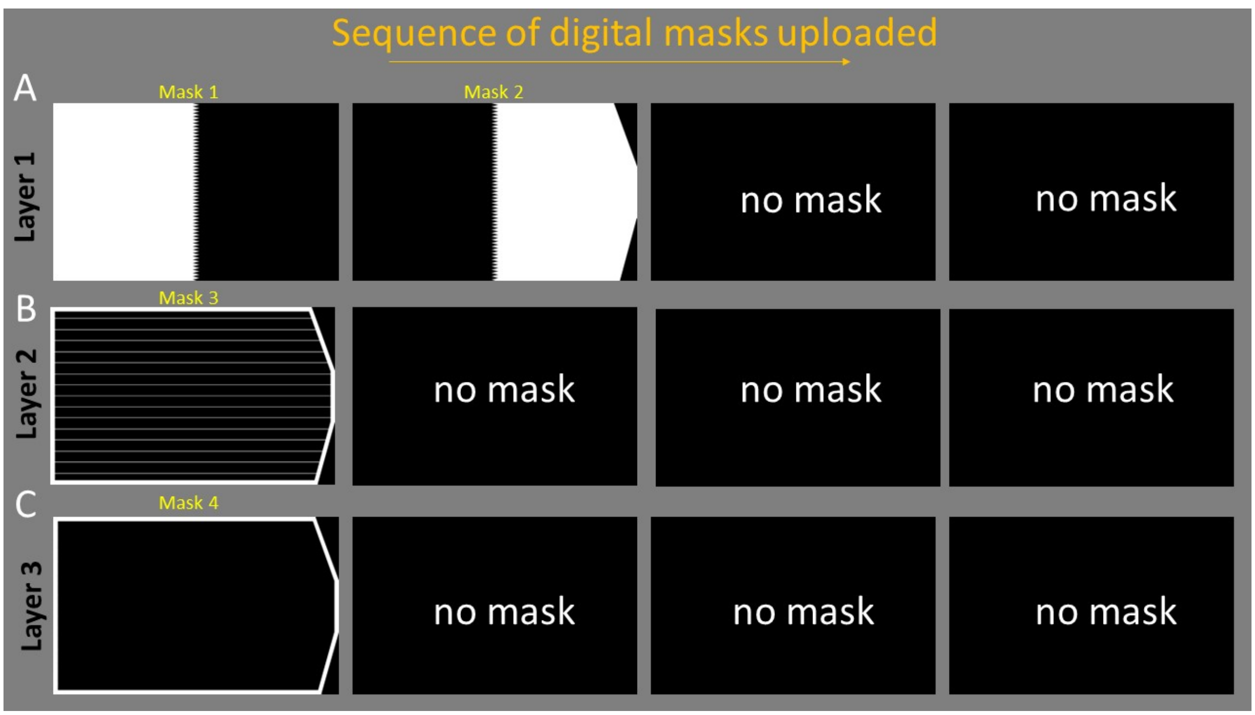
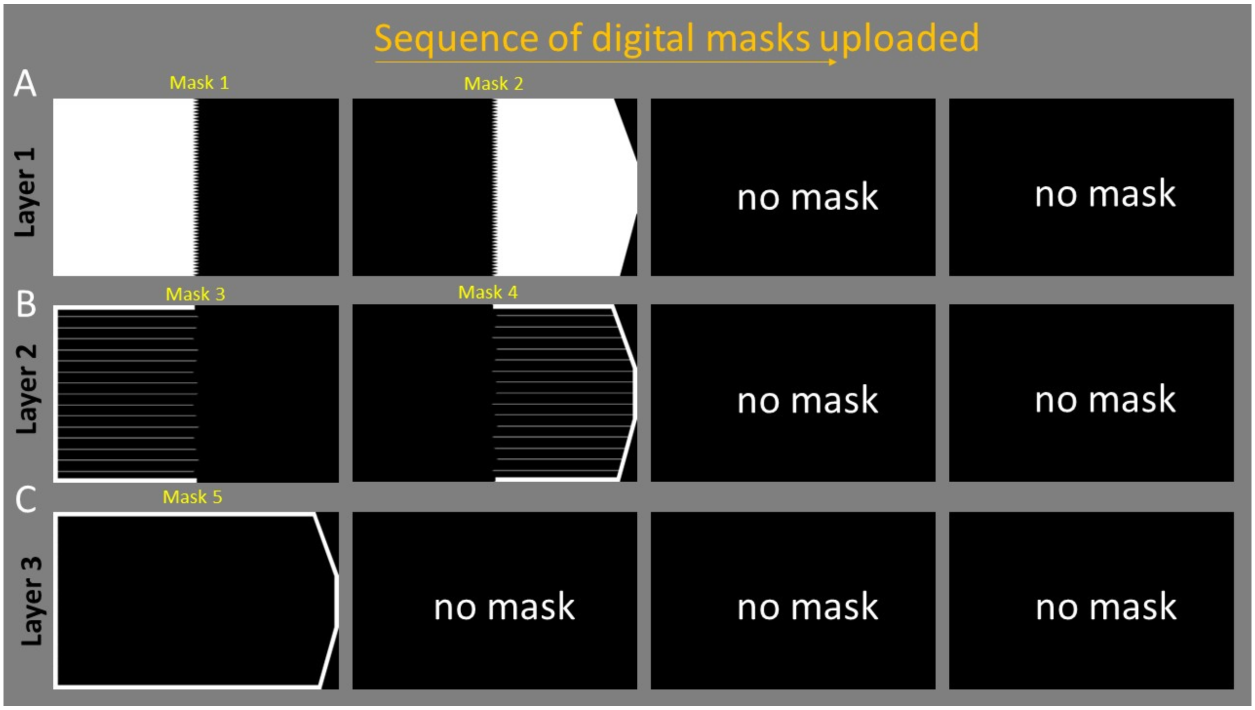
10. Supplementary Material

Supplementary Table 1. List of primer sequences used for RT-qPCR

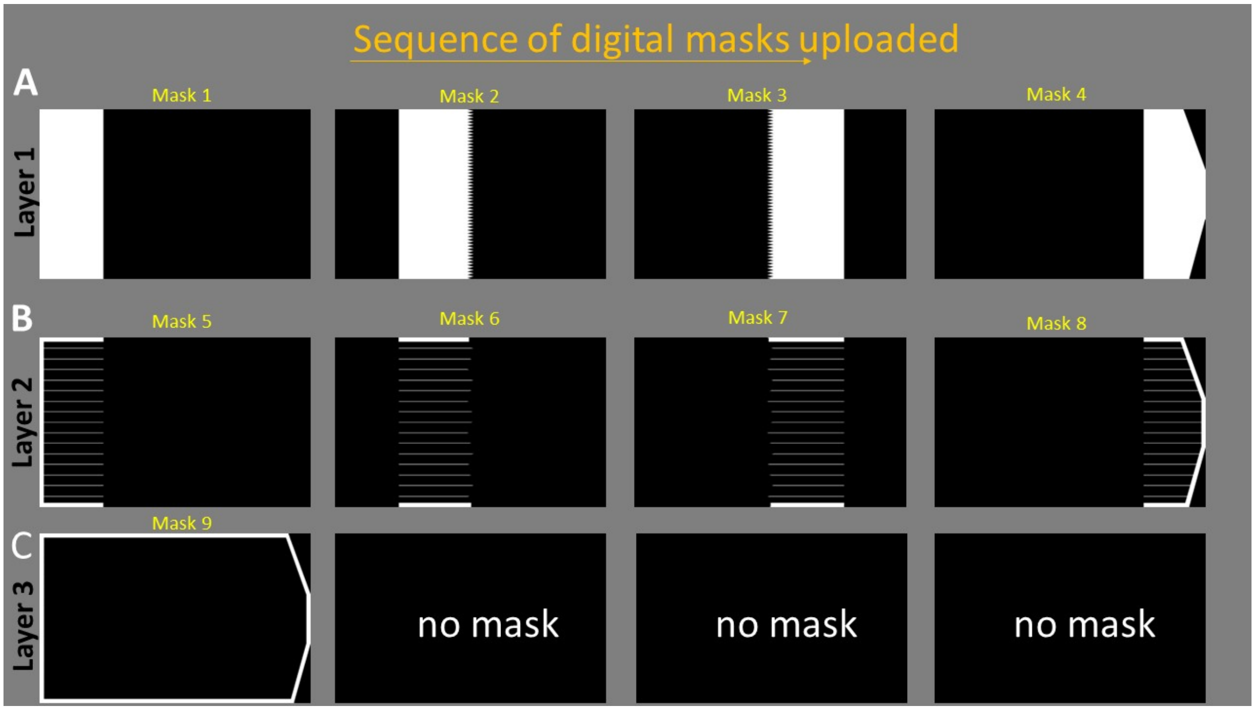
Primers	Forward (5' → 3')	Reverse (5' → 3')
GAPDH	AACTTTGGCATTGTGGAAGG	ACACATTGGGGGTAGGAACA
