



Frequently Asked Questions

How does artificial intelligence (AI) apply to a toothbrush?

Ara by Kolibree uses a new generation of deep learning algorithms that follow, in real-time, the position of the toothbrush in 16 zones of the mouth. These algorithms are embedded in the toothbrush handle, they don't require a smartphone to run. This gives the toothbrush the capability to capture, store and sync data whether using the app or not when brushing.

Kolibree's AI is predictive and prescriptive:

- Predictive - Ara learns previous brushing patterns to estimate, in real time, the location of the brush in 16 zones of the mouth, to indicate risk of cavities in each zone.
- Prescriptive - Ara recommends where and how you should brush better next time, helping to improve your dental hygiene.

What's the difference between AI (artificial intelligence) and IoT (Internet of Things) when it comes to a toothbrush?

IoT, Internet of Things, is the process of connecting devices to the Internet. This was Kolibree's initial toothbrush technology. Our raw brushing data, collected in the cloud, allowed Kolibree engineers to train our AI to better predict user behavior and quality of brushing. Ara has ported this artificial intelligence from the app to the toothbrush itself. Brush your teeth normally (with or without app guidance) and Ara will tell you which area of your mouth you have missed.

AI needs behavioral data from IoT in order to function properly, but not all IoT has AI.

Basically, while IoT *gathers* data, AI is able to *use* that data.

AI can be predictive (based on past historical behaviors/observations) and/or prescriptive (recommending a user to adopt a new behavior.) Ara is both.

What is the "Kolibree platform"?

The Kolibree platform is a solution provided to dentists, toothbrush manufacturers and application developers as part of a new ecosystem of oral disease prevention and preventive care. It consists of the Kolibree chip, the Kolibree cloud platform and the Kolibree application.

The Kolibree chip (Kolibree module) can be embedded in any kind of toothbrush. It runs a powerful AI software that analyzes the quality of the brushing and transmits this data to the Kolibree cloud platform via Bluetooth. Inside the Kolibree cloud platform you will find all the necessary services to run an efficient IoT infrastructure – from device management, to over-the-air upgrade, analytics for dental professionals and a set of apps allowing end-users to analyze their brushing data, play educational games, or watch motivational content to improve personal brushing behavior.

In order to provide a scalable service, the Kolibree platform/cloud platform includes an API (application program interface) and SDK (software development kit) for developers who want to create apps in alliance with Kolibree's mission, which is to help improve healthcare behaviors through patented AI technology. The Kolibree Platform has the capability to allow dentists and patients to share personalized brushing data as a way to encourage preventive oral health and minimize tooth decay and gum disease. Software developers are welcome to create toothbrush games and content that are motivational and educational in nature.

Is Ara compatible with iOS and Android?

Yes, Ara is compatible with iOS and Android as of March 2017.

Are all the games on the Kolibree platform compatible with Ara?

Go Pirate, the flagship game on the free Kolibree app, is compatible with Ara (iOS and Android). *Rabbids Smart Brush™* from Ubisoft will be compatible for iOS later in 2017. New games are expected in Q3 2017.

What is Ara's battery life? When fully charged, the charge on Ara by Kolibree should last for 10 days (based on three-minute brushing twice a day). It takes about 5 hours to gain a full charge on Kolibree's induction charger.

Is the Ara toothbrush waterproof? Ara by Kolibree is rated as IP67 and is designed to be waterproof.

The brush head seems smaller than most other electric toothbrushes. Why is this? Designed in consultation with dentists, the brush head is designed to provide easy access to all areas of the mouth that are often missed with "normal" brushing. These areas include the very back of the molars on the upper and lower teeth and the inside areas toward the back of the mouth.

What is the benefit of a sonic toothbrush? A sonic electric toothbrush uses vibration to effectively remove plaque while being gentle on the gums, which is very important for adults with sensitive or receding gum lines, and for young children, too. Ara by Kolibree averages 15,000 vibrations per minute, depending on the amount of pressure applied by the user. This is considered to be gentler than some other sonic toothbrushes.

How much does the Ara toothbrush weigh?

2.5 ounces, which makes Ara the lightest smart toothbrush on the market, and very easy for travel.

How do I know if I am truly brushing correctly?

Check the app. The *Check-up* feature will display a personalized color-coded diagram of your mouth to show how well each of 16 zones has been brushed. You can also opt-in to receive your Kolibree Weekly Report via email.

The AI in the Ara toothbrush analyzes data from a 9-axis sensor (i.e., gyroscope, accelerometer and magnetometer) to track in real-time the position of the brush in your mouth. It reports the quality of brushing to your app dashboard/Check-up, either in real-time after using the Coach feature, or when you sync your app (every week for example). To sync your Ara, you just need to open the Kolibree app and wait for the seamless synchronization to be completed over Bluetooth.

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