

Clinical Update

JANUARY 10, 2025



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Program



Opening Remarks

John Cox, President & CEO



New Data from DYNE-101 ACHIEVE Trial in DM1 Update on DYNE-251 DELIVER Trial in DMD

Doug Kerr, M.D., Ph.D., Chief Medical Officer



Closing Remarks

John Cox, President & CEO



Aiming to Deliver Transformative Therapies for Neuromuscular Diseases



LATE-STAGE PIPELINE

Two clinical programs moving to registrational expansion cohorts for DM1 and DMD following positive proof-of-concept data



NEAR-TERM VALUE DRIVERS

Key data readouts in 2025 & 2026 potentially enabling two submissions for U.S. Accelerated Approval in 2026



DIFFERENTIATED PLATFORM

FORCETM platform enables targeted delivery to muscle and CNS; broader pipeline includes FSHD and Pompe



STRONG FINANCIAL POSITION

Cash position of ~ \$642 million (as of 12/31/24)* with expected runway into H2 2026; all assets fully owned



Myotonic Dystrophy Type 1 (DM1) Clinical Data Show Broad Functional Impact and Support Potential for Accelerated Approval

Initiating Registrational Expansion Cohort in ACHIEVE trial to support potential 1H2026 submission for U.S. Accelerated Approval

Potential best-in-class profile with meaningful improvement in myotonia, strength, timed function tests, and patient reported outcomes

Continued favorable safety profile¹; no serious related TEAEs



3

Advancing Next-Generation Exon 51-Skipping Therapeutic for Duchenne Muscular Dystrophy (DMD)

- Ongoing Registrational Expansion Cohort in DYNE-251 DELIVER trial to support potential submission for U.S. Accelerated Approval early 2026, using dystrophin as surrogate endpoint based on recent FDA feedback
- Unprecedented dystrophin expression and functional benefit previously demonstrated at registrational dose of 20 mg/kg Q4W
- 3 DELIVER Registrational Expansion Cohort on-track for full enrollment in Q1 2025
- 4 Continued favorable safety profile¹ since last update



Program



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Closing Remarks

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Developing Transformative Therapeutics for People Living with DM1



Overview

- Mutation in the DMPK gene
- Onset at any point, depending on DM1 phenotype
- Life expectancy of 45 60 years



Clinical Presentation

- Myotonia
- Muscle weakness
- Cardiac arrhythmia
- Pulmonary abnormalities
- CNS manifestations



Population

- >40,000 (US)
- >74,000 (Europe)



OUR APPROACH

Disease-Modifying Nuclear *DMPK* Knockdown

Targeting toxic gain of function *DMPK* RNA to potentially **stop or reverse** disease progression

NO approved therapies



DYNE-101 Addressing the Central Pathobiology of DM1 to Enable Broad Functional Improvement¹

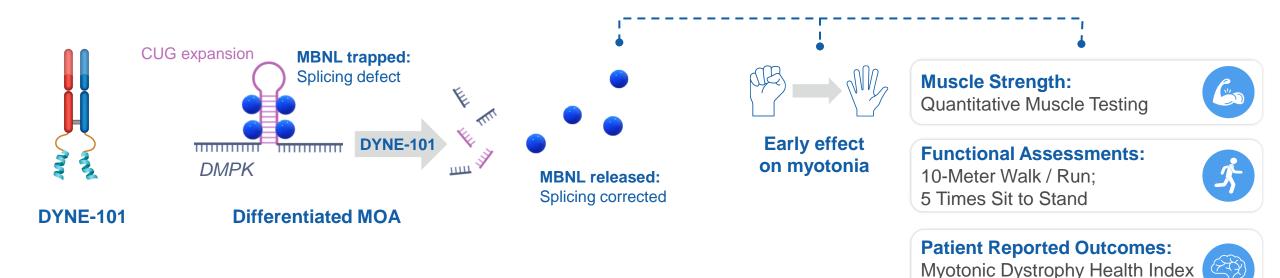
Robust and widespread delivery

DMPK degradation in the nucleus

MBNL release and splicing correction

Correction of myotonia and broad functional improvement

(MDHI)





DM1 is a Heterogeneous Disease with Widespread Muscle and CNS Manifestations

CNS¹⁻⁴

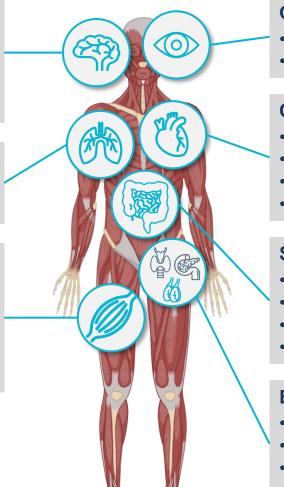
- Fatigue
- Excessive daytime sleepiness
- Difficulty concentrating
- Behavioral/personality changes

Skeletal muscle (respiratory)1-4

- Restrictive ventilatory pattern
- Shortness of breath

Skeletal muscle¹⁻⁴

- Muscle weakness
- Myotonia
- Balance issues
- Muscle pain
- Atrophy



Ocular¹⁻⁴

- Cataracts
- Ptosis

Cardiac1-4

- Conduction disturbances
- Arrythmia
- Cardiomyopathy
- Sudden death

Smooth muscle¹⁻⁴

- Dysphagia
- Constipation
- Heartburn
- Regurgitation

Endocrine¹⁻⁴

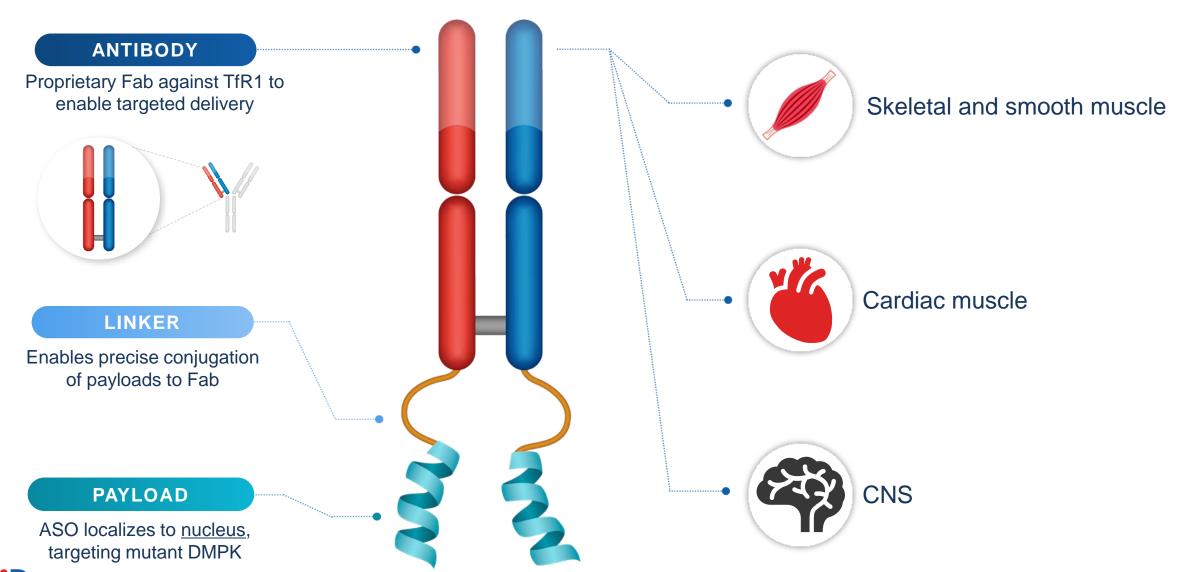
- Thyroid disorders
- Diabetes
- Male hypogonadism
- Vitamin D deficiency

Slide does not represent an exhaustive list of symptoms.



