recommendations, or change their guidance or requirements before or after approval; receiving Breakthrough Therapy Designation may not lead to a faster development or regulatory review or approval and does not mean zorevunersen will receive marketing approval; our ability to fund development activities and achieve development goals; our ability to protect our intellectual property; the global business, political and macroeconomic conditions, including inflation, interest rate volatility, cybersecurity events, uncertainty with respect to the federal budget, instability in the global banking system and volatile market conditions, and global events, including public health crises and ongoing geopolitical conflicts, such as the conflicts in Ukraine and the Middle East; and other risks and uncertainties described under the heading "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2024, our quarterly reports on Form 10-Q and the other documentation we file form time to time with the Securities and Exchange Commission. These forward-looking statements speak only as of the date of this presentation, and we undertake no obligation to revise or update any forward-looking statements to reflect events or circumstances after the date hereof.

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While we believe these third-party studies, research, publications, and surveys and other data to be reliable as of the date of this presentation, we have not independently verified, and we make no representation as to the adequacy, fairness, accuracy or completeness of any information obtained from third-party sources.

This presentation discusses product candidates, including zorevunersen and STK-002, that have not yet been approved for marketing by the U.S. Food and Drug Administration or any other regulatory agency.

STOKE THERAPEUTICS

OUR GOAL

Restore protein expression by harnessing the body's potential with RNA medicine

Stoke's pipeline offers potential first-in-class disease-modifying new medicines for diseases caused by protein insufficiency

zorevunersen for Dravet syndrome

A severe genetic developmental epileptic encephalopathy

STK-002 for Autosomal Dominant Optic Atrophy (ADOA)

The most common inherited optic nerve disorder

SYNGAP1

A severe and rare genetic neurodevelopmental disease

And beyond…

~6,500 add'l genes with TANGO target signatures

STOKE THERAPEUTICS

Stoke is on an Important Growth Trajectory, Advancing a Potential Disease-Modifying Therapy for Dravet Syndrome

Phase 3 Progress

- Nearly 330 patients identified globally, including ~60 in screening and ~60 randomized[1]
- Completion of enrollment of 150LP patients expected in Q2 2026
- Data readout in mid-2027 to support an NDA
- Enrollment in Europe to initiate in Q2 2026

4+Years of Clinical Data

- Phase 1/2 + ongoing OLE studies with 3 years of follow up support the potential for disease modification
- 2-year natural history data support need for disease-modifying medicines
- Focus on medical & scientific education, disease awareness, genetic testing

Platform Expansion

- Phase 1 study of STK-002 for ADOA initiated in the UK and Europe
- Lead optimization underway to identify a clinical candidate for SYNGAP1 in 2026
- Reinvigorated discovery research and external innovation strategy to expand platform

Strength to Deliver

- Strong balance sheet with runway into 2028
- Continued investment in capabilities and resources to support U.S. launch and commercialization
- Strategic rest of world collaboration with Biogen brings expertise and global capabilities

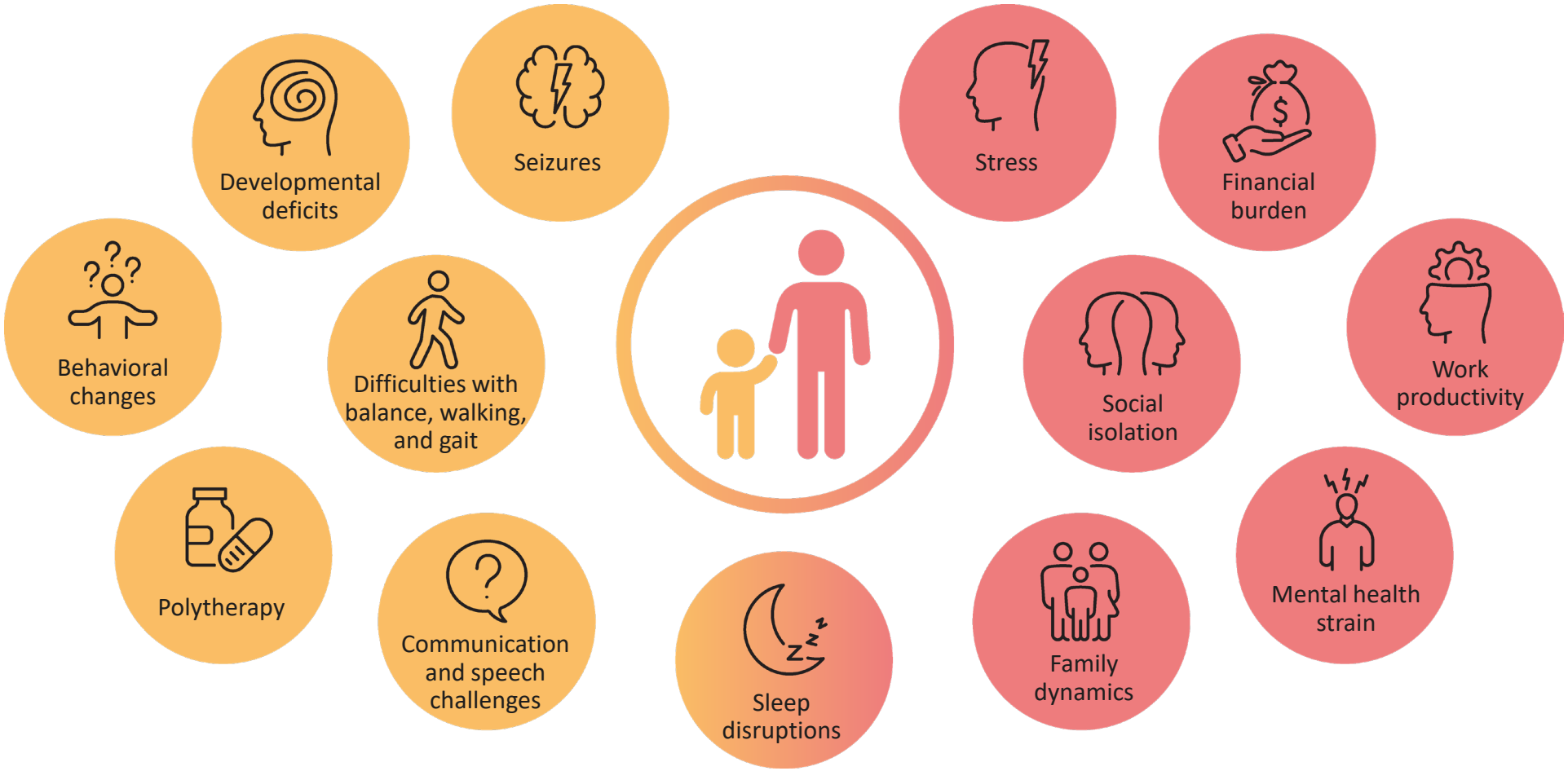
~$391.7M[2] as of Dec. 31, 2025 + eligible proceeds from Biogen collaboration anticipated to fund operations into 2028

