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# Delivering the next wave of genetic medicines

Corporate Presentation October 2024

# Forward-Looking Statements

This presentation includes “forward-looking statements,” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These statements express a belief, expectation or intention and are generally accompanied by words that convey projected future events or outcomes such as “believe,” “may,” “will,” “estimate,” “continue,” “anticipate,” “assume,” “design,” “intend,” “expect,” “could,” “plan,” “potential,” “predict,” “seek,” “should,” “would” or by variations of such words or by similar expressions. The forward-looking statements include statements relating to, among other things, REGENXBIO’s future operations, clinical trials, costs and cash flow. REGENXBIO has based these forward-looking statements on its current expectations and assumptions and analyses made by REGENXBIO in light of its experience and its perception of historical trends, current conditions and expected future developments, as well as other factors REGENXBIO believes are appropriate under the circumstances. However, whether actual results and developments will conform with REGENXBIO’s expectations and predictions is subject to a number of risks and uncertainties, including the outcome of REGENXBIO’s collaboration with AbbVie and other factors, many of which are beyond the control of REGENXBIO. For a summary of certain of these risks and uncertainties, refer to the “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” sections of REGENXBIO’s Annual Report on Form 10-K for the year ended December 31, 2023 and comparable “risk factors” sections of REGENXBIO’s Quarterly Reports on Form 10-Q and other filings, which have been filed with the U.S. Securities and Exchange Commission (SEC) and are available on the SEC’s website at [www.sec.gov](http://www.sec.gov). All of the forward-looking statements made in this presentation are expressly qualified by the cautionary statements contained or referred to herein. The actual results or developments anticipated may not be realized or, even if substantially realized, they may not have the expected consequences to or effects on REGENXBIO or its businesses or operations. Such statements are not guarantees of future performance and actual results or developments may differ materially from those projected in the forward-looking statements. Readers are cautioned not to rely too heavily on the forward-looking statements contained in this presentation. These forward-looking statements speak only as of the date of this presentation. Except as required by law, REGENXBIO does not undertake any obligation, and specifically declines any obligation, to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.



**Seeking to improve lives through the curative potential of gene therapy**

**We pioneered the landscape of adeno-associated virus (AAV) gene therapies.**

Thousands of patients have been treated with approved and investigational medicines built on our NAV<sup>®</sup> Technology platform.

**We are advancing late-stage, potential first- and best-in-class gene therapies for patients with retinal and rare diseases.**

Multiple billion-dollar opportunities, with lead candidate in Duchenne muscular dystrophy.

**With the expertise and strong balance sheet, REGENXBIO is leading the future of one-time treatments.**

Upcoming catalysts supported by industry-leading end-to-end capabilities.

# Late-stage pipeline in multi-billion dollar commercial markets



## Retina franchise partnered with AbbVie

**Wet AMD:** dual route of administration strategy to accelerate and expand access; clinical POC established with sustained vision & safety 4 years post-dosing

**Diabetic retinopathy:** pivotal trial initiation\* expected 1H 2025 for significant untapped market



## Potential best-in-class treatment for Duchenne Muscular Dystrophy (DMD)

**RGX-202** delivers a microdystrophin that is closest in length and functional capabilities to full-length dystrophin of commercial or investigational gene therapies; expected to advance to pivotal phase in Q4 2024



## Expecting to commercialize the first gene therapy for MPS II in 2026








**RGX-121** represents potential first and only one-time treatment for Hunter syndrome and only treatment to directly address neurocognitive decline; rolling BLA filing 2024



## Strong balance sheet expected to fund operational runway into 2026

\*AbbVie milestone payments expected for DR program

# REGENXBIO's pipeline

Indication		Description	Phase I	Phase II	Pivotal	Anticipated Milestones
 <b>Rare Disease</b>						
Duchenne	RGX-202	Novel microdystrophin				Pivotal trial initiation Q4 2024 Functional data 2H 2024
MPS II	RGX-121	Iduronate-2-sulfatase enzyme				Submission of a rolling BLA using the accelerated approval pathway to start in Q3 2024
 <b>Retinal Disease</b>						
wet AMD subretinal delivery	<b>ABBV-RGX-314</b> abbvie  eye care collaboration	Anti-VEGF				Global regulatory submissions 1H 2026
Diabetic retinopathy In-office suprachoroidal delivery						Design and evaluation of two pivotal trials is ongoing Pivotal trial initiation 1H 2025
wet AMD In-office suprachoroidal delivery						Initiated dose level 4 cohort with short course prophylactic steroid eye drops

# REGENXBIO executive team



**Curran Simpson**  
President and CEO



**Steve Pakola, M.D.**  
EVP, Chief Medical Officer



**Olivier Danos, Ph.D.**  
EVP, Chief Scientific Officer



**Mitchell Chan**  
EVP, Chief Financial Officer



**Shiva Fritsch**  
EVP, Chief Communications &  
People Officer



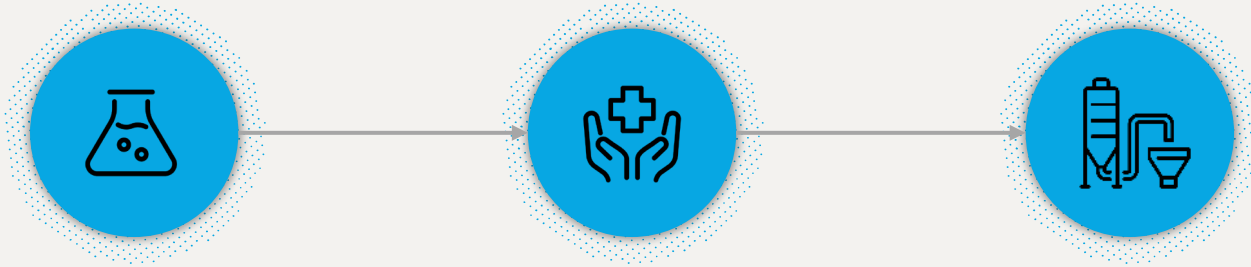
**Patrick Christmas**  
EVP, Chief Legal Officer



**Ram Palanki, Pharm.D.**  
EVP, Commercial Strategy &  
Operations

# Driving significant value creation

Diverse pipeline and industry-leading end-to-end capabilities to launch new medicines



## R&D Engine

innovating gene therapy through capsid discovery and gene transfer technology

## Clinical Programs

designed to accelerate medicines to patients with no or limited options

## Commercial-scale Manufacturing

with industry-leading state-of-the-art REGENXBIO Manufacturing Innovation Center

**\$17B**

## Retinal Disease

Leader in investigational gene therapies for chronic retinal conditions

Positioned to be first approved gene therapy to preserve vision and prevent disease progression

**\$7B**

## Duchenne

Blockbuster opportunity as likely second entrant into established infrastructure with a best-in-class product for large and underserved patient population

Pursuing accelerated approval and broad label

**\$1B**

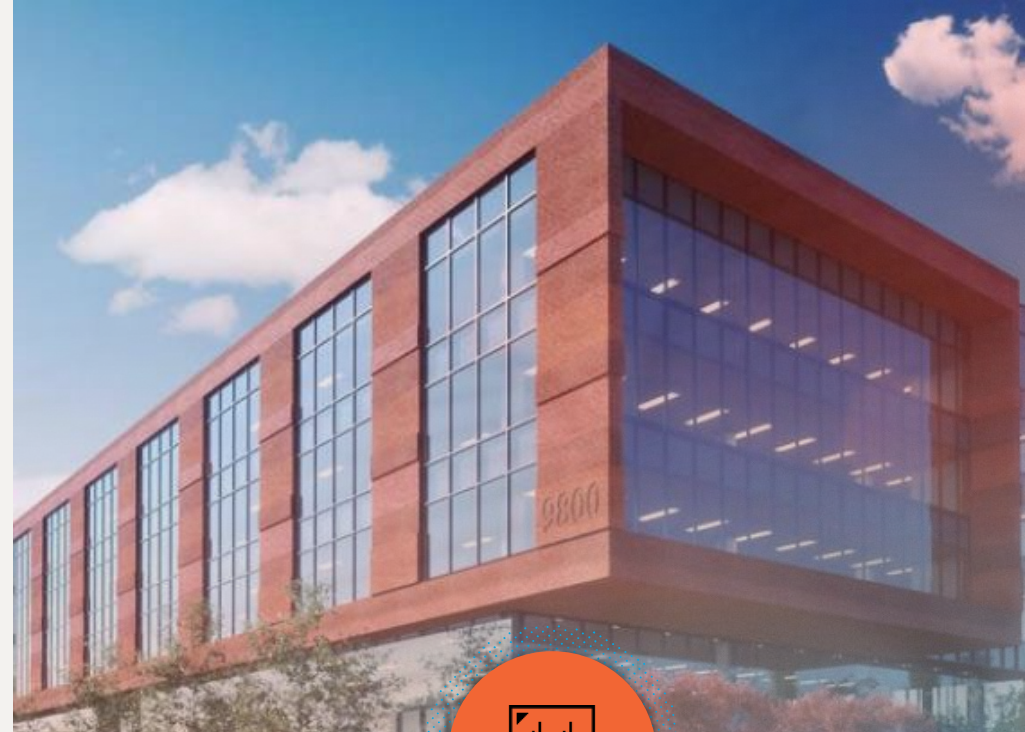
## MPS II

Well-positioned to be **first and only one-time treatment** for MPS II

Eligible for Priority Review Voucher upon potential accelerated approval

# Leaders in gene therapy manufacturing

REGENXBIO Manufacturing Innovation Center ready to serve patients facing rare and retinal diseases.



