

Gongji Design Process

We are three students from 2 different programs in Umeå Institute of Design in Sweden, joining our forces to create this project.



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Current Inhaler Experiences

Having in mind that this project is a design sprint, we spent our first few days narrowing our scope and doing desk research; scanning forums about inhalers, checking informative videos and analysing previous projects.

*...you have the doctor standing next to you and **motivating you** to keep breathing, at home you tend to not push as far in comparison.*

 **Lack of motivation and guidance**

*...if you don't **time your inhalation** right you may lose a lot of the medicine. Having the chamber can make things easier, but it's **annoying** most of the time.*

 **Timing, coordination and social pressures**

Preventing an asthma attack is much easier than dealing with one once it starts, which can mean having to go to the hospital.

 **Importance of preventative medicine**



* How might we encourage children aged 8-13 to use a metered-dose asthma preventer inhaler correctly?

Our desk research revealed that **up to 94% of asthma patients do not use their inhaler device correctly.*** Children often struggle to use inhalers correctly due to the complexity of the process. As a result, they may not receive the appropriate dosage of preventative medication, increasing the risk of severe asthma attacks.

Understanding the inhaler process

As individuals without firsthand experience of asthma, we made a concerted effort to understand the lived experiences of those affected. Our research process involved analyzing instructional videos and engaging in roleplay to simulate the perspective of a first-time inhaler user.



Key moments that lack feedback

According to our desk research and roleplays.



Shaking the inhaler

How long should I shake?
What if I forget?



Locking mouth

Did I lock my mouth properly?



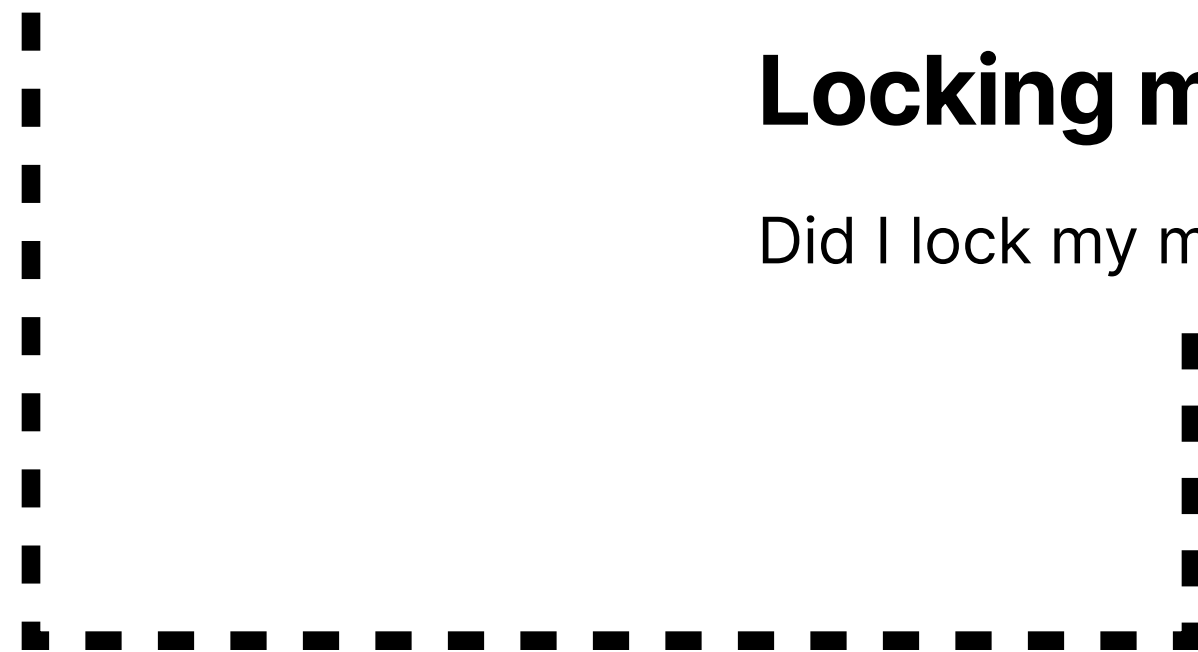
Press and breathe

It's really hard to coordinate,
I can't tell when to breathe and
when to press.

