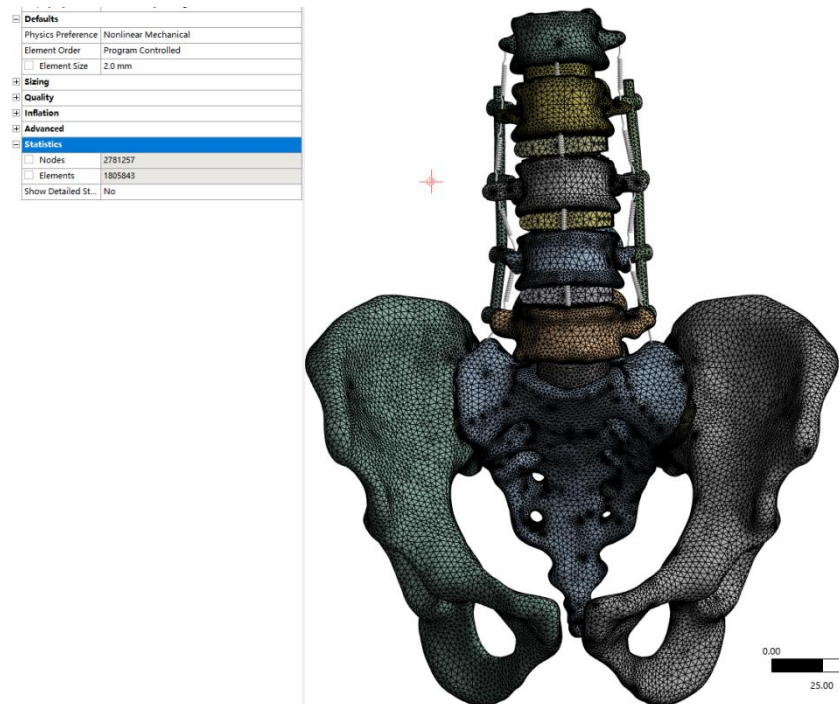
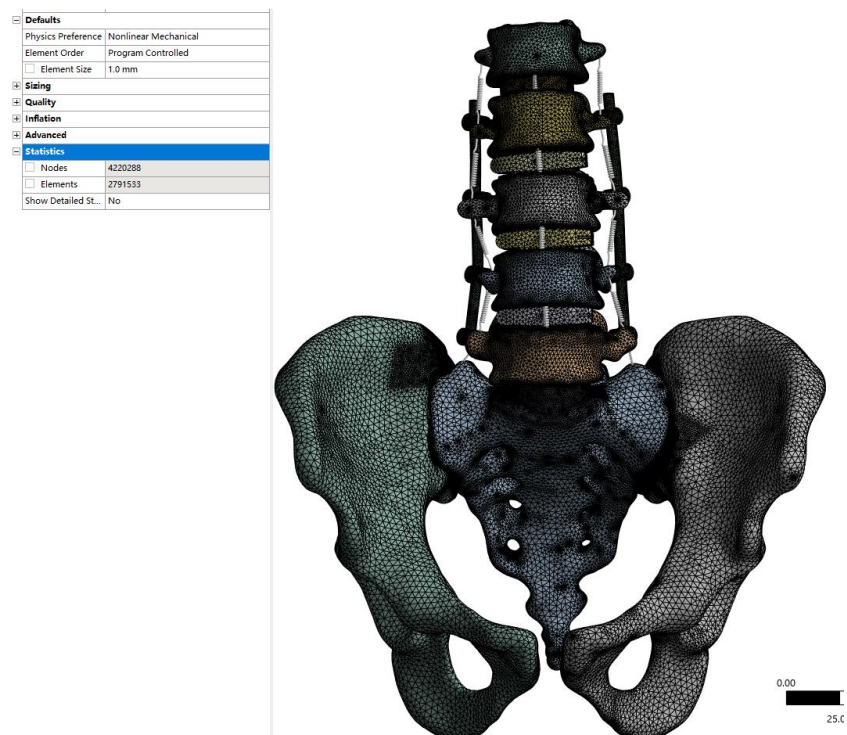