- 1. Thornton CA. Neurol Clin. 2014;32:705-719; 2. Ho G, et al. World J Clin Pediatr. 2015;4:66–80.
- 3. Hagerman KA, et al. Muscle Nerve. 2019;59:457–464; 4. Gutierrez Gutierrez G, et al. Neurologia (Engl Ed). 2020;35:185–206.

DYNE-101 Leverages FORCE™ Platform for Targeted Delivery



Multiple Ascending Dose (MAD) Portion of ACHIEVE is Complete



Population

- Adult patients living with DM1
- Ages 18 to 49 years

Primary Endpoints

Safety and tolerability

Additional Endpoints

- Pharmacokinetics
- Change from baseline of:
 - Splicing
 - DMPK RNA expression
 - Multiple assessments of muscle strength and function
 - Patient-reported outcomes, including DM1-ACTIV^c and MDHI

Stages of ACHIEVE

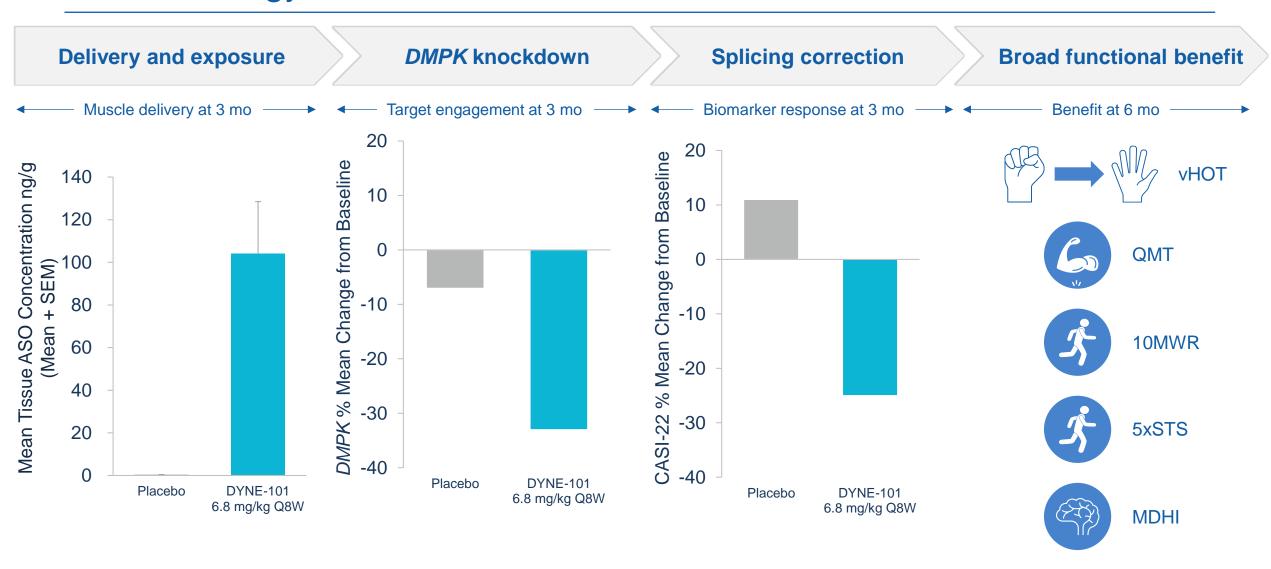
- ✓ Multiple Ascending Dose (MAD): 24 weeks
- Open-Label Extension (OLE): 24 weeks
- Long-Term Extension (LTE): 96 weeks



Registrational Expansion Cohort



DYNE-101 Addresses Central Pathobiology: Differentiated Pharmacology with Potential to Lead to Broad Functional Benefit





DYNE-101: Favorable Safety Profile with No Serious Related TEAEs

Summary of Treatment Emergent Adverse Events (TEAEs)¹

TEAE Category	Participants with ≥1 TEAE – n (%)								
	1.8 mg/kg Q4W+Rec. N=16	3.4 mg/kg Q4W+Rec. N=16	3.4 mg/kg Q8W N=8	5.4 mg/kg Q8W N=8	6.8 mg/kg Q8W N=8	Overall (N=56)			
Any TEAE	16 (100%)	16 (100%)	8 (100%)	8 (100%)	8 (100%)	56 (100%)			
Any related TEAE	9 (56%)	9 (56%)	2 (25%)	3 (38%)	6 (75%)	29 (52%)			
Any serious TEAE	4 (25%)	0	1 (13%)	0	0	5 (9%)			
Any serious related TEAE	0	0	0	0	0	0			
Any TEAE leading to withdrawal from study	0	0	0	0	0	0			
Any TEAE leading to death	0	0	0	0	0	0			

Most TEAEs Were Mild or Moderate in Intensity¹

- 6 serious TEAEs unrelated to study drug
 - Atrioventricular block first degree (1)²
 - Pneumonia (2 events in same participant)
 - Pulmonary embolism (1)³
 - Hyponatremia (1)
 - Influenza (1)
- Most common TEAEs (≥20% participant incidence)⁴
 - Nasopharyngitis (38%)
 - Procedural pain (30%)
 - Influenza (27%)
 - Infusion-related reaction (25%)
 - Diarrhea; headache (each 21%)

Additional Safety Data

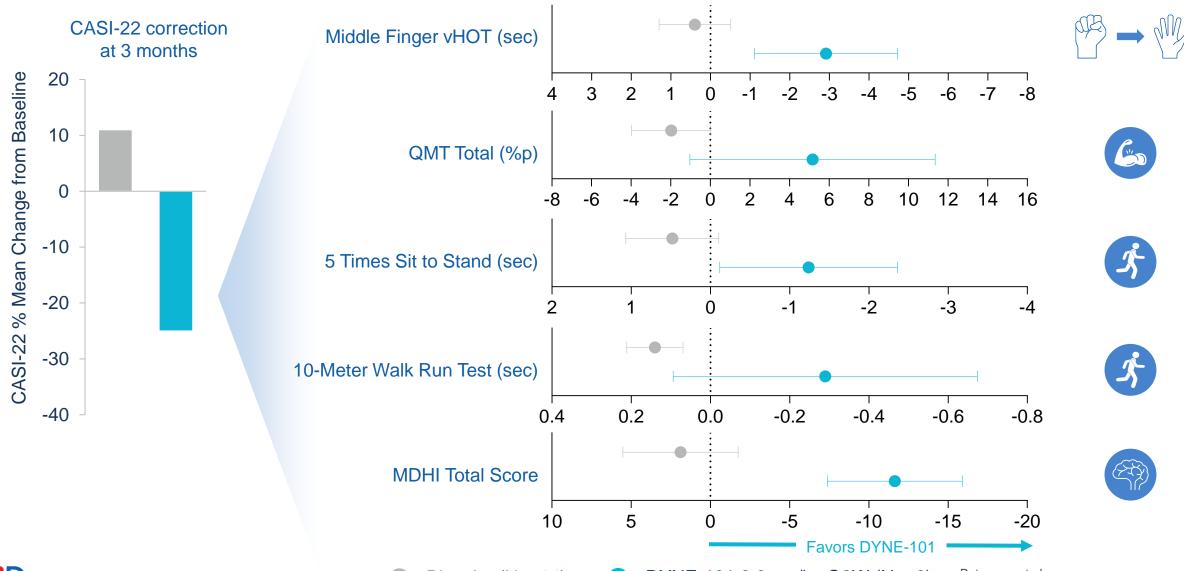
- Liver enzyme elevations have been observed in a minority of participants
 - No impact on liver function (bilirubin or coagulation)
 - Interpretation is complicated by underlying disease and elevated baseline values up to ~2.5x greater than the upper limit of normal
- No participants have demonstrated persistent related anemia or thrombocytopenia

