

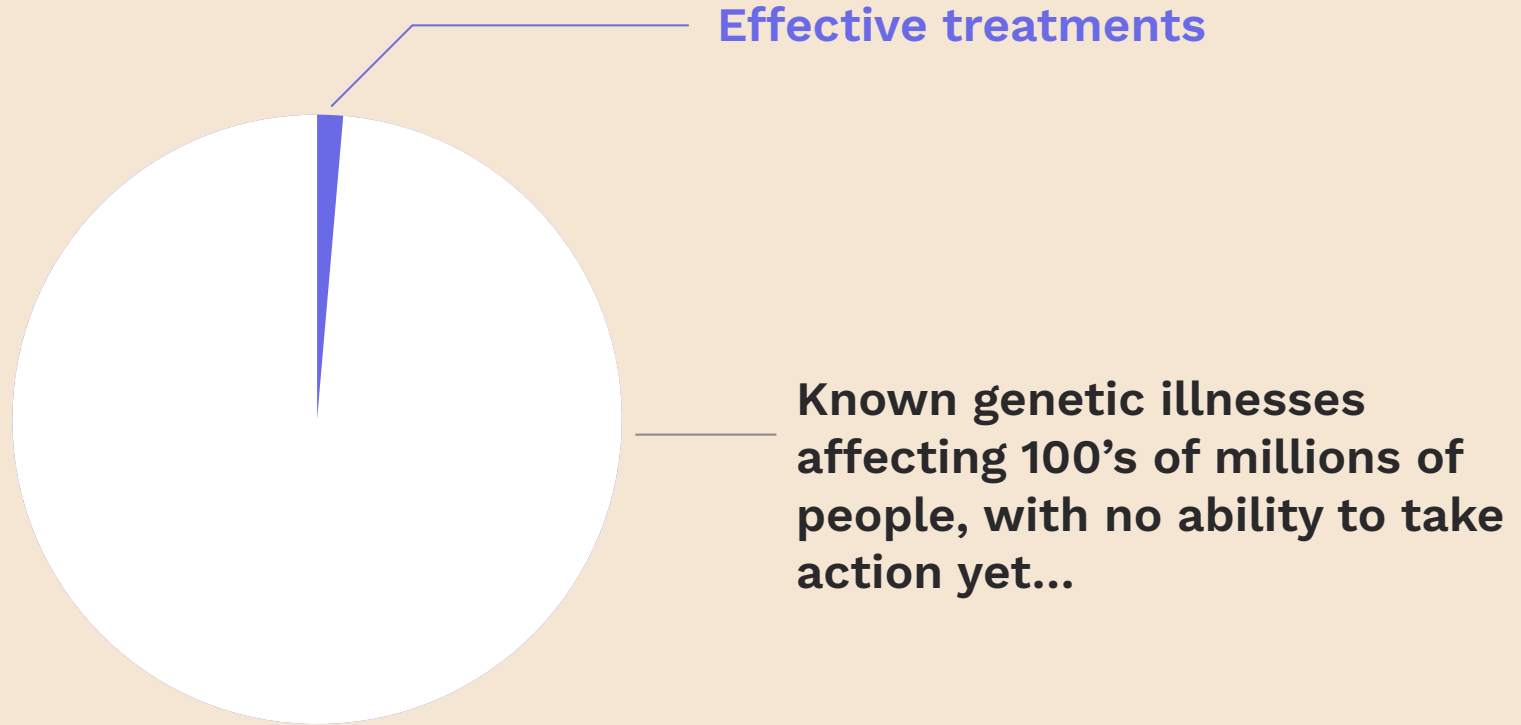


# Dyno Therapeutics: Advancing AI & Delivery Frontiers to Empower Patients with Genetic Agency

Eric Kelsic, CEO & Cofounder

ASGCT 2026 SCIENTIFIC SYMPOSIUM

# The challenges and massive opportunities for genetic medicine



No available treatments

Some available treatments

Many good treatments



Unmet patient need

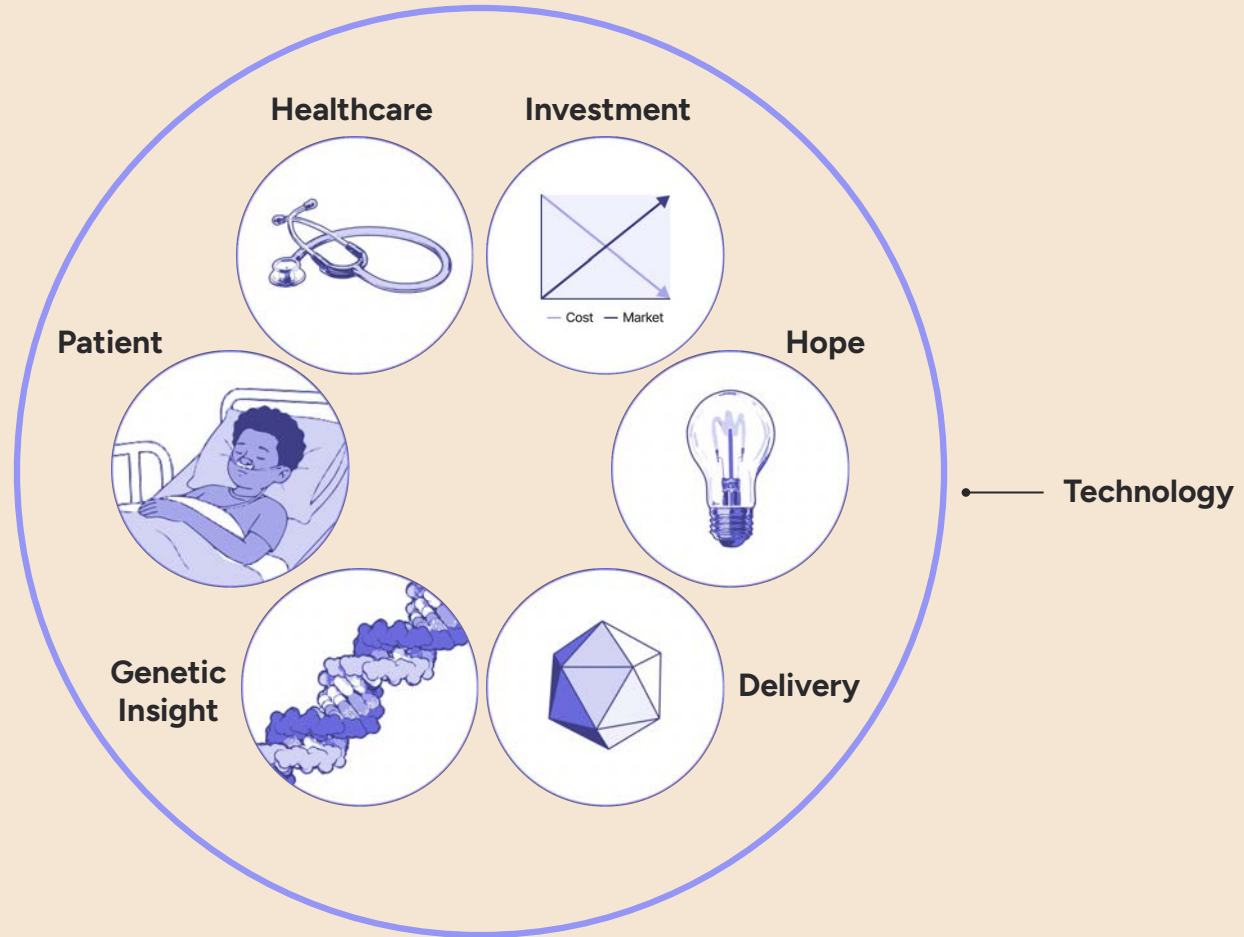
Genetic agency

*“An individual’s ability to take **action** at the **genetic level** to live a **healthier life**”*

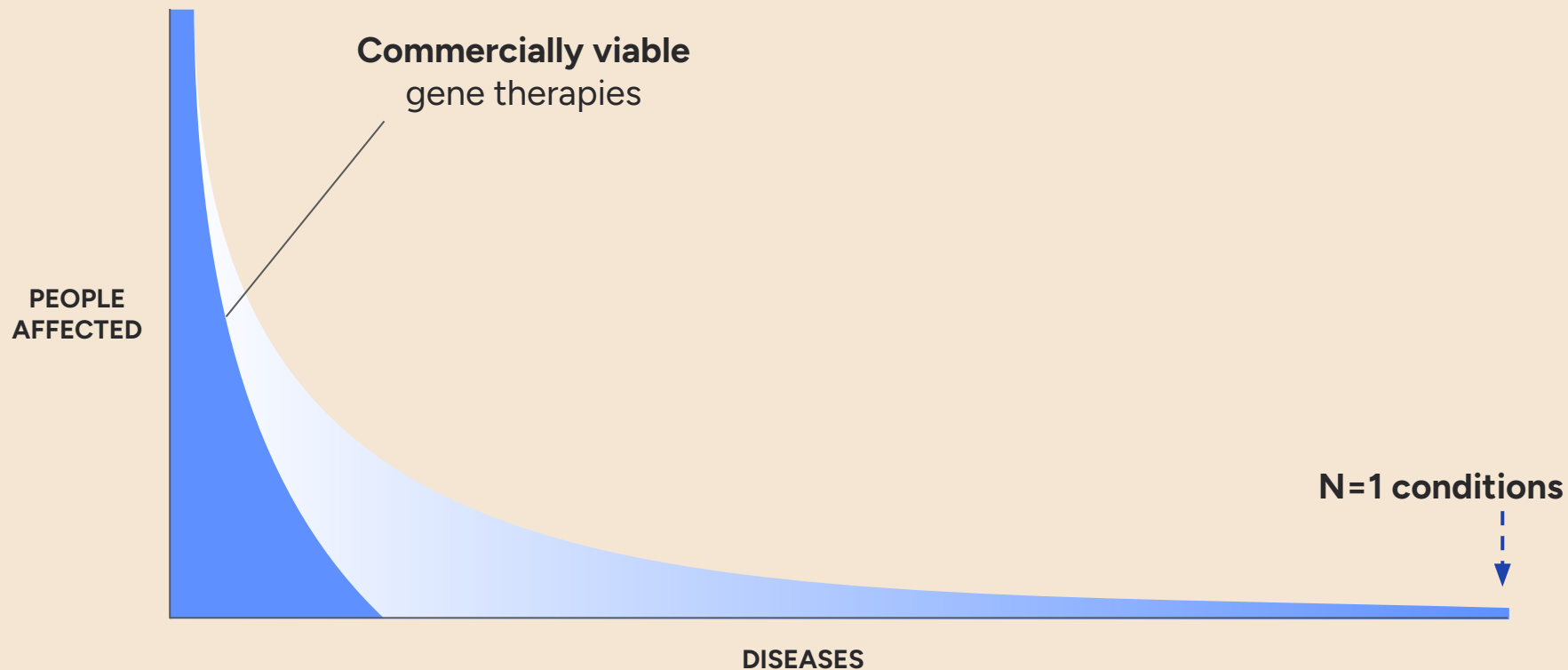
At Dyno, we are  
100% focused on building  
genetic technologies to  
empower patients with  
genetic agency



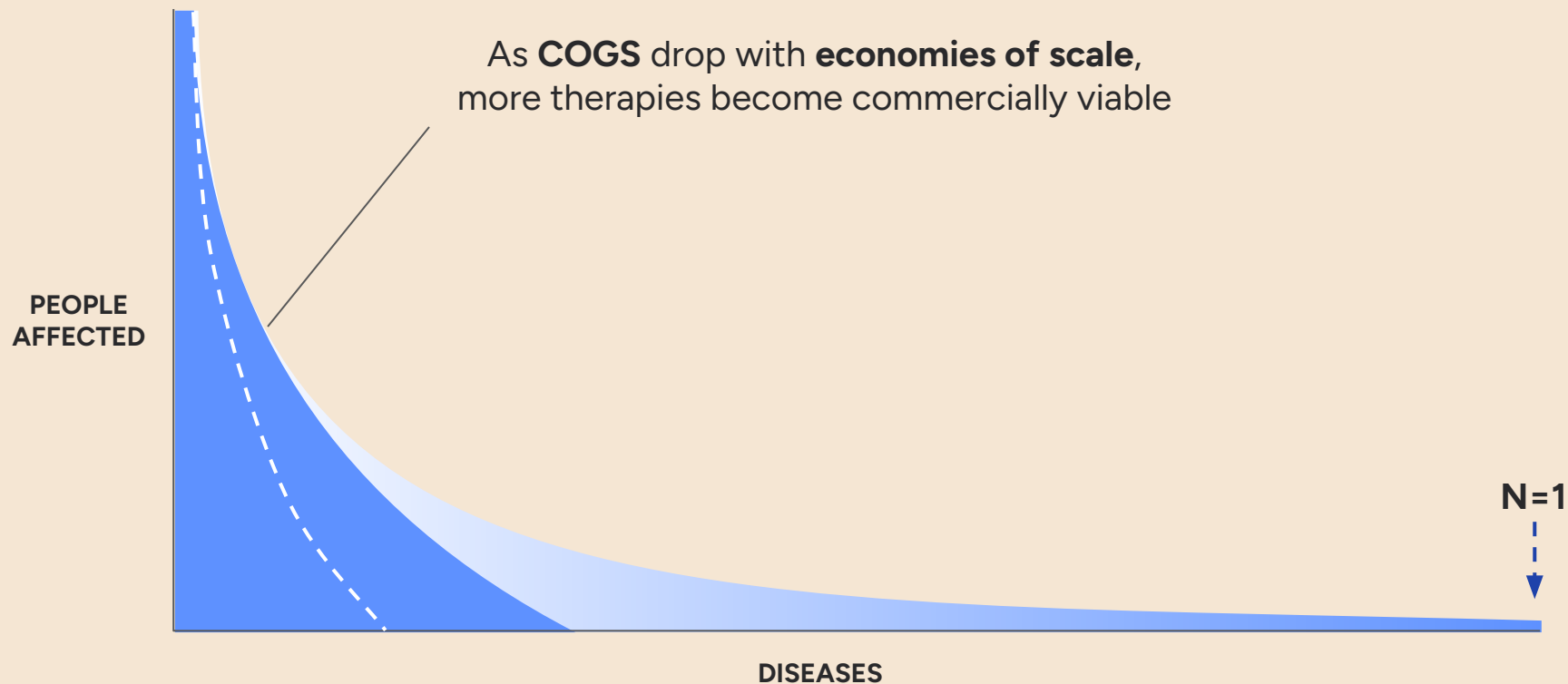
# Achieving Genetic Agency



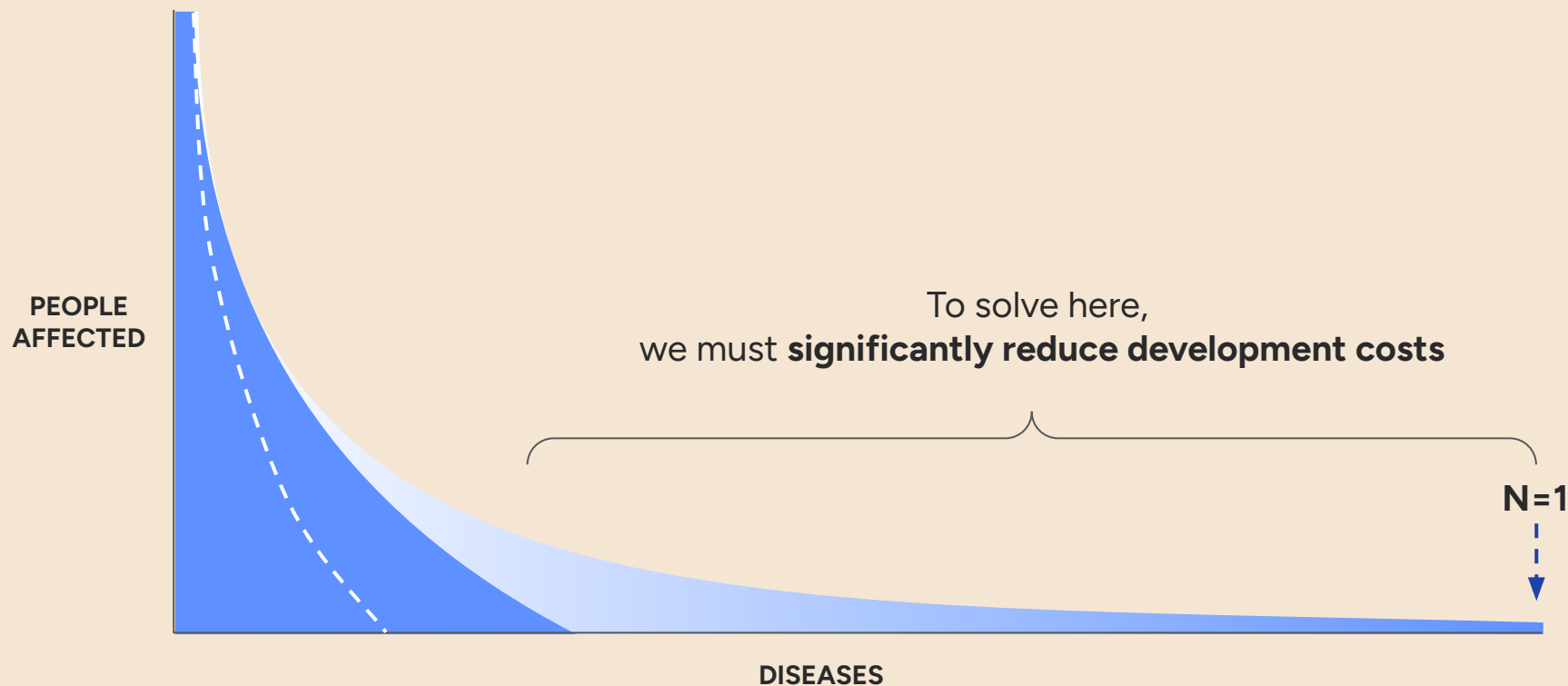
# Solving for the “long tail” of rare and ultra-rare diseases



