

Altimmune R&D Day

Pemvidutide: Designed to be the Treatment of Choice for Liver and Cardiometabolic Diseases

MARCH 13, 2025



Forward-looking Statements

Safe-Harbor Statement

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R&D Day Agenda

Introduction

Pemvidutide for Obesity and its Comorbidities

Pemvidutide for MASH: Upcoming Phase 2b Readout

Introducing Two Additional High-Impact Indications

- Alcohol Use Disorder (AUD)
 - Alcohol Liver Disease (ALD)
-

Summary

Today's Speakers



Vipin Garg, PhD

Chief Executive Officer
Altimmune, Inc.



Louis Aronne, MD

Weill Cornell
Medical College



Scott Harris, MD

Chief Medical Officer
Altimmune, Inc.



Mazen Nouredin, MD, MHSc

Houston Methodist
Hospital



Sarah Browne, MD

Vice President,
Clinical Development
Altimmune, Inc.



Henry Kranzler, MD

University of
Pennsylvania



Rohit Loomba, MD, MHSc

University of
California San Diego

| Introduction

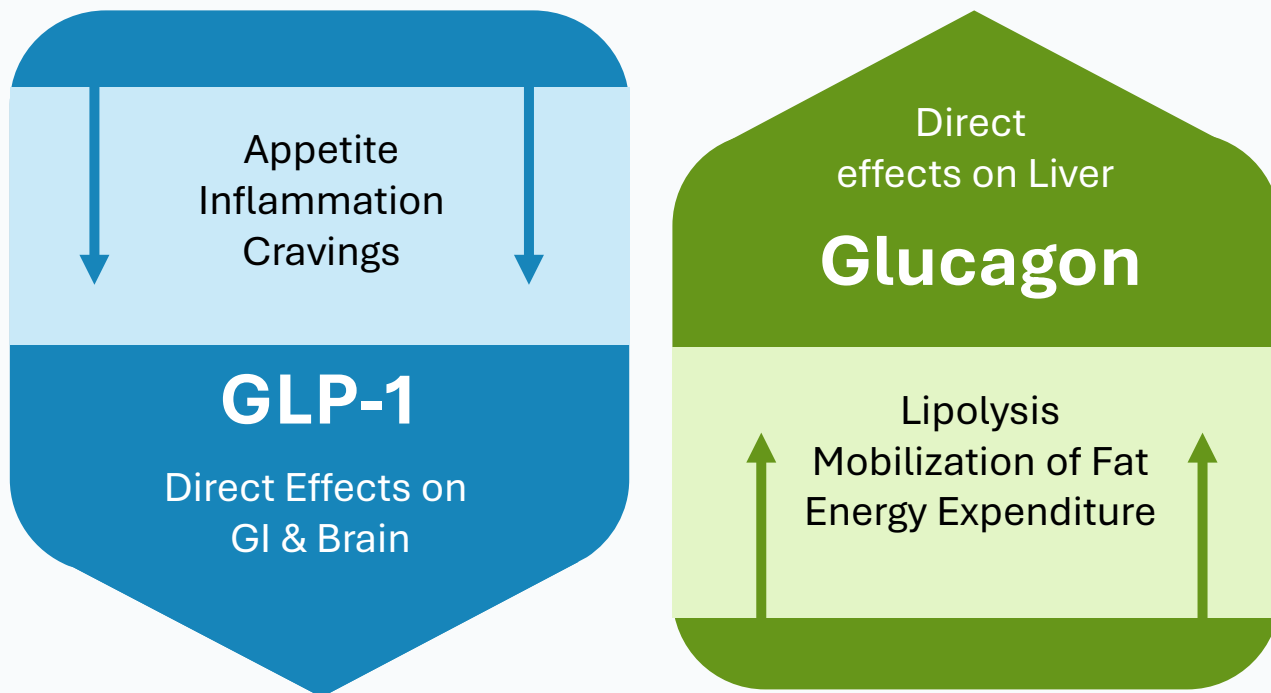
Vipin Garg, PhD

Chief Executive Officer
Altimmune, Inc.

Pemvidutide: Novel GLP-1/Glucagon Dual Receptor Agonist

Vision: Treatment of Choice for Liver and Cardiometabolic Diseases

1:1 POTENCY OF GLP-1 AND GLUCAGON



Compelling data to-date support continued development in multiple indications

Clinically meaningful weight loss

Class-leading lean mass preservation

Rapid and robust liver fat reduction

Significant reductions in serum lipids

Introducing Two Additional High-Impact Indications

Breaking New Ground in Addressing Major Unmet Medical Needs

Alcohol Use Disorder (AUD)

Compelling therapeutic potential in this highly prevalent indication

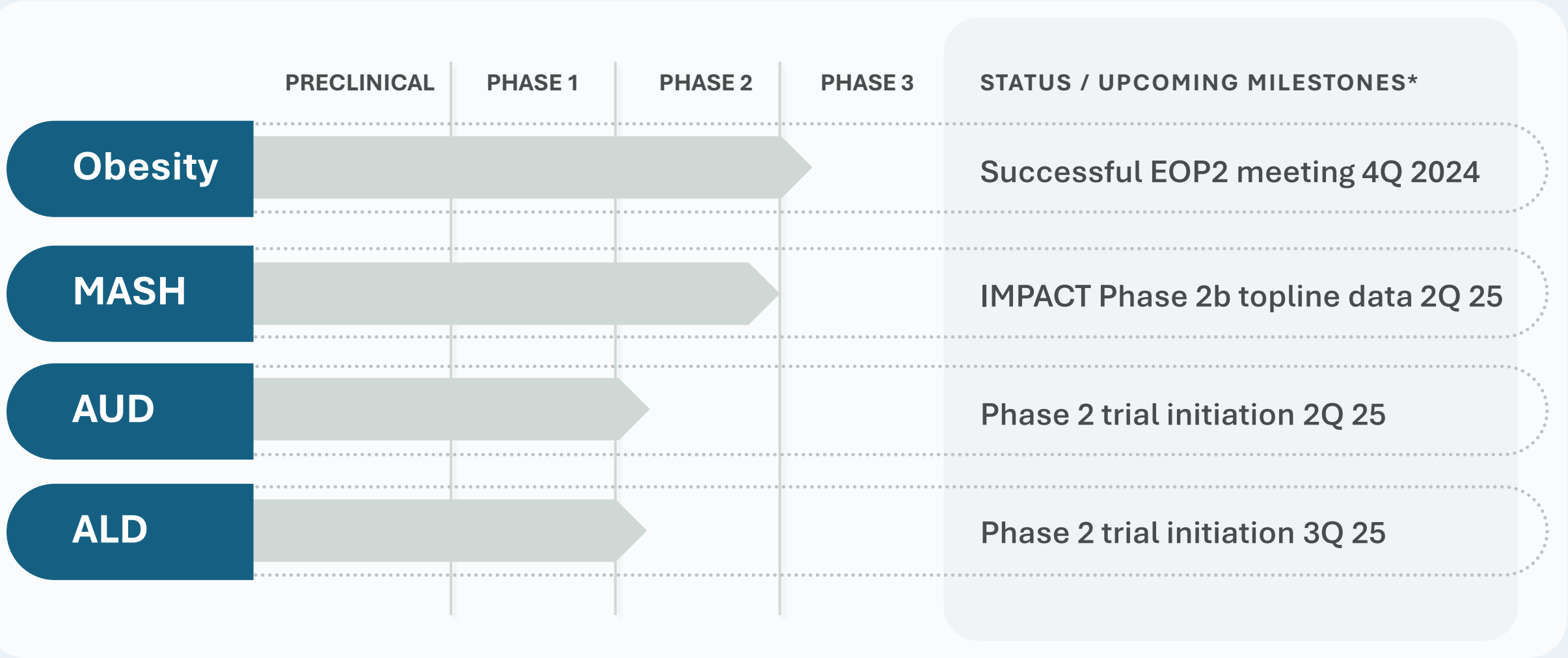


Alcohol Liver Disease (ALD)

Exciting commercial opportunity in large, underserved patient population



Pemvidutide: Pipeline in a Product



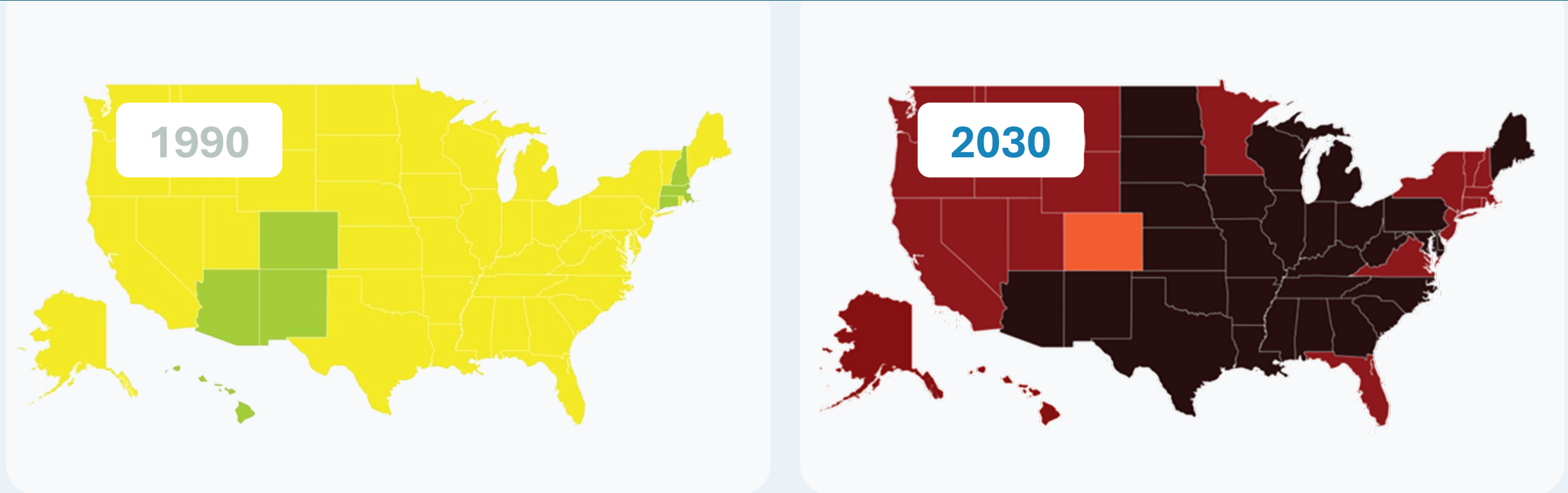
Pemvidutide for Obesity and its Comorbidities

Louis Aronne, MD, FACP

Sanford I. Weill Professor of Metabolic Research and Director of the Comprehensive Weight Control Center, Division of Endocrinology, Diabetes & Metabolism, Weill Cornell Medicine

Obesity: A Growing Epidemic

Nearly Half of All Americans will have Obesity by 2030



US OBESITY RATES (1990-2030)¹

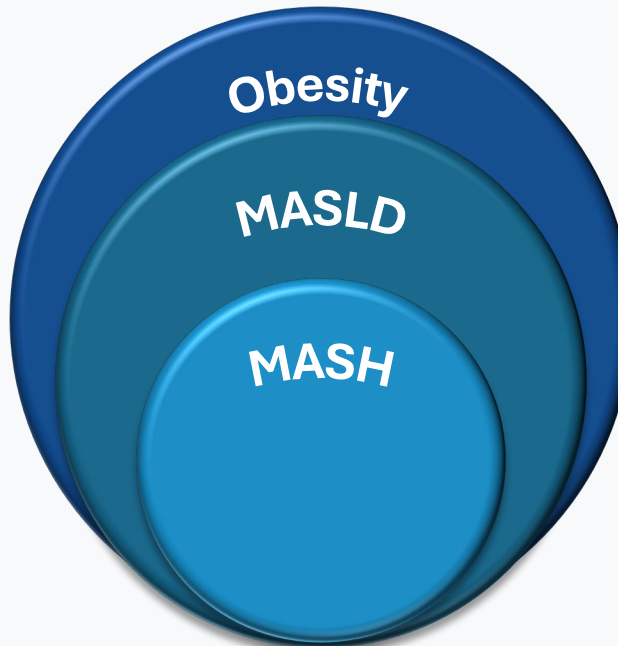


Managing Comorbidities is Essential to Treating Obesity

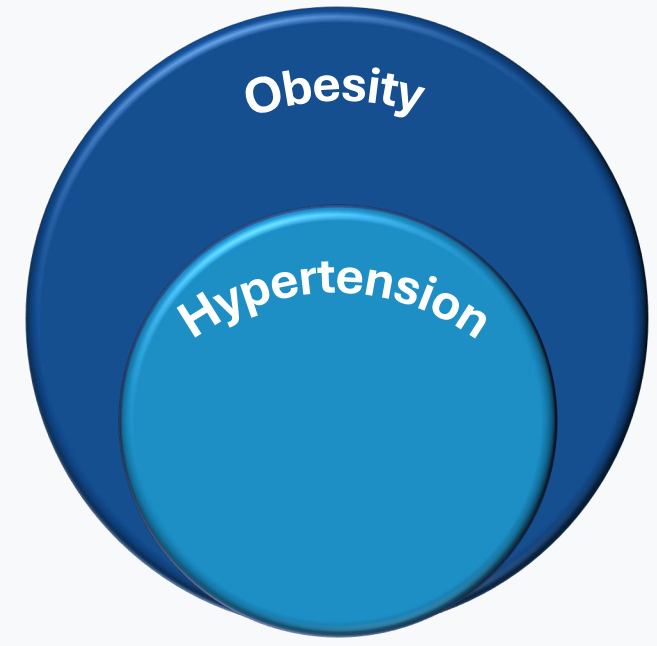
Most Significant Comorbidities Relate to Lipid and Liver Fat Disorders



