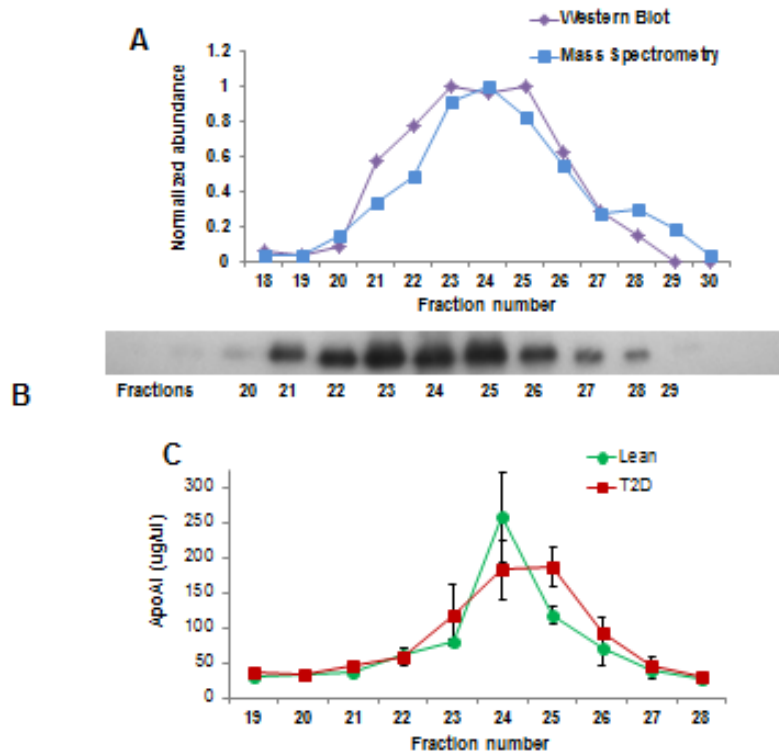
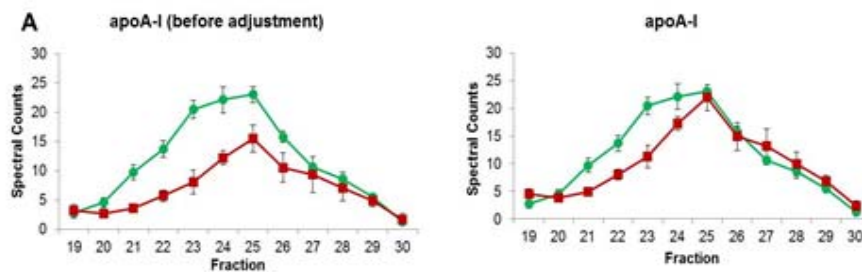


SUPPLEMENTARY DATA

**Supplementary Figure 1.** Validation of proteomic results using apoA-I. Densitometry measurements from a western blot for apoA-I across fractions 18 to 30 (panel B) from a single lean participant show a similar distribution to peptide counts from mass spectrometry (panel A). Panel C shows an apoA-I ELISA across fractions 19-29 in 3 lean and 4 T2D participants. ELISA results show no differences in apoA-I between groups similar to the mass spectrometry data.