~855 Doses Administered to Date Representing Over 72 Patient-Years of Follow-Up1

^{1.} Data as of December 6, 2024; 2. Transient worsening of atrioventricular (AV) block in a participant with ongoing medical history of first-degree AV block; 3. Attributed to risk factors for pulmonary embolism; 4. All cohorts combined; preferred terms are reported.



Broad Improvement Demonstrated at 6 Months with Planned Registrational Dose of 6.8 mg/kg Q8W

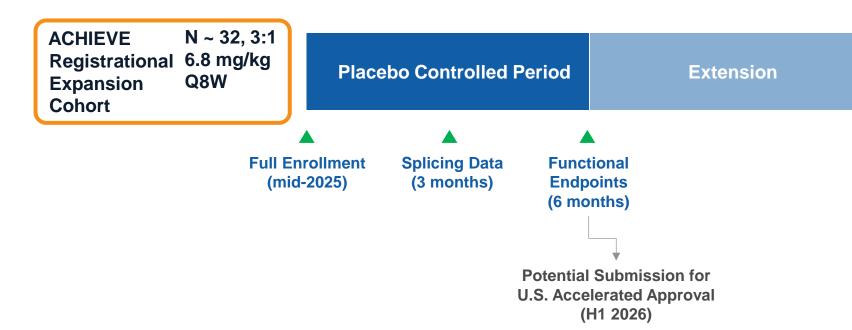






Registrational Expansion Cohort Timeline Enables Potential Submission for U.S. Accelerated Approval in H1 2026

Accelerated Approval Path Enables Speed to Filing with Functional Benefit



Potential Profile

Planned Primary Endpoint (3 months)

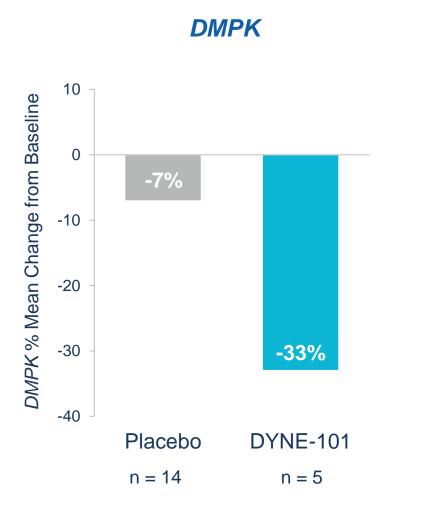
Change from baseline in CASI

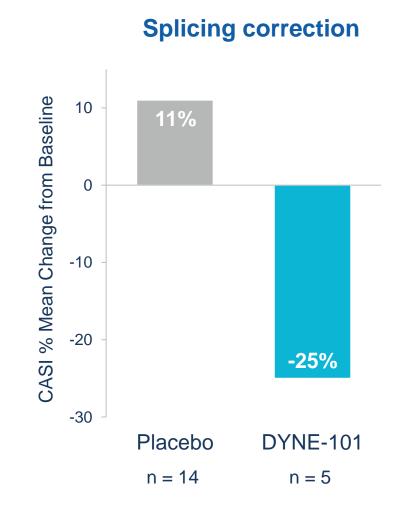
Planned Secondary Endpoints (6 months)

- · Change from baseline in
 - vHOT (middle finger)
 - 10MWR
 - QMT
 - 5xSTS
 - MDHI Total Score



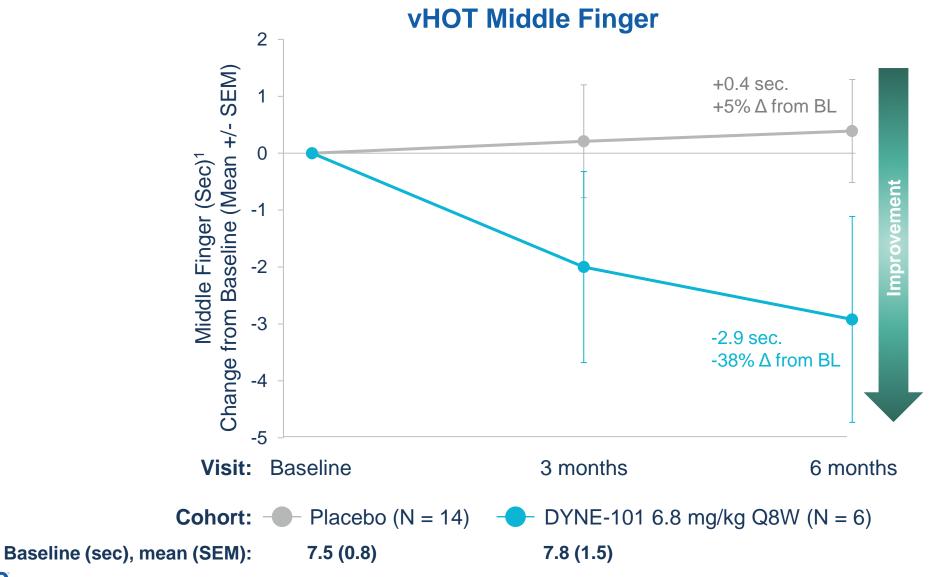
DYNE-101 at 6.8 mg/kg Q8W Improved Foundational Pathobiology of DM1 at 3 Months