## Capacity & Control

- 2,500 doses/year of RGX-202
- 350,000 doses/year of ABBV-RGX-314
- Internal drug substance and drug product manufacturing enables control of capacity vs. third-party manufacturer



## Platform

- Proprietary, high-yielding NAVXpress™ suspension platform process
- Potential for candidate selection to clinical supply in 12 months



## Efficiency

- Acceleration of product development and high yields enable lower cost of goods



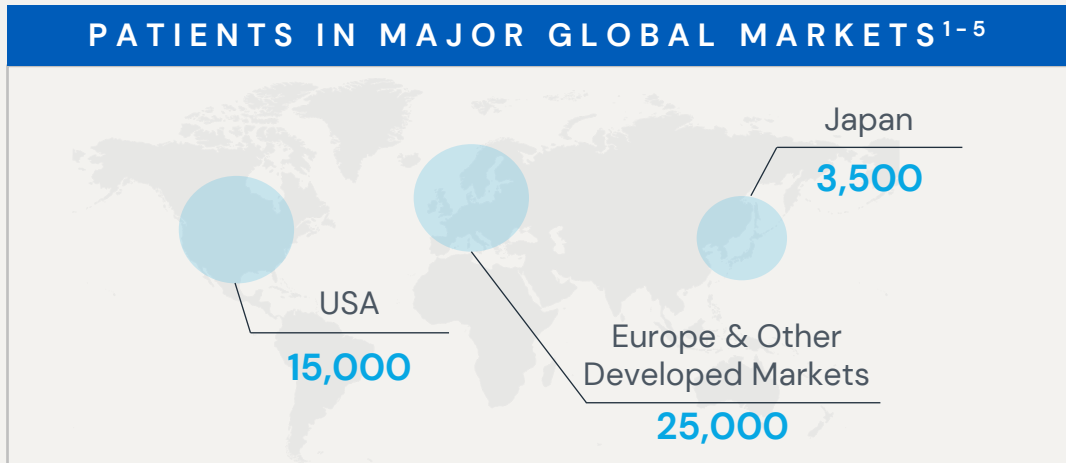


# Rare Disease

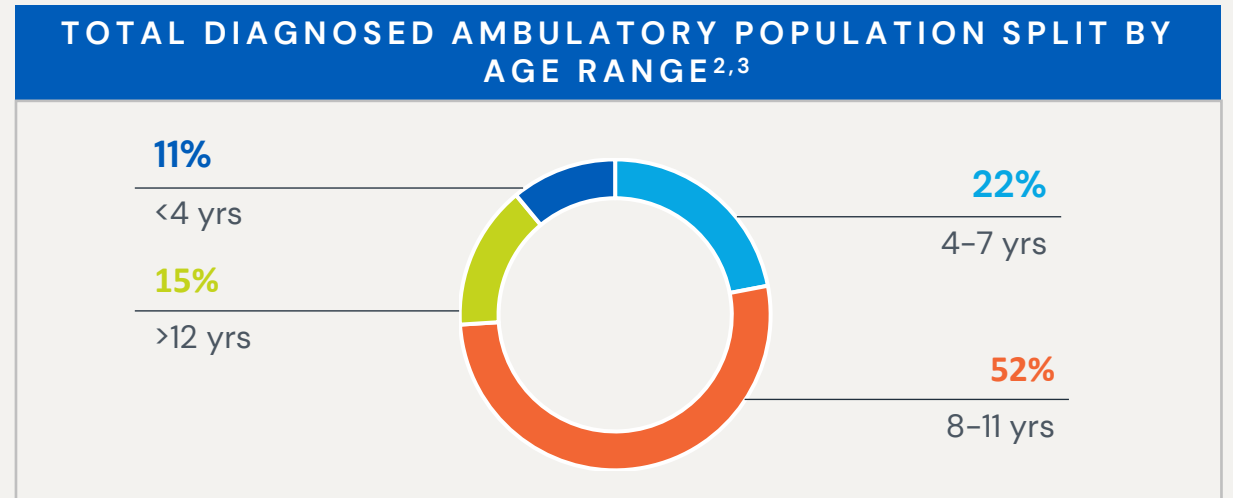
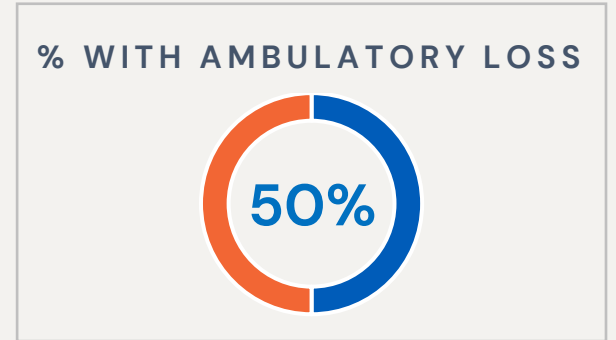
**RGX-202:**

**Next generation microdystrophin design  
for Duchenne Muscular Dystrophy**

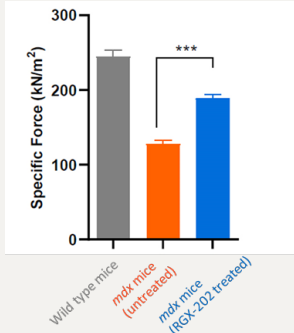
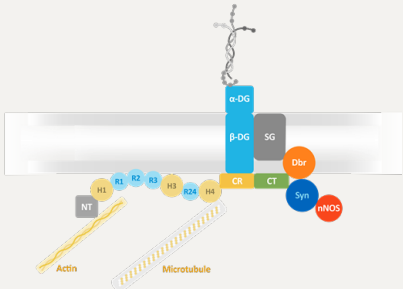
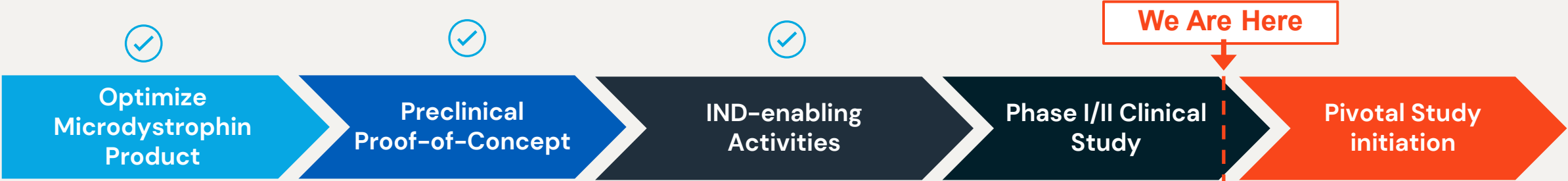
# Duchenne Muscular Dystrophy (DMD) opportunity: an estimated \$7B global market with ongoing unmet need



**Limited effective treatments to delay loss of ambulation and death<sup>5</sup>**



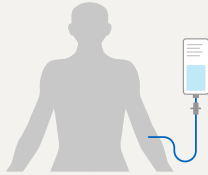
# RGX-202 Program Status: Pivotal Initiation in Q4 '24



Pharmacology (mdx) and Toxicology (NHP) studies complete



GMP material manufactured



### Upcoming Milestones

2024	<ul style="list-style-type: none"> <li>Sharing first functional data (2H)</li> <li>Sharing pivotal trial design (early Q4)</li> <li>Pivotal trial initiation (Q4)</li> </ul>
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# RGX-202: A potential best-in-class gene therapy



## NOVEL CONSTRUCT

- Only microdystrophin with CT domain
- **Spc5-12 promoter** for targeted expression in skeletal and heart muscle
- **Codon optimization** for improved expression and translation; CpG content reductions for reduced immunogenicity

## POSITIVE DATA PROFILE

- **Highly consistent, double-digit** microdystrophin expression
- **Highest reported levels** of microdystrophin expression in older ambulatory patients
- **Clean safety profile**, no SAEs
- **Early signs of functional improvements** observed through clinic and caregiver videos, showcasing improvements in daily activities

