

SUPPLEMENTARY MATERIALS

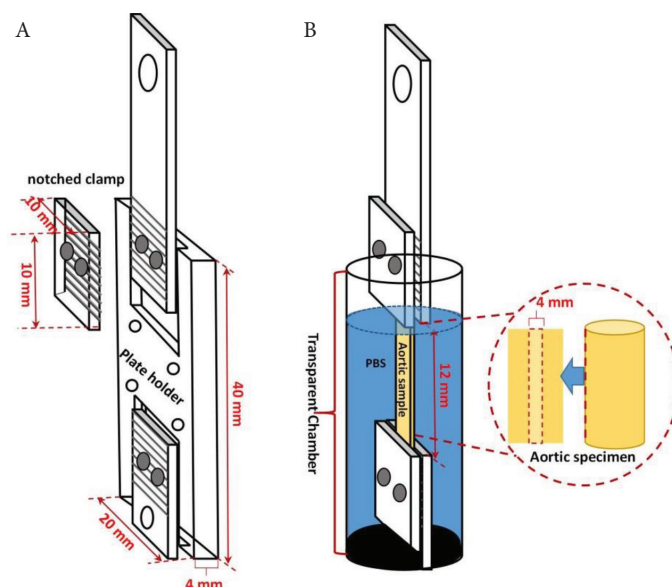


Figure S1 | Schematic diagram of the tensile set up: (A) The mechanical clamps: the upper clamp was moved whilst the lower clamp remained fixed in position. (B) Sample for testing hydrated with PBS in the liquid cell.

Table S1 | Statistical comparison within groups for each distance from heart (2–18 cm) for G' , G'' and $\tan(\delta)$ on the intimal face, for each animal

Intimal face	G' (kPa)		Sig.	G'' (kPa)		Sig.	$\tan(\delta)$		Sig.
Group 1 (2 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 2 (4 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 3 (6 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 4 (8 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 5 (10 cm)	Ovine 1	Ovine 2	2.77616 [*]	Ovine 1	Ovine 2	*	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	2.77616 [*]	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 6 (12 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 7 (14 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 8 (16 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 9 (18 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS

Table S2 | Statistical comparison within groups for each distance from heart (2–18 cm) between three ovines for G' , G'' and $\tan(\delta)$ on the adventitial face, for each animal

Adventitial face	G' (kPa)			Sig.			G'' (kPa)			Sig.			$\tan(\delta)$			Sig.					
Group 1 (2 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 2 (4 cm)	Ovine 1	Ovine 2	*	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	*	Ovine 1	Ovine 3	0.02	Ovine 1	Ovine 3	0.02	Ovine 1	Ovine 3	0.02	Ovine 1	Ovine 3	0.02	Ovine 1	Ovine 3	0.02	Ovine 1	Ovine 3	0.02
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 3 (6 cm)	Ovine 1	Ovine 2	*	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 4 (8 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 5 (10 cm)	Ovine 1	Ovine 2	2.77616'	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS 2.77616E-4	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 6 (12 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 7 (14 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 8 (16 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 9 (18 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	0.03	Ovine 1	Ovine 2	0.03	Ovine 1	Ovine 2	0.03	Ovine 1	Ovine 2	0.03	Ovine 1	Ovine 2	0.03	Ovine 1	Ovine 2	0.03
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS

Table S3 | Statistical comparison between groups for each distance from heart (2–18 cm) for G' , G'' and $\tan(\delta)$ on the intimal face