# Solving for the “long tail” of rare and ultra-rare diseases



# Solving for the “long tail” of rare and ultra-rare diseases



# DELIVERY

opens the path to  
genetic agency

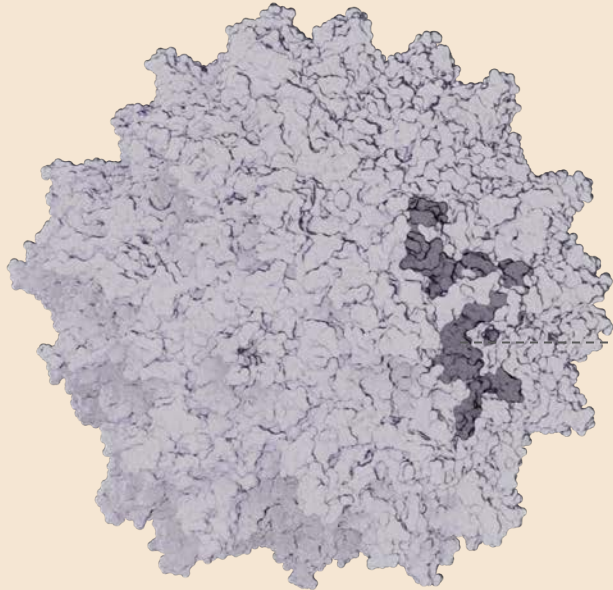


## *Dyno:*

*(noun) in climbing, a powerful jump across a rock face to reach a hold*

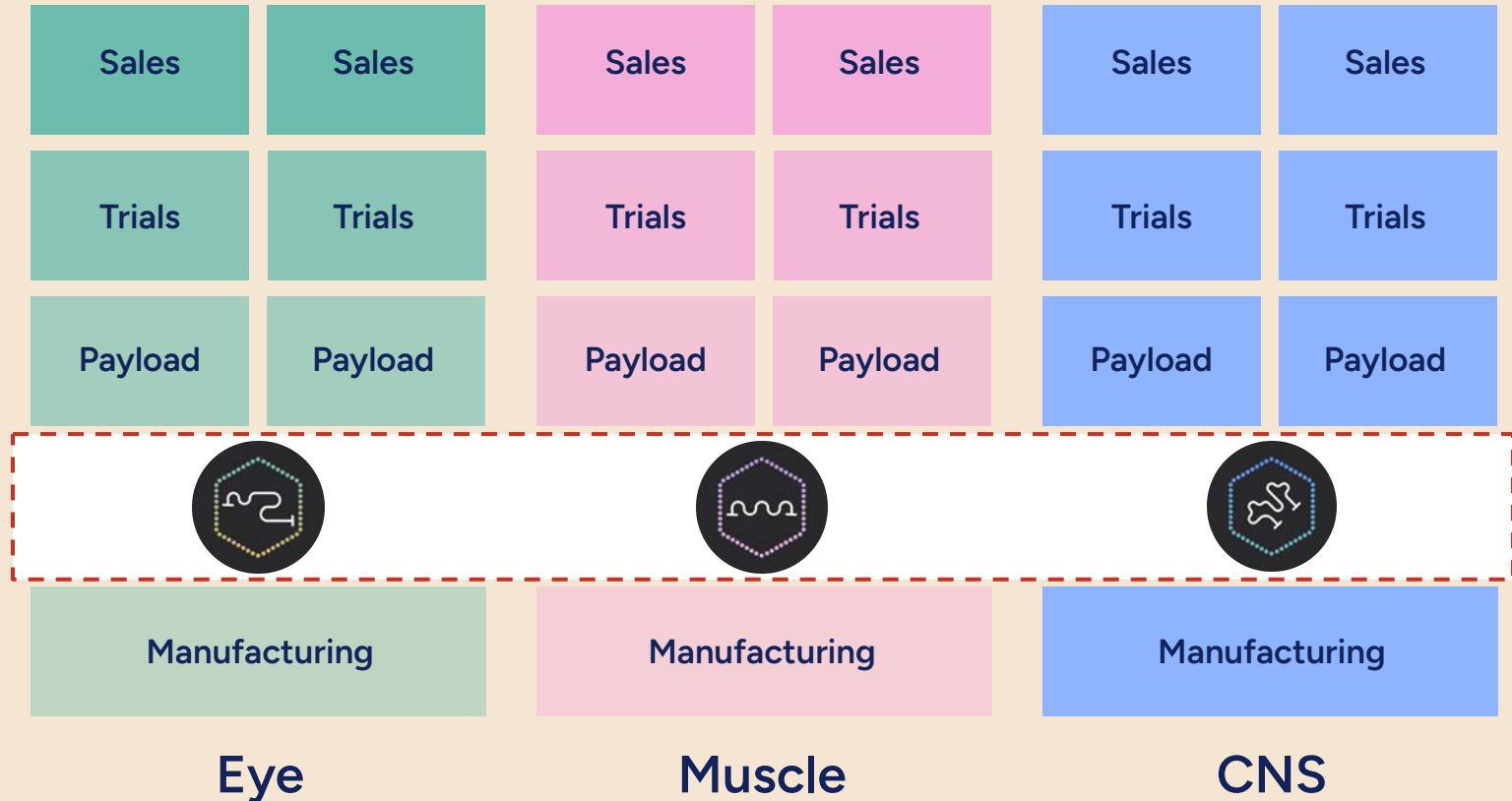


# AAV capsid: a ~736 letter sequence design problem

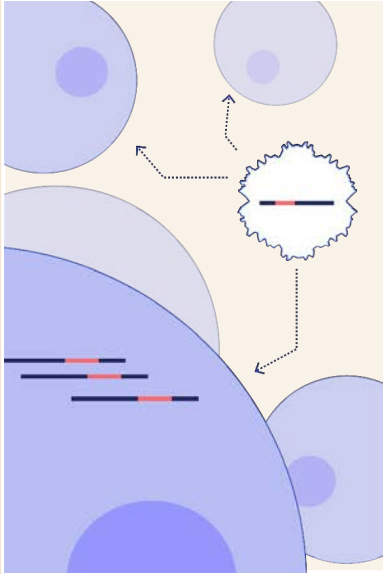


```
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HADAEFQERLKEDTSFGGNLGRAVFQAKKRLLEPLGLVEEAAKTAPG  
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```

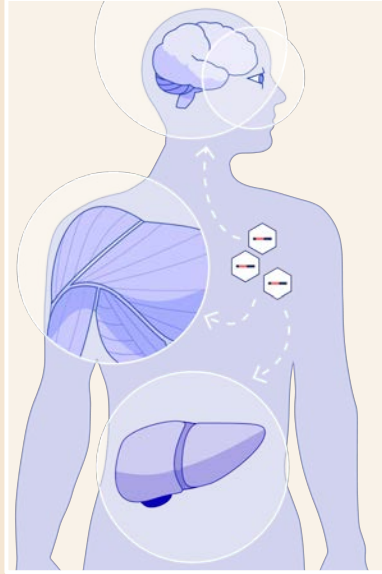
# Dyno's focus has been to solve delivery generally and broadly



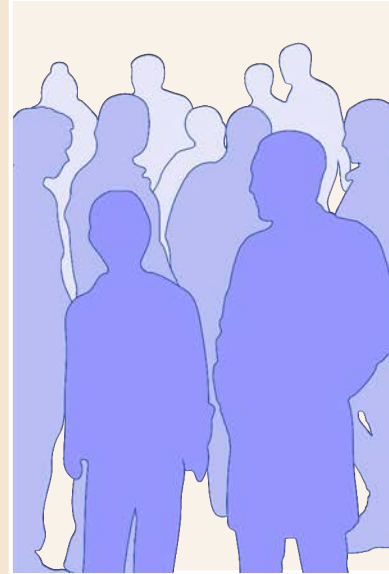
### Every cell



### Every organ



### Every patient



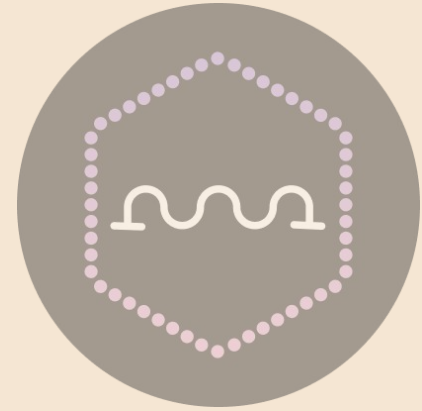
# The capsids you need



**Muscle**



**Neuromuscular**



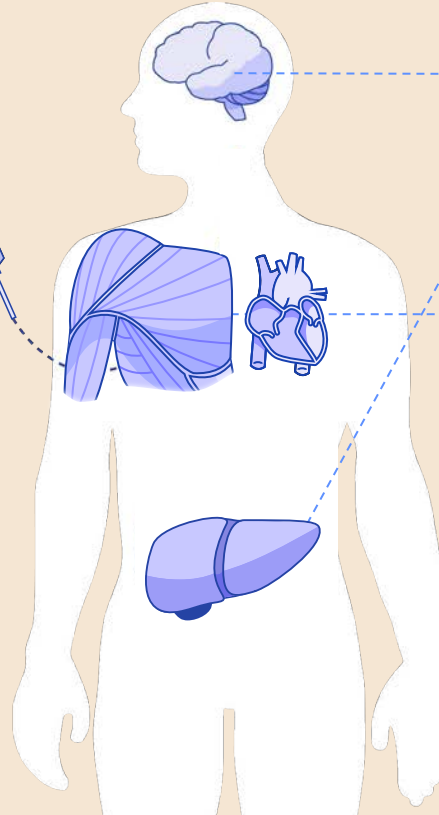
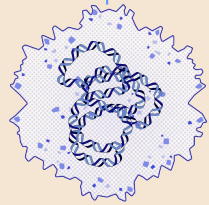
**CNS**

# Challenge: safe and effective IV gene delivery

Intravenous (IV) injection

Easily administered

Low dose

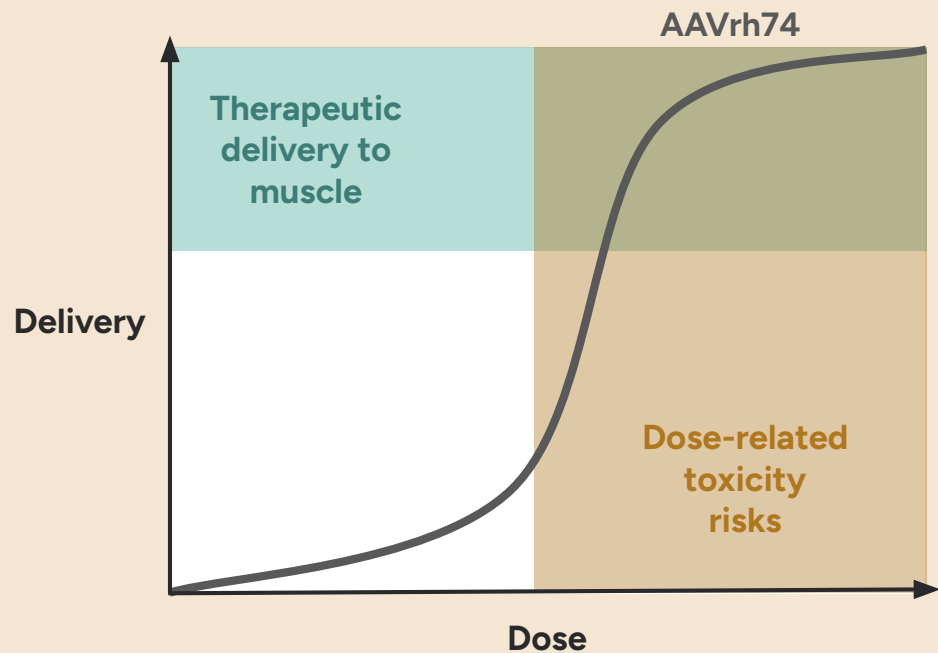


De-targeting peripheral organs

Transducing heart and skeletal muscle

# Gene delivery for muscle remains challenging

ELEVIDYS, the only FDA-approved gene therapy for muscular dystrophies, is an AAVrh74-based gene therapy that requires a high systemic dose of  $1.33 \times 10^{14}$  vg/kg to reach efficacy

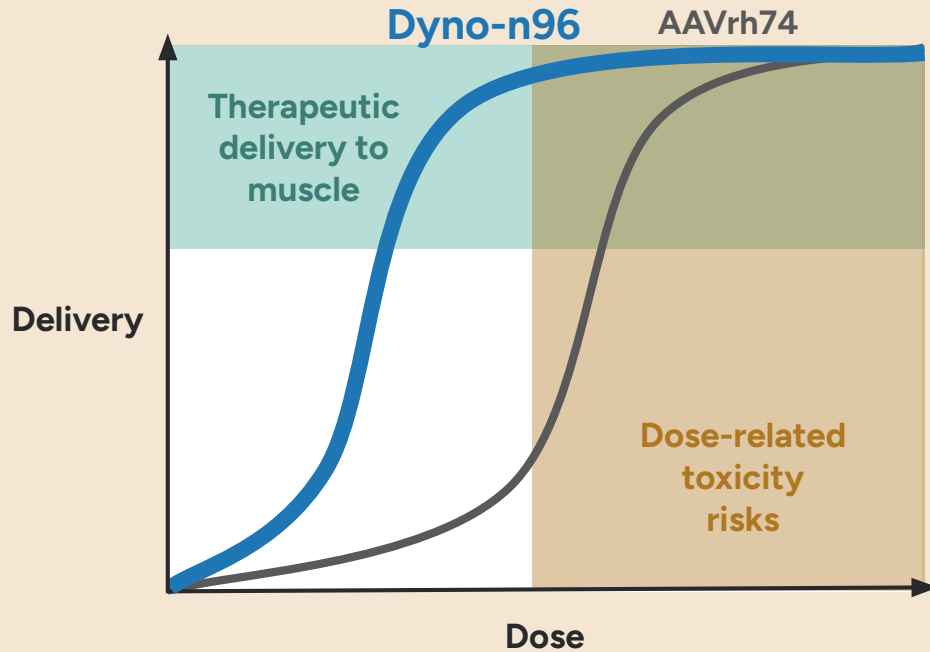


**goal:**

Safer

More effective

# AI-designed **Dyno-n96** achieves therapeutic delivery at a low dose, improving safety and reducing costs



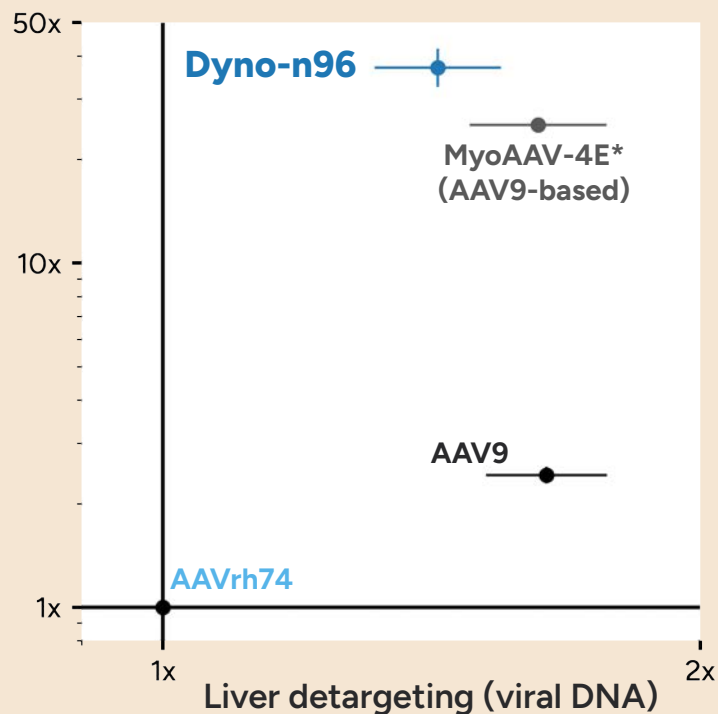
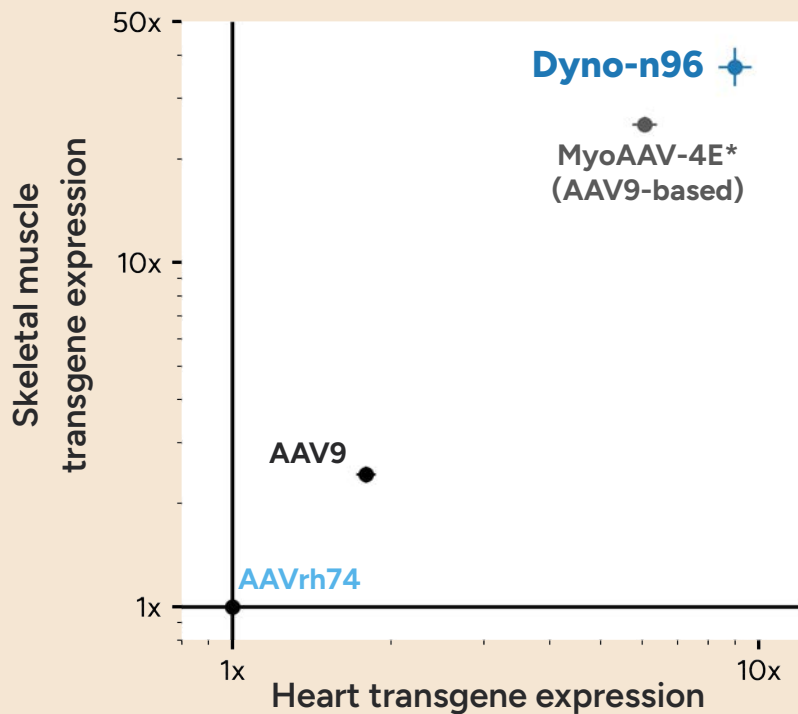
## Dyno-n96

Safer

More effective

# Optimized design of **Dyno-n96** enables targeting skeletal muscle and heart while detargeting liver in NHP vs AAVrh74

Data from small, pooled capsid study in NHPs

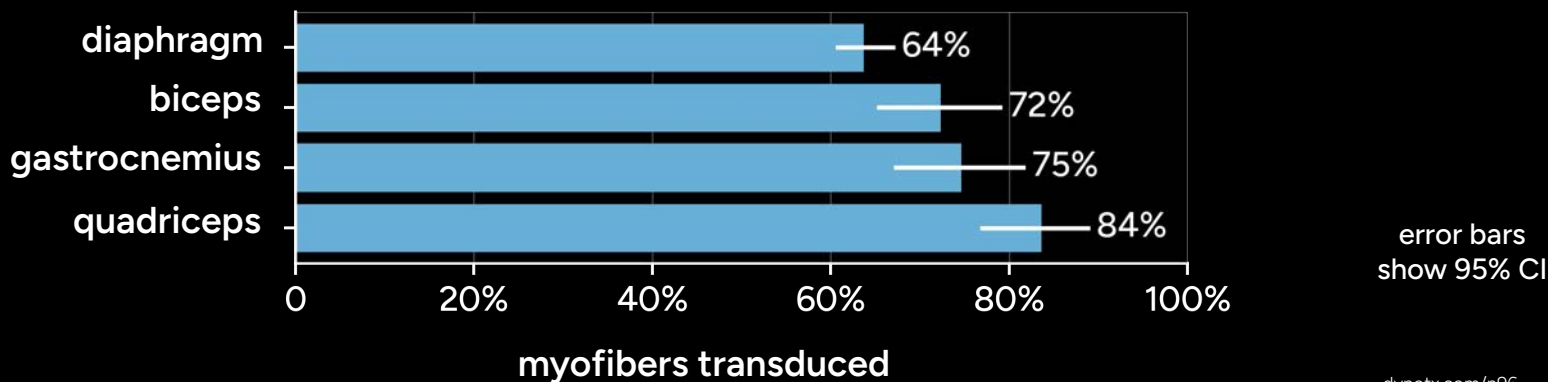
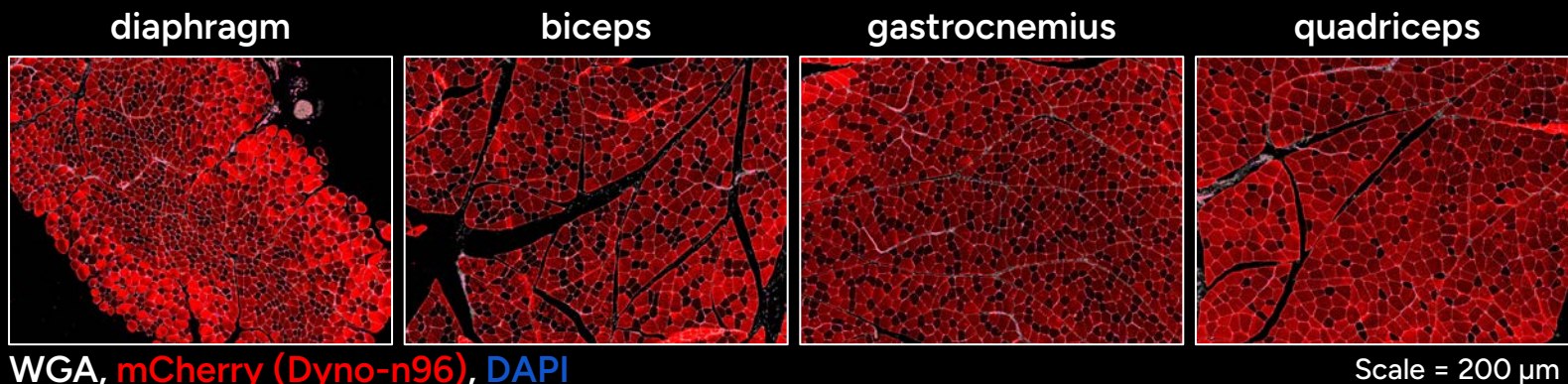


Therapeutic delivery with **Dyno-n96**,  
at a low dose of 5.2e12 vg/kg in NHPs

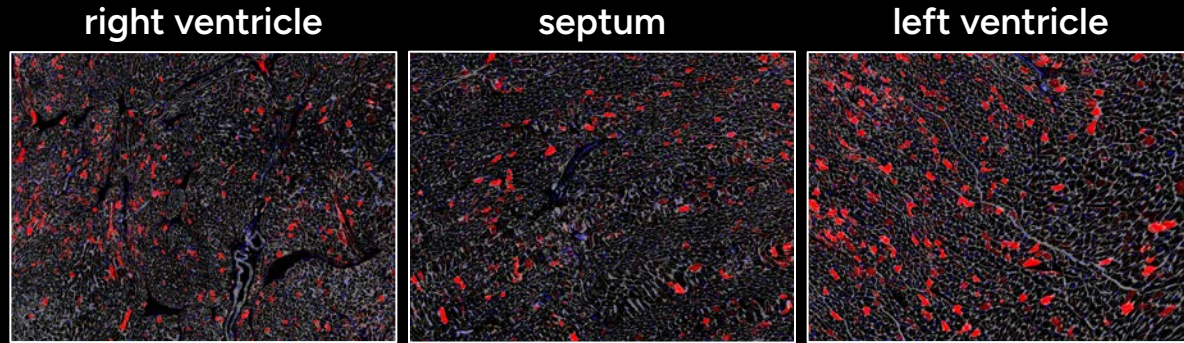
NHP gastrocnemius

200  $\mu$ m

# At 5.2e12 vg/kg, **Dyno-n96** evenly transduces an average of 74% of skeletal myofibers across several tissues

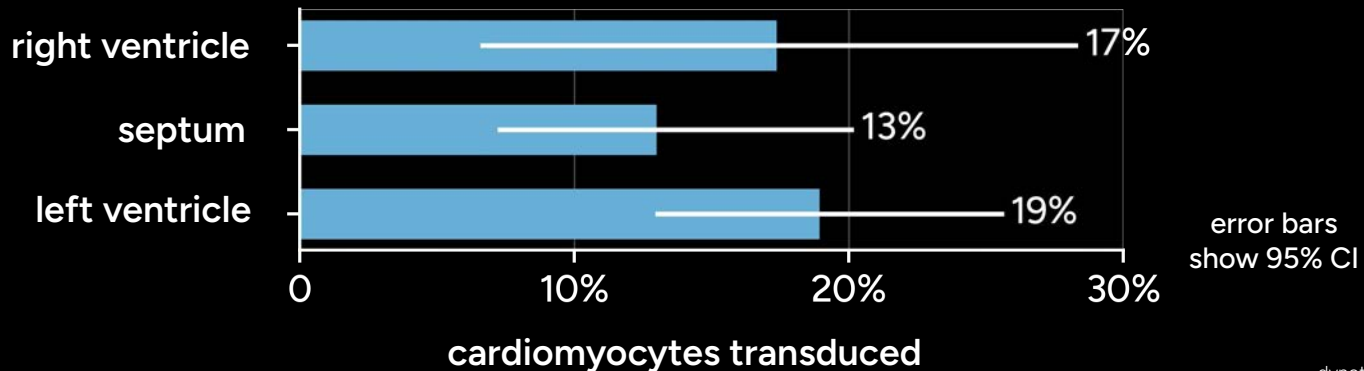


# At $5.2 \times 10^{12}$ vg/kg, **Dyno-n96** delivery to ventricular cardiomyocytes remains efficient, though variable

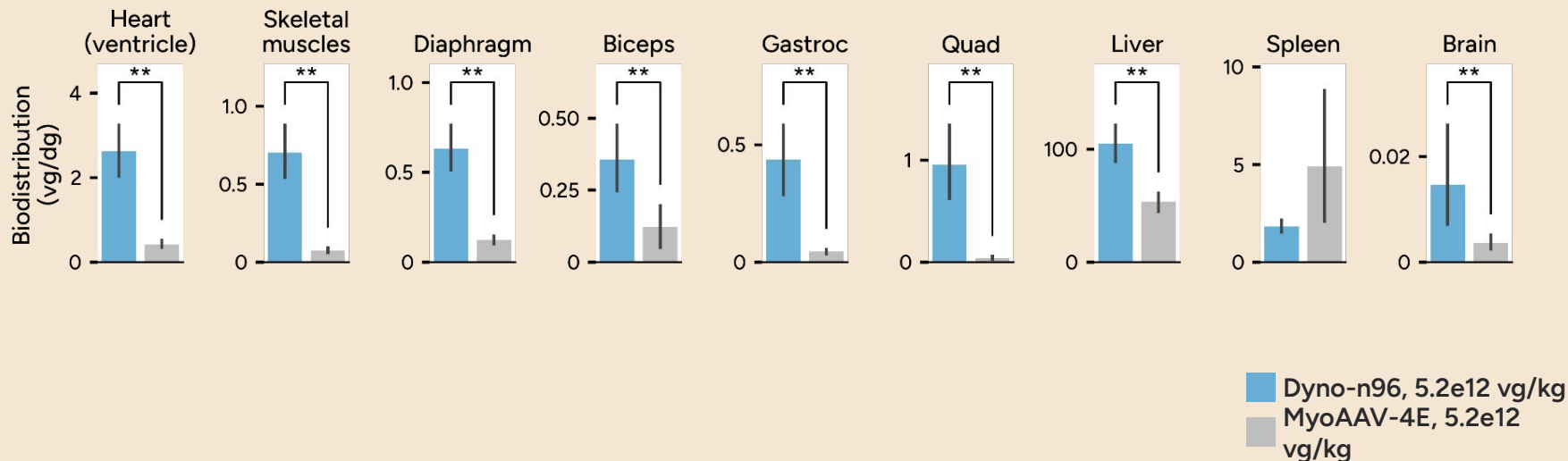


WGA, mCherry (Dyno-n96), DAPI

Scale = 200  $\mu$ m



# Dyno-n96 more potent than MyoAAV-4E in muscle and heart



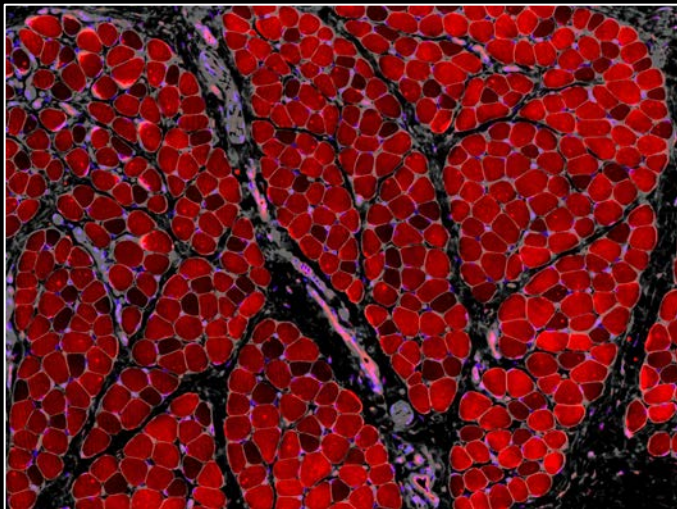
Error bars show 95% CI

\* p < 0.05

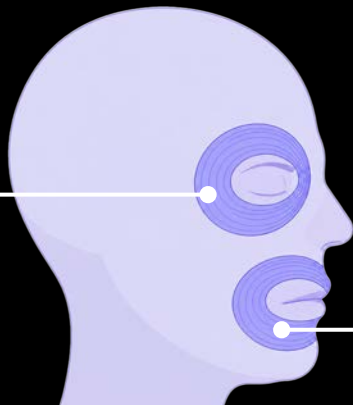
\*\* p < 0.01

