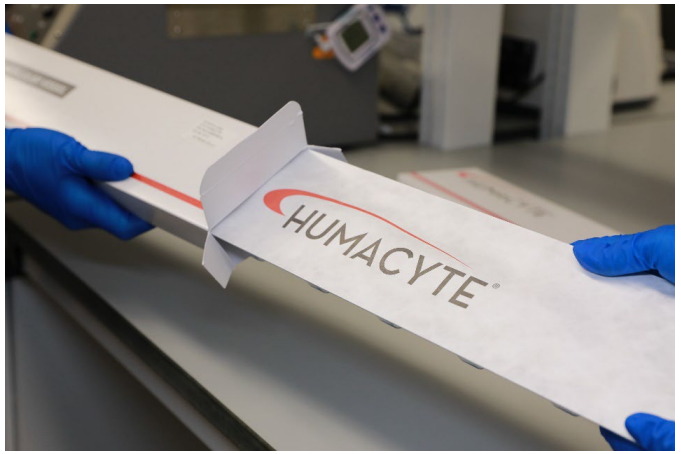
Humacyte®

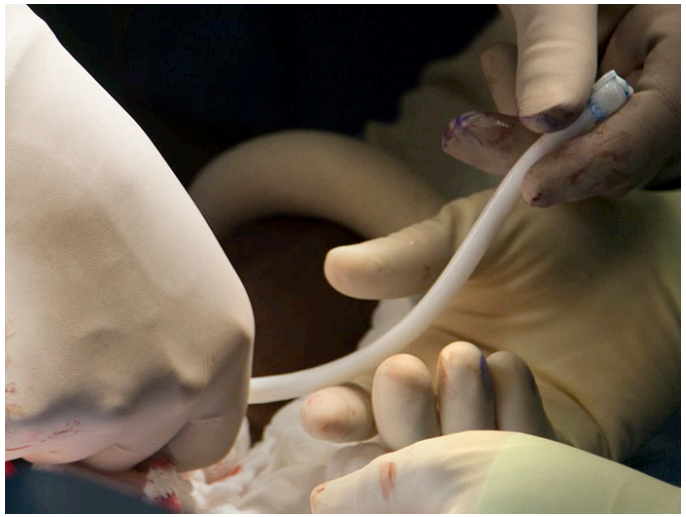
Universally Implantable Regenerative Human Tissue

Disclaimer

These slides and the accompanying oral presentation contain forward-looking statements. All statements, other than statements of historical fact, included in these slides and the accompanying oral presentation are forward-looking statements reflecting management's current beliefs and expectations. In some cases, you can identify forward-looking statements by terminology such as "will," "anticipate," "expect," "believe," "intend" and "should" or the negative of these terms or other comparable terminology. Forward-looking statements in these slides and the accompanying oral presentation include, but are not limited to, statements about our plans and ability to commercialize our bioengineered acellular tissue engineered vessels ("ATEV™s") in the United States under the brand name Symvess™ in vascular trauma repair; the anticipated commercialization of our ATEVs and our ability to manufacture ATEVs and other product candidates in sufficient quantities to satisfy our clinical trial and commercial needs; our plans and ability to execute product development, process development and preclinical development efforts successfully and on our anticipated timelines; our plans, anticipated timelines and ability to obtain marketing approval from the U.S. Food and Drug Administration ("FDA") and other regulatory authorities, including the European Medicines Agency, for our ATEVs in other indications and other product candidates; our ability to design, initiate and successfully complete clinical trials and other studies for our product candidates and our plans and expectations regarding our ongoing or planned preclinical and clinical trials; the outcome of our ongoing discussions with the FDA concerning the design of our clinical trials; our anticipated growth rate and market opportunities; the potential liquidity and trading of our securities; our ability to raise additional capital in the future; our ability to use our proprietary scientific technology platform to build a pipeline of additional product candidates; the anticipated characteristics and performance of our ATEVs; the expected size of the target populations and addressable markets for our product candidates; the anticipated benefits of our ATEVs relative to existing alternatives; our assessment of the competitive landscape; the degree of market acceptance of ATEVs and the availability of third-party coverage and reimbursement; the implementation of our business model and strategic plans for our business; our expectations regarding our strategic partnership with Fresenius Medical Care Holdings, Inc. to sell, market and distribute our 6 millimeter ATEV for certain specified indications and in specified markets; the performance of other third parties on which we rely, including our third-party manufacturers, our licensors, our suppliers and the organizations conducting our clinical trials; our ability to obtain and maintain intellectual property protection for our product candidates as well as our ability to operate our business without infringing, misappropriating or otherwise violating the intellectual property rights of others; our ability to maintain the confidentiality of our trade secrets, particularly with respect to our manufacturing process; our compliance with applicable laws and regulatory requirements, including FDA regulations, healthcare laws and regulations, and anti-corruption laws; our ability to attract, retain and motivate qualified personnel and to manage our growth effectively; our future financial performance and capital requirements; our ability to implement and maintain effective internal controls; and the impact of the overall global economy and increasing interest rates and inflation on our business. These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. The potential risks and uncertainties that could cause actual results to differ from the results predicted include, among others, those risks and uncertainties included under the captions "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Form 10-K for the year ended December 31, 2023, our quarterly report on Form 10-Q for the quarter ended September 30, 2024, each filed by Humacyte with the Securities and Exchange Commission, and in future filings made with the Securities and Exchange Commission from time to time. Any forward-looking statements contained herein are based on assumptions that we believe to be reasonable as of the date hereof. Except as required by law, we assume no obligation to update these forward-looking statements, even if new information becomes available in the future. This presentation shall not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of our securities, in any state or other jurisdiction in which such offer, solicitation or sale would be unlawful prior to the reregistration or qualification under the securities laws of any such state or other jurisdiction.

Humacyte is a Leader the Field of Regenerative Medicine:
Bioengineered Tissues & Organs





- Off-the-shelf
- Universally implantable with no immuno-suppression
- Observed to regenerate as the patient's own tissue

Category-Defining Innovation that Creates New Tissues

Universally Implantable Regenerative Human Tissue

Humacyte®

U.S. Market Launch Q1 2025

FDA approved Symvess™ (ATEV™) BLA in December 2024 for treatment of extremity vascular trauma; U.S. market launch planned for early Q1 2025

First-in-Class Technology and Manufacturing Platform

Large addressable markets

trauma, dialysis, peripheral artery disease, diabetes, coronary bypass

Commercial-Scale Manufacturing

Commercial-scale manufacturing in place with annual capacity of up to 40,000 ATEVs in existing facility

Validated through Multiple Partnerships

MAYO CLINIC

U.S. DEPT OF DEFENSE

JDRF IMPROVING LIVES. CURING TYPE 1 DIABETES.

FRESENIUS MEDICAL CARE

Humacyte Leadership & Board

Leadership Team

Laura E. Niklason, MD, PhD
Founder, President, Chief Executive Officer

Dale Sander
Chief Financial Officer, Chief Corporate Development Officer

Heather Prichard, PhD
Chief Operating Officer

Shamik Parikh, MD
Chief Medical Officer

Cindy Cao
Chief Regulatory Officer

BJ Scheessele
Chief Commercial Officer

Sabrina Osborne
Chief People Officer

Harold Alterson
Chief Quality Officer

Board of Directors

Kathleen Sebelius
Chair of the Board

John P. Bamforth, PhD

Emery N. Brown, MD, PhD

Michael T. Constantino

Brady W. Dougan

Charles Bruce Green, MD

Keith Anthony Jones, M.D.,

Laura E. Niklason, MD, PhD

Todd M. Pope

Diane Seimetz, PhD

Max Wallace, JD

Susan Windham-Bannister, PhD

Prior Experience

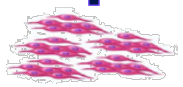
Lilly
AstraZeneca
AVITA MEDICAL
Biogen
bluebirdbio
Bristol Myers Squibb™
U.S.Department of Heath and Human Services
Duke University School of Medicine
Johnson & Johnson
KRIYA THERAPEUTICS
NOVARTIS
novo nordisk®
SANDOZ A Novartis Division
sanofi
Yale University School of Medicine
GSK

Platform & Manufacturing:
Enable Broad Pipeline of Regenerative Medicine Products

Humacyte®

Bioengineering Platform

1 Cell seeding



Working cell stock

Cells transferred onto polymer mesh

2 Tissue formation

Cells proliferate & build extracellular matrix

Polymer mesh degrades, leaving vascular cells and extracellular matrix

3 Cell removal and packaging

Decellularization solutions clean and remove vascular cells from vessel

Enables creation of universally implantable tissues and organs

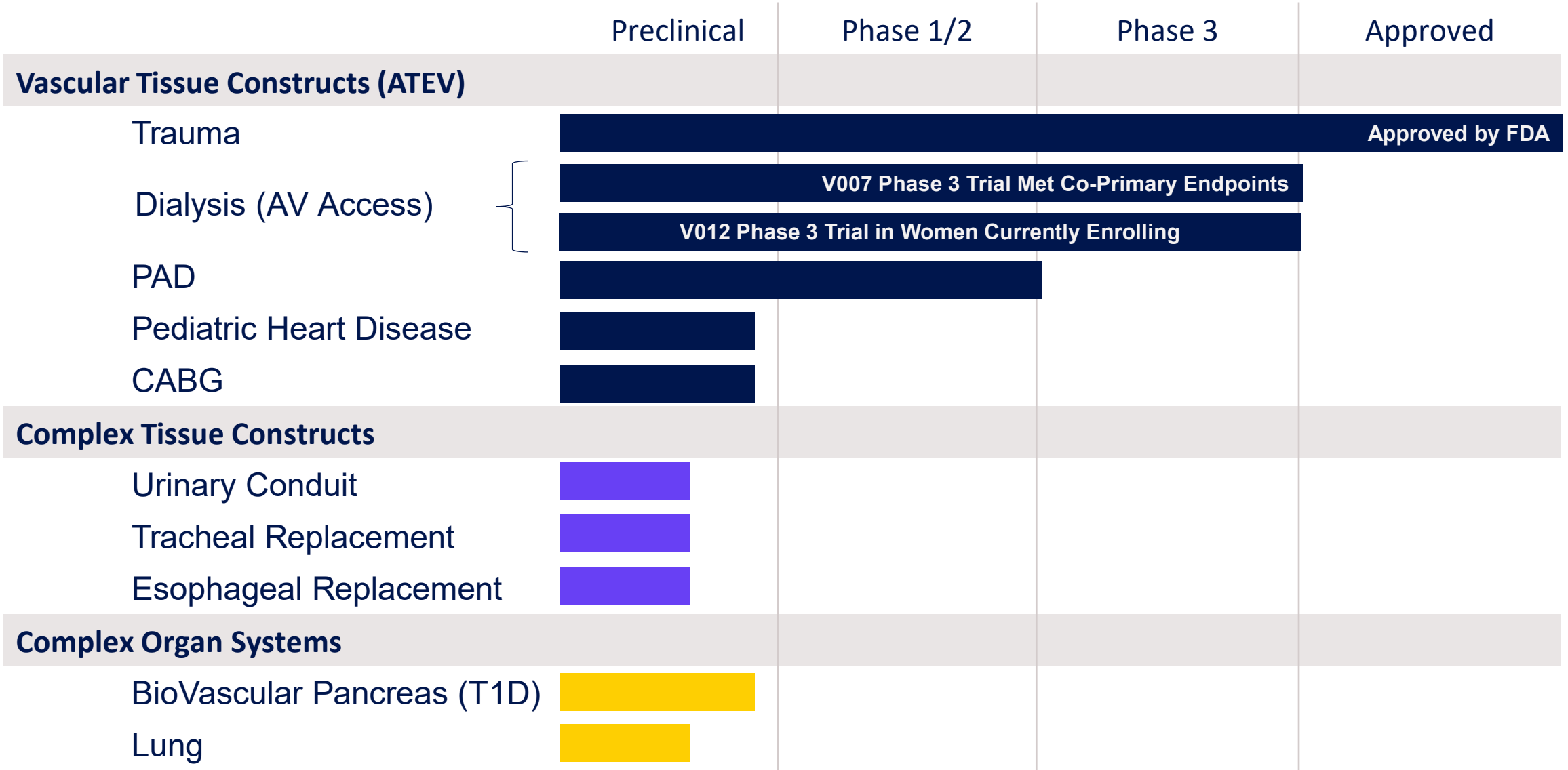
Commercial-Scale Manufacturing

Strategically designed with modular capabilities to manufacture products at scale