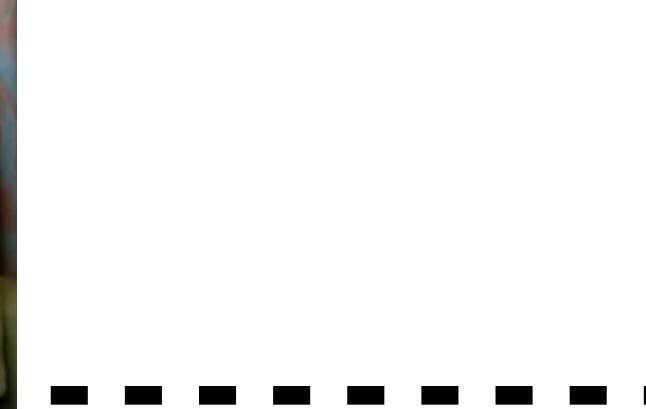


Hold breath

I can't really tell how long I
should be holding my breath

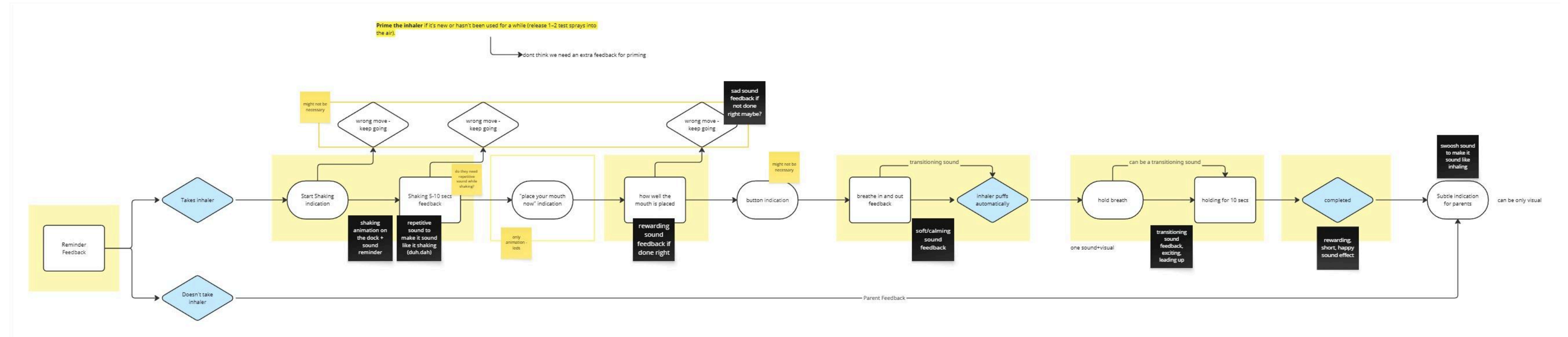


No way to tell the steps, need
to be assisted and reassured



Ideation

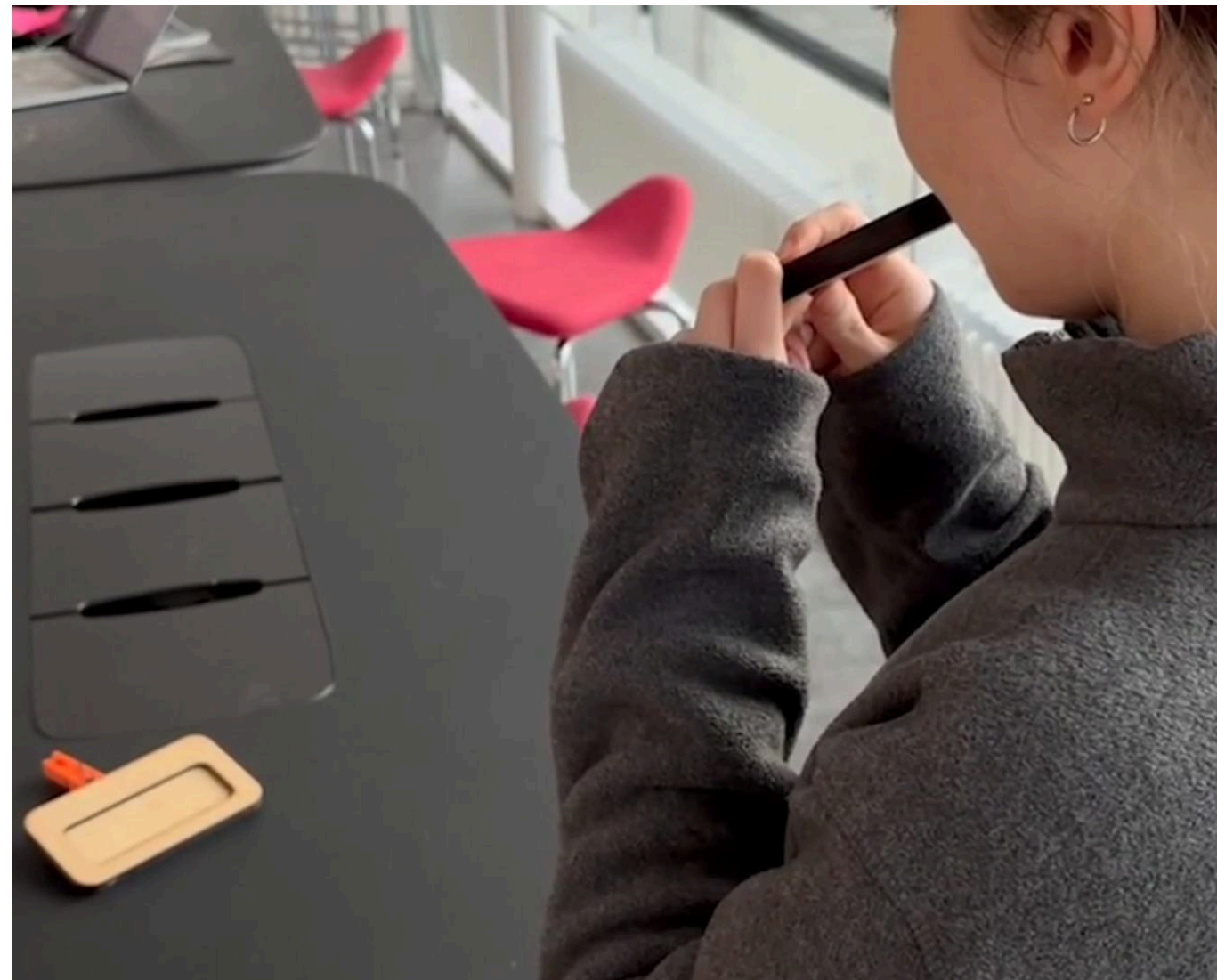
We used key moments in the user journey to inform the design of sound and visual feedback. Our primary goal was to make the inhaler more intuitive, offer subtle guidance throughout the process, and help children build confidence in its use.



User flow of our intervention proposal to determine where to include sound and/or visual feedback.

Ideation

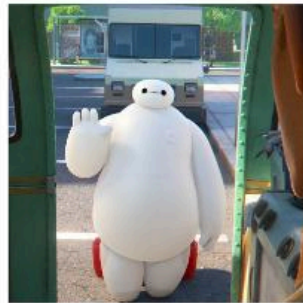