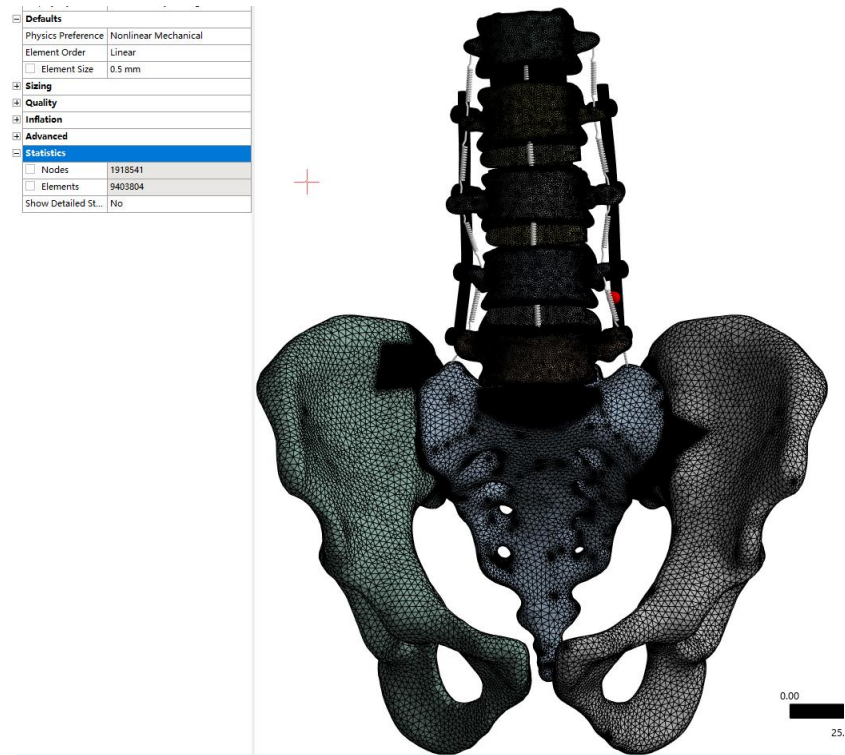
Convergence test



(a) Coarsened model



(b) This study

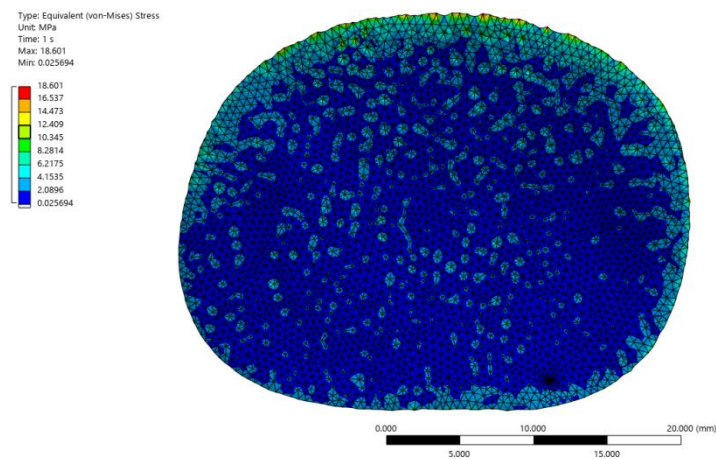


(c) Refined Model

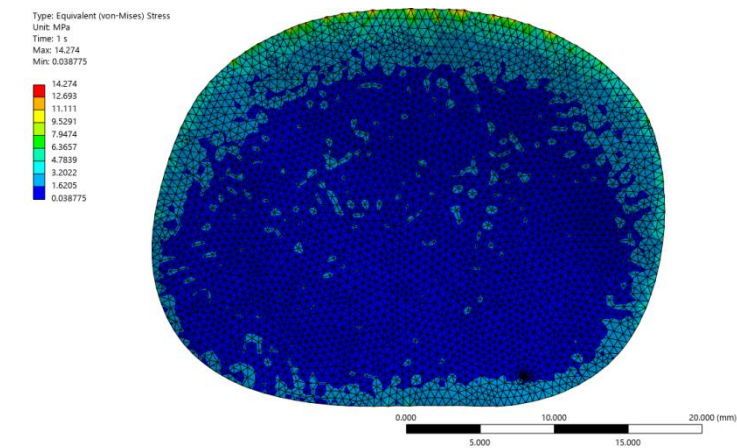
Supplementary Figure 1. Overall appearance of the Model with different mesh densities

