

## *Supplementary Materials*

**Table S1. soleus and EDL active mechanical properties**

| <b>soleus</b>                     | <b>C7</b>  | <b>R7</b>                | <b>C21</b> | <b>R21</b>                |
|-----------------------------------|------------|--------------------------|------------|---------------------------|
| rat mass, g                       | 228,3±16,1 | 237,8±15,2               | 291,5±9,3  | 278,1±5,9                 |
| soleus mass, mg                   | 110,4±3,1  | 103,4±3,1                | 133,7±3,9  | 120,5±3,5*<br><br>(-11%)  |
| soleus normalised<br>mass         | 0,50±0,02  | 0,44±0,02<br><br>(-13%)* | 0,46±0,02  | 0,43±0,01                 |
| muscle length, mm                 | 19,6±0,3   | 18,9±0,3                 | 17,9±0,3   | 18,0±0,2                  |
| CSA mm <sup>2</sup>               | 5,4±0,2    | 5,1±0,2                  | 7,9±0,3    | 6,5±0,2                   |
| twitch tension, mN                | 77,0±7,1   | 70,1±5,3                 | 67,2±6,7   | 59,0±6,1                  |
| twitch/CSA,<br>mN/mm <sup>2</sup> | 13,8±1,0   | 13,7±1,2                 | 7,7±1,5    | 7,9±1,4                   |
| TTP, ms                           | 43,4±2,4   | 50,9±3,3                 | 42,7±2,073 | 46,5±4,2                  |
| HRT, ms                           | 56,4±3,6   | 68,4±6,1                 | 37,6±2,1   | 40,4±2,6                  |
| tetanic tension, mN               | 543,1±47,5 | 520,3±40,6               | 649,2±36,9 | 426,8±52,2*<br><br>(-34%) |

|  |           |                          |            |                         |
|--|-----------|--------------------------|------------|-------------------------|
| tetanic<br>tension/CSA, mN/<br>mm <sup>2</sup> | 98,2±10,0 | 98,8±5,8                 | 85,9±5,6   | 60,2±7,9*<br><br>(-30%) |
| <b>extensor<br/>digitorum longus</b>           | <b>C7</b> | <b>R7</b>                | <b>C21</b> | <b>R21</b>              |
| EDL mass, g                                    | 117,1±3,1 | 112,9±3,1                | 136,1±3,8  | 128,1±2,8*<br><br>(-6%) |
| EDL normalised<br>mass                         | 0,51±0,01 | 0,48±0,01<br><br>(8%)*   | 0,47±0,02  | 0,46±0,01               |
| muscle length, mm                              | 25,3±0,5  | 26,0±0,5                 | 28,5±0,4   | 27,1±0,4                |
| CSA mm <sup>2</sup>                            | 4,3±0,1   | 4,1±0,127                | 4,7±0,1    | 4,5±0,1                 |
| twitch tension, mN                             | 102,9±8,8 | 113,2±9,4                | 110,9±9,9  | 74,1±7,8*<br><br>(-33%) |
| twitch/CSA,<br>mN/mm <sup>2</sup>              | 24,0±2,3  | 28,5±3,0                 | 21,9±1,5   | 15,2±1,0*<br><br>(-31%) |
| TTP, ms  | 19,7±0,5  | 24,3±0,8*<br><br>(-19,1) | 17,4±0,9   | 18,7±1,6                |

|   |            |            |            |                       |
|---|------------|------------|------------|-----------------------|
| HRT, ms                                 | 10,9±0,9   | 12,7±0,6   | 7,7±0,4    | 8,0±1,0               |
| tetanic tension, mN                     | 521,5±31,2 | 555,8±60,2 | 941,1±79,9 | 423,3±62,6*<br>(-55%) |
| tetanic tension/CSA, mN/mm <sup>2</sup> | 121,1±9,2  | 122,4±23,4 | 203,2±17,9 | 93,1±12,5*<br>(-54%)  |

CSA – physiological cross-section area, TTP – time to peak tension, HRT – half-relaxation time.

C – control, R – restricted activity. \* - significant differences from «C» ( $p < 0,05$ ). Data shown as mean±SE In parenthesis data shown as % of control group.