66-70%
Dyslipidemia^{2,3}



58-75% MASLD^{4,5,6}
15-36% MASH^{4,5,7}



45-55%
Hypertension^{2,8}

Obesity Drugs: Unmet Medical Needs

Enhanced Effects on Lipid and Liver Fat Reductions

Opportunity to further improve cardiovascular (CV) benefits

Muscle Preservation

Some therapies result in as much as 40% lean mass loss

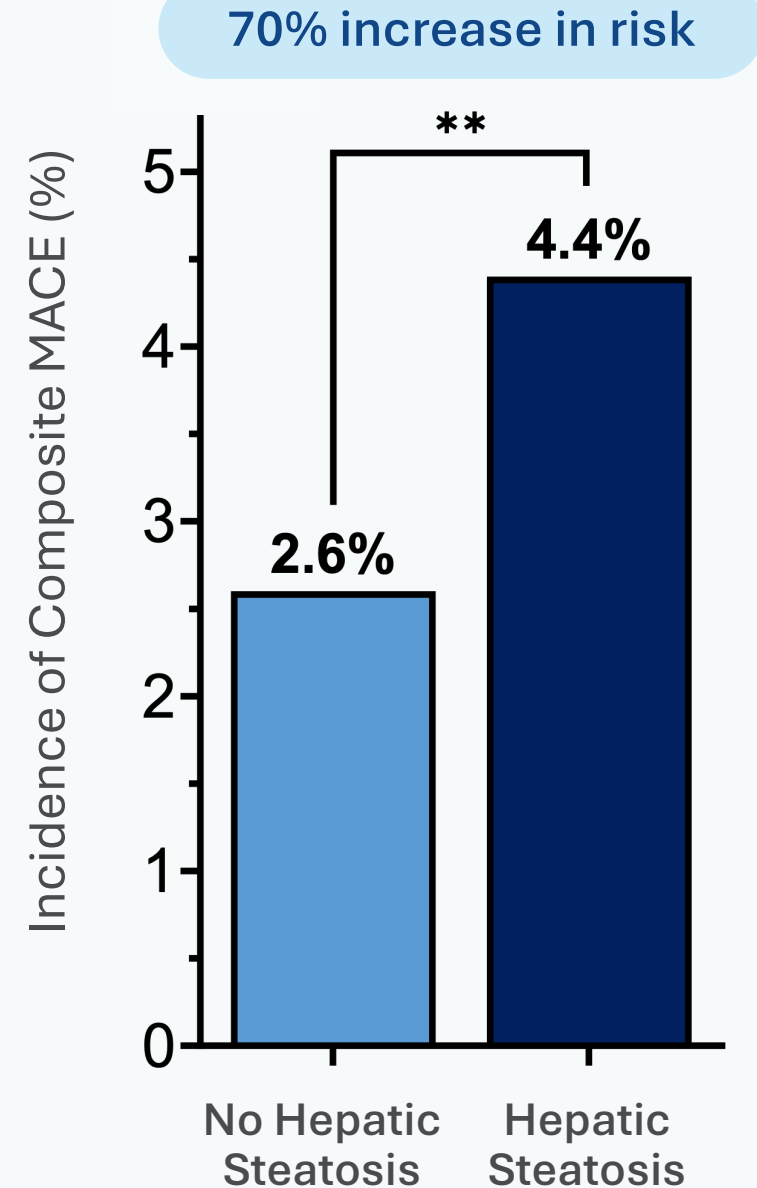
Improved Tolerability

High rates of discontinuation with lengthy dose titration

Patients with Liver Steatosis are at Higher Risk for CV Events

CV Events Over 36 Months⁹

Liver fat associated with 70% increase in MACE, independent of other CV risk factors or extent of atherosclerosis



MACE = Major Adverse Cardiac Events

** p < 0.01 vs. no hepatic steatosis

Pemvidutide: Designed to Address Major CV Risk Factors

>15%

Weight Loss



>75%

Liver Fat
Reduction



15-20%

LDL-C
Reduction



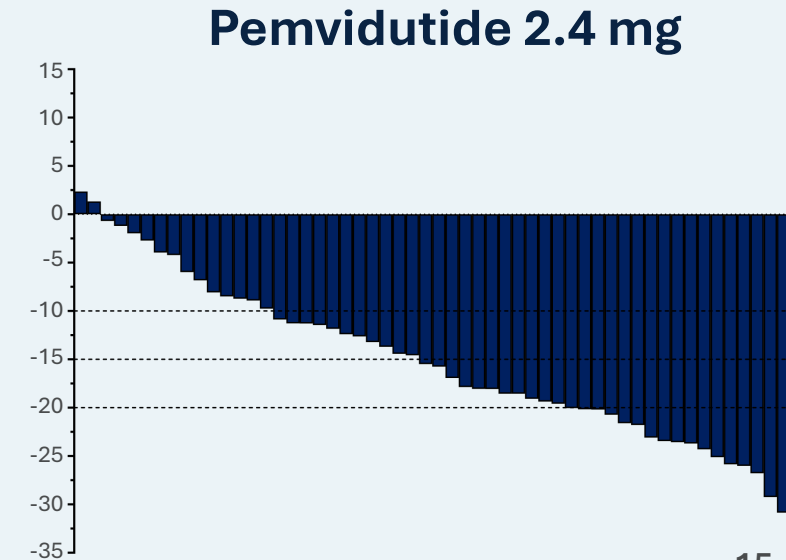
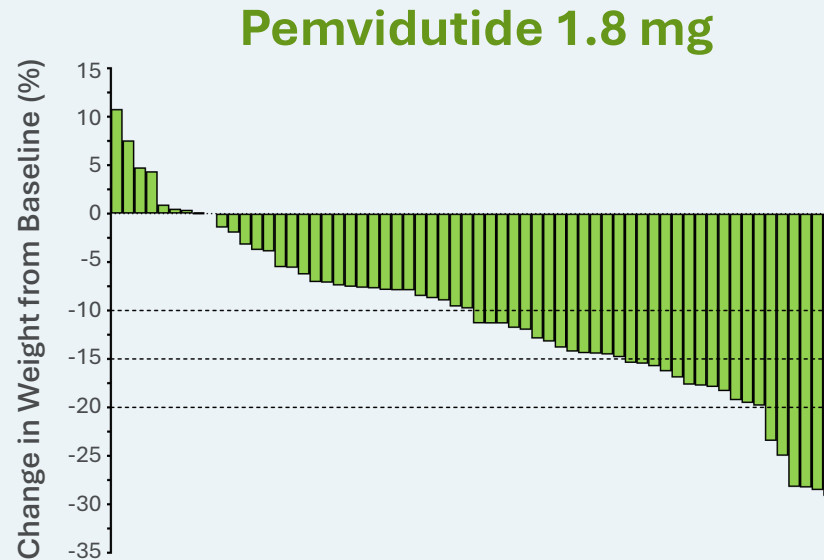
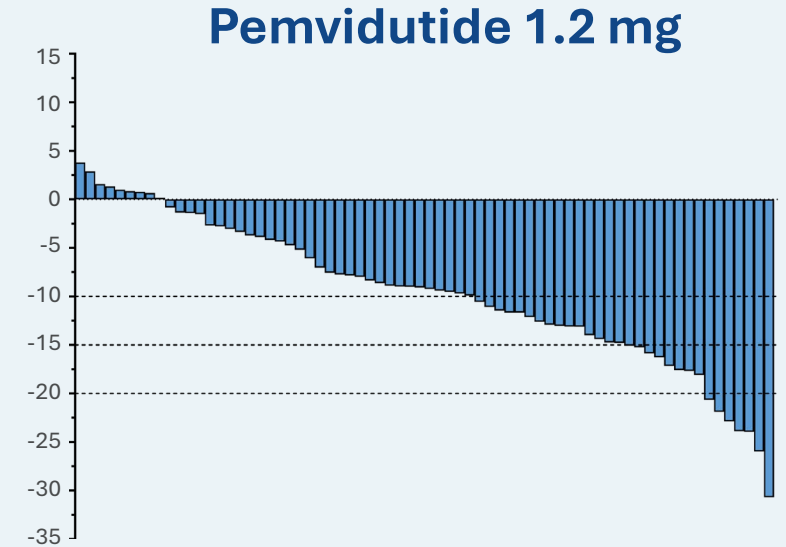
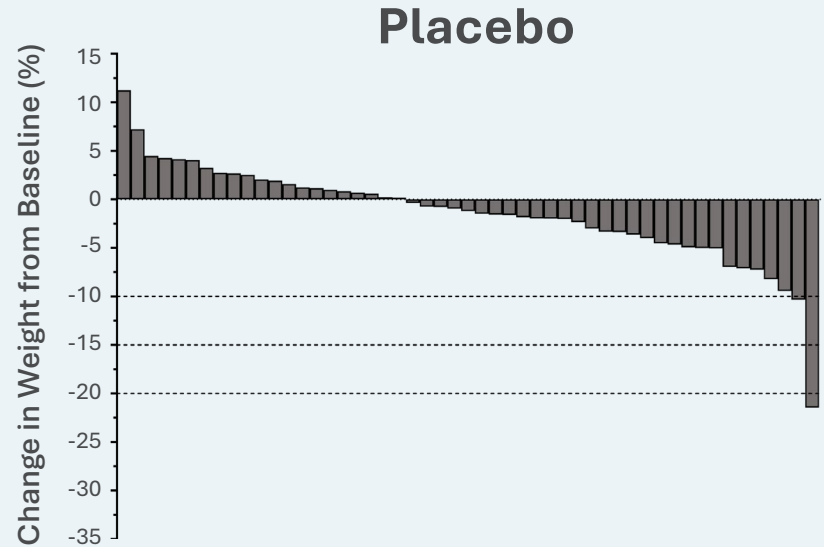
Pemvidutide: MOMENTUM Phase 2 Clinical Data Summary

MOMENTUM Phase 2 Trial:

Robust Weight Loss at All Doses

Potential to optimize
treatment with three active
doses

Over 30% of subjects lost $\geq 20\%$ of body weight on 2.4 mg dose



Pemvidutide: Improved Quality of Weight Loss

Class-leading Lean Mass Preservation

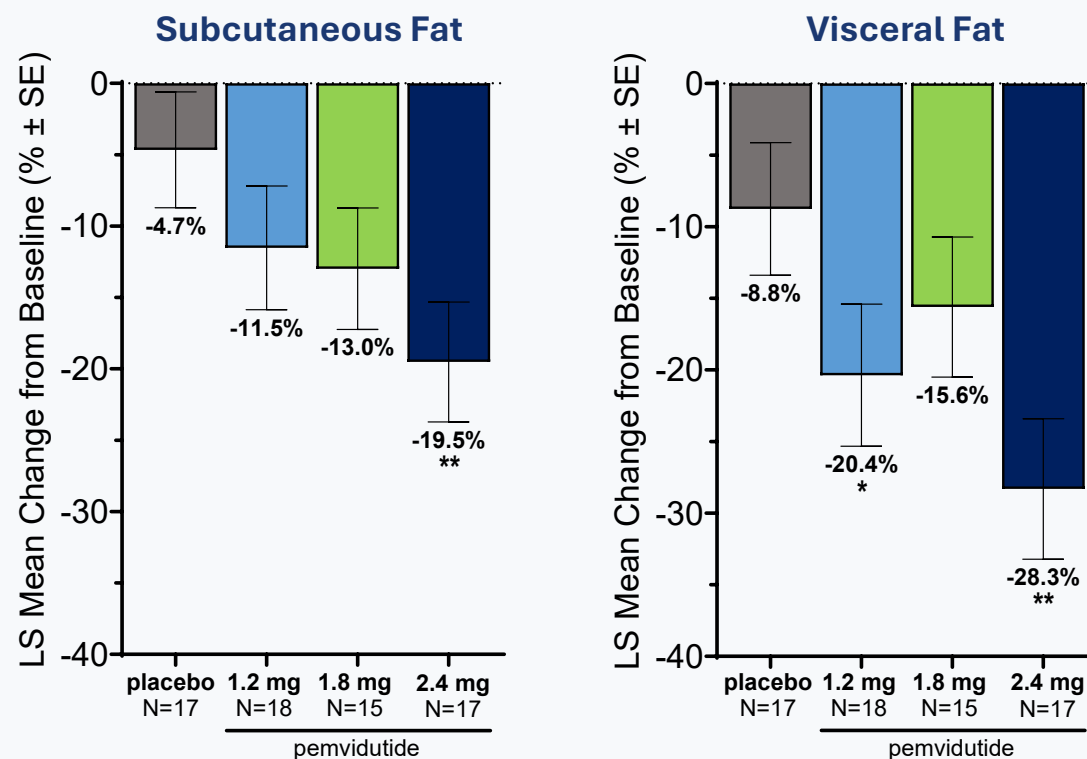
Drug	Study	Study Duration	Lean Loss Ratio
Pemvidutide	MOMENTUM Phase 2	48 weeks	21.9%¹⁰
Semaglutide	STEP-1 Phase 3	68 weeks	39.9% ¹¹
Tirzepatide	SURMOUNT 1 Phase 3	72 weeks	26.0% ¹¹
Retatrutide	Obesity Phase 2	36 weeks	37.7% ¹²

Lean Loss Ratio = Lean Loss (kg)/Total Loss (kg)

Note: These data are derived from different clinical trials at different points in time, with differences in trial design and patient populations. As a result, cross-trial comparisons cannot be made, and no head-to-head clinical trials have been conducted.

Visceral fat is a CV risk factor

Preferential Loss of Visceral Fat

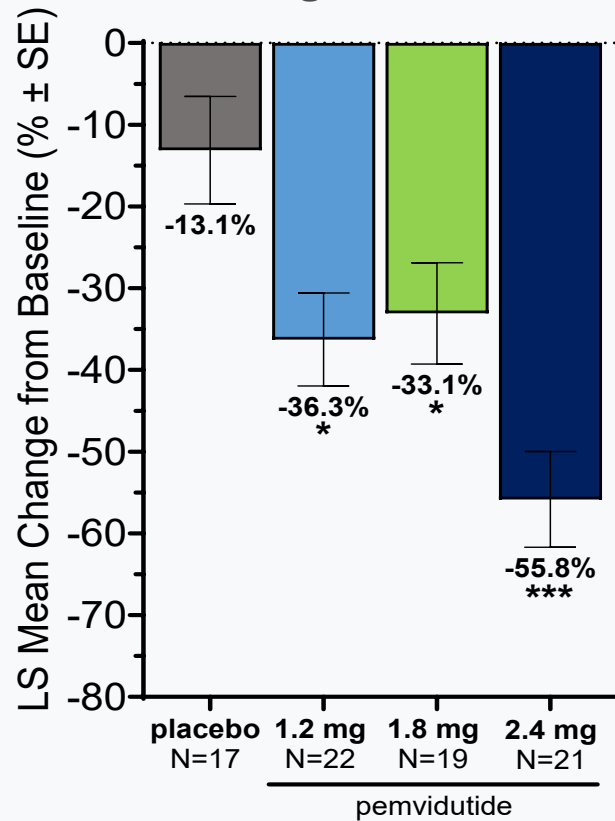


* p < 0.05 | ** p < 0.005 vs. placebo (analysis of covariance; ANCOVA)

