

CardioGRAFT®



Allograft solutions for cardiac repair and reconstruction – from the world’s most trusted provider of allograft solutions.

LifeNet Health grafts consistently perform as they should, allowing medical professionals to focus on the procedure, and patients to focus on healing. Year after year, this dedication to quality is validated internally and vetted by health-care organizations and industry partners, as well as government and industry regulators.

Our comprehensive portfolio allows customers to get more solutions from a single source – freeing time and resources to focus on providing the highest quality patient care. Our responsive client service department is available 24 hours per day and our Specialists are available to consult with surgeons or conduct in-service programs for operating room staff on allograft preparation.

Commitment to Quality

LifeNet Health's expertise in cardiac and vascular tissue processing spans more than 35 years. Our refined processes, quality-control systems and proprietary disinfection protocols ensure the highest level of safety, reduced risk and better outcomes.

Multiple Processing & Distribution Locations

LifeNet Health has processing and distribution centers located strategically across the country, boosting our ability to provide efficient and reliable service, and minimizing the impact of uncontrollable events like weather. Our consignment and freezer programs offer both convenience and operational readiness.

Service & Reliability

We collaborate with more than 50 recovery partners across the US, all of whom are required to adhere to our strict standards of donor screening and recovery techniques. This enables us to maintain a ready supply of grafts for your hospital's needs.

Experience & Knowledge

Our staff brings more than 200 combined years of experience in cardiac tissue processing, and we hold the longest-running American Association of Tissue Banks accreditation

Screening & Safety

LifeNet Health's stringent screening criteria determines which possible donors are potentially medically suitable. Less than 2% of all possible donors meet these standards designed to ensure that only the safest tissue is available for transplantation.

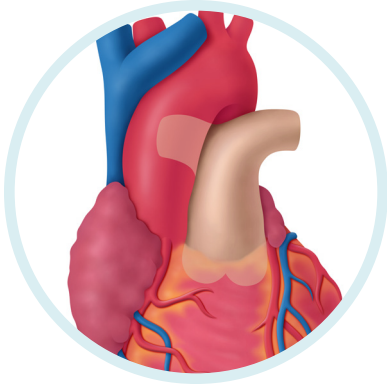
Donor Families

Our donor family support program is an expression of our appreciation and our commitment to honoring the precious gift. We offer support groups, workshops, online resources and remembrance events. Our Thanks2You program enables implant recipients to contact their tissue donor family to thank them for their loved one's gift. In addition to individual family communication and online resources, LifeNet Health hosts several events and workshops throughout the year to aid in the healing process and provide a meaningful way for families to celebrate the gift of life.



"I want you to know that your family's generosity in a time of grief made a difference to me, to my family, and to my newborn son. Without your precious gift, my son's heart would not be complete." - Amos's mom

Our record of safety, quality, innovation and service enables us to produce the



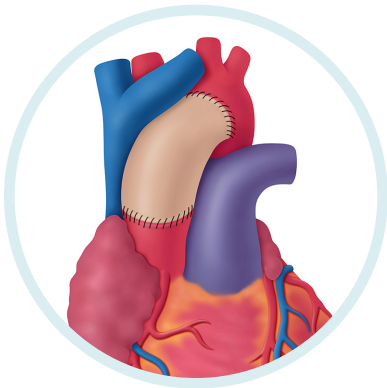
Cardiac Valve Replacement

Clinical Applications:

Tetralogy of Fallot, Pulmonary Stenosis, Infective Endocarditis, Ross Procedure, Valve Incompetence/Regurgitation, Valve Atresia

Clinical Solutions:

CardioGraft Aortic Valves (HVA), CardioGraft Pulmonary Valves (HVP), CardioGraft Pediatric Conduit (PFV-C, PCV-C)



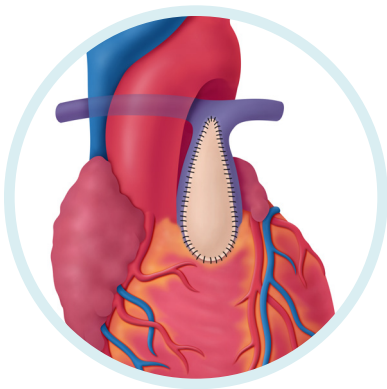
Cardiac Reconstruction with Conduits Without Leaflets

Clinical Applications:

Tetralogy of Fallot, Pulmonary Atresia, Truncus Arteriosus, Transposition of the Great Arteries

Clinical Solutions:

CardioGraft Ascending Aorta (AA), CardioGraft Pulmonary Artery (PA), CardioGraft Thoracic Aorta (TA)



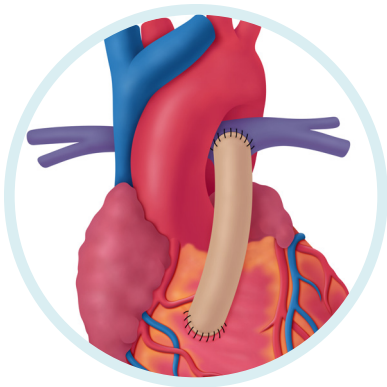
Cardiac Outflow Tract Repair and Reconstruction

Clinical Applications:

Tetralogy of Fallot, Hypoplastic Left Heart Syndrome, Truncus Arteriosus, Transposition of the Great Vessels, Pulmonary Stenosis/Atresia, Outflow tract/Root reconstruction

Clinical Solutions:

CardioGraft Hemi-Pulmonary Artery (LHPA/RHPA), CardioGraft Mono Cusp (MCPL), CardioGraft Pulmonary Patch (PPGK/PPGN), CardioGRAFT Pediatric Conduit (PFV-C, PCV-C)



Features & Benefits

- Natural ability to resist infection^{1,2,3}
- Alleviates the need for anticoagulation therapy⁴
- Reduced thrombosis potential³
- Allografts most closely resemble native tissue, making them compliant, flexible and easy to handle

highest quality allografts, including a full portfolio of cardiac surgical solutions.