# At $5.2 \times 10^{12}$ vg/kg, **Dyno-n96** delivers efficiently to facial muscles in NHP, key targets for disorders such as FSHD

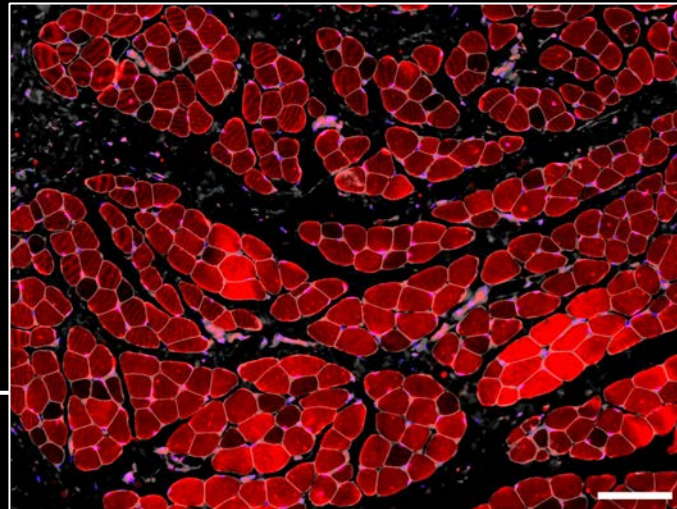
orbicularis oculi



WGA, mCherry (Dyno-n96), DAPI

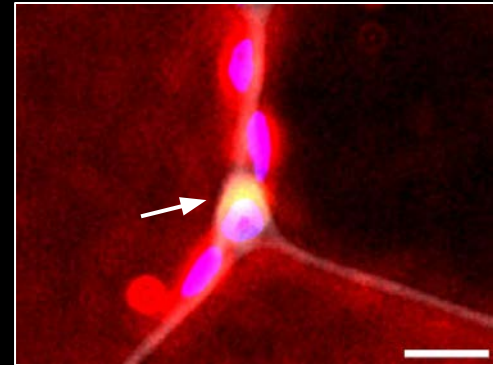
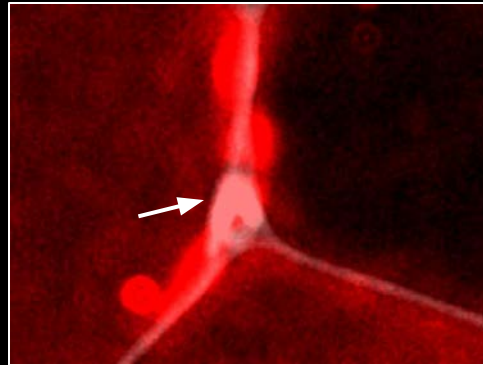
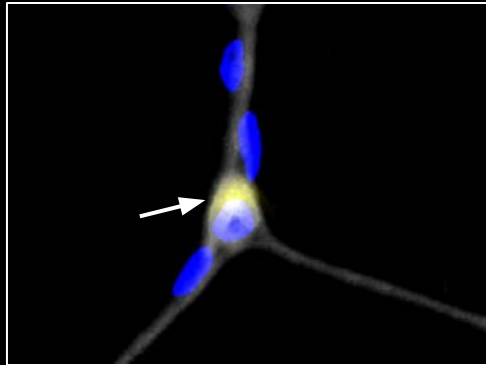


orbicularis oris



Scale = 100  $\mu$ m

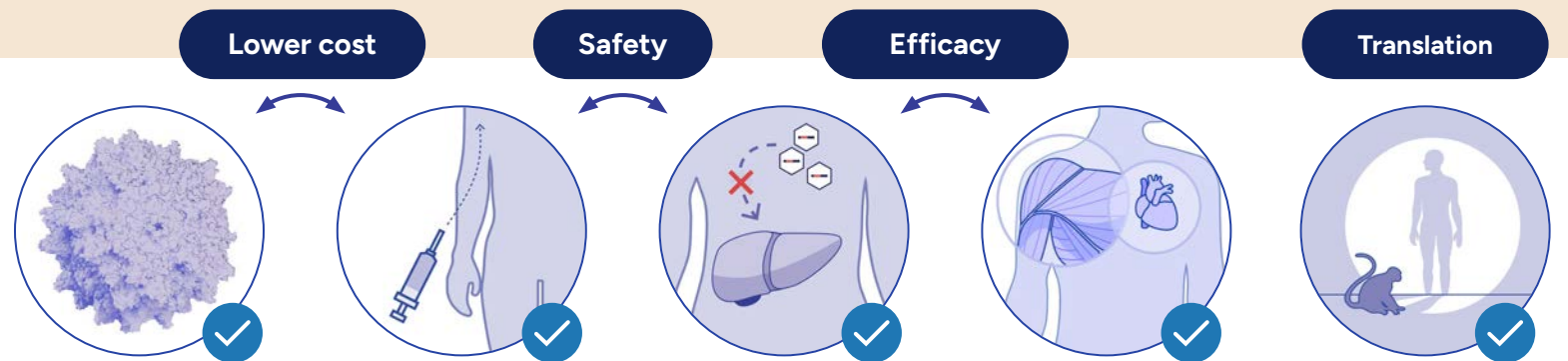
# Dyno-n96 transduces around 50% of satellite cells, positioning it as a promising candidate for gene editing applications



WGA, PAX7, mCherry (Dyno-n96), DAPI  
5.2e12 vg/kg IV

Scale = 10  $\mu$ m

# Dyno-n96 achieves therapeutic delivery to muscle at significantly lower doses and with improved liver detargeting



Efficient production

**similar**  
production vs  
AAV9

Efficient at low doses

**5.2e12vg/kg**

Detargeted from liver

**1.4x < AAVrh74**  
in liver

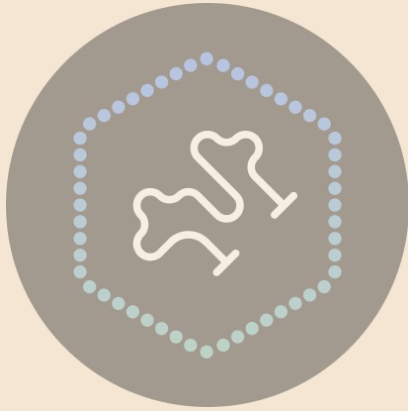
Targeted delivery to multiple organs

**74% avg muscle**  
**16% avg heart**  
at **5.2e12vg/kg**

Predict performance in humans

**Enhanced transduction** in relevant human cell lines

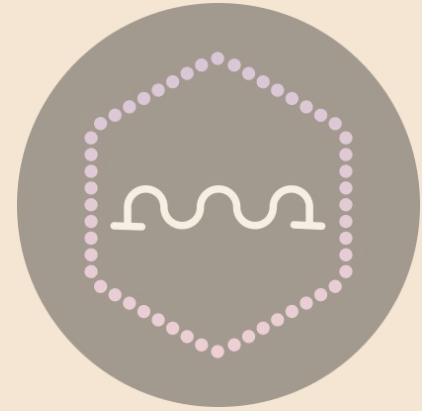
# The capsids you need



Muscle



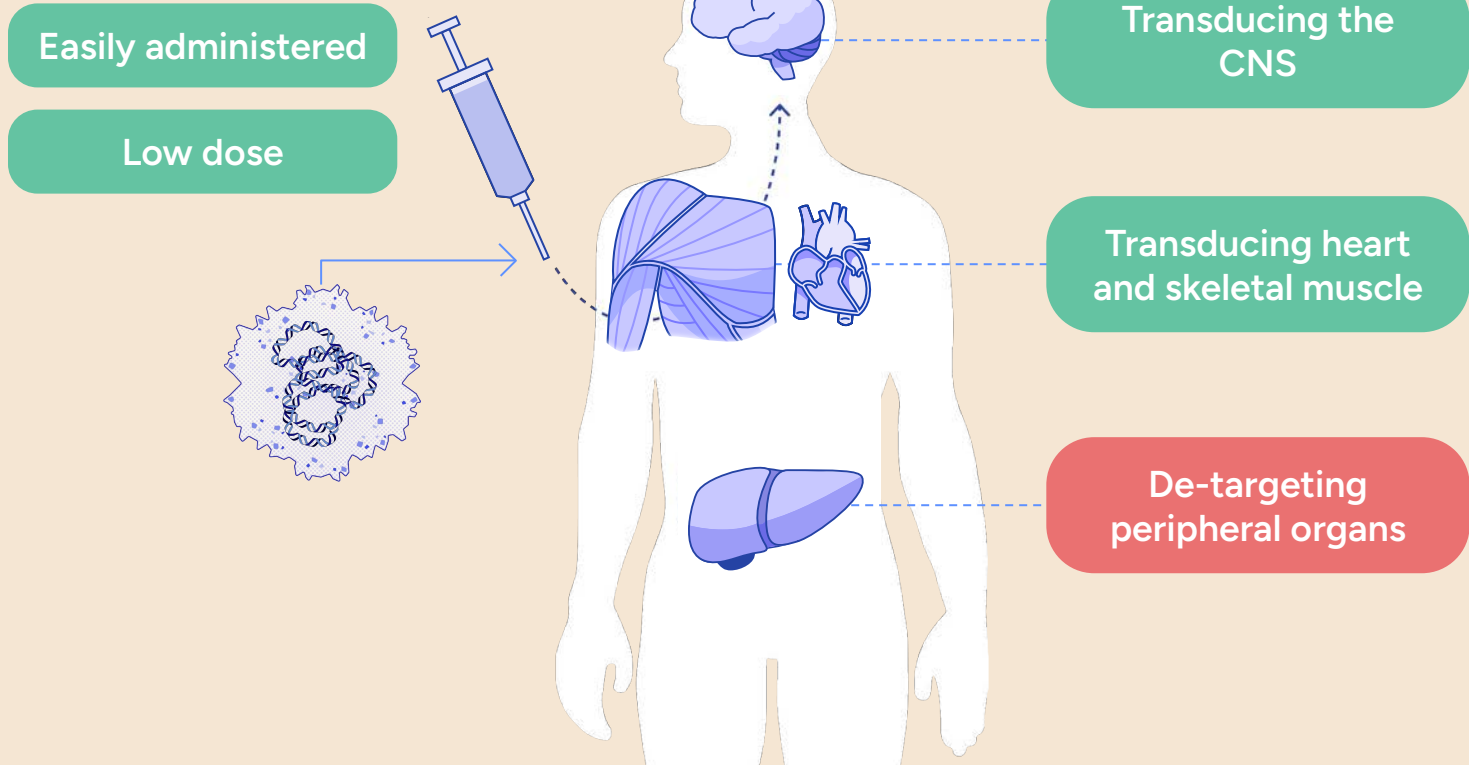
Neuromuscular



CNS

# Challenge: safe and effective IV gene delivery

Intravenous (IV) injection



Exceptional delivery with **Dyno-bn8**,  
at a low dose of 5.2e12 vg/kg in NHPs

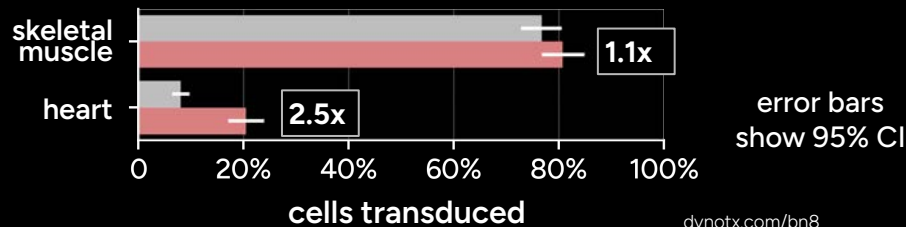
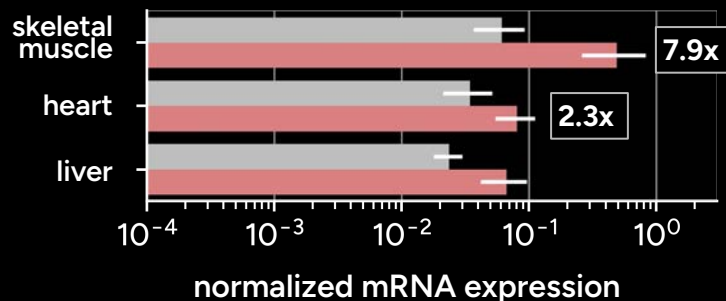
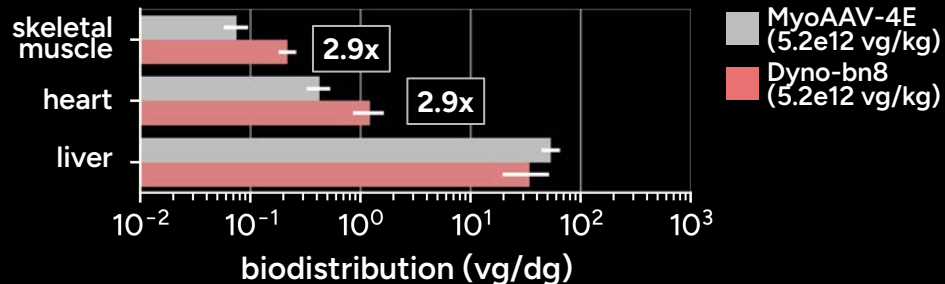
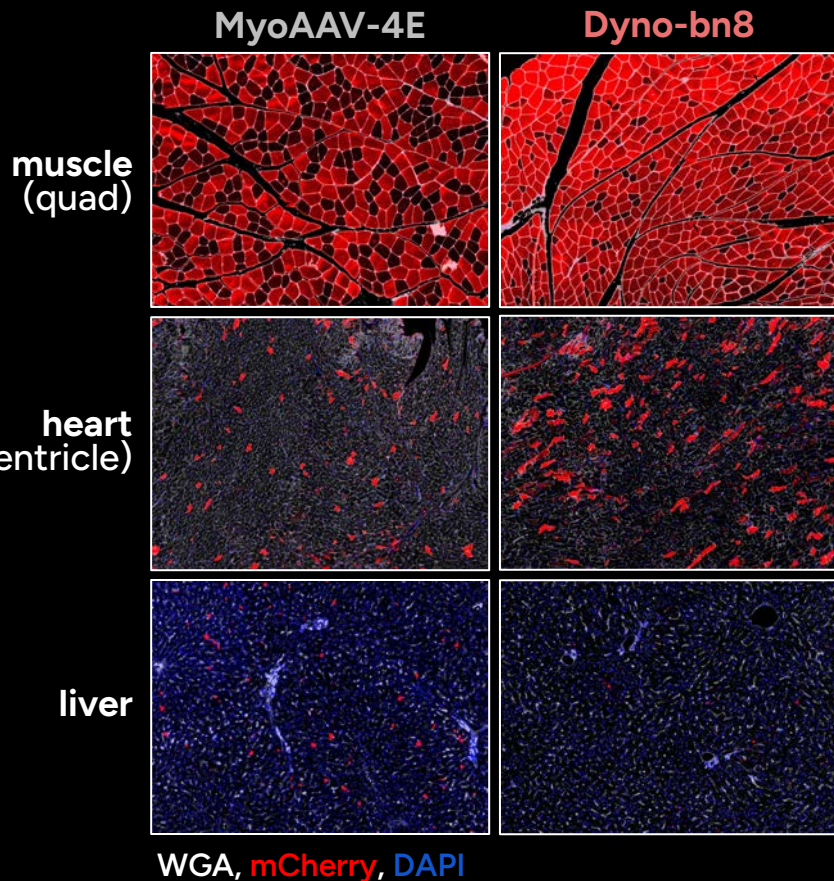
NHP gastrocnemius

200  $\mu\text{m}$

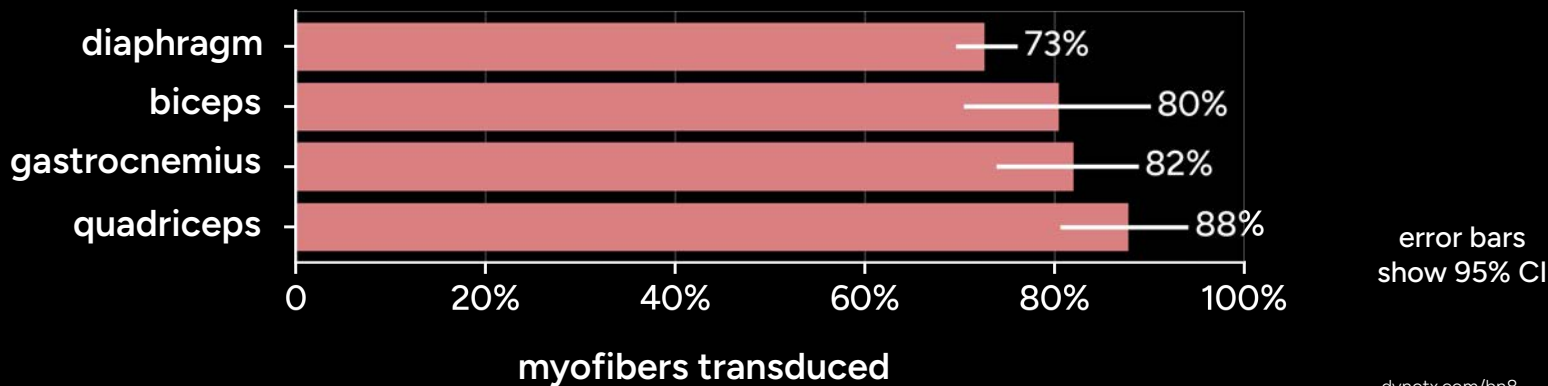
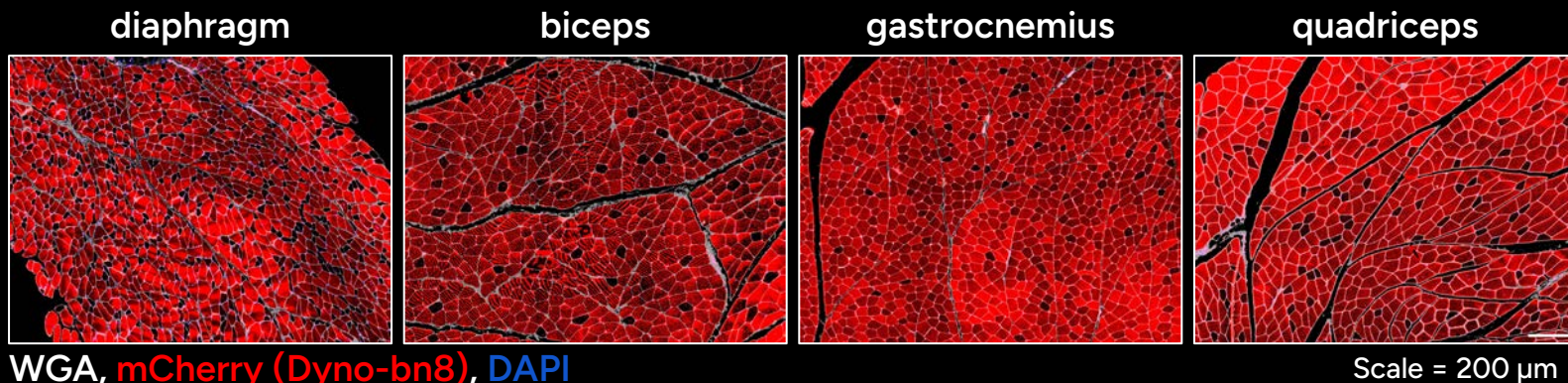
NHP diaphragm

200  $\mu\text{m}$

# Dyno-bn8 outperforms MyoAAV-4E in muscle, heart, and liver



# At $5.2 \times 10^{12}$ vg/kg, **Dyno-bn8** evenly transduces the vast majority of skeletal myofibers in all tested tissues



# Dyno-bn8 outperforms MyoAAV-4E in muscle, heart, and liver



Error bars show 95% CI

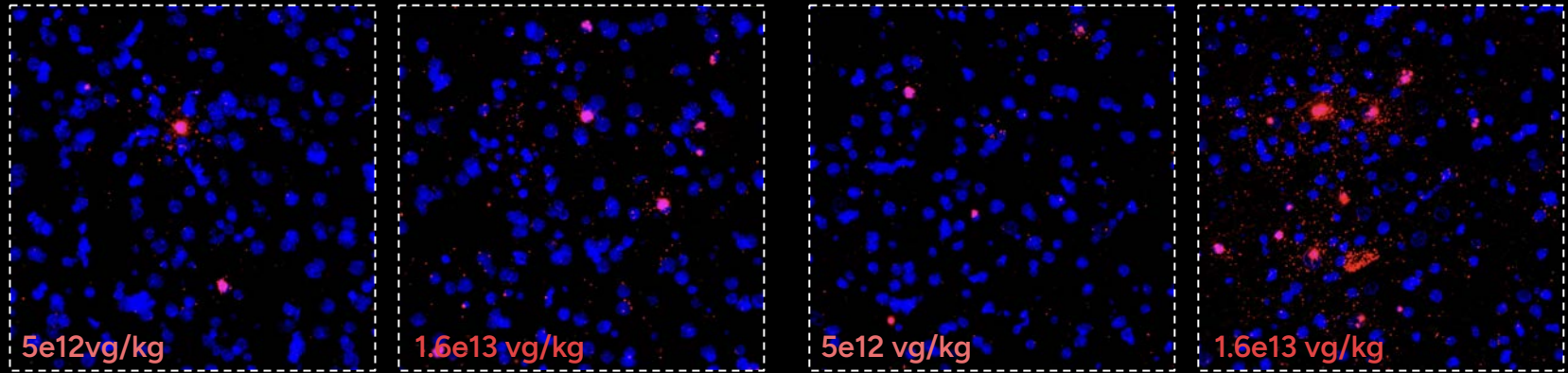
\* p < 0.05

\*\* p < 0.01

# Dyno-bn8 transduces neuronal cells in the CNS

Caudate

Substantia nigra



DAPI

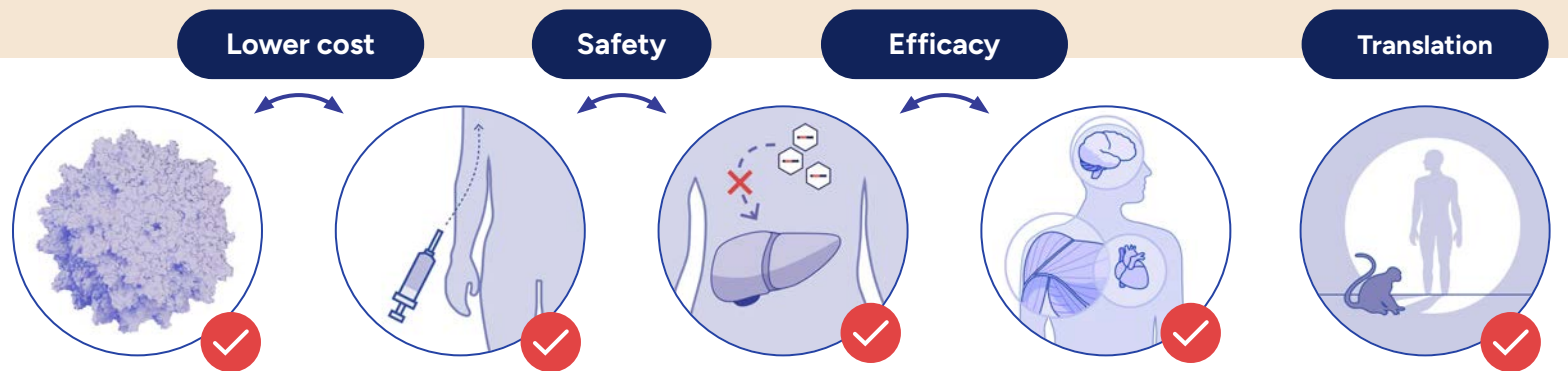
mCherry (RNAscope)

Dyno-bn8, 1.6e13 vg/kg

Dyno-bn8, 5e12 vg/kg



# Dyno-bn8 achieves therapeutic delivery to muscle at lower doses and with improved liver detargeting



Efficient production

similar production vs AAV9

Efficient at low doses

1.6e13 vg/kg  
5.2e12 vg/kg

Detargeted from liver

34 vg/dg liver  
at 5.2e12 vg/kg

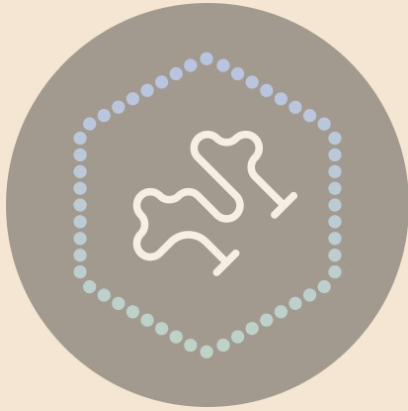
Efficient delivery to target organs

81% avg muscle  
at 5.2e12 vg/kg  
40% avg heart  
at 1.6e13 vg/kg

Predict performance in humans

Conserved receptor in NHP and humans

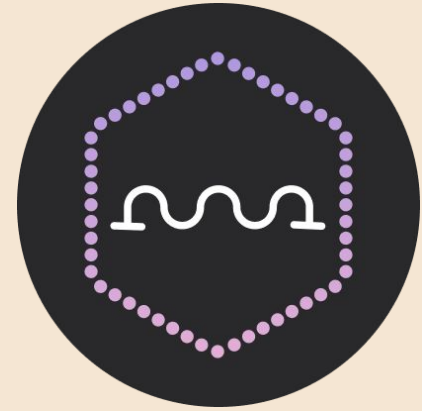
# The capsids you need



Muscle