Enhanced Lipid Reductions in Subjects with Elevated Baseline Levels

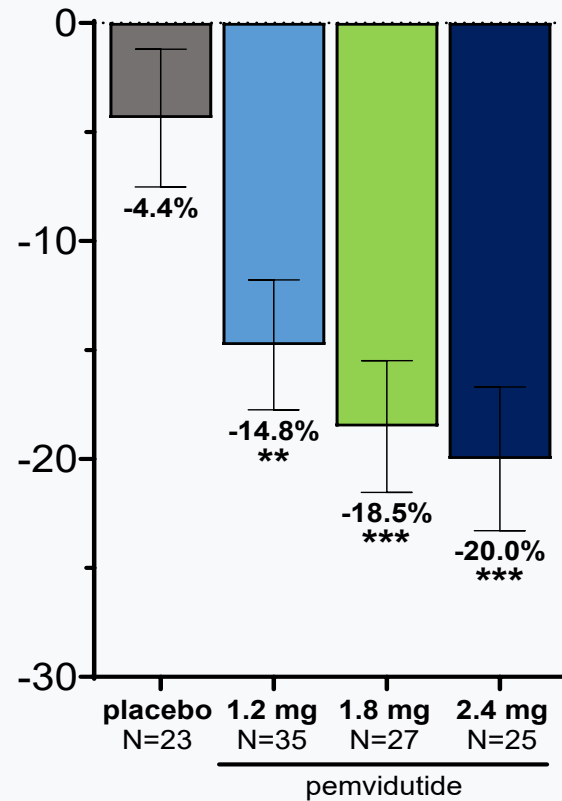
Triglycerides

> 150 mg/dL at Baseline



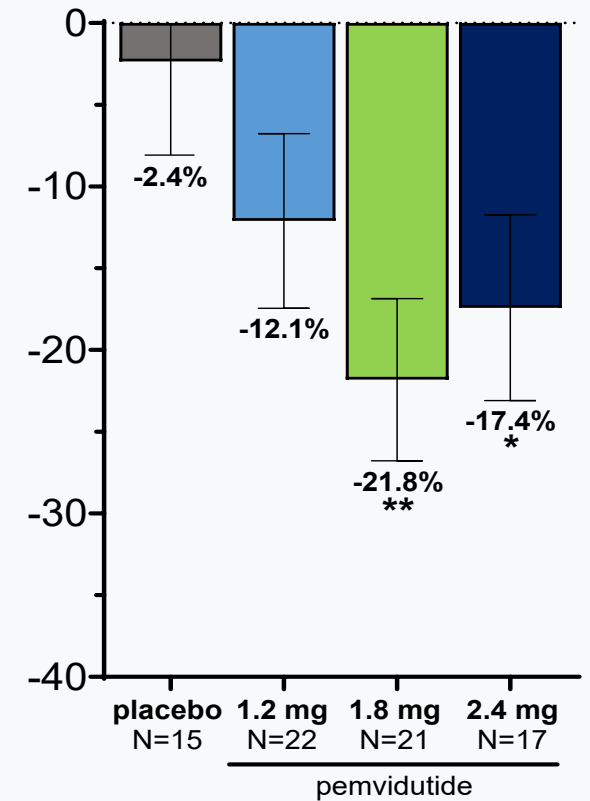
Total Cholesterol

> 200 mg/dL at Baseline



LDL

> 130 mg/dL at Baseline



Pemvidutide: Differentiated Profile for the Treatment of Obesity and its Comorbidities

Weight Loss

Robust weight loss with continued linear weight loss trajectory on 2.4 mg at Week 48

Quality of Weight Loss

Class-leading lean mass preservation

Serum Lipids and Liver Fat

Significant reductions in risk factors for CV disease

Dose Titration

Active dose without titration, ideal for PCP setting

Tolerability

Gastrointestinal adverse event rates similar to other incretin agents

Safety

No MACE events, no imbalances in cardiac arrhythmias across treatment groups, no CV safety study required

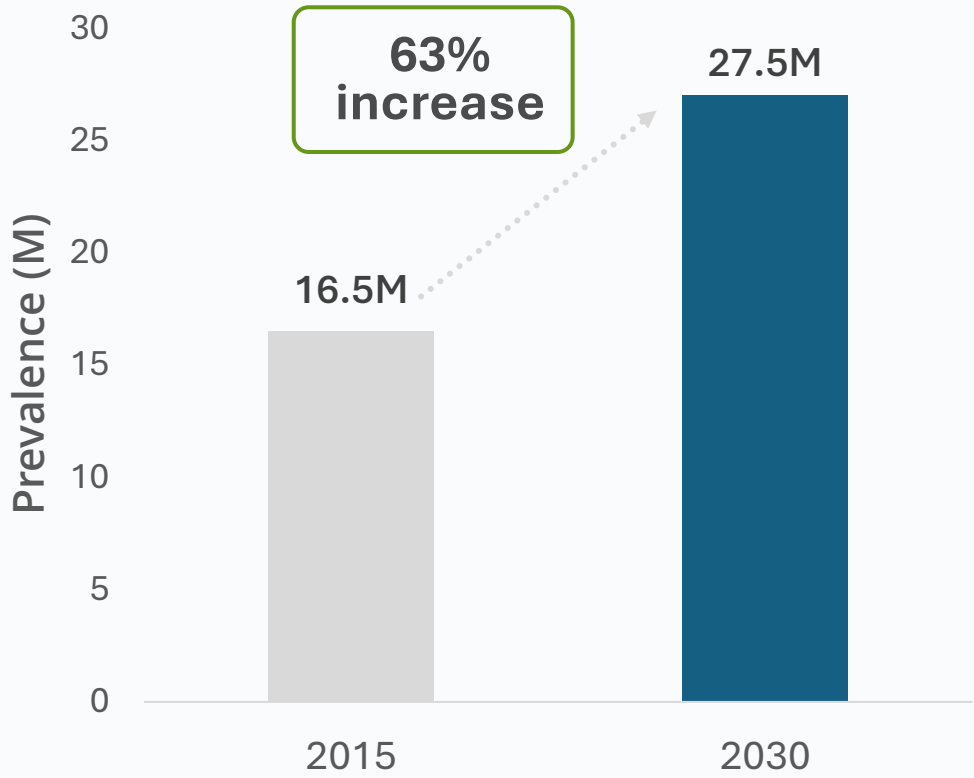
Pemvidutide for MASH: Upcoming Phase 2b Data Readout

Mazen Nouredin, MD, MHSc

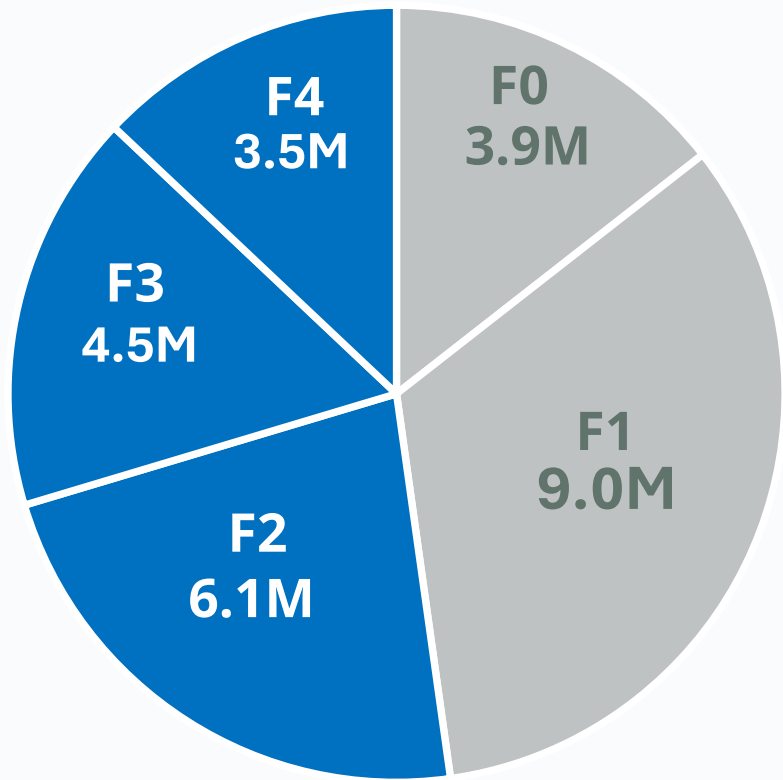
Professor of Medicine, Lynda K. and David M. Underwood Center for Digestive Disorder
Department of Medicine, Sherrie and Alan Conover Center for Liver Disease & Transplantation,
Houston Methodist Hospital

The Rising Prevalence of MASH

Projected MASH Prevalence in the US (2030)¹³

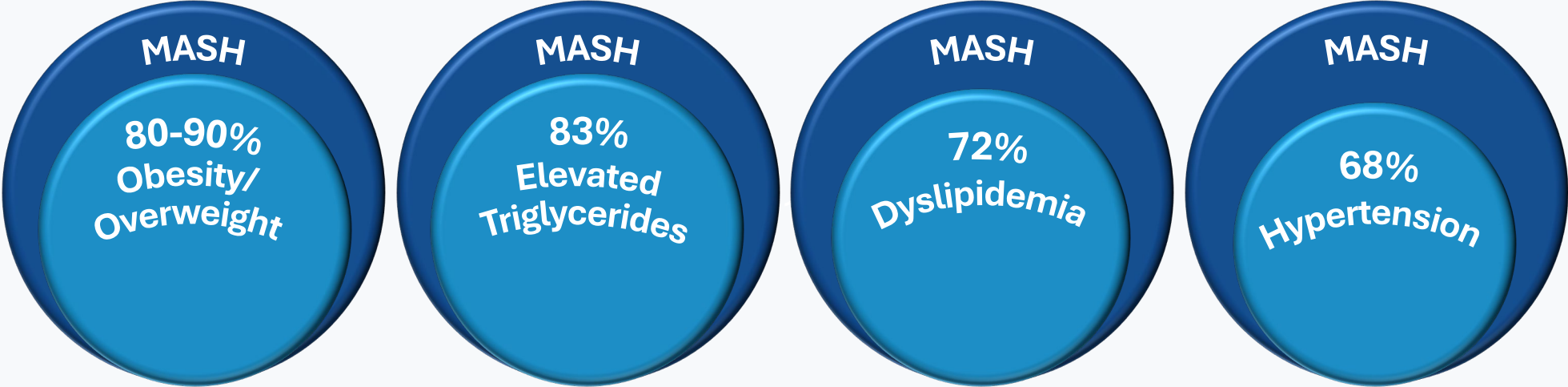


Projected MASH Prevalence by Stage (2030)¹³



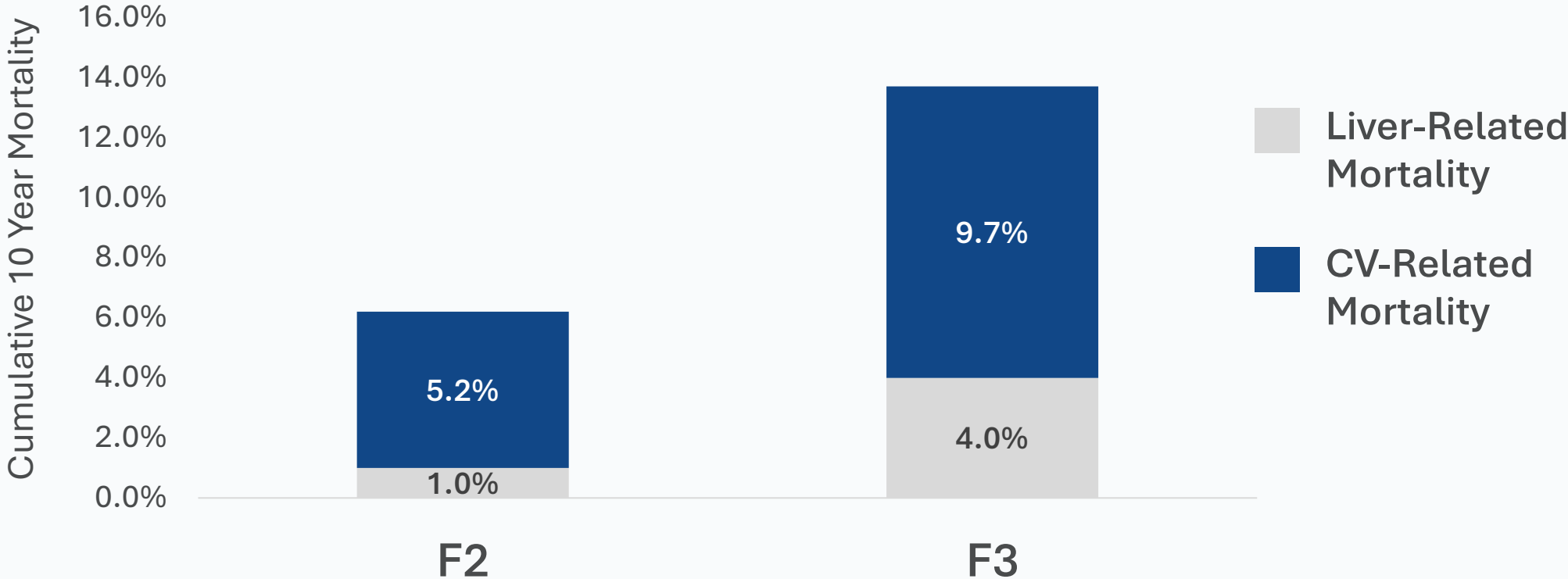
Significant Comorbidities Associated with MASH

Addressing Comorbidities Essential for Comprehensive MASH Treatment¹⁴



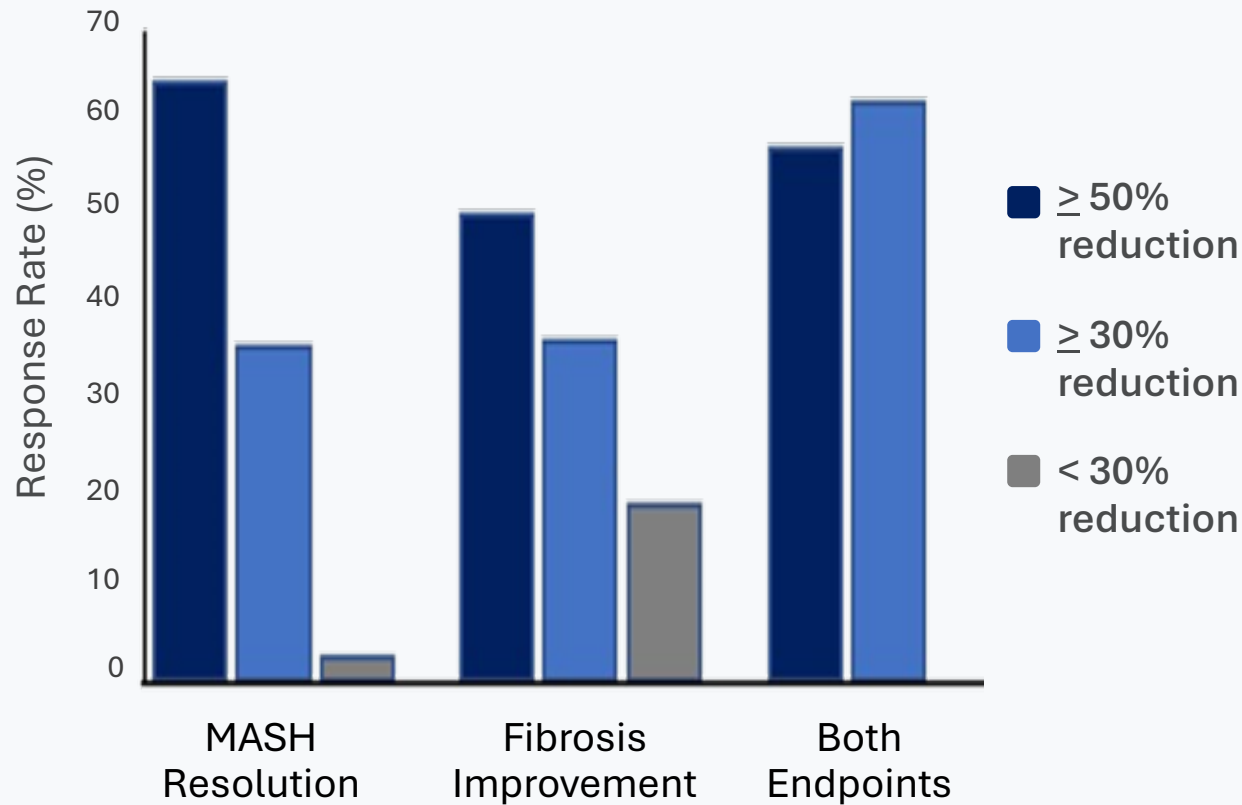
Ideal MASH Therapy Would Address Both Liver and CV Disease