## MANUFACTURING

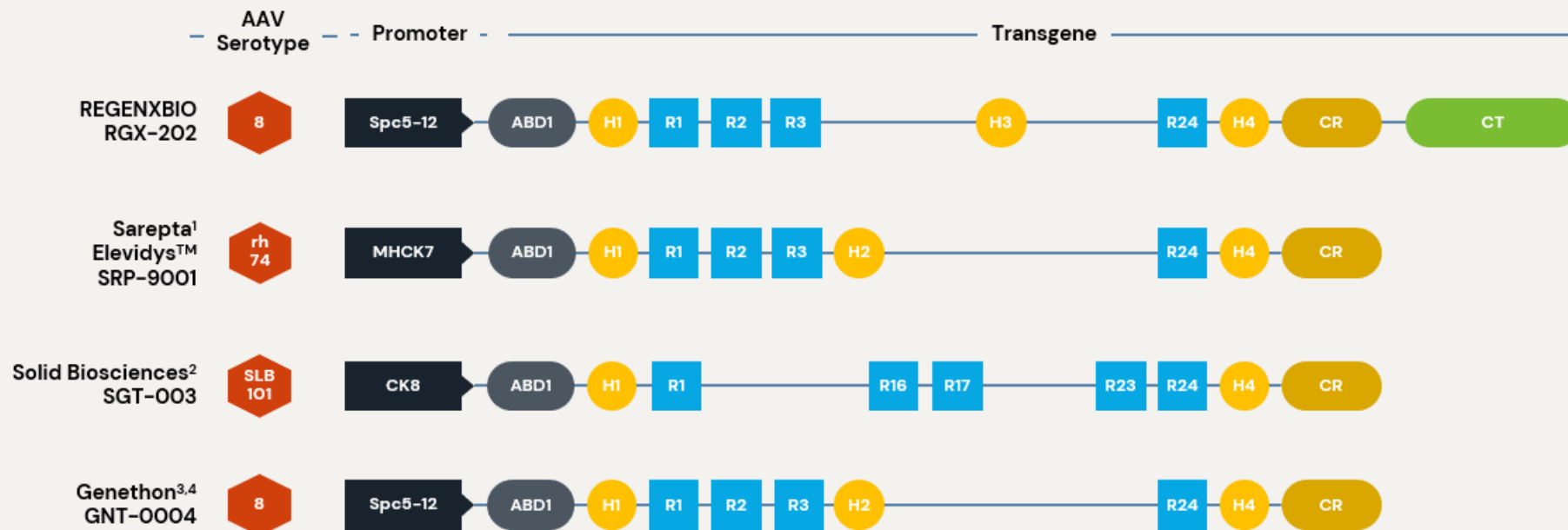
- Highest manufacturing capacity among all companies with approved or investigational DMD products
- Favorable cost of goods

## LAUNCH

- **Second-to-market**, positioned to broadly address ongoing unmet need
- **Large market opportunity** includes both incident and prevalent populations at launch
- **Reaching unserved population** as only trial recruiting younger patients in the U.S.

# RGX-202: Construct designed for potential improved durability

RGX-202 is the only gene therapy designed to deliver a microdystrophin transgene that incorporates the functional C-Terminal (CT) domain from naturally occurring dystrophin.



## Role of the CT Domain

Preclinical studies indicate the CT domain contributes to the long-term durability of RGX-202.

### Muscle health

- Plays a crucial role in muscle repair, potentially preventing muscle breakdown and preserving muscle function longer

### Prolonged transgene activity

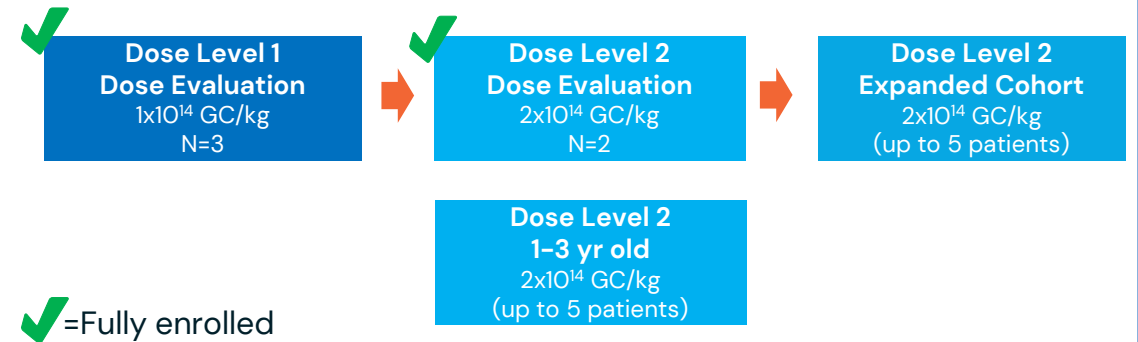
- Supports the half-life of the transgene, allowing RGX-202 to stay in target cells for longer, continuing to preserve muscle.

# RGX-202 Study overview and program updates

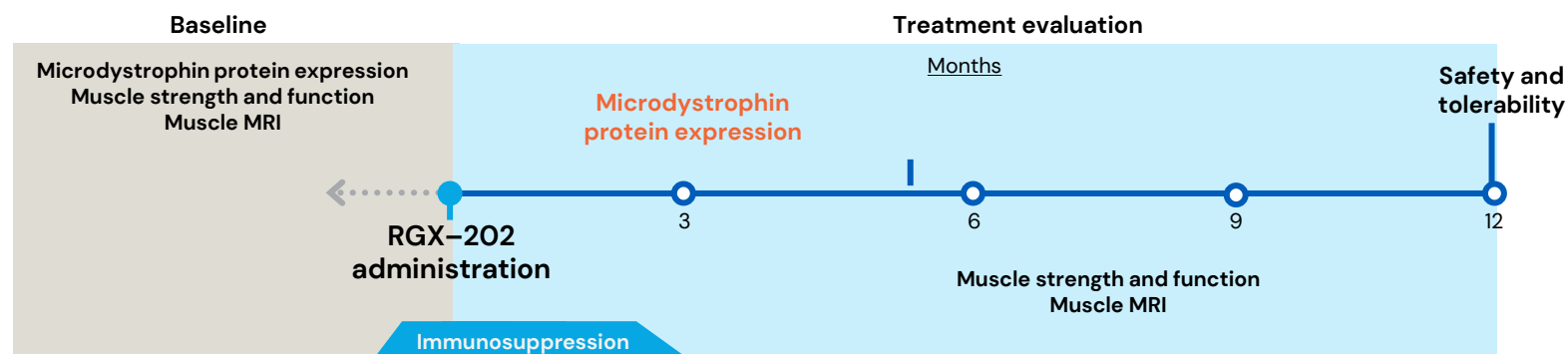
## Key Eligibility Criteria

- Boys aged 1 to 11 years at screening
- Genetically confirmed DMD (mutations in exons 18 and above)
- 100-meter walk: able to perform without assistive devices
- No pre-existing antibodies to the gene therapy (AAV8 capsid)

## Study Plan



## Administration and Assessments Timeline



# Interim results: microdystrophin expression at 3 months

- Consistent robust RGX-202 microdystrophin expression observed at both dose levels across treated patients
  - Among the highest levels of microdystrophin expression reported in older ambulatory patients
- Observed marked decreases in serum CK levels
- RGX-202 microdystrophin is localized to the sarcolemma at three months

Patient	Age at Dosing	RGX-202 Microdystrophin Western blot (Jess method) (% Normal Control)
Dose Level 1 – 1x10 <sup>14</sup> GC/kg		
1	4 yrs 4 mos	38.8
2	10 yrs 5 mos	11.1
3	6 yrs 6 mos	83.4
Dose Level 2 – 2x10 <sup>14</sup> GC/kg Pivotal dose		
1	12 yrs 0 mos	75.7
2	8 yrs 1 mos	20.9
3	8 yrs 5 mos	46.5
4	5 yrs 10 mos	77.2



# AFFINITY DUCHENNE: Summary

RGX-202 has been well-tolerated at both dose levels with no SAEs

Consistent, robust RGX-202 microdystrophin expression observed in all ages

Encouraging clinic and caregiver videos show observations of early improvements in daily activities

Industry-leading, commercial-ready manufacturing capacity using high-yield NAVXpress™ suspension process

Pivotal trial initiation expected in Q4 2024; confirmed plans to use RGX-202 microdystrophin as a surrogate endpoint likely to predict clinical benefit with FDA

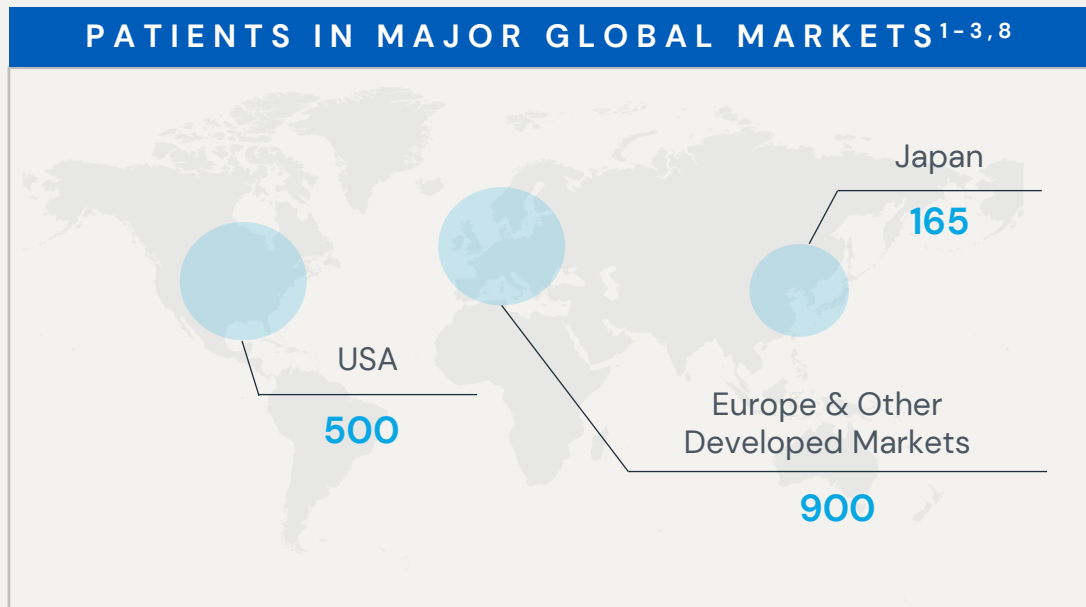
**RGX-121:**

**On track to be the first gene therapy  
for Hunter Syndrome**

# Mucopolysaccharidosis Type II (MPS II) opportunity: an estimated \$1B global market within 5 years<sup>9</sup>




RGX-121 is the only product in late-stage development with the potential to address neurocognitive development in patients diagnosed under age 2 years<sup>5</sup>




