



# Intravitreal 4D-150

Phase 2 Population Extension in  
Broad Disease Activity Wet AMD Patients



July 17, 2024

# Forward-Looking Statements

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This Presentation shall not constitute an offer to sell or the solicitation of an offer to buy securities.

# Today's Presenters

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**David Kirn, MD**  
Co-Founder & CEO



**Robert Kim, MD**  
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Director of Clinical Research  
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# Key Highlights for Today for 4D-150

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- 1 CONTINUES TO BE SAFE & WELL-TOLERATED:  
In Both Wet AMD & DME**
- 2 STRONG CLINICAL ACTIVITY DEMONSTRATED IN BROAD WET  
AMD DISEASE ACTIVITY POPULATION:  
Planned Phase 3 Population**
- 3 DEMONSTRATED DURABLE CLINICAL ACTIVITY**
- 4 PROVIDES FURTHER SUPPORT FOR PLANNED WET AMD PHASE 3  
PROGRAM**

Data cutoff date, June 24, 2024.

## Key Takeaways

# PRISM

## Phase 2 Population Extension:

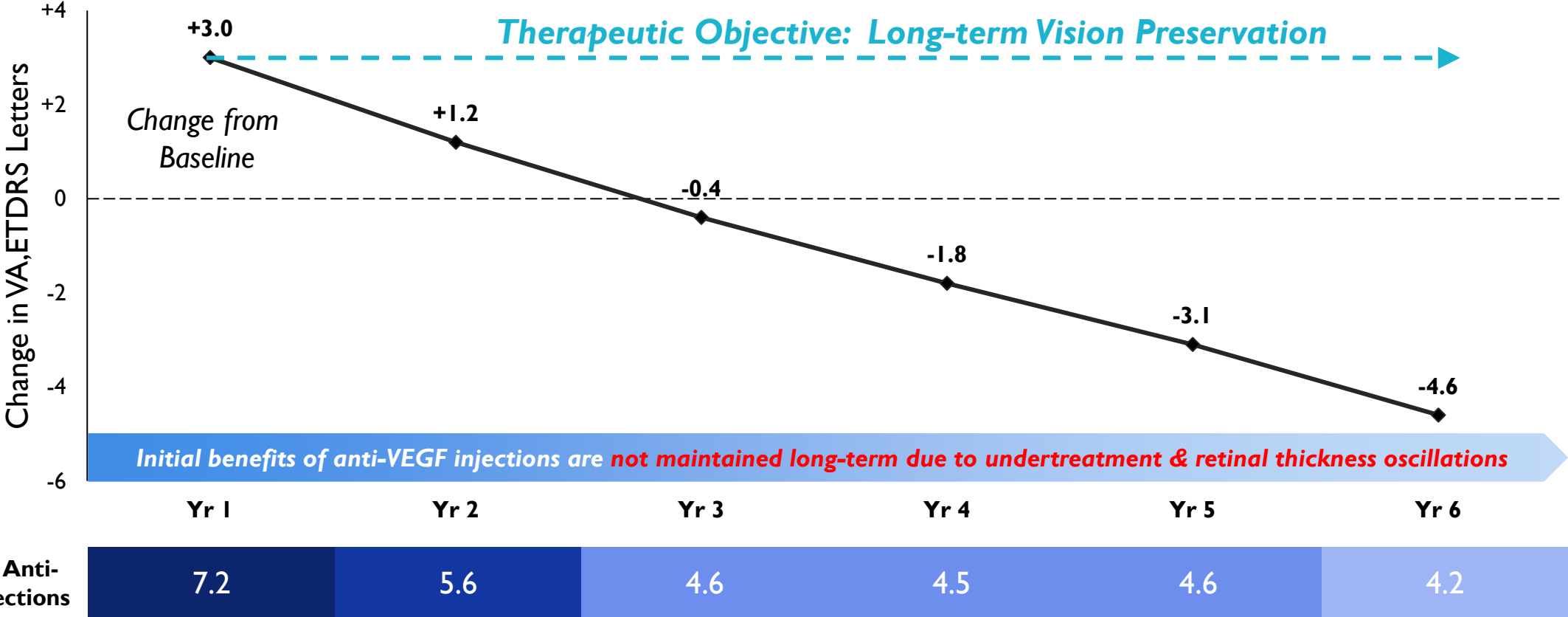
## 24-week Landmark

- 🔹 **45 PATIENTS WITH BROAD WET AMD DISEASE ACTIVITY TREATED**
- 🔹 **SAFE & WELL TOLERATED, INCLUDING PHASE 3 DOSE (N=30; 3E10 VG/EYE)**
  - ✓ **100% (30 of 30) No** anterior chamber inflammation
  - ✓ **100% (30 of 30) No** significant vitreous inflammation (n=1 trace, no intervention)
  - ✓ **100% (30 of 30)** completed local steroid prophylactic regimen on schedule and did not resume
- 🔹 **STRONG CLINICAL ACTIVITY THROUGH 24-WEEKS (3E10 VG/EYE)**
  - ✓ **Robust reduction in anti-VEGF injection treatment burden:**
    - **89%** reduction in annualized injection rate
    - **93%** 0–1 injection
    - **77%** injection-free
  - ✓ **BCVA improved: +4.2 letters** from baseline; **+5.7 letters** vs low dose
  - ✓ **CST: sustained and greater anatomic control without fluctuations**
- 🔹 **FURTHER SUPPORTS PLANNED PHASE 3 PROGRAM:** Study design, patient population, safety, primary endpoint (BCVA), treatment burden reduction

Data cutoff date, June 24, 2024.

# Current Bolus Anti-VEGF Therapies for Wet AMD Do Not Preserve Vision Long-Term

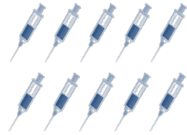
Vision Loss Over Time in the Real World with Current Standard of Care<sup>1</sup>




1. Wykoff et al.: Ophthalmol Sci. 2023 Oct 31;4(2):100421.; n=135,384 at Yr 1; 6,878 at Yr 6

# 4D-I50 Solution: Designed to Preserve Vision by Addressing the Limitations of Current Wet AMD Therapeutic Regimens

**Vision Loss Over Time**  
Due to Limitations of Current Standard of Care

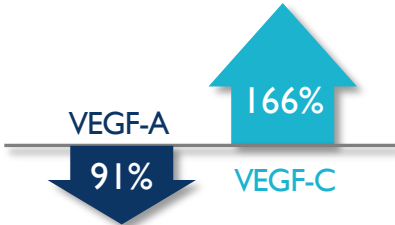


Limited durability & high treatment burden → **suboptimal compliance & undertreatment**



Oscillating peak-trough anti-VEGF concentrations → **CST fluctuations**

Aqueous Concentrations Following Bevacizumab Injections\*




VEGF-A ↓ 91%      VEGF-C ↑ 166%

VEGF-A inhibitors result in **increased VEGF-C levels**


**4D-I50 Designed to Preserve Vision**  
Transform Treatment Paradigm

**1**



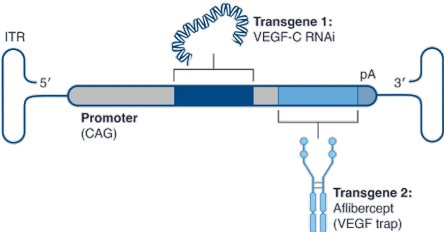
**Single** routine intravitreal injection optimizes treatment with durable expression of anti-VEGF