Projected Liver and CV-Related 10-year Mortality in F2/F3 MASH¹⁵

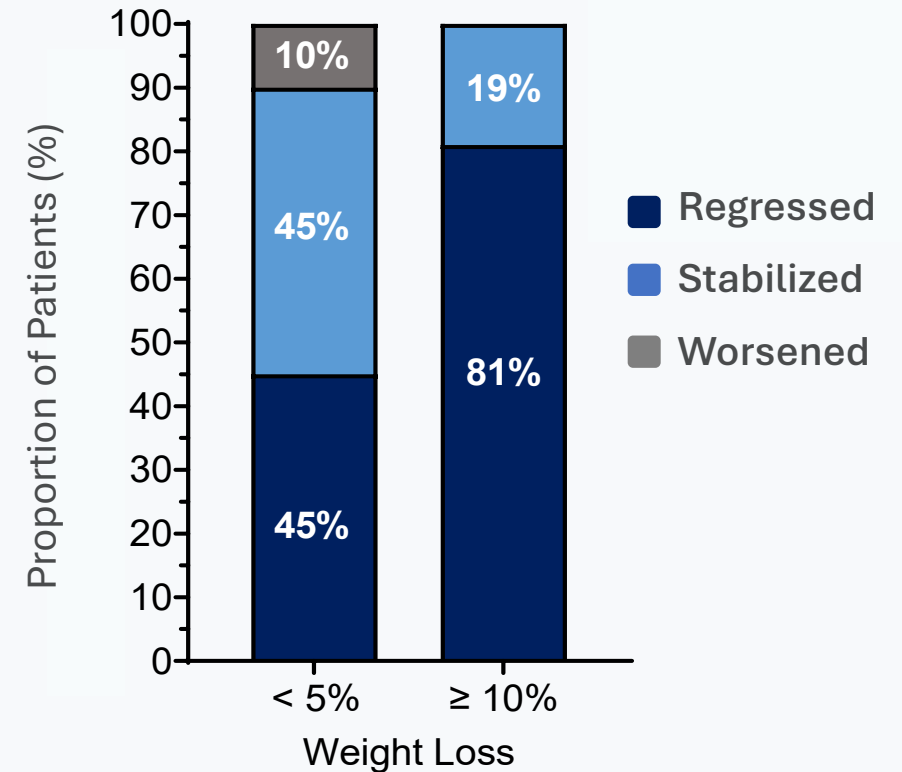


Liver Fat Reduction and Weight Loss are Critical to Effective MASH Treatment

Liver Fat Reduction Drives MASH Improvement¹⁶



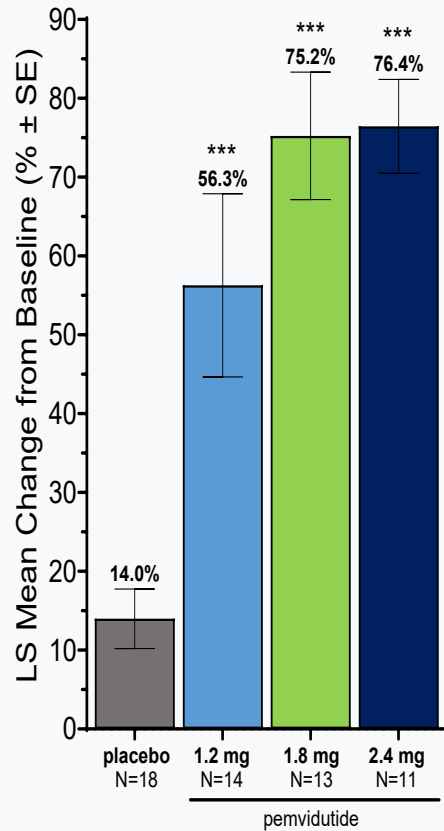
Weight Loss Benefits MASH Outcomes¹⁷



Pemvidutide: MASLD Phase 1b Clinical Data Summary

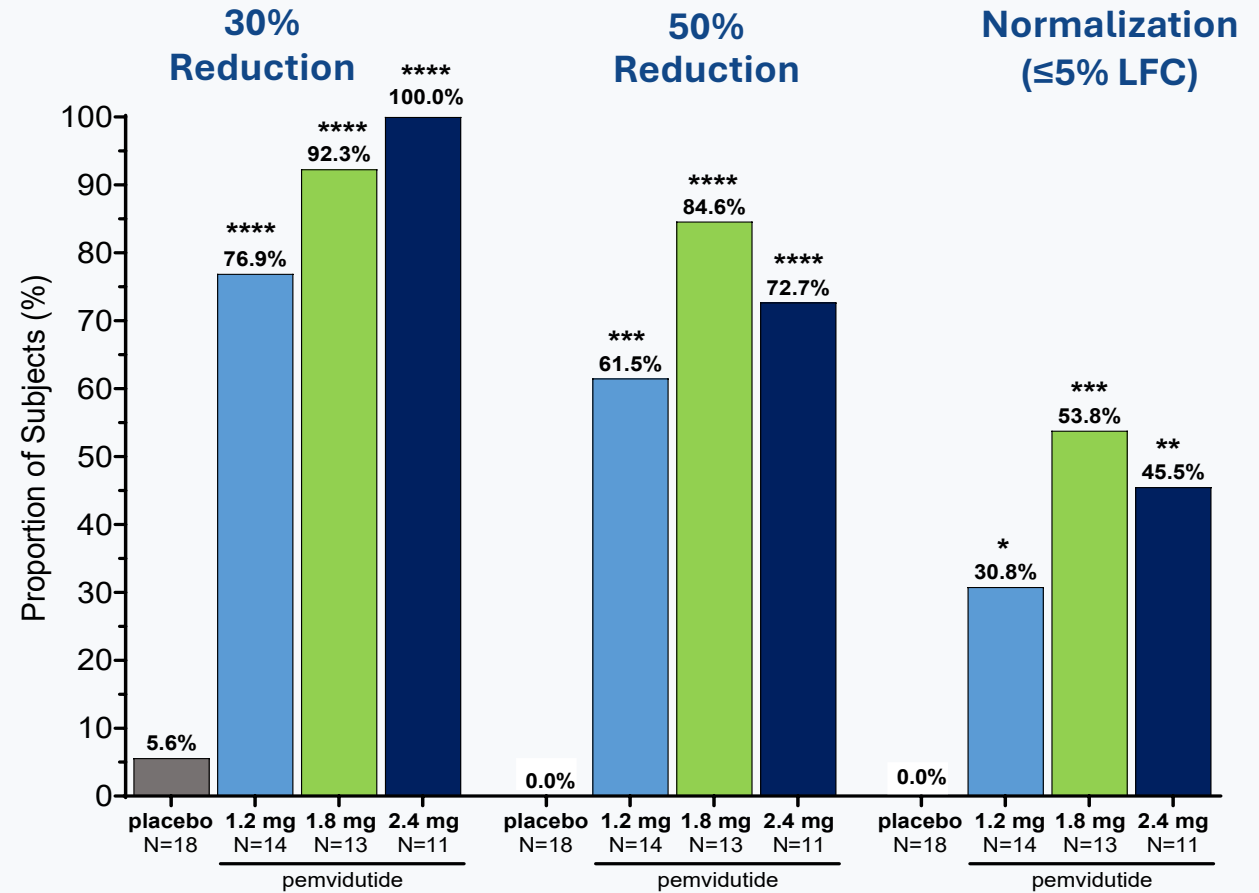
Pemvidutide: Up to 76.4% Reduction of Liver Fat

Relative Reduction at Week 24



*** p < 0.001 vs. placebo (ANCOVA)

Responder Analyses at Week 24



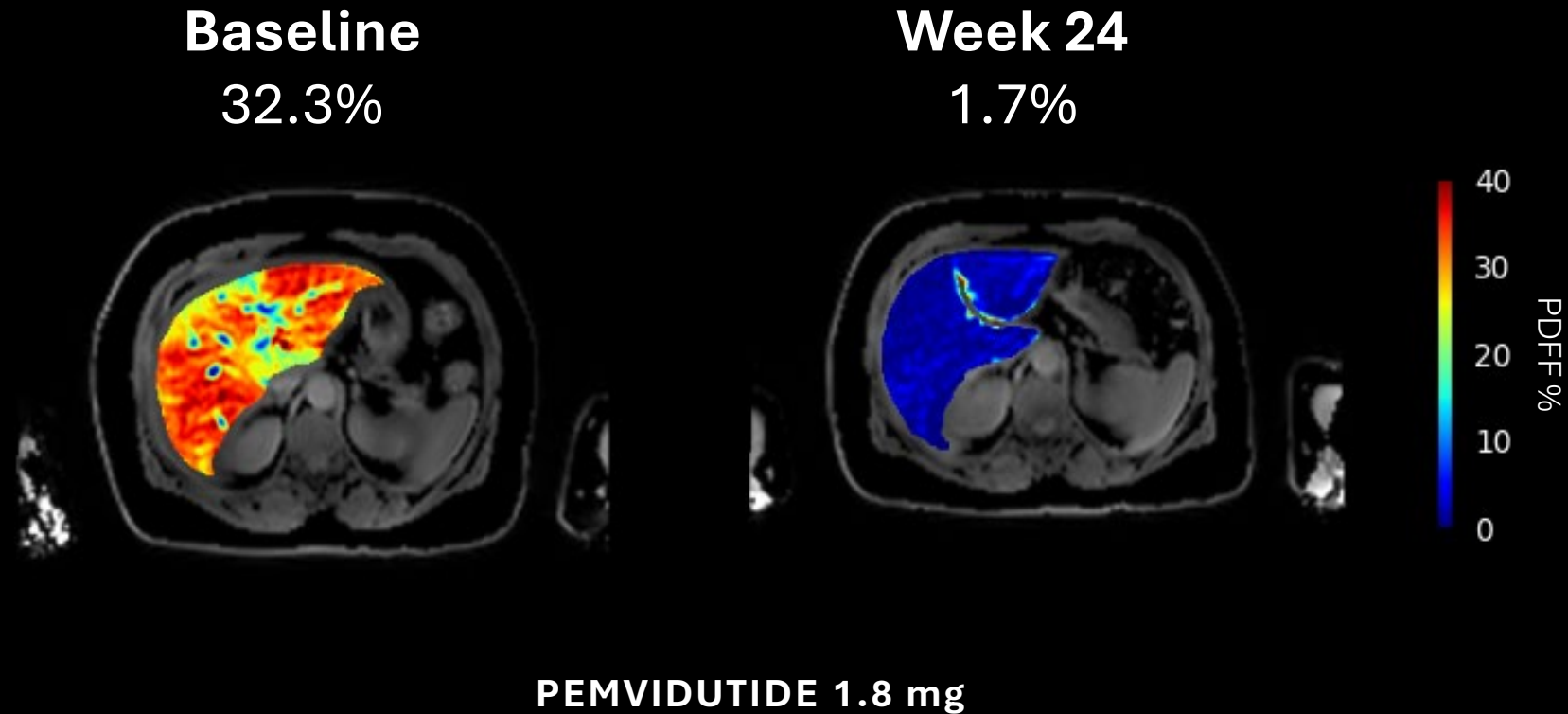
* p < 0.05 | ** p < 0.005 | *** p < 0.001 | **** p < 0.0001 vs. placebo (Cochran-Mantel-Haenszel; CMH)

MASLD Ph1b

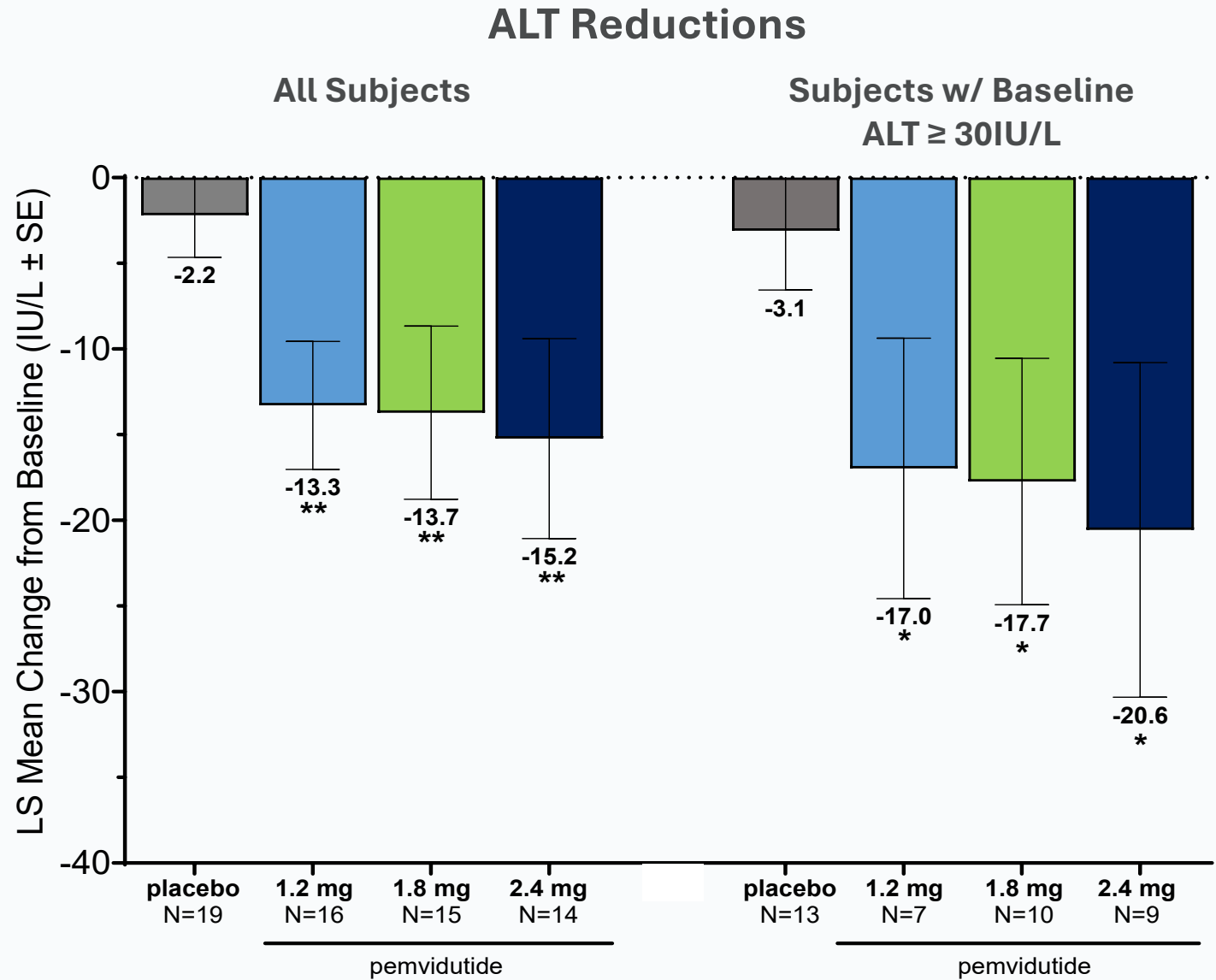
Case Example:

Near Complete De-Fatting of Liver with Pemvidutide

95% relative reduction in liver fat in a patient with high liver fat (normalization within 24 weeks)



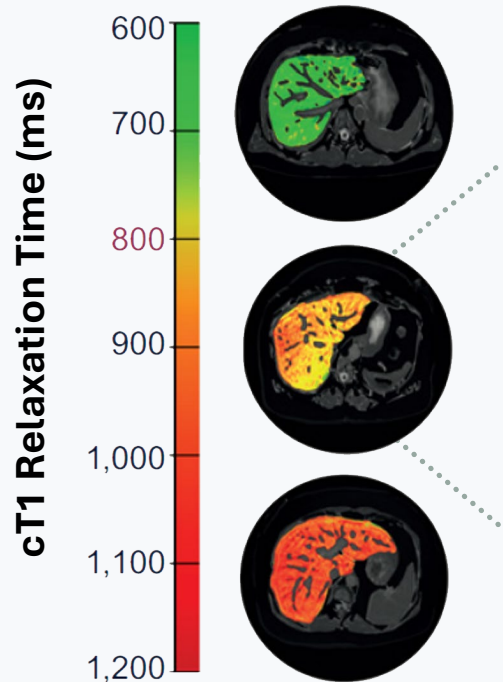
Significant Reduction in ALT, a Marker of Liver Inflammation



* p < 0.05 | ** p < 0.005 vs. placebo (mixed model for repeated measures; MMRM)

cT1: A Marker of Increased CV Risk

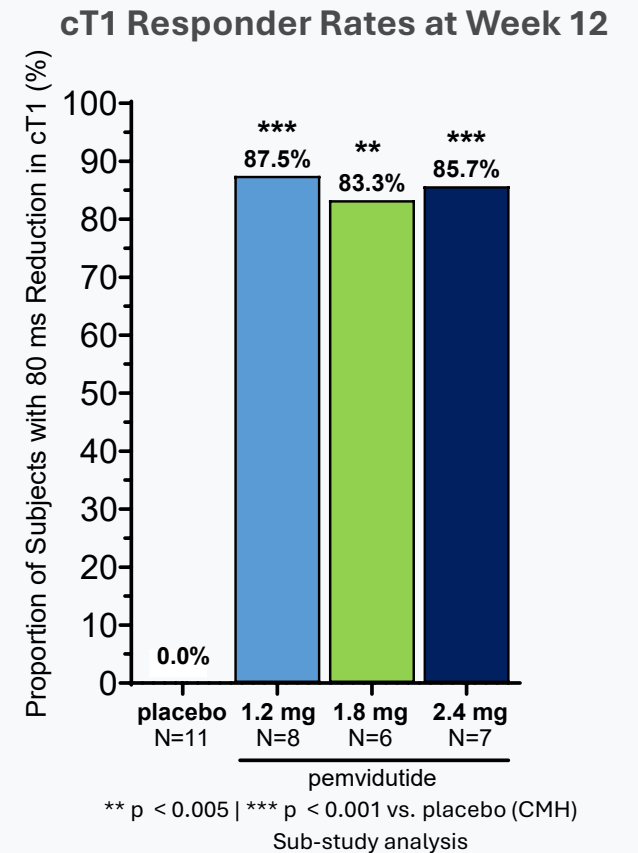
Elevated cT1 is associated with an increased Hazard Ratio (HR) for CV events¹⁸



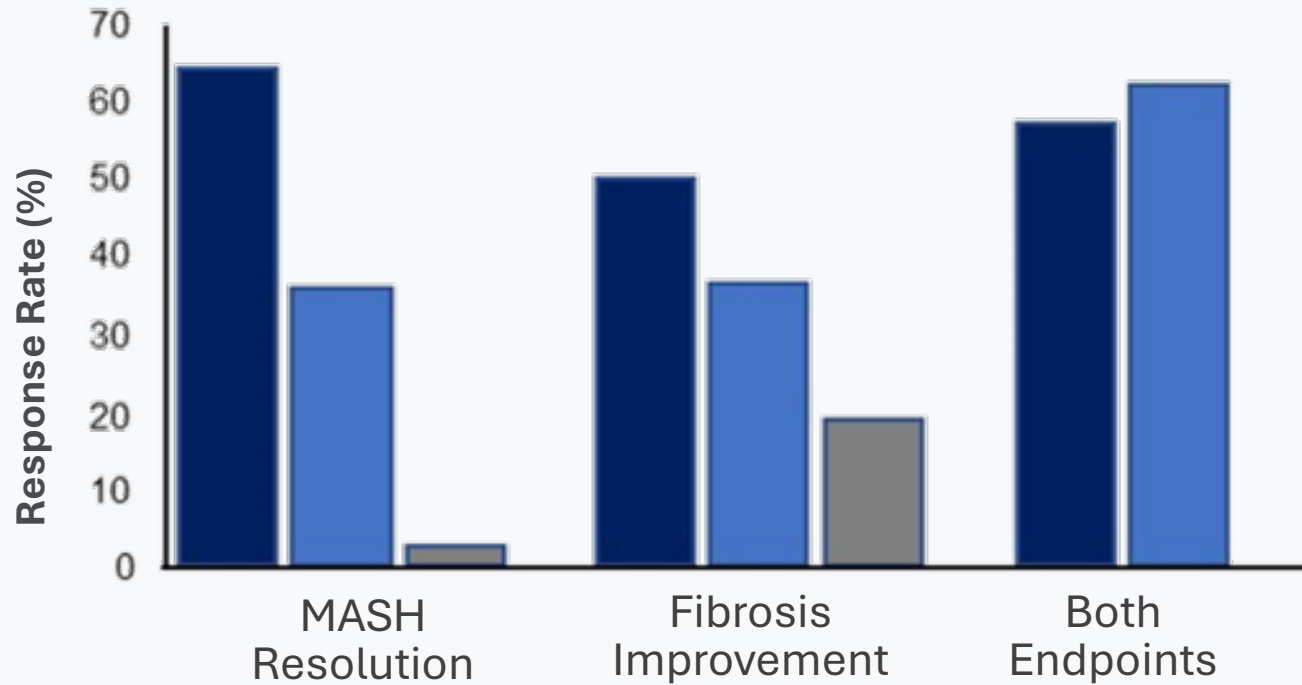
	HR (95% CI)	Range
Cardiovascular Events:		
Hospitalization	1.27	1.18-1.37
Atrial Fibrillation	1.3	1.12-1.51
Heart Failure	1.3	1.08-1.58
Any Cardiac Event	1.14	1.03-1.26
All-cause Mortality	1.19	1.02-1.38

cT1 is an MRI-derived biomarker of liver disease activity;
data from UK Biobank
800 ms = upper limit of normal

cT1 signal is reduced in over 80% of subjects

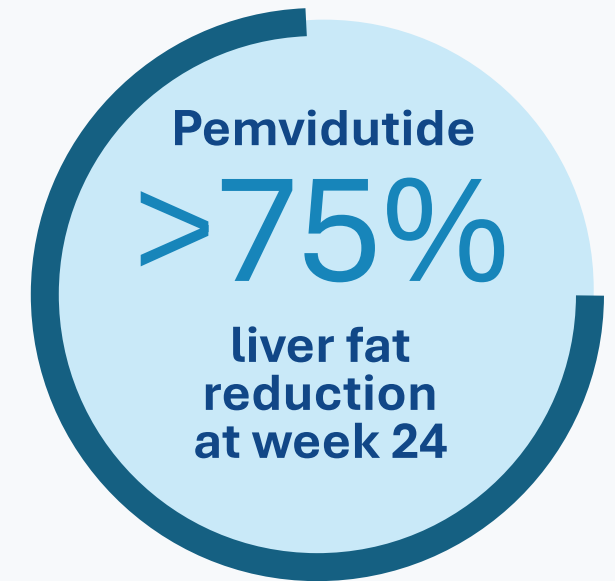


Magnitude of Liver Fat Reduction Correlates with MASH Resolution & Fibrosis Improvement

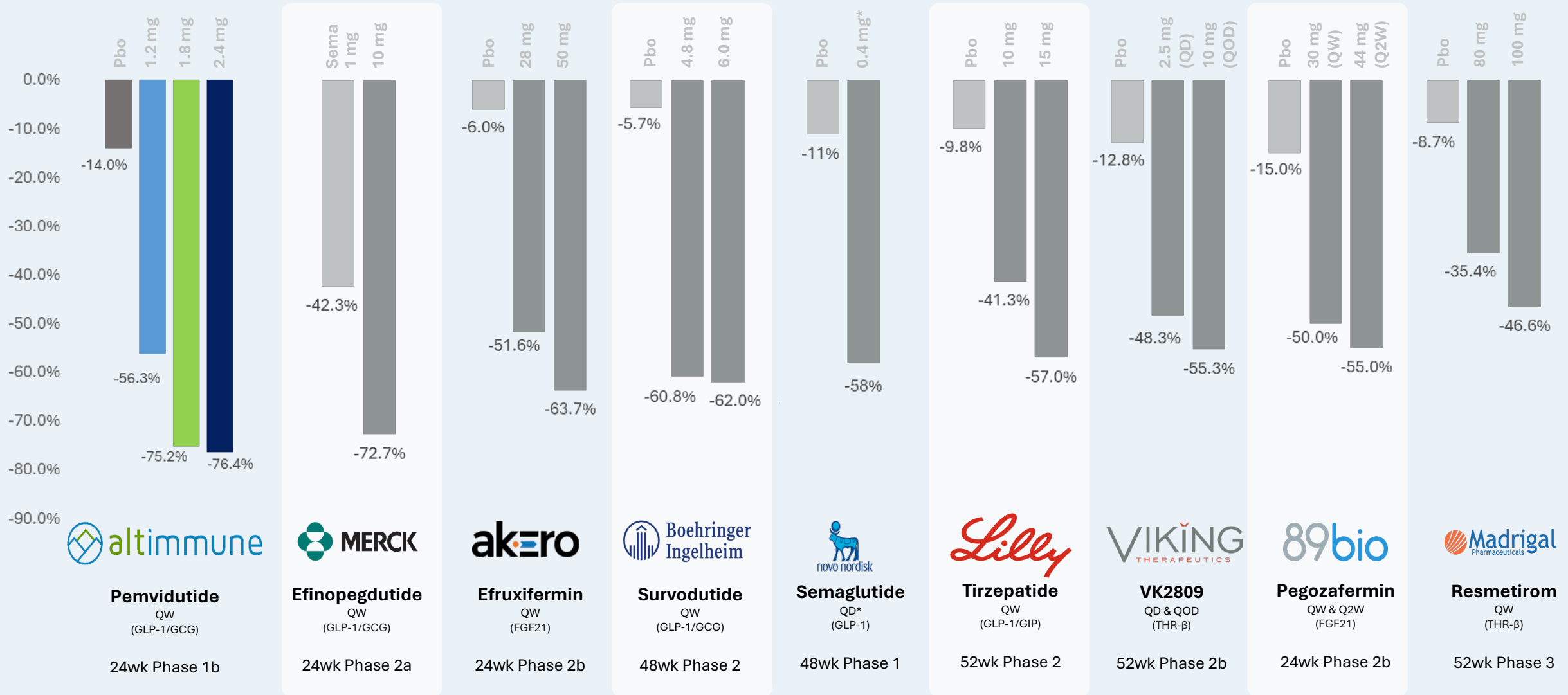


Level of Liver Fat Reduction¹⁹

■ $\geq 50\%$ reduction ■ $\geq 30\%$ reduction ■ $< 30\%$ reduction



Class-Leading Liver Fat Reduction among MASH Agents



Note: These data are derived from different clinical trials at different points in time, with differences in trial design and patient populations. As a result, cross-trial comparisons cannot be made, and no head-to-head clinical trials have been conducted.