In order to explore sonically, we did a vocal sketch on top of our roleplay. We imagined an inhaler with a smart dock, which initially was an exaggerated character, creating expressive animations for children to mimic.



<https://vimeo.com/1085444885/2153a3e954?share=copy>

1

Doctor buddy /
friendly / tips
and tricks / bit
more serious
innocent



soft deep tone
with a slight
electric sound

slow smooth
fluid animation

soft
helpful
Encouraging
huggable

Could work for
children and
"older"
teenagers





2

demanding but
adorable, funny
so it's not
threatening

higher pitch
has soft moments

hyperactive
impatient
but very
rewarding


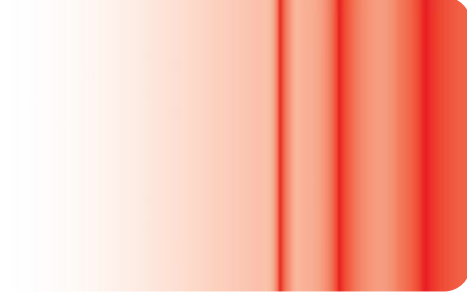
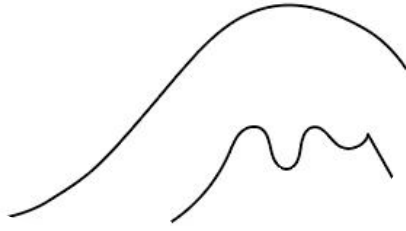