Intimal face	G' (kPa)		p -value		G'' (kPa)		p -value		$\tan(\delta)$		p -value													
G.1 (12 cm)	G.2 (4 cm)	NS	G.1 (12 cm)	G.2 (4 cm)	NS	G.1 (12 cm)	G.2 (4 cm)	NS	G.1 (12 cm)	G.2 (4 cm)	NS	G.1 (12 cm)	G.2 (4 cm)	NS										
	G.3 (6 cm)	0.005		G.3 (6 cm)	NS		G.3 (6 cm)	NS		G.3 (6 cm)	NS													
	G.4 (8 cm)	6.9×10^{-6}		G.4 (8 cm)	NS		G.4 (8 cm)	NS		G.4 (8 cm)	NS													
	G.5 (10 cm)	3.2×10^{-4}		G.5 (10 cm)	NS		G.5 (10 cm)	NS		G.5 (10 cm)	NS													
	G.6 (12 cm)	5.8×10^{-15}		G.6 (12 cm)	0.01		G.6 (12 cm)	0.01		G.6 (12 cm)	NS													
	G.7 (14 cm)	2.9×10^{-21}		G.7 (14 cm)	2.2×10^{-5}		G.7 (14 cm)	2.2×10^{-5}		G.7 (14 cm)	NS													
	G.8 (16 cm)	3.4×10^{-28}		G.8 (16 cm)	4.0×10^{-8}		G.8 (16 cm)	4.0×10^{-8}		G.8 (16 cm)	NS													
	G.9 (18 cm)	2.8×10^{-37}		G.9 (18 cm)	1.0×10^{-17}		G.9 (18 cm)	1.0×10^{-17}		G.9 (18 cm)	NS													
	G.2 (4 cm)	G.3 (6 cm)		NS	G.2 (4 cm)		G.3 (6 cm)	NS		G.2 (4 cm)	G.3 (6 cm)		NS	G.2 (4 cm)	G.3 (6 cm)	NS	G.2 (4 cm)	G.3 (6 cm)	NS					
G.4 (8 cm)		NS	G.4 (8 cm)	NS		G.4 (8 cm)	NS	G.4 (8 cm)	NS															
G.5 (10 cm)		NS	G.5 (10 cm)	NS		G.5 (10 cm)	NS	G.5 (10 cm)	NS															
G.6 (12 cm)		8.4×10^{-10}	G.6 (12 cm)	0.02		G.6 (12 cm)	0.02	G.6 (12 cm)	NS															
G.7 (14 cm)		1.5×10^{-16}	G.7 (14 cm)	7.3×10^{-4}		G.7 (14 cm)	7.3×10^{-4}	G.7 (14 cm)	NS															
G.8 (16 cm)		3.3×10^{-24}	G.8 (16 cm)	2.0×10^{-6}		G.8 (16 cm)	2.0×10^{-6}	G.8 (16 cm)	NS															
G.9 (18 cm)		3.3×10^{-34}	G.9 (18 cm)	4.7×10^{-16}		G.9 (18 cm)	4.7×10^{-16}	G.9 (18 cm)	NS															
G.3 (12 cm)		G.4 (8 cm)	NS	G.3 (12 cm)		G.4 (8 cm)	NS	G.3 (12 cm)	G.4 (8 cm)		NS	G.3 (12 cm)	G.4 (8 cm)		NS	G.3 (12 cm)		G.4 (8 cm)	NS					
		G.5 (10 cm)	NS			G.5 (10 cm)	NS		G.5 (10 cm)		NS		G.5 (10 cm)		NS									
	G.6 (12 cm)	1.2×10^{-6}	G.6 (12 cm)		NS	G.6 (12 cm)	NS		G.6 (12 cm)	NS														
	G.7 (14 cm)	1.8×10^{-13}	G.7 (14 cm)		0.008	G.7 (14 cm)	0.008		G.7 (14 cm)	NS														
