

# Long-term benefits of ReSound Tinnitus Sound Generator (TSG): An 18 month review

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Tinnitus is a concern for many people, and affects approximately 10-15% of the overall population, with approximately 20% of that population suffering from clinically treatable tinnitus (A. Davis & Refaie, 2000; Jastreboff & Hazell, 1998).

There are different approaches of treating tinnitus, such as medical management (in cases where the tinnitus can be addressed medically), educational counseling and sound therapy, each having a unique approach to tinnitus management. Up until now, little research has been published in regards to the effectiveness of hearing instruments, tinnitus sound generators (TSGs) or combination units for tinnitus management.

In addition, there is also a lack of research monitoring the progress of tinnitus sufferers over an extended period of time. Most key opinion leaders in the tinnitus field agree that benefits seen in the first three months of a management plan, although optimistic, can largely be due to placebo effects, and therefore it is important to monitor the patient's status over a longer period of time. This is to ensure that the results are due to the management plan, and not to other contributing factors that could have more transient effects on tinnitus perception, but may not be long-lasting.

If after three months, progress has reached a plateau, or in some cases digressed, this could imply that the management plan at hand may not be effective for the long term. In this case, another approach, or modifications to the existing approach should be considered.

In this paper three case studies will be reviewed. Results were monitored over an 18 month time period. All three subjects have been using ReSound Tinnitus Sound Generator (TSG) combination devices, in addition to a combined management approach of sound therapy and counseling.

## Sound Therapy

Sound therapy's main intention is to divert one's attention away from the tinnitus. By introducing sound into one's environment, we are able to minimize the contrast between the tinnitus and the background environment (Figure 1). By enriching the environment with sound, we increase the loudness of the background environment, therefore making the tinnitus less

prominent and noticeable. Sound stimulation may also reverse or modify the abnormal cortical reorganization thought to be responsible for tinnitus (Searchfield et. al, 2010).

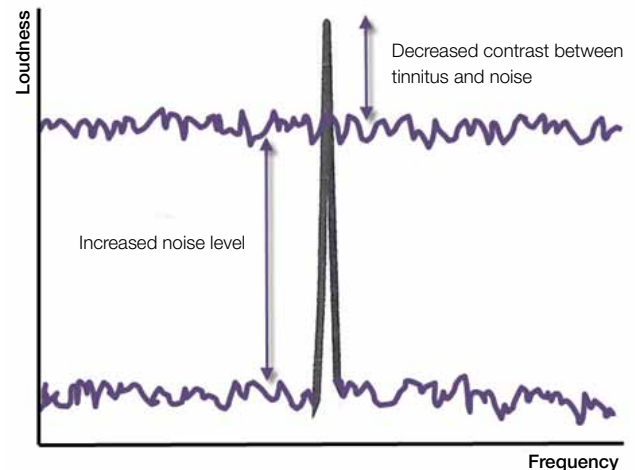


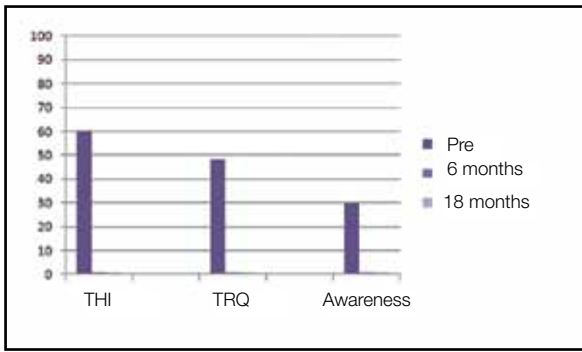
Figure 1: Increasing the background noise level reduces the contrast between the tinnitus and the background sound level.

## Case Studies

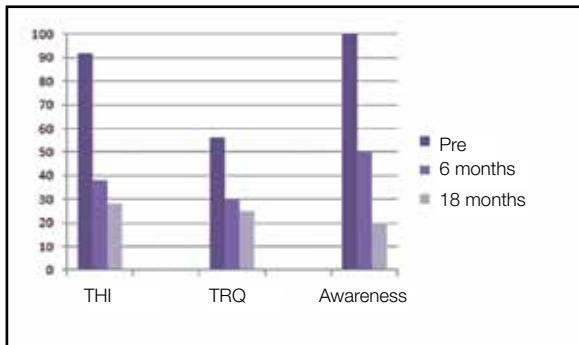
At the beginning of the trial, three subjects were fit with ReSound TSG combination instruments. Over the first 6 months, each subject was seen five times. Counseling and instruments adjustments were provided as needed. Over the last 12 months follow-up appointments were on an as needed basis, which varied from person to person. In total, their status was monitored over 18 months using well-accepted questionnaires, such as the Tinnitus Handicap Inventory (THI) and Tinnitus Reaction Questionnaire (TRQ). The questionnaires scores were recorded at the initial fitting of the instruments (Pre), at a 6 month interval and again at 18 months. In addition, the subjects were asked to score their awareness of tinnitus over the same time intervals. Each subject was asked the question 'How aware of your tinnitus are you?' They were then asked to rate their awareness using a scale of 0 – 100, where 0 = Never / 50 = Somewhat / 100 = All the time.

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**Figure 2:** THI, TRQ and awareness scores of Subject 1 over the 18 month time span.



**Figure 3:** THI, TRQ and awareness scores of Subject 2 over the 18 month time span.



**Figure 4:** THI, TRQ and awareness scores of Subject 3 over the 18 month time span.

**Conclusion:**

When combined with counseling, ReSound TSG appears to be an effective long-term sound therapy solution for tinnitus sufferers. As evidenced by the THI and TRQ scores of the subjects in this study, significant improvement in tinnitus perception are maintained up to 18 months.

**References**

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Searchfield GD, Cameron H, Irving S, Kobayashi K. "Sound therapies and instrumentation for tinnitus management." *New Zealand Medical Journal* 19 March 2010. Vol 123 No 1311; ISSN 1175 8716 Page 112-125. URL: <http://www.nzma.org.nz/journal/123-1311/4040/>