STOKE THERAPEUTICS

[1] *As of January 9, 2026*
[2] *cash, cash equivalents and marketable securities*

The Effects of Dravet Go Beyond "Just Seizures"

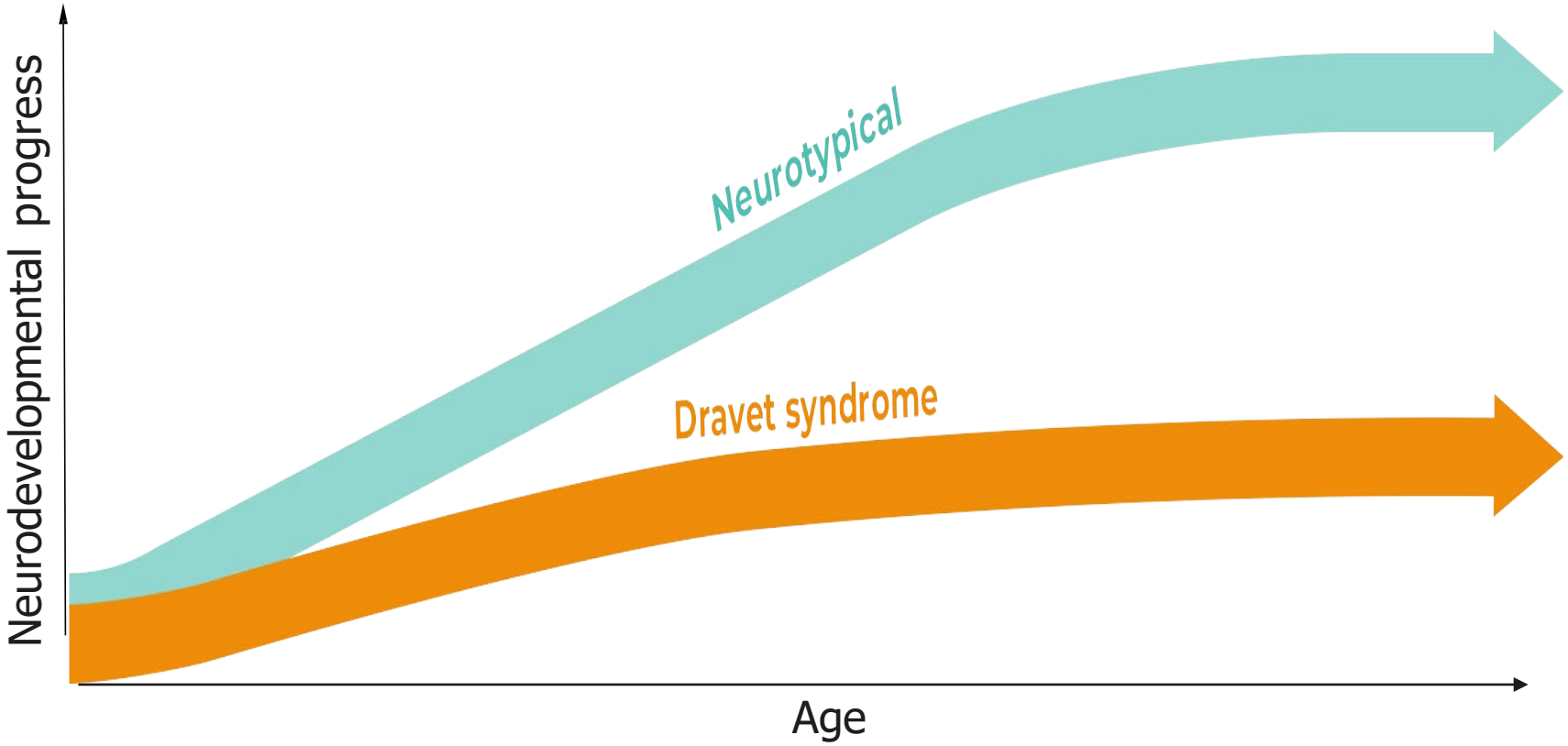
All aspects of life are affected, not only for the individual living with DS, but for their caregivers and families



DS, Dravet syndrome.