Supplementary Table 1. Stress of adjacent vertebral discs in different mesh density conditions

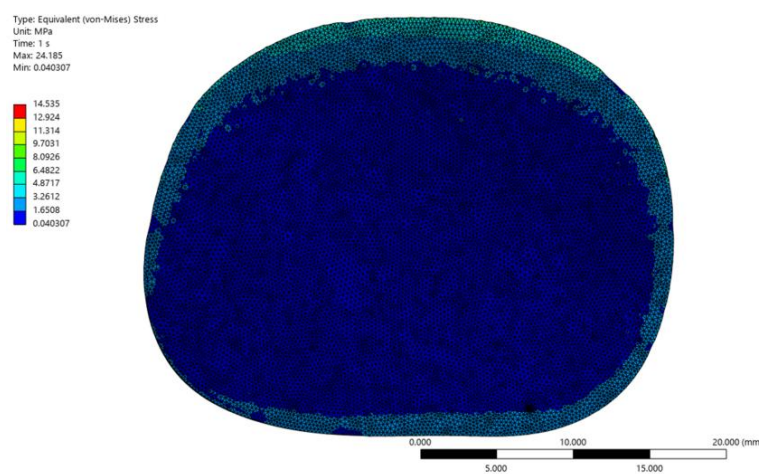
	Coarsened model	This study	Refined Model
Elements	1805843	2791533	9403804
Nodes	2781257	4220288	1918541
L1/L2 disc	1.18	0.97	0.98
L5/S1 disc	1.06	0.86	0.90