**2**



**Sustained** local expression of anti-VEGF reduces CST fluctuations

**3**

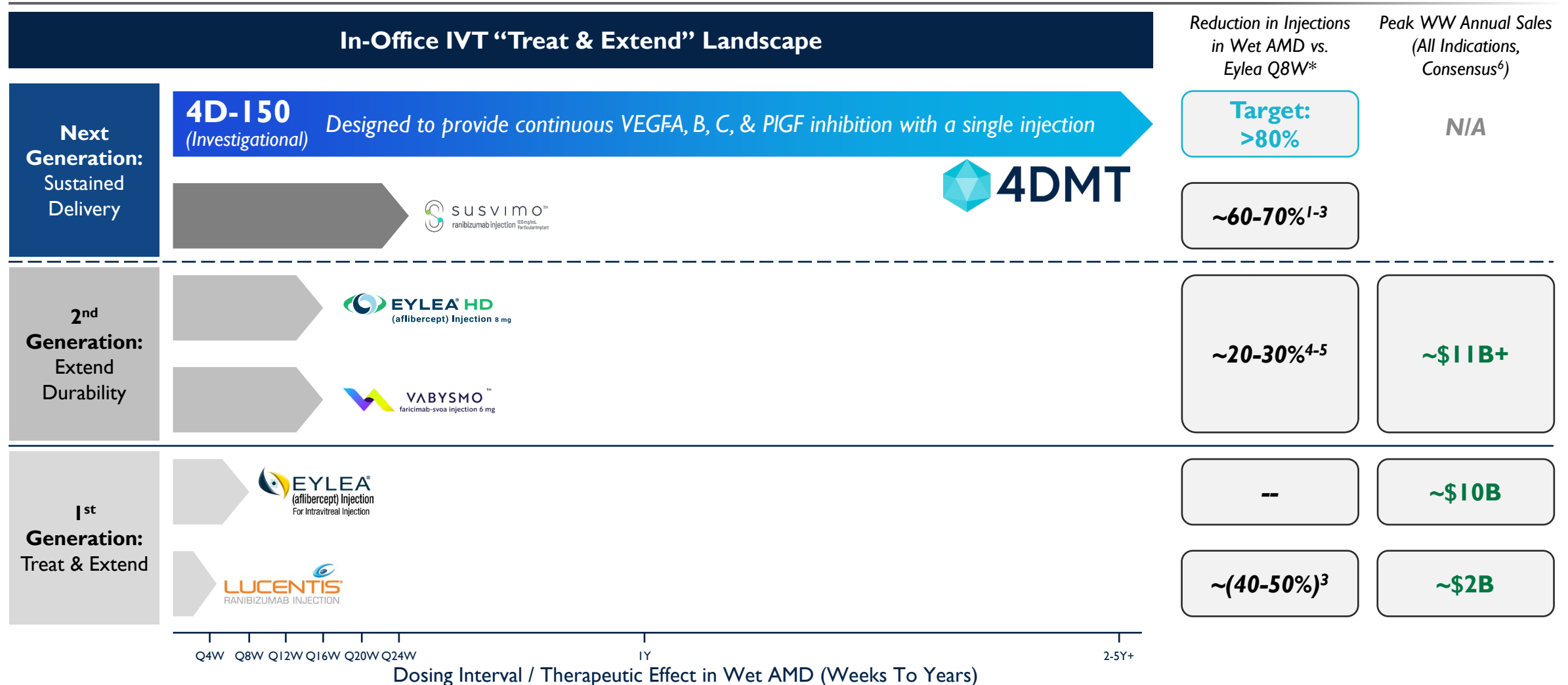


**Dual-transgene payload** targets **4 VEGF family members**

**Goal: Vision Preservation for Millions with a Safe, Routine, One-time IVT Treatment**

I. Cabral et al. *Ophthalmol Retina* 2018;2:31–7. CST, central retinal thickness. \*2 months post administration of bevacizumab

# Products with Incremental Improvements in Durability & Reduction in Treatment Burden Have Become Commercial Blockbusters



Mean no. of injections over Year 0-2: Susvimo (ARCHWAY) vs. Eylea Q8W (VIEW 1 & 2) 2. Regillo et al. *Ophthalmology* 2023; 130:735-7 (ARCHWAY). 3. Schmidt-Erfurth et al. *Ophthalmology* 2014; 121:193-201 (VIEW 1 & 2) 4. Eylea HD: Regeneron publicly available information/company website as of 8/10/23 (PULSAR data) 5. Vabysmo: CDER statistical review; Khanani et al., *Ophthalmology* 2024; 1-13 (TENAYA and LUCERNE) 6. FactSet 2028E WW sales for Eylea HD and Vabysmo; FactSet for Eylea and Lucentis peak WW sales \*The data presented above are based on cross-study comparisons and are not based on any head-to-head clinical trials. Cross-study comparisons are inherently limited and may suggest misleading similarities and differences. The values shown in the cross-study comparisons are directional and may not be directly comparable.



# Potential Multi-billion Annual Revenue Opportunity for 4D-I50 in Broad Wet AMD Patient Population in the U.S. if Approved

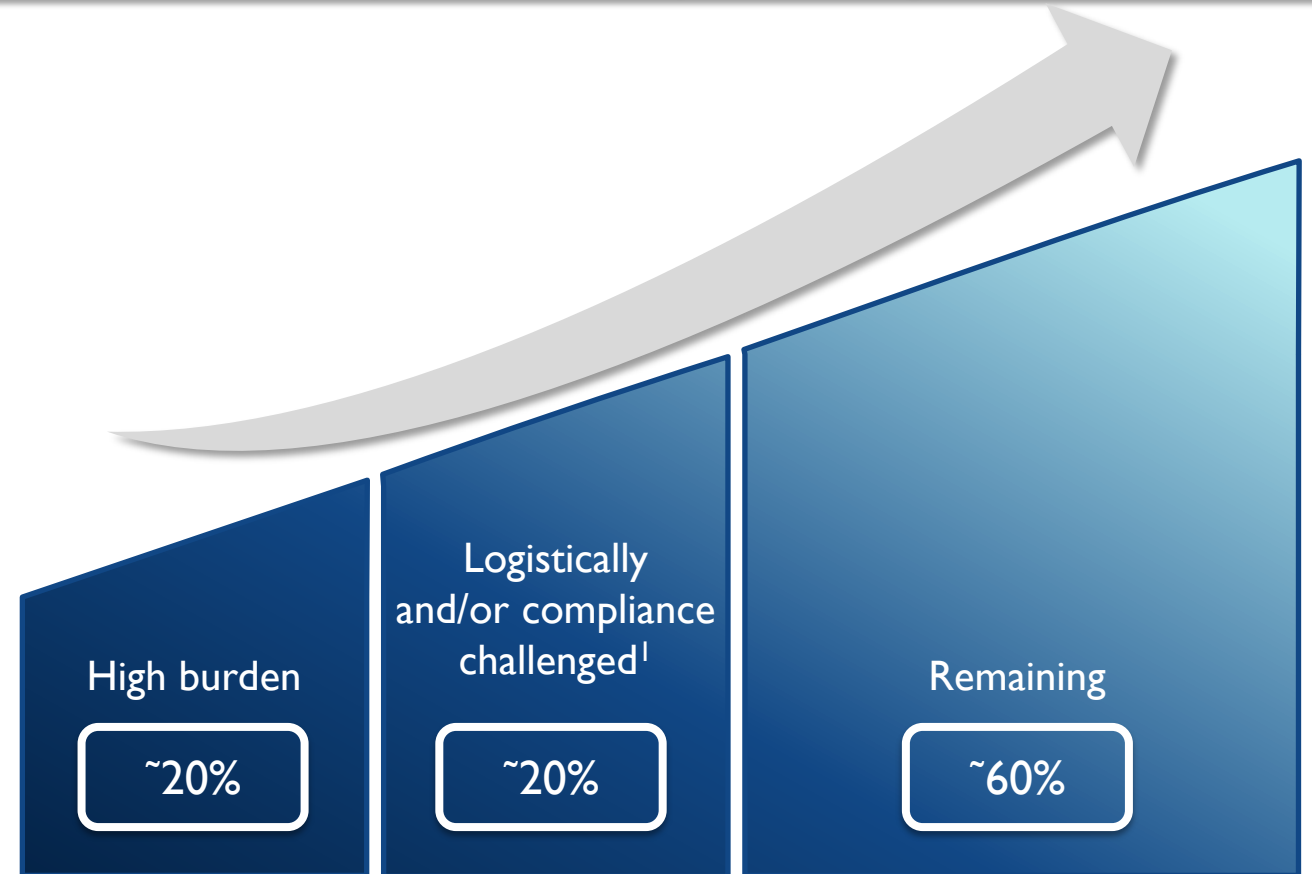
## Wet AMD U.S. Opportunity

Estimated in 2035



**1% share**  
translates to **\$300M to \$500M**  
(assumes 3-5 years of benefit)

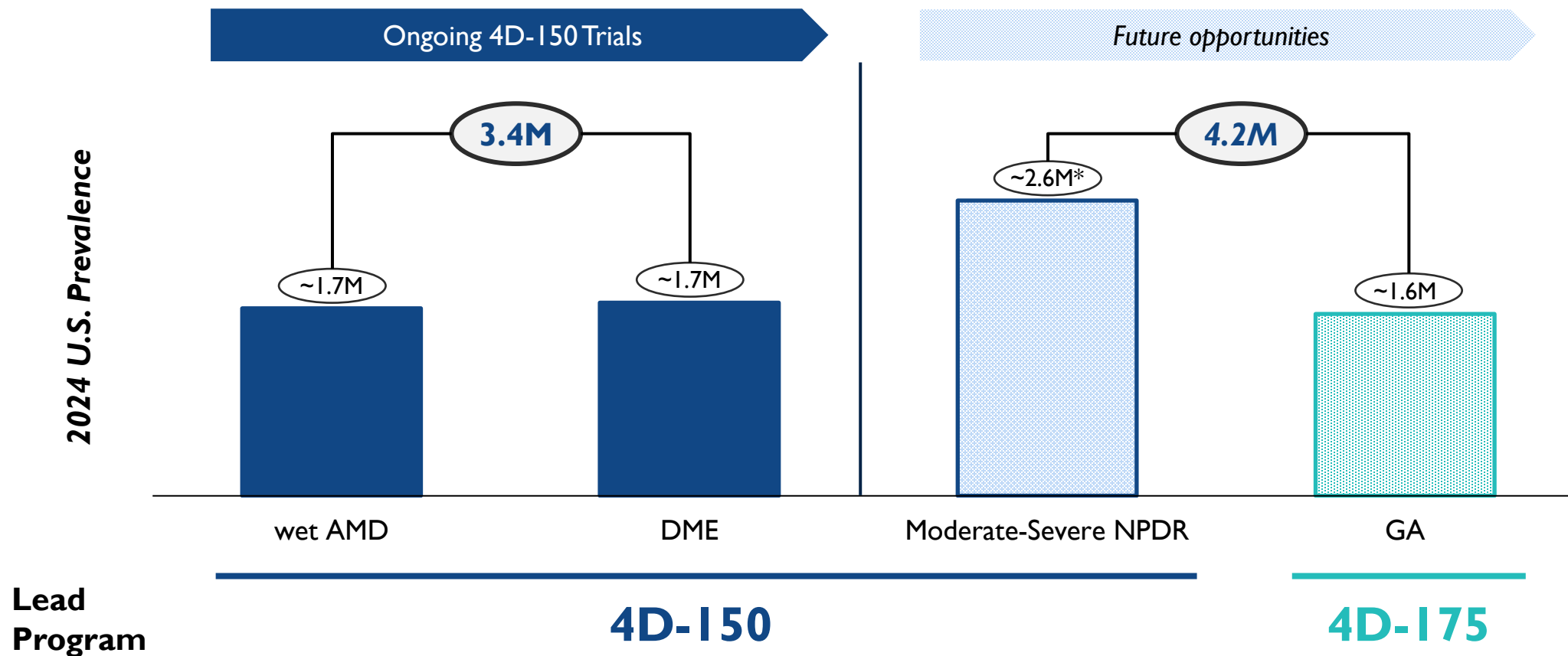
## Market Unlocked Through Potential Adoption Across Key Patient Segments



