Supplement Material

Arteriolar function in visceral adipose tissue is impaired in human obesity

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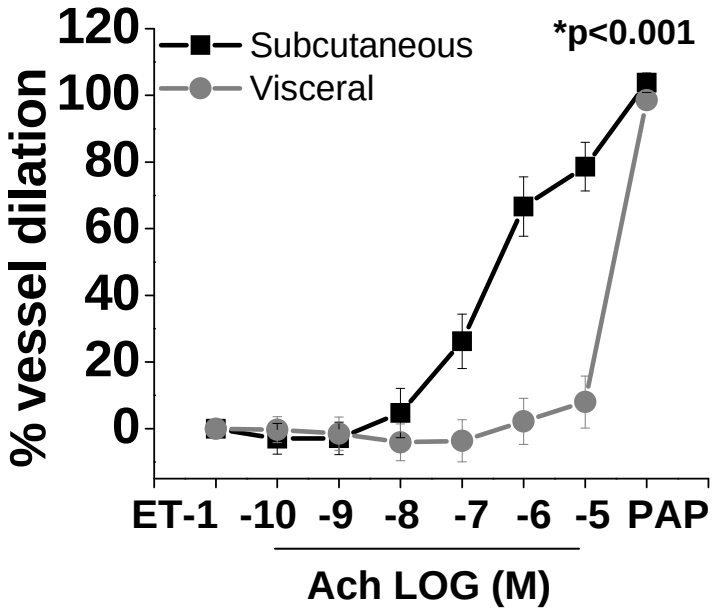
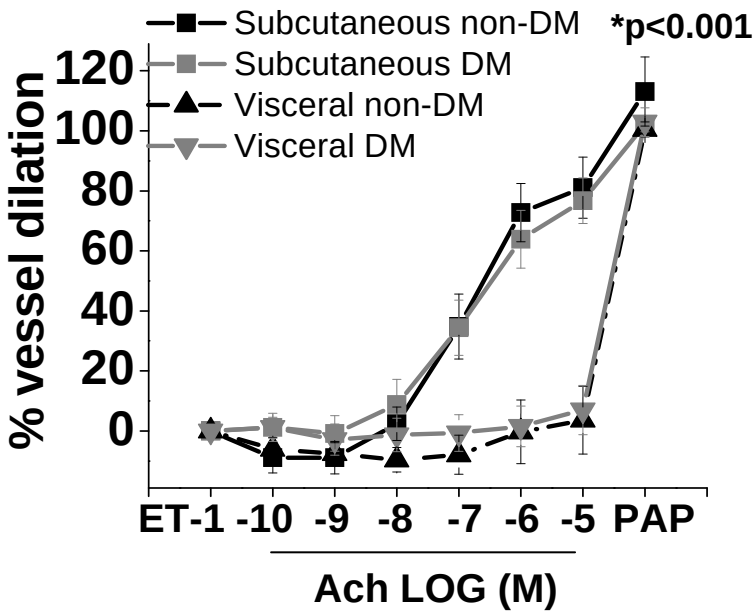
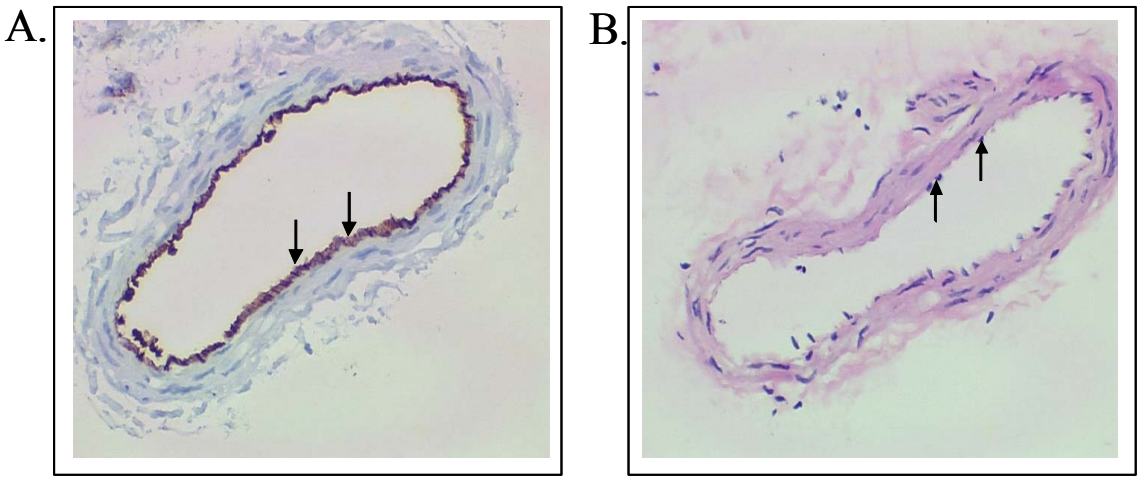