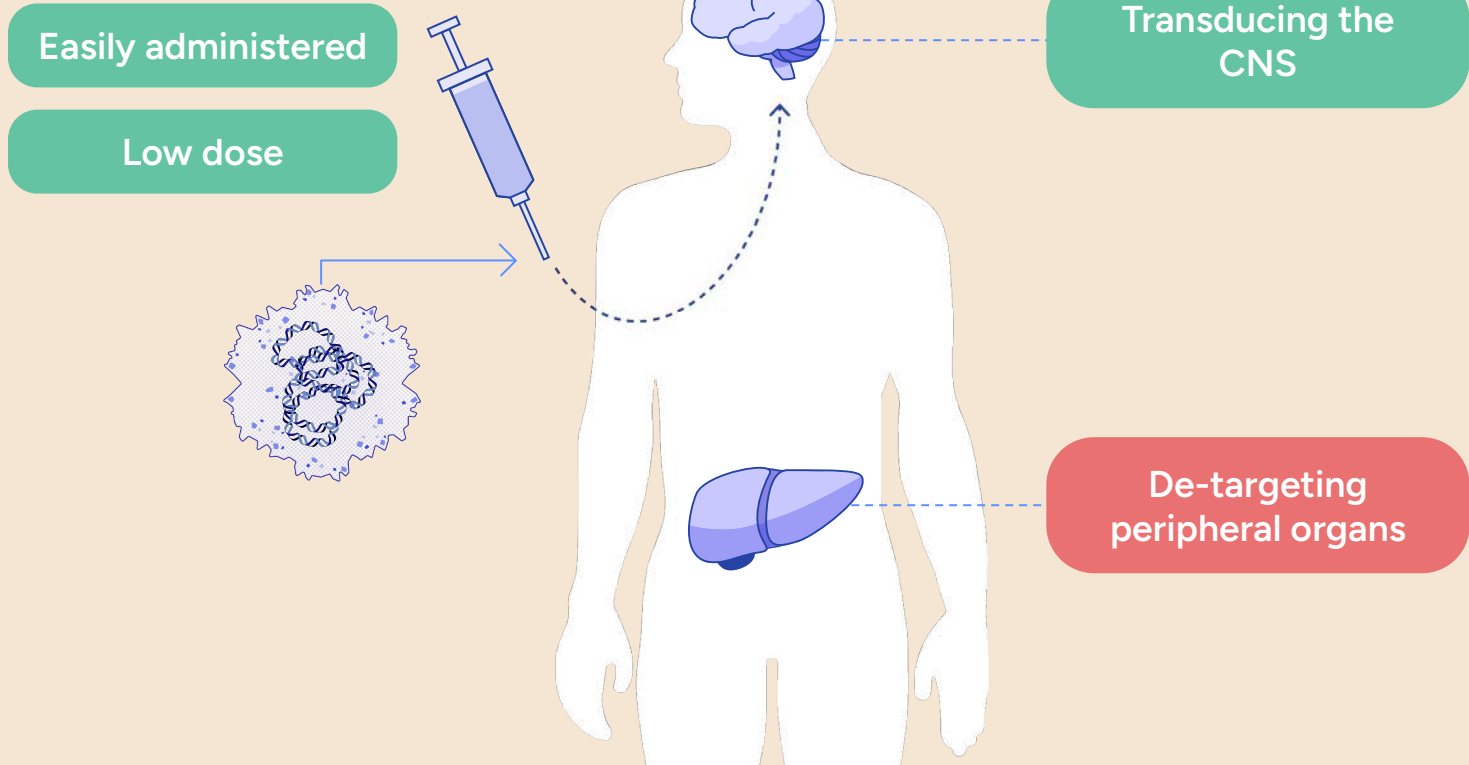
Neuromuscular



CNS

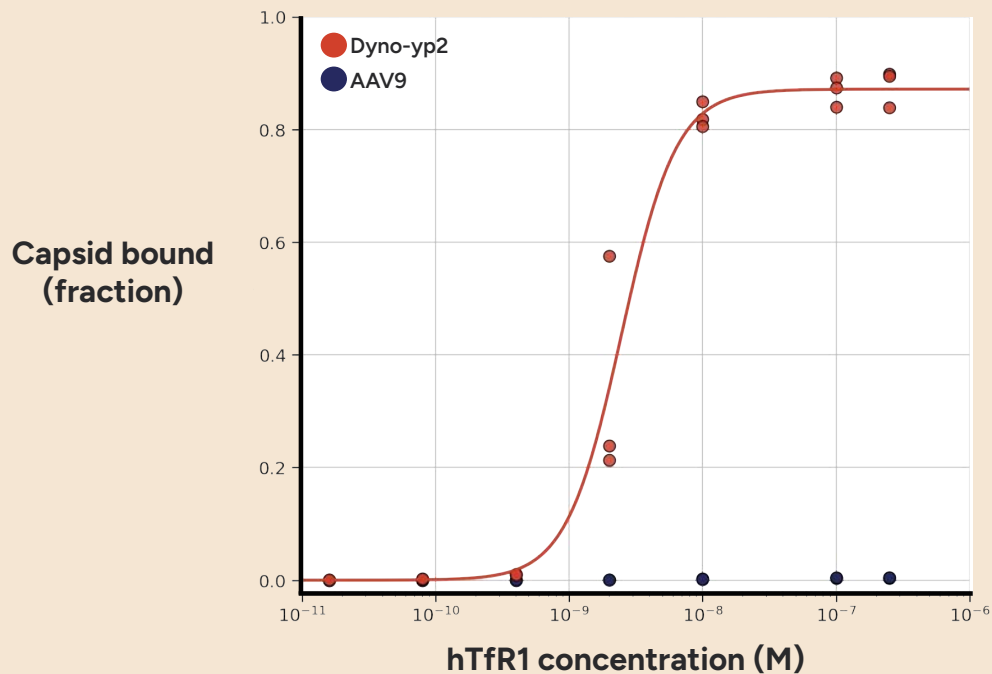
# Challenge: safe and effective IV gene delivery

Intravenous (IV) injection

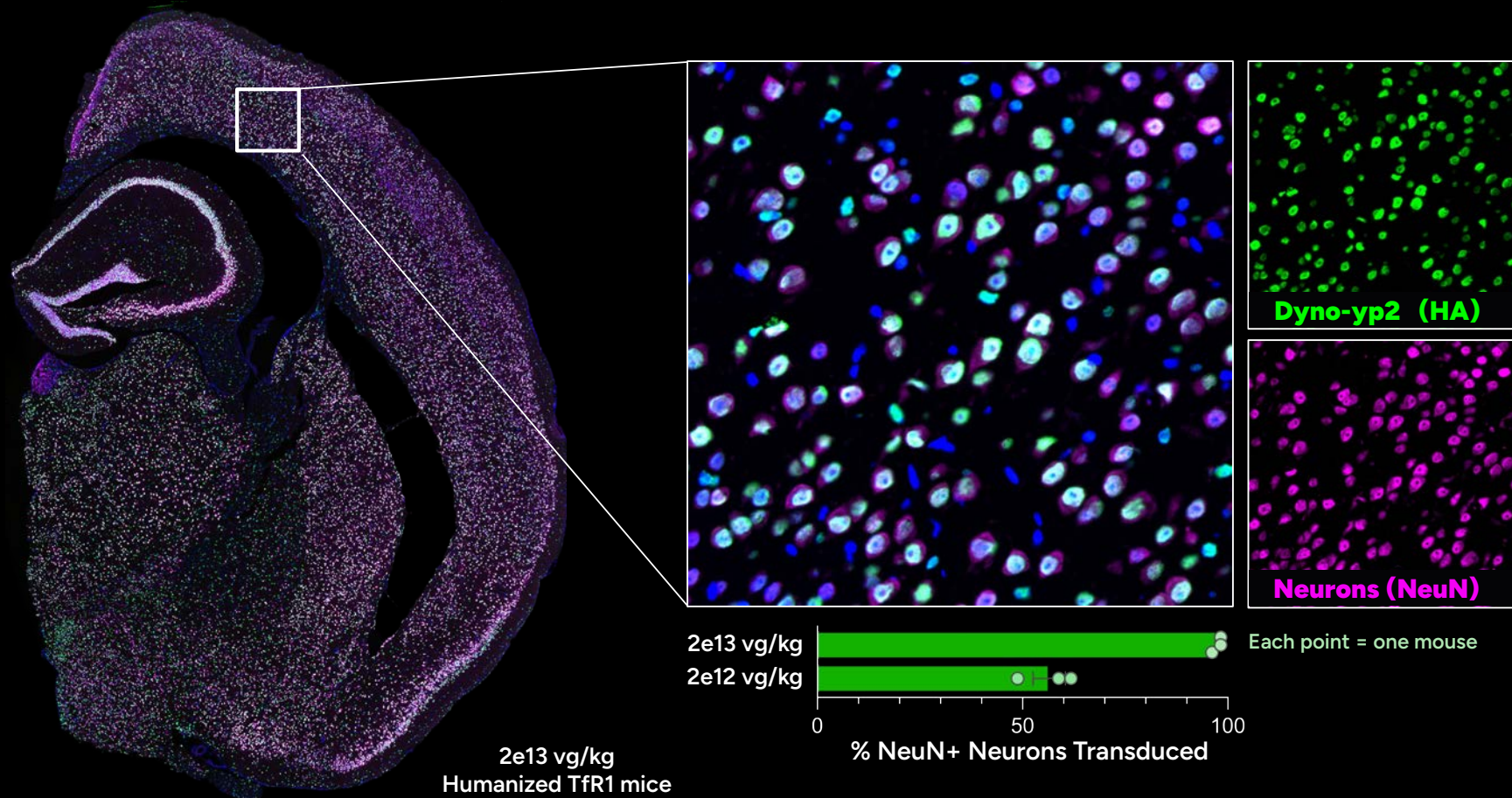




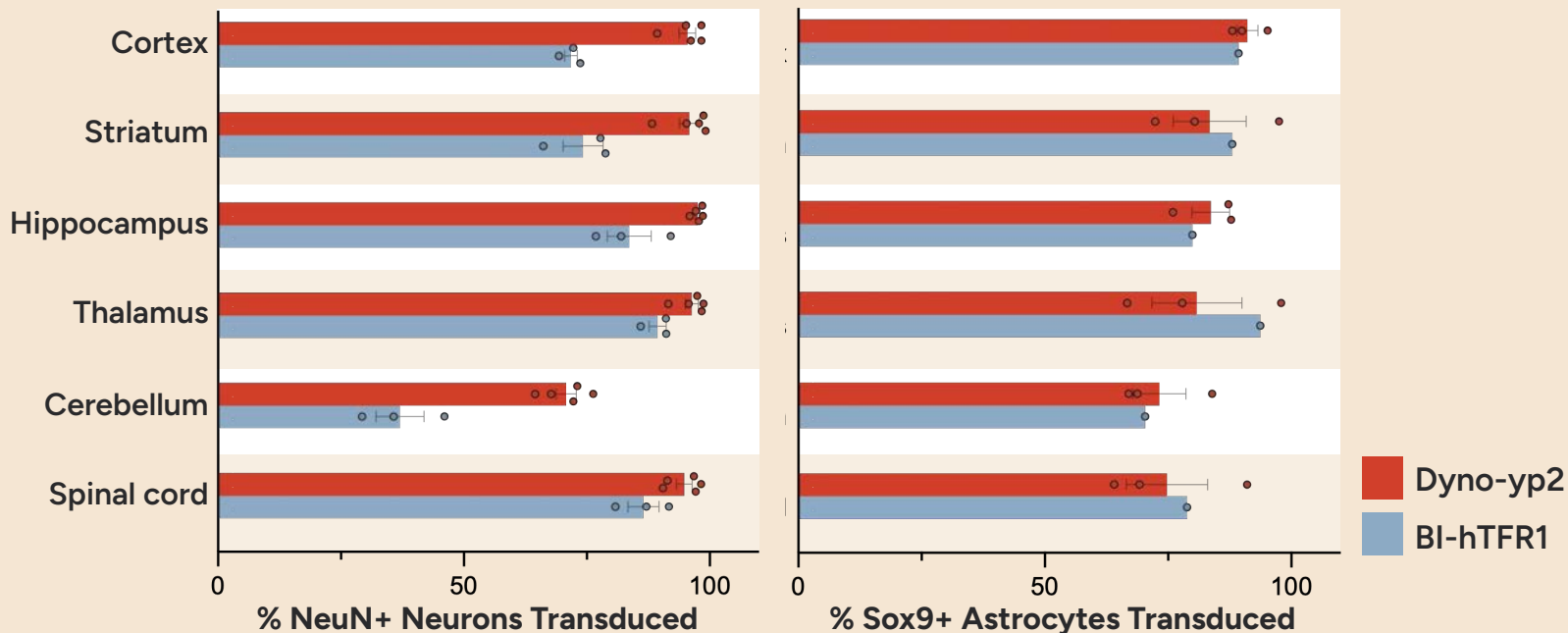
# Dyno-yp2 binds the human TfR1 receptor



# Dyno-yp2 transduces 98% of NeuN+ neurons in the cortex

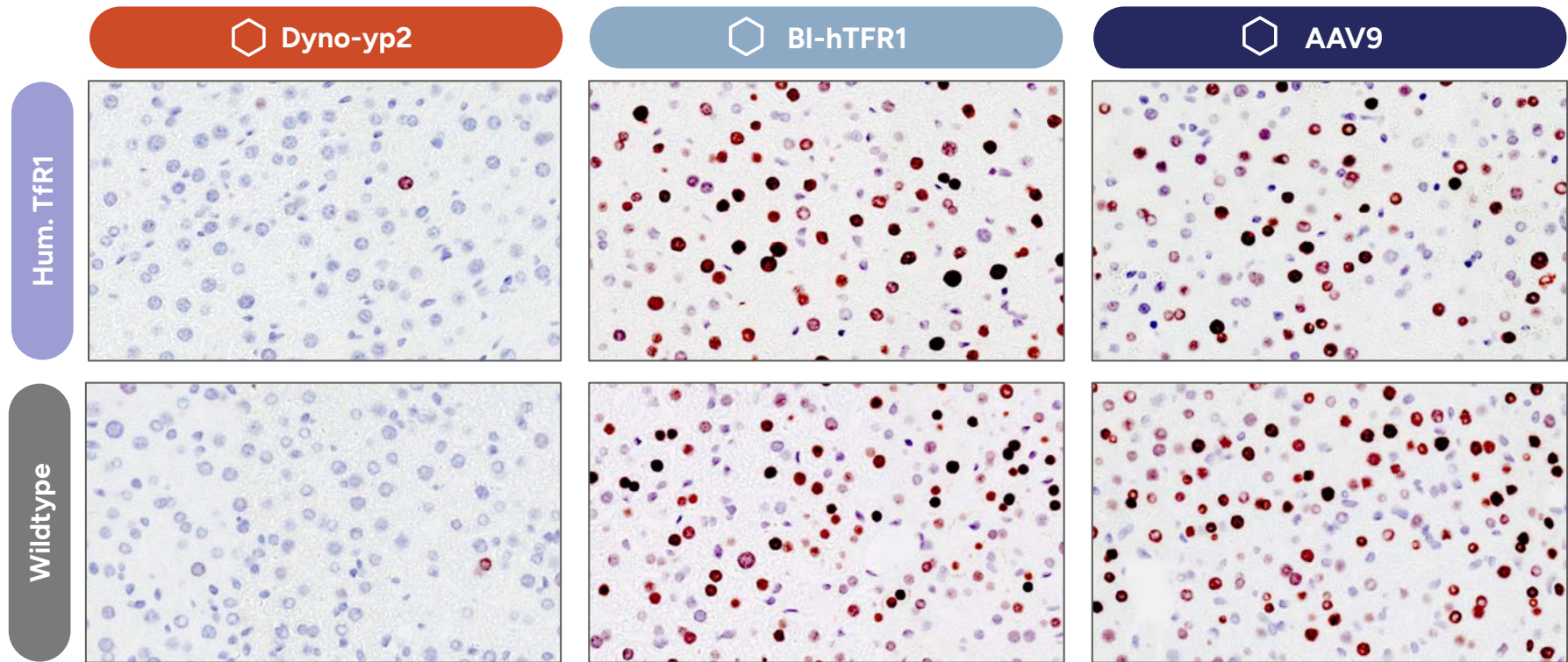


# Dyno-yp2 achieves exceptional pan-brain neuronal and astrocyte transduction in humanized TfR1 mice at 2e13 vg/kg



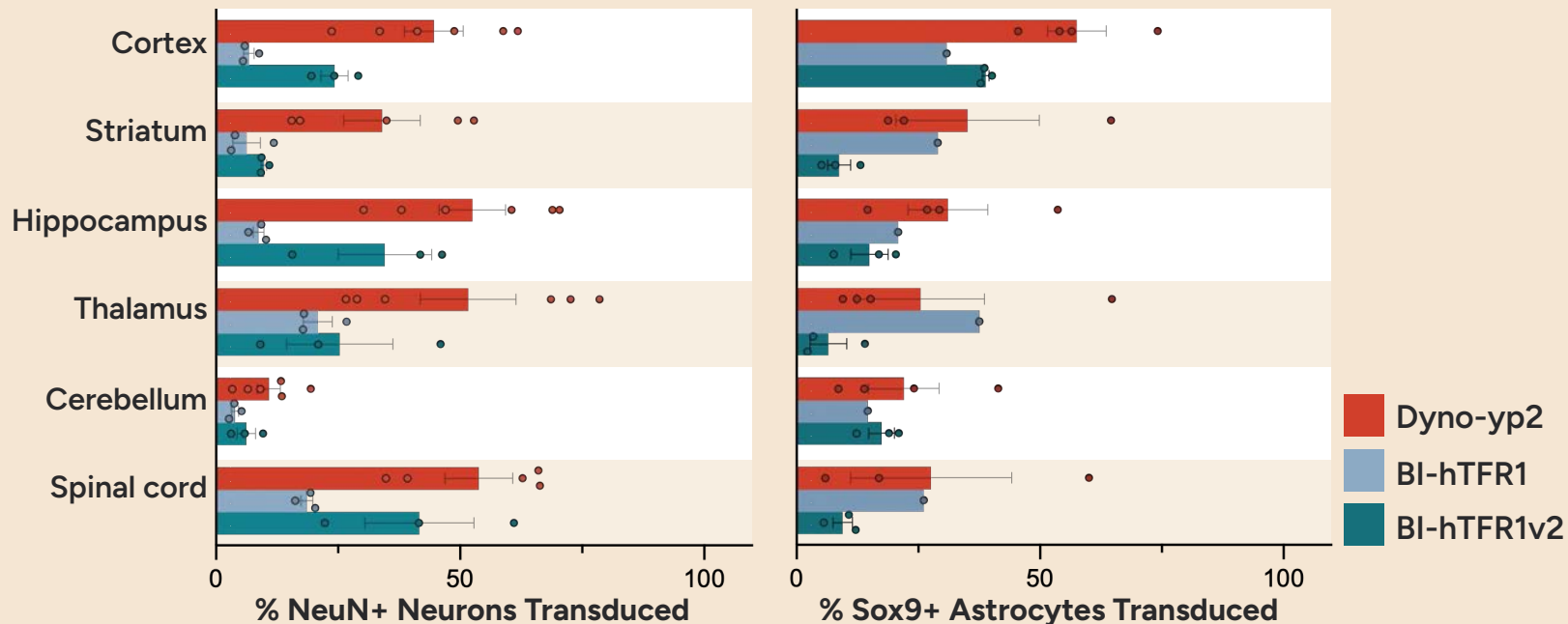
**Dyno-yp2 outperforms BI-hTfR1 in every brain region**

# Dyno-yp2 combines CNS tropism with excellent liver detargeting

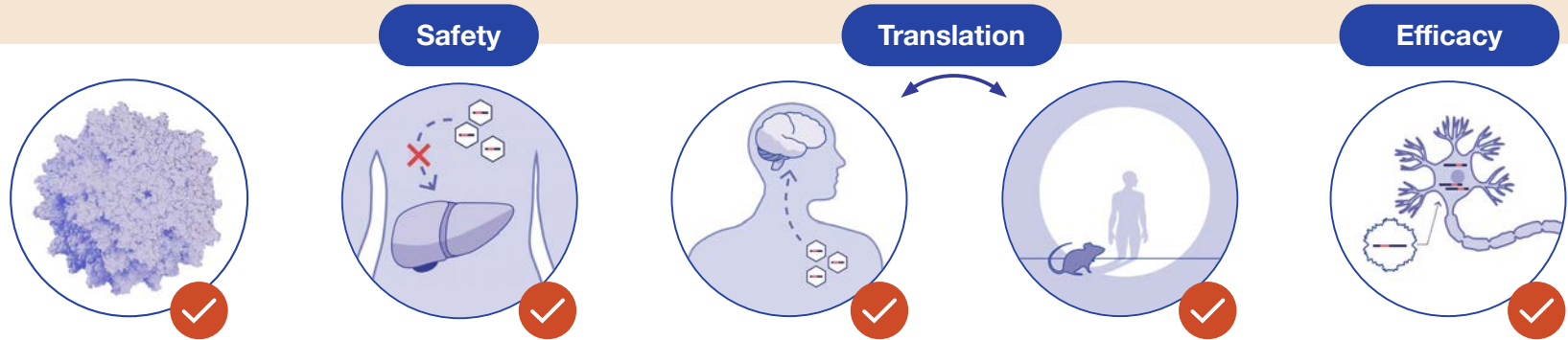


2e13 vg/kg dose

# Dyno-yp2 outperforms BI-hTFR1 and BI-hTFRv2 capsids in neuronal and astrocytic delivery at 2e12 vg/kg



# Dyno-yp2 broadly and efficiently transduces the CNS through a human TfR1-mediated mechanism



Efficient production

Detargeted from the liver

Efficient BBB crossing

Known human mechanism

Broad CNS transduction

Compatible with AAV9-based purification systems

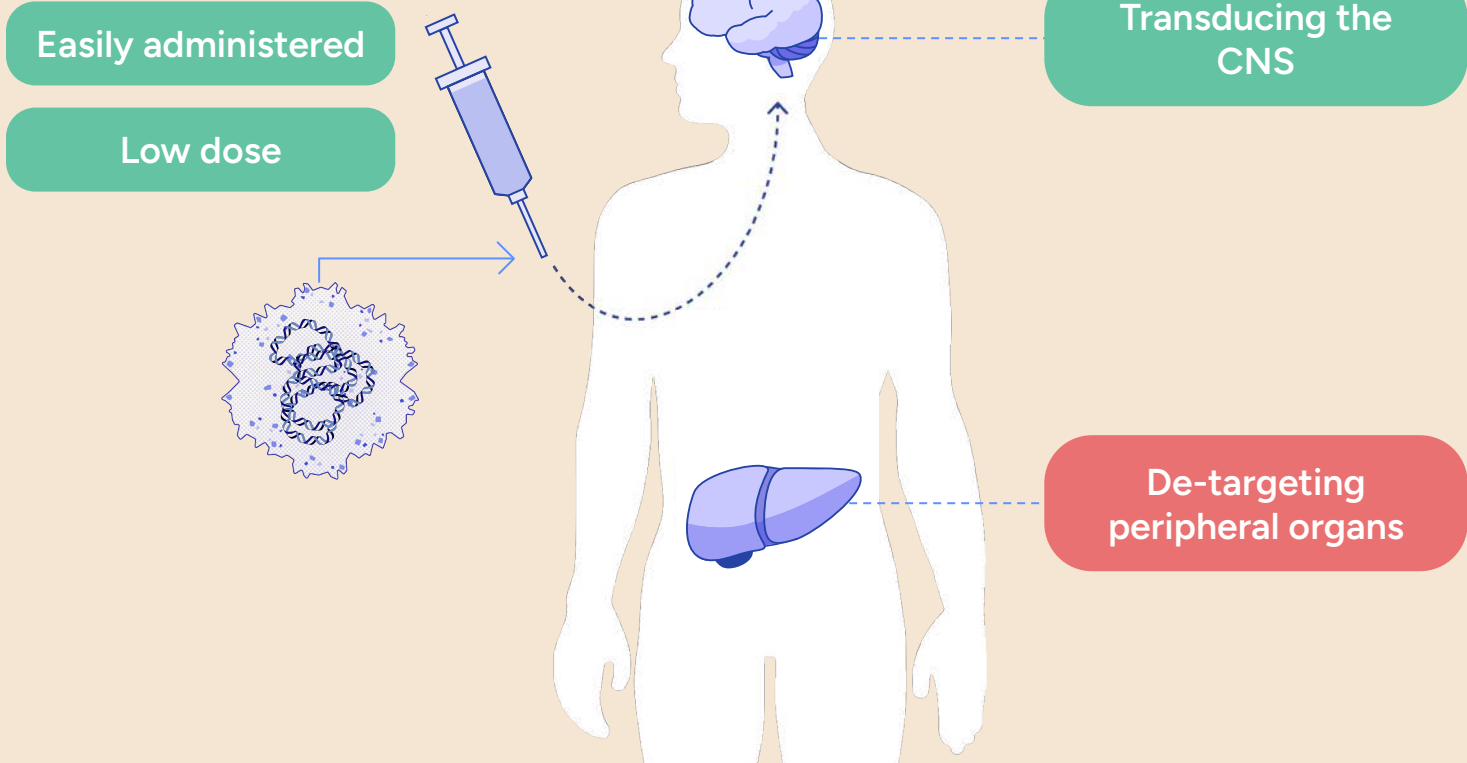
29x liver detargeting compared to AAV9

Engineered for binding human TfR1; known mechanism translatable to humans

- 72% pan-brain cells
- 94% NeuN+ neurons
  - 98% thalamic neurons
  - 98% cortical neurons
  - 97% spinal cord neurons
- 89% Sox9+ astrocytes

# Challenge: safe and effective cross-species IV gene delivery

Intravenous (IV) injection



# Challenge: safe and effective cross-species IV gene delivery

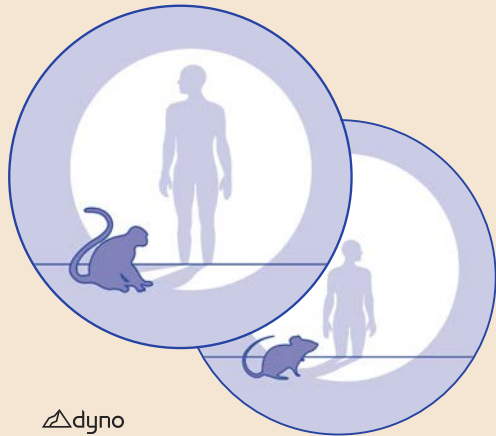
Intravenous (IV) injection

Easily administered

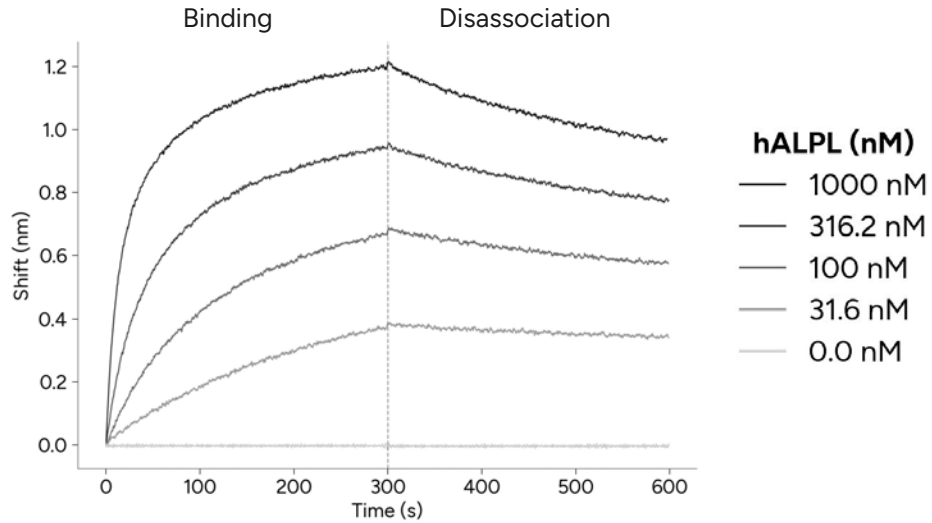
Low dose

Transducing the  
CNS

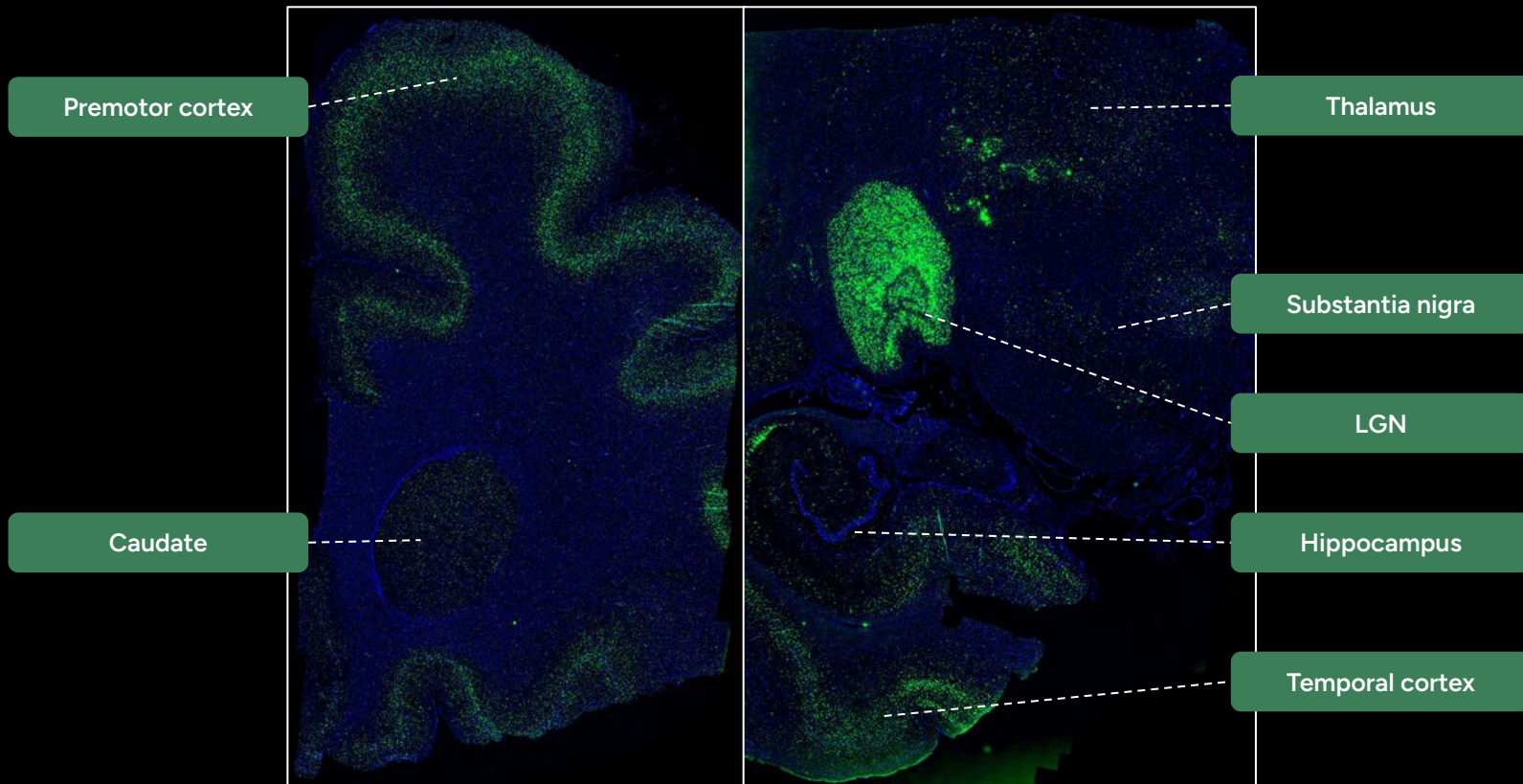
De-targeting  
peripheral organs



# Dyno-9zh binds the human ALPL receptor

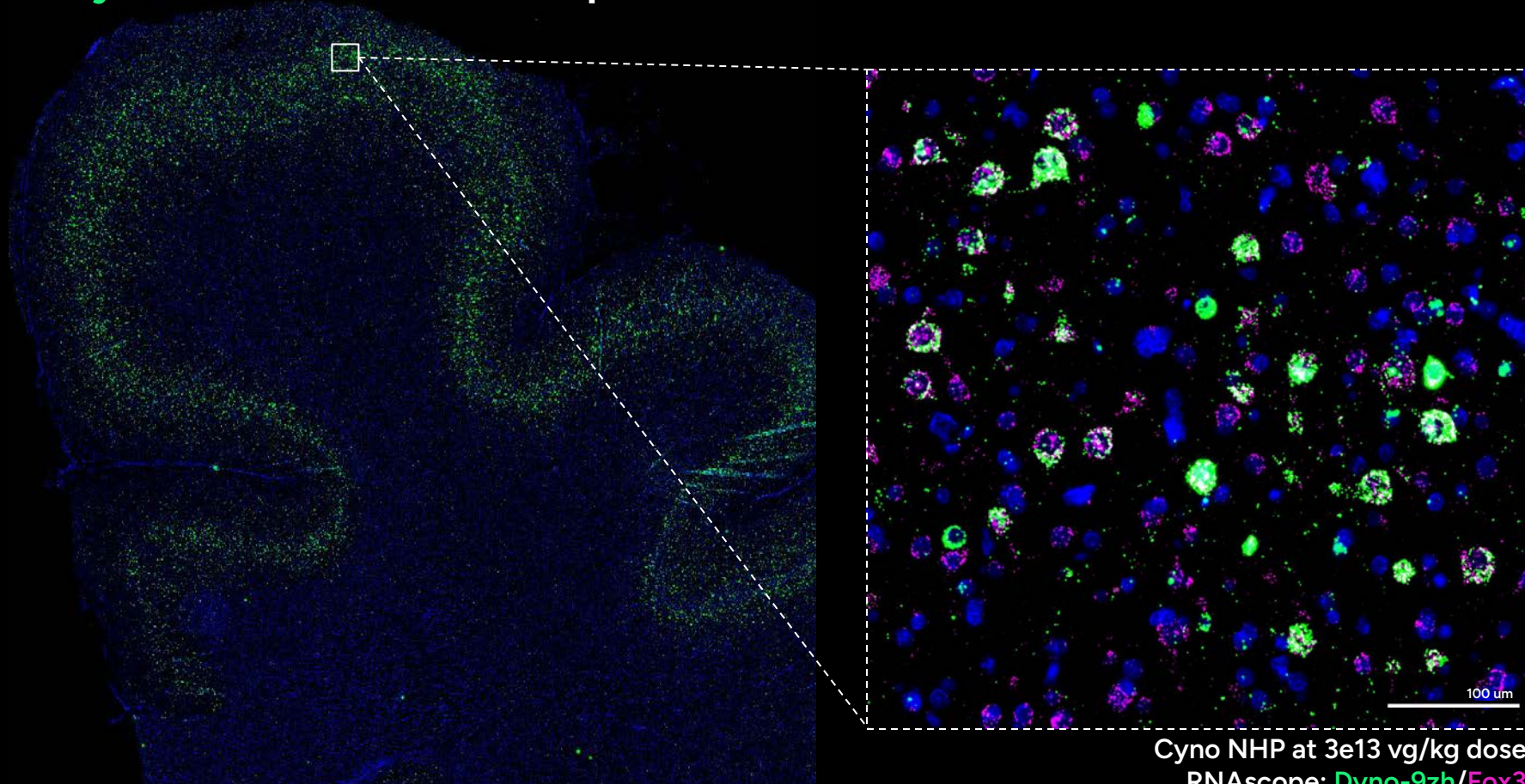


# Dyno-9zh achieves widespread transduction across the NHP CNS



Cyno NHP at 3e13 vg/kg dose  
RNAscope: **Dyno-9zh**

# Dyno-9zh transduces up to 50% of neurons in Premotor cortex



Cyno NHP at 3e13 vg/kg dose

RNAscope: **Dyno-9zh**/**Fox3**

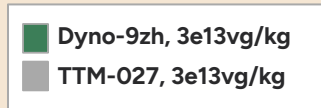
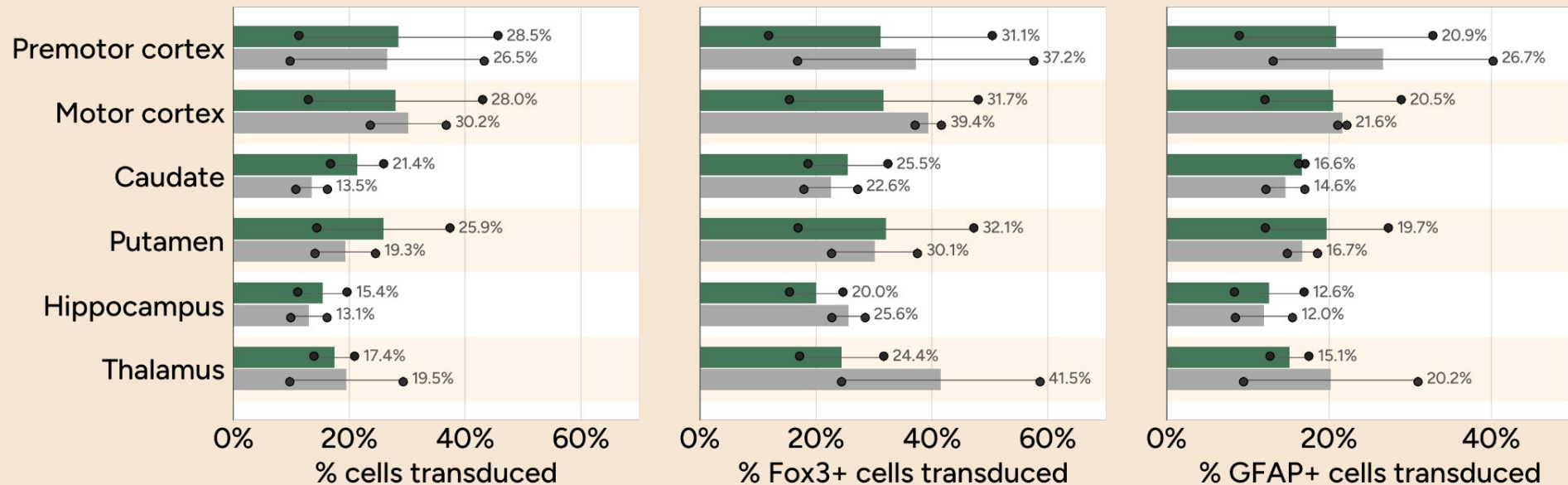
[dynotx.com/9zh](http://dynotx.com/9zh)

# Dyno-9zh shows broad CNS transduction matching the performance of TTM-027 in NHP

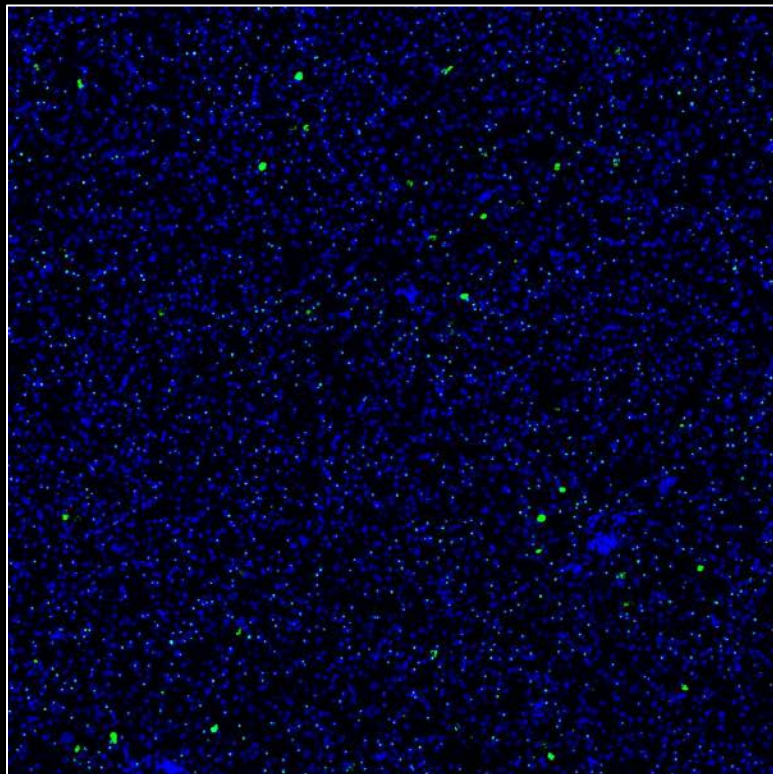
### All Cells

### Neurons

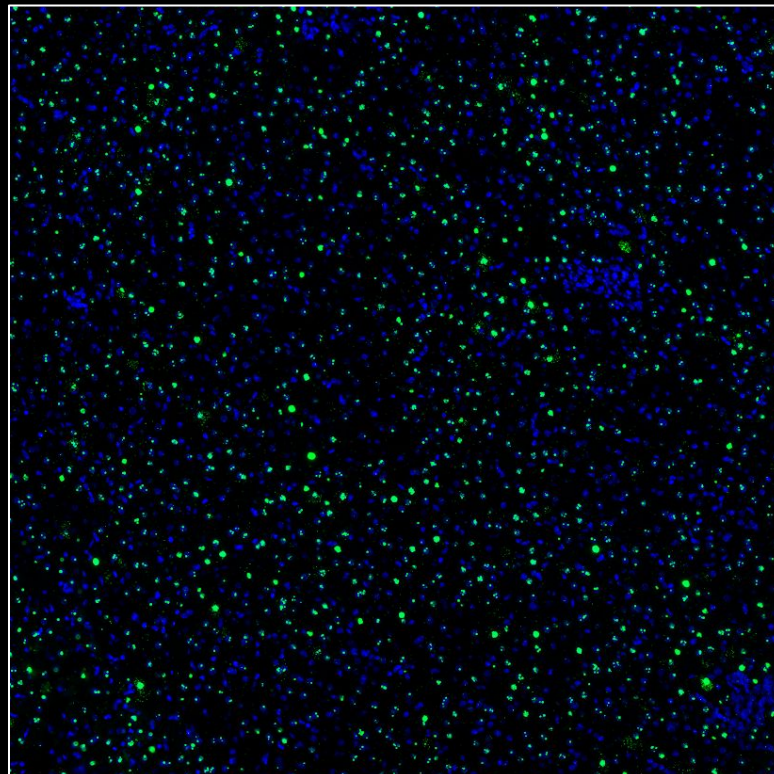
### Astrocytes



# Dyno-9zh shows excellent liver detargeting vs AAV9

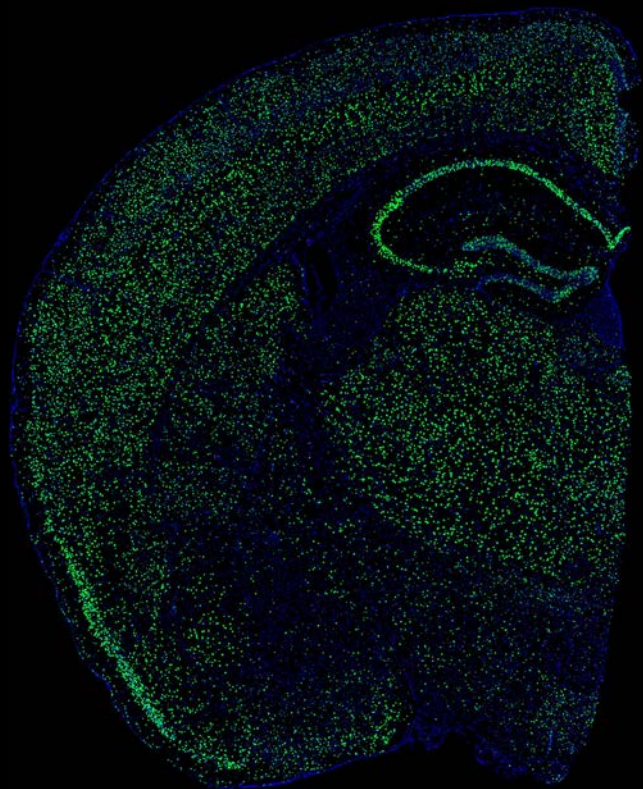


Cyno NHP at 3e13 vg/kg dose  
RNAscope: **Dyno-9zh**

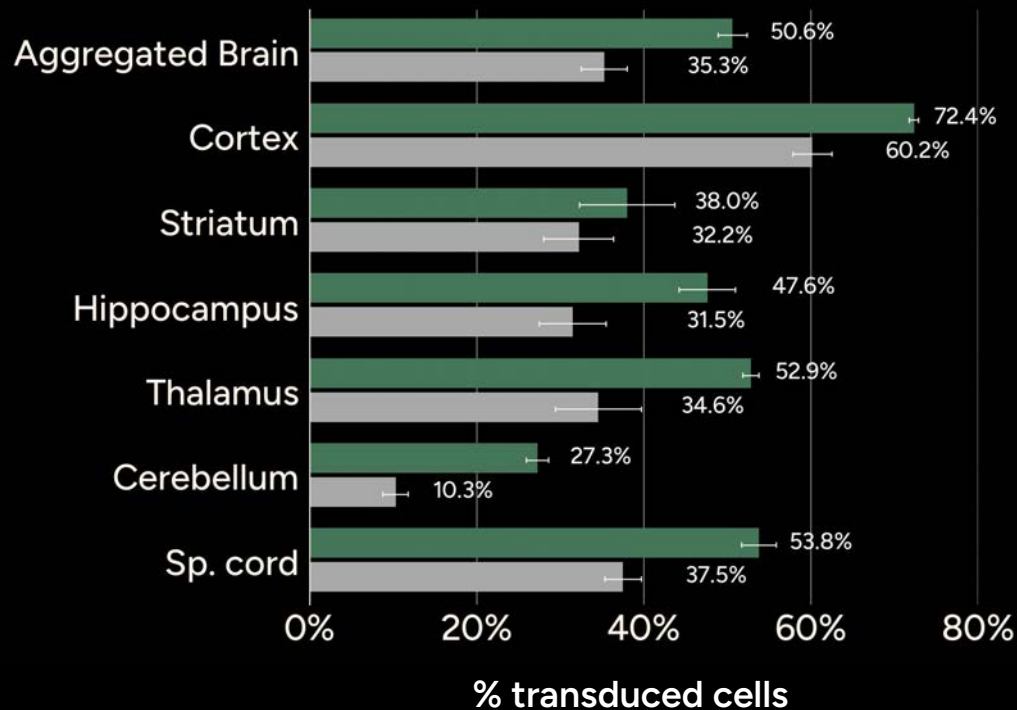


Cyno NHP at 1e13 vg/kg dose  
RNAscope: **AAV9**

# Dyno-9zh transduces mouse CNS better than TTM-027

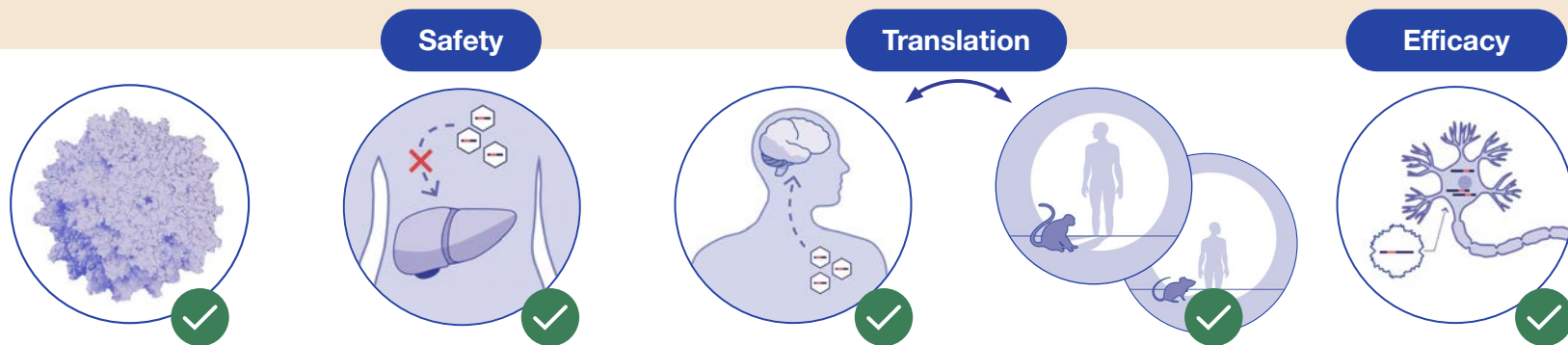