**CHRONIC ENZYME REPLACEMENT THERAPY IS INADEQUATE**

 Current standard of care is **weekly IV ERT** infusion to treat **somatic** symptoms only<sup>1</sup>

 **No approved treatment** to prevent neurocognitive loss<sup>^</sup>

**BROAD ACCESS TO NEWBORN SCREENING EXPECTED TO INCREASE EARLY DIAGNOSIS AND TREATMENT BY 2025**

 Newborns Screened for MPS II<sup>6,7</sup> **~60%**

 Average Age of Diagnosis with Newborn Screening: **0.2 yrs<sup>1</sup>**

# RGX-121 for MPS II: Phase I/II/III CAMPSITE® study

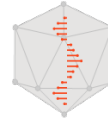
## The Disease

- Reduced ability to process glycosaminoglycans (GAGs), leading to neurodegeneration, and early death
- X-linked recessive disease
- Available treatment is inadequate to treat neurodegeneration
- More than 500 patients born annually worldwide

## RGX-121 PRODUCT CANDIDATE

### Vector:

AAV9



### Gene:

IDS Gene  
Replacement

### FDA Designations:

- ▲ Orphan Drug Designation
- ★ Rare Pediatric Disease Designation
- Fast Track Designation
- ✚ Regenerative Medicine Advanced Therapy Designation

### Route of administration:

Intracisternal delivery



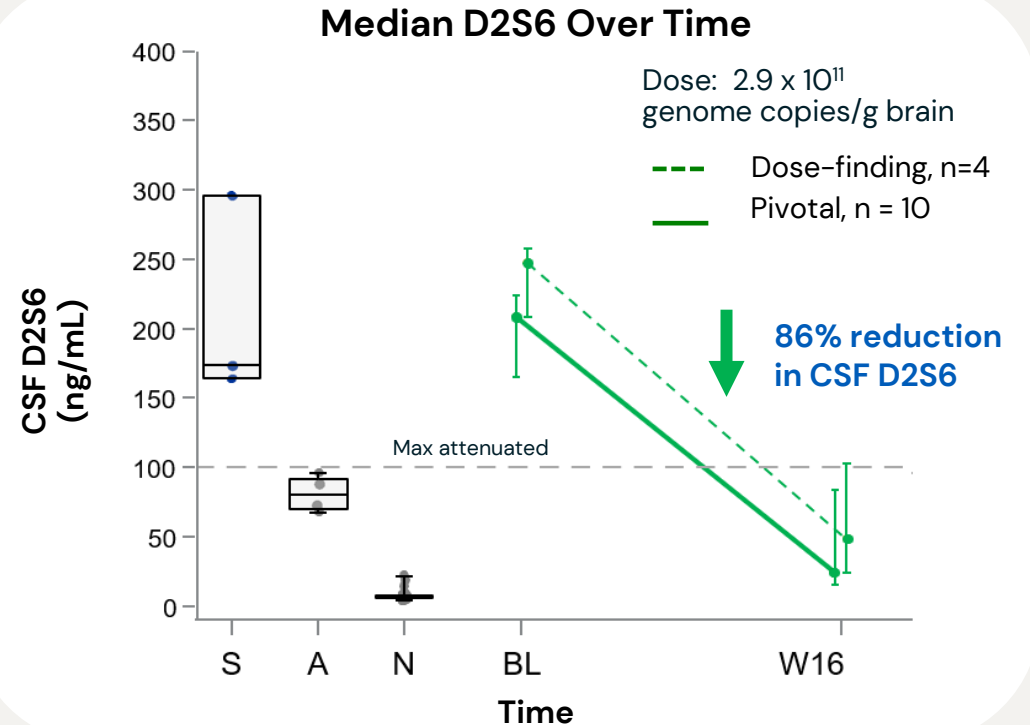
## CAMPSITE Part 2, Pivotal Trial to Support Approval

- Completed enrollment of 10 boys with neuronopathic MPS II, aged 4 months up to five years to support the BLA filing utilizing the accelerated approval pathway
- Pivotal dose:  $2.9 \times 10^{11}$  GC/g of brain mass, using commercial-scale cGMP material from REGENXBIO's proprietary, high-yielding NAVXpress™ platform process
- Trial collecting GAGs in CSF and neurodevelopmental data, and caregiver reported outcomes

# CAMPSIITE Part 2: Pivotal trial primary endpoint achieved

## Primary Endpoint: Proportion of Patients with CSF D2S6 below maximum attenuated level at W16

- Primary endpoint reached with statistical significance (p value of 0.00016)\*
  - 8 of 10 pivotal patients demonstrated reductions in CSF D2S6 to below maximum attenuated levels
  - Other 2 pivotal patients also exhibited robust reductions in CSF D2S6 (55%, 85%)



Meaningful reductions in CSF D2S6, approaching normal levels

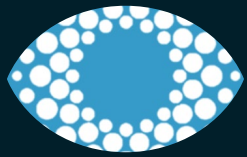
# CAMPSIITE: Summary

RGX-121 was well tolerated in 10 patients at pivotal dose

Pivotal trial met CSF D2S6 primary endpoint with statistical significance

Neurodevelopmental and daily activity skill acquisition was observed up to 3 years after RGX-121 administration

Held positive pre-BLA meeting; rolling BLA submission using the accelerated approval pathway expected to start in Q3 2024



# Retinal Disease

# **ABBV-RGX-314**

## **Potential to be the first gene therapy for chronic retinal diseases**



# Retinal Disease: An estimated \$17B global market within 5 years<sup>1</sup>



wAMD patient population expected to **increase to 5.7M** in US, EU, JP in the next 5 years<sup>1</sup>



Most wAMD patients are required to receive **anti-VEGF injections every 4-16 weeks** for the duration of their disease



In real world, **high treatment burden leads to undertreatment** and vision loss over time

## RETINAL DISEASE MARKET IN NEXT 5 YEARS<sup>1</sup>



### ANNUAL US RETINA ANTI-VEGF wAMD MARKET<sup>2-4</sup>



**\$4.5B**

Branded Anti-VEGF Market



**800K**

wAMD Patients Receiving Treatment



**4M**

Anti-VEGF Injections



**2.5K US RETINA SPECIALISTS<sup>5</sup>**

### ANNUAL US RETINA SURGICAL LANDSCAPE<sup>6-7</sup>



**90%**

of Retina Specialists Are Surgically Trained



**4K**

Retina Surgical Sites



**400K**

Vitrectomy Surgeries

# Global eye-care alliance with AbbVie to develop and commercialize ABBV-RGX-314 retina franchise



Leadership and expertise in AAV and retinal gene therapy



Strong in-house capabilities of AAV manufacturing



Leading eye care company





Established commercial infrastructure in 170+ countries

## Details of Strategic Partnership



- **\$370 million upfront payment** with up to **\$1.38 billion in additional development, regulatory and commercial milestones**
- AbbVie supports majority of development with **equal share of profits in U.S. and REGENXBIO to receive royalties outside the U.S.**
- **REGENXBIO will lead the manufacturing of ABBV-RGX-314** for clinical development and U.S. commercial supply