Voice of the patient report. Externally-Led Patient-Focused Drug Development Meeting on Dravet Syndrome. Available at: https://dravetfoundation.org/dsf-funded-research/externally-led-pfdd-meeting/. Accessed March 2025.

Development in Patients with Dravet Syndrome Differs Markedly from that of Neurotypical Children



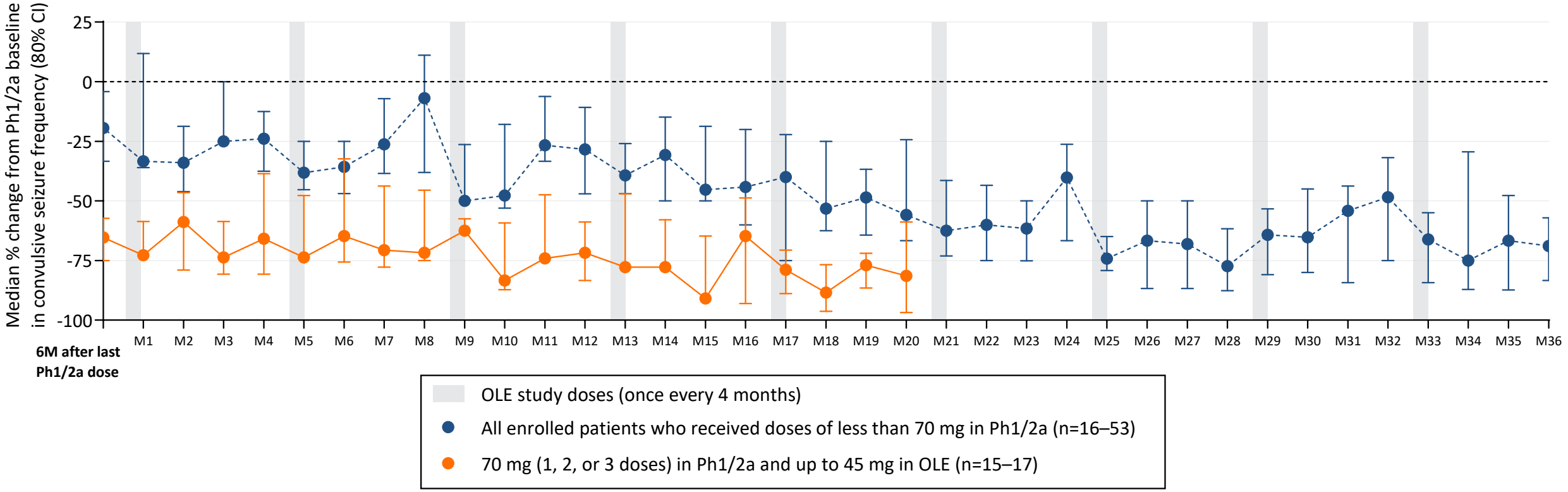
Comparison of developmental trajectory between neurotypical children and patients with Dravet syndrome

Graph provided for illustrative purposes only.

Sullivan et al Natural history of children and adolescents with Dravet syndrome: A 24-month follow-up. Submitted.

Substantial, Durable Reductions in Seizures on Top of SOC Observed Through Three Years of Treatment with Zorevunersen

Data for all patients who continued treatment in the OLEs separated by dose received in the Ph1/2a studies