\*Company estimates. 1. Patients receiving less than or equal to 4 injections from Ciulla et al: Ophthalmol Retina. 2020 Jan;4(1):19-30.

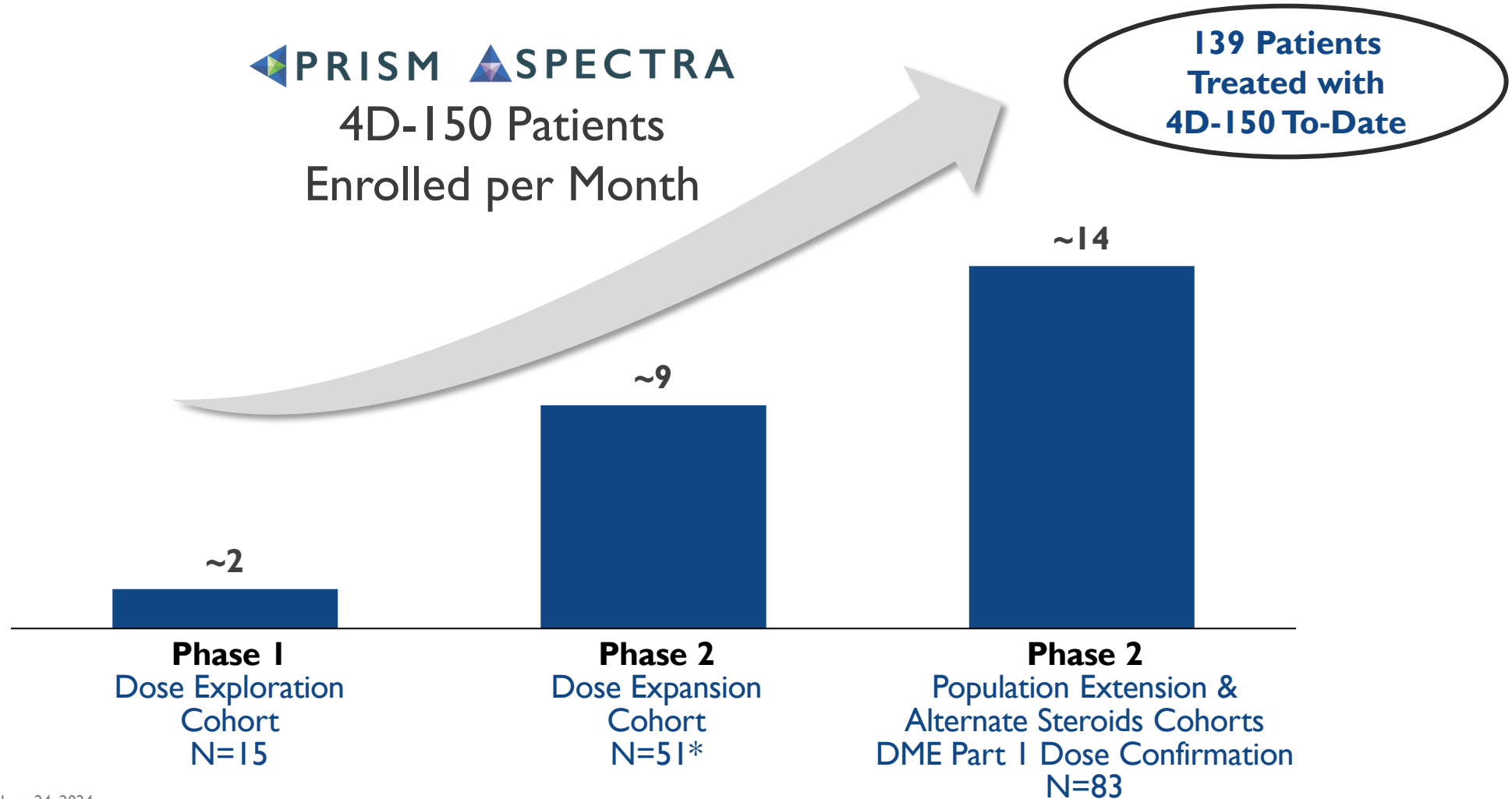
# Wet AMD is the First of Four Large Market Retina Indications for 4DMT

~7.6 Million Patients in U.S.



Market Scope 2023 Retinal Pharmaceuticals Market Report, published Aug 2023. \* Excludes patients with DME.



# Significant Investigator & Patient Interest Following Clinical Data Drove Strong & Accelerating Enrollment Rates



4DMT internal data. Data cutoff date, June 24, 2024.

\*Including n=10 in aflibercept control arm.

# 139 Patients Treated with 4D-150 To Date Across Multiple Populations in Wet AMD and DME

CLINICAL TRIAL	STAGE COHORT	DISEASE SEVERITY (Inj, Prior Year)	TOTAL N= Dose Range	FOLLOW-UP (UP TO)*	Planned Phase 3 Dose (3E10 vg/eye)
					N=
	Phase 1 Dose Exploration	Severe (≥6)	15 6E9 – 3E10 vg/eye	2.5 years	5
	Phase 2 Dose Expansion	Severe (≥6)	41 1E10 – 3E10 vg/eye	72 weeks	20
	Phase 2 Population Extension	Broad (1-6)	45 1E10 – 3E10 vg/eye	40 weeks	30
	Phase 2 Alternate Steroids	Severe/Broad (≥1)	16 3E10 vg/eye	44 weeks	16
	Phase 2 Part 1 Dose Confirmation	Broad	22 5E9 – 3E10 vg/eye	36 weeks	9
<b>Total</b>			<b>139</b>	<b>2.5 years</b>	<b>80</b>

\*Data cutoff date, June 24, 2024.



## Phase 2 Population Extension Cohort (N=45): 24-week Landmark Analysis

Data cutoff date: June 24, 2024

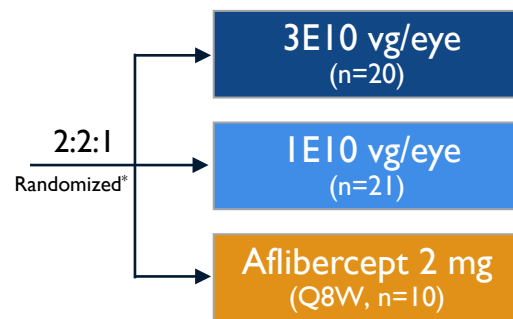
# Phase 2 Population Extension Cohort Designed to Evaluate 4D-150 in Wet AMD Patients With a Broad Range of Disease Activity