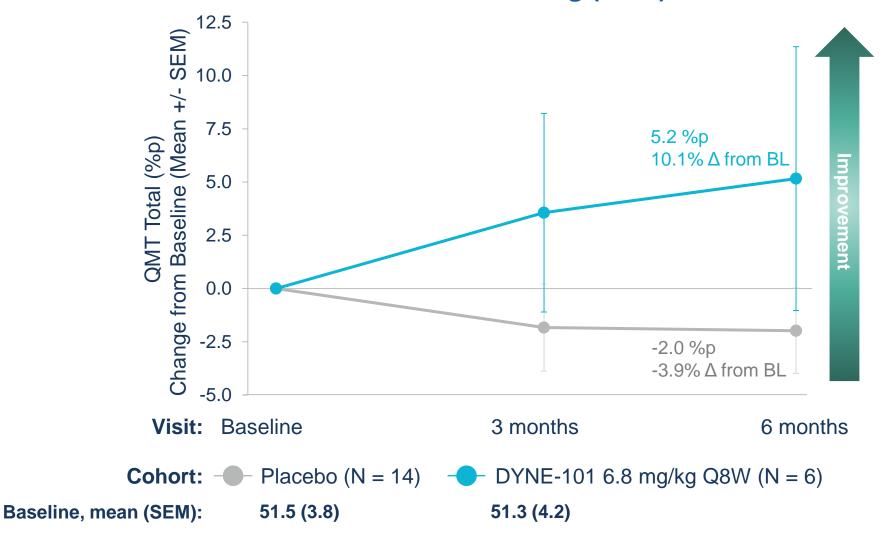


Early and Robust Improvement in Functional Myotonia



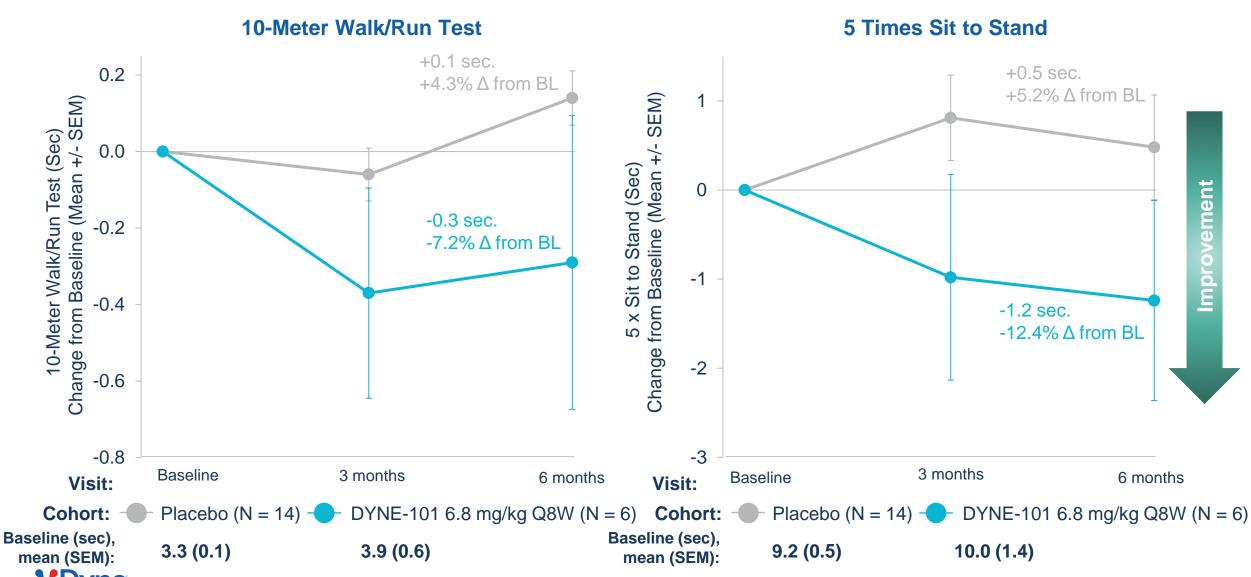
Improved Muscle Strength at 6 Months

Quantitative Muscle Testing (QMT) Total Score

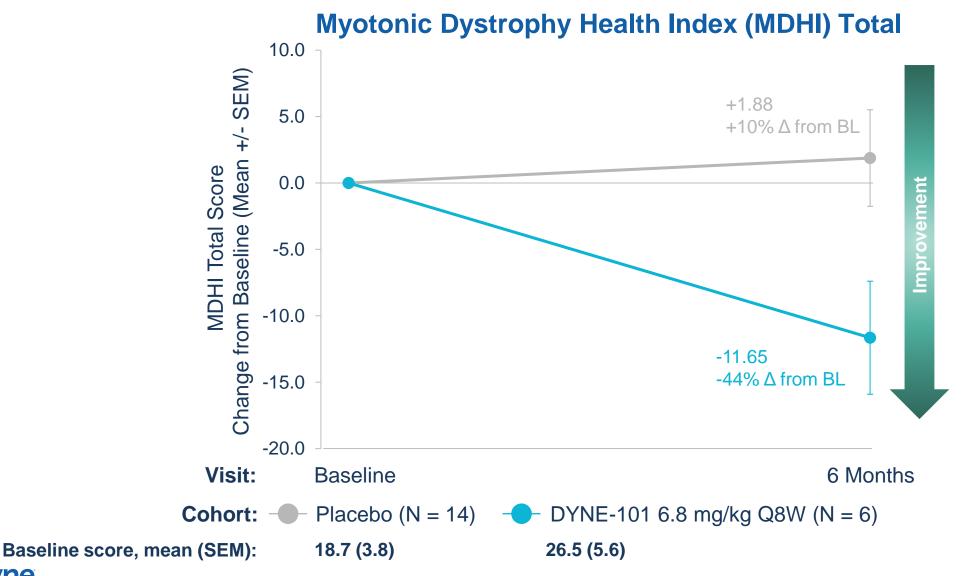




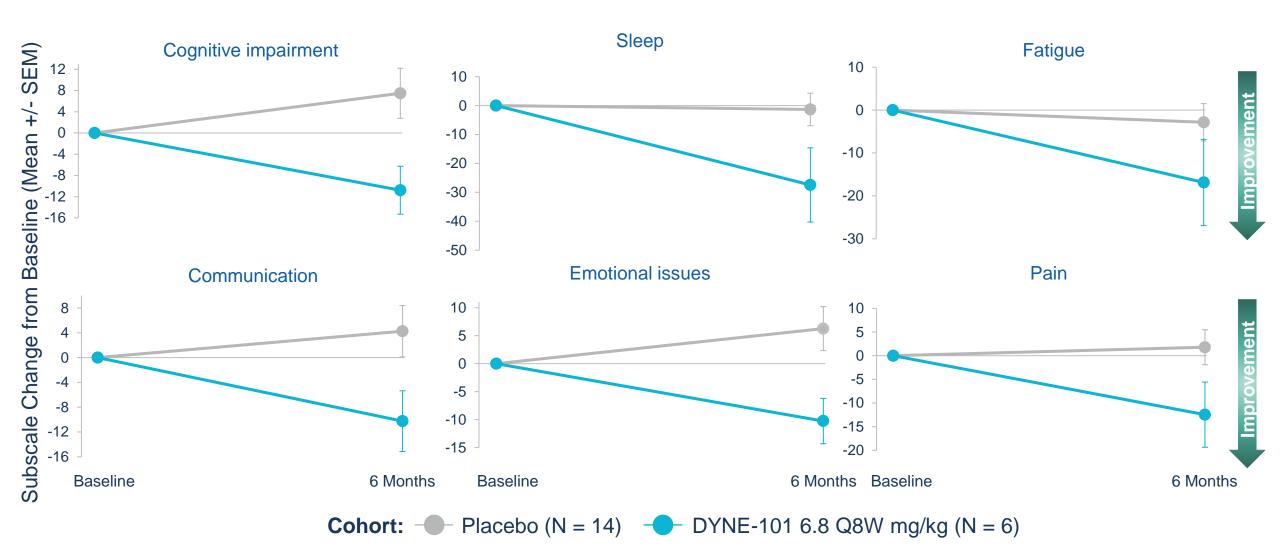
Early and Robust Benefit Across Multiple Timed Function Tests