Decellularized Cardiac Repair and Reconstruction

Clinical Applications:

Repair of the right ventricular outflow tract for Tetralogy of Fallot, Truncus Arteriosus, Hypoplastic Left Heart Syndrome, Transposition of the Great Arteries, Pulmonary Stenosis/Atresia

Clinical Solutions:

CardioGraft-MC® Decellularized Pulmonary Patch (DPPGK/DPPGN), CardioGraft-MC Decellularized Hemi-Pulmonary Artery (DLHPA, DRHPA)

Features & Benefits

- Clinical effectiveness – lower potential for reoperation or intervention^{5,6}
- Patented, validated Matracell decellularization and disinfection process that removes ≥99% of donor DNA⁷
- Resists calcification and stenosis^{5,6}
- Allografts most closely resemble native tissue, making them compliant, flexible and easy to handle
- Potentially reduces operating room time and cost by reducing the rate of serious adverse events and Reoperations⁸

More than 100 patients have shown no need for patch-related interventions, replacements or re-operations two years into an ongoing five-year study⁶

39 patients received LifeNet Health homografts to treat active endocarditis. During the follow-up period of 2.5 years, there were no reported reinfections.⁹

Matracell Technology

Matracell decellularization is a validated, patented process unique to LifeNet Health. It renders tissue acellular without compromising the strong and biocompatible matrix that facilitates cell proliferation and migration for our cardiovascular patches.

- Maintains the biomechanical strength of the native collagen and elastin scaffold.
- Demonstrates >99% reduction in donor DNA – benefiting your patients who may require future transplantation.



Heart Valves | CardioGRAFT®



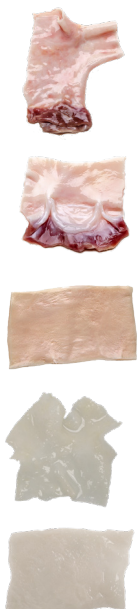
Description	Size	Cryopreserved
Aortic	22 mm and greater	HVA-L
	17 to 21 mm	HVA-M
	16 mm and less	HVA-S
Pulmonary	22 mm and greater	HVP-L
	17 to 21 mm	HVP-M
	16 mm and less	HVP-S

Conduits | CardioGRAFT®



Description	Size	Cryopreserved
Ascending Aorta (Non-Valved)	22 mm and greater	AAL
	17 to 21 mm	AAM
	16 mm and less	AAS
Pulmonary Artery (Non-Valved)	22 mm and greater	PAL
	17 to 21 mm	PAM
	16 mm and less	PAS
Thoracic Aorta (Non-Valved)	22 mm and greater	TAL
	17 to 21 mm	TAM
	16mm and less	TAS
Pediatric Conduit (Femoral Vein with Competent Valve)	≥6 cm length/≥6 mm diameter (OD)	PFV-C
Pediatric Conduit (Saphenous Vein with Competent Valve)	≥6 cm length/≥4 mm diameter (OD)	PCV-C

Repair | CardioGRAFT®



Description	Size	Cryopreserved	Frozen
Hemi Pulmonary Artery - Left (No Leaflet)	Varies	LHPA	
Hemi Pulmonary Artery - Right (No Leaflet)		RHPA	
Mono Cusp Patch (With Leaflet)	22 mm and greater	MCPL	
Pulmonary Patch Graft Thick (Trunk)	W = 25-50 mm in 5 mm increments; L = 30-60 mm in 5 mm increments	PPGK	
Pulmonary Patch Graft Thin (Branch)		PPGN	
Decellularized Hemi Pulmonary Artery - Left with Matracell®	Varies		DLHPA
Decellularized Hemi Pulmonary Artery - Right with Matracell®			DRHPA
Decellularized Pulmonary Patch Graft with Matracell® Thick (Trunk)	W = 25-50 mm in 5 mm increments; L = 30-60 mm in 5 mm increments		DPPGK
Decellularized Pulmonary Patch Graft with Matracell® Thin (Branch)			DPPGN

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References

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2. Tuna et al. Results of Homograft Aortic Valve Replacement for Active Endocarditis. Ann Thorac Surg 1990; 49: 619-24
3. Hopkins et al. Cardiac Reconstructions with Allograft Tissues. Springer 2005
4. Petterson, Coselli, et al. 2016 The American Association for Thoracic Surgery (AATS) consensus guidelines: Surgical treatment of infective endocarditis. Journal of Thoracic and Cardiovascular Surgery, 2017; 153: 1241-1258
5. Lofland GK, et al. Initial pediatric cardiac experience with decellularized allograft patches. Ann of Thoracic Surg, 2012;93:968-71
6. Hopkins RA, et al. Pulmonary Arterioplasty With Decellularized Allogeneic Patches. Ann of Thoracic Surg, Vol. 97, Issue 4, April 2014, Pages 1407-1412
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8. CardioGraft-MC (also known as Matracell®) Decellularized Cardiac Patch Allograft Cost-Effectiveness Analysis Musculoskeletal Clinical Regulatory Advisors, June 2014
9. Preventza et al. Homograft Use in Reoperative Aortic Root and Proximal Aortic Surgery for Endocarditis: A 12-year Experience in High-risk Patients. Journal of Thoracic and Cardiovascular Surgery, September 2014, Volume 148, Number 3: 989-94

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