## University of Pecs

## 15-PHYSIOTHERAPY TOY FOR HAND EXERCISES

Hand and finger physiotherapy exercises have been shown to relieve pain and prevent arthritic joints from getting worse. However, such exercises are challenging for people with arthritis because such movements are painful. This trumpet toy helps motivate people to do these exercises by making music and light effects in response to correct movements.



In order for such hand exercises to be effective physiotherapy, they should be practiced for at least 10 minutes a day. This is a long amount of time, especially when it is painful to do the exercises. This toy is inspired by a trumpet instrument, where the exercises are performed by pressing the keys. When the keys are pressed correctly, the toy makes a musical sound and lights up. This makes the exercises more motivating than other toys, such as squeeze balls, and therefore easier to do for longer amounts of time. The toy has the potential to be made smart as well - data on how often it is used and progress tracking could be collected digitally and made useful for research. It is also possible to attach accessories to the toy, to enable further types of exercises, or have the toy warm up (as joint warming helps for performing the exercises). The toy was designed alongside both patients and physiotherapists in a rehabilitation clinic, so not only are the movements correct, but real patients have helped shape the design. Taken together, this trumpet toy makes a painful task fun for people suffering from arthritis and other inflammatory joint diseases, so that they can actually benefit from their physiotherapy and prevent their disease from worsening.



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