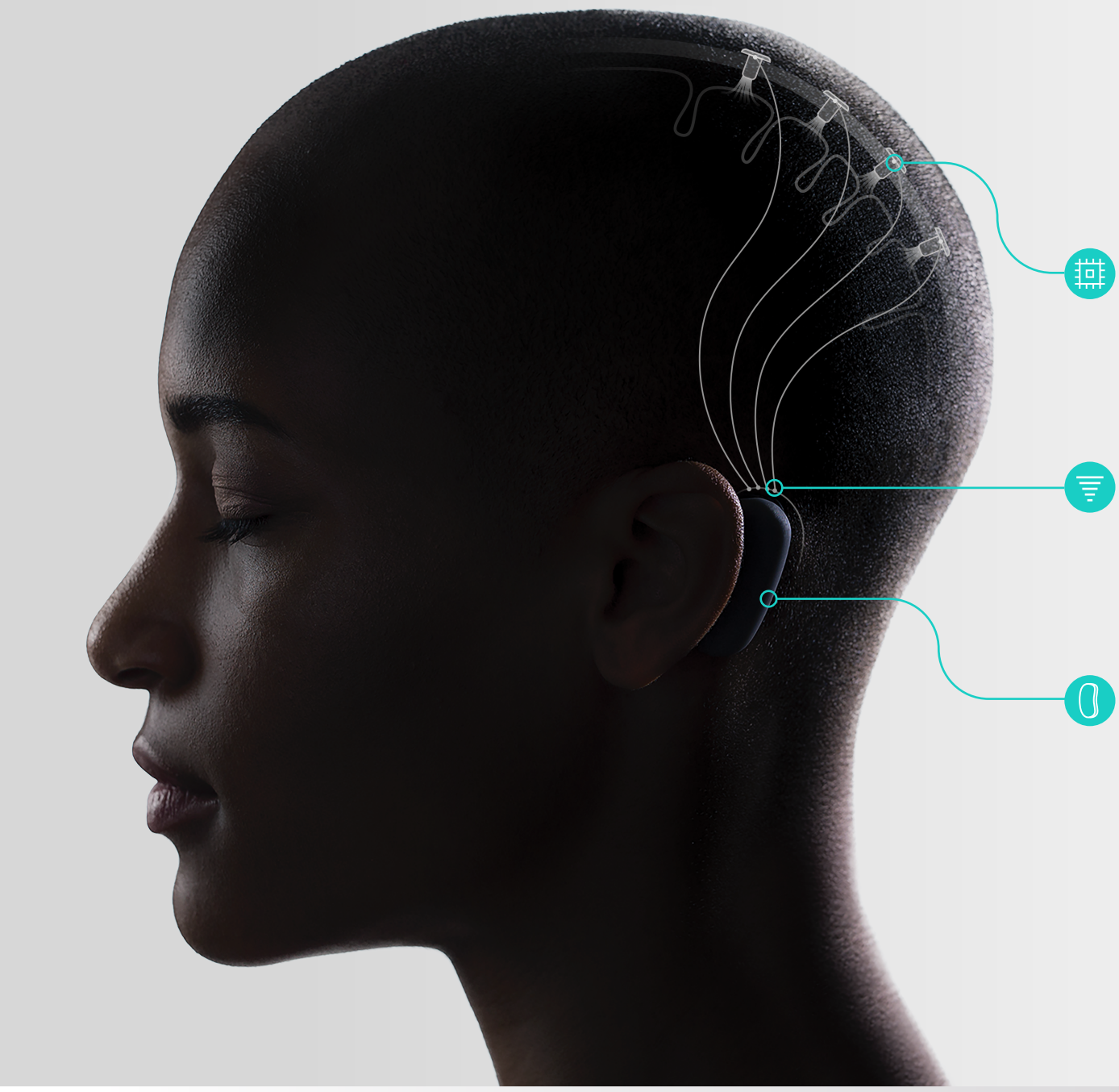
Neuralink N1 Wearable

Bringing Brain Computer Interfaces Out of the Lab and into the Real World

Elon Musk and the team at Neuralink are developing a powerful technology enabling paralysis patients to control machines with their thoughts. Up until now, existing brain computer interfaces have too bulky to wear outside of the lab, leaving patients with no viable alternative.

Our contribution to this project was to develop a wearable device that would turn this groundbreaking technology into a great product that these patients could use seamlessly in their daily lives.



How It Works

The system is made up of 3 components such as the Pill, Router and N1 Wearable.

PILL IMPLANT

Multiple pills sense and transmit data to and from neurons. The pill implants pass information to a router that is located under the scalp behind the ear.

ROUTER

The Router is a hub that goes underneath the user's scalp and transmits data and power through the skull to the N1 wearable that is worn outside the head.

N1 WEARABLE

The N1 wearable is worn behind the ear and is able to inductively transmit power and data to the router through the scalp.