	G.8 (16 cm)	1.5×10^{-21}	G.8 (16 cm)		7.8×10^{-4}	G.8 (16 cm)	7.8×10^{-4}		G.8 (16 cm)	NS														
	G.9 (18 cm)	3.5×10^{-32}	G.9 (18 cm)		3.0×10^{-13}	G.9 (18 cm)	3.0×10^{-13}		G.9 (18 cm)	NS														
	G.4 (8 cm)	G.5 (10 cm)	NS		G.4 (8 cm)	G.5 (10 cm)	NS		G.4 (8 cm)	G.5 (10 cm)	NS		G.4 (8 cm)	G.5 (10 cm)	NS		G.4 (8 cm)	G.5 (10 cm)	NS					
		G.6 (12 cm)	0.001			G.6 (12 cm)	NS			G.6 (12 cm)	NS			G.6 (12 cm)	NS									
		G.7 (14 cm)	5.1×10^{-10}			G.7 (14 cm)	0.0001			G.7 (14 cm)	0.0001			G.7 (14 cm)	NS									
G.8 (16 cm)		1.6×10^{-18}	G.8 (16 cm)	9.0×10^{-5}		G.8 (16 cm)	9.0×10^{-5}	G.8 (16 cm)		NS														
G.9 (18 cm)		7.5×10^{-30}	G.9 (18 cm)	2.4×10^{-14}		G.9 (18 cm)	2.4×10^{-14}	G.9 (18 cm)		NS														
G.5 (10 cm)		G.6 (12 cm)	3.4×10^{-5}	G.5 (10 cm)		G.6 (12 cm)	NS	G.5 (10 cm)		G.6 (12 cm)	NS	G.5 (10 cm)		G.6 (12 cm)	NS	G.5 (10 cm)		G.6 (12 cm)	NS					
		G.7 (14 cm)	6.6×10^{-12}			G.7 (14 cm)	0.005			G.7 (14 cm)	0.005			G.7 (14 cm)	NS									
		G.8 (16 cm)	3.4×10^{-20}			G.8 (16 cm)	2.2×10^{-5}			G.8 (16 cm)	2.2×10^{-5}			G.8 (16 cm)	NS									
		G.9 (18 cm)	3.9×10^{-31}			G.9 (18 cm)	5.4×10^{-15}			G.9 (18 cm)	5.4×10^{-15}			G.9 (18 cm)	NS									
	G.6 (12 cm)	G.7 (14 cm)	NS		G.6 (12 cm)	G.7 (14 cm)	NS		G.6 (12 cm)	G.7 (14 cm)	NS		G.6 (12 cm)	G.7 (14 cm)	NS		G.6 (12 cm)	G.7 (14 cm)	NS					
		G.8 (16 cm)	1.5×10^{-9}			G.8 (16 cm)	NS			G.8 (16 cm)	NS			G.8 (16 cm)	NS									
		G.9 (18 cm)	7.8×10^{-23}			G.9 (18 cm)	5.1×10^{-10}			G.9 (18 cm)	5.1×10^{-10}			G.9 (18 cm)	NS									
		G.7 (14 cm)	G.8 (16 cm)			0.003	G.7 (14 cm)			G.8 (16 cm)	NS			G.7 (14 cm)	G.8 (16 cm)			NS	G.7 (14 cm)	G.8 (16 cm)	NS	G.7 (14 cm)	G.8 (16 cm)	NS
			G.9 (18 cm)			9.6×10^{-17}				G.9 (18 cm)	1.2×10^{-6}				G.9 (18 cm)			1.2×10^{-6}		G.9 (18 cm)	NS			
G.8 (16 cm)			G.9 (18 cm)	3.9×10^{-8}		G.8 (16 cm)		G.9 (18 cm)		4.6×10^{-4}	G.8 (16 cm)	G.9 (18 cm)			4.6×10^{-4}	G.8 (16 cm)		G.9 (18 cm)		NS	G.8 (16 cm)		G.9 (18 cm)	NS