**Table S2 soleus and EDL passive mechanical properties**

| soleus                                 | C7         | R7        | C21      | R21                 |
|--|------------|-----------|----------|---------------------|
| F <sub>p</sub> , mN                    | 111,3±23,5 | 94,3±10,6 | 62,3±4,5 | 80,0±5,8*<br>(+29%) |
| F <sub>s</sub> , mN                    | 57,4±8,2   | 51,6±4,2  | 49,2±5,0 | 52,9±3,7            |
| F <sub>p</sub> /CSA, N/cm <sup>2</sup> | 2,0±0,3    | 1,8±0,2   | 0,8±0,3  | 1,2±0,09*<br>(+44%) |
| F <sub>s</sub> /CSA, N/cm <sup>2</sup> | 1,0±0,1    | 1,0±0,09  | 0,6±0,04 | 0,9±0,04*<br>(+50%) |
| E1, N/cm <sup>2</sup>                  | 3,8±0,9    | 3,3±0,5   | 1,1±0,1  | 1,9±0,2*            |

|  |            |            |            |                       |
|--|------------|------------|------------|-----------------------|
|  |            |            |            | (+82%)                |
| E2, N/cm <sup>2</sup>                  | 4,1±0,5    | 4,0±0,3    | 2,3±0,2    | 3,5±0,1*<br>(+50%)    |
| <b>extensor<br/>digitorum longus</b>   | <b>C7</b>  | <b>R7</b>  | <b>C21</b> | <b>R21</b>            |
| F <sub>p</sub> , mN                    | 141,7±10,6 | 124,0±11,0 | 284,4±29,7 | 167,9±16,7*<br>(-41%) |
| F <sub>s</sub> , mN                    | 70,4±8,7   | 54,2±4,5   | 119,9±8,6  | 81,6±6,5*<br>(-32%)   |
| F <sub>p</sub> /CSA, N/cm <sup>2</sup> | 2,8±0,1    | 2,4±0,2    | 6,3±0,8    | 3,8±0,5*<br>(-40%)    |
| F <sub>s</sub> /CSA, N/cm <sup>2</sup> | 1,3±0,1    | 1,1±0,1    | 2,6±0,3    | 1,8±0,2*<br>(-33%)    |
| E1, N/cm <sup>2</sup>                  | 6,2±0,3    | 5,4±0,5    | 15,9±1,9   | 8,2±1,3*<br>(-48%)    |
| E2, N/cm <sup>2</sup>                  | 5,2±0,4    | 4,2±0,3    | 10,5±1,1   | 7,0±0,7*<br>(-33%)    |

*F<sub>p</sub> – peak tension, F<sub>s</sub> – steady tension, F/CSA –stiffness, E1 and E2 – Young's modulus 1 and 2.*

*C – control, R – restricted activity. \* - significant differences from «C» (p<0,05). Data shown as mean±SE In parenthesis data shown as % of control group.*

