

**Table S1 survival rate of T1D mice in different groups and genders**

	<b>Male (death/total)</b>	<b>Female (death/total)</b>
<b>WT T1D</b>	<b>23/39</b>	<b>12/12</b>
<b>Integrin <math>\alpha 5/2</math> T1D</b>	<b>18/29</b>	<b>9/11</b>
<b>PDE4D5<sup>mut</sup> T1D</b>	<b>26/33</b>	<b>11/11</b>

**Table S2. Morphological and mechanical data (mean  $\pm$  SEM) for the right common carotid artery from citric buffer- (Ctrl) or STZ- (DB) injected WT and integrin  $\alpha 5/2$  mice. Pressure-dependent values were calculated at 120 mmHg.**

	<b>Biaxial biomechanical properties - 120 mmHg</b>			
	<b>WT - Ctrl</b> <b>n = 6</b>	<b>WT - DB</b> <b>n = 6</b>	<b><math>\alpha 5/2</math> - Ctrl</b> <b>n = 8</b>	<b><math>\alpha 5/2</math> - DB</b> <b>n = 5</b>
<b>Unloaded dimensions</b>				
<b>Wall Thickness (<math>\mu\text{m}</math>)</b>	<b>78 <math>\pm</math> 3.9</b>	<b>79 <math>\pm</math> 1.4</b>	<b>79 <math>\pm</math> 2.2</b>	<b>76 <math>\pm</math> 2.0</b>
<b>Outer Diameter (<math>\mu\text{m}</math>)</b>	<b>470 <math>\pm</math> 18</b>	<b>417 <math>\pm</math> 25</b>	<b>440 <math>\pm</math> 13</b>	<b>397 <math>\pm</math> 18</b>
<b>Axial Length (mm)</b>	<b>4.00 <math>\pm</math> 0.37</b>	<b>4.15 <math>\pm</math> 0.09</b>	<b>4.14 <math>\pm</math> 0.18</b>	<b>4.47 <math>\pm</math> 0.10</b>
<b>Loaded dimensions</b>	<b>P = 120</b>	<b>P = 120</b>	<b>P = 120</b>	<b>P = 120</b>
<b>Outer Diameter (<math>\mu\text{m}</math>)</b>	<b>706 <math>\pm</math> 24.9</b>	<b>640 <math>\pm</math> 40.1</b>	<b>680 <math>\pm</math> 12.6</b>	<b>633 <math>\pm</math> 19.5</b>
<b>Wall Thickness (<math>\mu\text{m}</math>)</b>	<b>22 <math>\pm</math> 0.9</b>	<b>22 <math>\pm</math> 1.2</b>	<b>22 <math>\pm</math> 0.5</b>	<b>20 <math>\pm</math> 0.7</b>
<b>Inner Radius (<math>\mu\text{m}</math>)</b>	<b>330 <math>\pm</math> 13.0</b>	<b>298 <math>\pm</math> 20.3</b>	<b>318 <math>\pm</math> 6.6</b>	<b>297 <math>\pm</math> 9.4</b>
<b>In vivo Circ. Stretch (<math>\lambda_\theta</math>)</b>	<b>1.75 <math>\pm</math> 0.05</b>	<b>1.84 <math>\pm</math> 0.10</b>	<b>1.84 <math>\pm</math> 0.08</b>	<b>1.92 <math>\pm</math> 0.07</b>
<b>in vivo Axial Stretch (<math>\lambda_z^{\text{iv}}</math>)</b>	<b>1.99 <math>\pm</math> 0.01</b>	<b>1.94 <math>\pm</math> 0.03</b>	<b>1.95 <math>\pm</math> 0.03</b>	<b>1.99 <math>\pm</math> 0.02</b>

<b>Systolic Cauchy Stresses (kPa)</b>								
<b>Circ., <math>\sigma_{\theta}</math></b>	<b>239</b>	<b>± 15.8</b>	<b>218</b>	<b>± 22.4</b>	<b>232</b>	<b>± 9.3</b>	<b>239</b>	<b>± 8.5</b>
<b>Axial, <math>\sigma_z</math></b>	<b>283</b>	<b>± 6.5</b>	<b>291</b>	<b>± 30.8</b>	<b>254</b>	<b>± 11.8</b>	<b>301</b>	<b>± 19.0</b>
<b>Systolic Linearized Stiffness (MPa)</b>								
<b>Circ.,<math>C_{\theta\theta\theta\theta}</math></b>	<b>1.89</b>	<b>± 0.27</b>	<b>1.88</b>	<b>± 0.28</b>	<b>1.79</b>	<b>± 0.13</b>	<b>1.44</b>	<b>± 0.13</b>
<b>Axial, <math>C_{zzzz}</math></b>	<b>2.08</b>	<b>± 0.07</b>	<b>2.50</b>	<b>± 0.19</b>	<b>1.97</b>	<b>± 0.08</b>	<b>2.02</b>	<b>± 0.20</b>
<b>Distensibility (1/MPa)</b>	<b>21.50 ± 3.85</b>		<b>19.76 ± 3.60</b>		<b>20.02 ± 1.58</b>		<b>28.60 ± 3.25</b>	
<b>Systolic Stored Energy (kPa)</b>	<b>82 ± 2.5</b>		<b>81 ± 10.8</b>		<b>73 ± 3.0</b>		<b>87 ± 3.7</b>	