Pemvidutide has the Potential to be a Complete Solution for MASH

Weight Loss



GLP-1/GIP

Significant weight loss,
modest liver effect

Pemvidutide
1:1 GLP-1/Glucagon

Optimal
Therapeutic Effect



THR- β

Insignificant weight loss,
modest liver effect

FGF21

Rapid liver effects,
insignificant weight loss

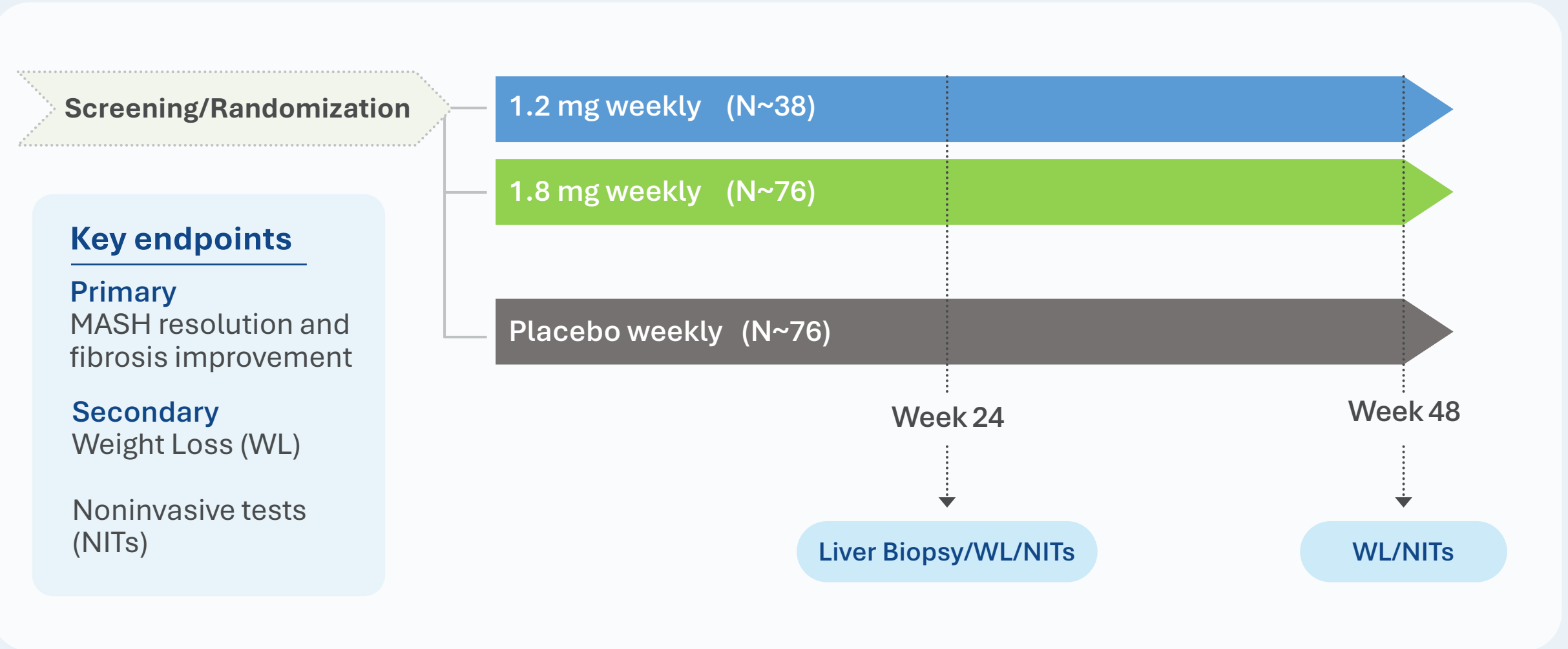
Liver Effect



Pemvidutide: IMPACT Phase 2b Topline Data Readout 2Q 2025

IMPACT Phase 2B Biopsy-driven F2/F3 MASH Trial

Topline Data 2Q 2025



IMPACT Phase 2b Trial: Designed for Success

Greater Liver
Fat Reduction



Greater Biopsy
Responses

Large
Sample Size



Increased
Study Power

Biopsy Re-Reads
and the use
of 3 Readers



Minimize
the Placebo
Response

Pemvidutide: A Foundational Therapy for MASH

If successful, pemvidutide would become:

The **first incretin-based agent** to achieve statistical significance on fibrosis improvement at 24 weeks

The **first therapeutic candidate in any class** to achieve statistically significant fibrosis improvement AND meaningful weight loss at 24 weeks

Q&A



Louis Aronne, MD

Weill Cornell
Medical College



Mazen Nouredin, MD, MHSc

Houston Methodist
Hospital



Henry Kranzler, MD

University of
Pennsylvania



Rohit Loomba, MD, MHSc

University of
California San Diego



Vipin Garg, PhD

Chief Executive
Officer
Altimmune, Inc.



Scott Harris, MD

Chief Medical
Officer
Altimmune, Inc.



Pemvidutide: Compelling Opportunities in Additional Indications

Scott Harris, MD

Chief Medical Officer
Altimune, Inc.

Pemvidutide: Positioned to Address Significant Unmet Needs in AUD & ALD

5+ / day

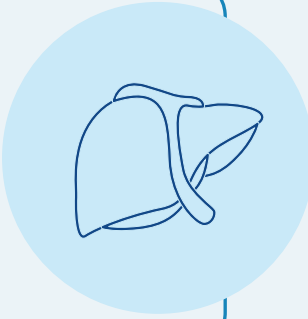


AUD

Up to 28.1M patients have AUD²⁰

ALD

Up to 6.6M patients have ALD²¹



First-in-class candidate in development to address alcohol misuse and liver inflammation, with added promise of weight loss

Pemvidutide: Attractive Profile for Both Physicians and Patients

HCPs are eager
to prescribe...

75%

of HCPs very likely
to prescribe
pemvidutide (N=24)



...and patients
are ready to start

84%

of patients with AUD
and ALD would use
if prescribed
(N=200)

Product profile demonstrating
reductions in alcohol craving and
liver inflammation was compelling
to HCPs and patients

Weight loss and serum lipid
improvements viewed
as additional positive attributes

Pemvidutide: Optimized for Steatotic Liver Diseases and their Primary Causes

MASH



Phase 2b Topline
Results Q2 2025

AUD



Phase 2 Start
Q2 2025

ALD



Phase 2 Start
Q3 2025

Obesity impacts the progression of MASH and ALD²²

Alcohol impacts the progression of MASH, AUD and ALD²³



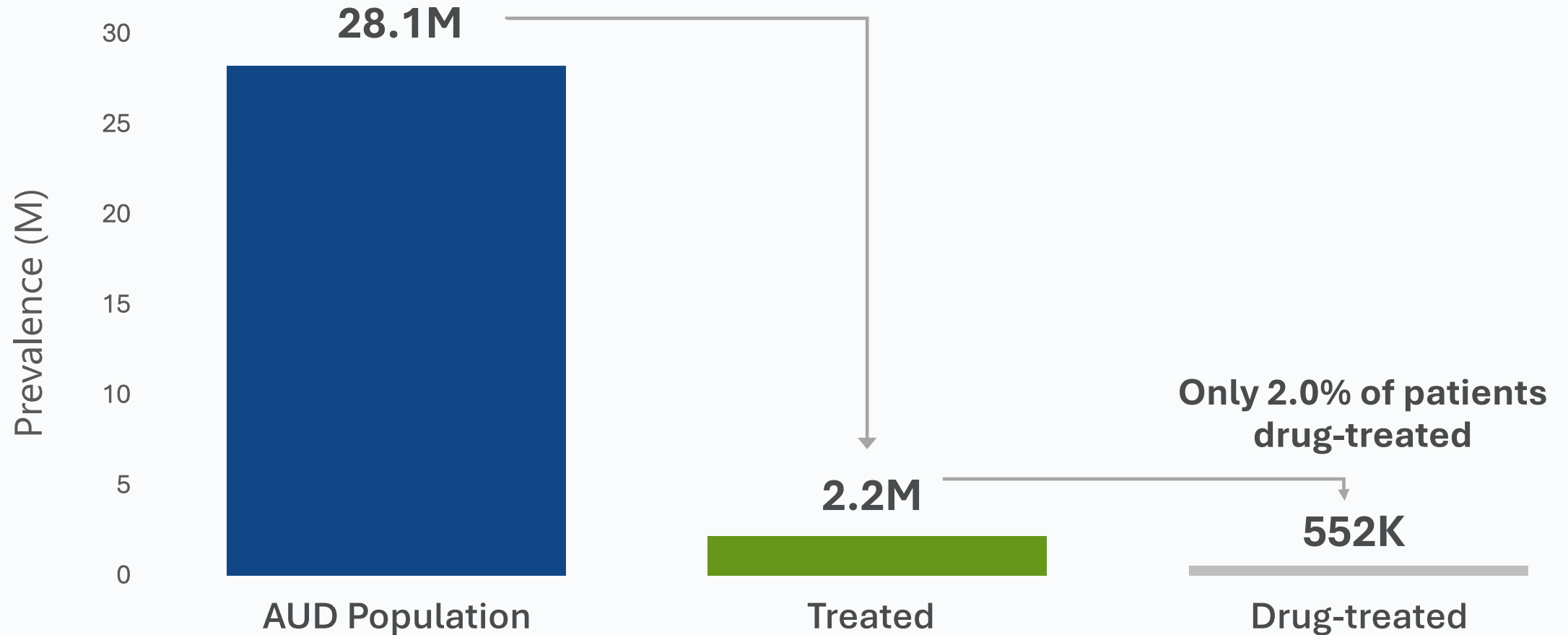
Pemvidutide: Alcohol Use Disorder (AUD)

Breaking Barriers to Treatment

Henry Kranzler, MD

Karl E. Rickels Professor of Psychiatry; Director, Center for Studies of Addiction
University of Pennsylvania Perelman School of Medicine

AUD: One of the Largest Known Healthcare Treatment Gaps²⁰



AUD Field is Ripe for Innovation

Opportunity to Address Cravings,
Improve Liver Health and Promote Weight Loss

Alcohol Use Disorder (AUD)

Only 3 approved medications, which are decades old

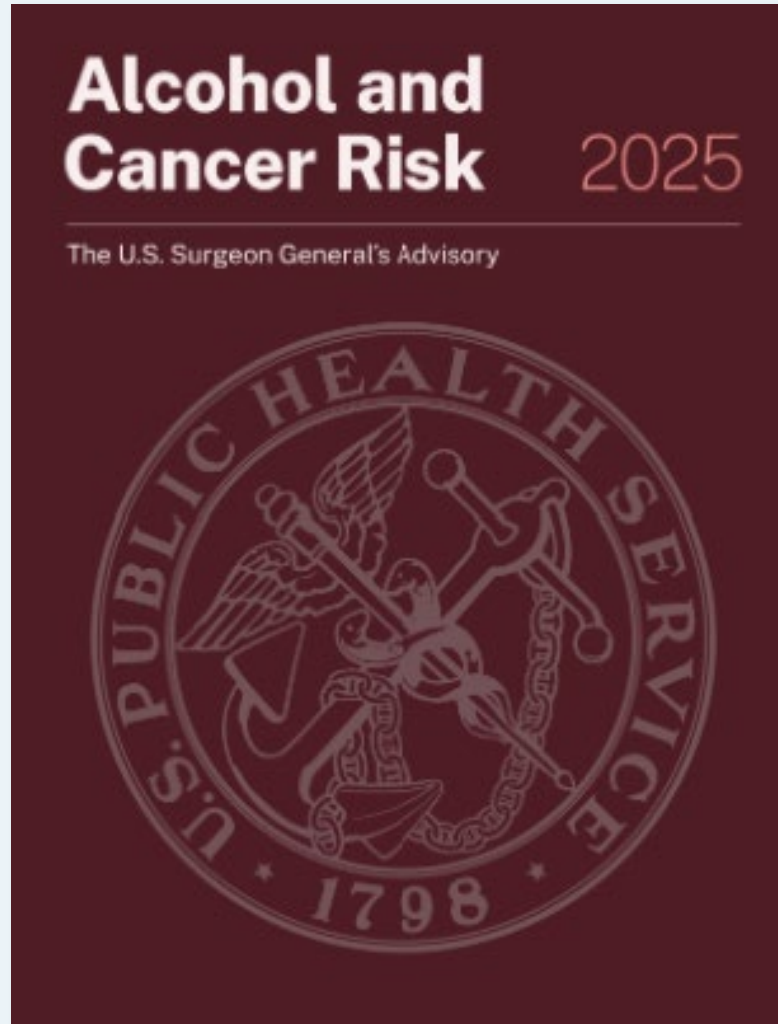
Many limitations with current treatment options

Poor treatment compliance with current therapies

AUD:

Significant Societal Burden

Alcohol is 3rd leading cause of preventable cancer after tobacco and obesity



Surgeon General Advisory January 2025

7th

Leading cause of death and disability globally due to alcohol²⁴

\$249B

Total cost of alcohol misuse in the US in 2010²⁵

AUD Patients Have Significant Comorbidities

In addition to managing underlying alcohol misuse patients with AUD require therapies to address comorbidities

Cardiometabolic Comorbidities

90%

will develop
liver steatosis²⁶

66%

are overweight
or have obesity²⁷

45%

have
hypertension²⁸

23%

have
hyperlipidemia²⁸



Decades Since Last Approved AUD Medication

Lack of Innovation and High Burden of Disease Create Major Unmet Need

1949

Disulfiram

(Antabuse®)

1994

Naltrexone

(Revia®)

2004

Acamprosate

(Campral®)

2006

Naltrexone ER

(Vivitrol®)

