Supplementary materials and results:

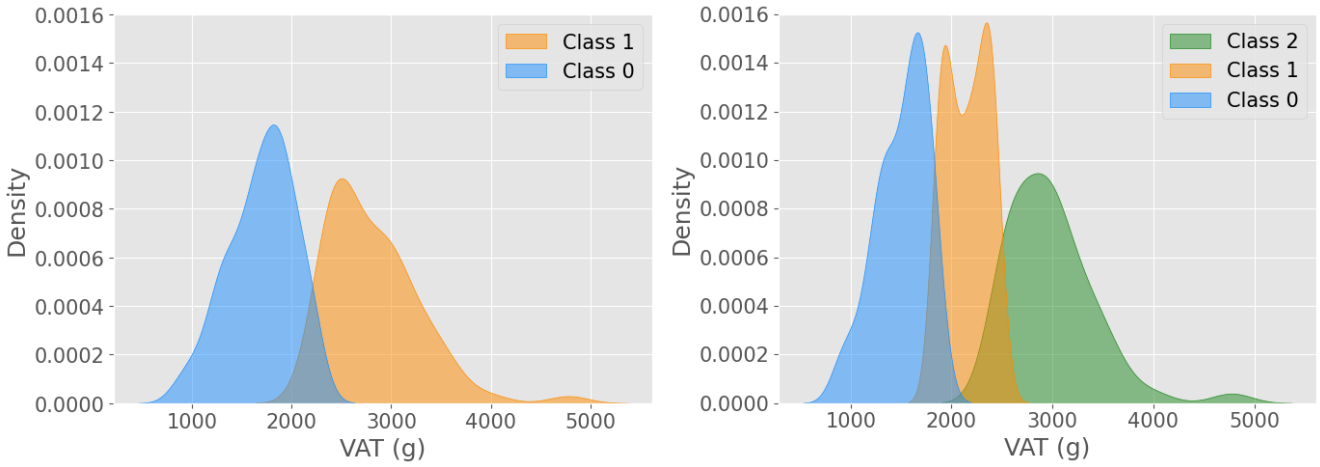
Machine learning allows robust classification of visceral fat in women with obesity using common laboratory metrics

Supplementary Table 1. Coefficients from multiple regression (MLR) models computed over the training sets. A total of three MLR models were computed: one for ALLdata, DXAdata and BLDdata respectively. The resulting MLR model coefficients for every variable considered in each dataset are reported column-wise.

	ALLdata	**DXAdata**	**BLDdata**
Age	21.62	19.02	23.27
T2D	-9.21	139.63	40.94
Weight	25.96	21.04	25.73
BMI	15.59	21.38	33.73
Waist	-8.99	-8.74	11.87
Hip	-16.65	-21.23	-20.04
Arms_FM	0.09	0.07	–
Trunk_FM	-66.22	-79.83	–
Android_FM	-12.59	-0.50	–
Total_FM	-0.13	-0.14	–
Trunk_MM	-68.09	-81.69	–
Android_MM	-7.28	6.44	–
Trunk_TM	66.89	80.67	–
Android_TM	12.45	0.27	–
Total_TM	0.27	0.21	–
Trunk_FFM	1.42	1.36	–
Androrid_FFM	-4.43	-5.82	–
Trunk_TotalM	-0.50	-0.66	–
Android_TotalM	0.01	0.01	–
OverallMass	-0.21	-0.13	–
usCRP	77.66	–	56.00
FPG	8.42	–	11.35
HbA1c	122.50	–	156.22
COLT	-2.45	–	-1.12
TG	0.71	–	1.12
LDL	0.20	–	0.92
AST	-1.71	–	0.92
ALT	3.97	–	4.80
GGT	0.41	–	0.57

Supplementary Table 2. Actual and estimated VAT weights over the same group of patients for each ALLdata, DXAdata and BLDdata. The actual VAT weight values were computed by the validated CoreScan software (EnCore version 17.0), while the estimated ones were obtained from the MLR models from each dataset.

Patient	Actual VAT weight (g)	Estimated VAT weight (g)		
		ALLdata	DXAdata	BLDdata
1	2201.00	2404.88	2130.41	2461.71
2	1215.00	2239.74	2193.39	2186.36
3	2516.00	2981.65	2769.42	3087.34
4	2357.00	2677.03	2644.92	2982.97
5	2188.00	3159.10	3046.31	3059.81
6	1539.00	1682.65	1753.88	1469.54
7	1921.00	2038.40	2143.16	2448.40
8	2972.00	3421.38	3176.40	2811.96
9	1951.00	1688.83	1697.83	1853.44
10	2366.00	2310.80	2337.05	2664.93
11	2986.00	2511.24	2614.65	2235.85
12	1400.00	2693.82	2841.56	2853.39
13	1335.00	1277.01	1486.57	1222.43
14	1822.00	1108.73	1304.98	1748.94
15	1347.00	1481.84	1179.62	1676.59



(a) Two-class clustering

(b) Three-class clustering

Supplementary Figure 1. Density plot representation of the distribution of VAT in case of two-class and three-class approach, panel (a) and (b), respectively. A considerable overlap between the two classes can be observed in panel (a) for VAT weight values around 1800 g to 2600 g, which could undermine the reliability of the classification at the boundary region. Nevertheless, this overlap is considerably reduced when comparing the distributions of the two most extreme classes (e.g. Class 0 and Class 2) in a three-class approach, as depicted in panel (b).