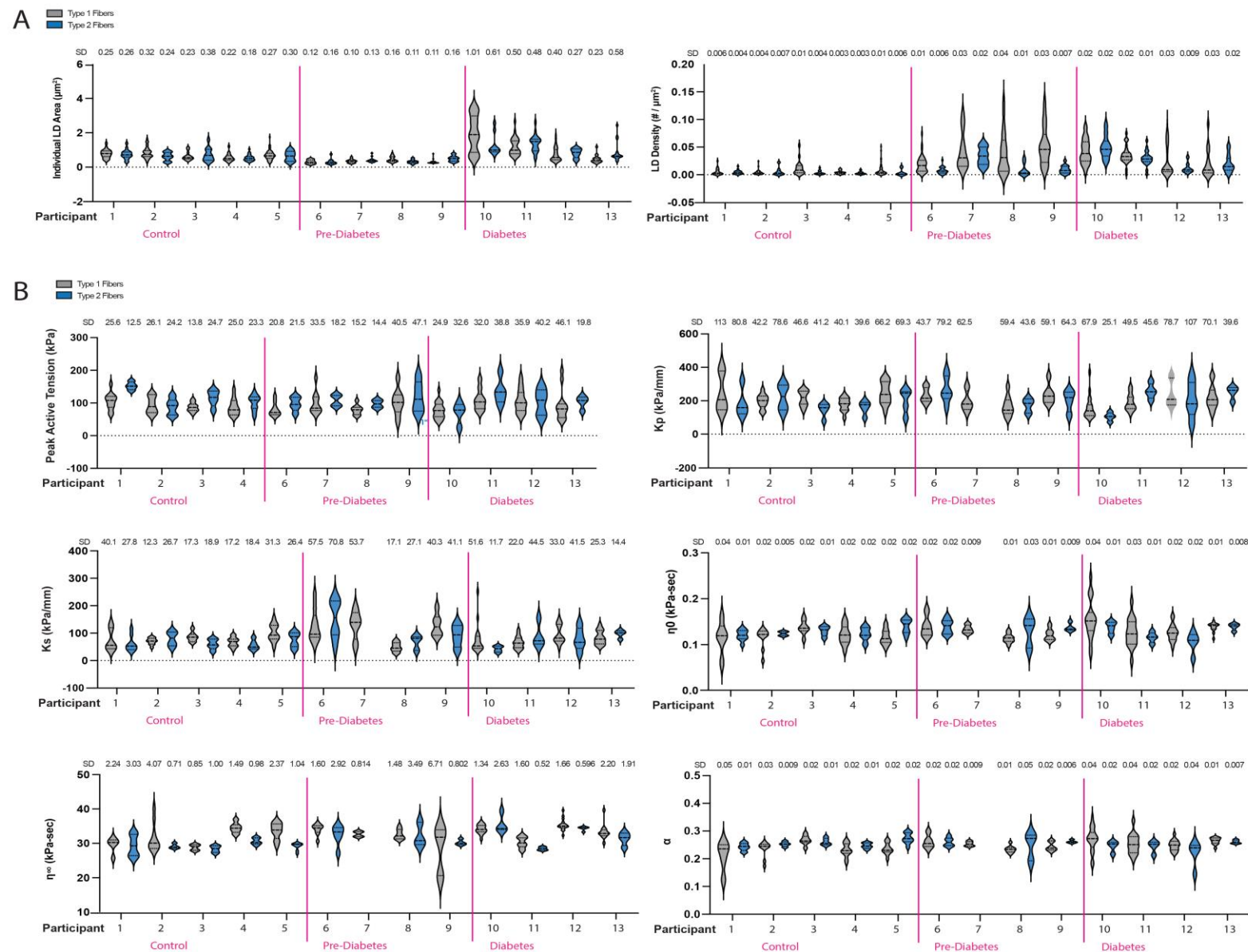


Supplemental Figure 2. Violin plots of outcome metrics in individual fibers from the same biopsy sample in each participant. Each participant is numbered (1-13 on the x-axis). Data from type 1 fibers are shown in gray and data from type 2 fibers are shown in blue. Standard deviations (SD) of each dataset are printed above the data. (A) Fiber lipid droplet metrics. (B) Fiber mechanics metrics. We show data from 4-5 of the 7 participants in the Control group, 4 of the 11 participants in the Pre-Diabetes group, and 4 of the 11 participants in the Diabetes group who had both lipid droplet and fiber mechanics data assessed in the same biospecimen.



Supplemental Table 1. Participant characteristics and lipid droplet (LD) outcomes subdivided by study (Study 1 vs Study 2) or biopsy source (Gastrocnemius vs Peroneus Longus/Calf). Study 1 obtained needle biopsies from the gastrocnemius muscle while Study 2 obtained muscle biopsies during below-knee amputation surgery. Participants from both studies are included in the Pre-Diabetes group and only differ by age ($p<0.05$; t-test). Study 2 obtained muscle biopsies from the gastrocnemius ($n=10$), peroneus longus ($n=2$) or an unspecified muscle of the calf ($n=3$), depending on the parameters of the surgery. No significant differences in lipid droplet outcomes were found by muscle source.

	Study 1	Study 2		Study 2			Study 2	
	Pre-Diabetes	Pre-Diabetes		Pre-Diabetes			Diabetes	
Parameter				Gastrocnemius (3)	Calf (1)		Gastrocnemius (7)	Peroneus Longus and Calf (4)
M/F	2/5	1/3		1/2	0/1		5/2	2/2
Age (y)	67.4±6.1	44.8 ± 14.9 (a)		50.0±13.0	29		60.0±4.0	51.8±10.4
BMI (kg/m ²)	30.61±3.6	32.43 ± 4.11		30.54±1.99	38.09		34.28±7.16	35.14±6.78
Fasting Glucose (mg/dL)	98.14±9.72	115.25±22.10		111.0±25.0	128		179.43±78.93	168.75±38.07
HbA1c	5.4±0.3	5.3±0.4						
Type 1 (%)	63.30±13.04	75.26±15.80		70.83±16.02	88.54		48.47±26.28	68.46±16.85
Type 2 (%)	28.55±19.73	24.74±15.80		29.17±16.02	11.46		51.53±26.28	31.53±16.85
Type 1 Area (μm ²)	5750.83±1517.86	4348.16±1352.76		4898.56±962.95	2696.95		5828.09±2080.77	4261.22±1183.36
Type 2 Area (μm ²)	5355.10±1812.34	3576.67±548.55		3613.44±664.53	3466.36		5153.85±2688.36	4961.39±1906.16
Type 1 LD area (μm ²)	0.46±0.19	0.64±0.32		0.75±0.28	0.3		1.20±0.44	0.91±0.38
Type 2 LD area (μm ²)	0.59±0.24	0.76±0.20		0.86±0.11	0.49		1.47±0.29	1.26±0.53
Type 1 LD density (#/μm ²)	0.033±0.011	0.044±0.020		0.045±0.003	0.052		0.018±0.009	0.023±0.011
Type 2 LD density (#/μm ²)	0.014±0.010	0.018±0.010		0.021±0.010	0.009		0.032±0.013	0.026±0.013