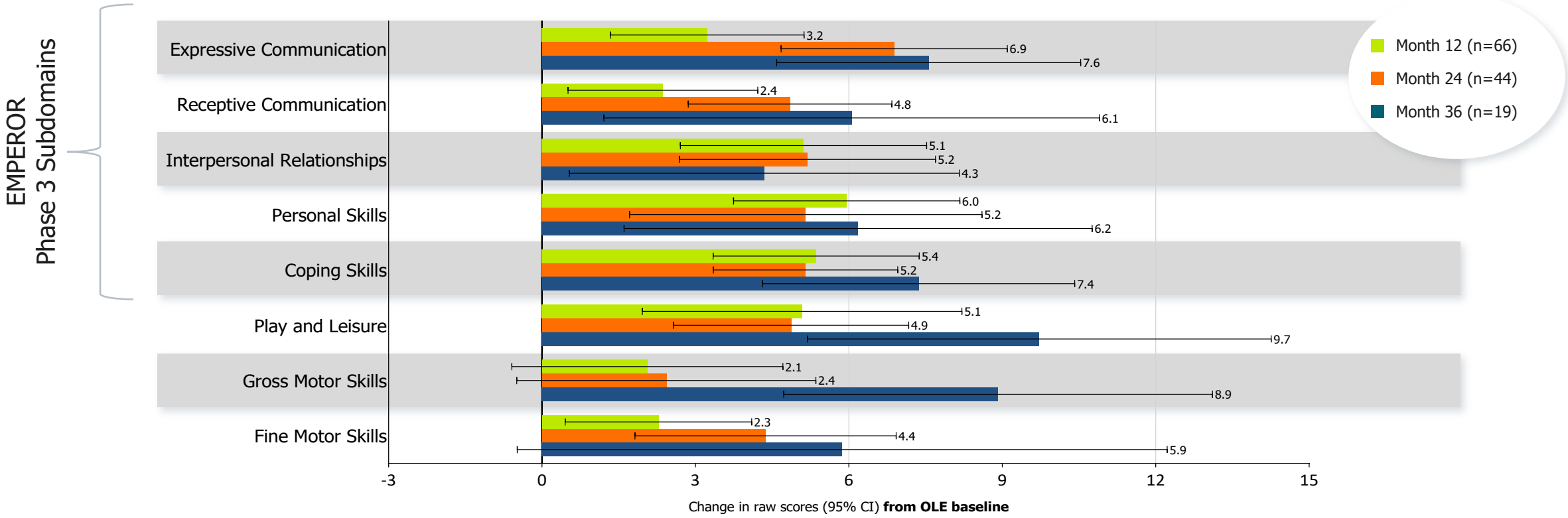


OLE data cut 30 May 2025. One patient who received an incorrect dose of zorevunersen in Phase 1/2a, 3 patients who experienced less than the minimum number of convulsive seizures during Phase 1/2a baseline, and 1 patient who transferred into OLE with a delay of approximately 10 months were excluded. Patients were not included in 6M after last Ph1/2a dose time point if they didn't enter OLE. No exclusions were made for ASM modification. Intervals with <50% diary data were excluded for individual patients. For all enrolled patients who received doses of less than 70 mg in Ph1/2a, n = 52, 53, 53, 53, 53, 52, 52, 52, 46, 46, 47, 47, 45, 45, 45, 41, 38, 41, 41, 40, 38, 39, 39, 39, 36, 36, 36, 36, 32, 30, 30, 30, 25, 20, 19, 19, 16 at each time point. For patients who received 70 mg (1, 2, or 3 doses) in Ph1/2a and up to 45 mg in OLE, n = 16, 17, 17, 17, 17, 17, 17, 17, 17, 17, 17, 17, 17, 16, 17, 17, 17, 15, 16, 16, 16, 16 at each time point. All enrolled patients received up to 45 mg zorevunersen in the OLEs.

ASM, antiseizure medication; CI, confidence interval; M, month; OLE, open label extension; Ph1/2a, Phase 1/2a.