**Population:**

**Cohort:**

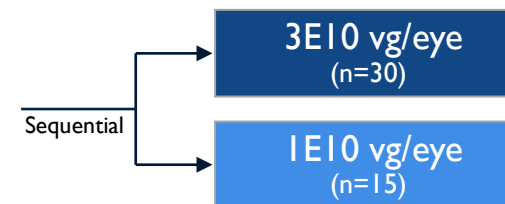
**Severe & High Treatment Burden**

**Dose Expansion**



**Broad Disease Activity**

**Population Extension**



**Key Inclusion Criteria:**

Anti-VEGF Injections in prior 12 months

CST at Screening

BCVA at Screening

≥6

≥325 μm AND retinal fluid

34–83 ETDRS letters

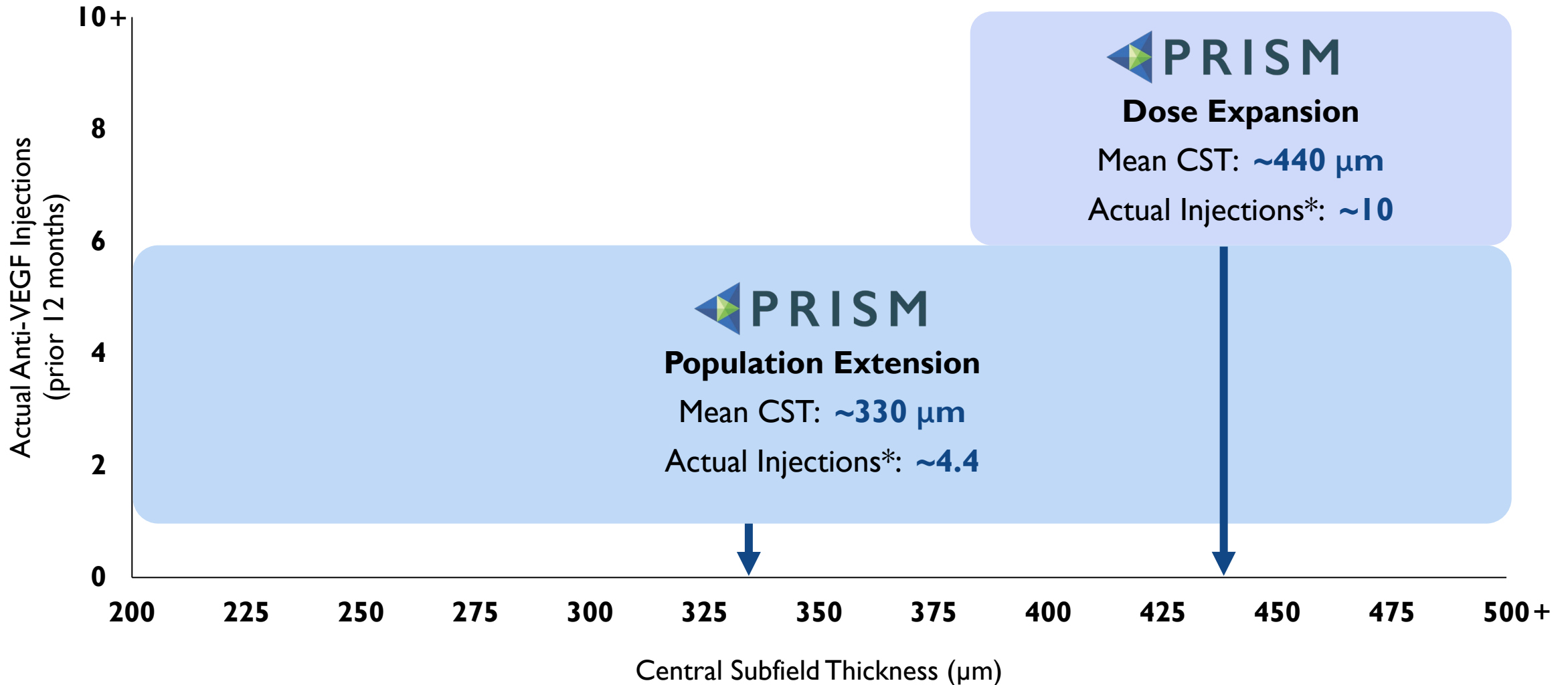
**1-6** (≥1 in last 12 weeks)

**No minimum or maximum**

34–83 ETDRS letters

\*Stratified by prior injections <9 vs. ≥9. BCVA, best corrected visual acuity; CST, central subfield thickness; ETDRS, Early Treatment Diabetic Retinopathy Study; VEGF, vascular endothelial growth factor.

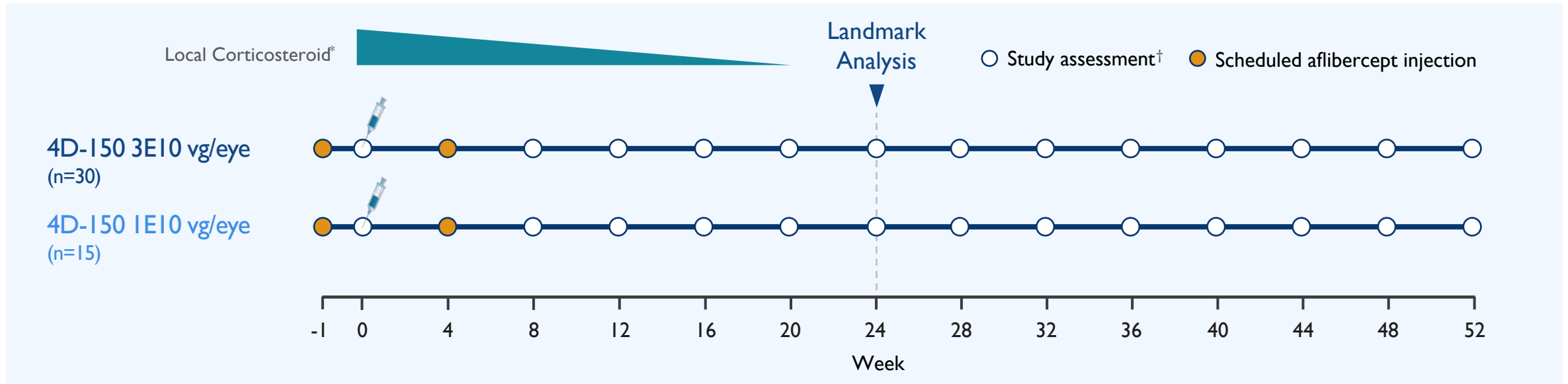
# Phase 2 Population Extension Cohort Focuses on a Previously Treated Wet AMD Population with Broad Disease Activity



Public filings, 4DMT data. \*Prior 12 months.

# Phase 2 Population Extension Cohort Treatment Schema & Endpoints

## Population Extension Cohort Study Schema



### Key Endpoints

- Safety and tolerability
- Annualized anti-VEGF injection rate
- % requiring supplemental aflibercept injection
- Change from baseline in BCVA and CST

### Supplemental Injection Criteria

- BCVA: Loss of  $\geq 10$  letters from average of Day -7 and Day 1 attributable to retinal fluid
- CST: Increase  $\geq 75$   $\mu\text{m}$  from average of Day -7 and Day 1 values
- New vision-threatening hemorrhage due to wet AMD per investigator

<sup>\*</sup>Participants received one of: (a) difluprednate (Durezol) ophthalmic emulsion (3E10 & 1E10 vg/eye), (b) triamcinolone acetonide with prednisolone taper (3E10 vg/eye), or (c) dexamethasone (3E10 vg/eye). <sup>†</sup>Visual acuity, optical coherence tomography, ophthalmic exam.



# Baseline Characteristics Showed Dose Arms are Well Balanced

	3E10 vg/eye (N=30)	1E10 vg/eye (N=15)	Total (N=45)
Mean $\pm$ SD age, years	77 $\pm$ 7.7	78 $\pm$ 8.6	77 $\pm$ 7.9
Mean $\pm$ SD BCVA, ETDRS letters	71 $\pm$ 9.9	73 $\pm$ 8.8	72 $\pm$ 9.5
Mean $\pm$ SD CST (central subfield thickness), $\mu$ m	<b>336 <math>\pm</math>135.0</b>	<b>314 <math>\pm</math>70.8</b>	<b>329 <math>\pm</math>117.1</b>
Mean $\pm$ SD time since diagnosis, years	1.8 $\pm$ 3.5	0.7 $\pm$ 0.9	1.4 $\pm$ 2.9
Mean $\pm$ SD <i>actual</i> anti-VEGF injections in prior 12 months*	<b>4.4 <math>\pm</math>2.0</b>	<b>4.3 <math>\pm</math>2.1</b>	<b>4.4 <math>\pm</math>2.0</b>
Mean <i>annualized</i> injection rate, prior 12 months*	8.3	10.7	9.0

\*Includes Day -7 aflibercept injection. BCVA, best corrected visual acuity; ETDRS, Early Treatment Diabetic Retinopathy Study; SD, standard deviation; VEGF, vascular endothelial growth factor.