Vascular tissue constructs (ATEV) ⟷ **Advanced tissue constructs** ⟷ **Advanced organ systems**

Our platform technology enables development of a broad range of product candidates

Pipeline with Multiple Potential Commercial Launches



ATEV Observed to Repopulate with Patient's Own Cells
Potentially Enabling Infection Resistance & Self-Healing

Humacyte®

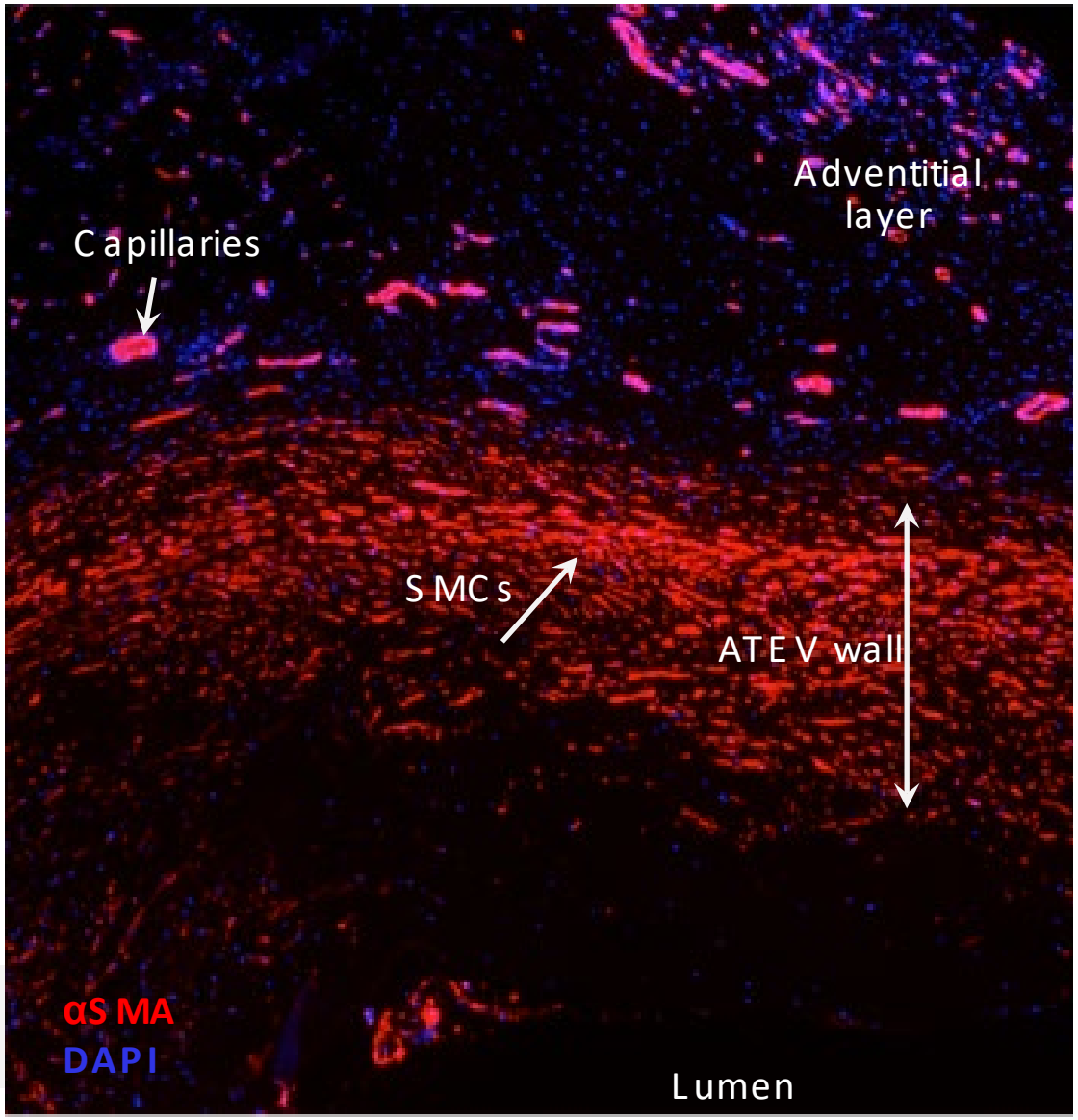
ATEV Overview

Host cells observed to repopulate the ATEV[1]

ATEV observed to have low rates of infection

ATEV may have the ability to self-heal

Over 600 patients across multiple indications



Benefits of ATEV

Off-the-shelf, immediately available with 18-month shelf life

Long-term durability

No evidence of immunogenicity

1. Kirkton, R.D., et al, Science Translational Medicine 2019; 11:eaau6934.


Symvess™
acellular tissue
engineered vessel-tyod
FDA Approved in
Extremity Vascular Trauma
Humacyte®

Symvess is FDA Approved in Extremity Vascular Trauma

acellular tissue engineered vessel-tyod
Symvess™

- Repopulates with the patient's cells[1-2,3]
- Low susceptibility to infection[4]
- No immune response observed[1-3,5]
- Off-the-shelf, ready to use[1,3]
- Low amputation results[1]

INDICATION

SYMVESS is an acellular tissue engineered vessel indicated for use in adults as a vascular conduit for extremity arterial injury when urgent revascularization is needed to avoid imminent limb loss, and autologous vein graft is not feasible.

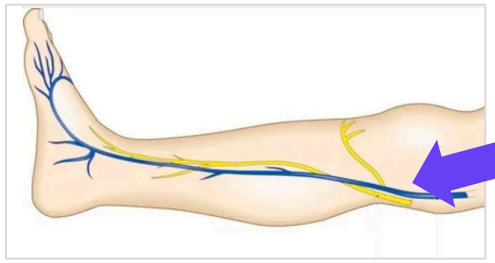
PLEASE SEE ACCOMPANYING FULL PRESCRIBING INFORMATION AT SYMVESS.COM, INCLUDING BOXED WARNING.

REFERENCES: 1. Symvess U.S. Prescribing Information. Durham, NC. Humacyte Global, Inc. **2.** Kirkton RD, et al. Bioengineered human acellular vessels recellularize and evolve into living blood vessels after human implantation. *Sci Transl Med*. 2019;11(485):eaau6934. **3.** Dahl S, et al. Readily available tissue-engineered vascular grafts. *Sci Transl Med*. 2011 Feb 2;3(68):68ra9. **4.** Wang J, et al. Biological mechanisms of infection resistance in tissue engineered blood vessels compared to synthetic expanded polytetrafluoroethylene grafts. *JVS Vasc Sci*. 2023;4:100120. **5.** Moore EE, et al. Bioengineered Human Arteries for the Repair of Vascular Injuries. *JAMA Surg*. 2024 Nov 20:e244893.

Vascular Trauma Injuries – Symvess Value Proposition

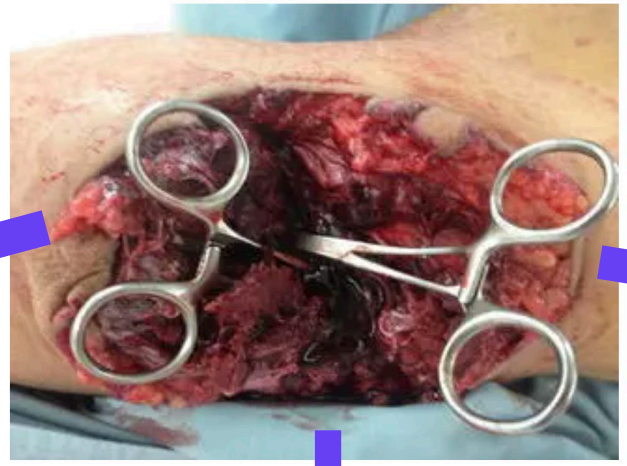
- Common causes of vascular injuries include workplace injuries, car accidents, gunshots and stabbings, and sports injuries
- Symvess address major drawbacks of current treatment options:

Symvess is immediately available, off-the-shelf, and does not require further injuring the patient

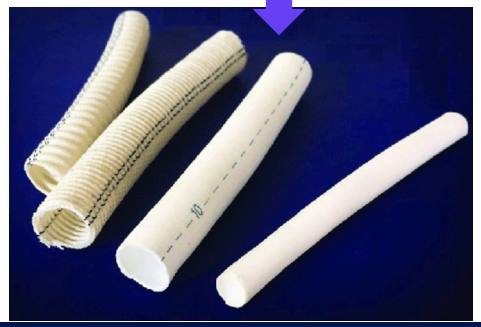


Vein is the standard of care, but takes valuable time, delaying revascularization

Exit wound of a shotgun injury



Amputation



Prosthetic grafts are quick, but have infection risk and high rates of amputation

Two Studies Were Used to Support FDA Approval

First Study: CLN-PRO-V005 Phase 2/3 Pivotal Trial In U.S. and Israel

- Single-arm, open label study
- Conducted at Level 1 trauma centers
- Arteria injury repair
- Extremity injuries at high risk of contamination / infection
- 69 patients enrolled as of data cut off
- As agreed upon with FDA, focus for BLA filing were 51 patients with extremity injuries

Statistical Analysis Plan

Historical Benchmark Comparator

> Systematic literature review of synthetic grafts in vascular trauma

Primary Comparison

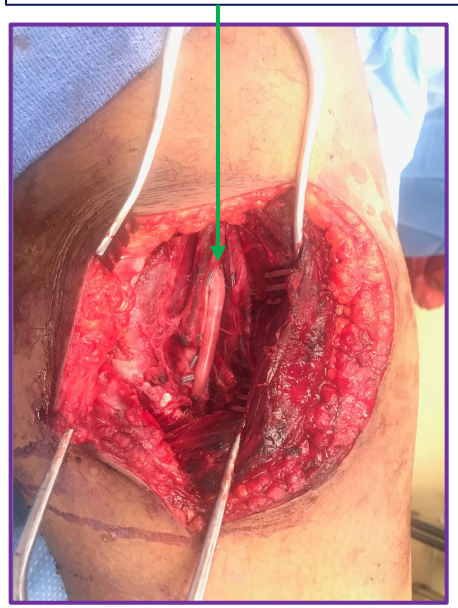
> 30-day endpoint of patency

Secondary Comparisons

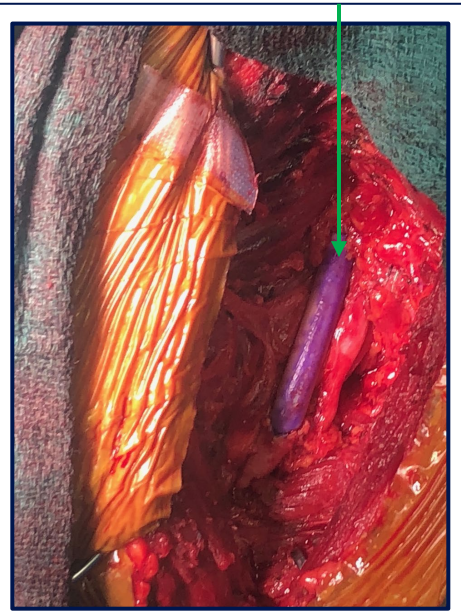
> 30-day infection rate

> 30-day amputation rate

Examples of Symvess Implants in V005 Study



Gunshot Wound



Industrial Accident

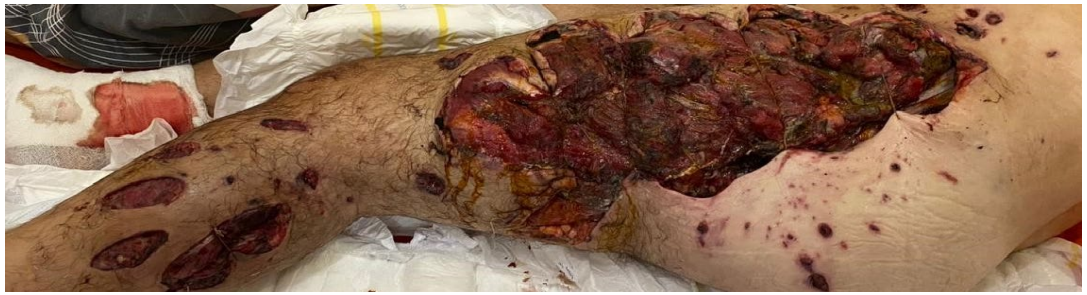
Knee Dislocation

Ukraine Real World Experience of Symvess Use in Vascular Repair

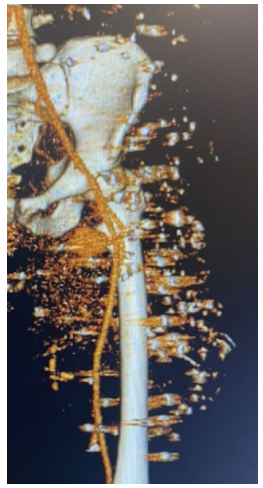
Second Study: V017 Humanitarian Program in Ukraine