Itgb1	CCTGTAACTCCGACGCCTTT	AAGGTCCCCACTCAGCAATG
Tln1	CCCGGGGGCTATGCAAATTA	AGAGAACGCCCGAACTAAGC
Col1a1	ACGCCATCAAGGTCTACTGC	ACTCGAACGGGAATCCATCG



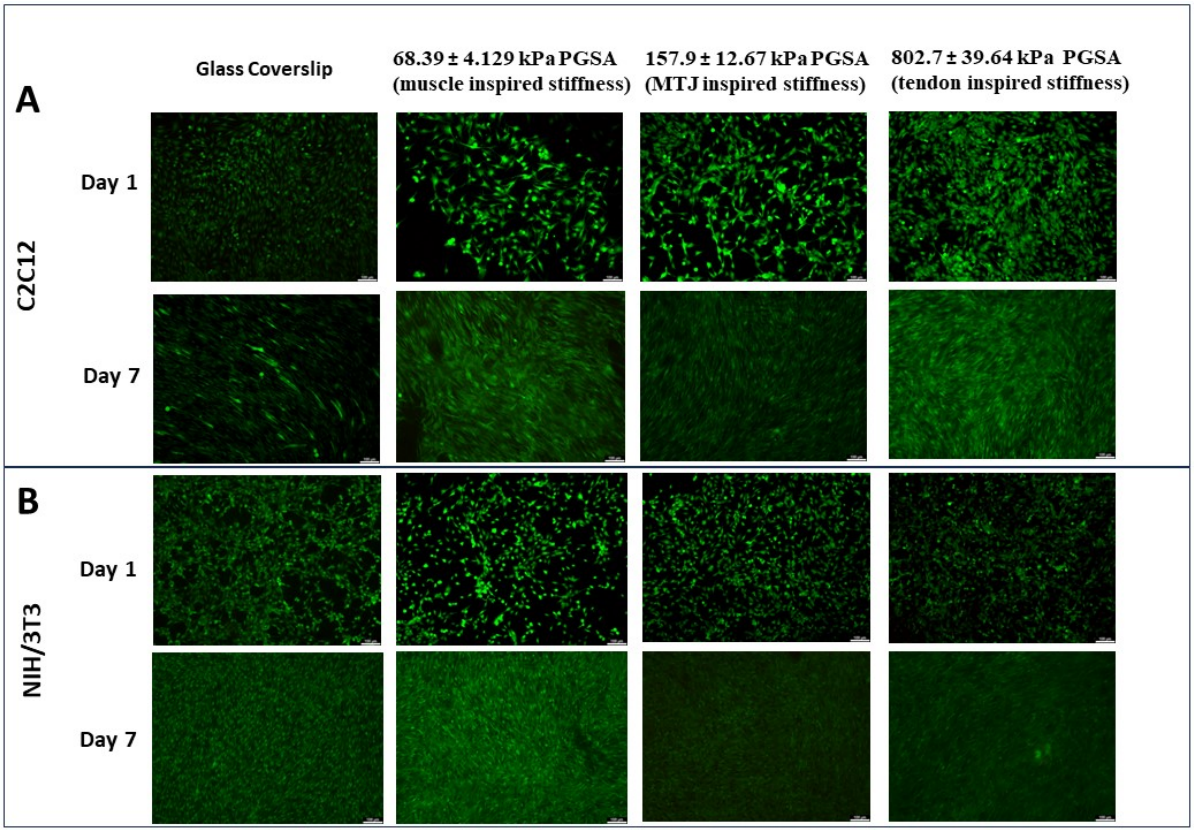
Supplementary Figure S1. Sequence of digital masks uploaded for the DLP-based 3D printing of PGSA-1STN scaffolds in a layer-by-layer fashion. (A) For layer 1, masks 1 and 2 were uploaded for the fabrication of the base layer. (B) For layer 2, mask 3 was uploaded for the fabrication of the microchannel walls plus outer walls. (C) For layer 3, mask 4 was uploaded for the fabrication of the outer walls.