Table S4 | Statistical comparison between groups for each distance from heart (2–18 cm) for G' , G'' and $\tan(\delta)$ on the intimal face

Adventitial face	G' (kPa)	p -value	G'' (kPa)	p -value	$\tan(\delta)$	p -value		
G.1 (12 cm)	G.2 (4 cm)	0.03	G.1 (12 cm)	G.2 (4 cm)	NS	G.1 (12 cm)	G.2 (4 cm)	NS
	G.3 (6 cm)	3.5×10^{-4}		G.3 (6 cm)	0.02		G.3 (6 cm)	NS
	G.4 (8 cm)	7.3×10^{-5}		G.4 (8 cm)	0.01		G.4 (8 cm)	NS
	G.5 (10 cm)	7.3×10^{-8}		G.5 (10 cm)	6.6×10^{-6}		G.5 (10 cm)	NS
	G.6 (12 cm)	4.9×10^{-12}		G.6 (12 cm)	1.8×10^{-7}		G.6 (12 cm)	2.8×10^{-4}
	G.7 (14 cm)	1.7×10^{-14}		G.7 (14 cm)	3.9×10^{-11}		G.7 (14 cm)	0.02
	G.8 (16 cm)	7.6×10^{-13}		G.8 (16 cm)	1.2×10^{-9}		G.8 (16 cm)	8.1×10^{-6}
	G.9 (18 cm)	13.3×10^{-26}		G.9 (18 cm)	4.1×10^{-21}		G.9 (18 cm)	3.1×10^{-4}
	G.2 (4 cm)	G.3 (6 cm)		NS	G.2 (4 cm)		G.3 (6 cm)	NS
G.4 (8 cm)		NS	G.4 (8 cm)	NS		G.4 (8 cm)	NS	
G.5 (10 cm)		0.04	G.5 (10 cm)	NS		G.5 (10 cm)	NS	
G.6 (12 cm)		1.1×10^{-5}	G.6 (12 cm)	0.04		G.6 (12 cm)	0.001	
G.7 (14 cm)		4.8×10^{-8}	G.7 (14 cm)	3.6×10^{-5}		G.7 (14 cm)	NS	
G.8 (16 cm)		3.4×10^{-9}	G.8 (16 cm)	8.0×10^{-4}		G.8 (16 cm)	3.5×10^{-4}	
G.3 (12 cm)	G.4 (8 cm)	NS	G.3 (12 cm)	G.4 (8 cm)	NS	G.3 (12 cm)	G.4 (8 cm)	NS
	G.5 (10 cm)	NS		G.5 (10 cm)	NS		G.5 (10 cm)	NS
	G.6 (12 cm)	0.001		G.6 (12 cm)	NS		G.6 (12 cm)	NS
	G.7 (14 cm)	1.0×10^{-5}		G.7 (14 cm)	1.1×10^{-4}		G.7 (14 cm)	NS
	G.8 (16 cm)	7.8×10^{-7}		G.8 (16 cm)	0.002		G.8 (16 cm)	NS
	G.9 (18 cm)	1.0×10^{-18}		G.9 (18 cm)	5.2×10^{-15}		G.9 (18 cm)	NS
G.4 (8 cm)	G.5 (10 cm)	NS	G.4 (8 cm)	G.5 (10 cm)	NS	G.4 (8 cm)	G.5 (10 cm)	NS
	G.6 (12 cm)	NS		G.6 (12 cm)	NS		G.6 (12 cm)	NS
	G.7 (14 cm)	5.1×10^{-5}		G.7 (14 cm)	2.8×10^{-4}		G.7 (14 cm)	NS
	G.8 (16 cm)	4.3×10^{-6}		G.8 (16 cm)	0.005		G.8 (16 cm)	NS
	G.9 (18 cm)	5.1×10^{-18}		G.9 (18 cm)	1.5×10^{-14}		G.9 (18 cm)	NS
G.5 (10 cm)	G.6 (12 cm)	NS	G.5 (10 cm)	G.6 (12 cm)	NS	G.5 (10 cm)	G.6 (12 cm)	NS
	G.7 (14 cm)	0.02		G.7 (14 cm)	NS		G.7 (14 cm)	NS
	G.8 (16 cm)	0.002		G.8 (16 cm)	NS		G.8 (16 cm)	NS
	G.9 (18 cm)	5.0×10^{-15}		G.9 (18 cm)	6.6×10^{-11}		G.9 (18 cm)	NS
G.6 (12 cm)	G.7 (14 cm)	NS	G.6 (12 cm)	G.7 (14 cm)	NS	G.6 (12 cm)	G.7 (14 cm)	NS
	G.8 (16 cm)	NS		G.8 (16 cm)	NS		G.8 (16 cm)	NS
	G.9 (18 cm)	6.8×10^{-11}		G.9 (18 cm)	2.7×10^{-9}		G.9 (18 cm)	NS
G.7 (14 cm)	G.8 (16 cm)	NS	G.7 (14 cm)	G.8 (16 cm)	NS	G.7 (14 cm)	G.8 (16 cm)	NS
	G.9 (18 cm)	2.0×10^{-8}		G.9 (18 cm)	1.0×10^{-5}		G.9 (18 cm)	NS
G.8 (16 cm)	G.9 (18 cm)	2.8×10^{-7}	G.8 (16 cm)	G.9 (18 cm)	3.8×10^{-7}	G.8 (16 cm)	G.9 (18 cm)	NS