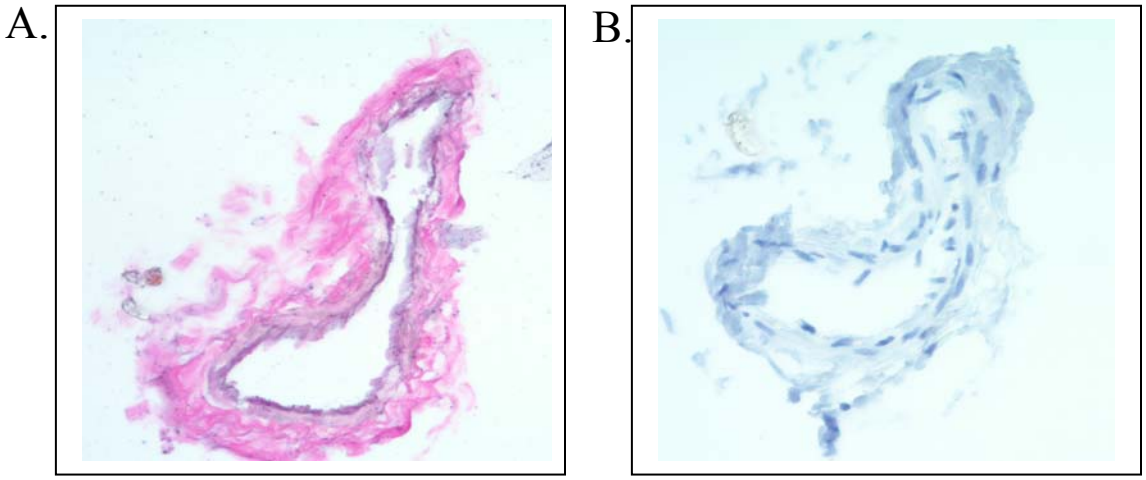
Supplemental Figure I: Adipose tissues arteriolar responses, paired data. In a subset of individuals (n=10) that provided paired samples simultaneously from both visceral and subcutaneous depots, endothelium-dependent vasorelaxation of visceral arterioles was severely impaired, similar in magnitude to results for the group as a whole ($p<0.001$ by ANOVA). Data presented as mean ± SEM.



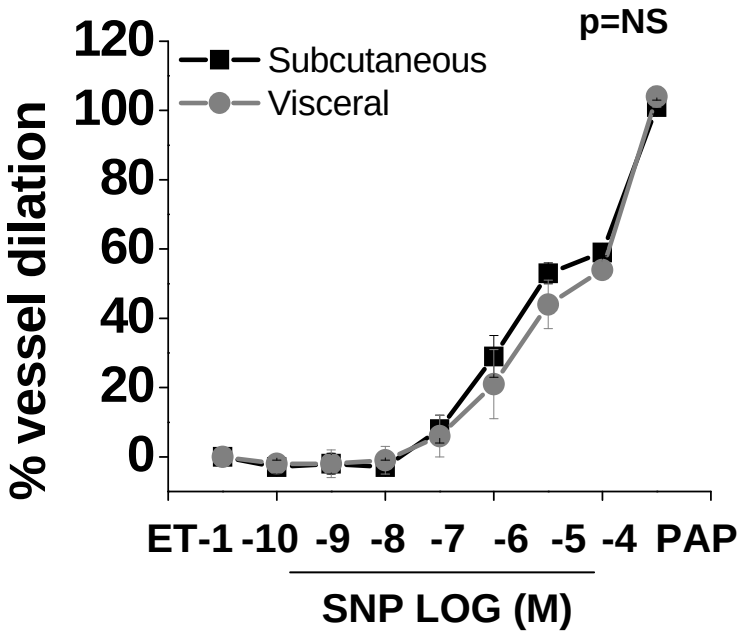
Supplemental Figure II: Adipose tissue arteriolar responses in non-diabetic (n=17) versus diabetic subjects (n=13). Visceral microvascular dilation was severely impaired compared to subcutaneous vasorelaxation irrespective of clinical diabetes status ($p<0.001$ by ANOVA). Data presented as mean ± SEM. DM=diabetes mellitus



