

Circle the approximately correct value for each of the materials. Only one value is reasonable.

Material	Young's Modulus	Young's Modulus
Human adipose tissue (body fat)	10 MPa	10 kPa
Rubber band used in BMED 3410 lecture	500 MPa	500 kPa
Polydimethylsiloxane (PDMS) (e.g., contact lenses and microfluidics)	1 GPa	1 MPa
Human bone (cortical bone)	20 GPa	20 MPa
Glass (e.g., glasses, pipette)	60 GPa	60 MPa
Aluminum (e.g., wheelchair, walker, and stretcher)	70 GPa	70 MPa
Tooth enamel	80 GPa	80 MPa
Titanium (Ti) (e.g., hip implants and dental implants)	100 GPa	100 MPa
Steel (e.g., bone fixation screws and prostheses)	200 GPa	200 MPa

These numbers and text are based on the following sources:

- [http://en.wikipedia.org/wiki/Young's\\_modulus](http://en.wikipedia.org/wiki/Young's_modulus)
- [http://en.wikipedia.org/wiki/Surgical\\_stainless\\_steel](http://en.wikipedia.org/wiki/Surgical_stainless_steel)
- <https://en.wikipedia.org/wiki/Polydimethylsiloxane>
- The mechanical properties of human adipose tissues and their relationships to the structure and composition of the extracellular matrix. Alkhouli N1, Mansfield J, Green E, Bell J, Knight B, Liversedge N, Tham JC, Welbourn R, Shore AC, Kos K, Winlove CP. Am J Physiol Endocrinol Metab. 2013.
- Mechanical characterization of bulk Sylgard 184 for microfluidics and microengineering, J. Micromech. Microeng. 24 035017, 2014. (<http://iopscience.iop.org/0960-1317/24/3/035017>).
- Rho, Jae Young, Richard B. Ashman, and Charles H. Turner. "Young's modulus of trabecular and cortical bone material: ultrasonic and microtensile measurements." Journal of biomechanics 26, no. 2 (1993): 111-119.