36 Month Data from Ongoing OLE Studies of Zorevunersen: Continuing Improvements in Cognition and Behavior

Vineland-3 subdomain results for 12, 24, and 36 months compared to OLE baseline

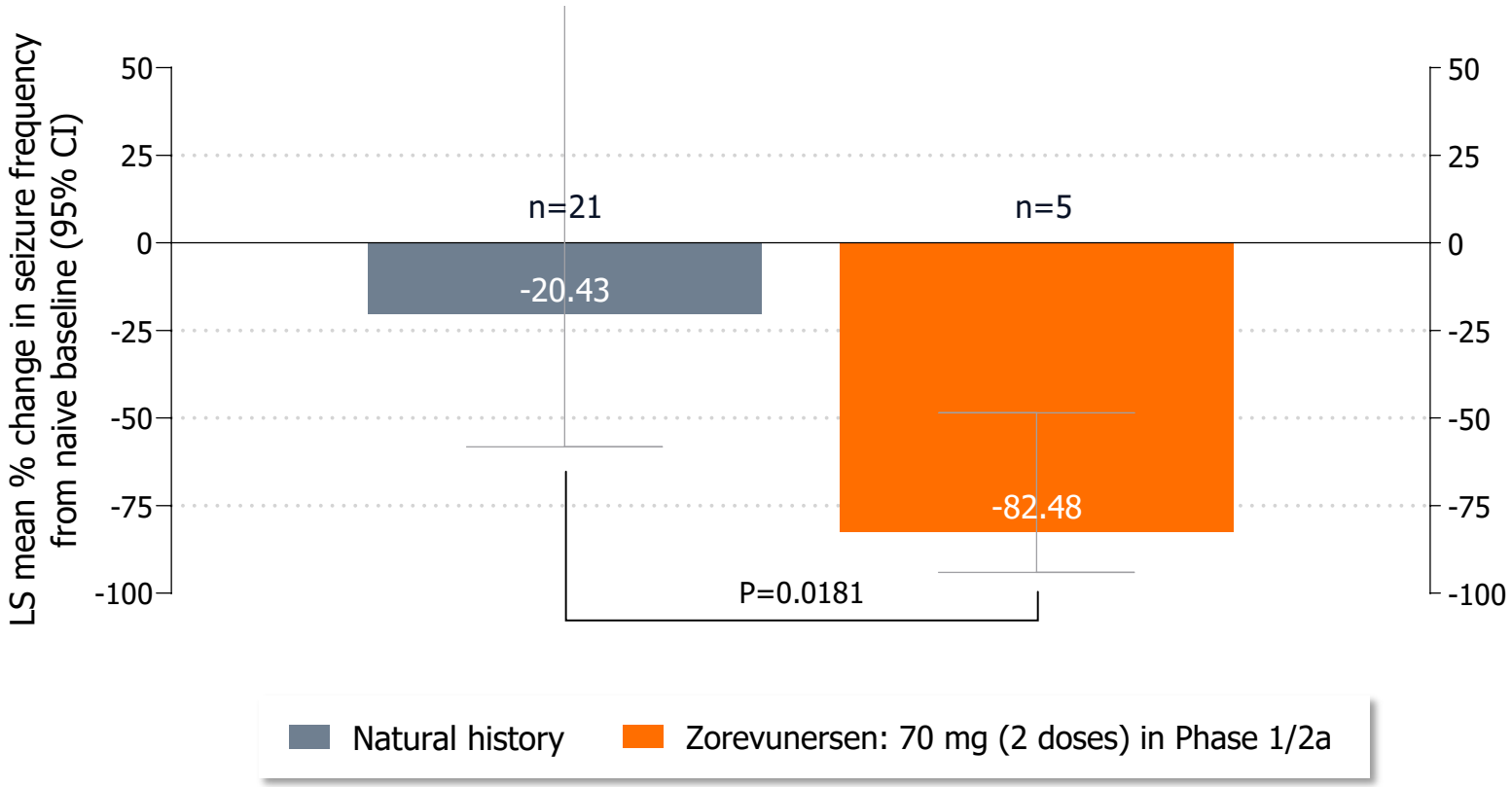


OLE data cut: 30 May 2025. Mixed-effects model for repeated measures constructed using available data from enrolled patients in OLE studies. One patient who received incorrect dose in Ph1/2a study excluded; OLE sample sizes: n=74 at OLE baseline, n=66 at Month 12, n=44 at Month 24, and n=19 at Month 36. CI, confidence interval; OLE, open-label extension; Ph1/2a, Phase 1/2a; Vineland-3, Vineland Adaptive Behavior Scales – Third Edition.

Zorevunersen Significantly Reduced Major Motor Seizure Frequency at 6 months Compared to Natural History

6-month timepoint and dosing are consistent with the Phase 3 study (EMPEROR) primary endpoint

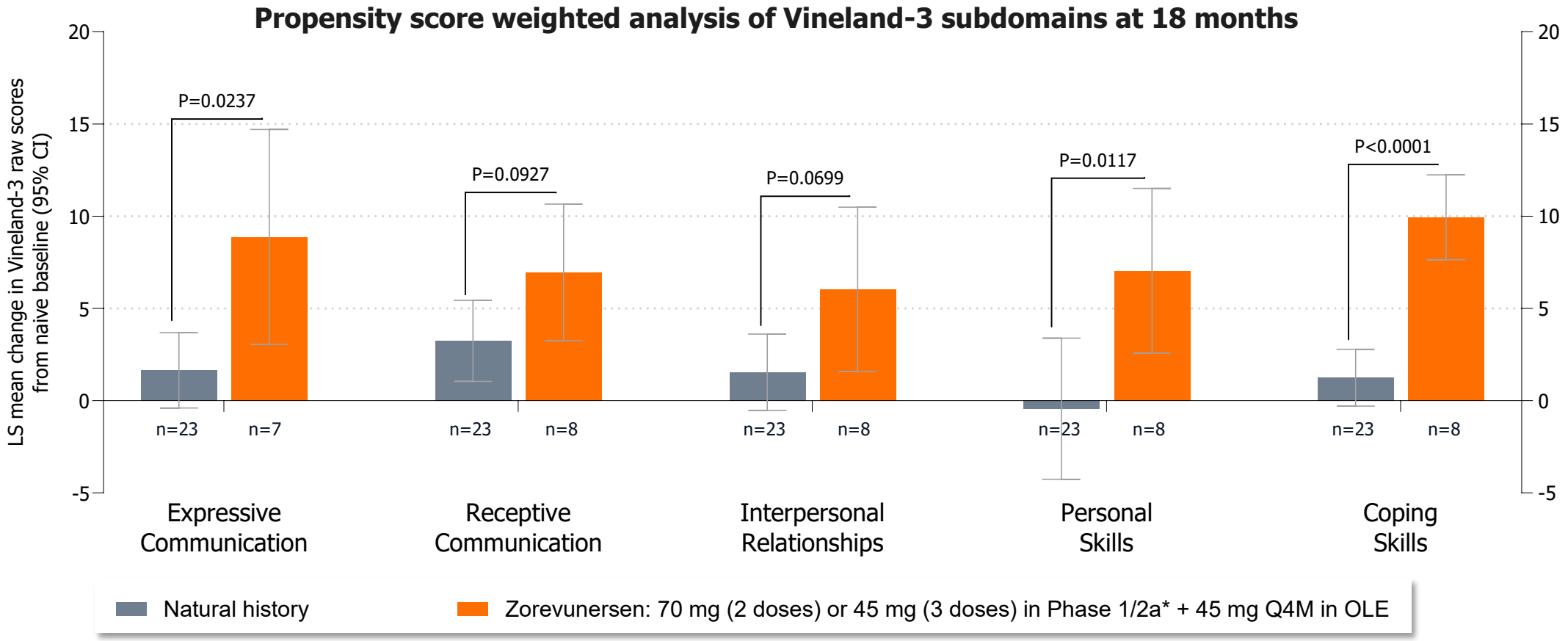
Propensity score weighted analysis of major motor seizure frequency at 6 months



Phase 1/2a data cut: December 12, 2023 (after End of Study); OLE data cut: May 30, 2025. Propensity score weighting (PSW) with weighted mixed repeated-measures model (MMRM) was employed to balance baseline characteristics for cross-trial comparison with the BUTTERFLY natural history study. MMRM used compound symmetry covariance. CI, confidence interval; LS, least squares; NH, natural history; OLE, open-label extension; Q4M, every 4 months.