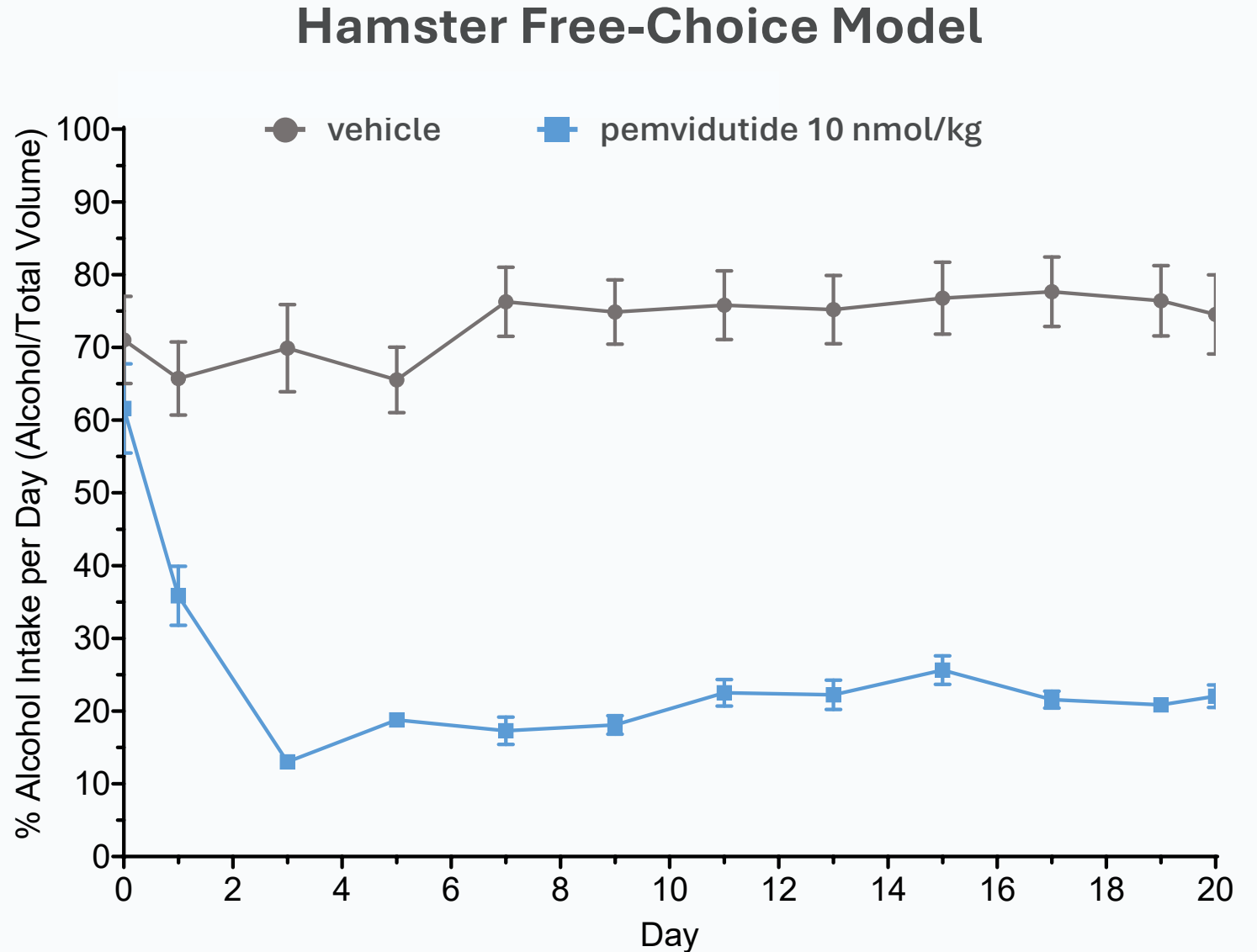
Limitations of Current Agents

Small effect size

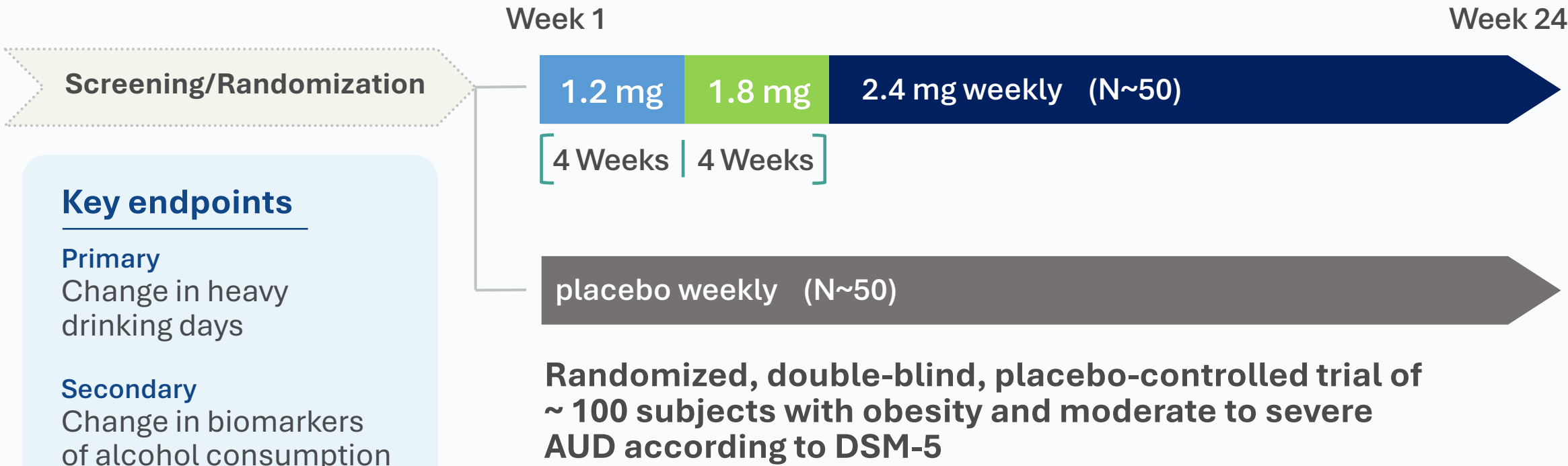
Administration and compliance challenges

Fail to improve other important risk factors
(e.g., metabolic / obesity)

Pemvidutide Suppresses Alcohol Intake in Preclinical Model



Pemvidutide: Phase 2 AUD Trial Design



Key endpoints

Primary
Change in heavy drinking days

Secondary
Change in biomarkers of alcohol consumption
Weight loss



Pemvidutide: Alcohol Liver Disease (ALD)

A Critical Health Challenge

Rohit Loomba, MD, MHSc

Professor of Medicine, Chief, Division of Gastroenterology and Hepatology
Director, MASLD Research Center, University of California at San Diego

ALD is Caused by Alcohol Misuse

Alcohol Liver Disease

Result of chronic, excessive alcohol use

Similar to MASH, disease progression begins with liver steatosis, which may lead to fibrosis, and ultimately cirrhosis

Patients have high rates of progression to cirrhosis

Complications of ALD can lead to high short-term morbidity/mortality

**ALD:
Critical Need
for Drugs that
Improve Liver
Health and
Reduce
Alcohol
Consumption**

Alcohol Liver Disease

Up to 6.6 million Americans affected by ALD

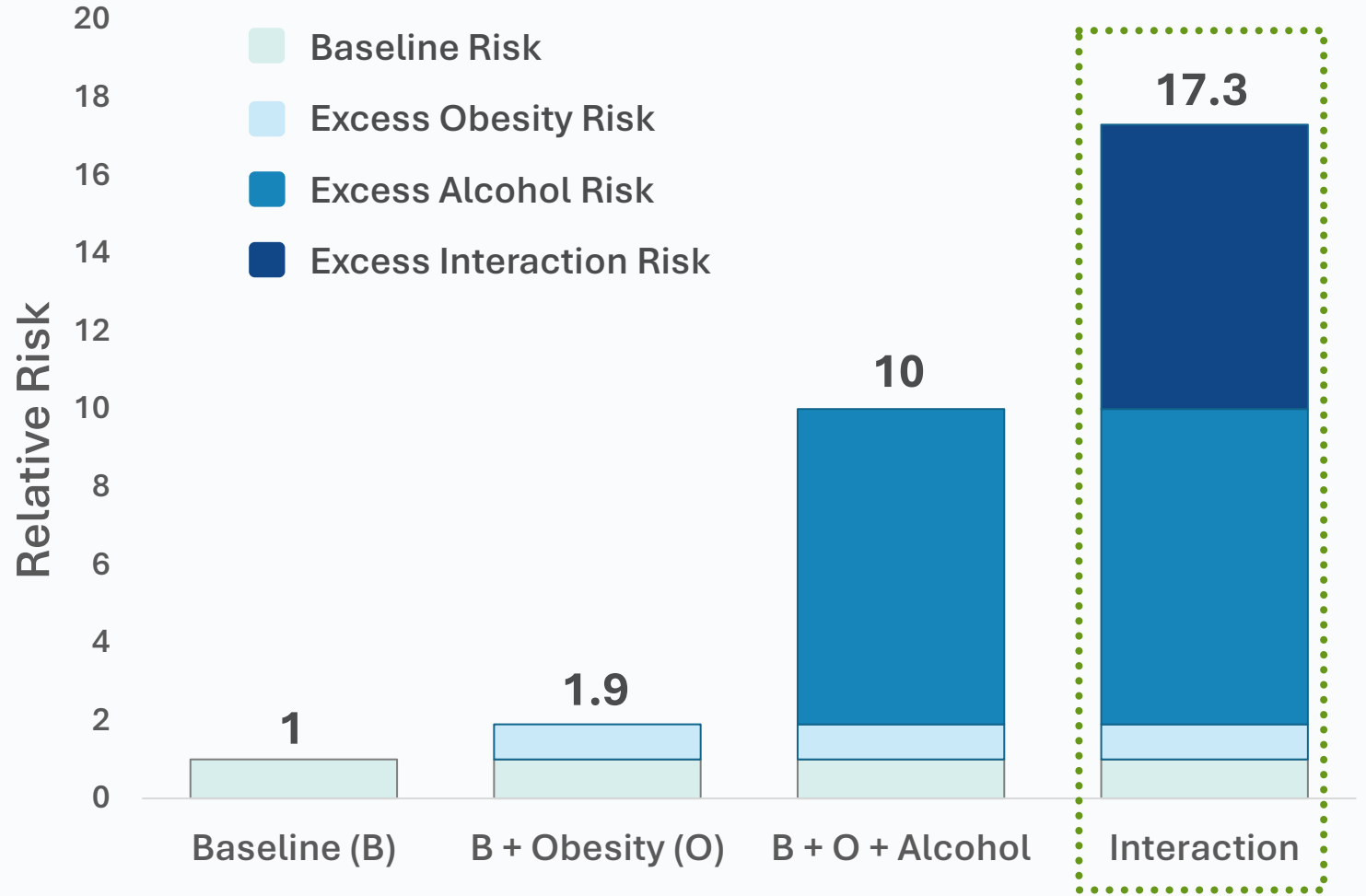
No approved treatments; few in development

Obesity significantly accelerates disease progression and leads to worse outcomes

Obesity Significantly Increases Risk of Poor Alcohol-Related Liver Outcomes

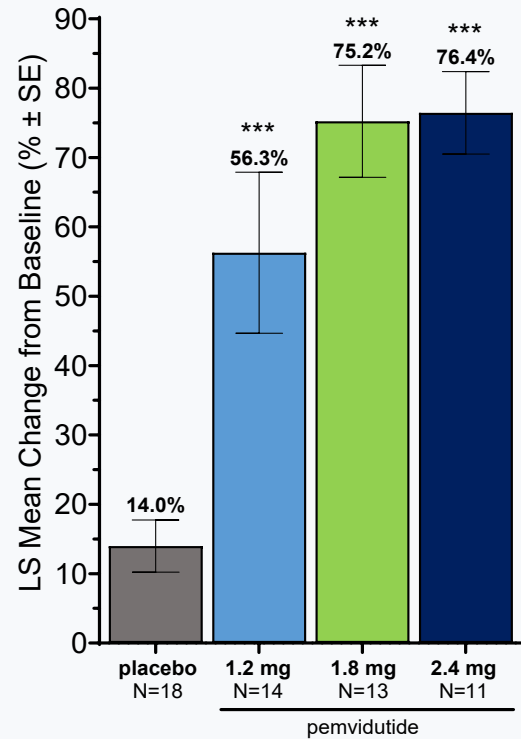
For heavy drinkers, increasing BMI increases all-cause disease mortality

Obesity Potentiates Alcohol-Related Liver Mortality²²



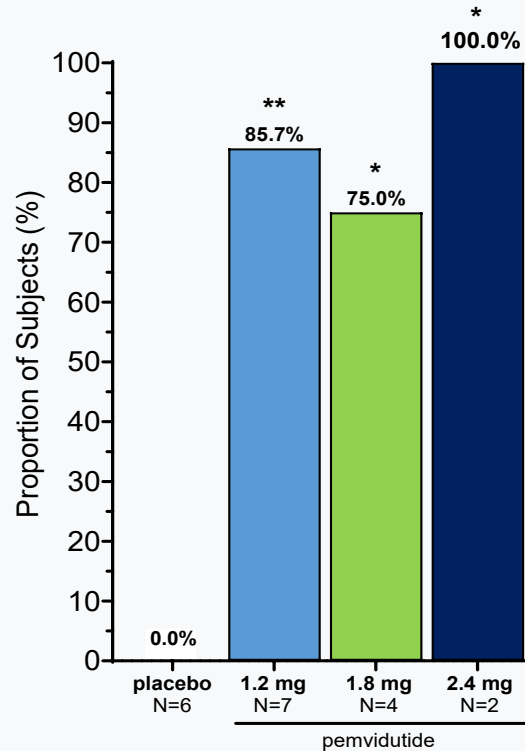
Rationale for Use in ALD: Fat-Associated Inflammation Drives both MASH and ALD

Relative Liver Fat Reduction at Week 24



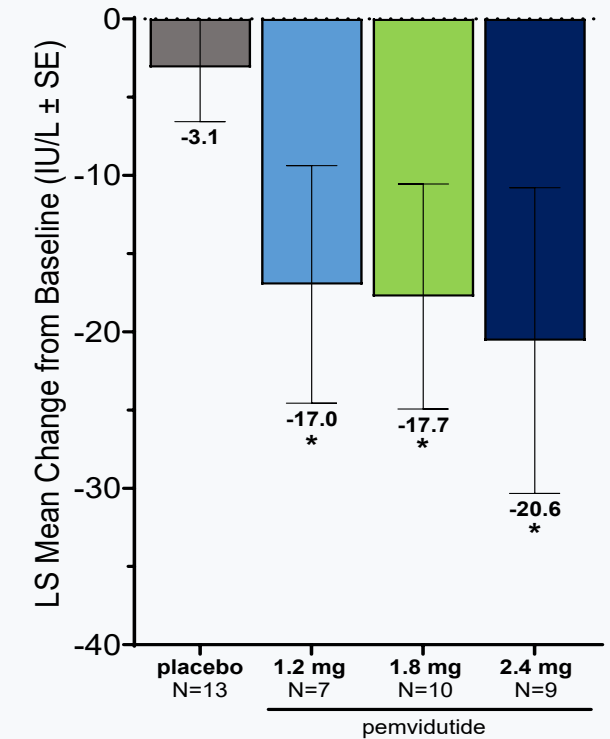
*** p < 0.001 vs. placebo (ANCOVA)

Improved Liver Inflammation cT1 Responder Rates at Week 24



* p < 0.05 | ** p < 0.005 vs. placebo (Fisher's Exact Test)

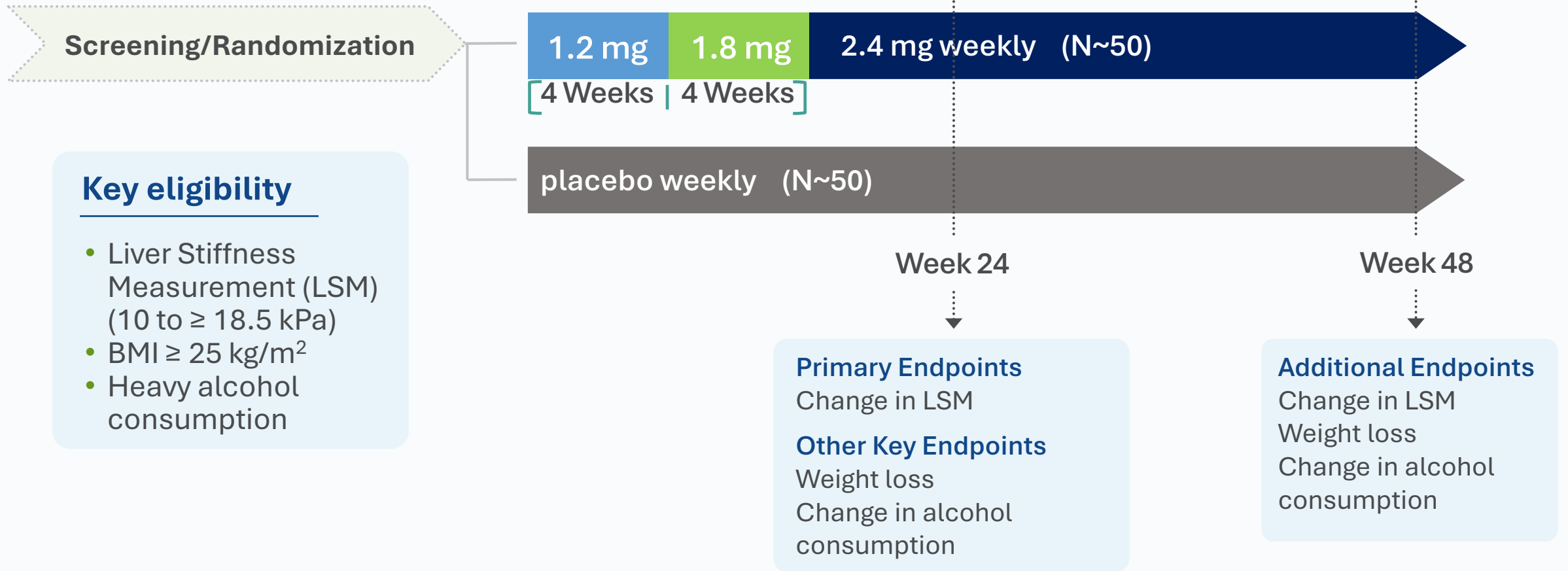
Significant Reductions in ALT Subjects w/ Baseline ALT ≥ 30IU/L