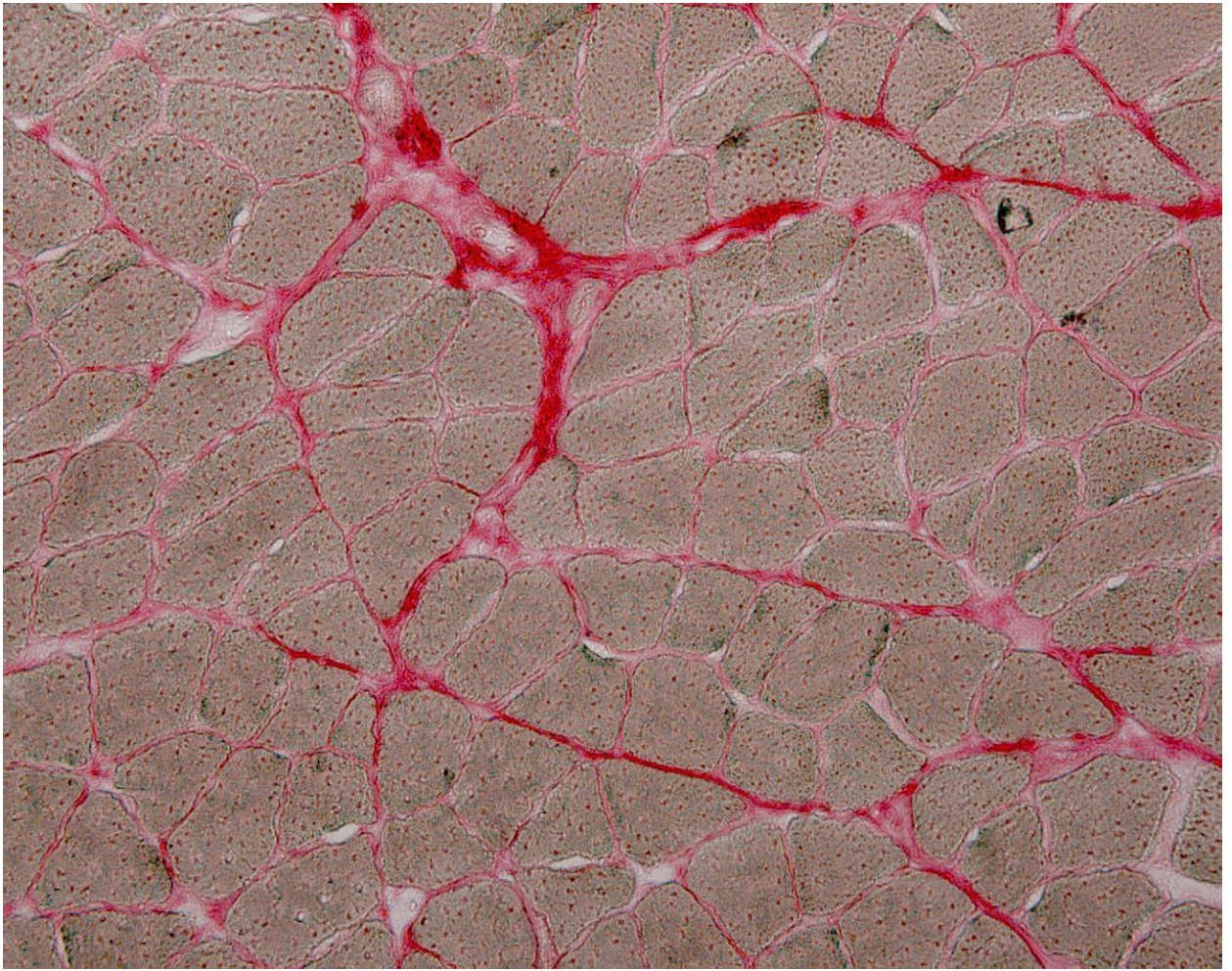


Figure S1. Representative image of collagen staining. Soleus Control



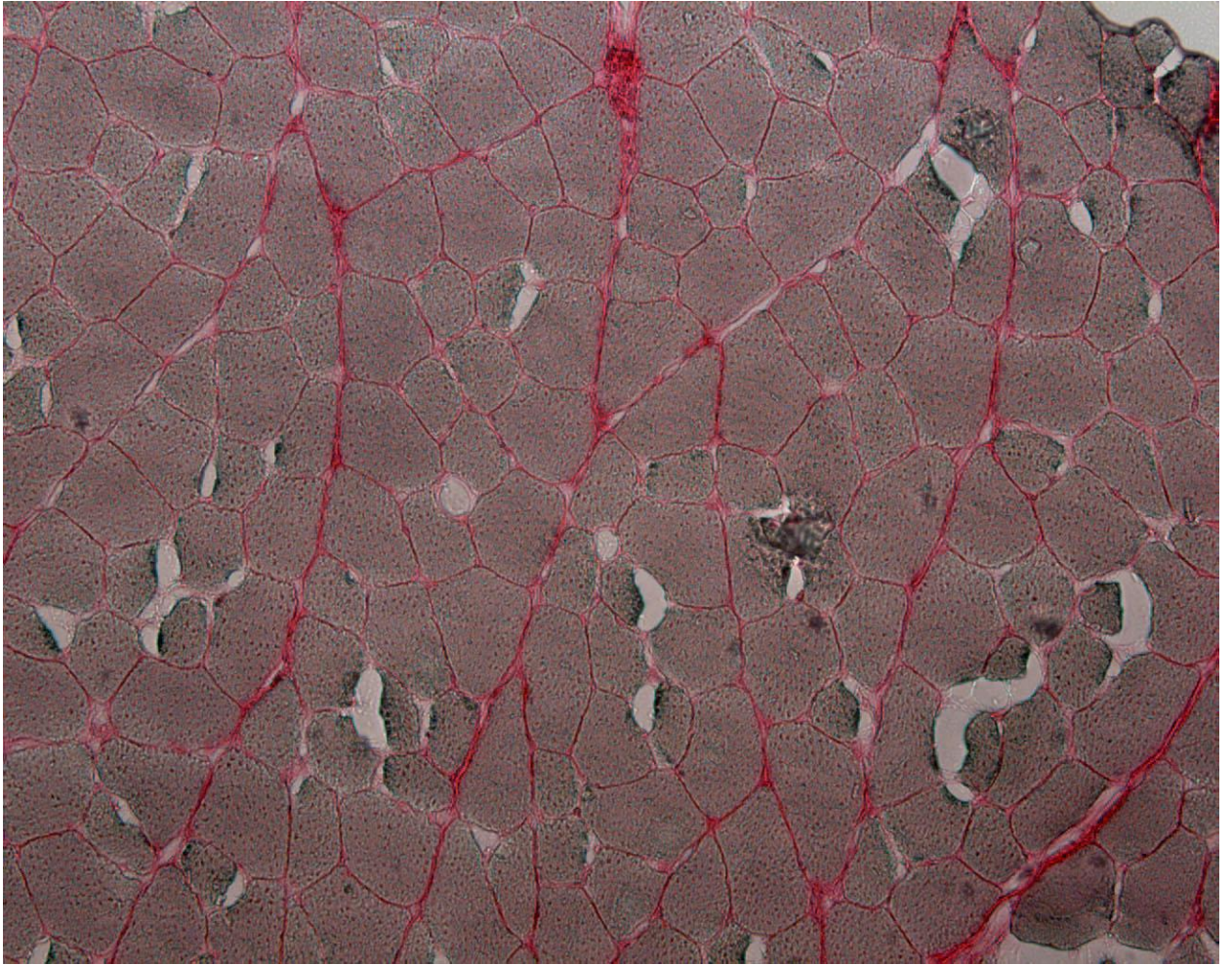