(a) Coarsened model

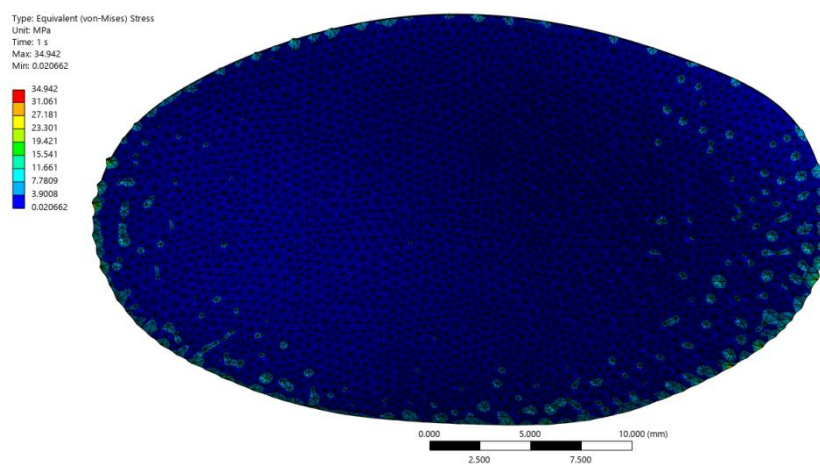


(b) This study

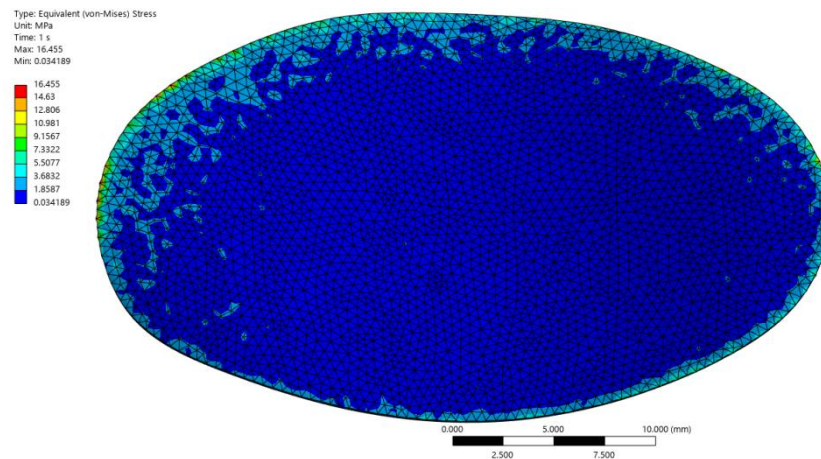


(c) Refined Model

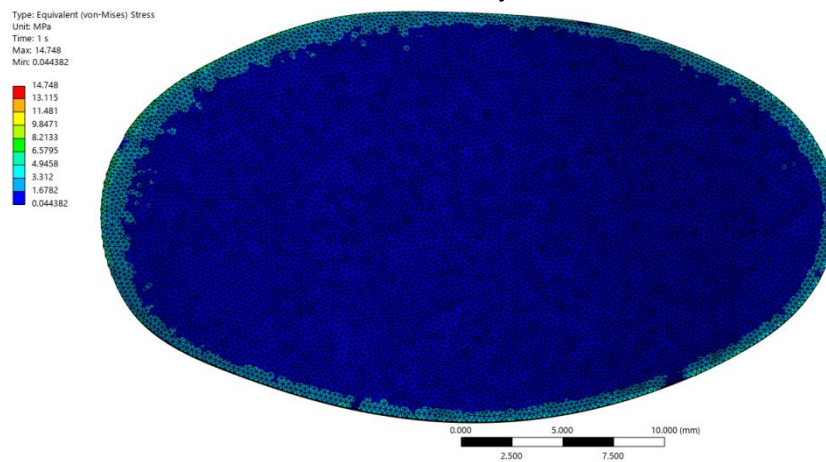
Supplementary Figure 2. Stress nephogram of L1/L2 intervertebral disc under different mesh density conditions



(a) Coarsened model

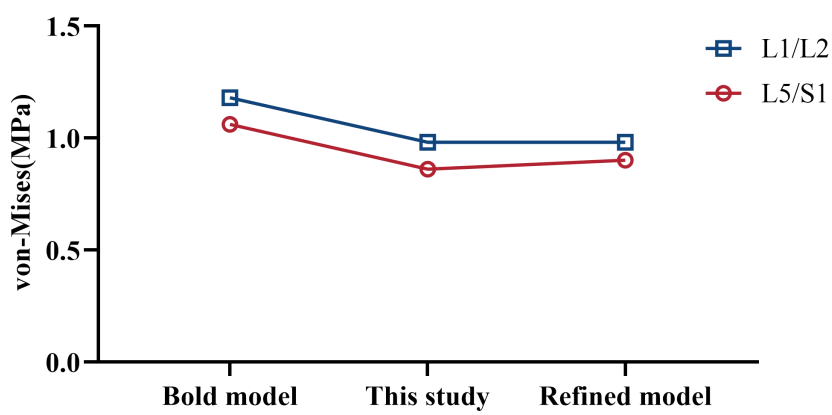


(b) This study



(c) Refined Model

Supplementary Figure 3. Stress nephogram of L5/S1 intervertebral disc under different mesh density conditions



Supplementary Figure 4. Stress trend of adjacent vertebral disc under different mesh density conditions