Dyno-9zh 1e13 vg/kg  
C57BL/6 mice



Dyno-9zh  
TTM-027

# Dyno-9zh broadly and efficiently transduces the CNS through a human ALPL-mediated mechanism



Efficient production

Compatible with AAV9-based purification systems

Detargeted from the liver

>10x liver detargeting compared to AAV9

Efficient BBB crossing

Engineered for binding ALPL; a mechanism with cross-species translation potential

Cross-species translation

In NHPs:

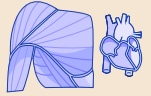
- Up to 50% cortical neurons
- Up to 47% striatal neurons
- Up to 60% lower motor neurons

In WT mice:

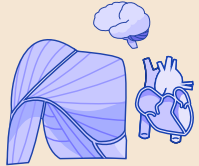
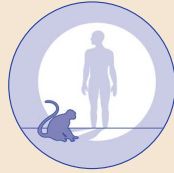
- Up to 80% cortical neurons

# Learn more

## Today



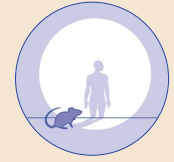
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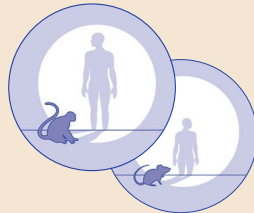
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[dynotx.com/yp2](https://dynotx.com/yp2)

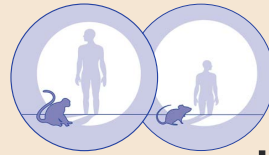
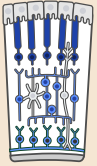


[dynotx.com/9zh](https://dynotx.com/9zh)

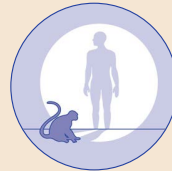
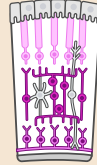


## Prior

[dynotx.com/4z2](https://dynotx.com/4z2)



[dynotx.com/86m](https://dynotx.com/86m)



[dynotx.com/ahq](https://dynotx.com/ahq)



# We've designed leading capsids for every promising BBB-crossing mechanism

**Novel  
primate-conserved  
BBB-crossing  
mechanisms**

**Dyno Receptor 1**

**Dyno-ahq**

**Dyno Receptor 2**

**Known  
BBB-crossing  
mechanisms**

**Alkaline Phosphatase  
(ALPL)**

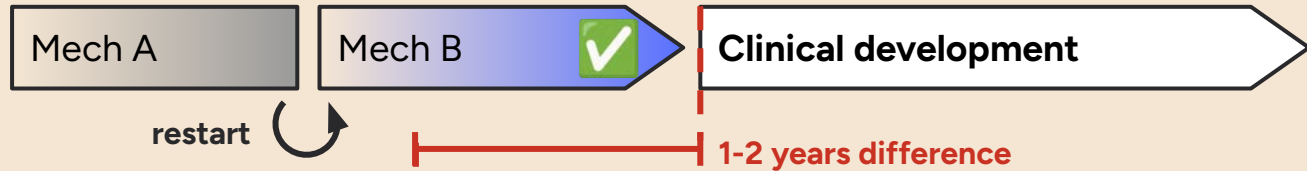
**Dyno-9zh**

**Transferrin Receptor 1  
(TfR1)**

**Dyno-yp2**

# Strategic delivery agility enables gene therapy developers to move fast with confidence

1 mechanism  
at a time



Several mechs  
in parallel  
= agility



# Better delivery makes for better therapies

Cost effective gene therapies help all patients in need

Gene therapies work for every patient

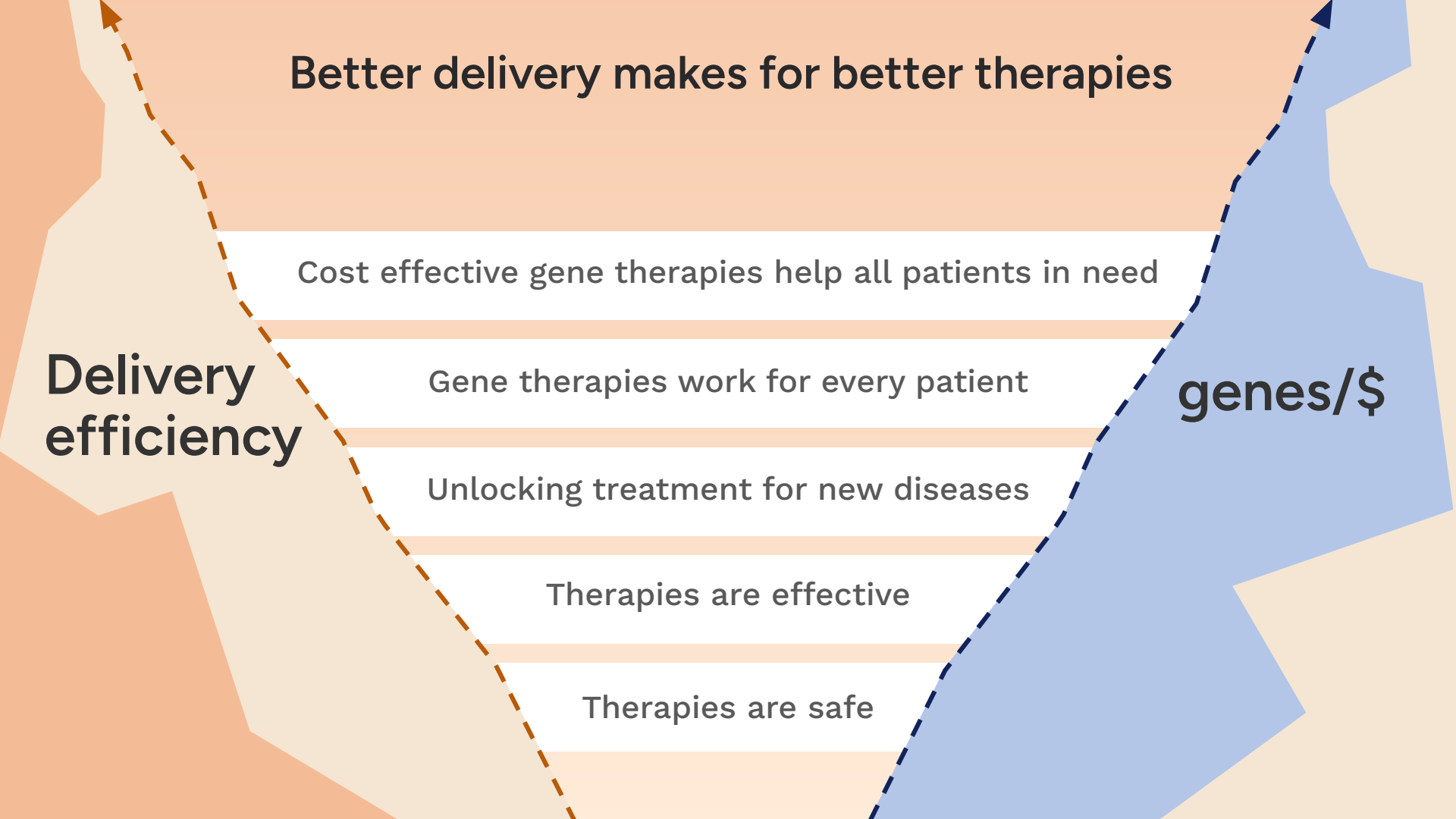
Unlocking treatment for new diseases

Therapies are effective

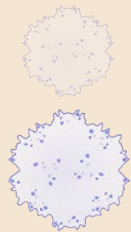
Therapies are safe

**Delivery  
efficiency**

**genes/\$**



# Why partner with Dyno?

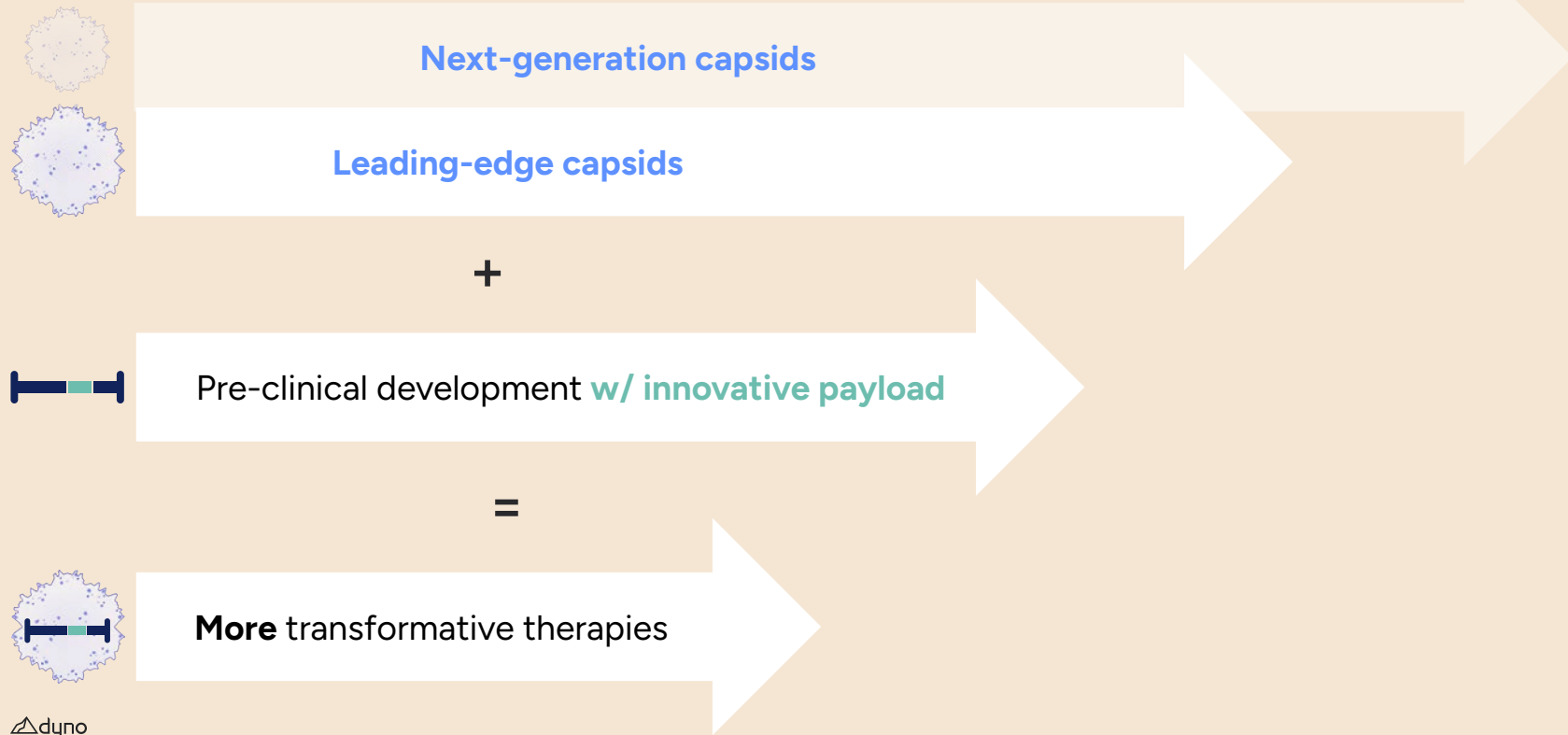


Next-generation capsids

Leading-edge capsids

- **High-performance** - safe, effective and competitive - our platform focus
- **Flexibility** for multiple targets/indications - in support of your strategy
- **Future access** to improved capsids - due to Dyno's Platform commitment
- **Support** of partnership success - due to our aligned interests

# Solution: Combine leading-edge delivery with innovative genetic payloads to demonstrate therapeutic potential



# Developers in Dyno Frontiers



Gain access to Dyno's delivery technology to demonstrate the *in vivo* effectiveness of innovative clinic-ready genetic payloads