Figure S2. Representative image of collagen staining. EDL Control



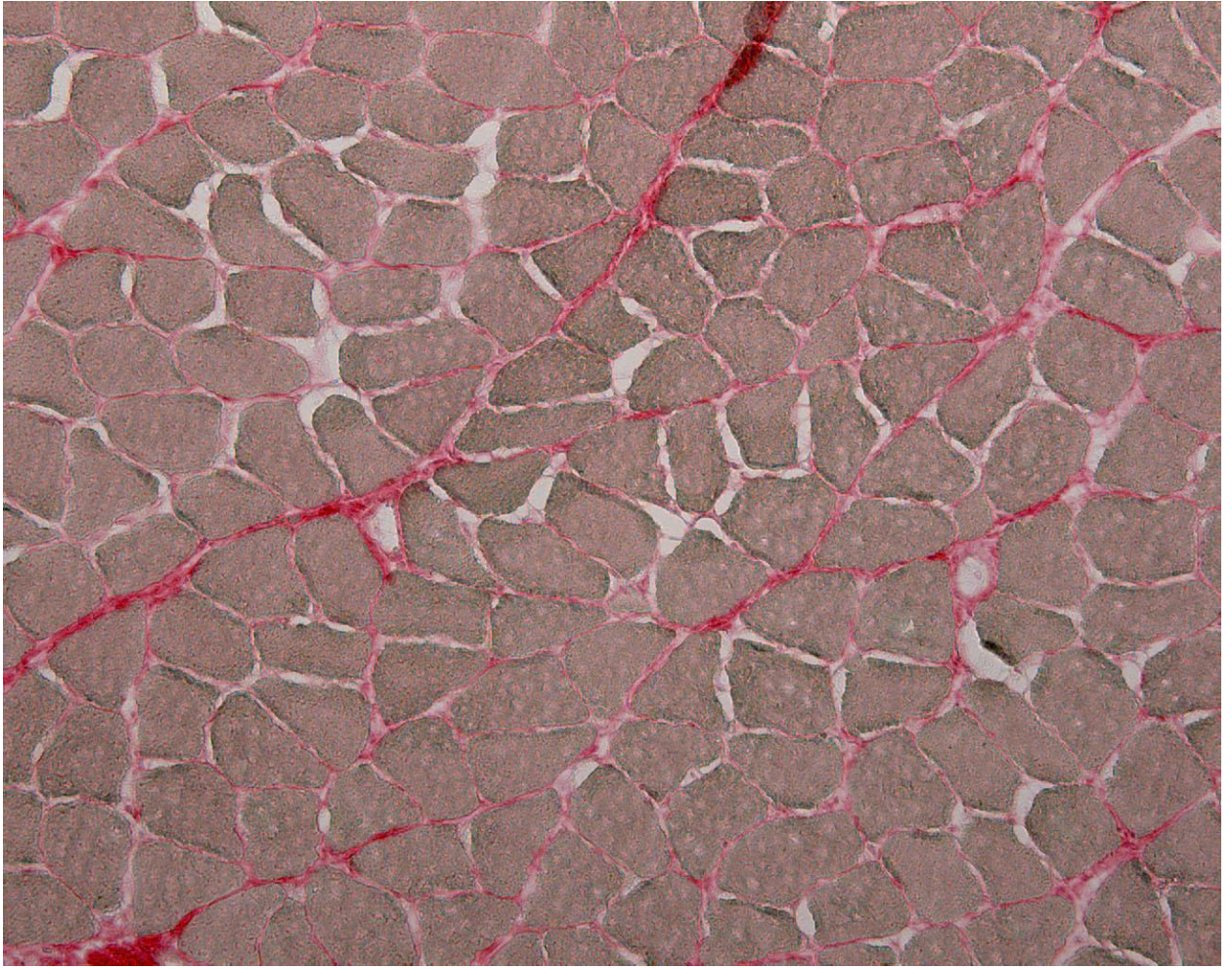


Figure S3. Representative image of collagen staining. Soleus 7-day movement restriction