# ABBV-RGX-314 clinical studies summary

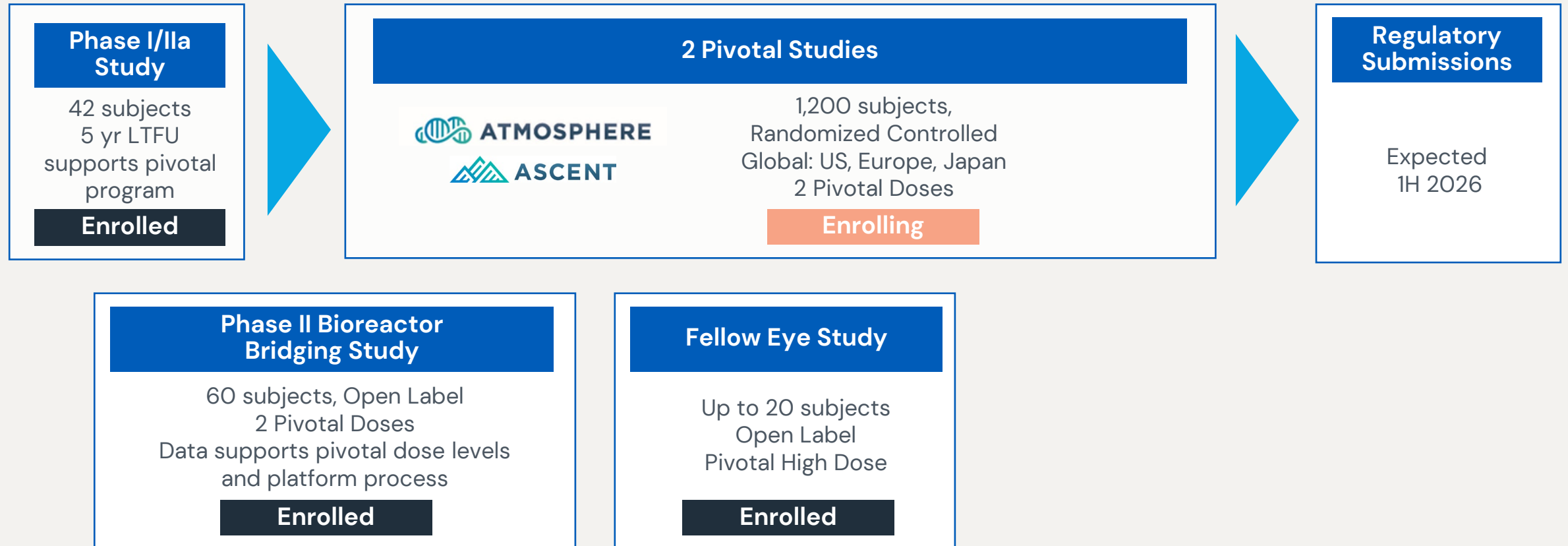
## Suprachoroidal (SCS) wAMD & DR

Clinical Study	Status	Region	Estimated Size	Description	Planned Readout
<b>wAMD</b> <i>Phase II</i> 	Enrolling	US	140	Dose finding	2024
<b>DR &amp; DME</b> <i>Phase II</i> 	Enrolling	US	130	Dose finding	2024

## Subretinal (SR) wAMD

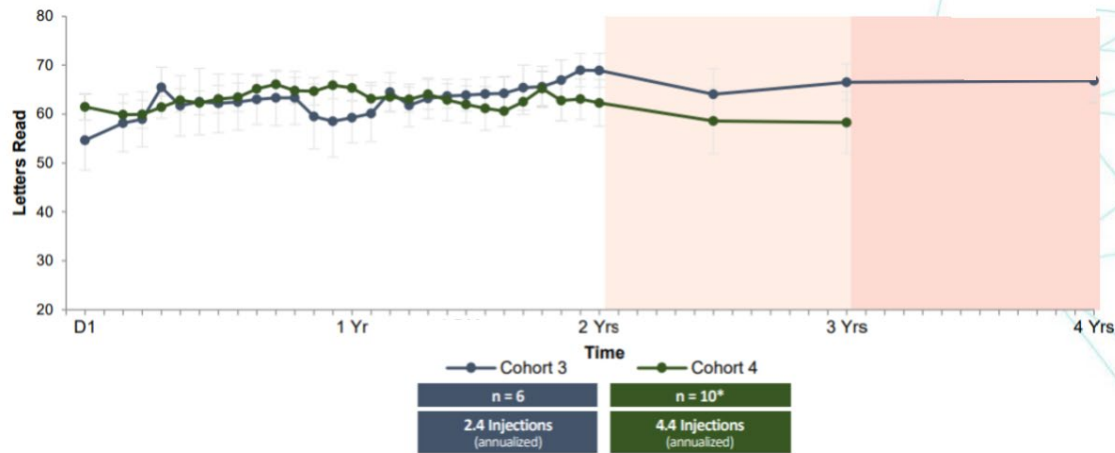
Clinical Study	Status	Region	Estimated Size	Description	Planned Readout
<b>Pivotal</b> 	Enrolling	US	540	Pivotal, 2 dose levels	2025
<b>Pivotal</b> 	Enrolling	Global	660	Pivotal, 2 dose levels	2025
<b>Phase II Bioreactor bridging</b>	Enrolled	US	60	Open label, 2 Pivotal doses	2024
<b>Fellow Eye</b>	Enrolled	US	20	Open label, bilateral safety	2024
<b>Long Term Follow Up</b>	Enrolling	Global	-	Supports Durability	2024
<b>Phase I/IIa</b>	Enrolled	US	42	Dose finding	

# ABBV-RGX-314 SR wAMD: Clinical program overview



# SR wet AMD: Leading ocular gene therapy clinical data

## Phase I/IIa LTFU (BCVA)



A single ABBV-RGX-314 treatment has the potential to become a *new standard-of-care option* by sustaining vision health and reducing treatment burden.

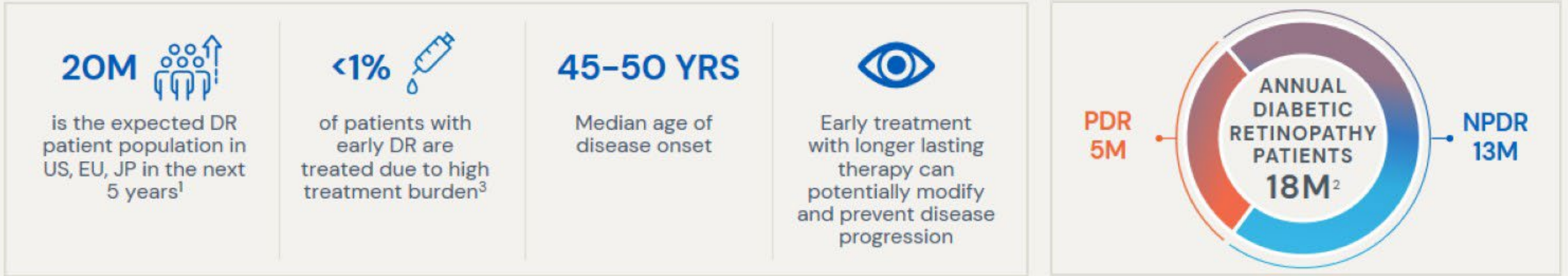
## Overall Safety

- ABBV-RGX-314 has been well tolerated across Phase I/II (up to 4 years)\* and Phase II Bioreactor Bridging<sup>^</sup> studies (at 6 months) at doses similar to pivotal study
  - No drug-related SAEs
  - Common AEs<sup>1</sup> including post-op conjunctival hemorrhage and post-op inflammation<sup>2</sup> resolving within days to weeks, eye irritation, eye pain, retinal degeneration, IOP increase, post-operative visual acuity reduction and retina hemorrhage; retinal pigmentary changes classified as mild to moderate

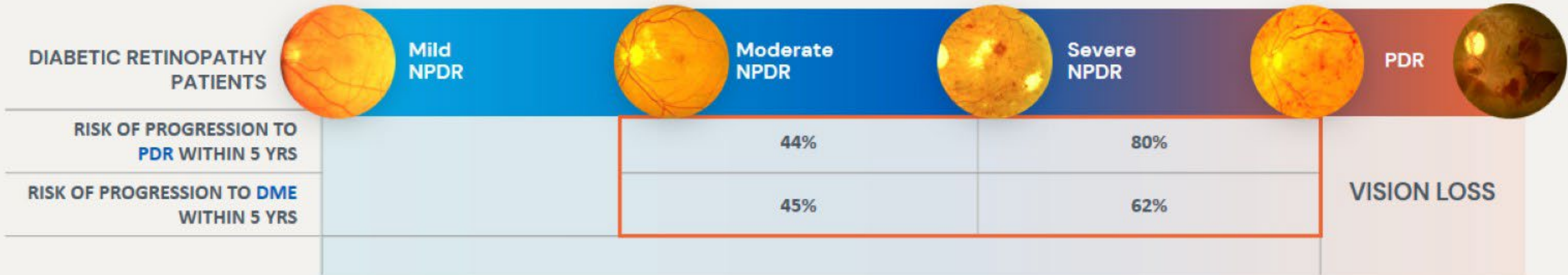
## Efficacy Endpoints

- With a single injection of ABBV-RGX-314 at dose levels similar to the pivotal trial, patients demonstrate a long-term, durable treatment effect up to 4 years
  - Stable to improved visual acuity
  - Meaningful reductions in anti-VEGF injection burden