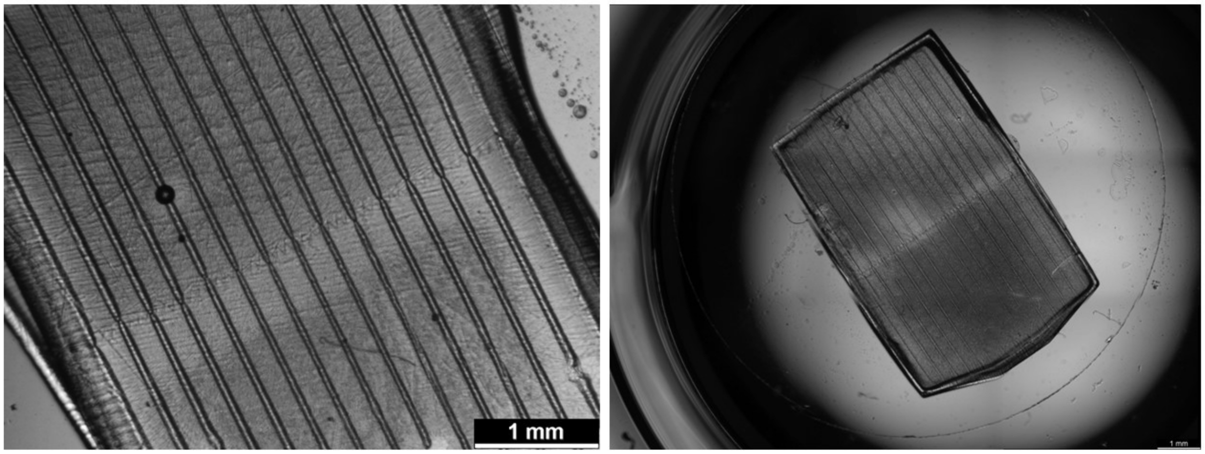
Supplementary Figure S2. Sequence of digital masks uploaded for the DLP-based 3D printing of PGSA-2STN scaffolds in a layer-by-layer fashion. (A) For layer 1, masks 1 and 2 were uploaded for the fabrication of the base layer. (B) For layer 2, masks 3 and 4 were uploaded for the fabrication of the microchannel walls plus outer walls. (C) For layer 3, mask 5 was uploaded for the fabrication of the outer walls. The first region (Masks 1 and 3) with Young's modulus corresponding to that of native rat muscle was 3D printed with light intensity of 12.40 mW/cm^2 and 47 s exposure time to generate the region on one end of the scaffold with the local Young's modulus measuring 68.39 ± 4.129 kPa in an attempt to match the measured Young's modulus of native rat muscle. The second region (Masks 2 and 4) with Young's modulus corresponding to that of native rat tendon was 3D printed with light intensity of 15.17 mW/cm^2 and 59 s exposure time to generate a second region on another end of the scaffold with the local Young's modulus measuring 802.7 ± 39.64 kPa in an attempt to match the measured Young's modulus of native rat tendon.