## 4D-I50 Was Safe & Well Tolerated

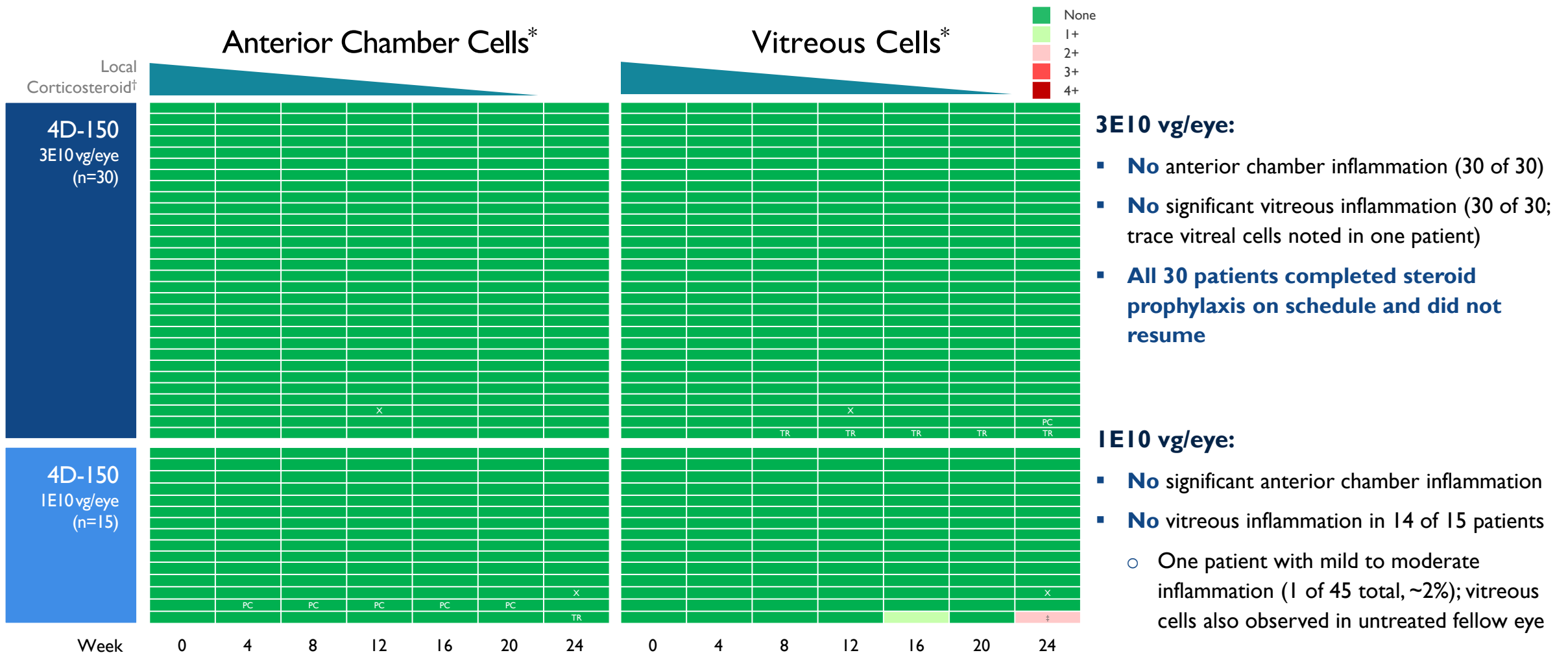
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- No 4D-I50–related serious adverse events
- No hypotony, endophthalmitis, vasculitis, choroidal effusions, or retinal artery occlusions
- No significant inflammation reported in patients treated with 3E10 vg/eye dose and topical corticosteroid regimen (N=30)
  - All 30 patients completed local corticosteroid prophylactic regimen on schedule and did not resume

Data cutoff date, June 24, 2024.

# No Significant Inflammation Observed in the Planned Phase 3 Dose Arm

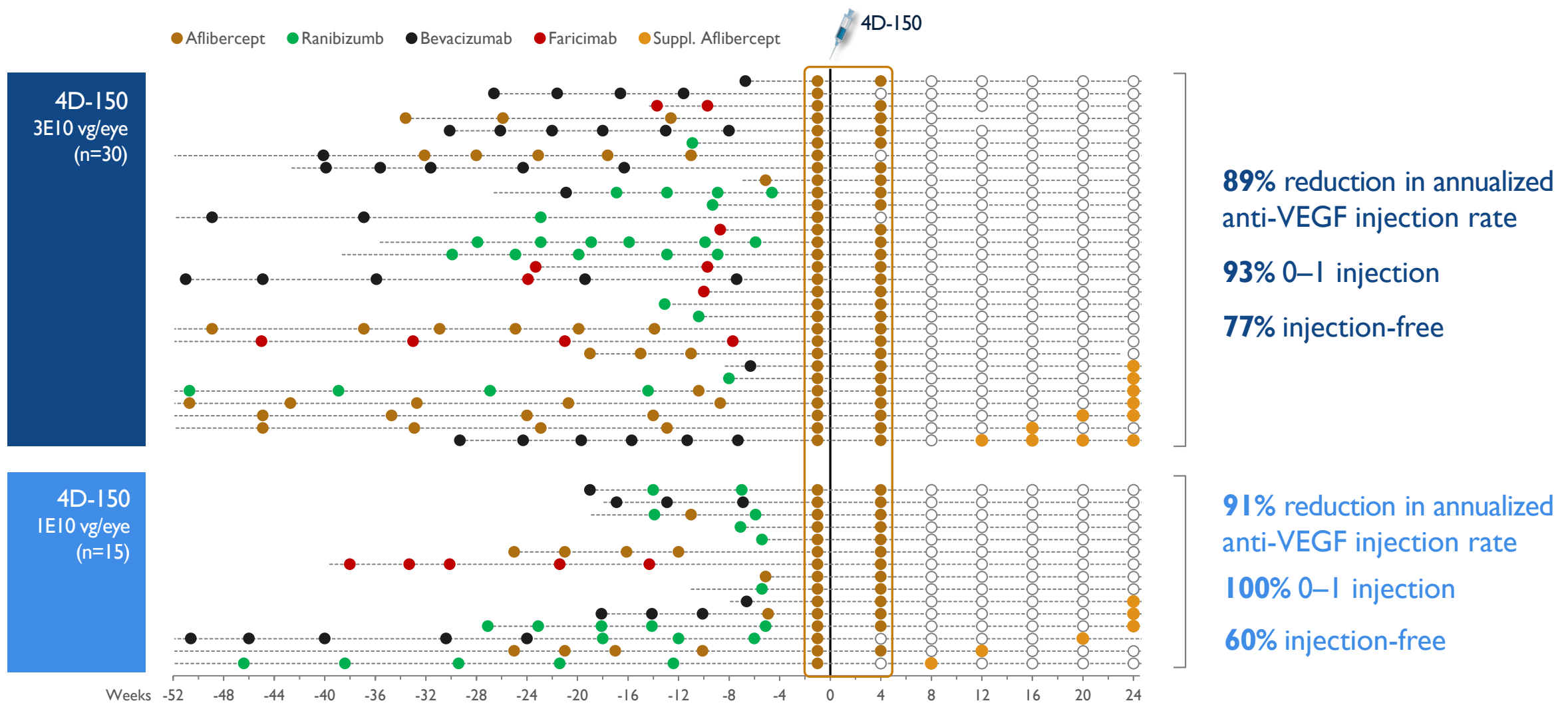
## Population Extension Cohort Scoring per Principal Investigator Through Week 24



Data cutoff date, June 24, 2024. \*SUN and NEI Scores for white blood cells. †Either difluprednate ophthalmic emulsion, triamcinolone acetonide with prednisolone taper, or dexamethasone. ‡Vitreous cells observed in non-injected contralateral eye at same visit; history of syphilis; assessed as 2+ by primary investigator next day after initial assessment by sub-investigator as 3+. NEI, National Eye Institute; PC, pigmented cells; SUN, Standardization of Uveitis Nomenclature; TR=trace; X=missed visit.

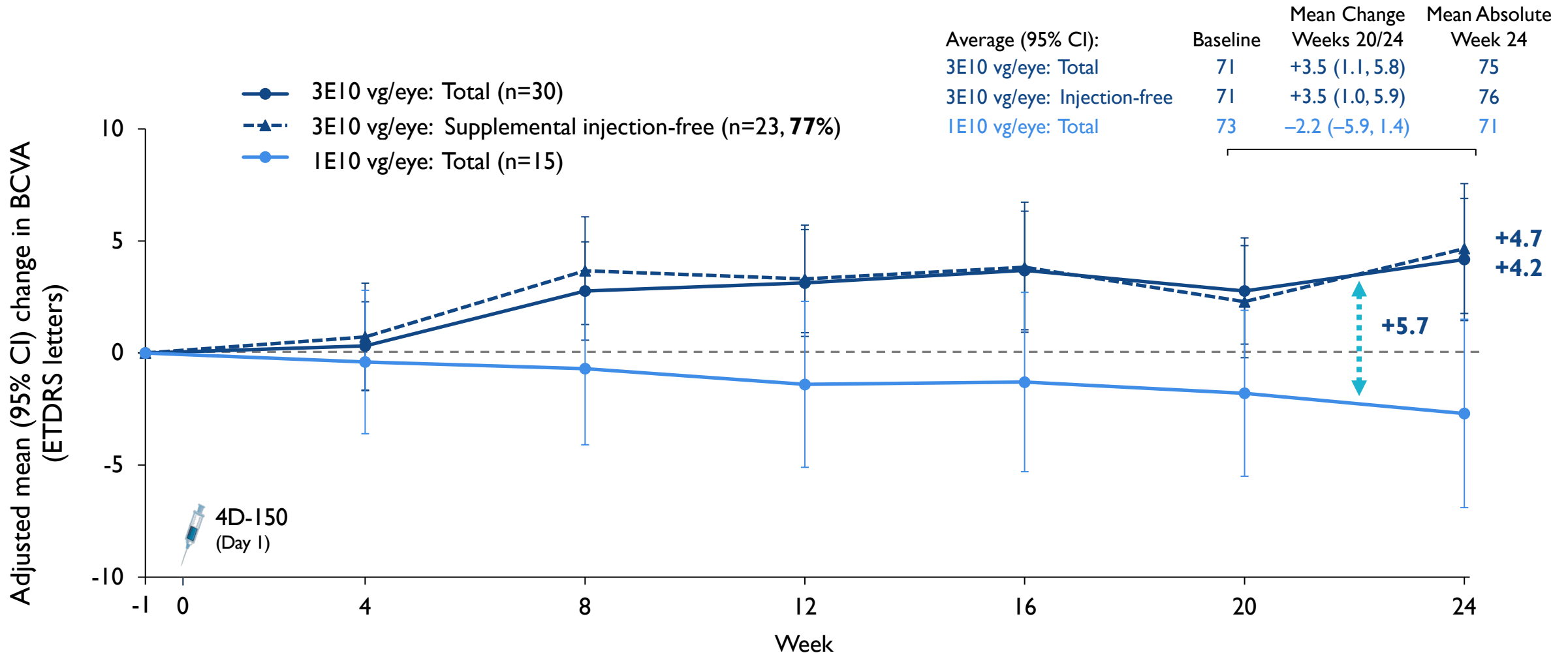
# Robust Anti-VEGF Treatment Burden Reduction Observed through 24 Weeks