- At request of Ukraine surgeons Humacyte supported humanitarian program for patients injured in conflict
- 19 patients received Symvess
- At suggestion of FDA, patients from humanitarian program were included in BLA filing
  - 17 consented for data collection and study participation
  - 16 patients had extremity trauma repair (one patient required Symvess for Iatrogenic trauma repair)

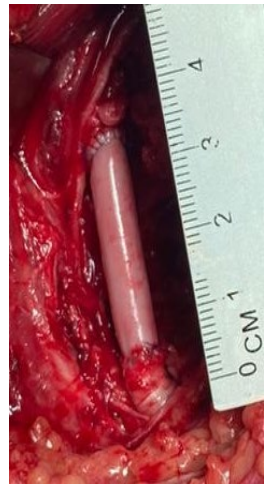
Case Study of Patient Treated in Ukraine Program



Ukraine Patient Blast Injury



Pre-op CT Scan



Symvess repair of Femoral artery

Walking once again (Day 113)

Symvess Performed Better than Synthetic Graft Benchmark

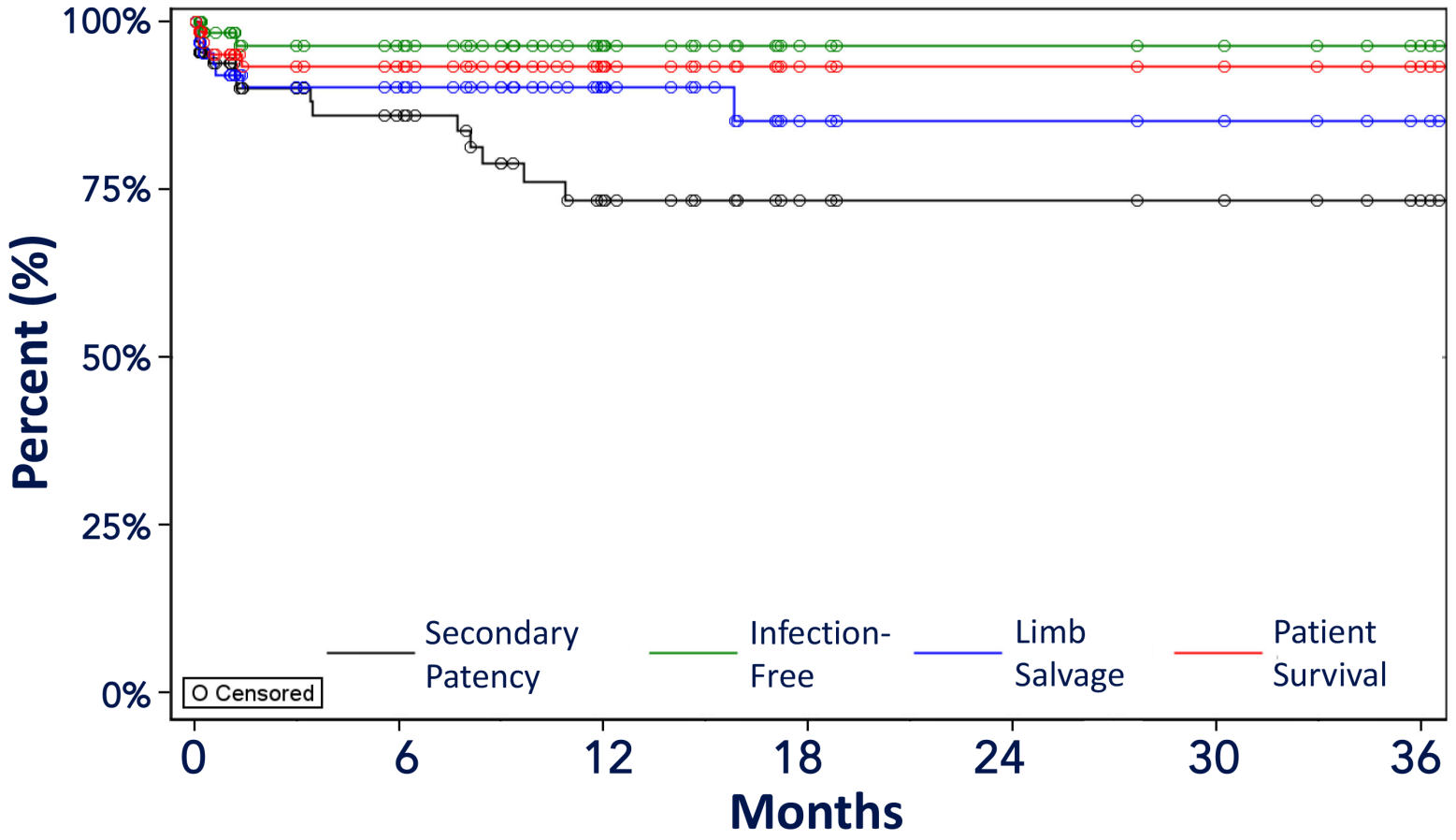
- **Benchmark for Symvess efficacy was the published performance of prosthetic grafts[1]**
- **Data from V005 and V017 and the benchmark were included in the BLA file, supporting Symvess approval**

Outcome Day 30	Symvess V005 (n=51)[1]	Symvess V017 (n=16)[1]	Combined Symvess (N=67)[1]	Synthetic Graft Benchmark[1]
Primary Patency	84.3 %	93.8%	87.1%	78.9%
Secondary Patency	90.2%	93.8%	91.5%	78.9%
Conduit Infection rate	2.0%	0%	0.9%	8.4%
Amputation rate	9.8%	0%	4.5%	24.3%
Death rate (all cause)	5.9%	0%	3.5%	3.4%

Humacyte filed the BLA with trauma clinical data based upon the accepted statistical analysis plan. These data were also peer reviewed and published in *JAMA Surgery* on November 20, 2024. In the package insert, the FDA elected to exclude the synthetic graft comparator that was in the statistical analysis plan. The FDA also applied a different imputing methodology for V005 Symvess patients who did not have a day 30 assessment.

[1]Moore EE, et al. Bioengineered Human Arteries for the Repair of Vascular Injuries. *JAMA Surg*. 2024 Nov 20:e244893. ; Humacyte BLA filed December 11, 2023.

Symvess was Durable in Trauma Repair in V005 and V017 Studies[1]



- Function of Symvess is durable over 36 months of observation in trauma repair
- ***Zero*** reports of late infection, aneurysm, or mechanical failure

[1]Moore EE, et al. Bioengineered Human Arteries for the Repair of Vascular Injuries. *JAMA Surg*. 2024 Nov 20:e244893..

Symvess Compares Well to Autologous Vein[1]

- Symvess was compared to *Prospective O*bservational *V*ascular *I*njury *T*rial (*PROOVIT*) registry
- ***NOT a head-to-head study. Retrospective comparison to existing registry***
- Symvess patients (n=67) were propensity-matched 1:2 to PROOVIT patients (n=134) who were previously treated with vein. Identical injured arteries. Similar injury severity scores (though SYMVESS patients were more severe)
- Symvess outcomes were similar to autologous vein:

Outcome @ Day 30 for Symvess (@ initial hospitalization for Vein – average 16 days of follow up)	V005 + V017 Symvess (N=67)	*PROOVIT* Autologous Vein (N=134)	P-value
Primary Patency	86.6%	91.8%	0.276
Secondary Patency	91.0%	97.7%	0.077
Amputation rate	7.5%	8.2%	0.852
Conduit Infection rate	1.5%	0.0%	0.333
Death rate (all cause)	4.5%	4.5%	0.991
Reintervention Thrombosis/Stenosis	6.0%	8.2%	0.550

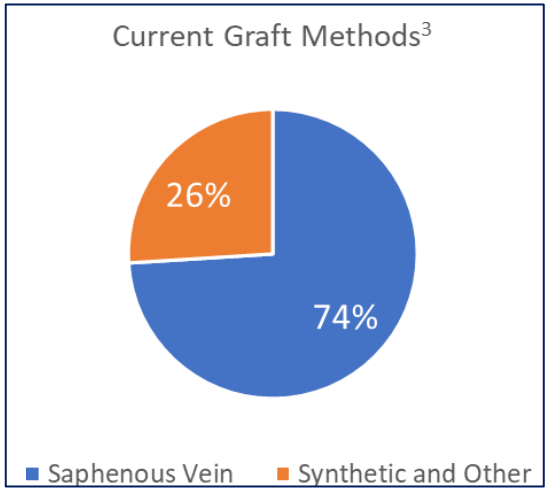
[1]Manuscript under review. Retrospective comparison at 30 days (SYMVESS) or during initial hospitalization (*PROOVIT*).


Symvess™
acellular tissue
engineered vessel-tyod
Commercial Launch in
Extremity Vascular Trauma
Humacyte®

U.S. Vascular Trauma Market – Total Addressable Market for Symvess

Total Vascular Trauma Patients (All Injuries)[1]
79,000
Emergent Vascular Trauma – 56,000 Iatrogenic Vascular Trauma – 23,000

Target U.S. TAM for Symvess Based on Hospital Claims Data[2]
26,000
Emergent Vascular Trauma – 18,667 Iatrogenic Vascular Trauma – 7,333



Symvess-Eligible Patients	Exclusions
• Type of repair: Bypass, repair, replacement, supplement, destruction or restriction • Location: Extremity arteries of interest • Iatrogenic: Arterial injuries co-occurring with other surgeries	• Vein injury / repair • Injuries to torso, head, neck, wrist, hand, ankle, foot • Primary repair: Ligation or endovascular repair

[1]Third-party market research based on procedural volumes (2019) and secondary literature search

[2]Based on analysis of Definitive Healthcare (DHC) Claims Database 2022, claims as of November 2023. Adjusted to reflect estimate the database captures approximately 60% of procedures:

Diagnosis (Dx) Codes: Identify Injury type, location

Procedure Codes: ICD-10 PCS or CPT

[3]Based on analysis of Prospective Observational Vascular Injury Trial (PROOVIT) registry

Drivers of U.S. Commercial Launch in Vascular Trauma

Humacyte

Symvess™

acellular tissue engineered vessel-tyod

Concentrated Market

Approximately 200 Level 1 trauma centers in U.S.