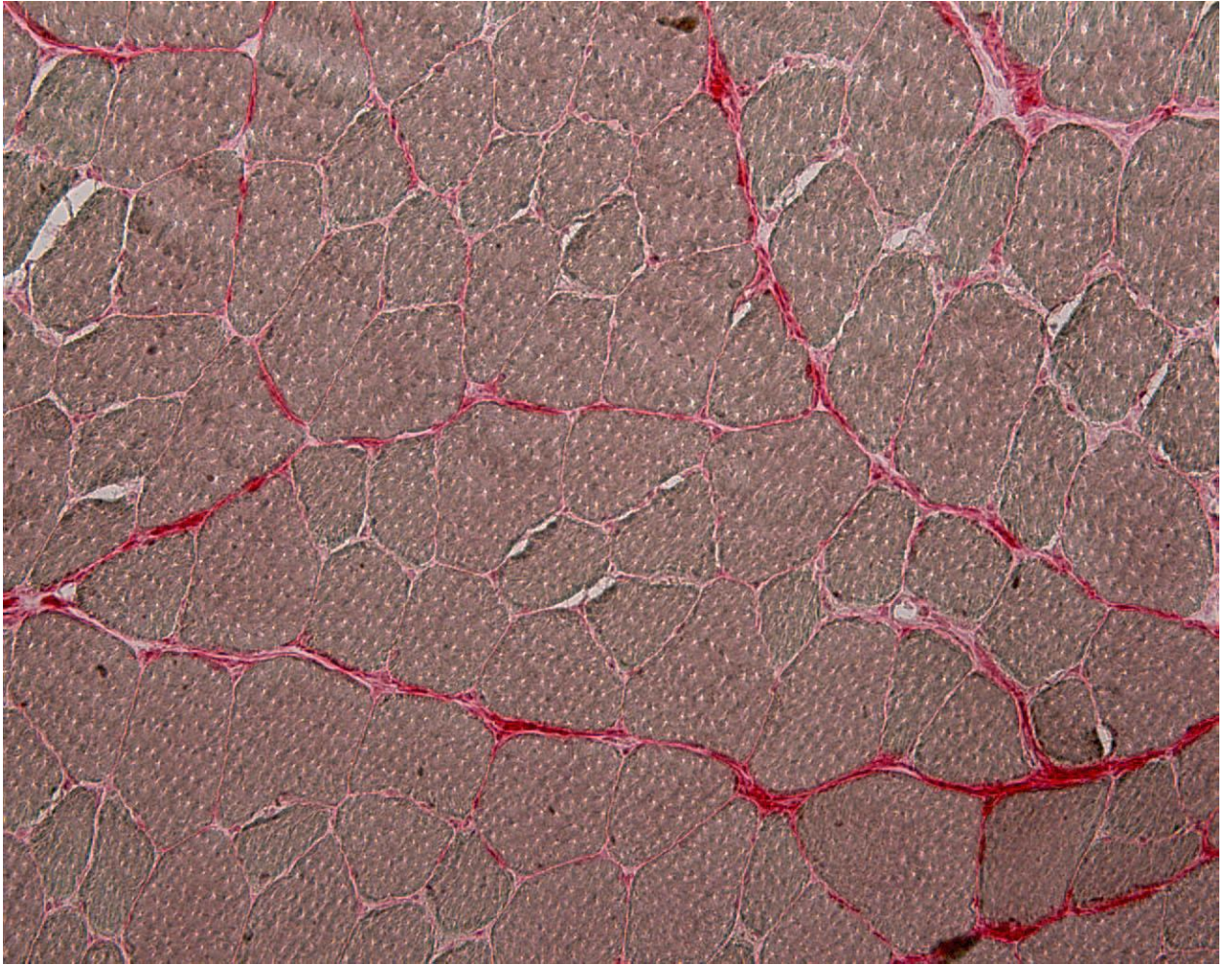


Figure S4. Representative image of collagen staining. EDL 7-day movement restriction