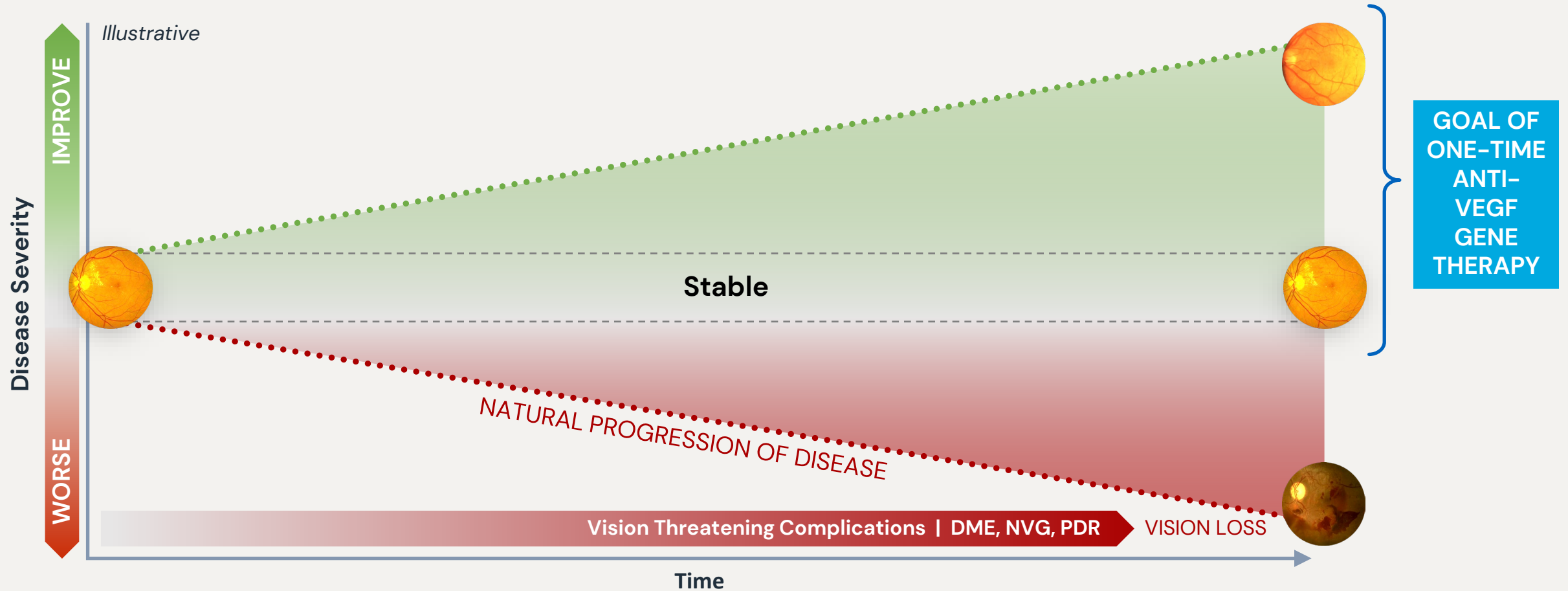
# Diabetic retinopathy is a global public health problem



## ► INCREASING RISK OF DEVELOPING VISION-THREATENING COMPLICATIONS<sup>4,5</sup> ►



# One time, in-office injection of gene therapy could potentially provide long-lasting improvement in DR severity and reduce risk of vision-threatening complications



# ABBV-RGX-314 SC DR & DME: Phase II ALTITUDE<sup>®</sup> trial

## Study Overview

- ~130 subjects
- Key Outcome measures:
  - Change in DRSS (Diabetic Retinopathy Severity Scale)
  - Safety and tolerability of ABBV-RGX-314
  - Development of DR-related ocular complications

## Data Readouts

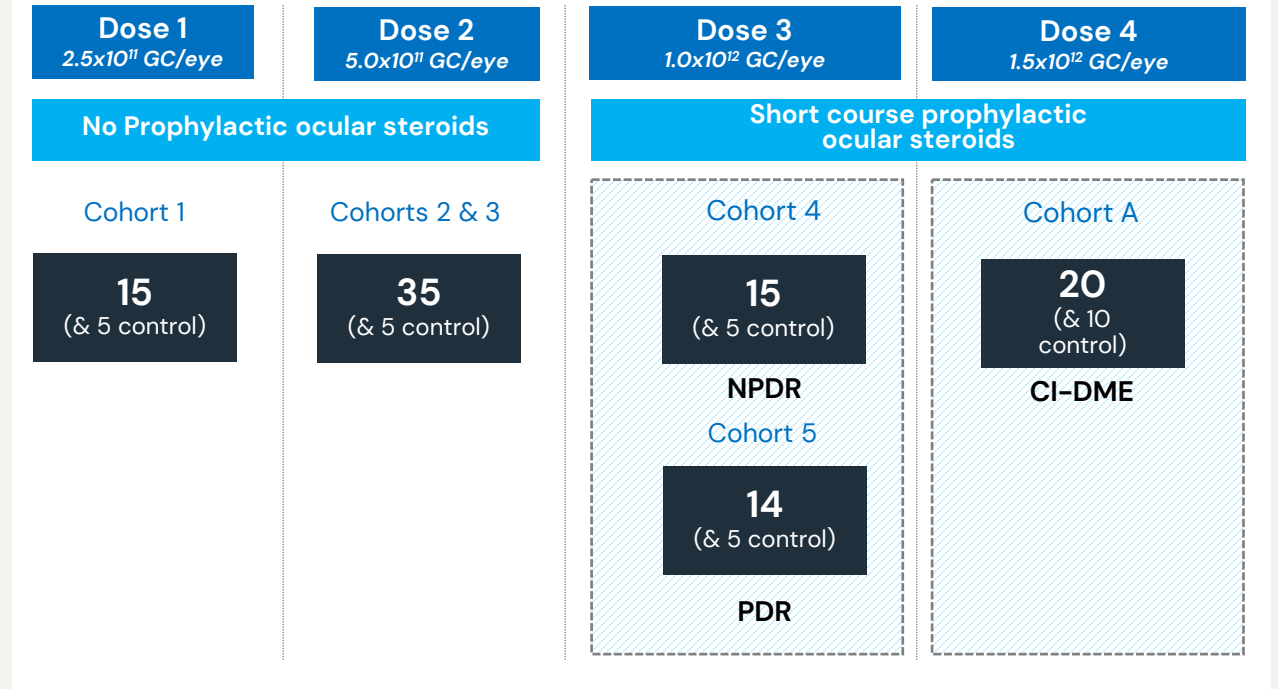
### Latest Readouts

- Cohorts 1-3 (DL1-2) at 1 year
- Cohort 4-5 (DL3) at 11 -24 weeks safety, with prophylactic topical steroids

### Pivotal Trial Initiation

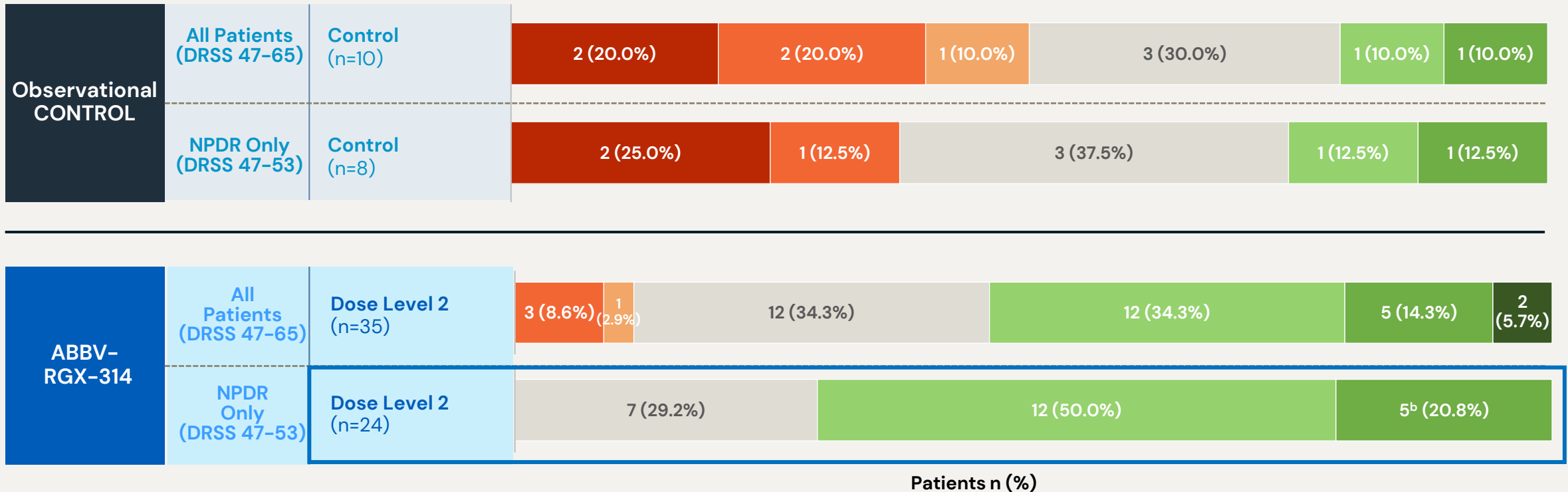
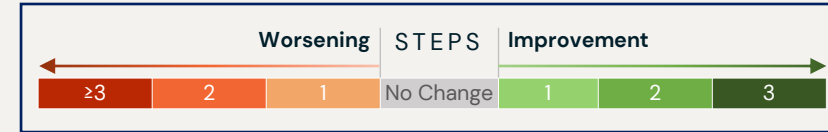
- Design and evaluation of two pivotal trials is ongoing; initiation of pivotal trial expected 1H 2025

