

Supplementary material

Radscore calculation formula

$$\begin{aligned} \text{Radscore} = & 1.498 - 0.691 * \text{Bowel_exponential_glszm_SmallAreaEmphasis} \\ & - 0.797 * \text{Bowel_log-sigma-1-0-mm-3D_gldm_DependenceNonUniformityNormalized} \\ & - 1.211 * \text{Bowel_log-sigma-1-0-mm-3D_gldm_LargeDependenceEmphasis} \\ & + 1.691 * \text{Bowel_log-sigma-1-0-mm-3D_glrlm_LongRunHighGrayLevelEmphasis} \\ & - 0.682 * \text{Bowel_log-sigma-3-0-mm-3D_firstorder_Kurtosis} \\ & - 0.478 * \text{Bowel_original_shape_MinorAxisLength} \\ & + 0.222 * \text{Bowel_wavelet-HHH_glszm_SmallAreaEmphasis} \\ & - 0.521 * \text{Bowel_wavelet-HHH_glszm_SmallAreaHighGrayLevelEmphasis} \\ & + 1.699 * \text{Bowel_wavelet-LLH_glszm_ZonePercentage} \\ & + 0.894 * \text{Fat_lbp-3D-m2_firstorder_InterquartileRange} \\ & + 1.271 * \text{Fat_log-sigma-1-0-mm-3D_ngtdm_Coarseness} \\ & - 0.999 * \text{Fat_log-sigma-3-0-mm-3D_glszm_ZonePercentage} \\ & - 0.976 * \text{Fat_wavelet-LHH_glszm_SizeZoneNonUniformityNormalized} \\ & + 0.612 * \text{Fat_wavelet-LHH_glszm_SmallAreaEmphasis} \\ & + 1.204 * \text{Fat_wavelet-LHL_firstorder_Median} \end{aligned}$$



Supplementary Figure 1 Example of ROI segmentation. Deep learning-based model outlined the intestinal wall to obtain the VOI-bowl. VOI-fat was then obtained *via* an expansion algorithm, which automatically extends the fat

density (-30- -150 HU) within 0-1 cm outward along the margin of the outlined intestinal wall.