Table S5 | Statistical comparison within groups for each distance from heart (2–18 cm) for collagen, GAG and elastin, for each animal

	Collagen ($\mu\text{g}/\text{mg}$)			GAG ($\mu\text{g}/\text{mg}$)			Elastin ($\mu\text{g}/\text{mg}$)		
			Sig.			Sig.			Sig.
Group 1 (2 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 2 (4 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 3 (6 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	0.04	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 4 (8 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 5 (10 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	0.04	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 6 (12 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
Group 7 (14 cm)	Ovine 1	Ovine 2	*	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	*	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	*
Group 8 (16 cm)	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS

Table S5 | Statistical comparison within groups for each distance from heart (2–18 cm) for collagen, GAG and elastin, for each animal—Continued

	Collagen (µg/mg)		Sig.	GAG (µg/mg)		Sig.	Elastin (µg/mg)		Sig.
Group 9 (18 cm)	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS
	Ovine 1	Ovine 2	*	Ovine 1	Ovine 2	NS	Ovine 1	Ovine 2	NS
	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS	Ovine 1	Ovine 3	NS
	Ovine 2	Ovine 3	*	Ovine 2	Ovine 3	NS	Ovine 2	Ovine 3	NS

Table S6 | Statistical comparison between groups for each distance from heart (2–18 cm) for collagen, GAG and elastin