Receive scientific advice from Dyno on capsid selection, NHP study design and vector manufacturing



Collaborate with Dyno to accurately quantify capsid performance

# Dyno Frontiers

# developers

ASGCT 2025: 0 (at launch)

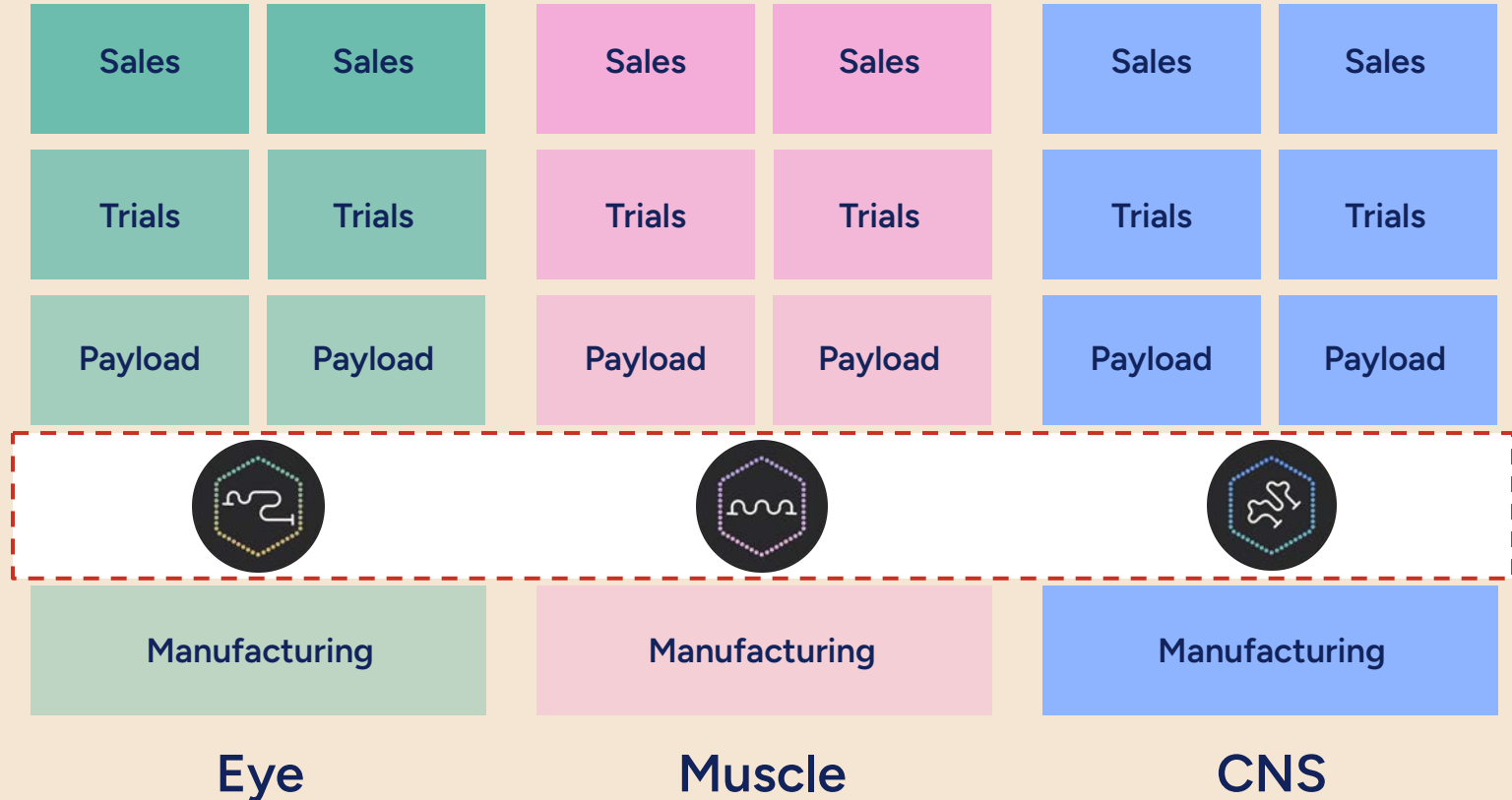
End of 2025: 5

**Today: 15**

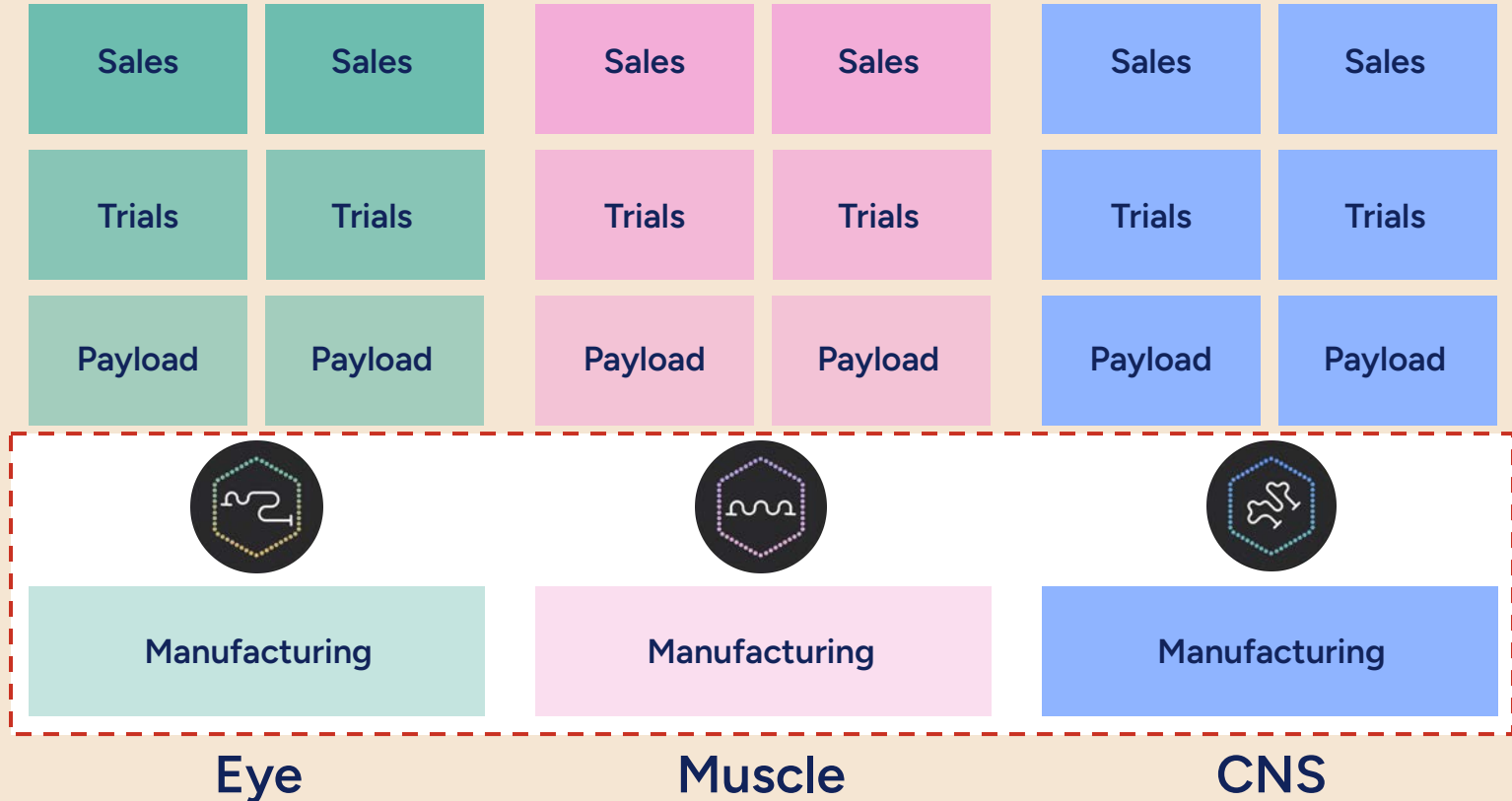
Announcing

# Dyno Frontiers is now a Network

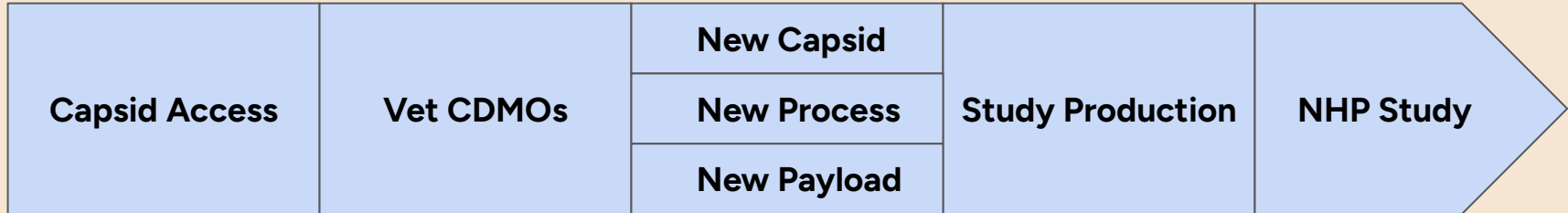
# An ecosystem that supports developers and works for patients



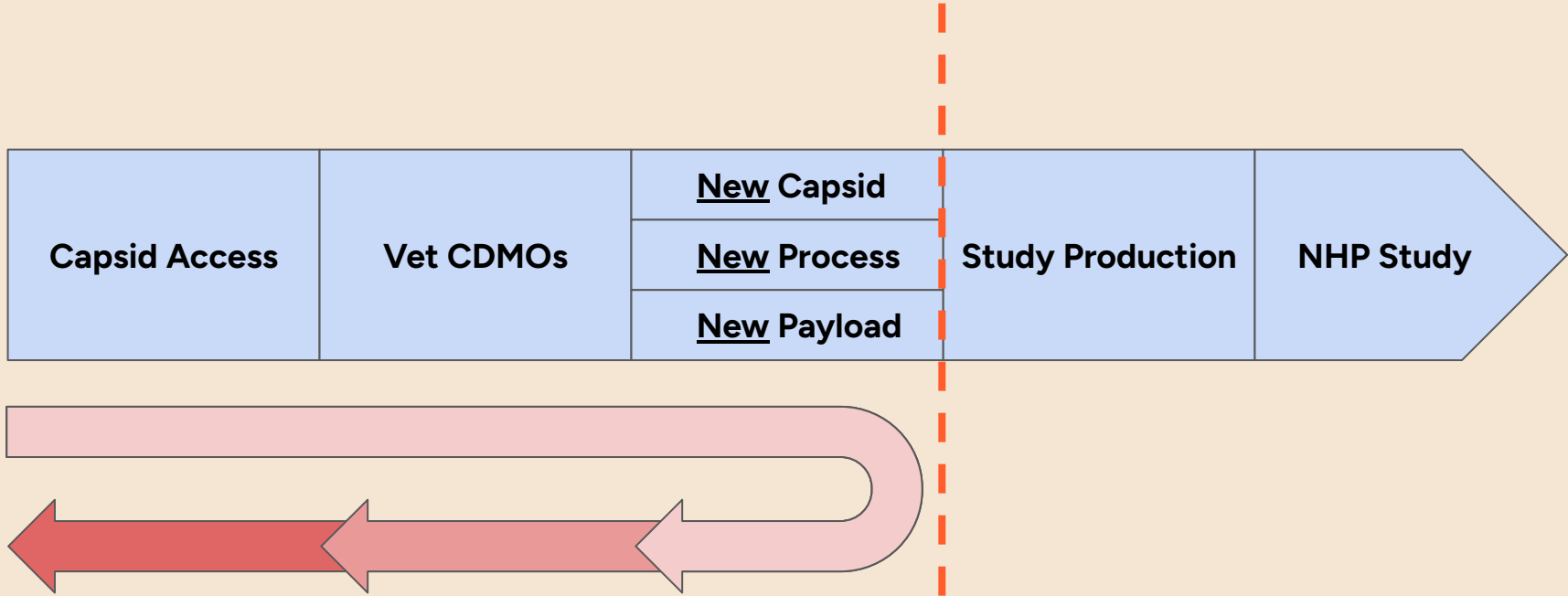
# An ecosystem that supports developers and works for patients



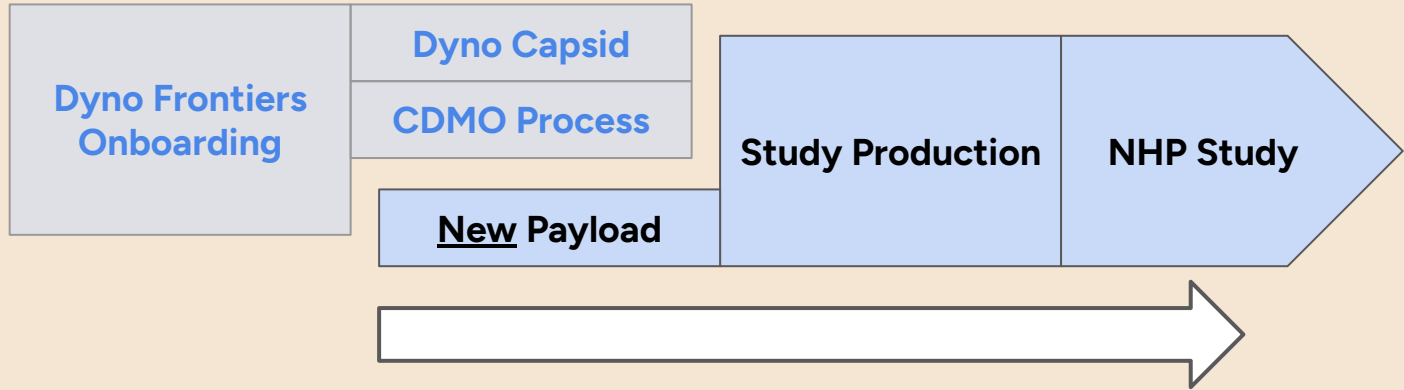
# Manufacturing introduces challenges for Developers



# Manufacturing introduces challenges for Developers



# Solving manufacturing challenges through Dyno Frontiers Manufacturing Partners



# Dyno Frontiers now includes manufacturing partners

3P BIOVIAN

Franklin  
Biolabs

 Trisk

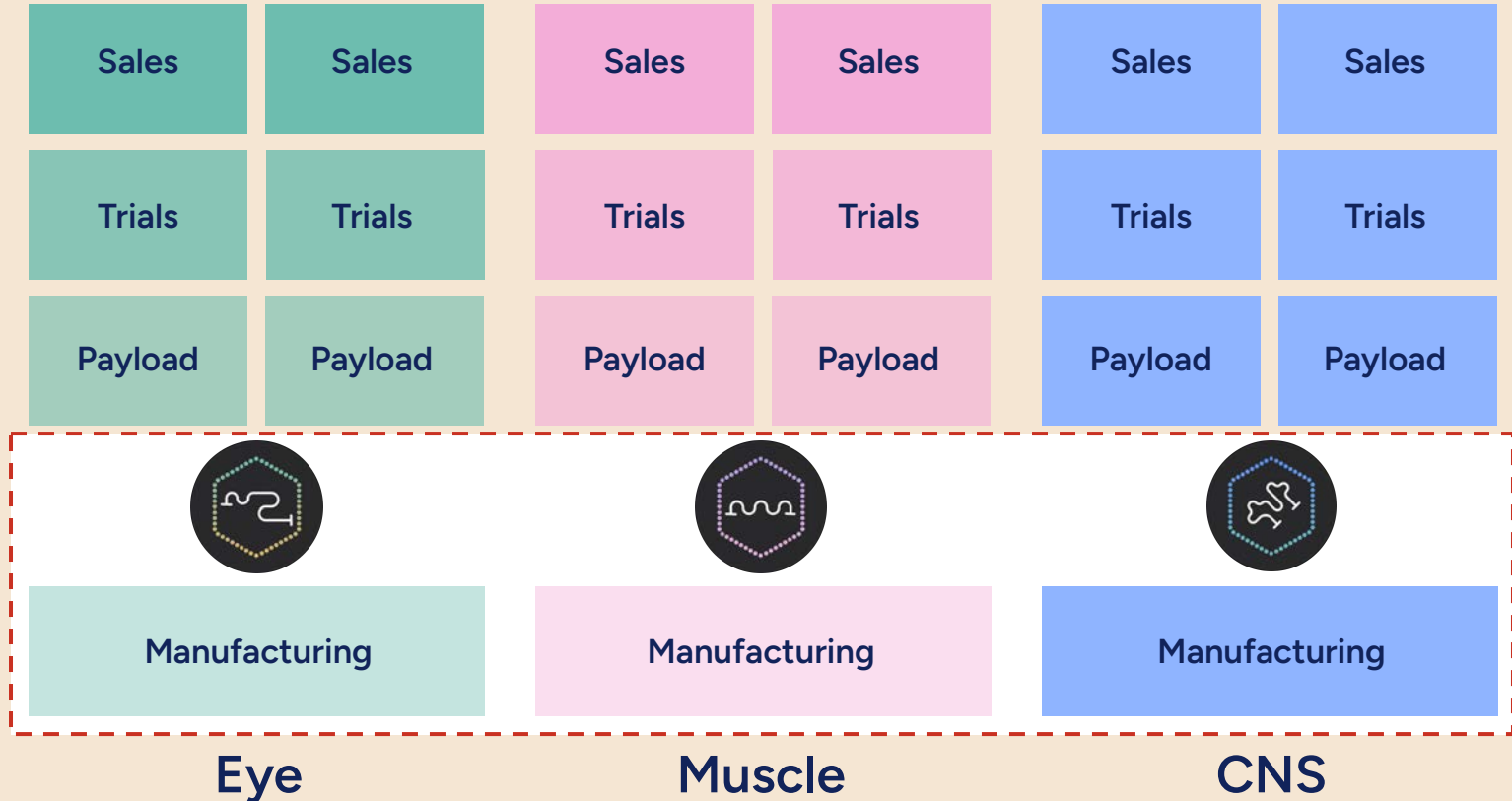
Andelyn  
BIOSCIENCES  
Advancing Discoveries. Manufacturing Cures.

 PackGene

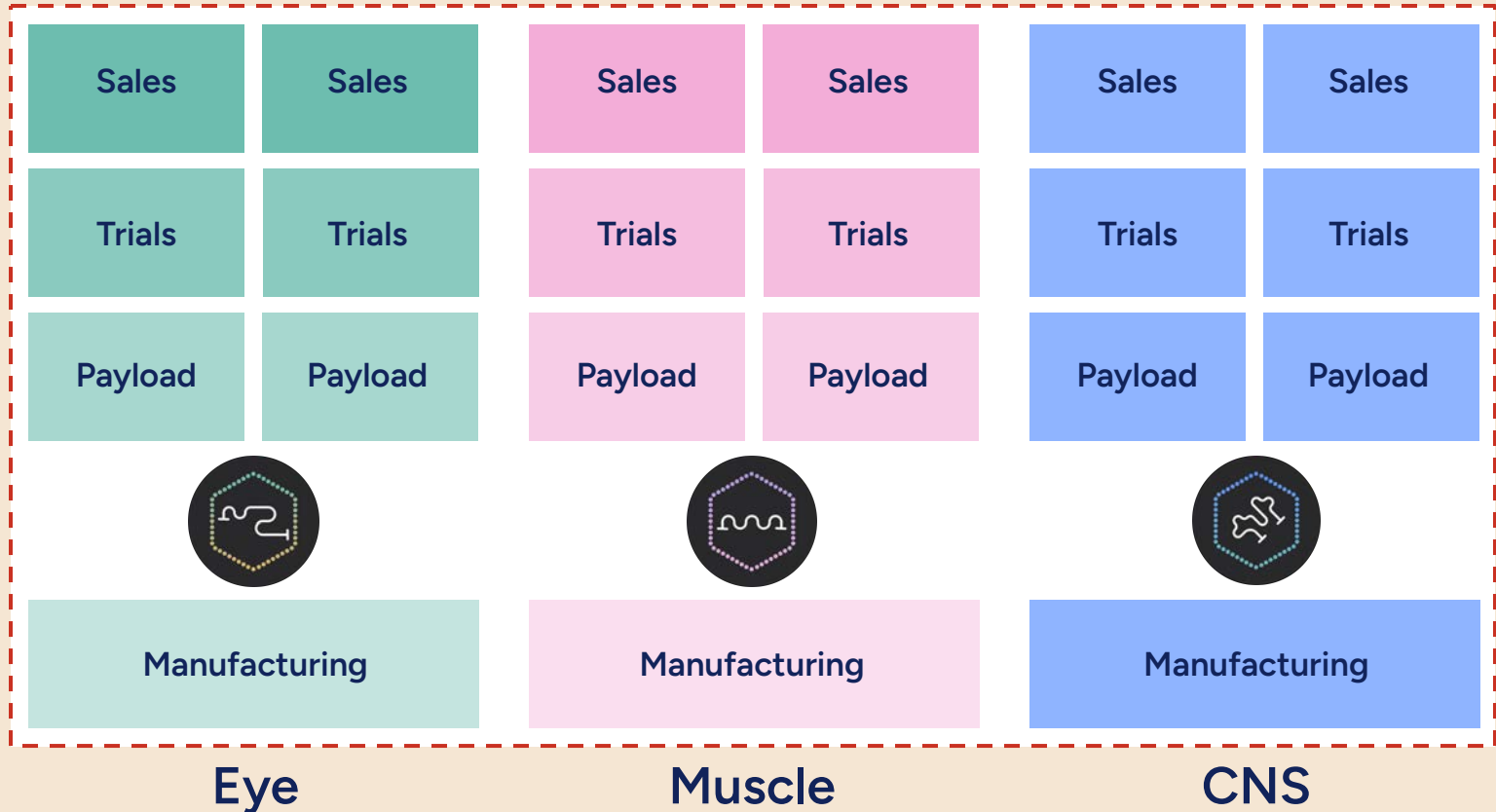
 CIRSIUM  
BIOSCIENCES

revvity

# An ecosystem that supports developers and works for patients



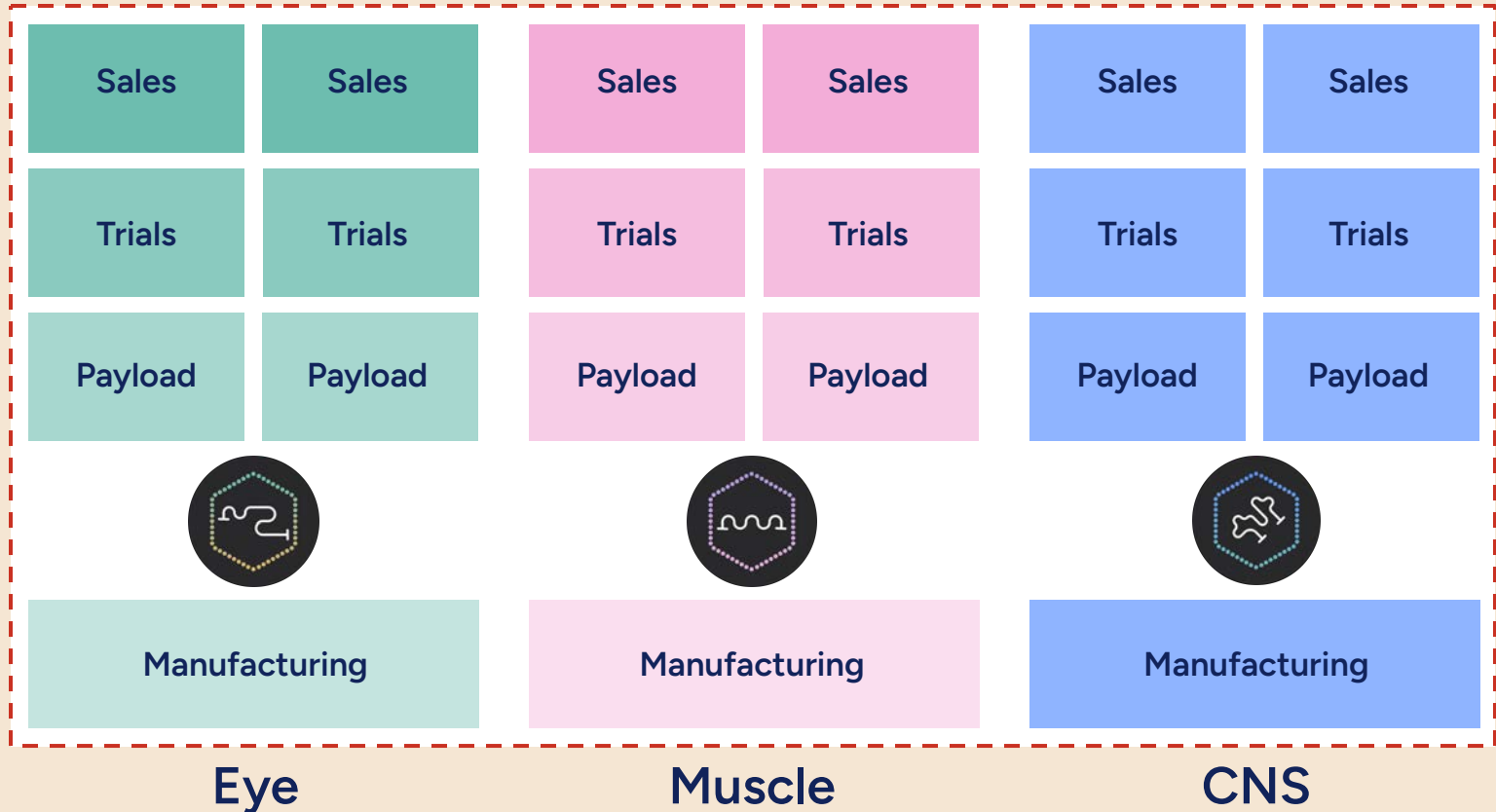
# An ecosystem that supports developers and works for patients



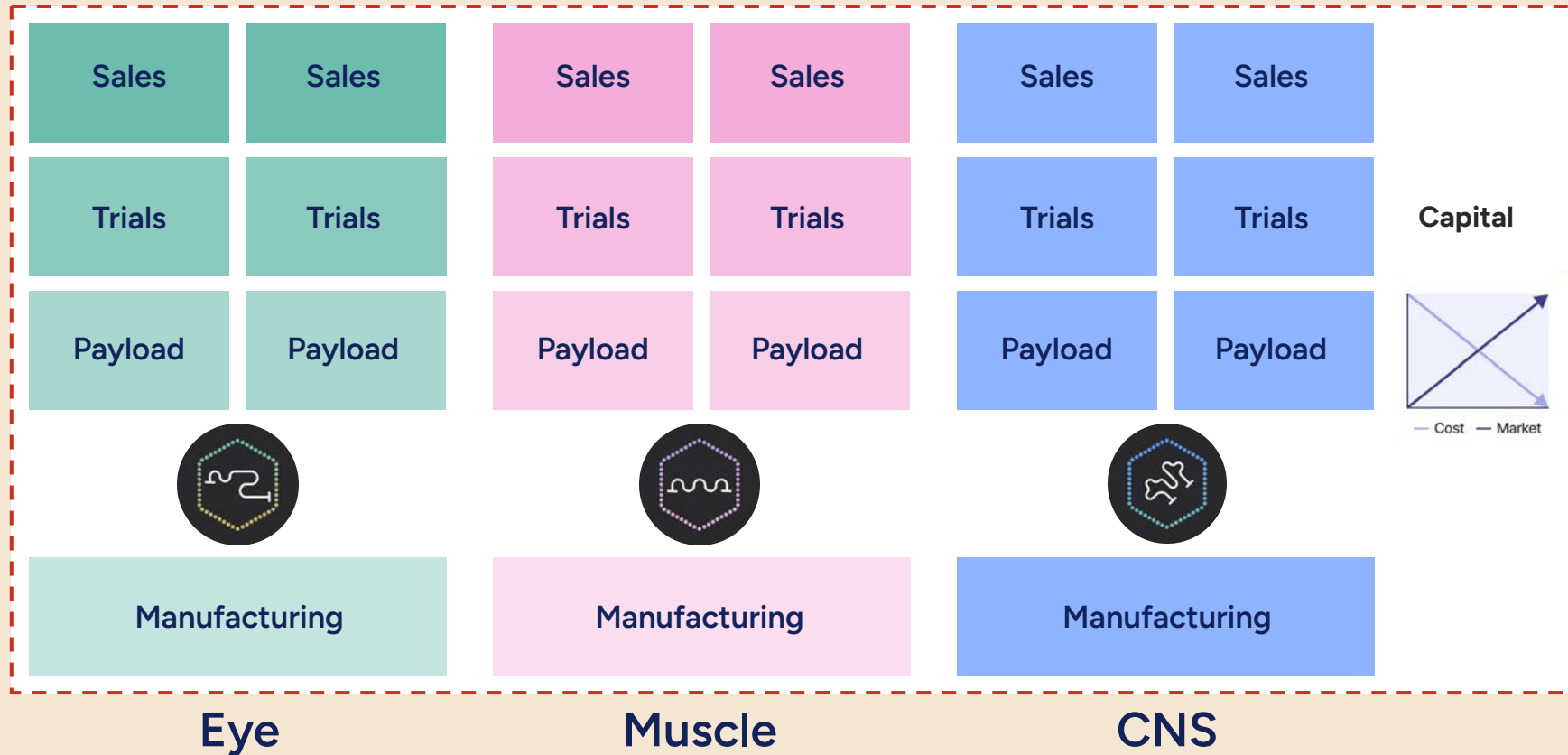
# Dyno Frontiers now includes service providers



# An ecosystem that supports developers and works for patients



# An ecosystem that supports developers and works for patients



# Dyno Frontiers now includes early stage investors



ANDREESSEN  
HOROWITZ



BioTech  
FUNDING PORTAL

Curie.Bio

CRV

DIMENSION 

G/

INSIGHT  
PARTNERS

KdT  VC

LU+

OBVIOUS

pillar

Pier  
Three  
Capital

polarispartners

 vibe bio

Y

# An ecosystem that supports developers and works for patients



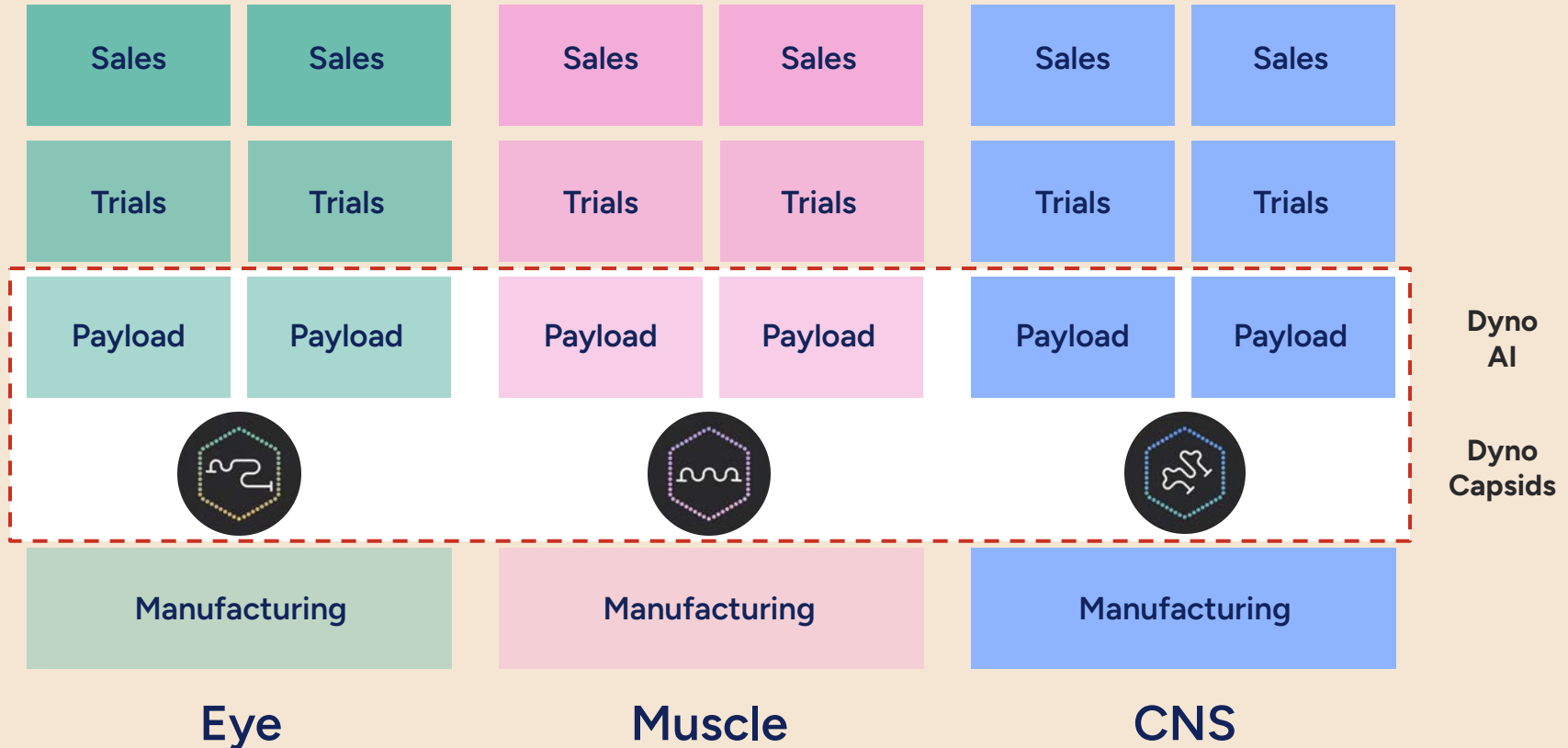
[dynotx.com/frontiers-network](https://dynotx.com/frontiers-network)

# Frontier AI:

Building a better future



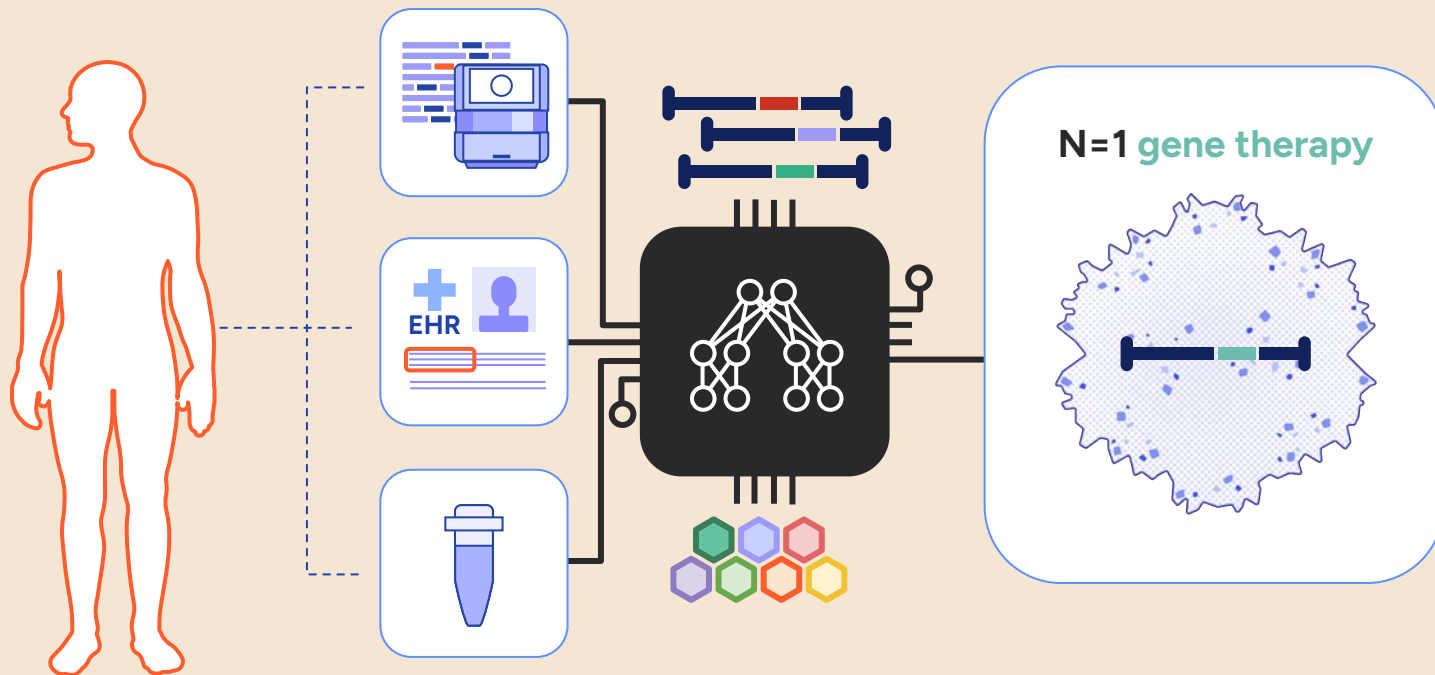
# Solving therapeutic developers' grand challenges



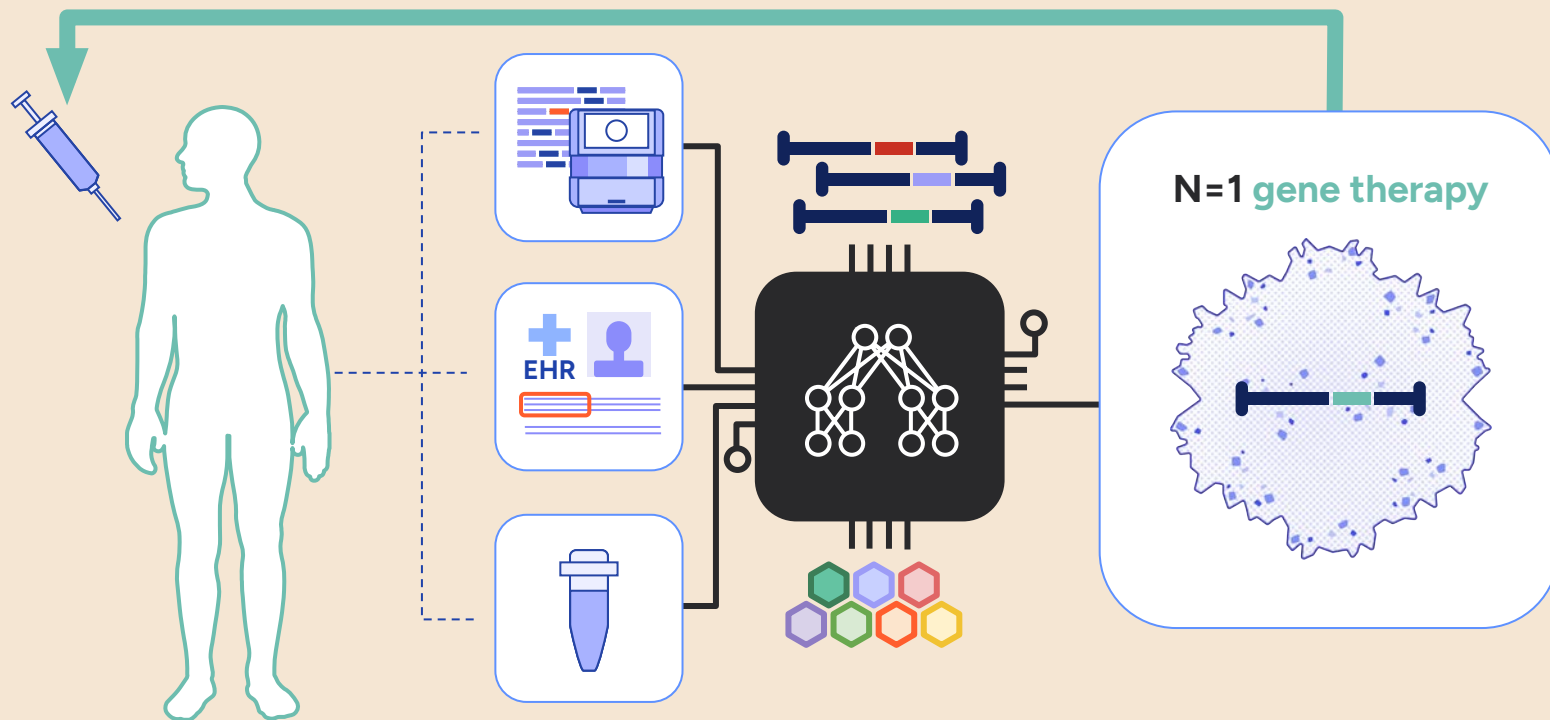
# Grand challenges in payload design



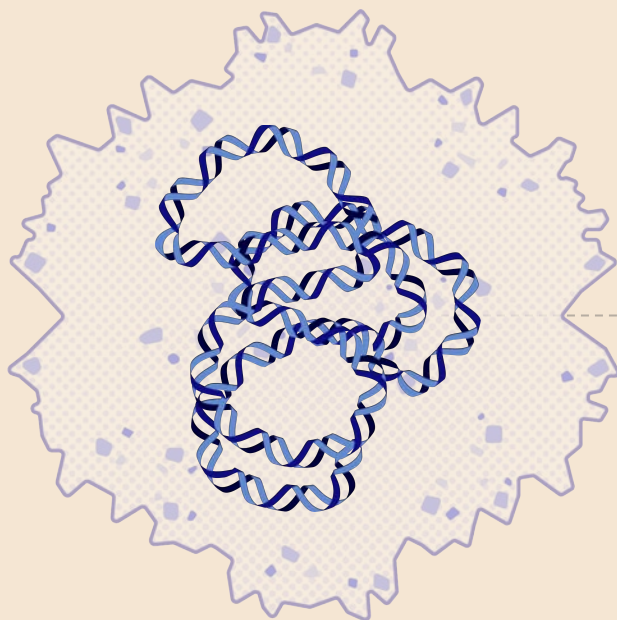
# AI for empowering all patients with genetic agency



# AI for empowering all patients with genetic agency

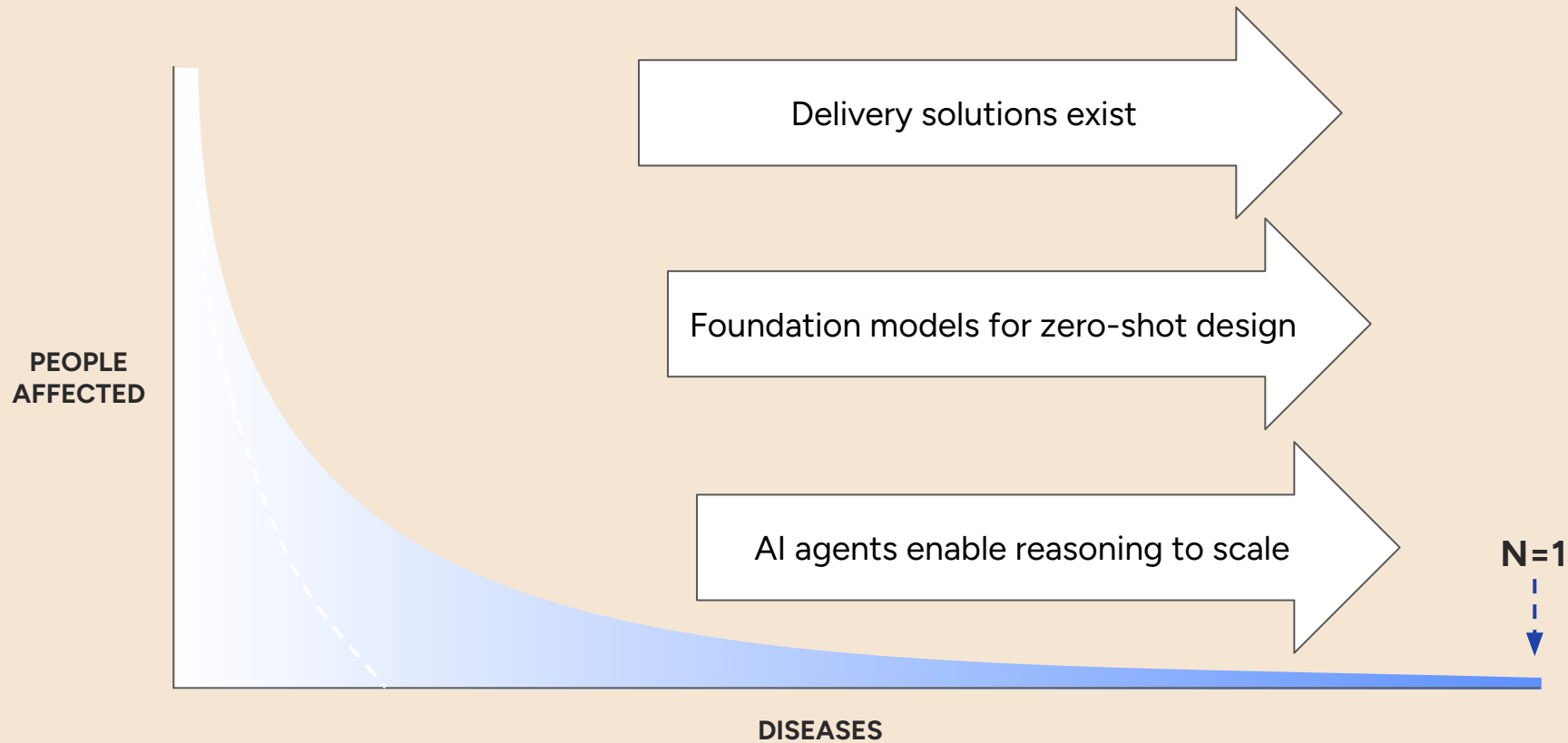


# AAV payload: a ~4700 nucleotide sequence design problem

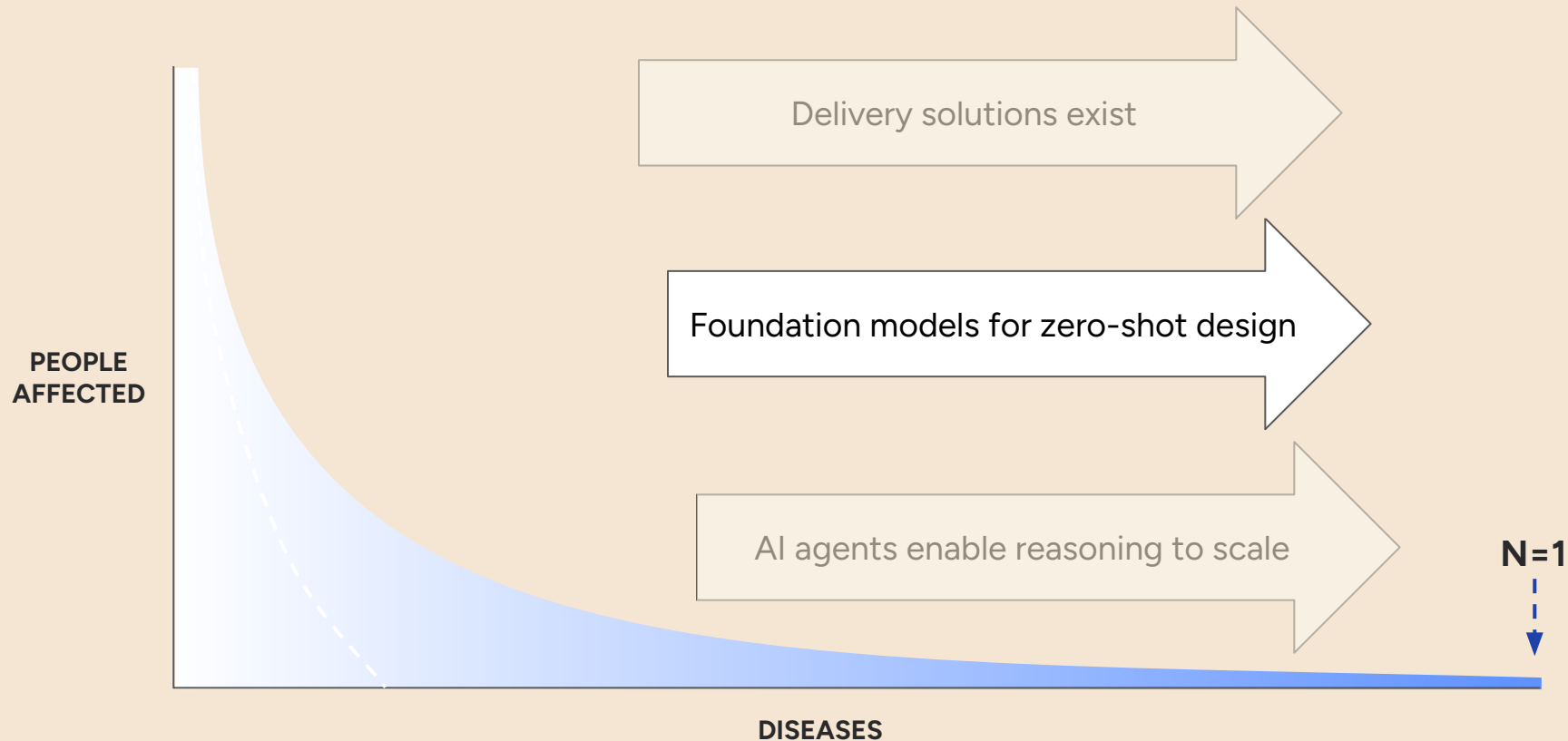


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```

# N=1 design: Why now?



# N=1 design: Why now?

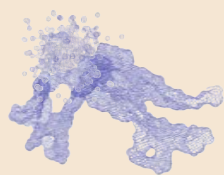