Improvement in MDHI Total Indicates Encouraging Patient Reported Outcome Trends

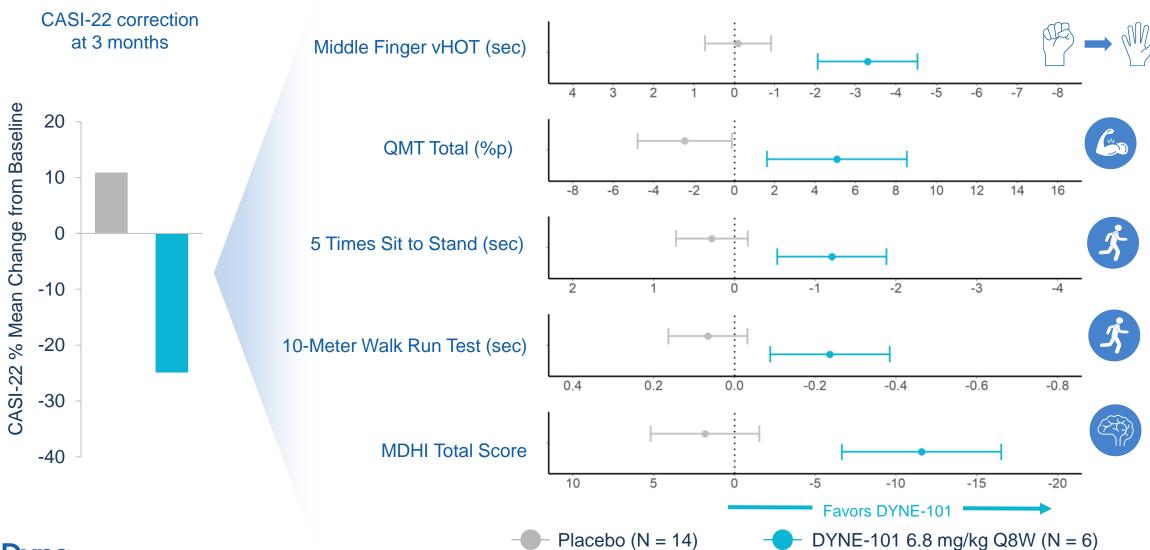


CNS-related MDHI Subscales Show Improvement at Registrational DYNE-101 Dose



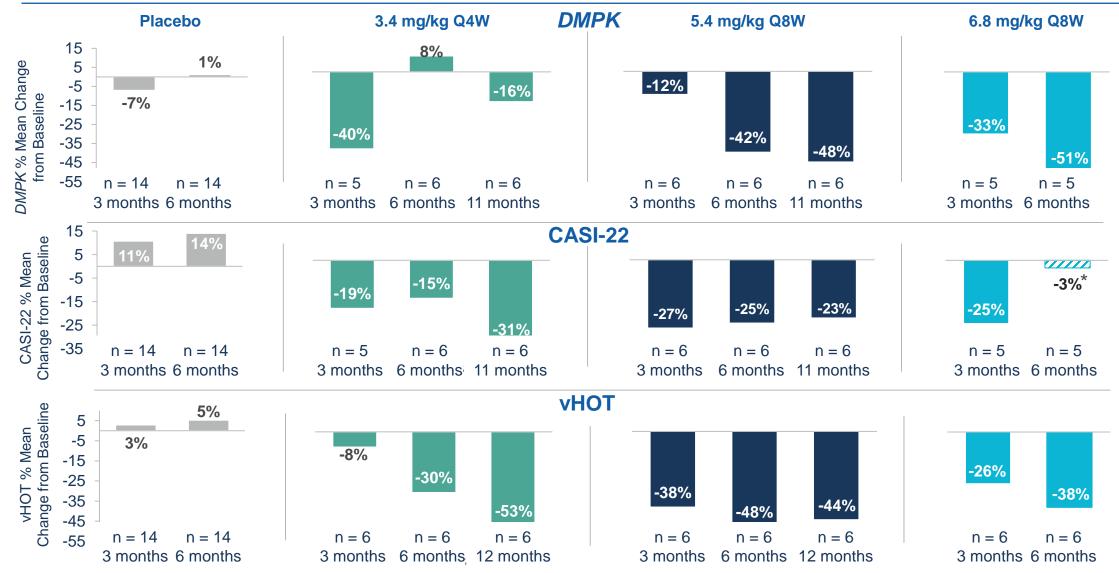


Benefit at 6 Months Strengthened when Adjusting for Baseline Imbalances



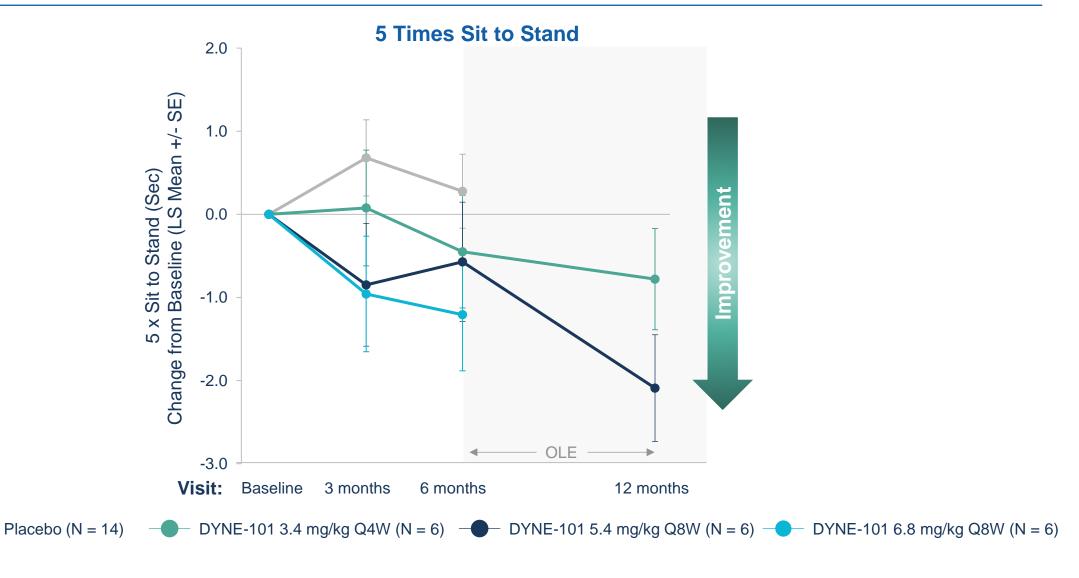


Additional Data: Robust DMPK KD, Splicing Correction, and vHOT





Additional Data: Early, Sustained and Deepening Benefit on 5x Sit to Stand with Baseline Adjustment





Myotonic Dystrophy Type 1 (DM1) Clinical Data Show Broad Functional Impact and Support Potential for Accelerated Approval



Initiating Registrational Expansion Cohort: primary endpoint of splicing correction at 3 months, supported by functional endpoints and PROs; full enrollment expected mid-2025



6.8 mg/kg Q8W dose showed robust splicing correction at 3 months and broad functional improvement, starting at 3 months and continuing at 6 months



Continued favorable safety profile¹; no serious related TEAEs



Building a Global DMD Franchise of Transformative Therapeutics



Overview

- Mutation in the DMD gene that encodes for dystrophin
- Onset in first few years of life
- Life expectancy ~30 years