Significant Improvements Across Multiple Vineland-3 Subdomains With Zorevunersen Compared to Natural History

At 18 months, cumulative dosing is similar and consistent to that evaluated in the Phase 3



Initial cumulative doses of 135 mg to 140 mg in the Phase 1/2a studies. Phase 1/2a data cut: December 12, 2023 (after End of Study); OLE data cut: May 30, 2025. Propensity score weighting (PSW) with weighted mixed repeated-measures model (MMRM) was employed to balance baseline characteristics for cross-trial comparison with the BUTTERFLY natural history study. MMRM used unstructured covariance. CI, confidence interval; LS, least squares; NH, natural history; OLE, open-label extension; Q4M, every 4 months; Vineland-3, Vineland Adaptive Behavior Scales – Third Edition.

STOKE THERAPEUTICS

Zorevunersen Generally Well-Tolerated with Long-Term Dosing

Phase 1/2a studies
(n=81)

- **30%** of patients experienced a study drug–related TEAE
- Most common: CSF protein elevations (14%) and procedural vomiting (5%)
- **22%** of patients experienced a TESAE
- All were unrelated to the study drug except for one patient with SUSARs
- 1 patient died due to SUDEP, **unrelated to zorevunersen**

OLE studies
(n=75)

- **CSF protein elevation*** occurred in **86%** of patients and was **classified as a TEAE in 45%**
  - No clinical manifestations associated with CSF protein elevation were observed
  - One patient discontinued treatment due to elevated CSF protein
- 1 patient died due to SUDEP and 1 due to malnutrition; both deaths were **unrelated to zorevunersen**

>800 doses †
Administered to date in the Phase 1/2 and OLE studies

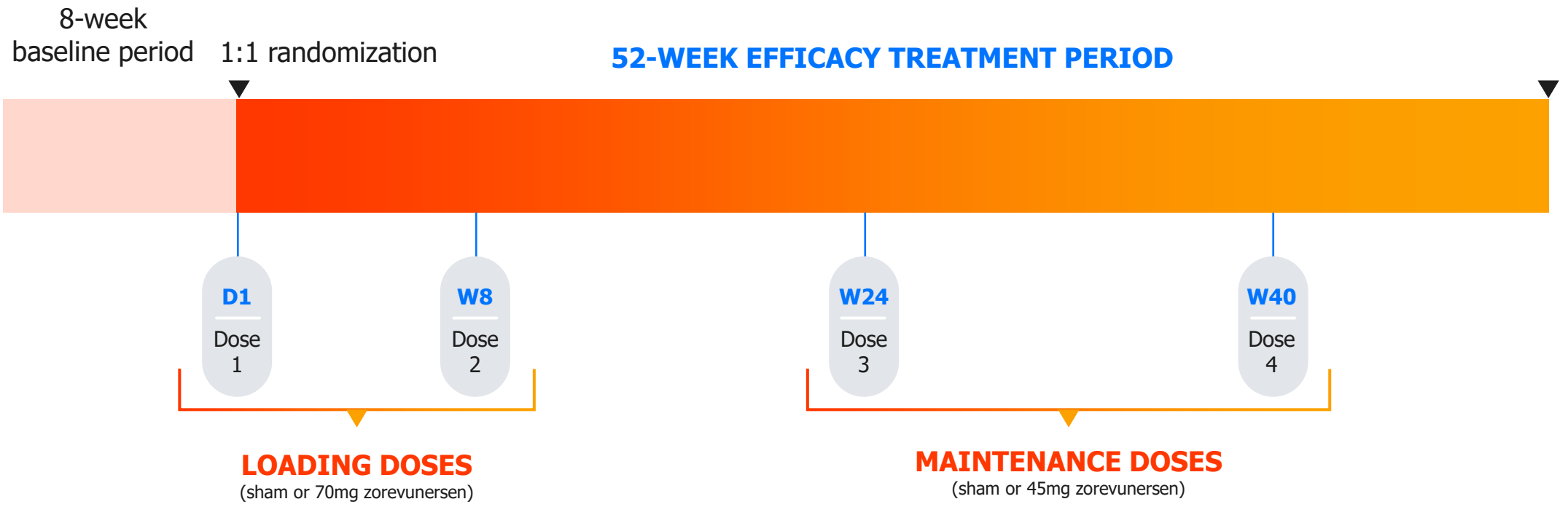
Patients have received treatment for **up to 4.5 years**

Phase 1/2a data cut: December 12, 2023 (after End of Study); OLE data cut: May 30, 2025.

**≥1 CSF protein value >50 mg/dL. Percentage based on 72/75 patients who had ≥1 post-baseline CSF protein value in the OLE studies, of whom 62/72 (86.1%) had an elevation.*

† Dosing information as of November 2025. CSF, cerebrospinal fluid; SUSAR, suspected unexpected serious adverse reaction; TEAE, treatment-emergent adverse event; TESAE, treatment-emergent serious adverse event.

First Phase 3 Study Designed to Assess Disease Modification in Dravet Syndrome



Dosing regimen of 2x70mg followed by 2x45mg over a 52-week treatment period

Regulatory discussions ongoing

Global Phase 3 EMPEROR Study Progress

Enrollment of 150 patients on track to complete in Q2 2026
Data readout in mid-2027 to support NDA

- **Nearly 330 patients globally identified in prescreening of which**
  - ~60 patients have progressed to formal 8-week screening and an additional ~60 patients were randomized*
- **Completion of enrollment of 150LP patients in the U.S., UK and Japan expected in Q2 2026**
  - Screening complete for patients ≥7-<18; cohorts now closed
  - Enrollment continuing for ages 2-≤7
- **European site activation anticipated in Q2 2026**
- **Rolling NDA submission planned to initiate in H1 2027**

Current progress and plans represent the potential to deliver zorevunersen to patients sooner than originally expected.