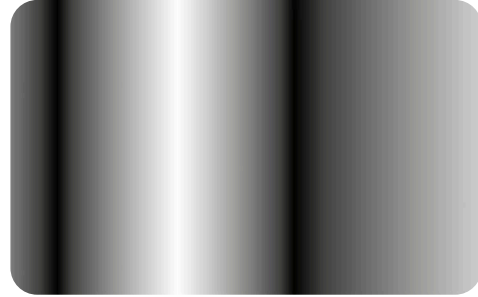
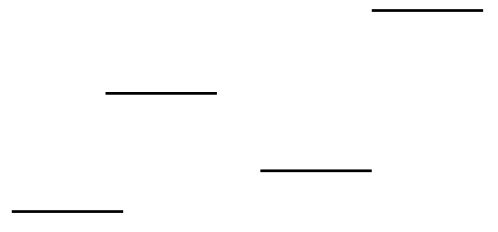


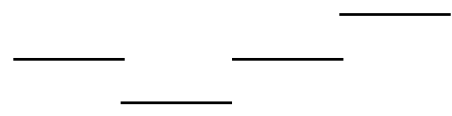


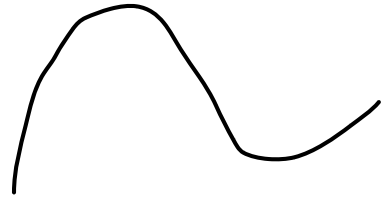


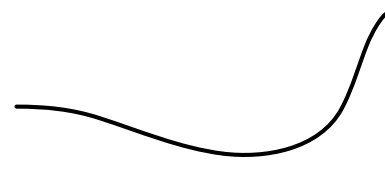
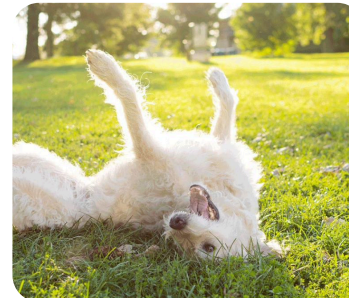

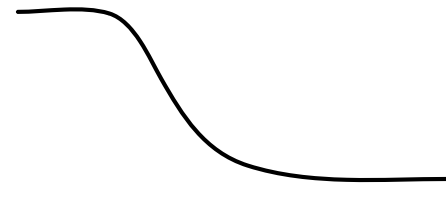



xylophone
soundscape
8bit
soundish



However, we chose to tone down the character design, opting for a more abstract approach that relies on a combination of sonic feedback and geometric animations to provide guidance. In order to determine the characteristics of the feedback we did character archotyping.

Soundboard

Before finalizing the sound feedback, we developed a soundboard to guide our design process. These sounds served as initial references, intended to inspire rather than represent the final audio outputs.

Function	Association	Colour	Time Envelope	Description
Reminder				soft building strings accompanied with wind chimes with a sense of warmth - a subtle nudge from a squishy friend
Shaking				melodic and soft xylophone playing, a nudge to signalize the success of the shaking
Mouth Placement				soft happy trilling - a cat greeting you accompanied by a subtle chime/string melody
Breathing in and out				gentle humming - a mother guiding her child, encouraging
Holding breath				positive gentle humming - continuity of breathing in motion - holding it in like a balloon, gradual
Completion				happy playful melodic tune - release of air with chimes, bubbly "you can let go you're done!"
Parent notification				swoosh of wind accompanied with chimes - happy, ensuring but more mature

Wizard of Oz

We aimed to test our initial sounds and animations to determine whether they effectively conveyed motion and process to individuals unfamiliar with the inhaler experience and children that have used inhalers before.

Through this user testing we found out that while the sounds did indicate certain elements, some animations fell short on conveying the motion. So we adjusted them accordingly.