As Easy to Wear as Airpods

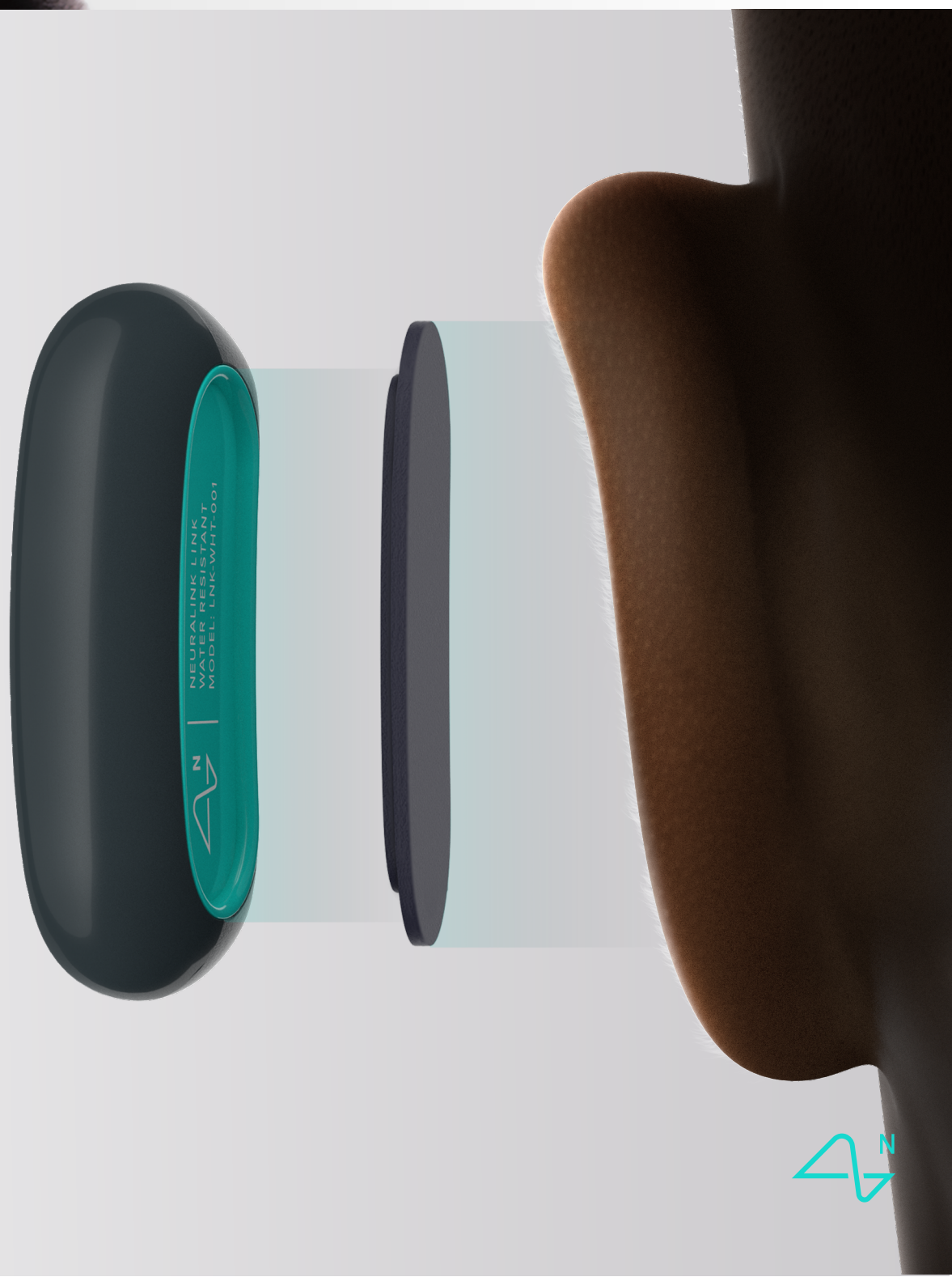
After exploring different methods to effortlessly recharge and replace the N1 wearable, we came up with a simple 2 part solution consisting of the N1 wearable and a magnetic silicone sticky pad that users stick to their skin.

Silicone Adhesive Pad

In order to make a device to wear behind the ear that could be worn with glass frames, we developed a silicone pad that sticks to the skin with adhesive and holds the N1 wearable with magnets embedded within the pad

7 Day Lifespan

The silicone pad was designed with 3M bio-compatible adhesives to be worn on the skin for 7 days. We did internal testing with these adhesives and were able to confirm the intended longevity.



Every Details Exists For a Reason

Despite it's small size, every surface of the N1 Wearable has been carefully considered to address all of the functional and aesthetic requirements necessary to make this a viable product.

MINIMAL SEAMS IMPROVE CLEANABILITY

Seamless design makes it easy to clean and ensures oils don't build up in part lines.

EASY ALIGNMENT WITH SILICONE BASE

The back part is recessed to self align with the silicone base when putting the N1 on.

INNER ARCH MATCHES MOST EAR SHAPES

The inner arch of the N1 was defined by analyzing the average shape of people's ear arch.

OUTER CURVE MIMICS EAR SHAPE

The outer surface is visually soft to match up with the shape of the ear.

CROSS SECTION WEDGES BEHIND EAR

The shape of the N1 gets narrower in the zone that goes behind the ear.

Creating the Ideal Stackup

We considered the internal components just as closely as the outer enclosure in order to create the most comfortable fitting product. Eventhough Neuralink is not launching for atleast a couple of more years, we wanted to ensure our design was feasible when it does launch.