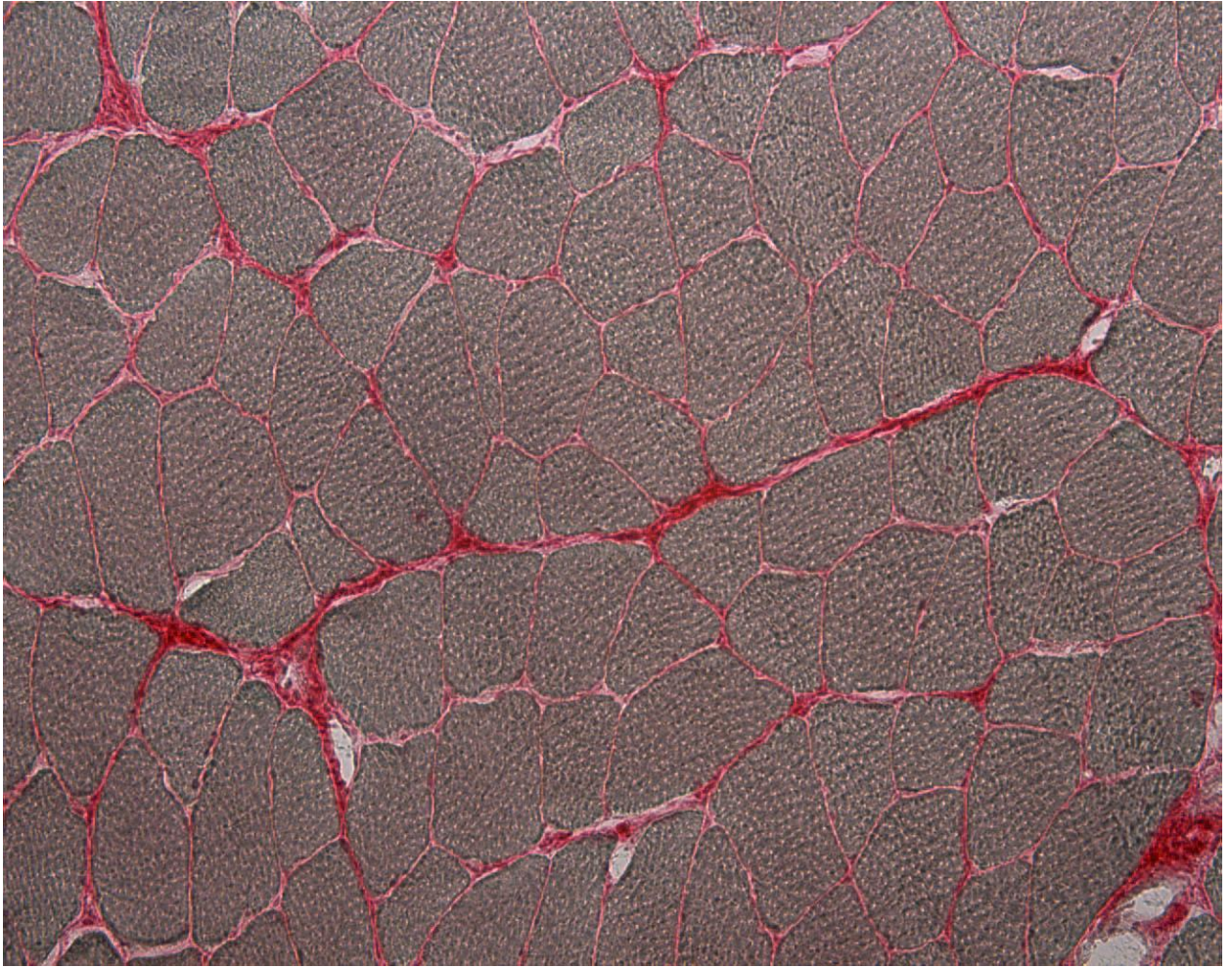


Figure S5. Representative image of collagen staining. Control 21-day movement restriction



