Figure 1

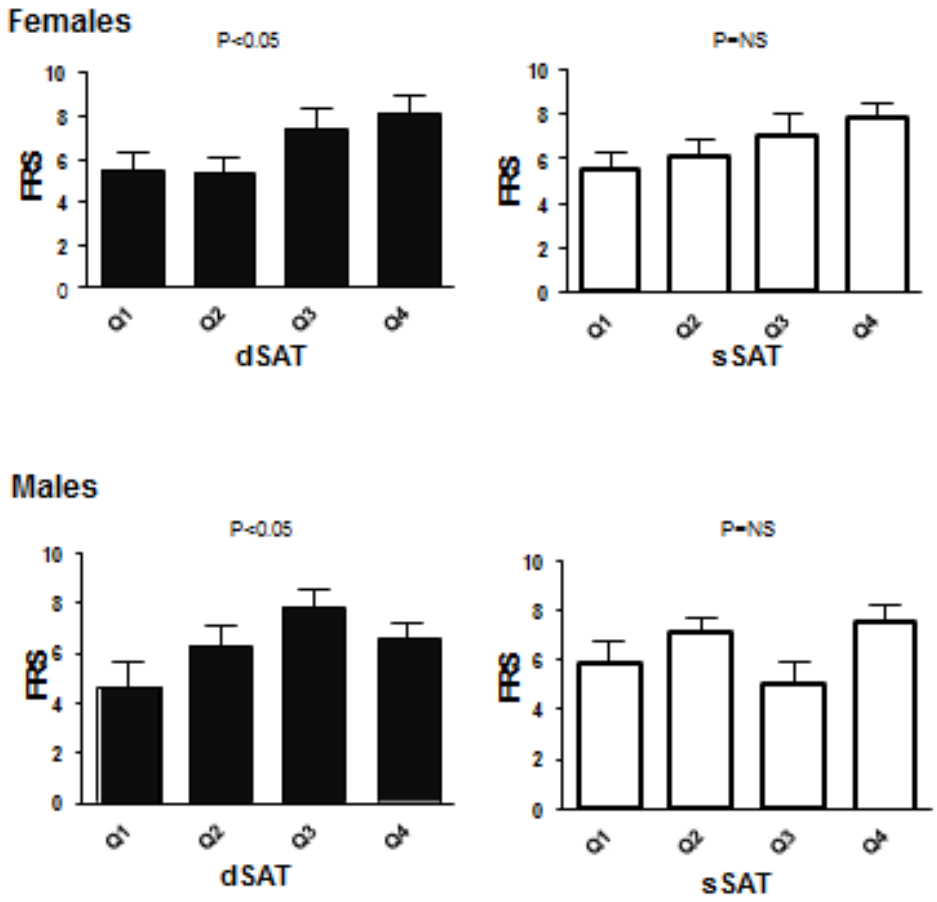
Females
P<0.05
P=NS
FRS
dSAT
sSAT
Q1
Q2
Q3
Q4
Males
P<0.05
P=NS
FRS
dSAT
sSAT

