

USER TESTING: Haptic Motors

Strong Click

Out of 20 instances of the strong click being used, only 65% of instances (13) were felt at all. They were most reliably felt and successfully differentiated against medium clicks and sharp ticks. They were very difficult to differentiate from sharp clicks, at a 20% success rate. *Do not recommend use; not reliably felt enough. However, could be used occasionally if necessary.*

Sharp Click

Out of 30 instances of the sharp click being used, 77 % of instances (23) were felt. They were most reliably felt and successfully differentiated against sharp ticks, but this was not at a 100% success rate (80%). The results were reliably the same regardless of the order the patterns were played in (sharp click > other pattern vs other pattern > sharp click). *Tentatively recommended for use, especially given its reliability in results.*

Soft Bump

Out of 30 instances of the soft bump being used, 83% of instances (25) were felt. They were most reliably differentiated from the medium click (80%), with poor differentiation against the sharp tick (40%). However, this poor differentiation was only present if the soft bump was played first. If it came after the sharp tick, it had a 100% differentiation rate. *Recommended for use, but may be hard to pair with a frequency.*

Medium Click

Out of 20 instances of the medium click being used, only 55% of instances (11) were felt. It had good differentiation from other patterns, but only when the other pattern was felt; otherwise, it blended in with the other patterns. *Recommend against use of the medium click in any capacity.*

Sharp Tick

Out of 30 instances of the sharp tick being used, 80% of instances (24) were felt. It had reliably good differentiation from other patterns (80% or higher), except with the soft bump. The differentiation from the soft bump was only good when the sharp tick was played first (100%); when played second, the success rate of differentiation dropped to 40%. *Recommended for use due to high levels of differentiation and strong success in noticing it at all.*

Conclusion

Overall, most patterns were at least partially distinguishable and would likely string together well in an extended series of patterns. However, the medium click was very difficult to feel and distinguish so should not be used. The sharp tick and soft bump were most successful, however

not necessarily good paired together. The sharp click was close behind and was very easy to distinguish from other patterns. Final recommendation is either using the sharp click and sharp tick, or using the sharp click and soft bump, if two patterns are to be used. If one pattern is to be used, ultimately I recommend the sharp tick as it was more distinguishable with thicker clothing than the soft bump was. If three patterns are to be used, sharp click, sharp tick, and soft bump could be used together. However, more than three patterns may not be a wise idea as they may begin to muddle together again. If a fourth is necessary, it should be the strong click – but ideally, keep to one, two, or three patterns.