Approximately 3,000 vascular surgeons across civilian and military market opportunities

Superior Clinical Results

In the civilian and military clinical studies, Symvess was observed to have high rates of patency and low rates of amputation and infection

The Right Team

Sales team of ten executives who are experienced in vascular and/or trauma surgery and regenerative therapies

Sales team is complemented by Medical Affairs, market access, and marketing teams

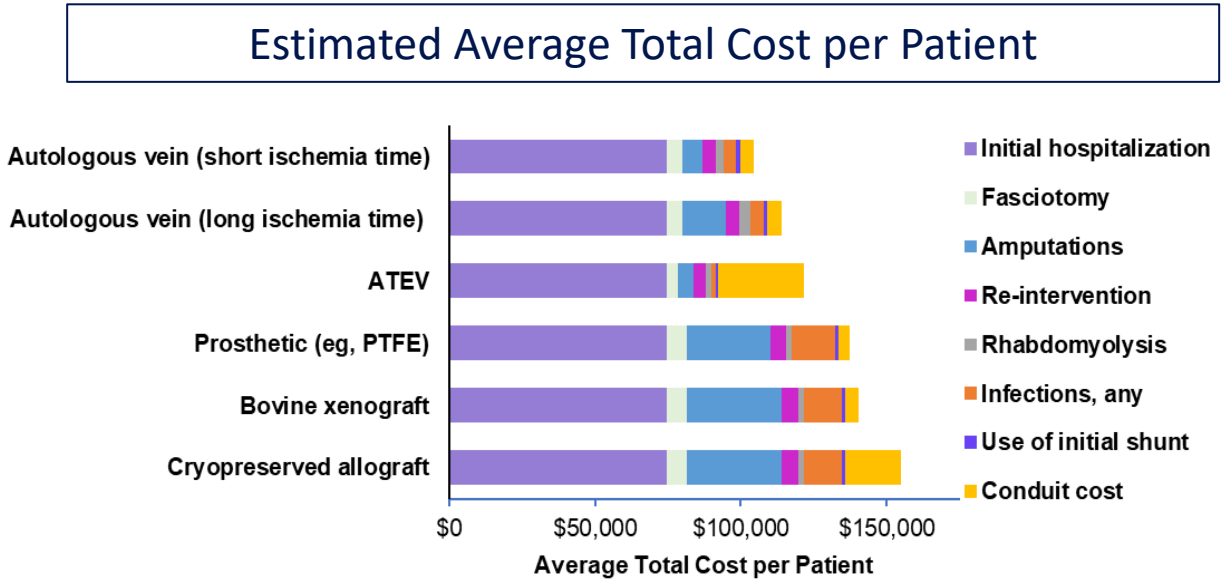
Health Economics

Budget Impact Model projects that the per-patient cost of treating patients with Symvess is estimated to be less than the cost of treating with synthetic grafts and other conduits

Symvess Pricing Supported by Budget Impact Model

The U.S. launch price of Symvess will be $29,500 per unit

- A Budget Impact Model supporting Symvess economic benefit was based on:
  - Symvess clinical results
  - Estimated reduction in clinical complications
  - Medical costs incurred by hospitals derived from real-world hospital and claims databases
- The per-patient cost of treating patients with Symvess is estimated to be less than the cost of treating with synthetic grafts and “non-autologous other” conduits
- Major drivers of cost savings were attributed to reductions in the rate of amputation and infection



NTAP Reimbursement And CMS Progress

Application Timelines

- NTAP Submission: **Submitted on October 6, 2024**
  - **FDA approval required by May 1, 2025**
- CMS Townhall Meeting: **December 11, 2024**
  - Opportunity to present and address questions
- IPPS Proposed Rulemaking Process: **Spring 2025**
  - Opportunity for public comment
- NTAP Decision: **August 2025**

3 Criteria to be Eligible for an NTAP

- ✓ Newness Criterion: must be novel
- ✓ Cost Criterion: must be costly, such that the DRG rate is inadequate to cover
- ✓ Substantial Clinical Improvement: must be better than existing services

ICD-10-PCS Codes and NTAP

- ✓ ATEV PCS codes effective **October 1, 2024**
- ✓ Codes trigger NTAP hospital reimbursement

NTAP Implications

- Enables additional payment to hospitals, specifically for ATEV usage in Medicare beneficiaries
- Also provides a benchmark payment for Medicaid and private payers to imitate
- Covers up to 65% of the cost of ATEV and is active for 2 to 3 years, with the payment going directly to the hospital
- When implemented, this becomes an inflection point in overall product adoption

AV Access for Dialysis

Humacyte®

AV Access for Hemodialysis Has Limitations

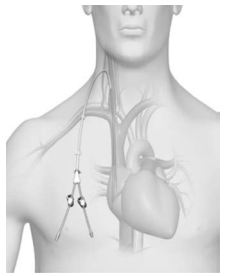
Estimate of Permanent Access Procedures Performed in U.S.

~60% AV fistulas

Primary/AV Fistula (Autogenous)

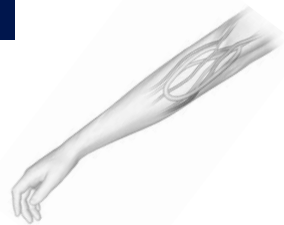
Market targeted by ongoing V007 Phase 3 Trial

~20% Catheters



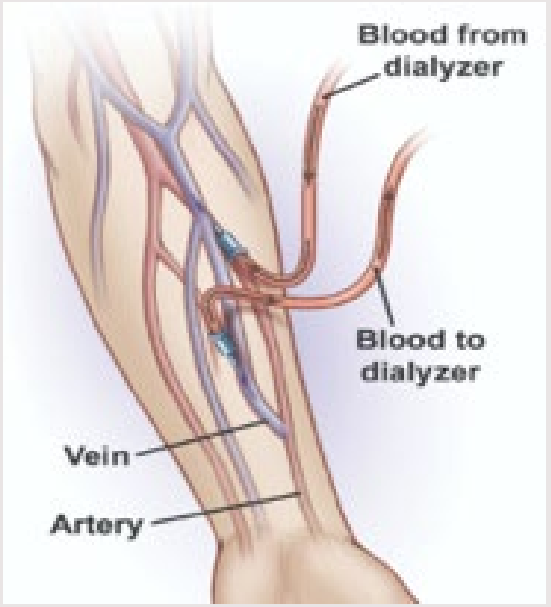
Venous / Temporary Catheter

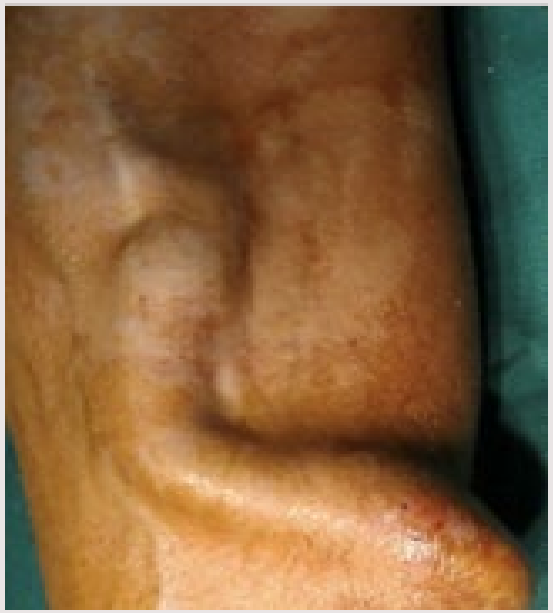
~20% Grafts



Secondary / Graft

Limitations of AV Fistulas (Current Standard of Care)





- ~40% of fistulas fail to mature
- Even the fistulas that do mature take 3-6 months to become usable for dialysis
  - Catheter infection rates are up to 200% per patient-year

ATEV is Designed to Address Failures in AV Access

ATEV provides potential for improved patient outcomes

- ATEV usable for dialysis after only four weeks
- ATEV reduces catheter contact time, thereby reducing risk of catheter infection
- >80% of ATEVs functional for dialysis at 6 months
- ATEV infection rate is comparable to AVF
- Opportunity to reduce cost of access failures and other complications:
  - Access failures and complications
  - Dialysis complications
  - Infections

FRESENIUS MEDICAL CARE

Strategic collaboration with FMC, the largest provider of renal care services

RMAT

RMAT designation granted by FDA

Current AV Access in Women Work Poorly and is Expensive

Partnered with Fresenius / Frenova Renal Research to identify the hemodialysis subpopulations with highest unmet needs

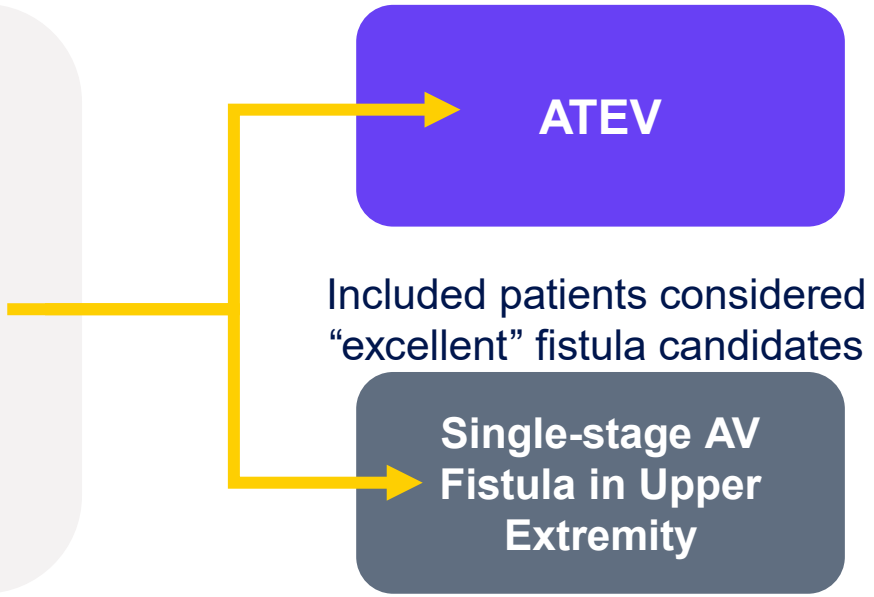
Analysis of 178,575 adults with in-center hemodialysis established that:

- Women are more likely to use AVG ± CVC for access within 90 days of initiation
  - Women have up to 90% increased risk of AVG ± CVC use, as compared to men
- AVG ± CVC access has much higher complication rates: ~2X higher than AVF
  - Nearly $3 billion spent by Medicare in 2013 for on access complications/maintenance
  - Top quintile of dialysis patients cost between **$91,841 to >$155,632 annually to maintain access**
- Women are more likely to fail AVF maturation: **Cost >$30,000 in first year**
  - Women are 20% more likely to fail AVF maturation
  - Women are 20% more likely to have multiple access failures in the first 6 months
  - Women are 24% more likely to have multiple hospitalizations for access complications
- Some female sub-groups are at especially high risk
  - Example: Obese, diabetic women have **excess costs of ~$27,000 to $91,000 during the first year**

V007 Phase 3 Trial: ATEV vs. Fistula

V007 Phase 3 Trial Design: Compare the Efficacy and Safety of Humacyte's Human Acellular Vessel with that of an Autologous Arteriovenous Fistula in Subjects with End-Stage Renal Disease

- Subjects with end-stage renal disease in need of dialysis and suitable for single-stage arteriovenous fistula
- Enrollment completed April 2023, 242 total subjects



Results presented at American Society of Nephrology's *Kidney Week 2024*

> Endpoints
  > Efficacy: Useability for dialysis and patency during the first year
  > Safety: interventions, infections, etc.

> Duration
  > Subjects followed for 24 months after implantation

> Sites
  > 30 centers in the U.S.