*As of January 9, 2026

Dravet Syndrome: A Severe, Progressive Genetic Epilepsy

85%[3]

of cases caused by a **HAPLOINSUFFICIENCY** of the *SCN1A* gene

RESULTING IN

50%

$Na_V1.1$ protein expression

1 OUT OF 15,600[2]

babies are born with Dravet syndrome

UP TO 20%[4]

of children and adolescents with Dravet syndrome die before adulthood, due to SUDEP[1], prolonged seizures, seizure-related accidents or infections

Up to 57% of patients do not achieve ≥50% reduction in seizure frequency[5]

~38,000[2]

Patients with Dravet syndrome in the U.S., Japan, Germany, France, Italy, Spain and UK

Dravet syndrome is not concentrated in a particular geographic area or ethnic group

1 Sudden Unexpected Death in Epilepsy

[2] Based on preliminary management estimates, which scaled annual incidence to prevalence using country-specific live birth rates over the past 85 years and adjusted for Dravet-specific mortality. The estimate is based on incidence rates published by [3]Wu et al., Pediatrics, 2015

[4]Symonds, J. et al. Brain, 2021. 2018 Health Advances Report; Djémié et al., Molecular Genetics & Genomic Medicine, 2016; Lagae et al., Developmental Medicine & Child Neurology, 2017; Nabbout et al., Orphanet Journal of Rare Diseases, 2013; Epilepsy, Behav. 2016; Dravet Syndrome Foundation.

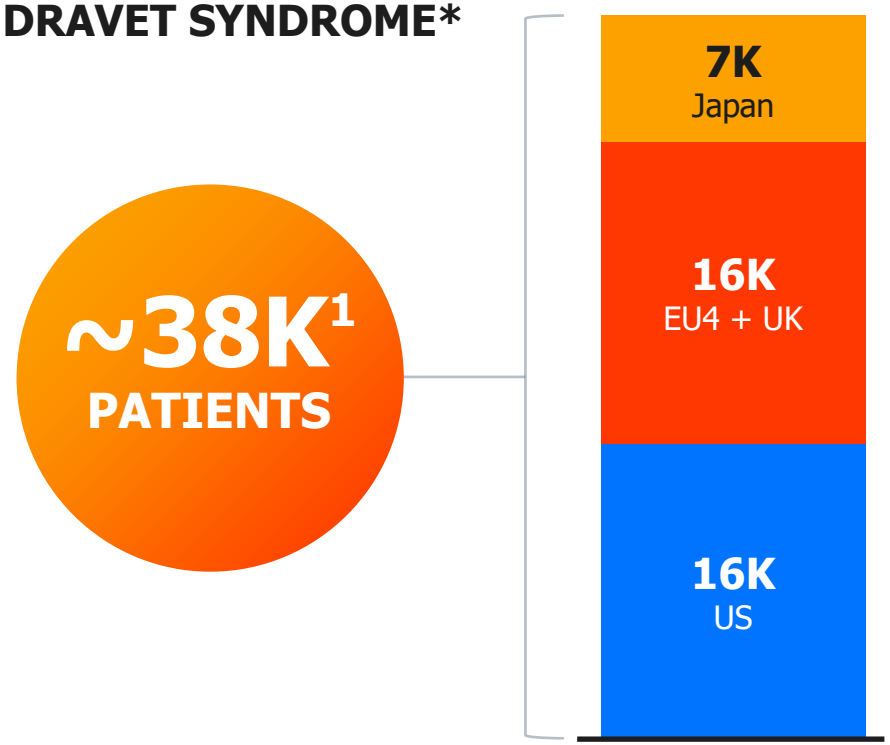
[5] Devinsky O, et al. Trial of Cannabidiol for Drug-Resistant Seizures in DS. N Engl J Med. 2017;376:2011–2020

STOKE THERAPEUTICS

Significant Market Opportunity

~38K patients with Dravet syndrome across 7 major markets

PREVALENCE OF DRAVET SYNDROME*



SIGNIFICANT NEED DESPITE ANTI-SEIZURE MEDICINES

No disease-modifying medicines are currently available

Up to 57% of patients do not achieve ≥50% reduction in seizure frequency[2]

- **Mean 14.3 seizures per 28 days** while receiving an average of 3.5 ASMs at baseline

Developmental delays and cognitive impairment are persistent and cannot be treated today

- Patients with Dravet syndrome **fall further and further behind** their neurotypical peers

**Numbers may not add up due to rounding. EU4: Germany, France, Italy and Spain; ASMs: anti-seizure medications.*

[1] Based on preliminary management estimates, which scaled annual incidence to prevalence using country-specific live birth rates over the past 85 years and adjusted for Dravet-specific mortality. The estimate is based on incidence rates published by Wu et al., Pediatrics, 2015. Lagae et al., Developmental Medicine & Child Neurology, 2017; 2018 Health Advances Report; Dravet Syndrome Foundation Voice of the Patient Report. Sullivan, J. et al., 24-Month Analysis of BUTTERFLY. AES 2023. [2] Devinsky O, et al. Trial of Cannabidiol for Drug-Resistant Seizures in DS. N Engl J Med. 2017;376:2011–2020