* p < 0.05 vs. placebo (MMRM)

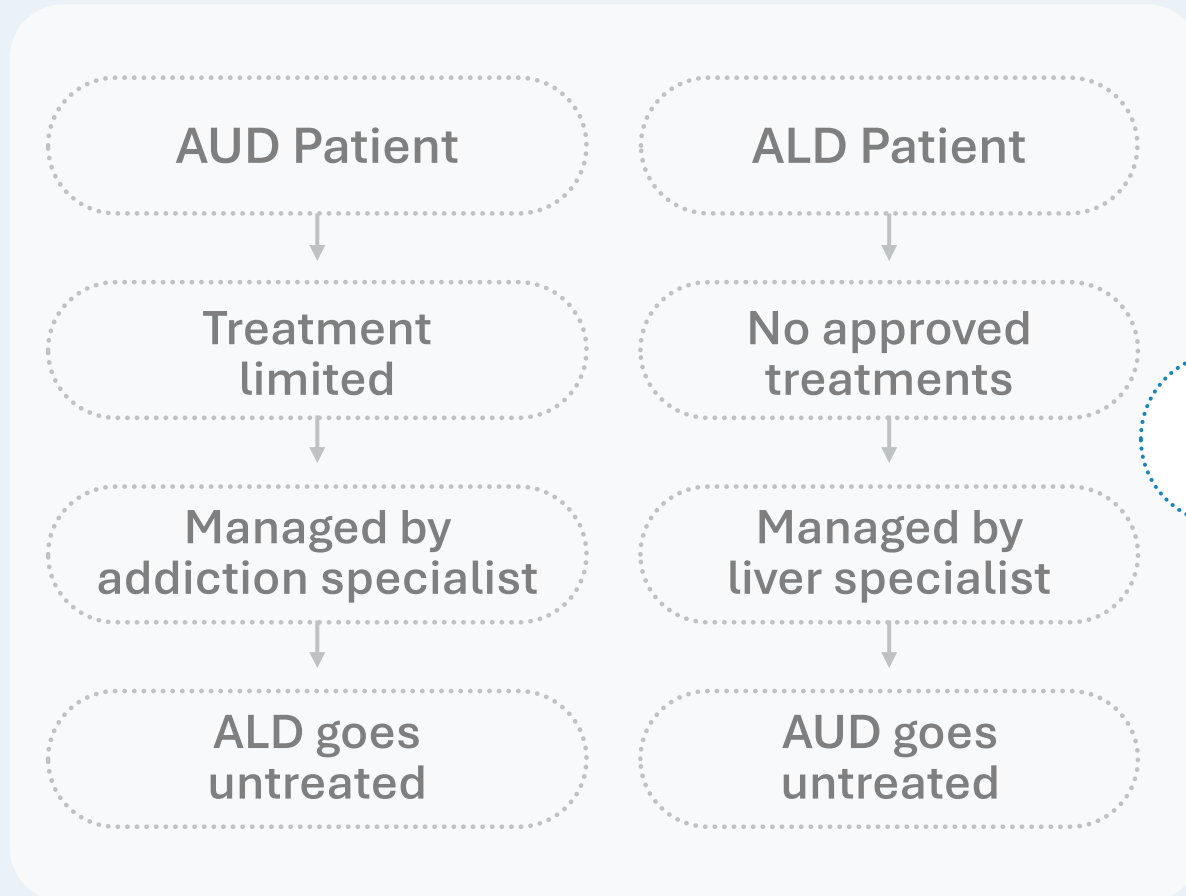
Pemvidutide: Phase 2 ALD Trial Design

Randomized, double-blind, placebo-controlled trial of ~ 100 subjects with obesity and ALD

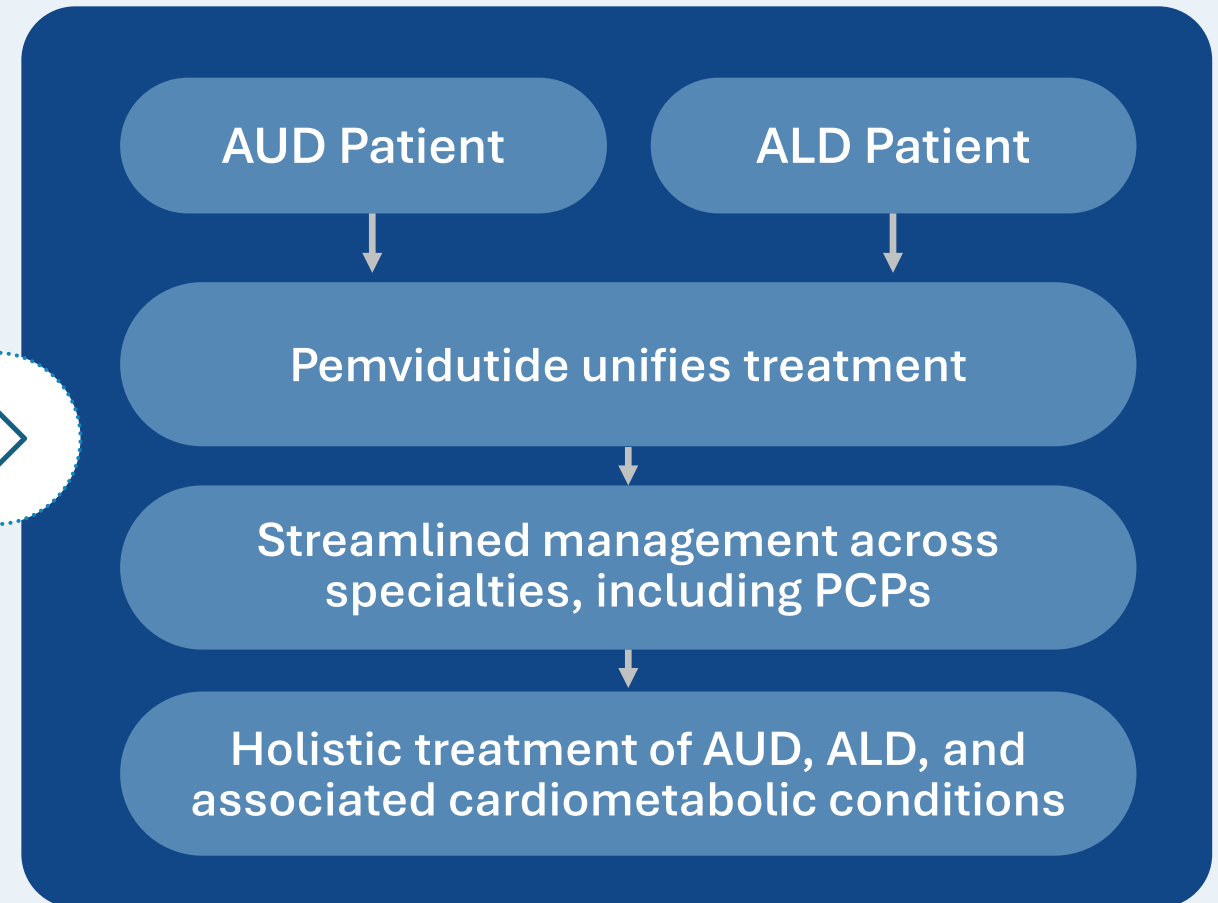


Pemvidutide Could Integrate AUD/ALD Care

Current Treatment Paradigm

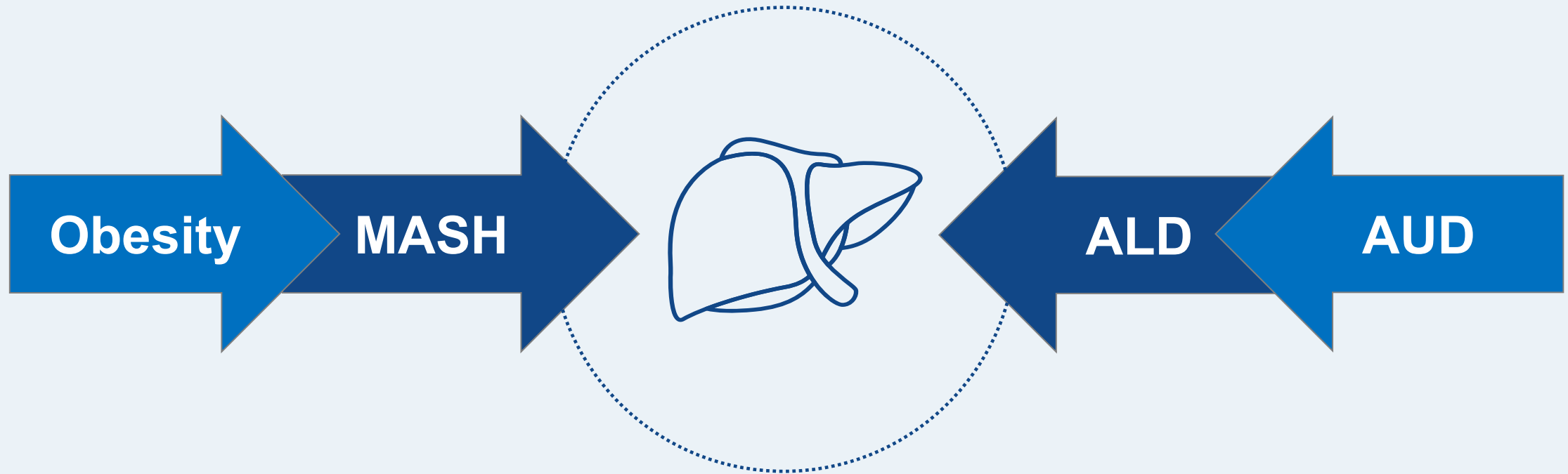


Potential Future Treatment Paradigm



Pemvidutide Vision: A Transformational Therapy Across Related Diseases

Designed to cover the spectrum of steatotic liver disease and its primary causes



Q&A



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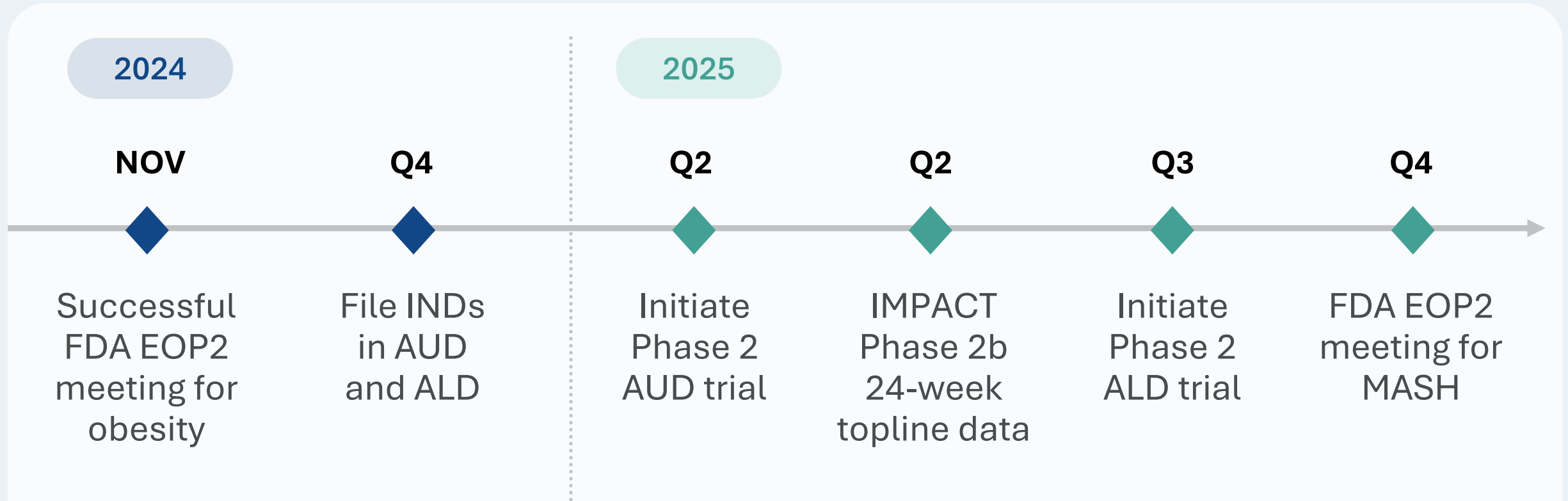
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Altimune R&D Day Summary

Vipin Garg, PhD
Chief Executive Officer
Altimune, Inc.

Milestones and Near-Term Catalysts



H1 2026: Initiate MASH Phase 3 Registrational Trial

Pemvidutide Vision: Transformational Therapy Across Multiple Indications

OBESITY



Treating the Comorbidities

MASH



A Complete Solution

AUD



Major Cause of Liver Damage

ALD



No Approved Therapies



Thank You

Appendix: References

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Slide 30 Data Sources:

- **Pemvidutide:** Phase 1b NAFLD Study Topline Results Extension
- **Efinopegdutide:** EASL Congress 2023, Manuel Romero-Gomez Presentation
- **Efruxifermin:** Harrison et al. “Safety and efficacy of once-weekly efruxifermin versus placebo in non-alcoholic steatohepatitis (HARMONY): a multicentre, randomised, double-blind, placebo-controlled, phase 2b trial.” *The lancet. Gastroenterology & hepatology* vol. 8,12 (2023): 1080-1093. doi:10.1016/S2468-1253(23)00272-8
- **Survodutide:** Sanyal, Arun J et al. “A Phase 2 Randomized Trial of Survodutide in MASH and Fibrosis.” *The New England journal of medicine* vol. 391,4 (2024): 311-319. doi:10.1056/NEJMoa2401755
- **Tirzepatide:** Loomba et al. “Tirzepatide for Metabolic Dysfunction-Associated Steatohepatitis with Liver Fibrosis.” *The New England journal of medicine* vol. 391,4 (2024): 299-310. doi:10.1056/NEJMoa2401943
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- **VK2809:** Company Release June 3, 2024
- **Pegozafermin:** Corporate Presentation March 2025
- **Resmetirom:** Harrison et al. “A Phase 3, Randomized, Controlled Trial of Resmetirom in NASH with Liver Fibrosis.” *The New England journal of medicine* vol. 390,6 (2024): 497-509. doi:10.1056/NEJMoa2309000

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