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V007 Top-Line Results – ATEV Met Co-Primary Endpoints

ATEV demonstrated superior function and patency at six and 12 months (co-primary endpoints) compared to autogenous fistula, the current standard of care for hemodialysis

Co-Primary Endpoints	ATEV (N=37)	AVF (N=33)	p-value	
Functional Patency at Month 6	81.3%	66.4%	0.0071	
Secondary Patency at Month 12	68.3%	62.2%		
			Difference	p-value
Duration of Use Over First 12 Months	7.5 months	6.1 months	1.4 months	0.0162

- More adverse events were reported in patients on the ATEV treatment arm than those on the AV fistula treatment arm:
  - More thromboses in the ATEV group, but virtually all were resolved
  - A number serious events occurred more frequently in the AVF arm:
    - Two ruptures of AVF (a potentially fatal event), none for ATEV
    - Substantially more “steal” (ischemia of the hand), surgical revisions, and balloon-assisted maturation in the AVF group compared to the ATEV group

V007 Superior Subgroup Results

ATEV showed superior function and patency in subgroups with historically poor outcomes

Females	ATEV (N=37)	AVF (N=33)	p-value	
Functional Patency at Month 6	89.2%	54.5%	<0.0001	
Secondary Patency at Month 12	81.1%	48.5%		
			Difference	p-value
Duration of Use Over First 12 Months	8.3 months	5.0 months	3.3 months	0.0011

Obese (BMI ≥ 30)	ATEV (N=51)	AVF (N=42)	p-value	
Functional Patency at Month 6	80.4%	52.4%	<0.0001	
Secondary Patency at Month 12	72.5%	47.6%		
			Difference	p-value
Duration of Use Over First 12 Months	7.7 months	4.5 months	3.2 months	0.0051

V007 Superior Subgroup Results (continued)

Diabetic	ATEV (N=82)	AVF (N=83)	p-value	
Functional Patency at Month 6	81,7%	61.4%	0.0024	
Secondary Patency at Month 12	68.3%	59.0%		
			Difference	p-value
Duration of Use Over First 12 Months	7.4 months	5.5 months	1.9 months	0.0155

Females, and males with BMI ≥ 30 and diabetes	ATEV (N=56)	AVF (N=54)	p-value	
Functional Patency at Month 6	85.7%	51.9%	<0.0001	
Secondary Patency at Month 12	76.8%	46.3%		
			Difference	p-value
Duration of Use Over First 12 Months	8.0 months	4.5 months	3.5 months	0.0002

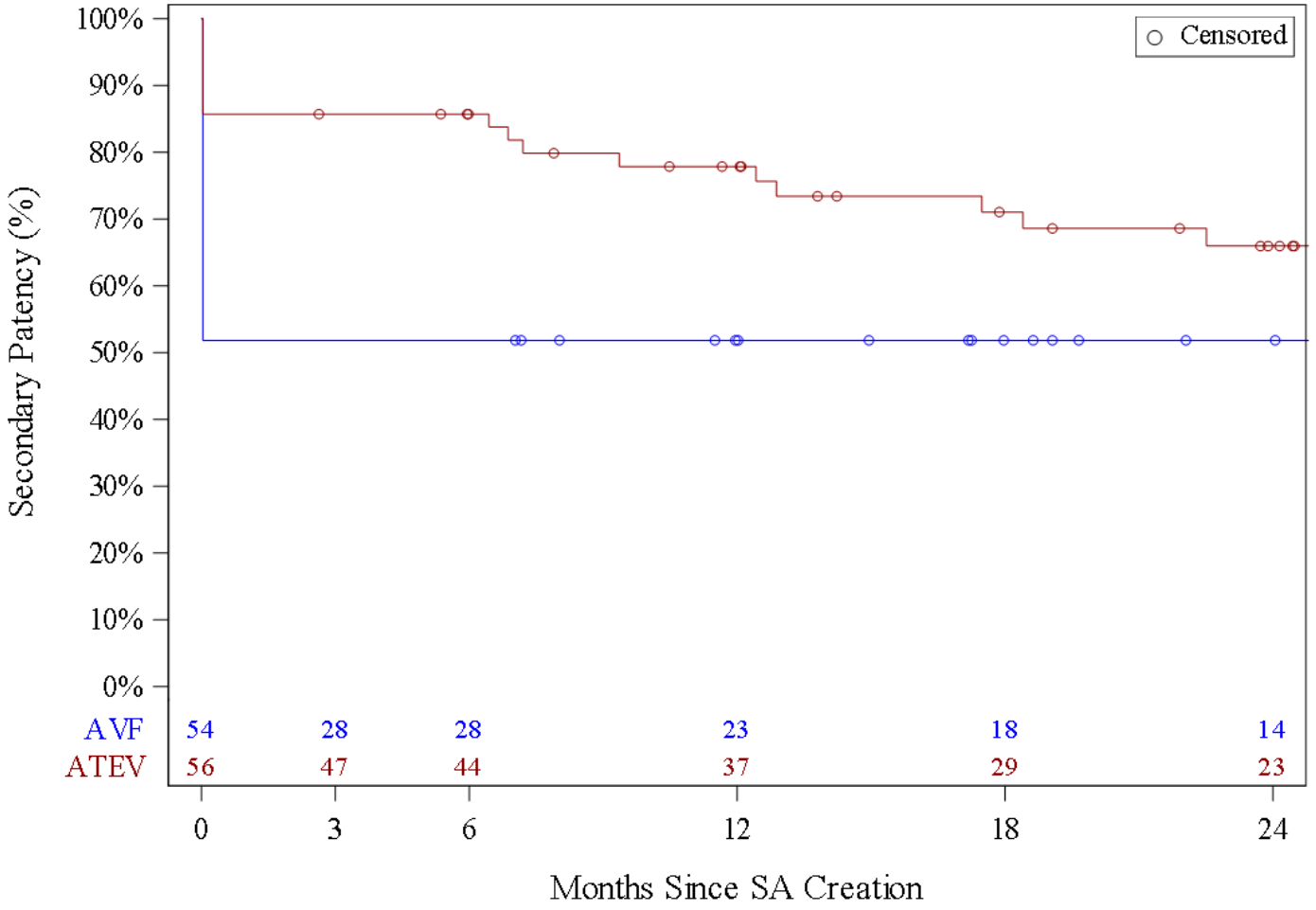
Planned Supplemental BLA Strategy

Our current thinking, subject to modification based on FDA discussions…

- File supplemental BLA based primarily on V007 study results:
  - Planned supplemental BLA filling in 2nd half of 2025
- Target subgroups in which the ATEV showed the best results in the V007 study:
  - All females, and males with two risk factors (BMI ≥ 30 kg/m2 and diabetes)
  - This collection of subgroups encompasses over 50% of dialysis patients
- Anticipate using two-year results from V007 study which will be available in April 2025
  - Two-year results from 70% of the patients in V007 are already available on show durability of ATEV as illustrated on following slide

V007 Long-Term Results in ATEV Target Population

ATEV has shown superior long-term patency to date in the expected target population (all females and males with BMI ≥ 30 kg/m2 and diabetes)



The 24-month results reflect data from the 70% of patients who had reached their 24-month visit as of 12-month data cut off. 100% of patients will have reached their 24-month visit by April 2025

V007 Safety Results in ATEV Target Population

ATEV has shown no increased safety events per year of usability in the expected target population (all females and males with BMI ≥ 30 kg/m2 and diabetes)

12-Month Safety Summary	ATEV		AVF	
	Subjects (%) n=54	Events per Patient Year	Subjects (%) n=56	Events per Patient Year
Treatment Emergent Adverse Events	96.3%	14.8	98.2%	21.8
Serios Adverse Events	77.8%	4.2	67.9%	6.1
Adverse Events of Special Interest:				
CEC SA-related infections	7.4%	0.1	5.5%	0.1
Thrombosis	51.9%	1.2	12.5%	0.3
Stenosis	64.8%	3.0	51.8%	2.9
Clinically significant Steel Syndrome	1.9%	0.0	3.6%	0.1
Rupture of SA	0.0%	0.0	3.6%	0.1
Leading to SA revision or ligation	11.1%	0.2	28.6%	1.2
Leading to SA excision	5.6%	0.2	3.6%	0.1

V012 (HUMAXX) Trial in Women Dialysis Patients

Trial comparing Humacyte's (ATEV™) to AVF in women

To Compare the Efficacy and Safety of the ATEV With AVF in Female Patients With End-Stage Renal Disease Requiring Hemodialysis (HUMAXX)

Female patients currently receiving hemodialysis via catheter and who are candidates for creation of an AVF or implantation of an ATEV.

- **Enrollment:**
  - Target 100 total subjects
  - 60 patients enrolled as of December 31, 2024
  - 1:1 Prospective randomization
  - ATEV vs. Autogenous fistula

Comparators:

Surgically created AV Fistula in the upper extremity

Follow-up Duration:

12 months without regard of patency status.

24 months (if access not abandoned)

Objectives:

- **Primary Efficacy:** Total days free from in-dwelling catheter ("catheter-free days") until 365 days, or until access abandonment, whichever occurs first.
- **Primary Safety:** Number and severity of infections related to all accesses (including catheters) from access creation until 365 days.

Strategic Value of V012 Study

Women are 43% of the US dialysis population and many struggle with access

V012 was designed in consultation with nephrologists and FDA to quantify value of ATEV vs. AVF for women

- V012 is focused on catheter exposure in women:
  - Captures failures of AVFs
  - Catheters are the most expensive access for dialysis
- V012 was designed in consultation with FDA:
  - Agency acknowledges that women have high unmet need in dialysis
  - Agency notes that women suffer high rates of fistula failure
- V012 captures important access complications and adds to health economic narrative:
  - No study has quantified AVF access complications specifically in women
  - Will provide strong health economic data on ATEV
  - Should provide additional support for reimbursement in women

Peripheral Arterial Disease (PAD)

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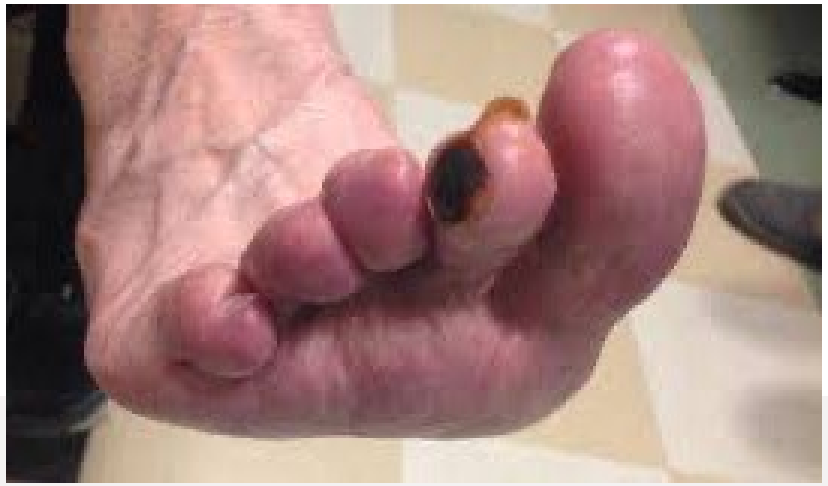
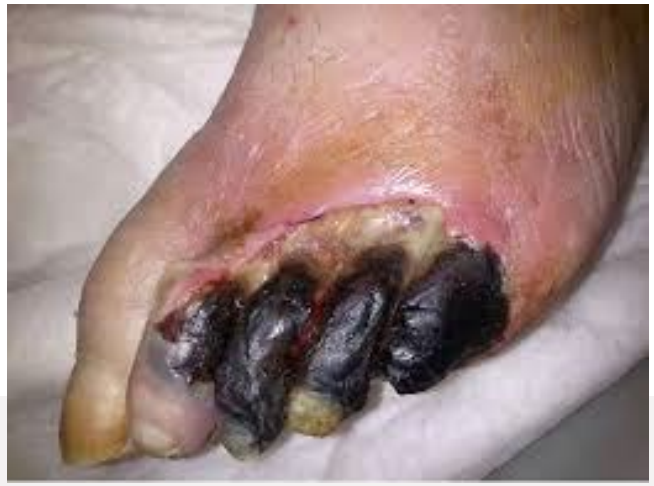
Peripheral Artery Disease (PAD)

Can progress to multiple leg arteries, further reducing circulation



Critical Limb Threatening Ischemia

- Tissue does not receive enough blood flow to survive
- If untreated, leads to tissue loss, gangrene, and ultimately amputation



Treatment Requires Restoration of Blood Flow

- Non-surgical, catheter-based intervention
- Surgical bypass

For the 40% of PAD patients who do not have an ipsilateral saphenous vein for arterial bypass, ATEV may represent a promising means of revascularization and limb salvage

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Current Clinical Experience with ATEV in Peripheral Arterial Disease

Phase 2 Trials

- V002 – 20 patients (EU)
- V004 – 15 patients (US)