Patients Receiving Planned Phase 3 Dose of 3E10: 77% Injection-Free & 93% Had 0-1 Injection



Data cutoff date, June 24, 2024. \*Scheduled on-study aflibercept injection administered at Weeks -1 and 4; post-4D-I50 annualized anti-VEGF injection rate calculated from Week 4 onward (time of last loading aflibercept dose)

# Planned Phase 3 Dose Demonstrated Higher BCVA Gains That Were Maintained Over Time, Including in Injection-Free Patients

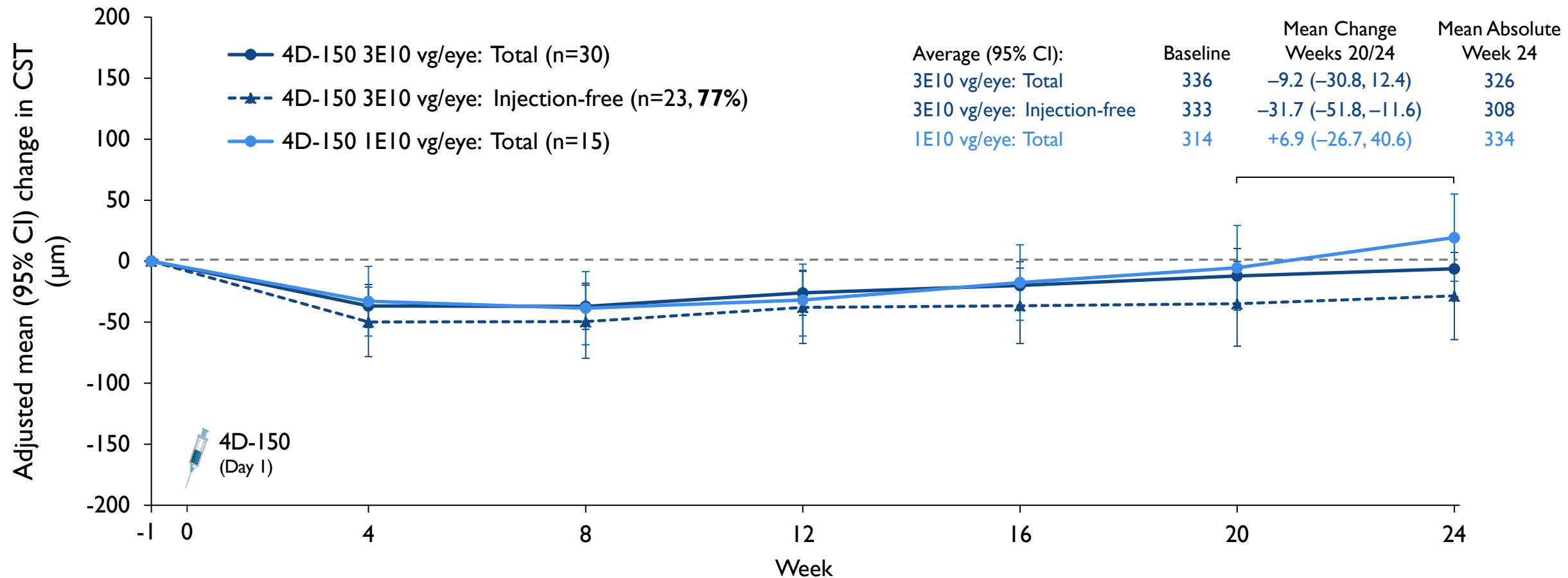


Data cutoff date, June 24, 2024.

Adjusted mean and 95% CI estimated from a mixed-effect model for repeated measures (MMRM) including observed data (weeks 4-24) without imputing missing values.

CI, confidence interval; ETDRS, Early Treatment Diabetic Retinopathy Study.

# Planned Phase 3 Dose Demonstrated Sustained & Greater Anatomic Control Without Fluctuations, Including in Injection-Free Patients

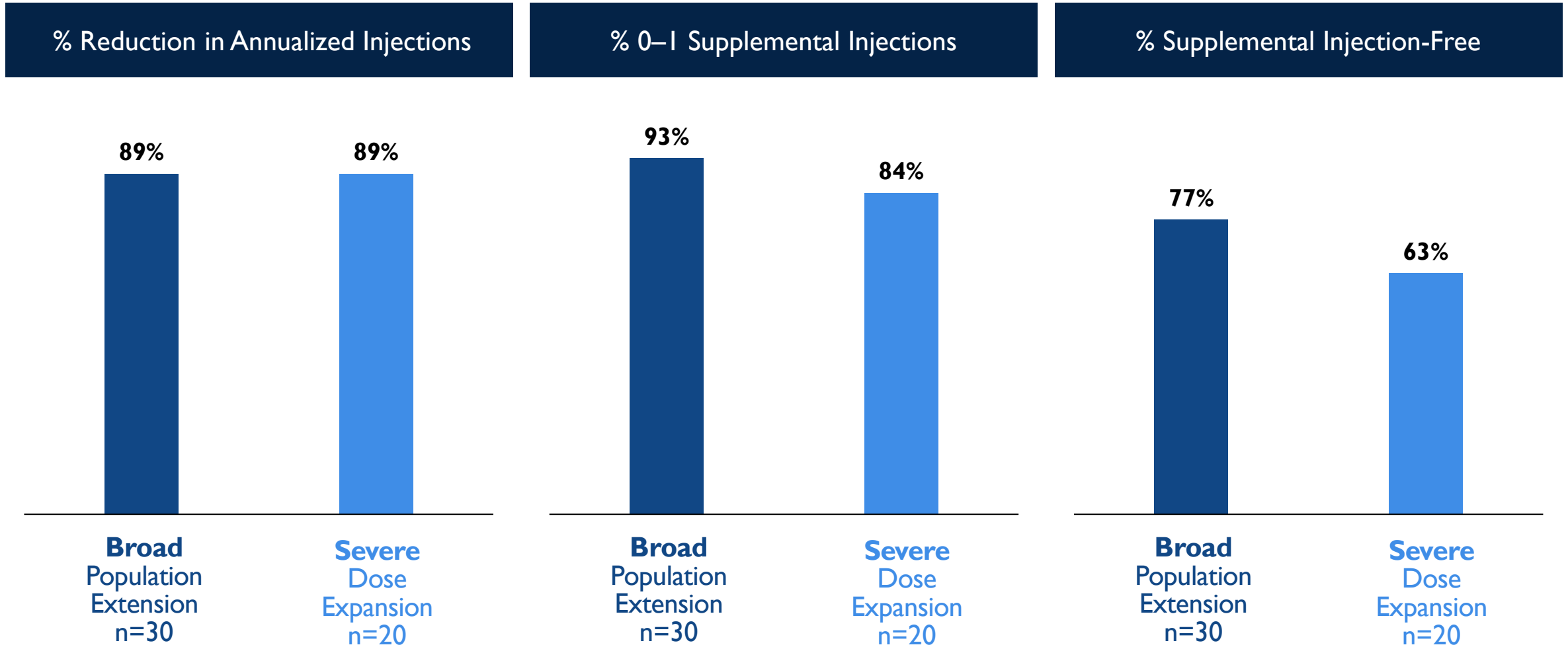


Data cutoff date, June 24, 2024.

Adjusted mean and 95% CI estimated from a mixed-effect model for repeated measures (MMRM) including observed data (weeks 4-24) without imputing missing values.

CI, confidence interval; CST, central subfield thickness.