Clinical Presentation

- Muscle weakness
- Progressive loss of function
- Loss of ambulation
- · Respiratory/cardiac failure



Population

- ~12,000 15,000 (US)
- ~ 25,000 (Europe)



Potential Best-in-class Targeted Exon Skipping

Increase dystrophin expression and enable less frequent dosing to potentially stop or reverse disease progression





Registrational Expansion Cohort of DELIVER Rapidly Enrolling



Population

- Male patients with DMD with mutations amenable to exon 51 skipping therapy
- Ages 4 to 16 years
- Ambulant and nonambulant

Primary Endpoints

- Safety and tolerability
- Change from baseline in dystrophin protein levels by Western Blot

Additional Endpoints

- Pharmacokinetics
- Change from baseline of:
 - Exon 51 skipping levels
 - Muscle tissue PDPF
 - Multiple assessments of muscle function, including NSAA score, SV95C and certain timed functional tests

Stages of DELIVER

- Multiple Ascending Dose (MAD): 24 weeks
 - Open-Label Extension (OLE): 24 weeks
- Long-Term Extension (LTE): 192 weeks





DYNE-251 Safety Profile Is Favorable

Summary of Treatment Emergent Adverse Events (TEAEs)¹

	Participants with ≥1 TEAE – n (%)									
TEAE Category	0.7mg/kg Q4W N=6	1.4 mg/kg Q4W N=6	2.8 mg/kg Q4W N=6	5 mg/kg Q4W N=6	10 mg/kg Q4W N=8	20 mg/kg Q4W N=8	40 mg/kg Q8W N=8	40 mg/kg Q4W N=6	Overall ¹ N=54	
Any TEAE	6 (100%)	6 (100%)	6 (100%)	6 (100%)	7 (88%)	8 (100%)	7 (88%)	5 (83%)	51 (94%)	
Any related TEAE	3 (50%)	3 (50%)	0	6 (100%)	3 (38%)	4 (50%)	2 (25%)	3 (50%)	24 (44%)	
Any serious TEAE	0	0	1 (17%)	0	0	1 (13%)	2 (25%)	2 (33%)	6 (11%)	
Any serious related TEAE	0	0	0	0	0	0	0	2 (33%)	2 (4%)	
Any TEAE leading to withdrawal from study	0	0	0	0	0	0	0	0	0	
Any TEAE leading to death	0	0	0	0	0	0	0	0	0	

Most TEAEs Were Mild or Moderate in Intensity¹

- 3 serious TEAEs potentially related to study drug in two participants
 - Acute kidney injury (1); thrombocytopenia (1)²
 - Pancytopenia (1)³
- 6 serious TEAEs unrelated to study drug
 - Dehydration due to gastroenteritis (1)
 - Femoral neck fracture (1); gastric volvulus (1)⁴
 - Tibia fracture (1)
 - Febrile convulsion (1); pyrexia (1)⁵
- Most common TEAEs (≥20% participant incidence)⁶
 - Pyrexia (44%)
 - Fall; vomiting (each 33%)
 - Headache (32%)
 - Nasopharyngitis (28%)
 - Cough; infusion-related reaction⁷ (each 20%)

Additional Safety Data

- Other than two participants with serious TEAEs in 40 mg/kg Q4W cohort:
 - No participants have demonstrated persistent related anemia or thrombocytopenia
 - No participants have demonstrated kidney injury
- No participants have demonstrated clinically meaningful changes in electrolytes, including magnesium

837 Doses Administered to Date Representing Over 65 Patient-Years of Follow-Up¹

1. Data as of November 21, 2024; 2. Events have same day of onset in a single participant with a nonserious related TEAE of anemia in the context of fever, hemolysis, diarrhea and positive blood in stool; together these events are consistent with hemolytic uremic syndrome (HUS) with a possible infectious etiology; 3. Participant has a history of hemolytic anemia of unidentified etiology; presented with fever and tonsilitis; symptoms resolved without therapeutic intervention; 4. Events occurred in same participant at different times; 5. Events occurred in same participant at different times; 6. All cohorts combined; preferred terms are reported; 7. All infusion-related reactions have been mild or moderate in intensity; dosing has continued in all participants who experienced infusion-related reactions.