EA

Over 20 U.S. patients with critical limb ischemia treated under FDA Expanded Access program

Mayo IND

Investigator-sponsored IND

- 29 patients with severe PAD at risk of limb loss
- Patients did no have saphenous vein available

- Six-year results from V002 published in *Journal of Vascular Surgery – Vascular Science*[1]
- Publication of First Eight Expanded Access Cases in *Annals of Vascular Surgery*[2]
- Outcomes published in *Midwestern Vascular Surgical Society* showing 86% limb salvage rate

[1]Piotr Gutowski, et al, 6-Year Outcomes of a Phase 2 Study of Human-Tissue Engineered Blood Vessels for Peripheral Arterial Bypass, JVS: Vascular Science (2023)

[2]Lauria A, Kersey A, Propper B, et al. *Annals of Vascular Surgery*. 2022 Apr 6:S0890-5096(22)00180-7

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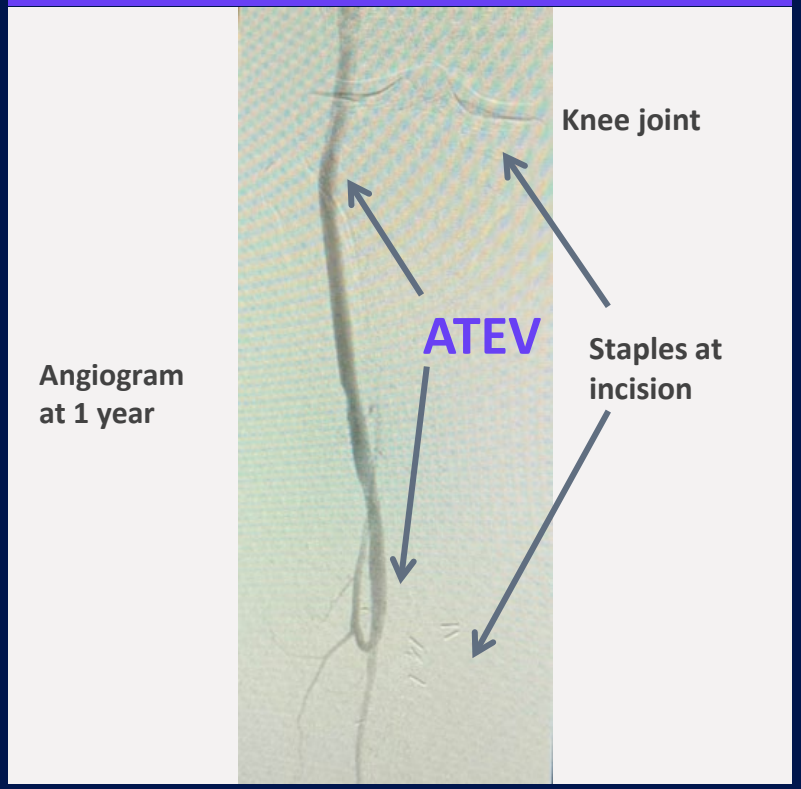
Expanded Access: Restoring Mobility with ATEV

- The ATEV was used under compassionate use program in 70-year-old patient with severe vascular disease
- No vein was available to perform a bypass, as the vein was previously harvested for a CABG
- A right distal superficial femoral artery-to-peroneal artery bypass was performed using an ATEV
- The patient's postoperative course was unremarkable
- At 1-year follow-up the angiography showed a patent ATEV without significant stenosis at the distal anastomosis
- **Four years after ATEV implantation, the patient continues to do well and is walking.**

VESS Vascular & Endovascular Surgery Society

This case was included in ATEV results in critical limb ischemia presented at VESS meeting in January 2022

Bypass performed using the ATEV in patient with severe vascular disease



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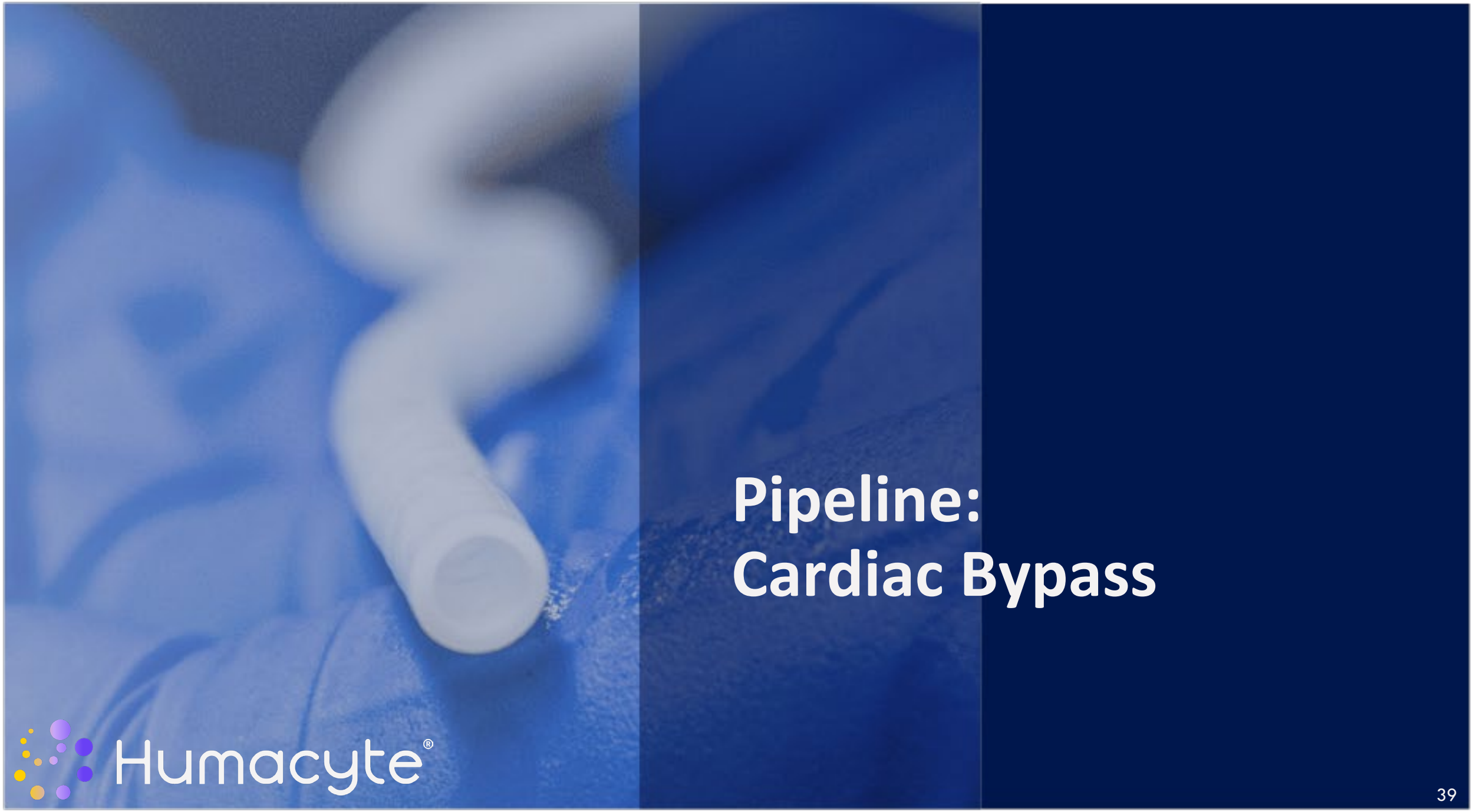

Pipeline:
Cardiac Bypass

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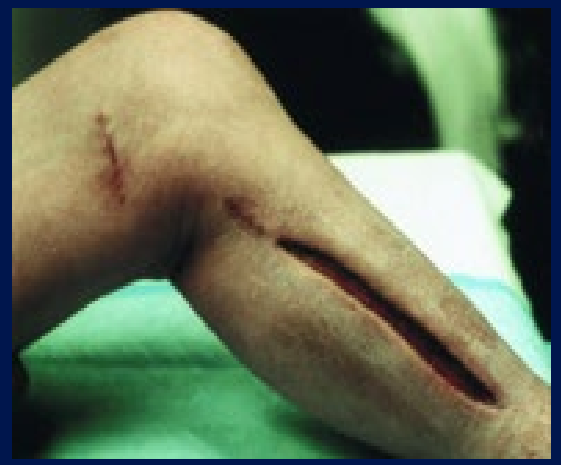
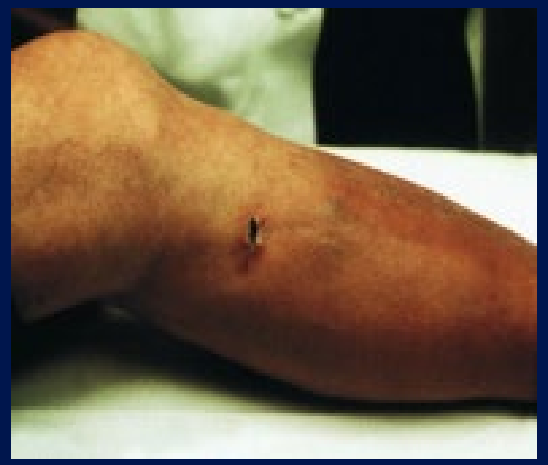
Potentially Transforming CABG Care: Greater Durability, Less Morbidity





- Saphenous Vein Graft (SVG)
  - Harvesting SVG from the patient is painful and complicated:
    - 41% have persistent numbness
    - 32% develop infection
    - 23% have persistent swelling; worse in obese and diabetic patients; 2x worse in women
  - SVGs do not last long enough: ~33% of patients will require one or more re-grafting procedures during their lifetimes

Humacyte's ATEV

- Does not require tissue harvest from the patient
- Immediately available and avoids morbidity of vein harvest
- Particularly important to avoid vein harvest in diabetics, women, and the overweight
- Durable and highly uniform in diameter and quality

Surgeons know what they are getting each time

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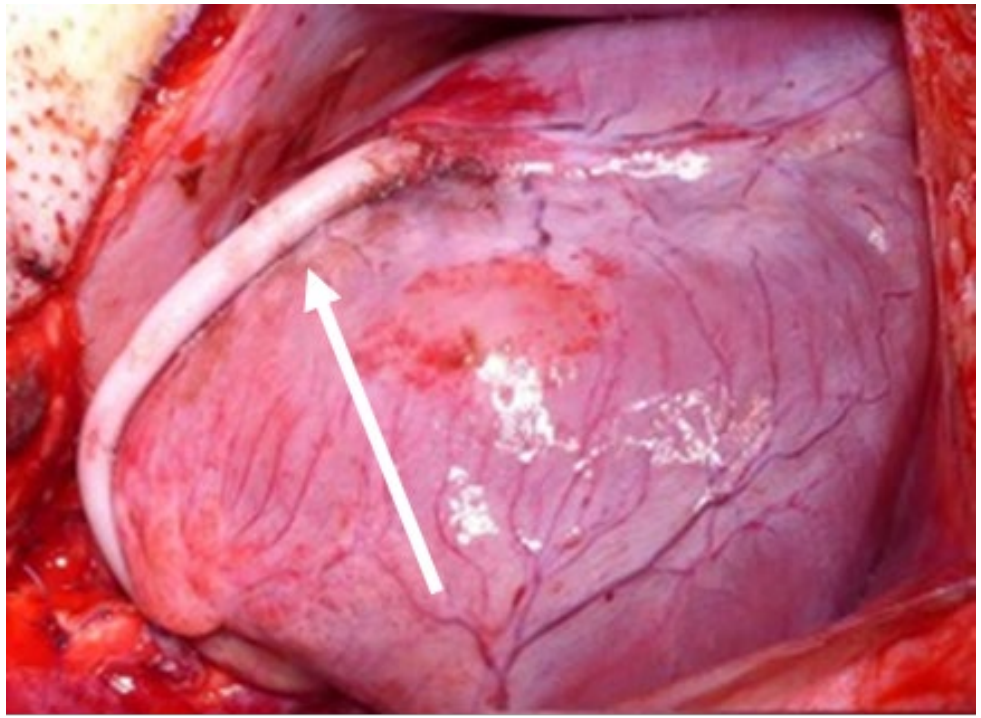
CABG Preclinical Results