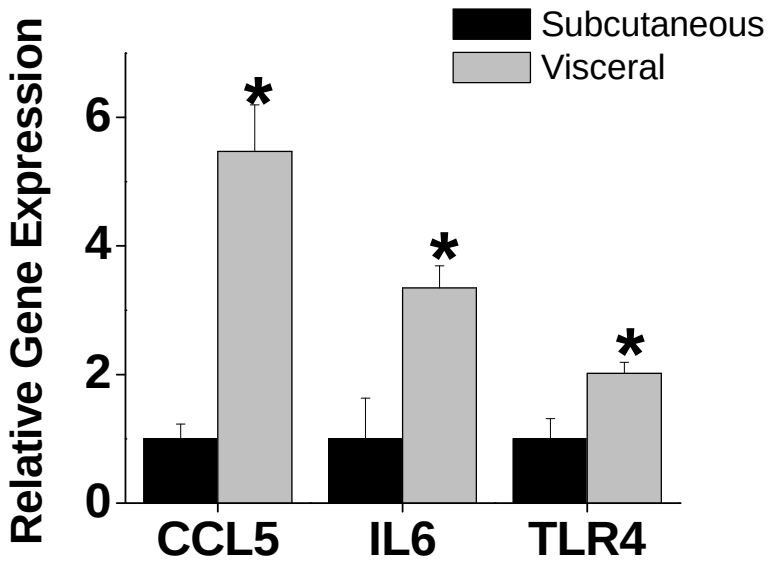
Supplemental Figure III: Adipose arteriolar histology. Representative cross-sectional histology of arteriolar staining for (A) endothelium-specific CD31 (B) H&E, demonstrating architecturally intact nucleated endothelium (indicated by arrows) surrounded by smooth muscle layers demonstrating endothelial integrity during experimental conditions.



Supplemental Figure IV: Representative cross-sectional histology of adipose arterioles stained for (A) elastica-van Gieson, and (B) CD68, demonstrating no evidence of atherosclerotic changes or vascular macrophage infiltration, respectively.



Supplemental Figure V: Adipose tissues arteriolar responses to sodium nitroprusside (SNP). No difference in endothelium-independent, SNP-mediated vasodilation was observed between visceral as compared to subcutaneous adipose arterioles. (n=6, p=0.5 by ANOVA). Data presented as mean ± SEM.



Supplemental Figure VI: Vascular endothelial cell populations isolated from visceral fat exhibited higher expression of inflammatory cytokines as compared to the subcutaneous depot (n=6). Data are presented as fold difference in visceral compared to subcutaneous expression ± SEM. * $p<0.05$.

Supplemental Table I: Gene expression in visceral compared to subcutaneous adipose tissue, paired samples.

	Gene	Fold difference in visceral compared to subcutaneous fat	p value
Immune cells markers	CD3	7.2	0.001*
	CD4	10.0	0.059
	CD8	20.7	0.004*
	CD68	1.7	0.192
	CD163	2.9	0.092
	FOXP3	1.8	0.576
Inflammation and oxidative stress	Adiponectin	0.5	0.503
	CCL2	1.2	0.773
	CCL5	10.6	0.006*
	CCR2	3.8	0.306
	FSTL1	3.5	0.132
	IFN-γ	1.1	0.980
	ICAM-1	1.8	0.395
	IL-1β	4.7	0.240
	IL-6	7.6	0.040*
	IL-10	1.8	0.232
	MYD88	2.1	0.150
	NF-κB	2.2	0.008*
	NOX1	1.6	0.090
	NOX4	1.3	0.650
	TGF-β	3.9	0.054
	TLR4	1.9	0.160
	TNF-α	4.4	0.213
	VCAM-1	1.4	0.459
	eNOS	0.8	0.588
Angiogenic and hypoxia-related genes	ANGPT2	3.5	0.109
	HIF1-α	2.3	0.108
	VEGF	2.8	0.002*