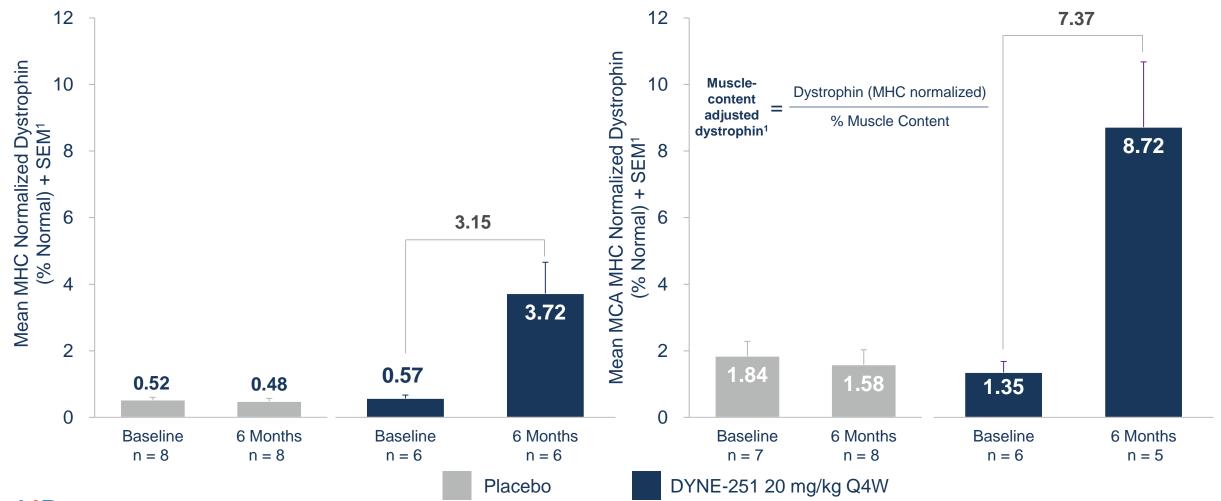


DYNE-251 Achieved Robust Dystrophin Expression

DYNE-251 Showed 3.7% Unadjusted and 8.7% Adjusted Dystrophin at 6 Months

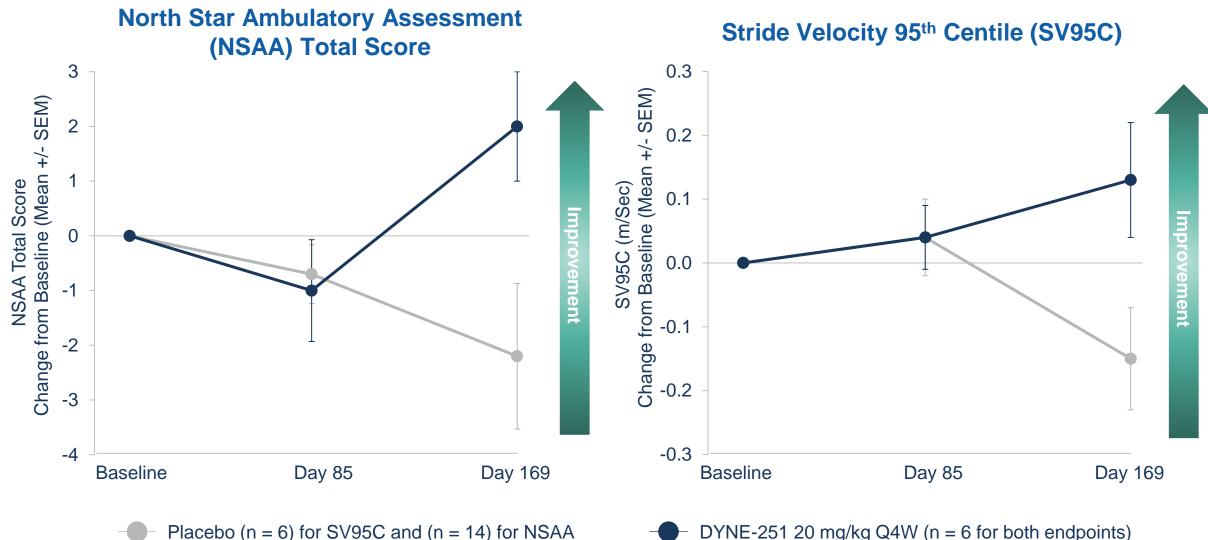
Unadjusted Dystrophin

Muscle Content Adjusted Dystrophin





Unprecedented Clinically Meaningful Benefits Observed at Registrational Dose



Registrational Expansion Cohort Timeline Enables Potential Submission for U.S. Accelerated Approval in Early 2026

Accelerated Approval Path Enables Speed to Filing

DELIVER N ~ 32, 3:1
Registrational 20 mg/kg
Expansion Q4W
Cohort

Placebo Controlled Period

Extension

Full Enrollment (Q1 2025)

Primary Endpoint (6 months)

Potential Submission for U.S. Accelerated Approval (Early 2026)

Potential Profile

Primary Endpoint (6 months)

 Change from baseline in dystrophin protein levels by Western Blot

Additional Endpoints

- Change from baseline of:
 - Exon 51 skipping levels
 - Muscle tissue PDPF
- NSAA
- SV95C



Program



Opening Remarks

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New Data from DYNE-101 ACHIEVE Trial in DM1 Update on DYNE-251 DELIVER Trial in DMD

Doug Kerr, M.D., Ph.D., Chief Medical Officer



Closing Remarks

John Cox, President & CEO

Robust Portfolio Focused on Neuromuscular Diseases with Opportunities to Expand by Leveraging FORCE Delivery



Pipeline expansion opportunities in CNS, rare skeletal, cardiac and metabolic



Building Momentum Toward Potential Launches in 2027

2025

2026

DYNE-101 for DM1

✓ MAD Complete

2024

✓ Registrational dose selected

Fully enroll
Registrational
Expansion Cohort
(mid-2025)

Registrational Expansion Cohort readout (H1 2026)

Submission for U.S. Accelerated Approval (H1 2026)

DYNE-251 for Exon 51 DMD

✓ Registrational Expansion Cohort initiated

Registrational Expansion Cohort readout (late 2025)

Submission for U.S. Accelerated Approval (early 2026)









Appendix: Additional Study Results



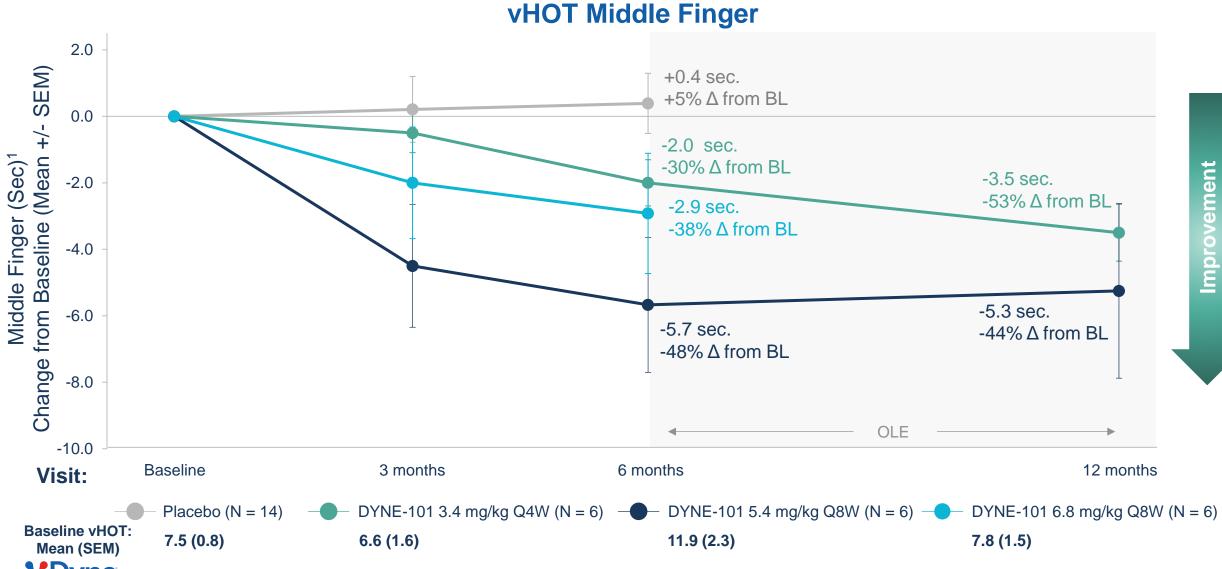
ACHIEVE Baseline Participant Characteristics: By Treatment

Mean (SD)	Placebo (N=14)	1.8 mg/kg Q4W (N=6)	3.4 mg/kg Q4W (N=6)	5.4 mg/kg Q8W (N=6)	6.8 mg/kg Q8W (N=6)
Age (years)	32.6 (9.6)	37.0 (10.5)	31.2(4.4)	40.2 (6.5)	37.2 (9.7)
BMI (kg/m²)	24.4 (4.7)	21.6 (5.8)	21.1 (1.8)	21.4 (2.5)	23.4 (5.6)
CASI-22	0.68 (0.20)	0.64 (0.25)	0.75 (0.12)	0.82 (0.16)	0.74 (0.25)
CTG Repeats	597 (246)	303 (163)	652 (258)	482 (236)	542 (191)
vHOT (sec) (middle finger)	7.5 (3.0)	11.3 (4.4)	6.6 (3.9)	11.9 (5.7)	7.8 (3.8)
QMT Total (% predicted)	51.5 (14.3)	48.1 (10.6)	42.0 (12.6)	46.6 (17.7)	51.3 (10.4)
10MWR (sec)	3.34 (0.48)	3.39 (0.55)	3.48 (0.67)	5.1 (2.40)	3.94 (1.56)
5 Times Sit to Stand (sec)	9.24 (2.03)	9.47 (2.04)	8.75 (1.88)	12.78 (6.79)	9.98 (3.33)
DM1-ACTIV ^c Total	47 (NAa)	46 (4.59)	38 (4.65)	44 (6.99)	43.4 (NA ^a)
MDHI Total	18.7 (13.8)	23.5 (23.2)	30.2 (23.2)	14.8 (7.4)	26.5 (13.7)

^a SDs for DM1-ACTIV ^c are not reported to maintain blinding.