	G' (kPa)		p -value	G'' (kPa)		p -value	$\tan(\delta)$		p -value					
G.1 (12 cm)	G.2 (4 cm)	NS	G.1 (12 cm)	G.2 (4 cm)	NS	G.1 (12 cm)	G.2 (4 cm)	NS						
	G.3 (6 cm)	NS		G.3 (6 cm)	NS		G.3 (6 cm)	NS						
	G.4 (8 cm)	NS		G.4 (8 cm)	NS		G.4 (8 cm)	NS						
	G.5 (10 cm)	NS		G.5 (10 cm)	NS		G.5 (10 cm)	NS						
	G.6 (12 cm)	NS		G.6 (12 cm)	NS		G.6 (12 cm)	NS						
	G.7 (14 cm)	NS		G.7 (14 cm)	NS		G.7 (14 cm)	NS						
	G.8 (16 cm)	NS		G.8 (16 cm)	NS		G.8 (16 cm)	NS						
	G.9 (18 cm)	NS		G.9 (18 cm)	NS		G.9 (18 cm)	NS						
	G.2 (4 cm)	G.3 (6 cm)		NS	G.2 (4 cm)		G.3 (6 cm)	NS	G.2 (4 cm)	G.3 (6 cm)	NS			
G.4 (8 cm)		NS	G.4 (8 cm)	NS		G.4 (8 cm)	NS							
G.5 (10 cm)		NS	G.5 (10 cm)	NS		G.5 (10 cm)	NS							
G.6 (12 cm)		NS	G.6 (12 cm)	NS		G.6 (12 cm)	NS							
G.7 (14 cm)		NS	G.7 (14 cm)	NS		G.7 (14 cm)	NS							
G.8 (16 cm)		NS	G.8 (16 cm)	NS		G.8 (16 cm)	NS							
G.9 (18 cm)		NS	G.9 (18 cm)	NS		G.9 (18 cm)	NS							
G.3 (12 cm)		G.4 (8 cm)	NS	G.3 (12 cm)		G.4 (8 cm)	NS	G.3 (12 cm)		G.4 (8 cm)	NS			
		G.5 (10 cm)	NS			G.5 (10 cm)	NS			G.5 (10 cm)	NS			
	G.6 (12 cm)	NS	G.6 (12 cm)		NS	G.6 (12 cm)	NS							
	G.7 (14 cm)	NS	G.7 (14 cm)		NS	G.7 (14 cm)	NS							
	G.8 (16 cm)	NS	G.8 (16 cm)		NS	G.8 (16 cm)	NS							
	G.9 (18 cm)	NS	G.9 (18 cm)		NS	G.9 (18 cm)	NS							
	G.4 (8 cm)	G.5 (10 cm)	NS		G.4 (8 cm)	G.5 (10 cm)	NS		G.4 (8 cm)	G.5 (10 cm)	NS			
		G.6 (12 cm)	NS			G.6 (12 cm)	NS			G.6 (12 cm)	NS			
		G.7 (14 cm)	NS			G.7 (14 cm)	NS			G.7 (14 cm)	NS			
G.8 (16 cm)		NS	G.8 (16 cm)	NS		G.8 (16 cm)	NS							
G.9 (18 cm)		NS	G.9 (18 cm)	NS		G.9 (18 cm)	NS							
G.5 (10 cm)		G.6 (12 cm)	NS	G.5 (10 cm)		G.6 (12 cm)	NS	G.5 (10 cm)		G.6 (12 cm)	NS			
		G.7 (14 cm)	NS			G.7 (14 cm)	NS			G.7 (14 cm)	NS			
		G.8 (16 cm)	NS			G.8 (16 cm)	NS			G.8 (16 cm)	NS			
		G.9 (18 cm)	NS			G.9 (18 cm)	NS			G.9 (18 cm)	NS			
	G.6 (12 cm)	G.7 (14 cm)	NS		G.6 (12 cm)	G.7 (14 cm)	NS		G.6 (12 cm)	G.7 (14 cm)	NS			
		G.8 (16 cm)	NS			G.8 (16 cm)	NS			G.8 (16 cm)	NS			
		G.9 (18 cm)	NS			G.9 (18 cm)	NS			G.9 (18 cm)	NS			
		G.7 (14 cm)	G.8 (16 cm)			NS	G.7 (14 cm)			G.8 (16 cm)	NS	G.7 (14 cm)	G.8 (16 cm)	NS
			G.9 (18 cm)			NS				G.9 (18 cm)	NS		G.9 (18 cm)	NS
G.8 (16 cm)			G.9 (18 cm)	NS		G.8 (16 cm)		G.9 (18 cm)		NS	G.8 (16 cm)		G.9 (18 cm)	NS

Table S7 | Mean and standard deviation (SD) of the collagen, GAG and elastin levels for aortas ($n = 27$ / distance with three samples/animal)

Distance (cm)	Collagen (µg/mg)	GAG (µg/mg)	Elastin (µg/mg)
2	27.26 ± 7.03	4.15 ± 0.89	102.50 ± 24.58
4	30.84 ± 4.44	4.03 ± 1.03	100.24 ± 27.03
6	31.42 ± 6.27	3.69 ± 0.53	92.69 ± 24.56
8	29.64 ± 5.08	3.71 ± 0.95	90.98 ± 25.37
10	34.17 ± 7.75	3.83 ± 0.56	86.42 ± 13.91
12	33.83 ± 6.78	3.70 ± 0.43	94.06 ± 17.30
14	33.69 ± 8.61	3.67 ± 0.43	88.07 ± 18.40
16	37.58 ± 8.89	3.62 ± 0.51	79.81 ± 10.24
18	40.14 ± 8.81	3.45 ± 0.37	80.15 ± 11.01