

ME 327: Design and Control of Haptic Systems Spring 2020

Interactive Session 5: Tactile Haptic Devices

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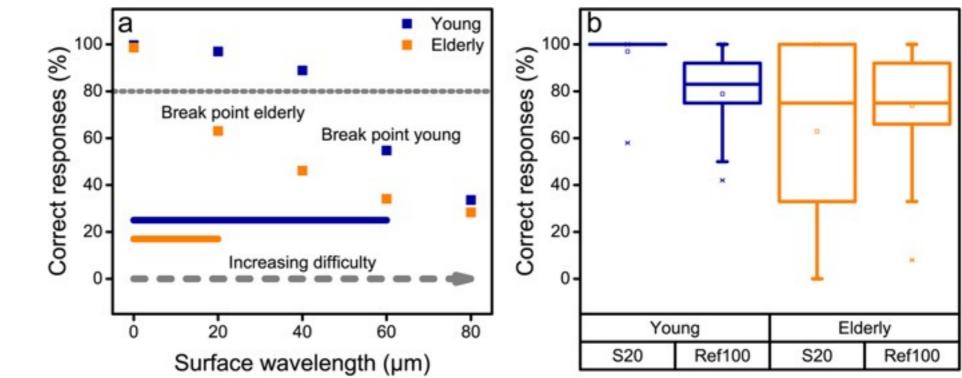
Age-related effects

Hearing high frequency sounds decreases with age (presbycusis).

Frequency (Hz) High Low 4000 8000 250 500 1000 2000 20 years 20 Hearing loss (dB) 40 years 60 years 80 100

Presbycusis

What about tactile sensitivity?

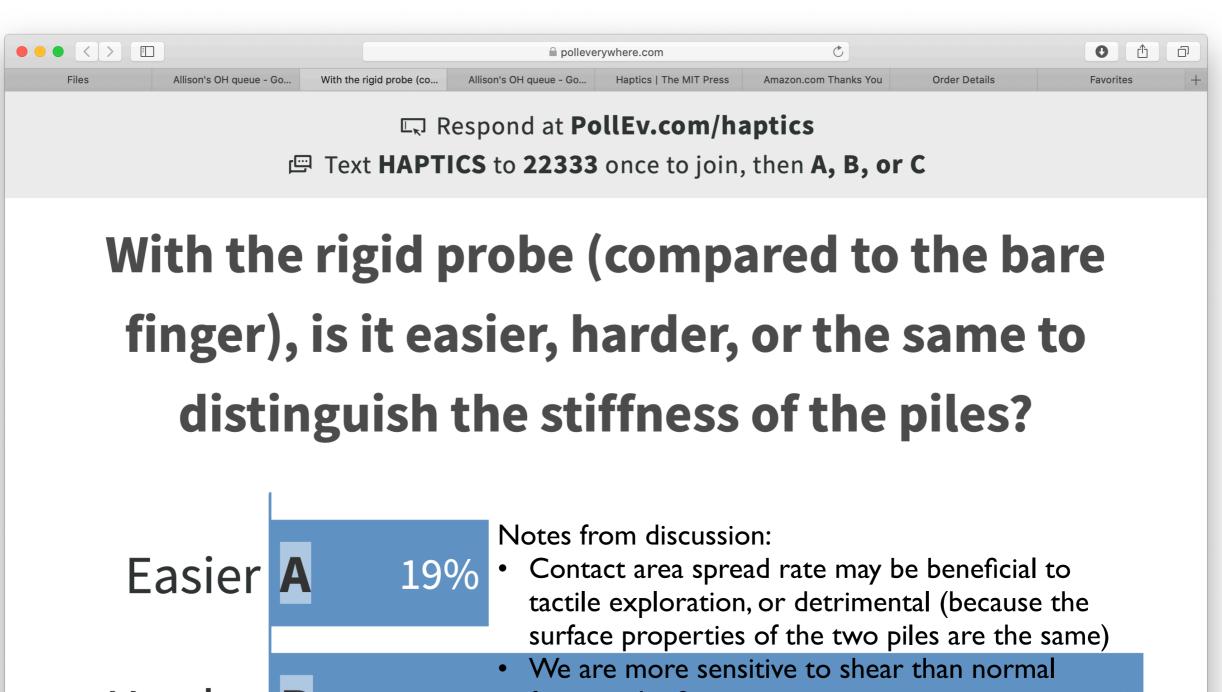


Stiffness

- Gather a pile of napkins, tissue, or (if you can spare it!) toilet paper
- 2. Divide into piles of different thickness (number of layers) that can just barely be distinguished by combined cutaneous and kinesthetics sensation.
- 3. Now probe the piles with a rigid tool/stylus. It is easier, harder, or the same to distinguish the piles?



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or
text **haptics** to 22333
once to join and then text
your response



Easier A 19%

Contact area spread rate may be beneficial to tactile exploration, or detrimental (because the surface properties of the two piles are the same)

We are more sensitive to shear than normal force at the fingertips 76%

Exploration strategy (e.g. tapping) might affect ability to perceive with fingertips vs. stylus

The same

The sam

Texture



Stereognosis without tactile feedback?



Thank you for posting questions to the Canvas discussion board!

Reminder: Assignment 2 due Thursday Add/drop deadline this Friday

We will organize Hapkits after the add/drop deadline

Office Hours/Q&A with Allison until 10 am. Question queue (see tab with today's date): https://tinyurl.com/HapticsAllison