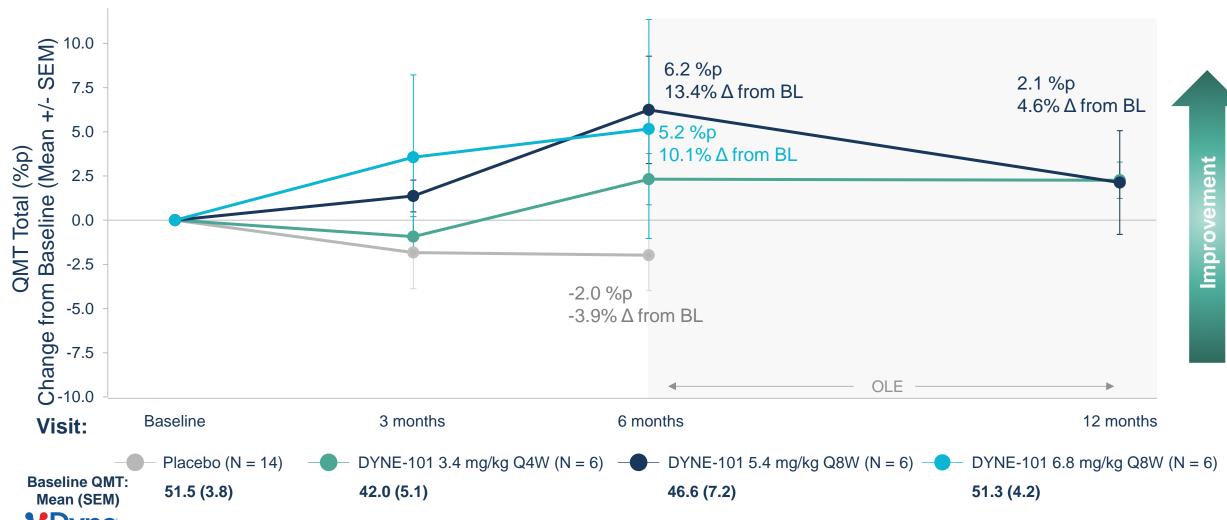


Early and Sustained Improvement in Functional Myotonia

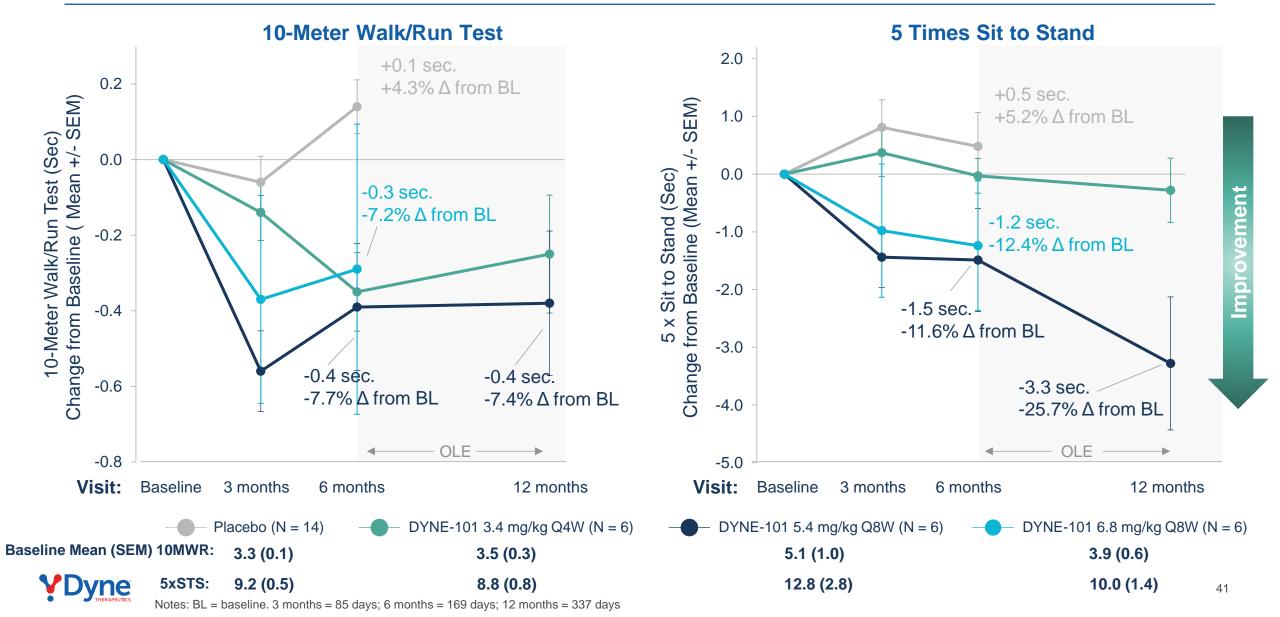


Improvement in Muscle Strength at 6 and 12 Months



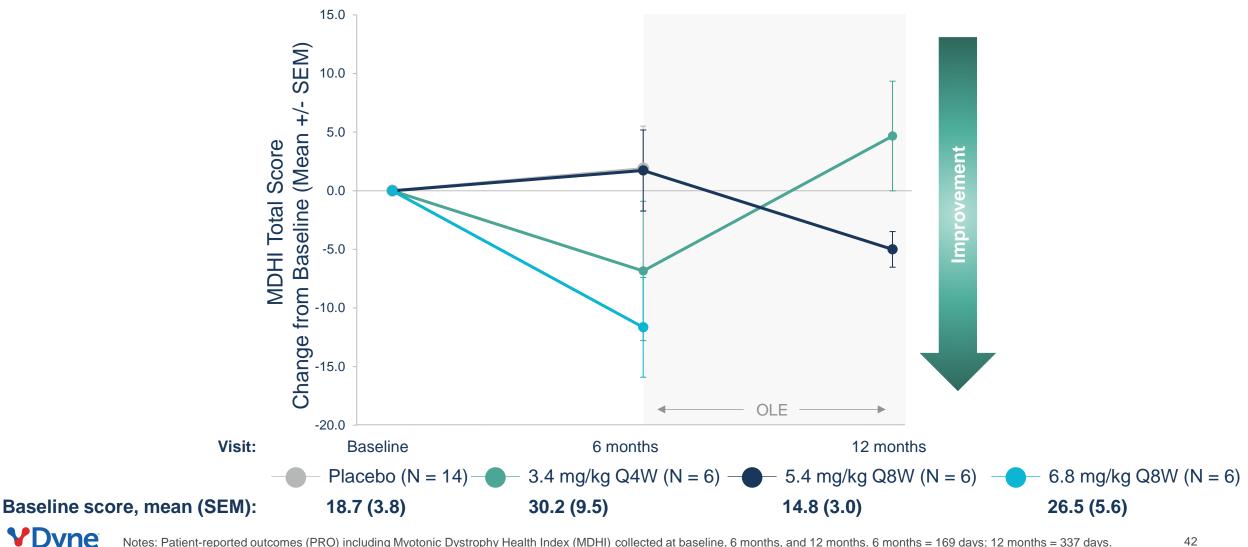


Early and Sustained Benefit Across Measures of Daily Function



Encouraging Trends on MDHI Total PRO





CNS-related MDHI Subscales Show Improvement at Registrational DYNE-101 Dose