Figure 2

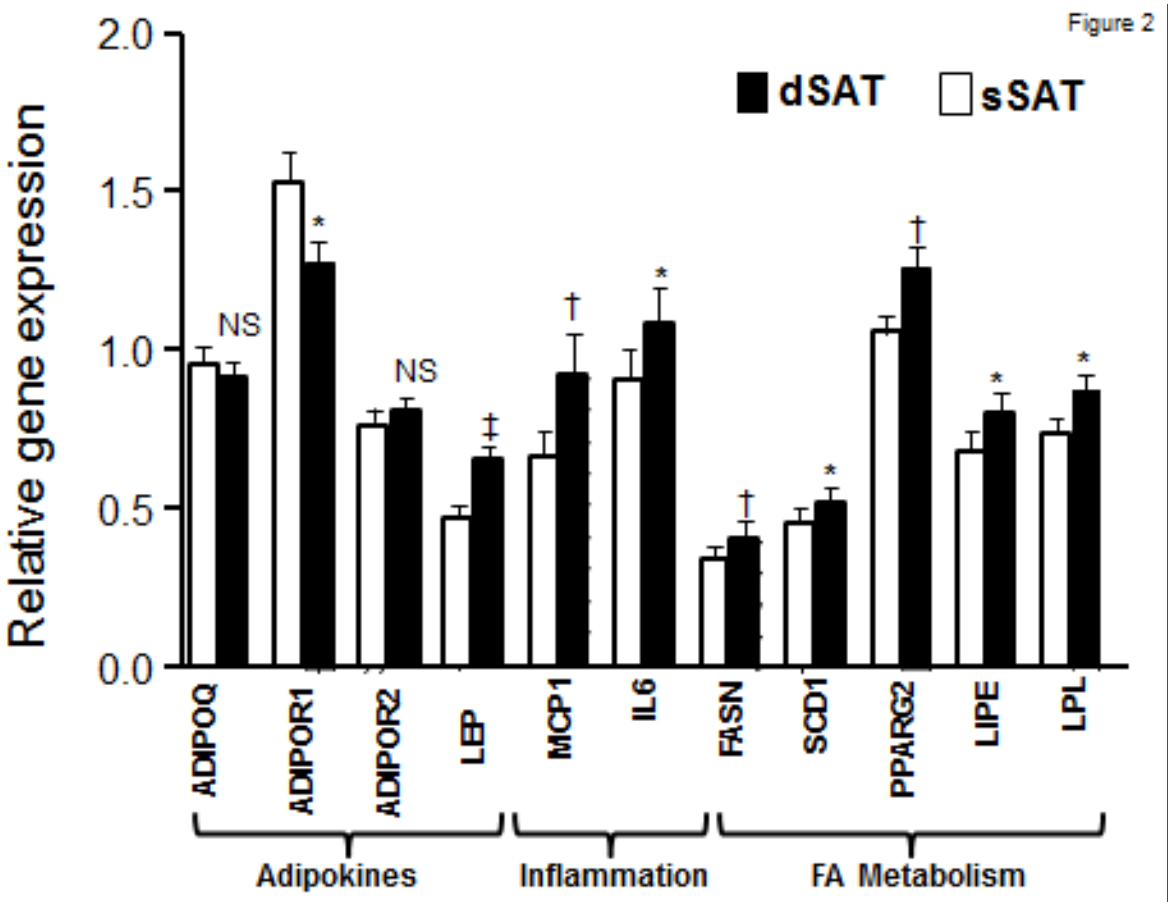
Relative gene expression
2.0
1.5
1.0
0.5
0.0
dSAT
sSAT
NS
NS
*
*
*
*
*
†
†
†
†
‡
ADIPOQ
ADIPOR1
ADIPOR2
LEP
MCP1
IL6
FASN
SCD1
PPARG2
LIPE
LPL
Adipokines
Inflammation
FA Metabolism

Table 1:Fatty acid composition of superficial (sSAT) and deep subcutaneous abdominal adipose tissue (dSAT)

Fatty acid	sSAT (n=22)	dSAT (n=22)	P value
14:0	2.14 ± 0.10	2.53 ± 0.22	0.029
14:1 n-5	0.27 ± 0.04	0.22 ± 0.03	0.150
16:0	20.44 ± 0.43	21.06 ± 0.43	0.002
16:1 n-7	5.42 ± 0.31	4.51 ± 0.26	<0.001
18:0	3.08 ± 0.14	3.70 ± 0.16	<0.001
18:1 n-9	48.84 ± 0.53	48.84 ± 0.57	0.994
18:1 n-7	2.16 ± 0.04	2.14 ± 0.04	0.783
18:2 n-6	14.56 ± 0.40	13.87 ± 0.39	0.07
18:3 n-3	1.45 ± 0.09	1.44 ± 0.09	0.881
Fatty acid ratios			
16:1 n-7 / 16:0	0.27 ± 0.02	0.22 ± 0.01	<0.001
18:1 n-9 / 18:0	16.64 ± 0.82	13.79 ± 0.70	<0.001
18:0 / 16:0	0.15 ± 0.01	0.18 ± 0.01	<0.001
18:1 n-7 / 16:1 n-7	0.43 ± 0.03	0.51 ± 0.03	0.001
16:0 / 18:2 n-6	1.44 ± 0.06	1.55 ± 0.06	0.017

Fatty acid values are expressed as percentage of total fatty acids. Data are expressed as mean±SEM.