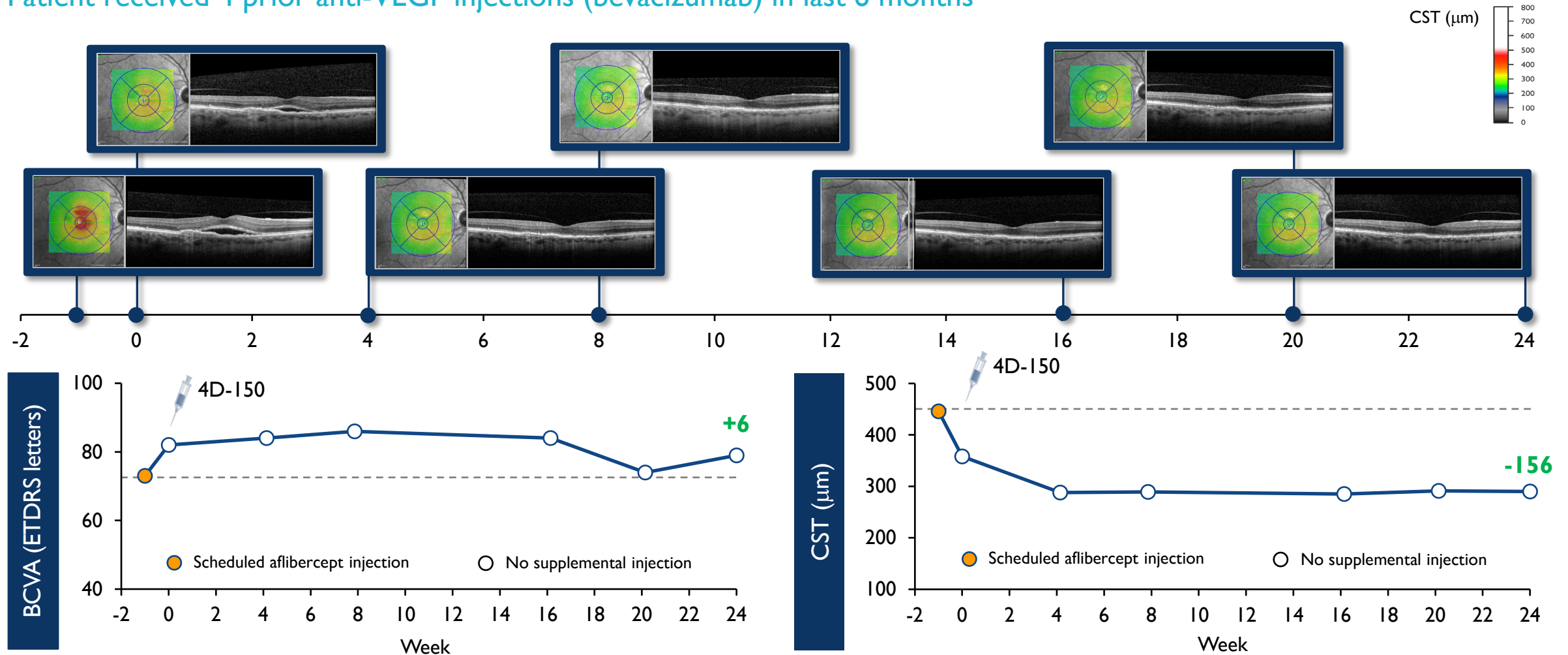
# Robust & Consistent Reduction in Treatment Burden Observed Across All Wet AMD Populations Studied at the 3EI0 vg/eye Dose Through 24 Weeks



Data cutoff dates: Dose Expansion, January 19, 2024; Population Extension, June 24, 2024.

# Patient Case Highlighting the Benefit of a Single Injection of 4D-150 3E10: BCVA & CST Improved and Maintained Over Time and Injection-free

Patient received 4 prior anti-VEGF injections (bevacizumab) in last 6 months

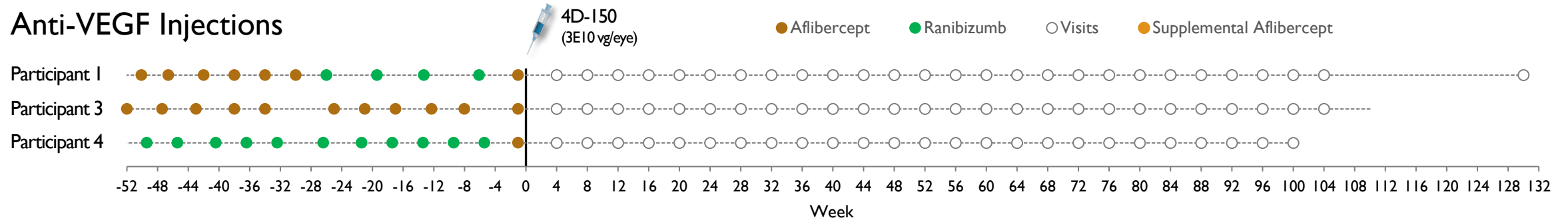


Data cutoff date, June 24, 2024. BCVA, best corrected visual acuity; ETDRS, Early Treatment Diabetic Retinopathy Study; CST, central subfield thickness.

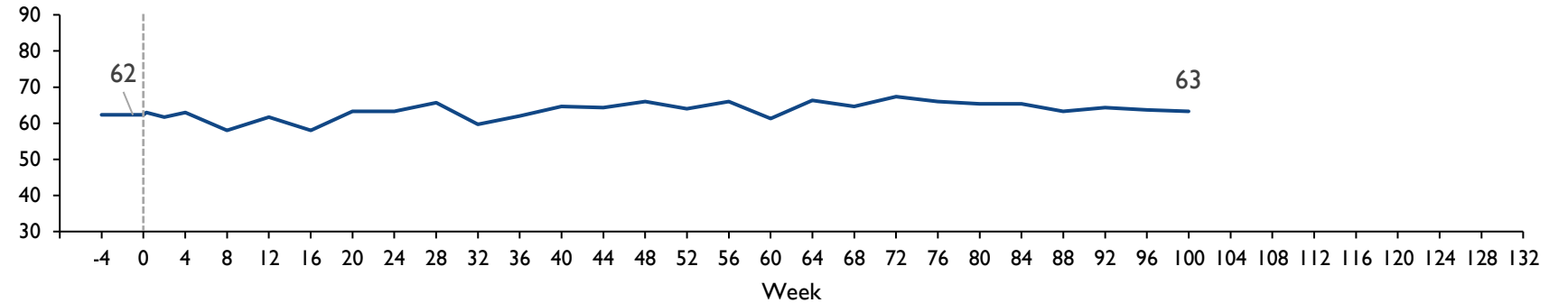


# 3 Patients from Phase I Treated with 4D-150 3E10 vg/eye Remain Injection-free Through ~2 to 2.5 Years

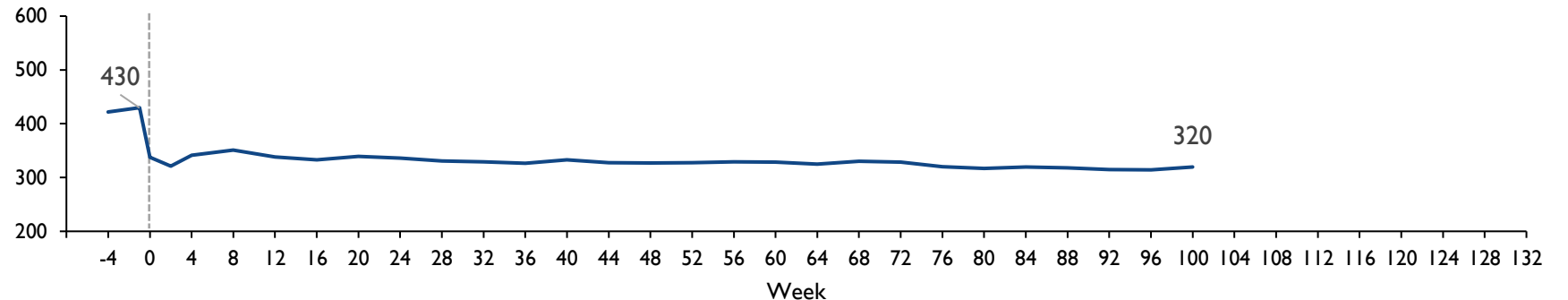
## Anti-VEGF Injections



## Mean BCVA (ETDRS letters)



## Mean CST (μm)



Data cutoff date, June 24, 2024.

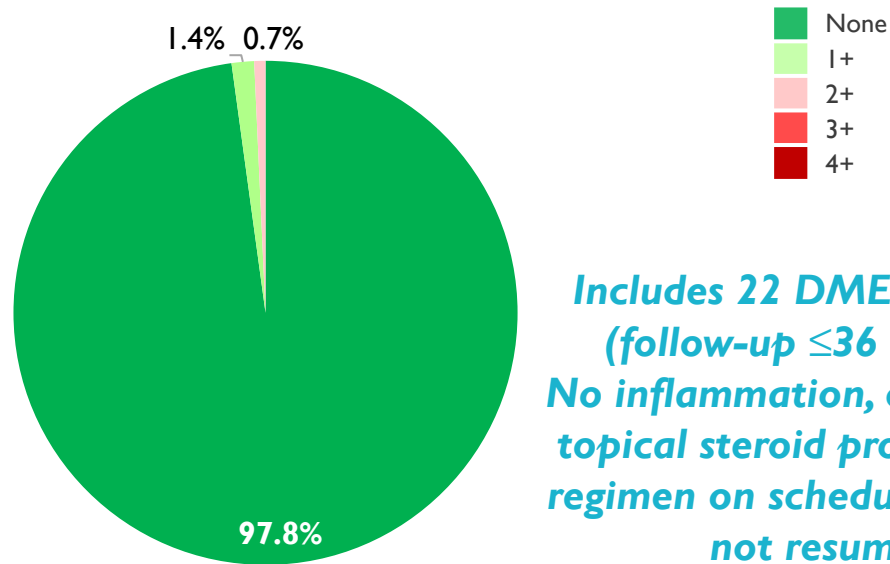
Baseline = Week -1. BCVA, best corrected visual acuity; ETDRS, Early Treatment Diabetic Retinopathy Study; CST, central subfield thickness.