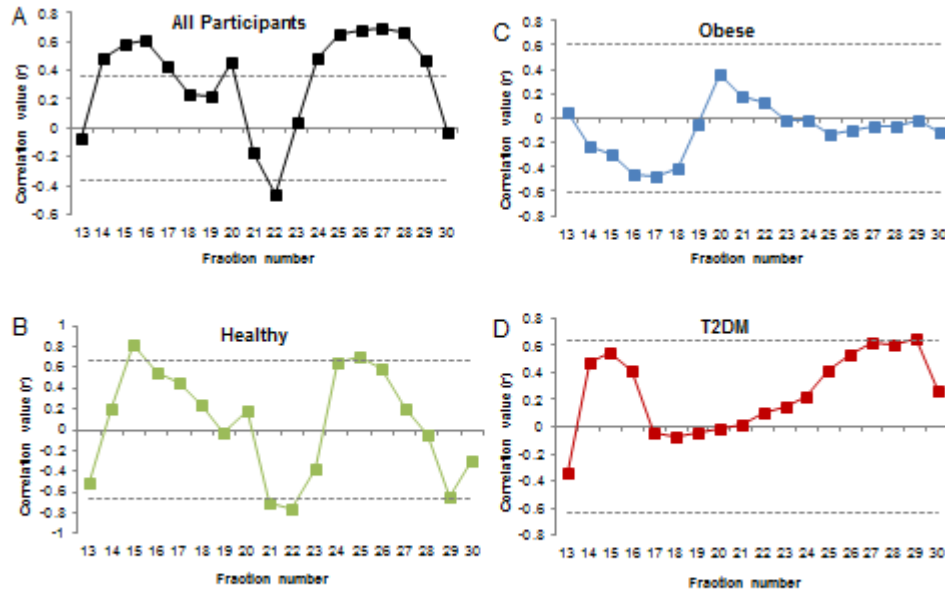


**Supplementary Figure 2.** Distribution of apoA-1 across the collected fractions are shown for lean (green) and T2D (red) participants: A, before adjustment; B, after adjustment. There are no significant differences in any of the fractions between groups.

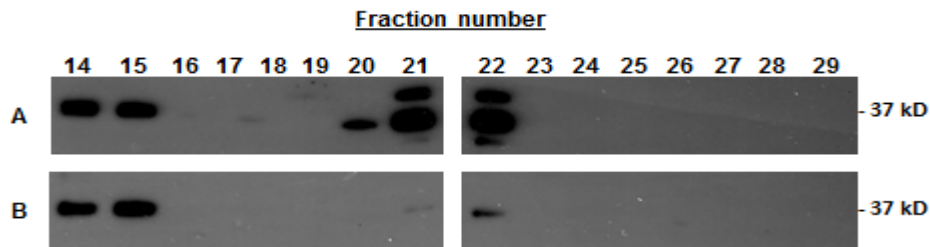


SUPPLEMENTARY DATA

**Supplementary Figure 3.** Correlations between cholesterol fractions and pulse wave velocity. Panel A displays the correlation value ( $r$ ) between the cholesterol content in each fraction and pulse wave velocity for all participants (black); B for lean (green); C for obese (blue); D for T2D (red). Outer dotted lines indicate  $r$  values of  $p < 0.05$ .



**Supplementary Figure 4.** Validation of proteomics results using apoE. To validate our observed decrease in apoE peptide counts in youth with type 2 diabetes, we performed a western blot for apoE across fractions from one lean participant (panel A) and one participant with T2D (panel B). Decreased apo E is seen among HDL fractions in the participant with T2D compared to the lean.



SUPPLEMENTARY DATA

Supplementary Figure 5. Differences in protein distributions patterns between groups.

