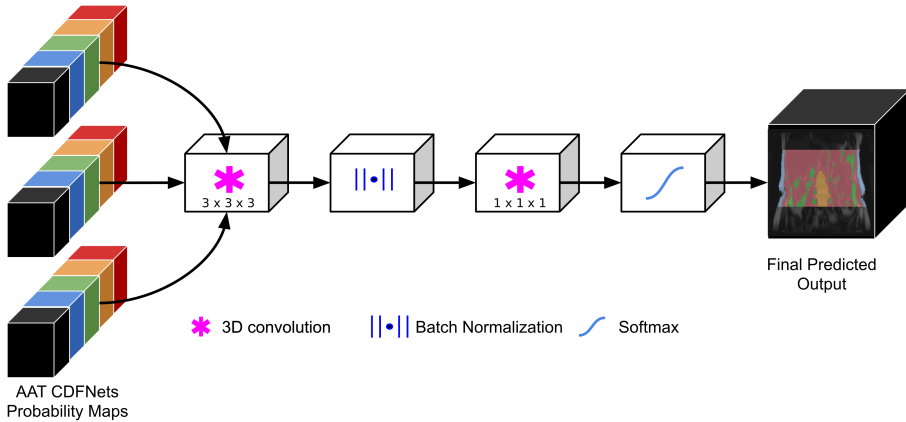
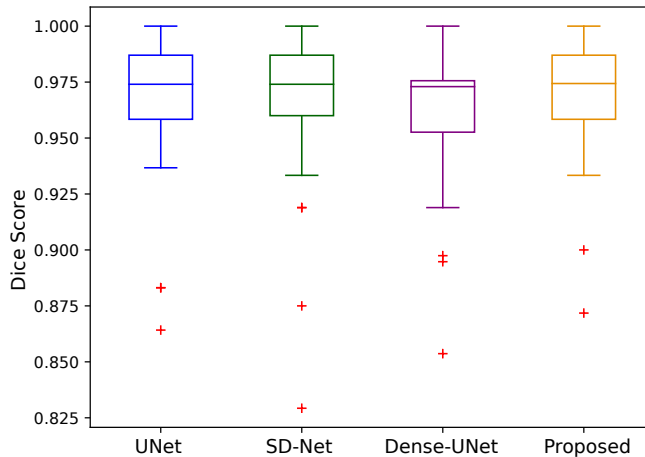


**SUPPLEMENTARY INFORMATION**

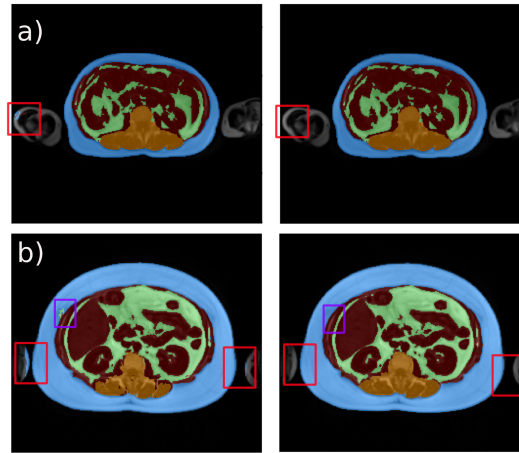
This document supplies expanded material for the FatSegNet: A Fully Automated Deep Learning Pipeline for Adipose Tissue Segmentation on Abdominal Dixon MRI work.



**FIGURE S1 View-aggregation Network** The proposed network is composed of an initial 3D convolution layer with 30 channels, followed by a batch normalization and a 3D convolutional layer for reducing the feature map dimensionality into the number of classes( $n=5$ ).



**FIGURE S2 Step 1: Abdominal region localization.** Dice scores box-plot: Average Dice score (cross-validation) of the abdominal region detection comparing the Proposed CDFNet vs. other FCNN architectures. The Dice scores are calculated on the average abdominal region generated from the average bounding boxes of the sagittal and coronal model. There is no significant difference between models, nonetheless, the proposed method achieves the same performance with  $\sim 30\%$  and  $\sim 80\%$  less parameters compared to Dense-UNet and UNet, respectively.



**FIGURE S3** Comparison of single view model (left) vs. view-aggregation (right): AAT predictions of two unseen subjects: a) normal subject, b) obese subject. View-aggregation avoids arm-misclassification (red boxes) and improves SAT (purple box).

**TABLE S1** Case study analysis on the Rhineland Study data . Characteristics of the participants (n=587) showing mean (SD) for continuous and counts (PCT) for categorical variables

Characteristic	Normal weight	Overweight	Obesity
n	311	209	67
Age in years	53.1 (13.2)	55.1 (13.5)	56.9 (12.4)
Women, n (%)	202 (65.0)	76 (36.4)	43 (64.2)
BMI in kg/m <sup>2</sup>	22.4 (1.6)	27.0 (1.4)	33.3 (3.4)
AAT-V in liters	4.24 (1.42)	7.29 (1.64)	10.59 (2.27)
VAT-V in liters	1.44 (0.93)	3.06 (1.40)	3.99 (1.71)
SAT-V in liters	2.80 (0.80)	4.23 (0.94)	6.60 (2.04)
VAT-V to SAT-V ratio	0.52 (0.32)	0.76 (0.40)	0.70 (0.47)

BMI, body mass index; AAT-V, abdominal adipose tissue volume; SAT-V, subcutaneous adipose tissue volume; VAT-V, visceral adipose tissue volume.