## Study Design



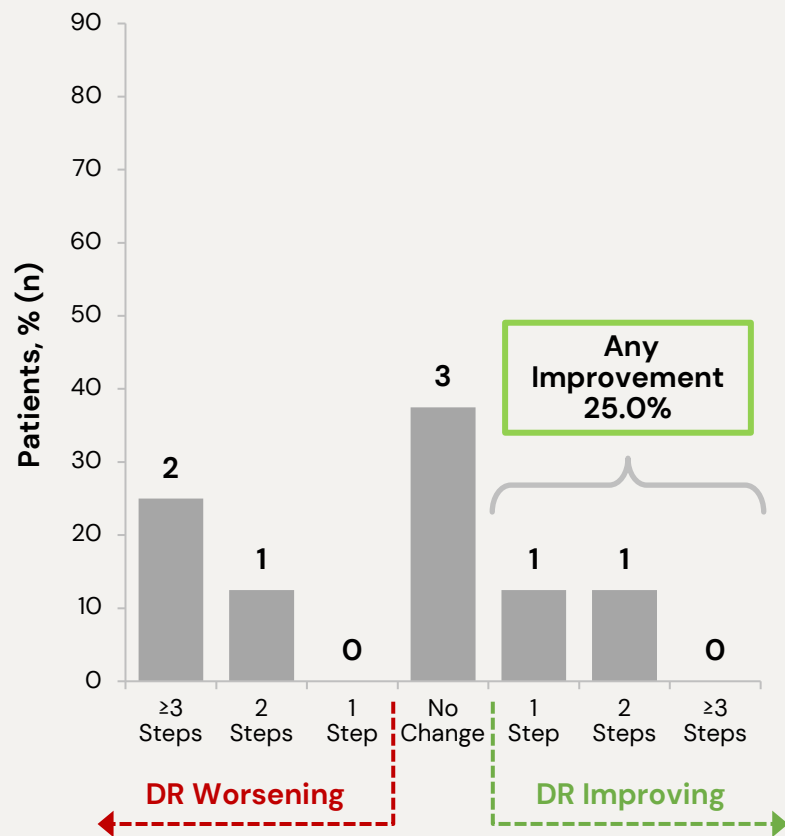


# ALTITUDE: Summary of DRSS change compared to control at 1 year at Dose Level 2

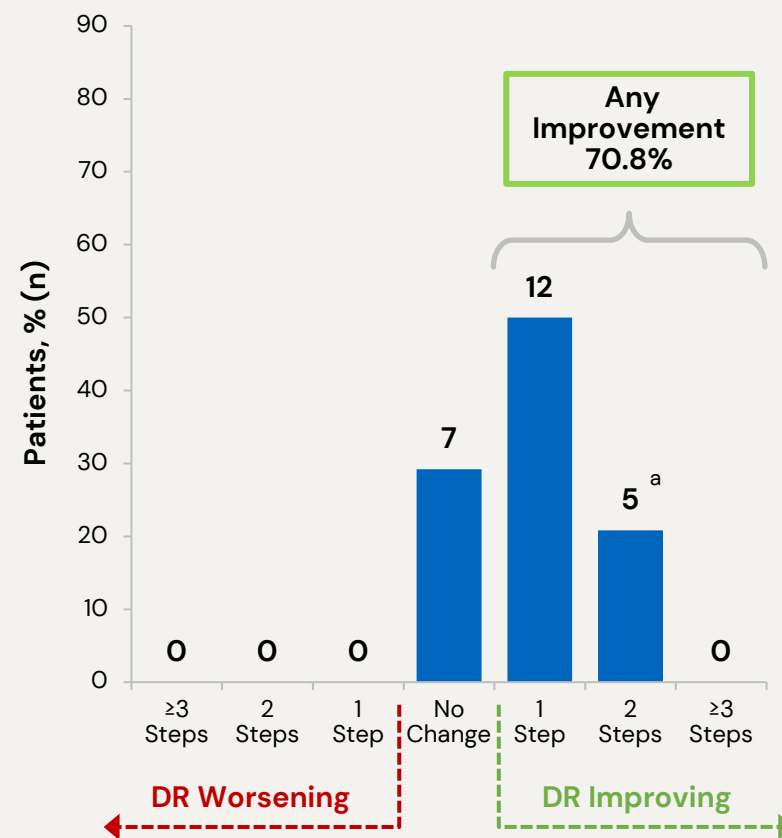


# ALTITUDE: Change in DRSS at 1 year at Dose Level 2– NPDR only (DRSS 47–53)

Control (n=8): 1 Year

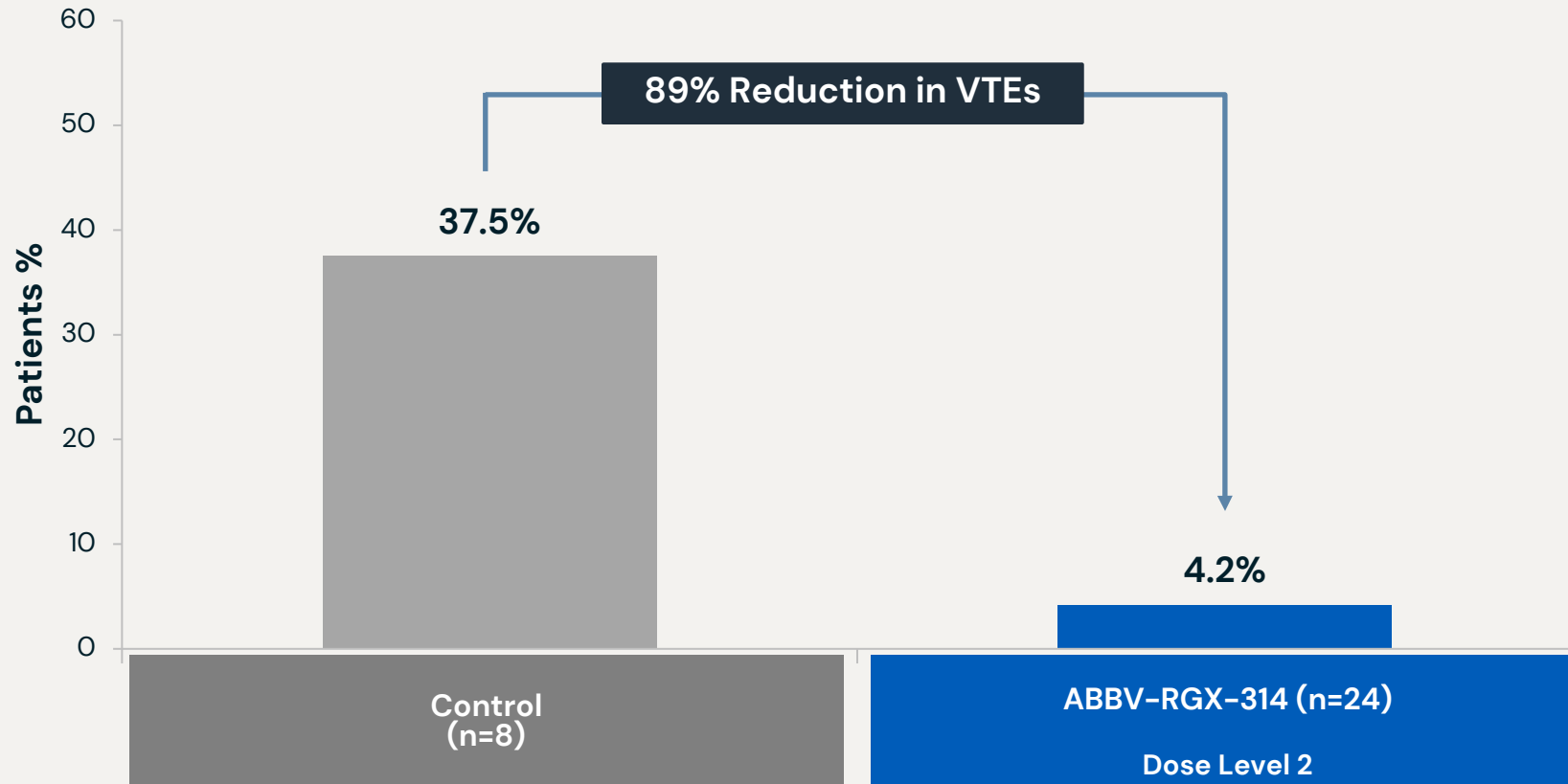


ABBV-RGX-314 (n=24): 1 Year  
Dose Level 2



# ALTITUDE: Vision-threatening events (VTEs) through year 1 at Dose Level 2– NPDR only (DRSS 47–53)

ABBV-RGX-314 treatment reduced VTEs compared to control group through 1 year



# ALTITUDE: Interim results summary

## Safety

- Suprachoroidal ABBV-RGX-314 continues to be **well-tolerated in dose levels 1 – 3**

## Efficacy Endpoints

- **One-time in-office injection** of investigational ABBV-RGX-314 demonstrated clinically meaningful improvements in disease severity and reduction of VTEs in NPDR patients
- **In Dose Level 2 patients with baseline NPDR (n=24):**
  - **100%** demonstrated stable to improved disease severity
    - 70.8% achieved any disease improvement vs. 25.0 % in Control
    - 0% worsened  $\geq 2$  steps vs. 37.5 % in Control
  - 4.2% developed VTEs vs. 37.5% in Control