Figure 3

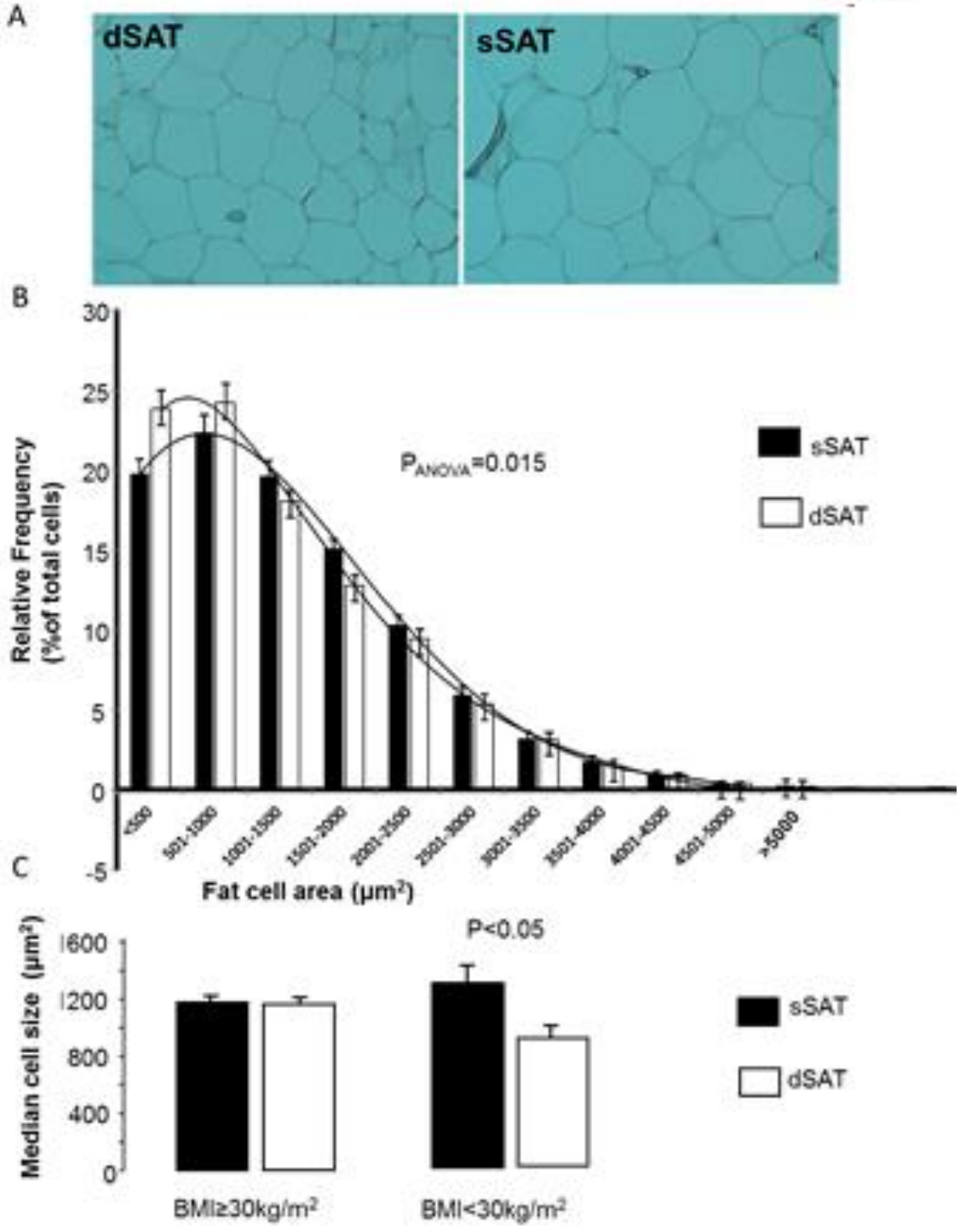
A
dSAT
sSAT
B
Relative Frequency (%of total cells)
30
25
20
15
10
5
0
-5
P_{ANOVA}=0.015
sSAT
dSAT
<500
501-1000
1001-1500
1501-2000
2001-2500
2501-3000
3001-3500
3501-4000
4001-4500
4501-5000
>5000
Fat cell area (µm²)
C
Median cell size (µm²)
1600
1200
800
400
0
P<0.05
sSAT
dSAT
BMI≥30kg/m²
BMI<30kg/m²

Figure 1: Expansion of SAT layers and Framingham Risk Score (FRS) in men and women. The depth of deep subcutaneous fat (dSAT) (but not superficial subcutaneous fat- sSAT) in both genders was significantly associated with Framingham Risk score (FRS). However, the ratio dSAT/wSAT was significantly associated with FRS only in men.

Figure 2: Differences in gene expression between sSAT and dSAT in 43 subjects (21 men and 22 women). *ADIPOQ*: diponectin; *ADIPOR1*: adiponectin receptor 1; *ADIPOR2*: adiponectin receptor 2; *LEP*: leptin; *SCD1*: Stearoyl-CoA desaturase-1; FASN: fatty acid synthase; PPARG2: peroxisome proliferator-activated receptor gamma 2; IL-6: interleukin-6; *CCL2*:monocyte chemotactic protein-1; LPL: lipoprotein lipase; LIPE: hormone sensitive lipase. Values expressed as mean ± SEM, *P<0.05,†P<0.01, ‡P<0.0001 vs Males.

Figure 3: Sections of superficial subcutaneous adipose tissue (sSAT) and deep subcutaneous adipose tissue (dSAT) (A). Frequency distribution of adipocyte cell surface area from dSAT and sSAT revealed an increased proportion of small adipocytes in the dSAT compared with the sSAT (B). Comparison of median adipocyte cell surface area from dSAT and sSAT (C). n=23 per group, >100 cells were measured for each biopsy; BMI: Body mass index