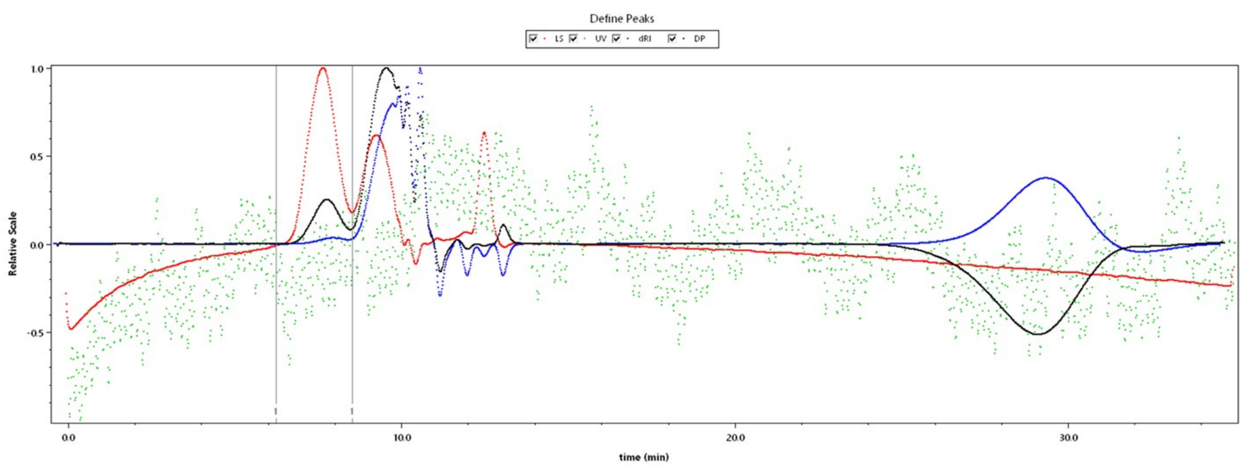
Supplementary Figure S3. Sequence of digital masks uploaded for the DLP-based 3D printing of PGSA-3STN scaffolds in a layer-by-layer fashion. (A) For layer 1, masks 1, 2,3, and 4 were uploaded for the fabrication of the base layer. (B) For layer 2, masks 5, 6, 7, and 8 were uploaded for the fabrication of the microchannel walls plus outer walls. (C) For layer 3, mask 10 was uploaded for the fabrication of the outer walls. The first region (Masks 1 and 5) with Young's modulus corresponding to that of native rat muscle was 3D printed with light intensity of 12.40 mW/cm^2 and 47 s exposure time to generate the region on one end of the scaffold with the local Young's modulus measuring 68.39 ± 4.129 kPa in an attempt to match the measured Young's modulus of native rat muscle. The second region (Masks 2, 3, 6, and 7) with Young's modulus corresponding to that of native rat MTJ was 3D printed with light intensity of 13.70 mW/cm^2 and 49 s exposure time to generate the region in the middle of the scaffold with the local Young's modulus measuring 157.9 ± 12.67 kPa in an attempt to match the measured Young's modulus of native rat MTJ. The third region (Masks 4 and 8) with Young's modulus corresponding to that of native rat tendon was 3D printed with light intensity of 15.17 mW/cm^2 and 59 s exposure time to generate a third region on another end of the scaffold with the local Young's modulus measuring 802.7 ± 39.64 kPa in an attempt to match the measured Young's modulus of native rat tendon.



Supplementary Figure S4. In vitro biocompatibility tests of PGSA printed at different stiffnesses. (A) Cell viability staining of C2C12 cells seeded on glass coverslip control and PGSA scaffolds with stiffnesses corresponding to those of native rat muscle, MTJ, and tendon at day 1 and day 7. (B) Cell viability staining of NIH/3T3 fibroblasts seeded on glass coverslip control and PGSA scaffolds with stiffnesses corresponding to those of native rat muscle, MTJ, and tendon at day 1 and day 7. Scale Bar = 100 μm



Supplementary Figure S5. Brightfield Images of 3D Printed Muscle-Tendon Scaffolds
(A) Zoomed in image of the 3D printed junction. (B) Tiled image of the whole muscle-tendon scaffold. Scale Bar = 1 mm



Supplementary Figure S6. GPC plot of synthesized PGSA prepolymer
GPC plot of synthesized PGSA prepolymer with differential refractive index in blue, light scattering in red, and viscometer (DP) in black.