American Heart Association. Scientific Sessions

- Testing of ATEV in baboon model has transitioned to right coronary artery (RCA) as distal target
- Results showing ATEV maintained patency and exhibited host-cell remodeling through six months



Humacyte ATEV in Baboon

Next Steps in CABG Development

Proceeding to IND enabling non-clinical studies to support first-in-human clinical trials

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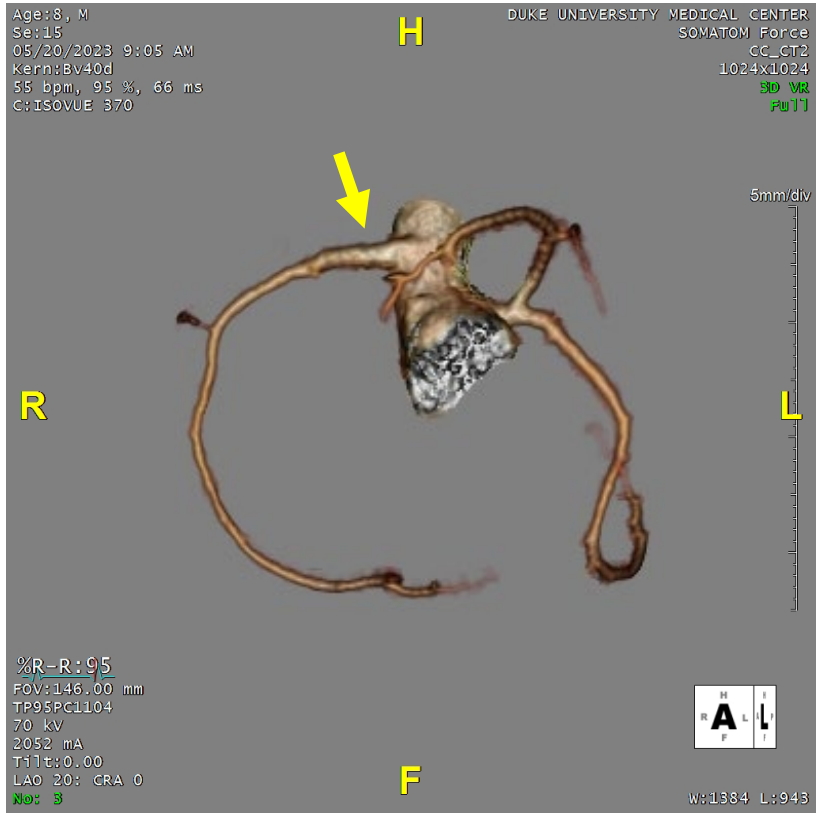
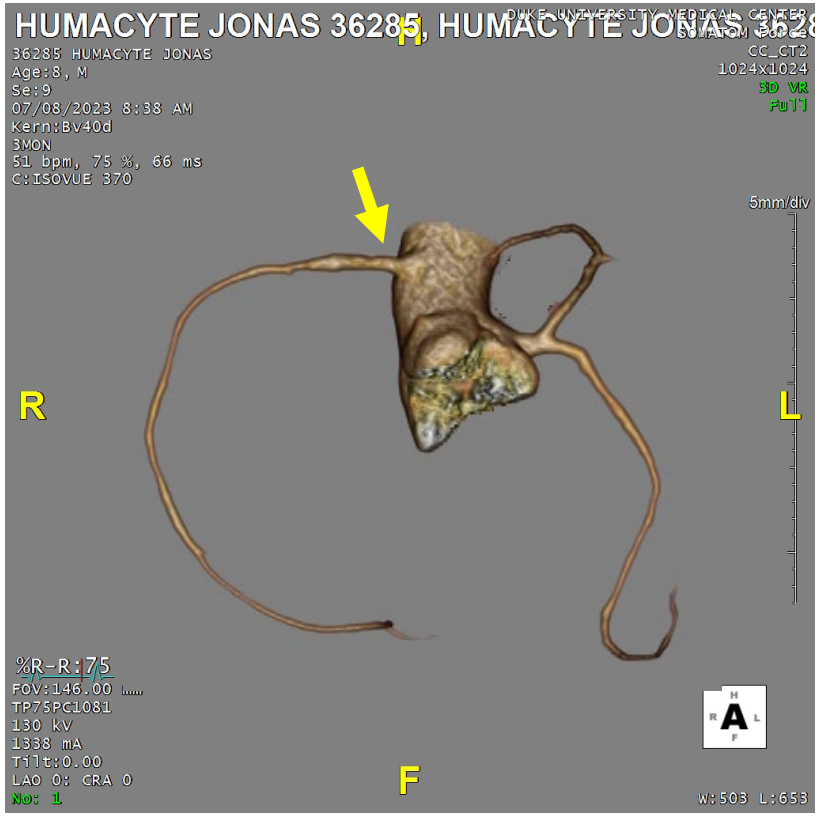
Primate – CABG Angiography – Adaptive Remodeling

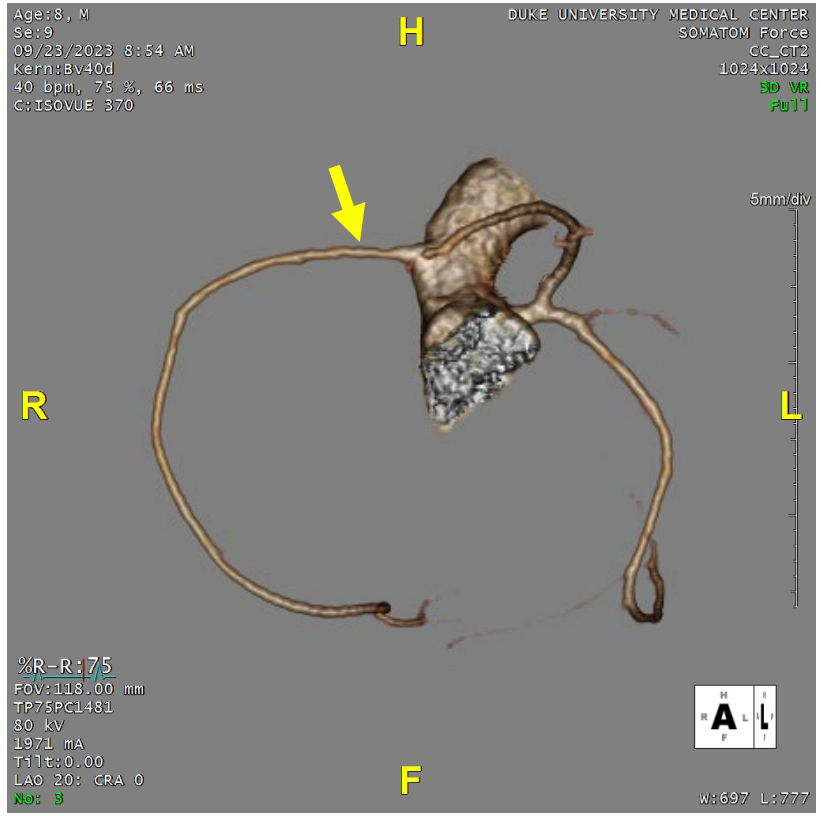
1 Month



3 Months



6 Months



Jonas – Left Ventricular Function (%)			
Pre-Op	1-Month	3-Month	6-Month
70%	73%	74%	73%

Pipeline:
BioVascular Pancreas

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Biovascular Pancreas May Deliver Curative Islets to Diabetics

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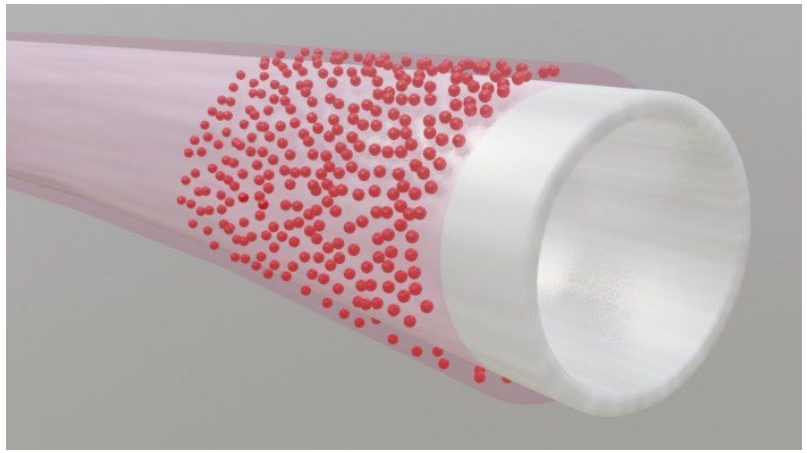
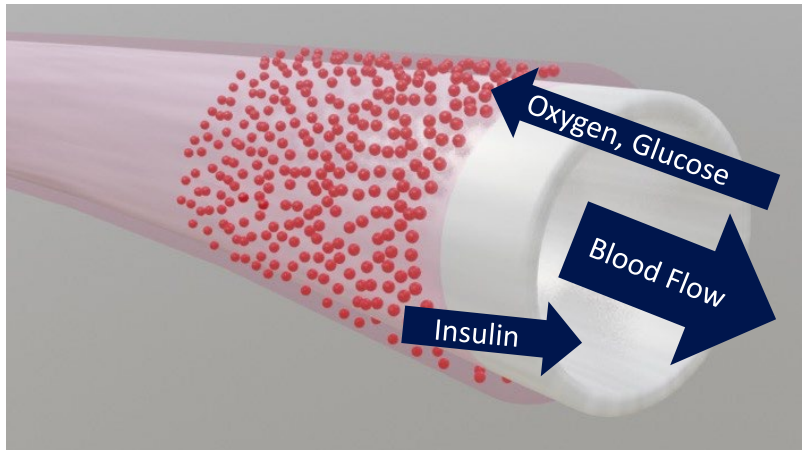
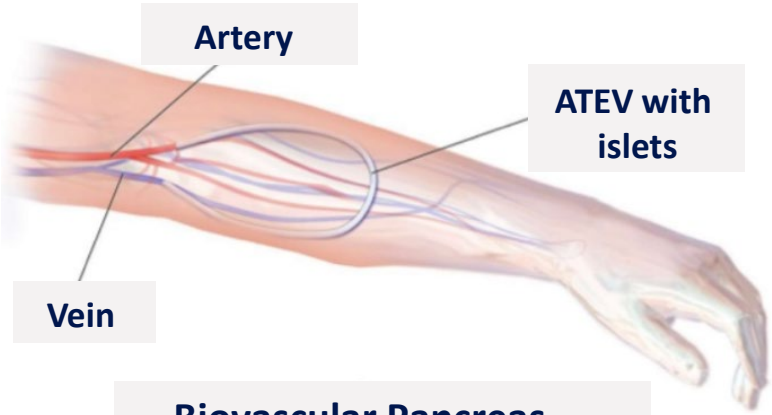
Islets + ATEV = Biovascular Pancreas (BVP)



Blood Flow Supports Islets



BVP Implanted In The Arm



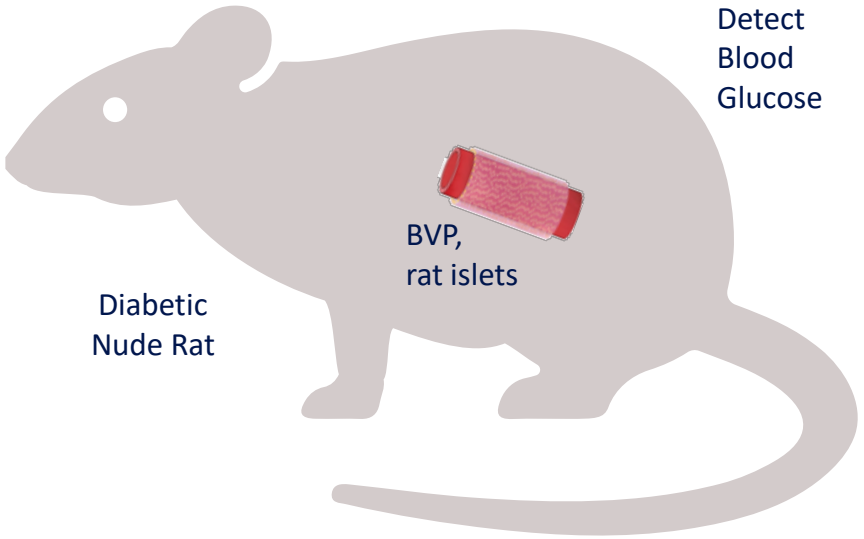
Biovascular Pancreas

- Islets die after injection into the liver, due to lack of oxygen and nutrients
- Humacyte's ATEV is being developed as a means to provide oxygen and nutrients to islets that are coated on the outside: "Biovascular Pancreas" (BVP)
- Once implanted in the vasculature, blood flow supplies oxygen and nutrients to islets
- One 42-cm ATEV is expected to accommodate all the islets in an entire human pancreas