# Dyno Psi-1: Controllable protein design for genetic medicines



## Binding site specification

Control what you bind, where you bind it, and what not to bind.



## Sequence re-design

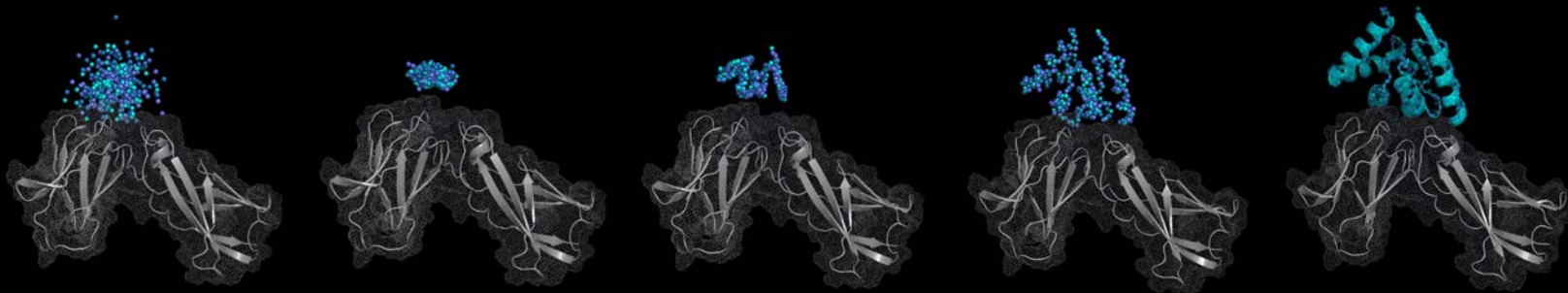
Surgically replace parts of your protein while leaving other functionality intact.



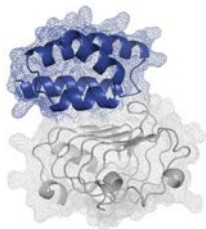
## Cross-species targeting

Optimize for multiple related targets at the same time with the same binding interface.

# Dyno Psi-1



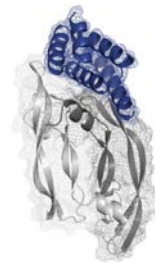
# Dyno Psi-1, an open-weights model with exceptional in-vitro design performance



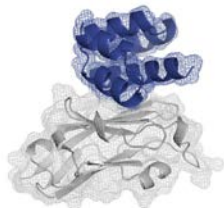
Insulin Receptor	
Expressed	50/50
Binders	27/50
Best $K_D$	19 nM



IL-7RA	
Expressed	50/50
Binders	22/50
Best $K_D$	2.1 nM



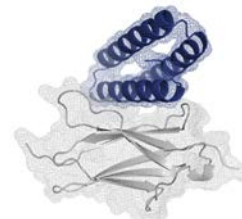
VEGF-A	
Expressed	50/50
Binders	29/50
Best $K_D$	0.48 nM



PD-L1	
Expressed	49/50
Binders	3/50
Best $K_D$	100 nM

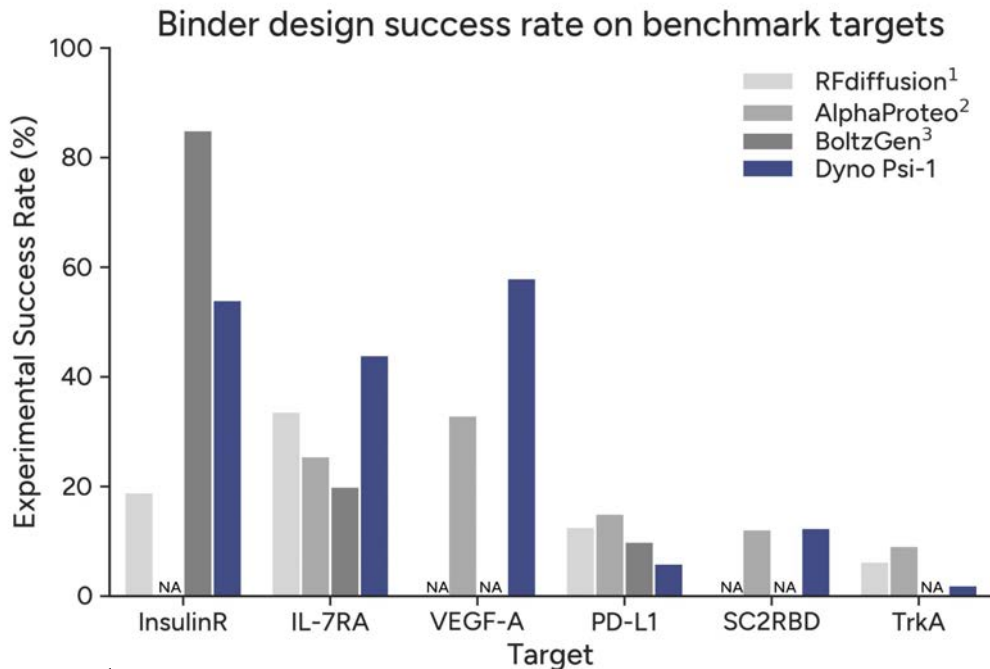


SARS-CoV-2 RBD	
Expressed	7/8
Binders	1/8
Best $K_D$	420 nM



TrkA	
Expressed	50/50
Binders	1/50
Best $K_D$	1000 nM

# Dyno Psi-1, an open-weights model with exceptional in-vitro design performance



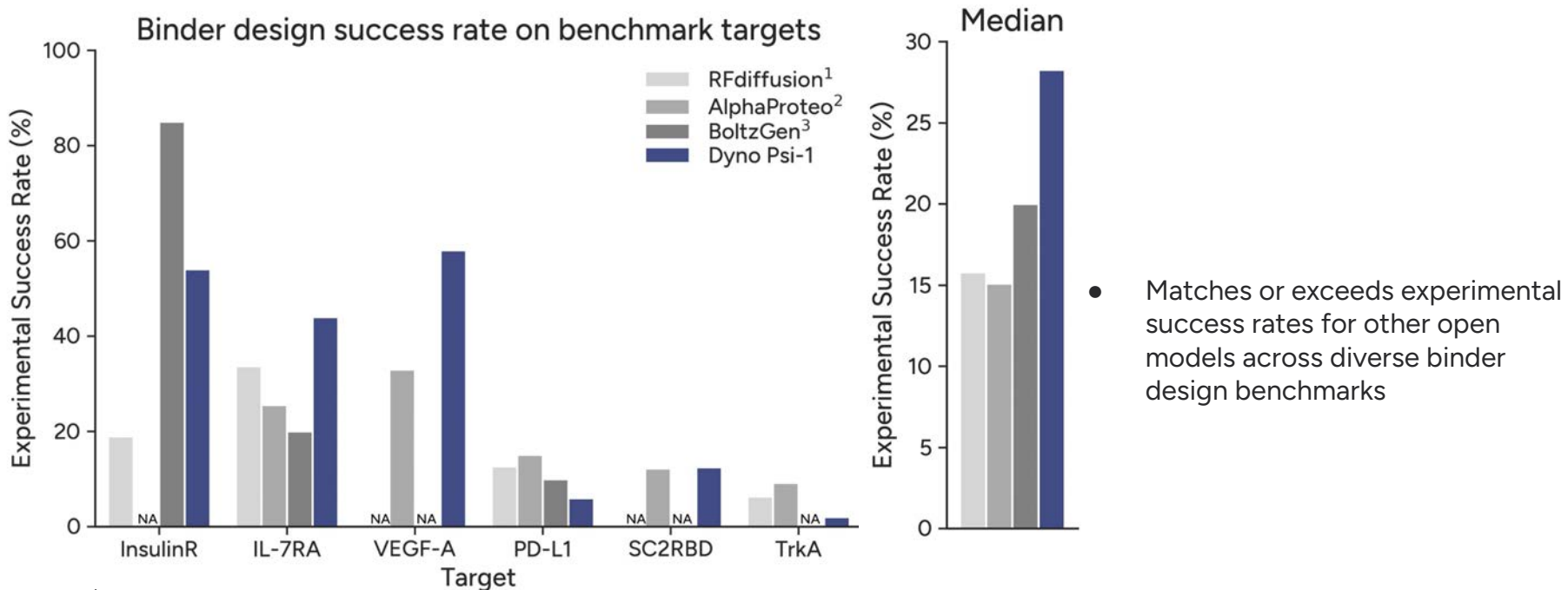
- Leads on 3/6 targets with available comparator data, while producing experimentally validated binders across all six targets tested

<sup>1</sup> Watson et al., Nature, 2023

<sup>2</sup> Zambaldi et al., arXiv, 2024

<sup>3</sup> Stark et al., bioRxiv, 2025

# Dyno Psi-1, an open-weights model with exceptional in-vitro design performance



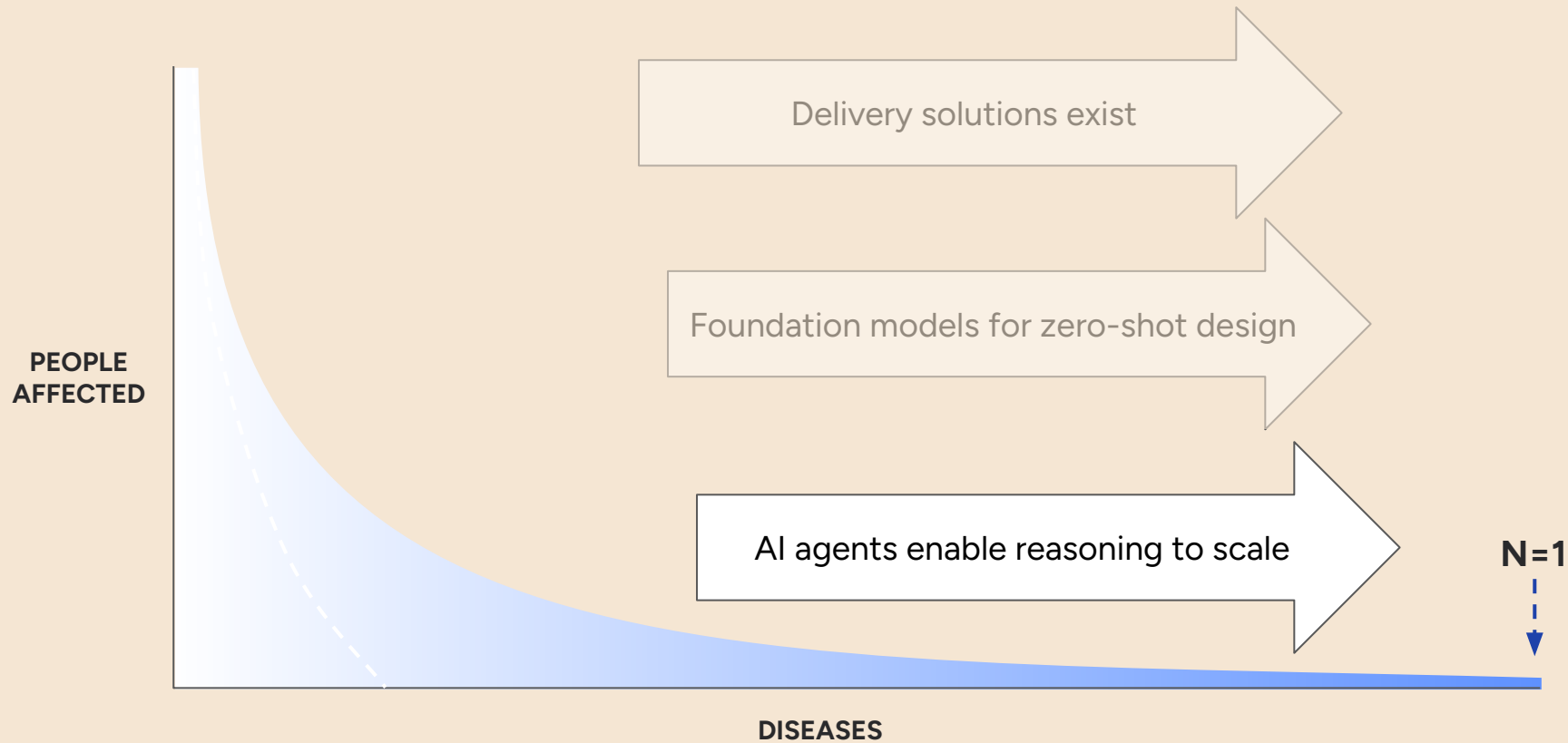
<sup>1</sup> Watson et al., Nature, 2023

<sup>2</sup> Zambaldi et al., arXiv, 2024

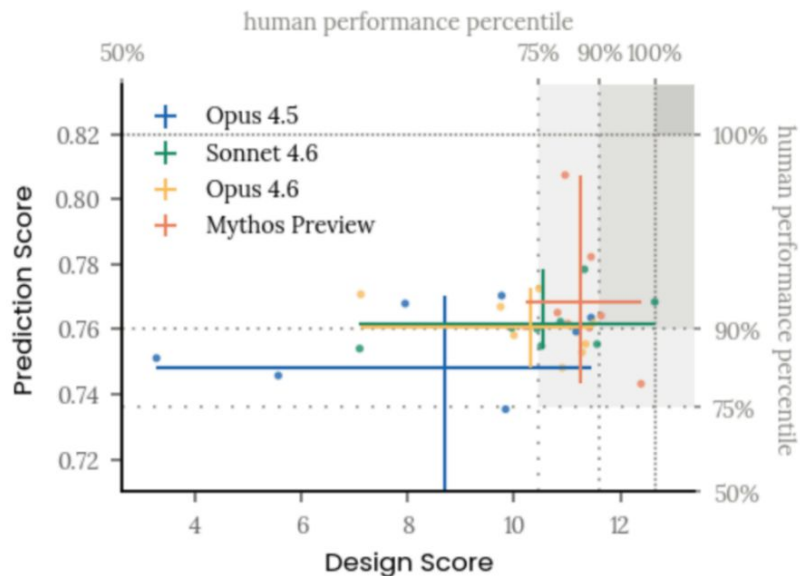
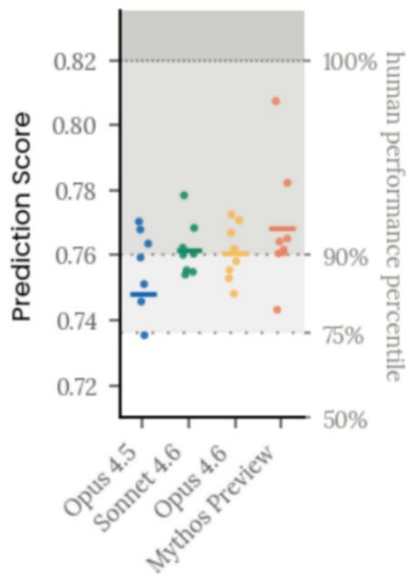
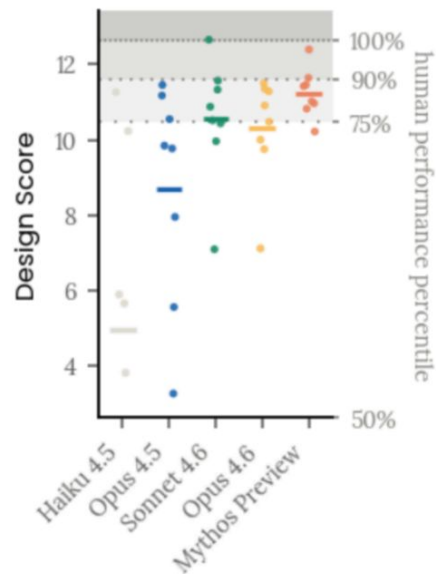
<sup>3</sup> Stark et al., bioRxiv, 2025

<https://dynotx.substack.com/p/dyno-psi-phi-shaping-new-futures>

# N=1 design: Why now?



# AI reasoning is now quite good for short time horizon tasks



**ANTHROPIC**

\*also collaborating w/ OpenAI using GPT-Rosalind: “best-of-ten model submissions ranked above the 95th percentile of human experts on the prediction task and around the 84th percentile of human experts on the sequence generation task.”

# Connecting frontier AI to patients

**Opening Dyno Psi-Phi foundation models and APIs  
to patient advocacy orgs and rare disease  
communities**



Andreas Borg

Founder at CURE5 Foundation and Full Stack Engineer at Jimini Health

Co-founded CURE5 Foundation after his daughter was diagnosed with CDKL5 Deficiency Disorder, and is applying his software engineering background to build AI tools that help families make decisions and accelerate therapeutic development.

# Connecting frontier AI to patients

Opening Dyno Psi-Phi foundation models and APIs to patient advocacy orgs and rare disease communities