Strategic Collaboration with Biogen to Develop and Commercialize Zorevunersen For Dravet Syndrome

Collaboration leverages Biogen's expertise commercializing high-value, disease-modifying medicines for rare genetic diseases

Stoke leads global development and retains exclusive commercialization rights in the U.S., Canada, and Mexico

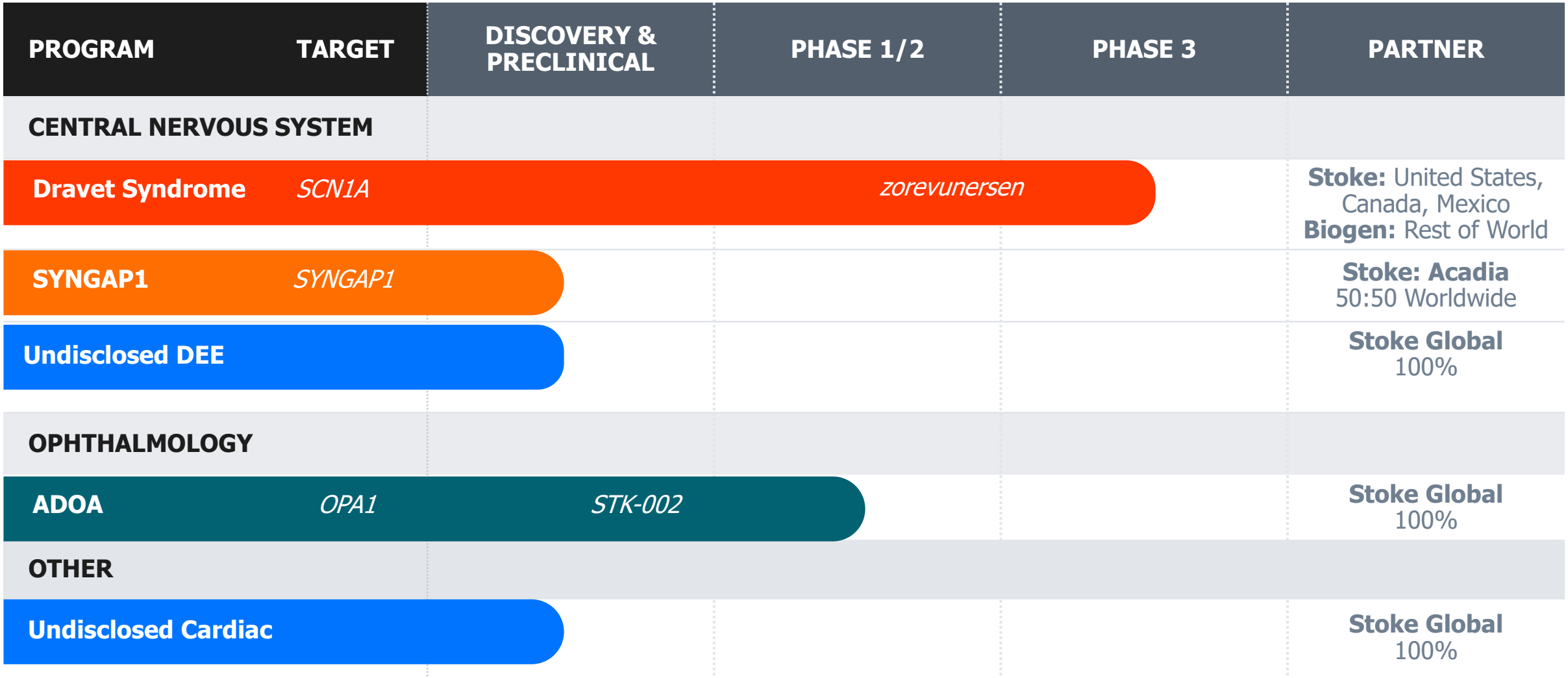
Financial terms maximize value to Stoke:

- $165M upfront, shared development costs, and potential milestone payments of $385M
- Tiered royalties on future sales in Biogen territories enable Stoke to retain substantial upside

Biogen receives exclusive rest of world commercialization rights

- Option to license rights in rest-of-world for certain future follow-on ASO products targeting *SCN1A*, in exchange for certain payment considerations

Our Pipeline of First-in-Class Disease-Modifying Potential Medicines



ADOA: Autosomal dominant optic atrophy

Positioned to Deliver Long-Term Value to Stakeholders

2026 Strategic Priorities

Deliver Zorevunersen to Patients as Quickly as Possible

- Drive Phase 3 EMPEROR study toward completion:
  - Complete enrollment of 150LP patients in Q2
  - Initiate enrollment of ~20 patients in Europe in Q2
- Initiate studies of zorevunersen in additional patient populations
- Continue to explore opportunities to deliver zorevunersen to patients faster
- Continue to use data from OLE studies to support the long-term disease-modifying potential of zorevunersen
- Evaluate strategies to optimize patient outcomes and experience with zorevunersen

Develop and Expand Pipeline

- Dose first patient in Ph1 OSPREY study of STK-002 for ADOA
- Complete lead optimization to identify a clinical candidate for SYNGAP1 in 2026 in collaboration with Acadia
- Continue discovery efforts to identify additional disease areas

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ADOA: Autosomal dominant optic atrophy

Q&A