Differences in protein distributions patterns between groups.													
Protein	Accessi	Fraction number											
		19	20	21	22	23	24	25	26	27	28	29	30
Alpha-1-antitrypsin	A1AT	0.43	0.43							0.36	0.15	0.29	0.27
Alpha-1B-glycoprotein	A1BG							0.39	0.23	0.83			
Alpha-2-antiplasmin	A2AP							0.02	0.40	0.13			
Alpha-2-HS-glycoprotein	FETUA							0.24	0.11	0.00	0.03	0.06	
AMBP protein	AMBP		0.83	0.46	0.17								0.66
Angiotensinogen	ANGT	0.23	0.23						0.06	0.06	0.04	0.15	
Antithrombin-III	ANT3									0.22	0.55	0.74	0.78
Apolipoprotein A-I	APOA1	0.30	0.58	0.02	0.02	0.01	0.14	0.74	0.77	0.47	0.74	0.48	0.36
Apolipoprotein A-II	APOA2		0.23	0.01	0.00	0.05	0.95	0.15	0.72	0.24	0.56		
Apolipoprotein A-IV	APOA4			0.43	0.09	0.23	0.33	0.08	0.47	0.18	0.15	0.19	0.42
Apolipoprotein B-100	APOB												
Apolipoprotein C-I	APOC1	0.43	0.24	0.16	0.09	0.03	0.32	0.70	0.55	0.06	0.24	0.43	
Apolipoprotein C-II	APOC2				0.60	0.06	0.73	0.24	0.43				
Apolipoprotein C-III	APOC3	0.93	0.80	0.24	0.89	0.94	0.90	0.78	0.38	0.24	0.43	0.23	
Apolipoprotein E	APOE		0.09	0.02	0.01	0.03	0.22	0.85	0.60	0.23	0.39	0.24	0.23
Apolipoprotein M	APOM			0.27	0.02	0.42	0.24	0.60					
Apolipoprotein-L1	APOL1	0.89	0.28	0.60	0.24	0.97	0.23						
Beta-2-glycoprotein 1	APOH							0.23	0.12	0.47	0.25	0.19	
C4b-binding protein alpha chain	C4BPA	0.43											
Clusterin (apoJ)	CLUS	0.80	0.09	0.89	0.43	0.86	0.34	0.66	0.88	0.53	0.24		
Complement C1s subcomponent	C1S				0.09	0.05	0.80	0.12					
Complement C3	CO3			0.43	0.70	0.29	0.86	0.46	0.06	0.43		0.43	
Complement C4-B	CO4B	0.43	0.33	0.06	0.21	0.28	0.16	0.29					
Complement factor B	CFAB							0.09	0.27	0.78	0.11	0.43	
Fibrinogen alpha chain	FIBA	0.38	0.14	0.73	0.43				0.43	0.43	0.43	0.24	
Haptoglobin-related protein	HPTR	0.43	0.09	0.36	0.43			0.23					
Hemopexin	HEMO							0.88	0.41	0.80	0.51	0.06	0.43
Heparin cofactor 2	HEP2							0.97	0.44	0.84	0.64	0.02	
Insulin-like growth factor-binding protein ALS	ALS					0.43	0.36	0.30	0.15	0.43			
Inter-alpha-trypsin inhibitor heavy chain H2	ITI2		0.80	0.21	0.01	0.00	0.24						
Inter-alpha-trypsin inhibitor heavy chain H4	ITI4			0.43	0.43	0.04	0.01	0.03	0.01	0.13		0.43	0.24
Kininogen-1	KNG1			0.94	0.13	0.24	0.73	0.91	0.27	0.28	0.63	0.43	
Lipopolysaccharide-binding protein	LBP										0.83	0.57	0.43
Pigment epithelium-derived factor	PEDF									0.27	0.08	0.98	0.34
Plasma protease C1 inhibitor	IC1			0.18	0.26								
Prothrombin	THRB							0.69	0.62	0.24	0.06	0.43	0.43
Retinol-binding protein 4	RET4										0.38	0.04	0.09
Serotransferrin	TRFE								0.16	0.31	0.13		
Serum albumin	ALBU	0.43	0.20	0.07	0.24	0.11	0.71	0.06	0.03	0.21	0.20	0.15	0.21
Serum amyloid A protein	SAA				0.43	0.16	0.16	0.24					
Serum amyloid A-4 protein	SAA4				0.43	0.78	0.38	0.13	0.43				
Serum paraoxonase/arylesterase 1	PON1			0.27	0.02	0.00	0.04	0.06	0.01	0.15	0.15	0.17	0.43
Transthyretin	TTHY		0.43						0.43	0.33	0.22	0.29	0.42
Vitamin D-binding protein	VTDB							0.27	0.43	0.24	0.03	0.05	0.23
Vitronectin	VTNC				0.24	0.24		0.68	0.52	0.95	0.69	0.02	
<b>Significant differences/fraction</b>		19	20	21	22	23	24	25	26	27	28	29	30
		0	0	3	6	8	2	2	3	1	3	4	0

Shaded values indicate p value <0.05.

The fractions between the two vertical dotted lines were found to have a significant inverse correlation with measures of vascular health.