# 4D-150 Continues to be Safe and Well Tolerated in Wet AMD & DME (N=139)

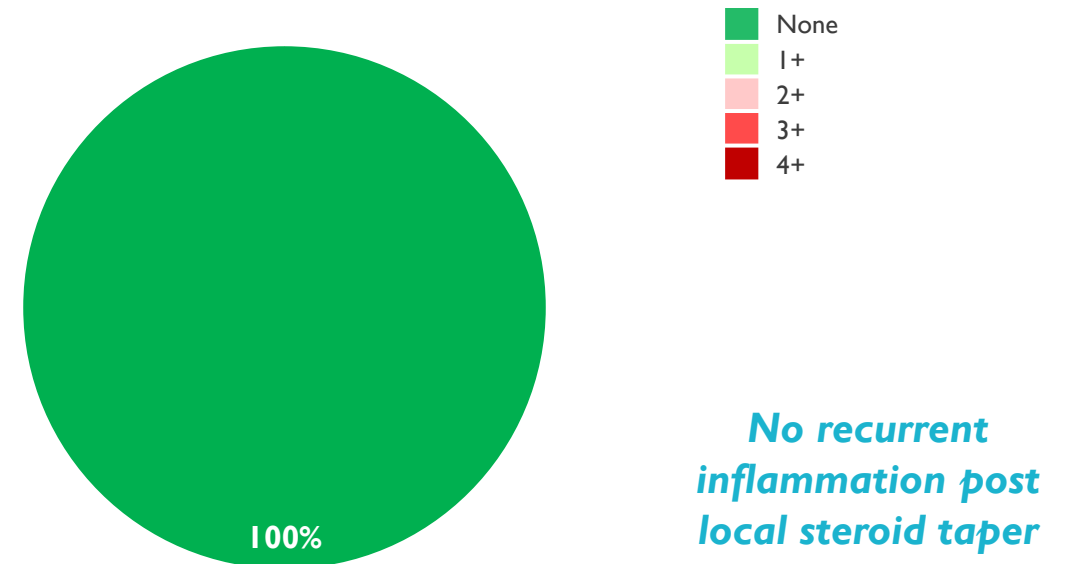
## No Significant Inflammation in Patients Treated with Planned Phase 3 Dose & Durezol Regimen

### Highest SUN/NEI Score Observed\*

All Doses & Steroid Regimens Tested†  
(5E9 to 3E10 vg/eye, N=139)



Planned Phase 3 Dose & Durezol Regimen (3E10 vg/eye, N=51)



No 4D-150–related hypotony, endophthalmitis, vasculitis, choroidal effusions or retinal artery occlusions observed to date

Data cutoff date, June 24, 2024.

\*Duration of follow up, ≤2.5 years. NEI, National Eye Institute; SUN, Standardization of Uveitis Nomenclature. †N=29 3E10 vg/eye patients received one of the following: (a) triamcinolone acetonide with prednisolone taper or (b) dexamethasone.

# Planned 4D-I50 Phase 3 Registrational Trials in Wet AMD

## Preliminary Phase 3 Design

- **Primary Endpoint:** Noninferiority (BCVA) 4D-I50 **3E10 vg/eye** vs. aflibercept 2mg Q8 weeks
- **Study Size:** ~450 patients per study, two studies
- **Target Population:** **broad** wet AMD disease activity

## FDA RMAT & EMA PRIME Designations










- **Increased collaboration** between the FDA & EMA with opportunity for **expedited product development**
- **Plan to have an aligned global development pathway**

**Final Phase 3 design update expected September 2024**  
**1<sup>st</sup> Phase 3 initiation expected Q1 2025**

Such designations do not guarantee faster approval or approval of the product

# Key Takeaways

## 4D-150 Program in Wet AMD and DME

-  **CONTINUES TO BE SAFE & WELL-TOLERATED:  
In Both Wet AMD & DME**
-  **STRONG CLINICAL ACTIVITY DEMONSTRATED IN BROAD WET  
AMD DISEASE ACTIVITY POPULATION:  
Planned Phase 3 Population**
-  **DEMONSTRATED DURABLE CLINICAL ACTIVITY**
-  **PROVIDES FURTHER SUPPORT FOR PLANNED WET AMD PHASE  
3 PROGRAM**
-  **NEXT STEPS:**
  -  **PHASE 3 WET AMD PROGRAM UPDATE:** Expect to share final study design in **September 2024** and initiate first trial in **Q1 2025**
  -  **PHASE 2 PRISM WET AMD 52-WEEK DATA:** Expect update from both Dose Expansion & Population Extension cohorts in **February 2025**
  -  **PHASE 2 SPECTRA DME 24-WEEK DATA:** Expect update from Part I (N=22) in **Q4 2024**
-  **\$589M CASH\* AS OF MARCH 31, 2024; RUNWAY INTO H1 2027**

Data cutoff date, June 24, 2024.

\*Includes cash equivalents and marketable securities



# THANK YOU

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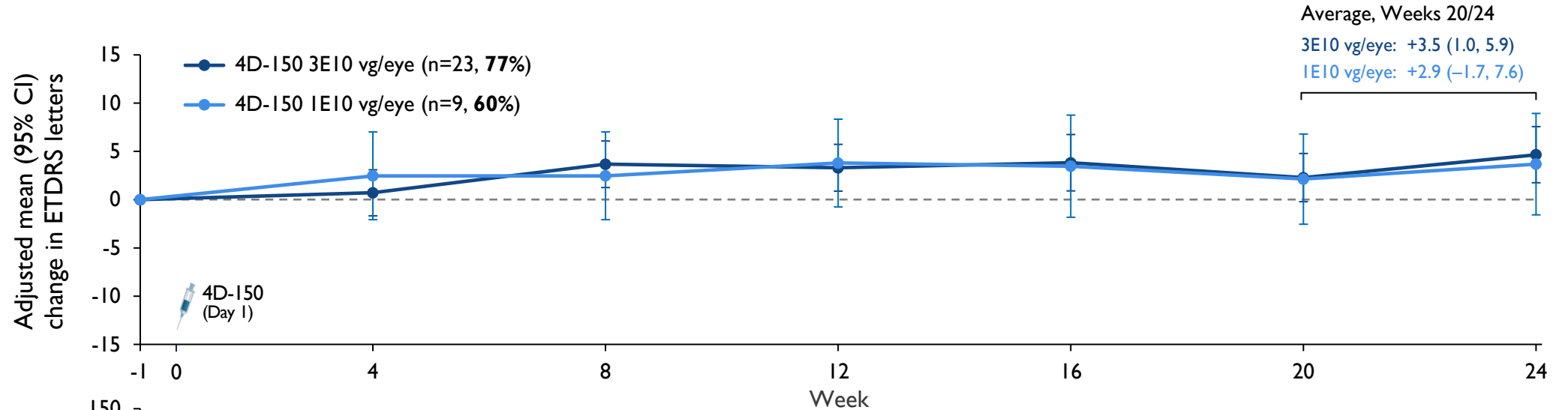
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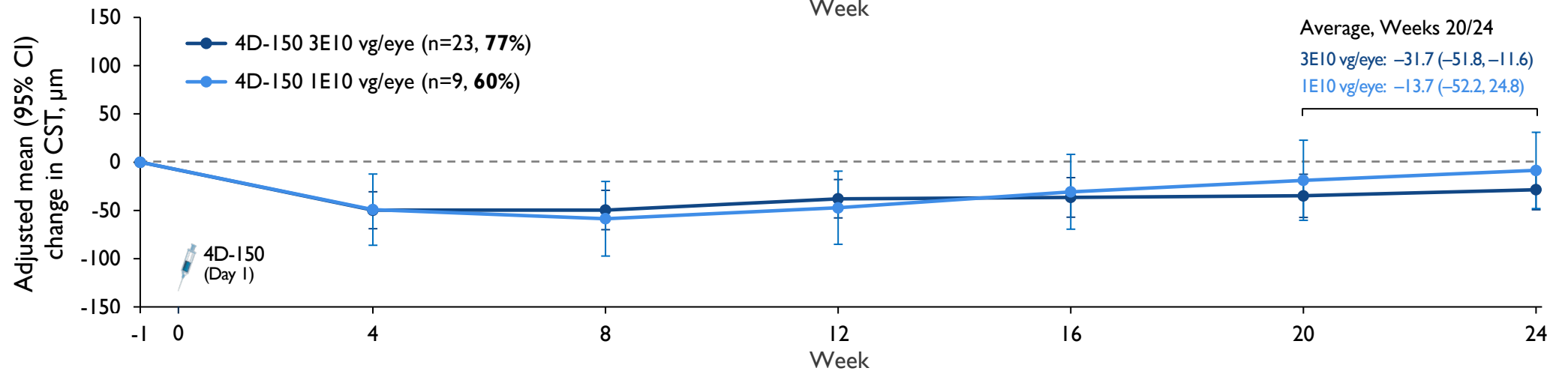
# Supplemental Injection-free Participants

## 3E10 vg/eye: Durable Improvement in Visual Acuity and Sustained Reduction in CST

BCVA



CST



Data cutoff, June 24, 2024. Adjusted mean, difference in adjusted mean, and 95% CI estimated from a mixed-effect model for repeated measures (MMRM) including observed data (weeks 4-24) without imputing missing values. BCVA, best corrected visual acuity; CI, confidence interval; CST, central retina thickness; ETDRS, Early Treatment Diabetic Retinopathy Study.