**Dose Level 2 prevented disease progression in all NPDR patients and reduced vision-threatening events by 89%.**

# ABBV-RGX-314 SCS wAMD: Phase II AAVIATE® trial



## Study Overview

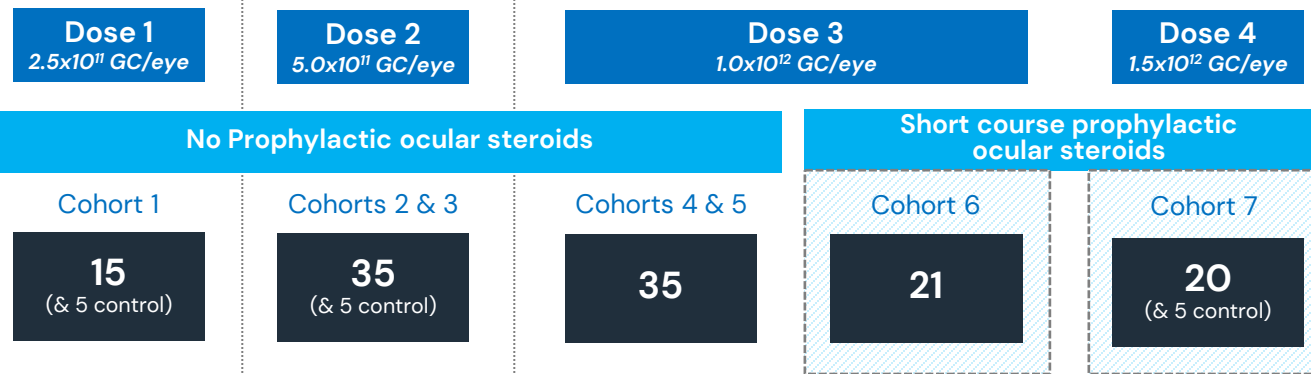
- ~140 subjects
- Key Outcome measures:
  - Visual acuity
  - Safety and tolerability
  - Retinal anatomy
  - Additional anti-VEGF injections post ABBV-RGX-314

## Data Readouts

### Latest Readouts

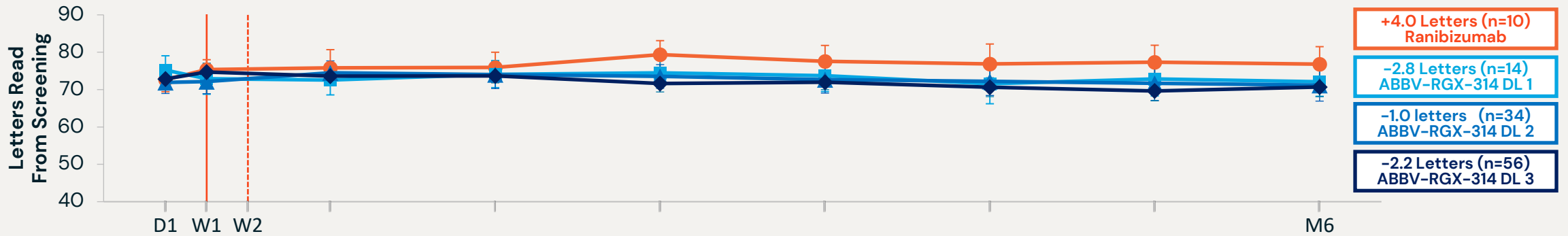
- Cohort 1-4 (DL1-3) at 6 months
- Cohort 1-6 (DL1-3) at 6 months

## Study Design

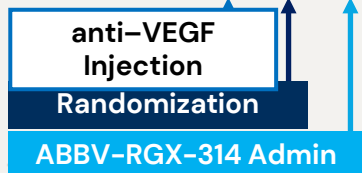
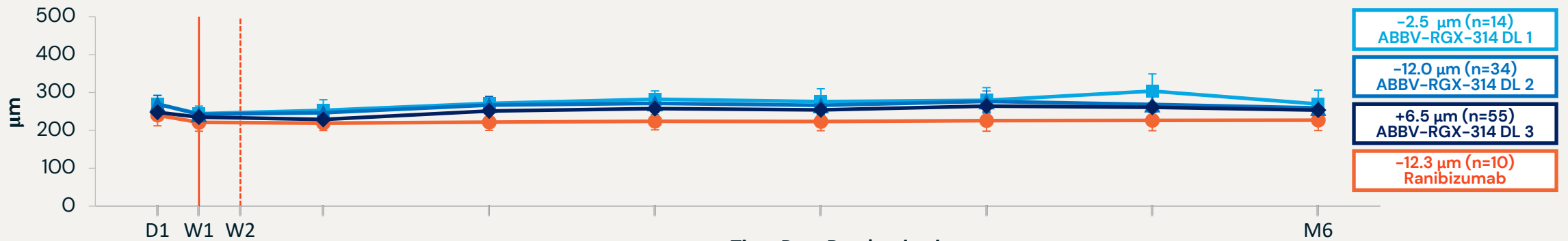


# AAVIATE: Dose Levels 1–3: Mean BCVA and CRT from Day 1 Through Month 6

## Best Corrected Visual Acuity (BCVA) 95% CI



## Central Retinal Thickness (CRT) 95% CI

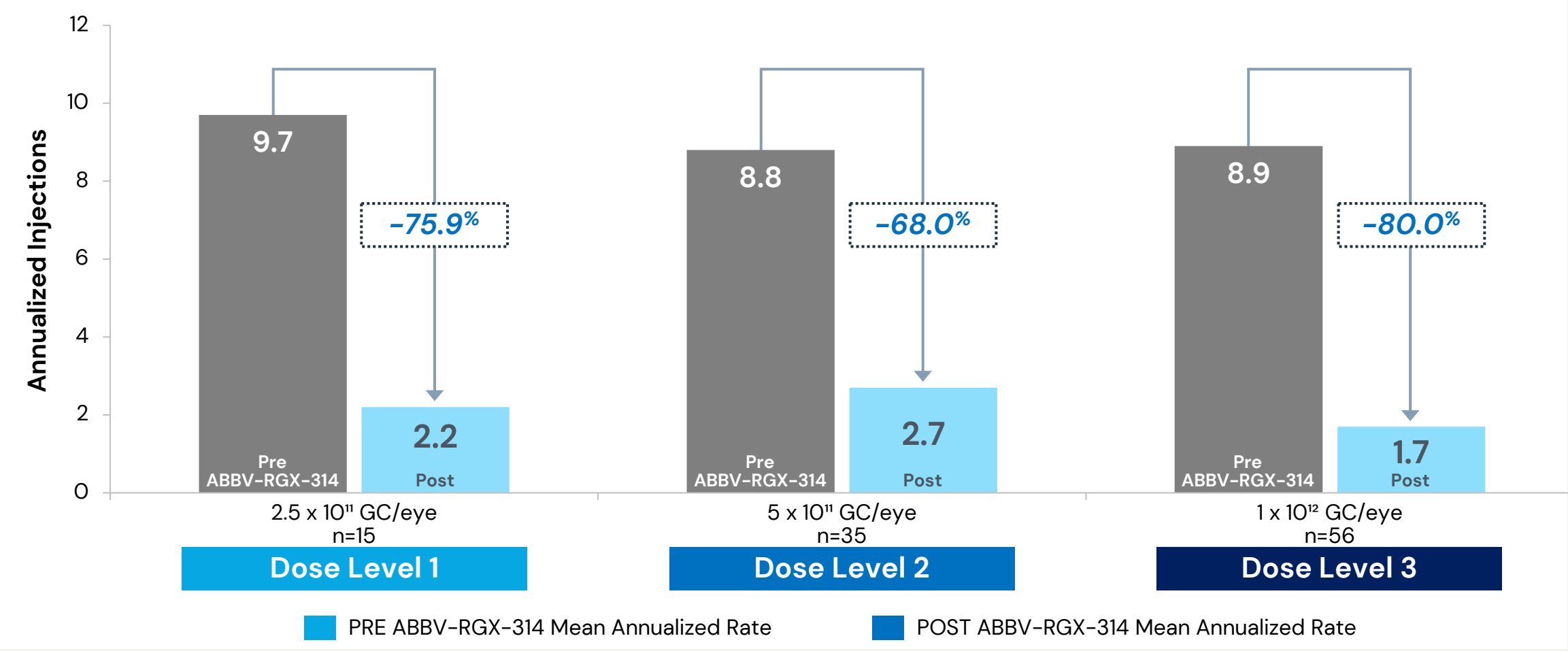


Mean Injections Post-Randomization



# AAVIATE: Mean change in annualized injection rate pre- and post- ABBV-RGX-314 by dose level

Annualized Injection Rate based on Month 6 Data



# AAVIATE: Interim results summary

## ABBV-RGX-314 Dose Levels 1-3 (n=106): 6 Month Results

- Suprachoroidal ABBV-RGX-314 has been well-tolerated
- Zero cases of IOI in subset of Dose Level 3 with short-course prophylactic topical steroids
- ABBV-RGX-314 continues to demonstrate stable vision and retinal thickness, with a meaningful reduction in treatment burden with the highest reduction seen in Dose Level 3:
  - 80% reduction in annualized injection rate
  - 50% injection-free

**Dose Level 3 continues to show encouraging interim results with a well-tolerated profile, including zero cases of IOI with short-course prophylactic topical steroids**





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Thank You