

Investigating how humans perceive differences between drops of water

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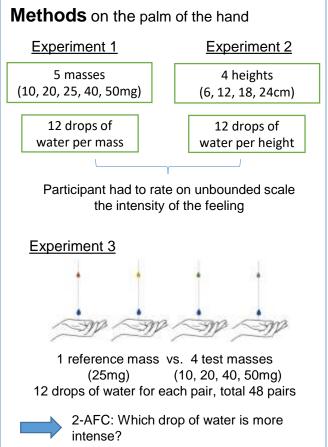
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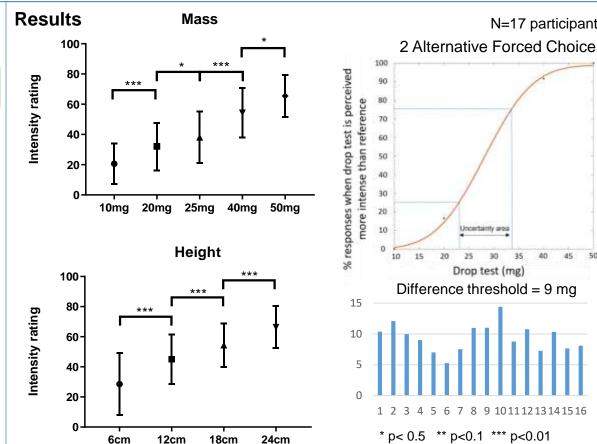




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Introduction We have receptors in our skin that allow us to sense and interact with liquids in our environment, e.g. to determine if it's raining or to adapt our grip force on a wet object so that it does not slip. As humans do not have hygroreceptors, wetness perception relies on the integration of tactile information conveyed by low-threshold mechanoreceptors and/or temperature information conveyed by thermoreceptors (Filingeri & Ackerley, 2017). We aimed to investigate how participants perceive drops of water at room temperature, by modulating the height and the mass of a drop and we hypothesized that participants would readily be able to quantify these differences.





Conclusion

- Participants needed a drop mass between 5-10 mg to perceive a difference.
- The minimum amount for perceiving a difference psychophysically is 9 mg.
- Drop intensity increased linearly with height.
- There exists very little in the literature concerning the perception of wetness and we show that humans are able to discriminate well between different intensities of sensation by changing the properties of small drops of water.
- Microneurography will be performed explore to responses mechanoreceptors in humans to drops of water.

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Reference: Filingeri D, Ackerley R (2017). The biology of skin wetness perception and its implications in manual function and for reproducing complex somatosensory signals in neuroprosthetics. J Neurophysiol, 117: 1761-75.

N=17 participants

Uncertainty area

Drop test (mg)