## Classification

Which mechanism or modality?

## Biology

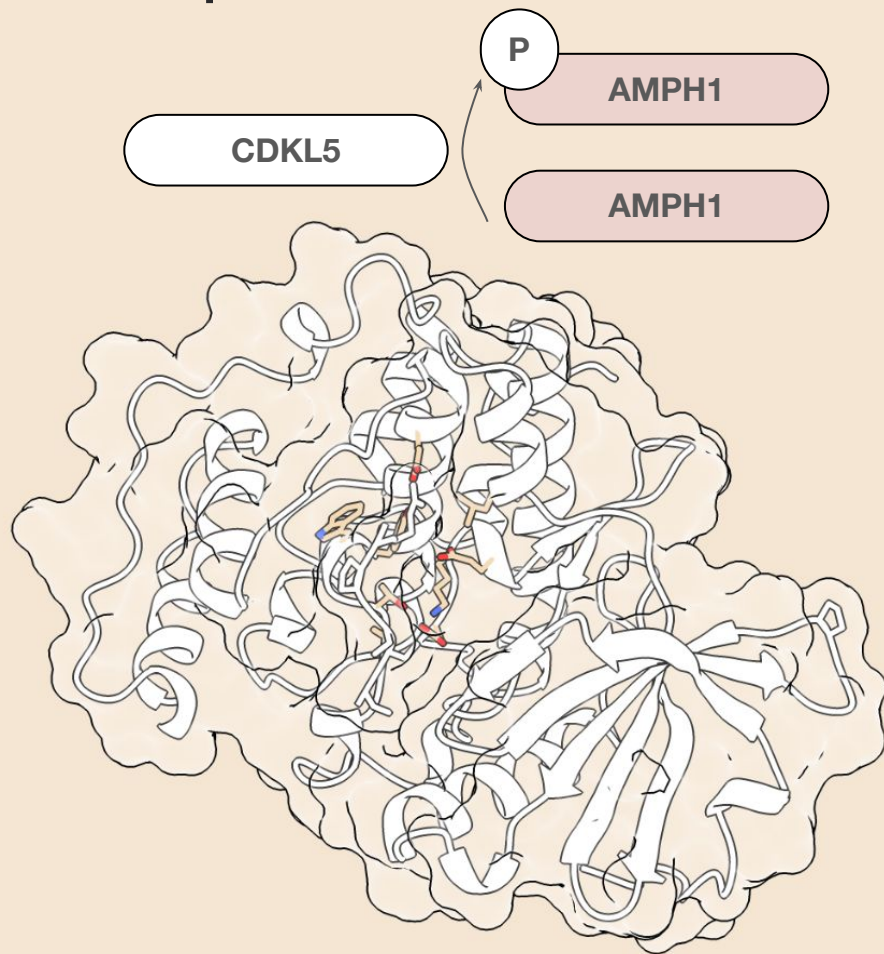
Is the protein stable? Can it bind substrates?

## Analysis

Coordinating computational and wet-lab validation

## Development

Advancing therapeutics into clinical trials



# Connecting frontier AI to patients

Opening Dyno Psi-Phi foundation models and APIs to patient advocacy orgs and rare disease communities

## Classification

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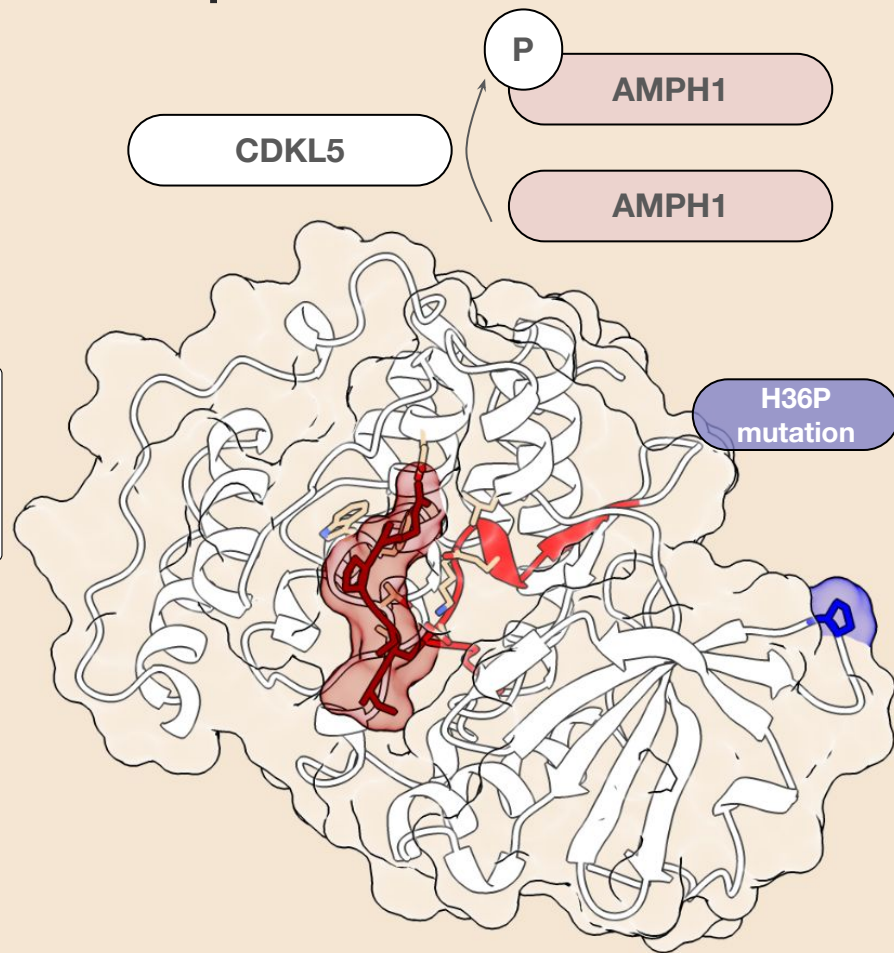
Coordinating computational and wet-lab validation

## Development

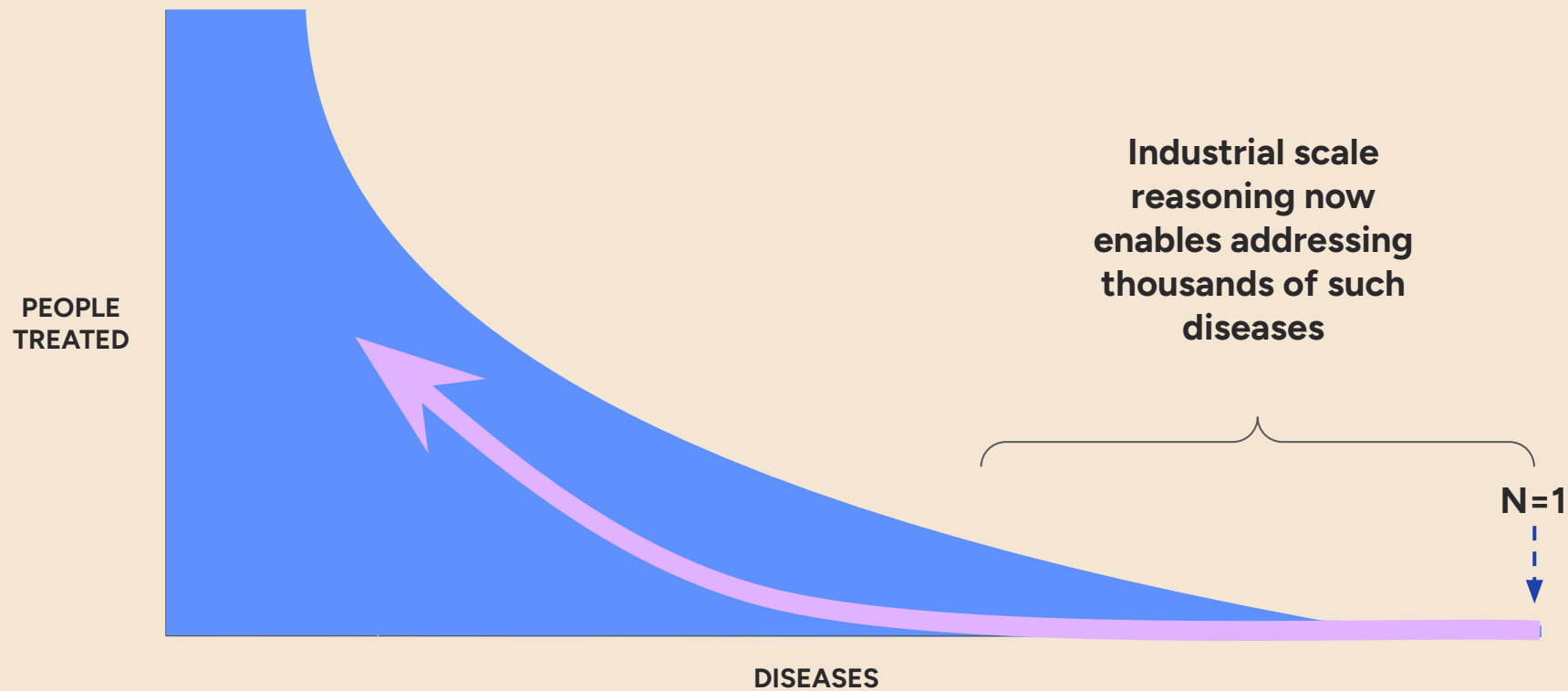
Advancing therapeutics into clinical trials

Dyno Phi APIs: [design.dynotx.com](https://design.dynotx.com)

Email [partnerwith@dynotx.com](mailto:partnerwith@dynotx.com) with an idea for how Dyno can help



# From N=1 to everyone



# AI for advancing the genetic medicine frontiers, **in the near future:**

Frontier AI models to navigate sequence space

**Reducing costs for design  
of N=1 gene therapies**

Experimental Research and Clinical Development

**Understanding genetic disease to predict  
who will benefit from new payload strategies**

Approved Therapies

**Advising patients on the best treatment options  
from their unique genome and health goals**

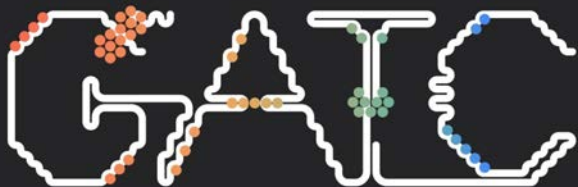
We have never had more opportunities and challenges ahead



**Genetic Agency**

TECHNOLOGY CONFERENCE 2025

 dyno



**Genetic Agency**  
TECHNOLOGY CONFERENCE 2025

 dyno

**GATO**  
**Genetic Agency**  
TECHNOLOGY CONFERENCE 2025



**Genetic Agency**  
TECHNOLOGY CONFERENCE 2025

 **dyno**

**GATC**

**Genetic Agency**  
TECHNOLOGY CONFERENCE 2025



# Come to co-create the future of genetic medicine

Hear from patients directly as co-creators shaping the next generation of genetic technologies

Meet your next collaborator and build lasting relationships across the gene therapy ecosystem, united by a shared commitment to genetic agency

Step into the future with sessions that reveal the technological trends shaping what's next

Leave with optimism and the conviction to act to build a future with genetic agency



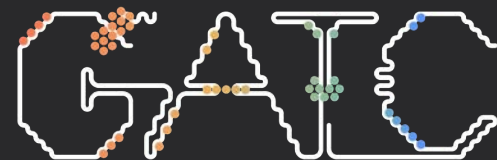
**Genetic Agency**

TECHNOLOGY CONFERENCE

# SAVE THE DATE

November 18th, 2026 | SF

Apply to attend: [dynotx.com/gatc2026](https://dynotx.com/gatc2026)



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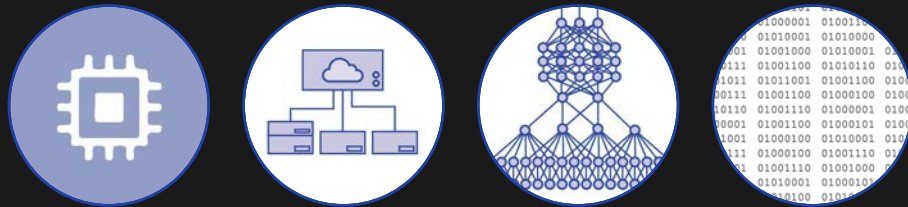
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# Reaching greater heights together

Partnerships are [Dyno's business](#).

We give our partners a competitive edge with high-performance solutions for [gene delivery](#) and [sequence design](#).





It's time to build  
a future with  
**genetic agency**