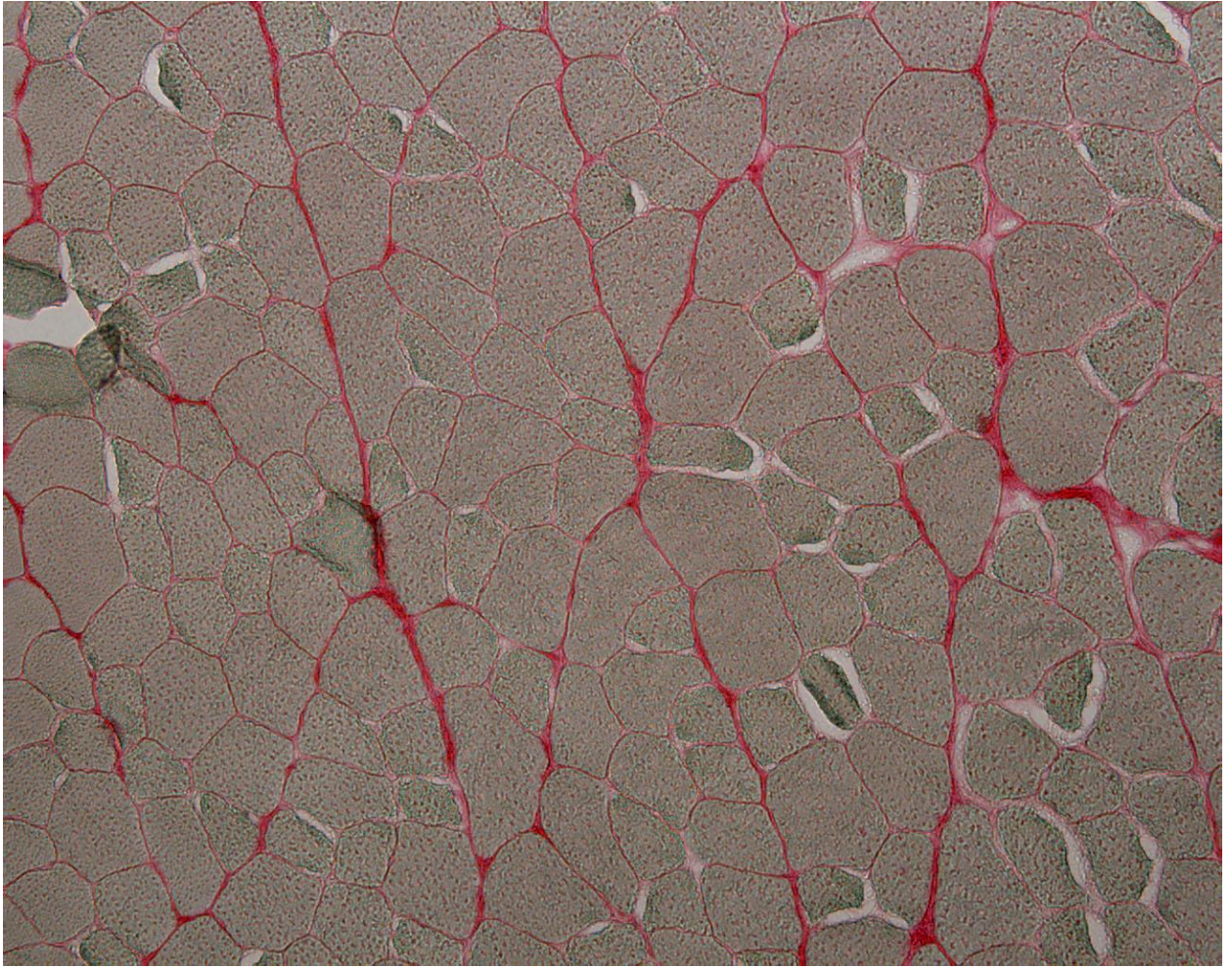


Figure S6. Representative image of collagen staining. EDL 21-day movement restriction