

Field Study News

Secure 'n Stay

A study on application with children

Summary

Wearers of hearing instruments, regardless of age, should enjoy improved hearing without the worry that arises from fear of losing their hearing instrument. This is an issue particularly during physical activity. Securely holding the hearing instruments on the ear is important for both adults and children, especially for adults who are physically active and lively children. Secure 'n Stay was developed for active Naída users. It holds the HI securely on the ear, is easy to set up and once in place, allows access to manual controls of the HI. It is recommended for all active adults and children 6 years and older.

Twelve children above the age of 6 participated in this study designed to ensure the safety and applicability of Secure 'n Stay for pediatric applications.

Secure 'n Stay holds the HI firmly on the ear while engaging in sports, game-playing or even hanging upside down from a tree.

Introduction

Keeping HIs on the ears of children engaging in sports or moving fast has always been a challenge. While there are several possibilities for holding the HI securely on the ear (EarGear; OtoClips; Hucki), the cosmetic aspect still needs to be improved since all of these options are clearly visible. Therefore, Secure 'n Stay was invented to provide a secure hold of Phonak's new HIs, Naída UP and SP (CORE platform) and to provide an almost invisible alternative. It consists of a plastic housing, which can simply be clicked on the HI and a bendable coated metal wire (flexible extension). Prior in-house testing with a former version showed that the connection between bendable coated wire and housing could be loosened and destroyed after rotation of the wire part. Therefore, the connection between housing and wire was strengthened. To examine whether the newer version of the Secure 'n Stay (Figure 1) can be fitted safely to children above the age of 6 years, the following study has been performed at the University Clinic of Mainz.

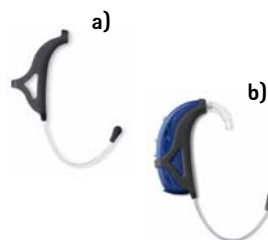


Figure 1: Secure 'n Stay without (a) and with HI (b).

Goal of the Trial

Two issues have been examined in this study: First the fit of the hearing aid on the ear during the performance of different movements with Secure 'n Stay compared to without Secure 'n Stay.

Secondly, handling and safety have been examined: This was examined to see if there is any possibility for children to destroy Secure 'n Stay in a way that the broken parts could harm them.

Set-up of the Study

The study was conducted in the Audiology Department of the University Clinic in Mainz, Germany.

In the first part of the study children were instructed to shake their heads quickly and to bend over to touch their toes. These movements were performed with and without ear molds.

In the second part, the young subjects were instructed to destroy the Secure 'n Stay in different ways. The children were instructed to perform the following actions:

- To pull several times with their stronger hand at the plastic ball at the end of the flexible extension, while holding the housing in the other hand and vice versa.
- To pull several times with their stronger hand at the flexible extension itself, while holding the housing in the other hand and vice versa.

- To keep the housing in one hand and rotate the flexible extension with the other hand.
- If all these attempts did not result in the destruction of the Secure 'n Stay, children were asked to find an individual way to destroy it.

Results

Subjects were first asked to test whether their hearing aids remain more safely on the ear during movements than without. The answers to subjective questionnaires revealed that 11 children stated that the HIs sit much more secure with Secure 'n Stay, while one child rated it as more secure (Figure 2).

Security of fit with Secure 'n Stay

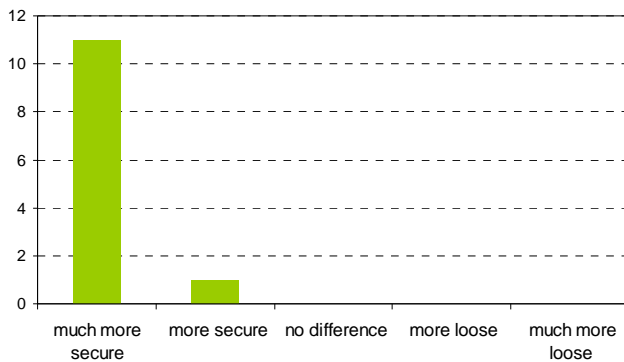


Figure 2: HIs sit more secure with Secure 'n Stay than before

The durability of Secure 'n Stay has been tested by encouraging the children to attempt to destroy the devices (Figure 3). If the device was destroyed, the corresponding child did not enter the next evaluation.

Instructed methods were:

1. pull flexible extension with stronger hand
2. pull flexible extension with other hand
3. pull ball with stronger hand
4. pull ball with other hand
5. rotate flexible extension
6. method of own invention

While Secure 'n Stay generally remained intact during the destruction attempts, one child however managed to destroy the Secure 'n Stay by pulling with his stronger hand at the flexible extension. Subjects were then instructed to move the flexible extension in circles as this was known to be a way to destroy the Secure 'n Stay. 2 children did not manage to pull the flexible extension out of the housing, 9 children managed to tear it apart but only after trying to destroy it over a prolonged period of time (Figure 3).

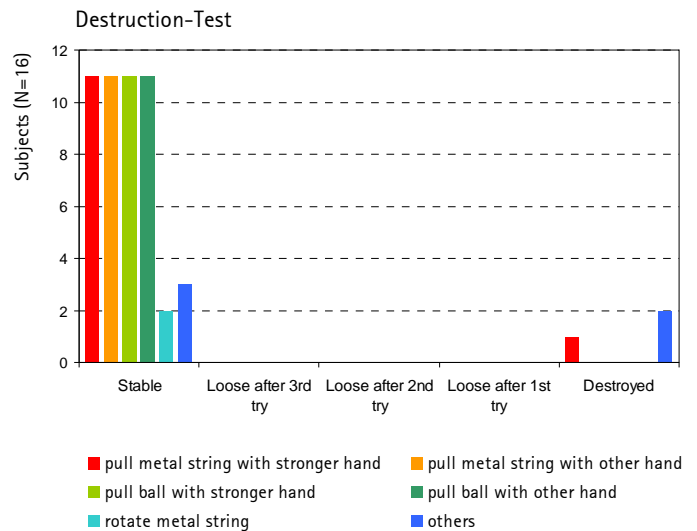


Figure 3: Overview of the Destruction Test

The remaining intact devices were eventually destroyed by the children's own methods of destruction (continuing with circular movements or biting off a part).

Conclusion

Secure 'n Stay provides a much more secure fit on the ear than the hearing aid alone. The use of Secure 'n Stay allows a perfect hold of HIs on the ear when used with ear molds and even when used without ear molds.

It has been shown that neither pulling the flexible extension with the stronger or the other hand, nor pulling the ball with the stronger or the other hand leads easily to the destruction of Secure 'n Stay. The only way to destroy the device was with continuous circular movements over a prolonged period. The destroyed device cannot be used anymore but under no conditions is it able to cause harm.

Secure 'n Stay provides a reliable fit on the ear and is very difficult to destroy by children.

Reference sources

- EarGear, Lake Country, British Columbia, CA
- OtoClips, Westone Laboratories, Colorado Springs, CO
- Hucki Hörgerätehalterung, Augsburg, Germany

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