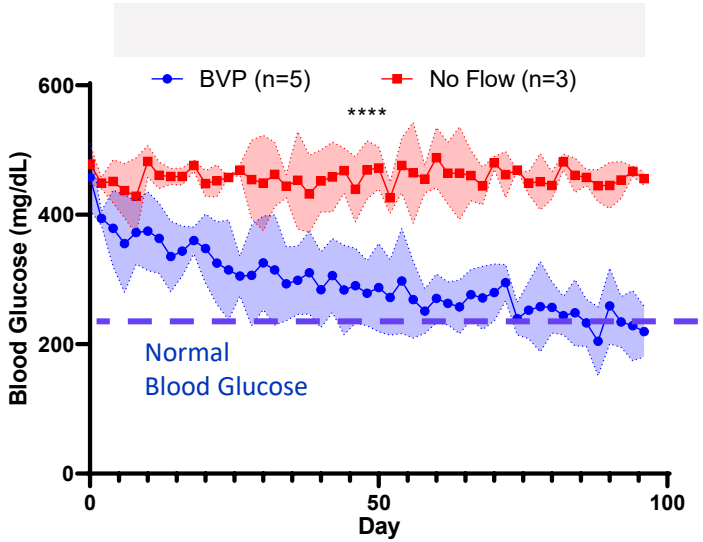
Biovascular Pancreas Normalized Glucose in Diabetic Animals

- Diabetic rodents implanted with BVPs
- All treated animals normalized glucose over time. All sham-treated animals ("No Flow") remained diabetic

Transplant BVP into Vasculature



Blood Glucose Levels



DIABETES RESEARCH INSTITUTE FOUNDATION
The Best Hope for a Cure®

JDRF IMPROVING LIVES. CURING TYPE 1 DIABETES.

Han EX, Wang J, Kural M, et al. Journal of Tissue Engineering; 12: 1-18

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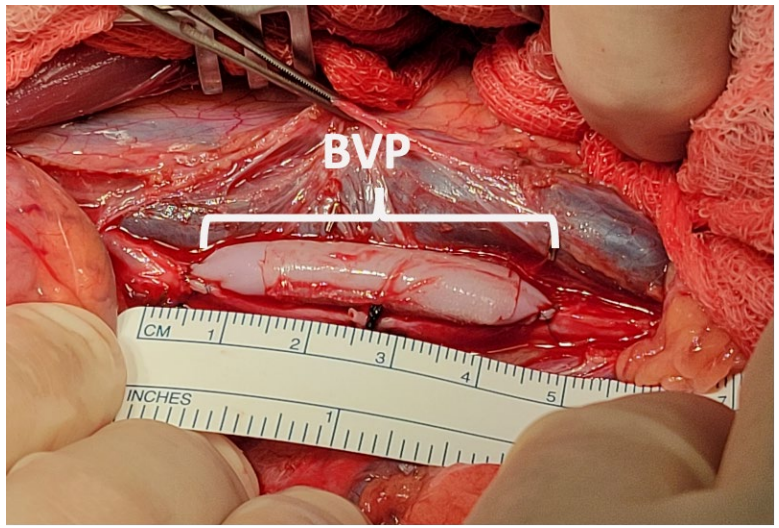
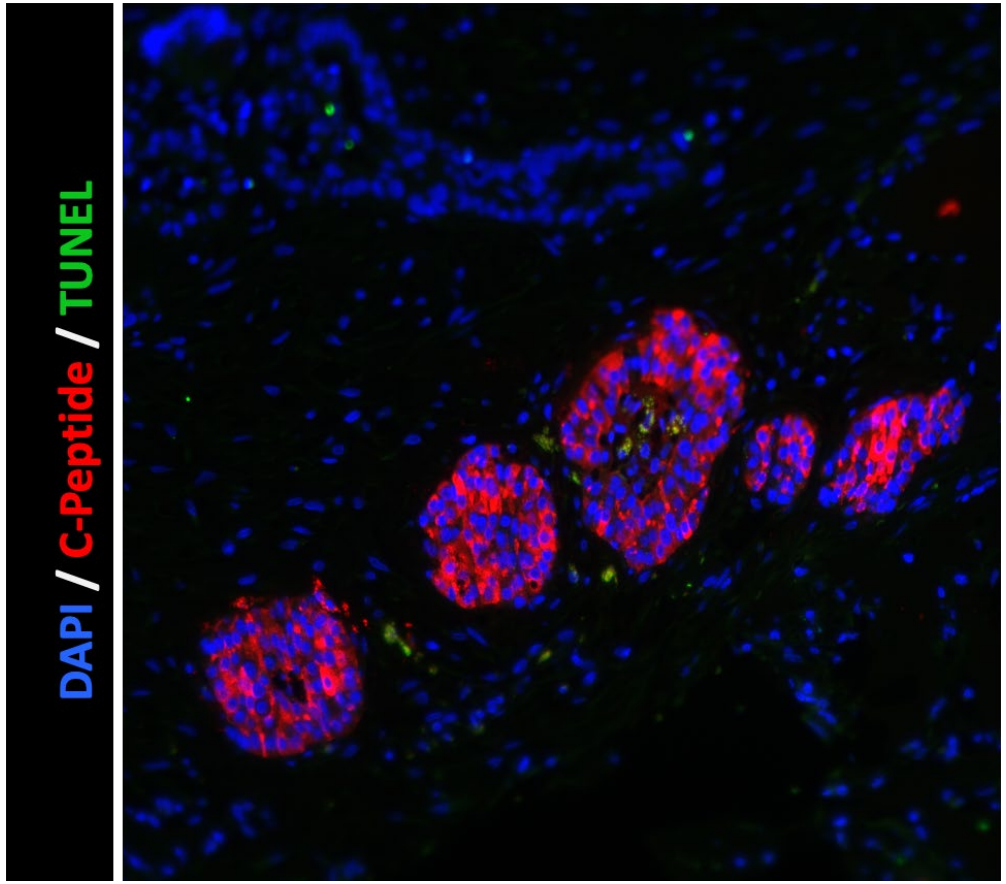
Primate BVP – Islets Survive, and Produce Insulin

- In this model, the BVP is produced by harvesting islets from one animal, and creating a BVP comprising human ATEV and primate islets
- Animal receives the primate-islet BVP into the aorta
  - 25,600 islet equivalents
  - Corresponds to a potentially curative number of islets in a human



Islets survive for weeks after implantation, continue making insulin (c-peptide).



Milestones

Humacyte®

Our Technology Addresses Compelling Unmet Needs in Attractive Markets

Vascular Tissue Constructs

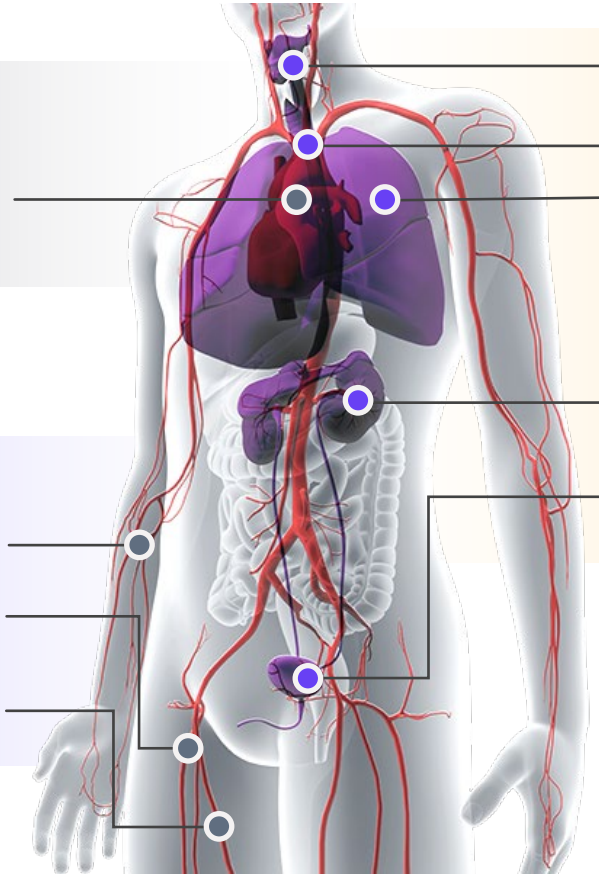
Complex Tissue Constructs and Organ Systems

Pre-Clinical

- Coronary Artery Bypass Graft (CABG)
- BT Shunt

Clinical Programs

- Dialysis AV Access
- Vascular Trauma
- Peripheral Arterial Disease (PAD)



Pre-Clinical

- Trachea
- Esophagus
- Lung
- Pancreas
- Urinary Conduit

Commercial Manufacturing Scale – LUNA200 System

Bioreactor bag

Each bioreactor bag contains a single polymer mesh scaffold, seeded with banked human cells

Growth drawer

10 bioreactor bags per growth drawer; tubing connects to shared nutritive media

LUNA200 System

Each LUNA200 can produce 200 ATEVs per batch (or ~1,000 ATEVs annually) [1]

Commercial 83,000 sq ft Bioprocessing Facility

- Currently operating 8 LUNA200 systems
- Annual Capacity expected to exceed 40,000 ATEVs
- Functionally closed system with state-of-the-art process automation

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Anticipated 2025 Milestones

Completed in 2024

- *Vascular Trauma (Symvess):*
  - *BLA acceptance and priority review* ✓
  - ***BLA approval*** ✓
- *V007 ATEV dialysis (AV Access) Phase 3 results – trial met co-primary endpoints* ✓
- *Positive Phase 2 results from PAD trial conducted by Mayo Clinic* ✓
- *Preclinical BVP results showing survival and function of islets* ✓

Planned for 2025

- Vascular Trauma (Symvess):
  - **U.S. commercial launch**
  - Multiple publications including Budget impact model
  - NTAP reimbursement
- ATEV dialysis (AV Access):
  - Completion of enrollment in V012 Phase 3 trial in women
  - Submission of Supplemental BLA
- BioVascular Pancreas (BVP) for type-1 diabetes:
  - Preclinical results in large animal diabetes model
- Cardiac Bypass Surgery (CABG) with of small-diameter ATEV:
  - Preclinical results from large animal studies
  - IND submission

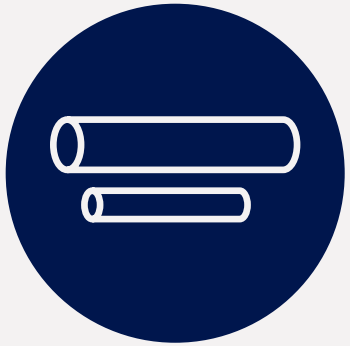
Publications & Presentations
(Multiple other clinical and preclinical publications and presentations expected for 2025)

All milestone dates are only management estimates

The Promise of Regenerative Medicine

Bioengineering Platform

Broad platform of universally implantable off-the-shelf bioengineered human tissues and organs



Extensive Markets

Platform targets extensive markets across multiple indications

Commercial Scale Manufacturing

Existing facilities expected to support anticipated commercial launch with room for modular expansion

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Universally Implantable Regenerative Human Tissue

Thank You