

# Guide to conducting tinnitus retraining therapy initial and follow-up interviews

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**Abstract**—Tinnitus Retraining Therapy (TRT) is a structured method of tinnitus treatment that has been performed since 1990. The TRT Initial Interview form was developed to guide clinicians in obtaining essential information from patients that would specify treatment needs. The TRT Follow-up Interview form is similar to the initial interview form and is designed to evaluate outcomes of treatment. The clinician administers these forms verbally. The forms have been used in a highly abbreviated format with the potential for inconsistent interview administration between examiners. This project was to expand the forms to provide specific wording for each question. The expanded forms are presented in this article, and the intent of each question is explained. Standardized administration of these interview forms will facilitate greater uniformity in the initial evaluation and outcomes analyses of patients treated with TRT.

**Key words:** audiology, diagnosis, hyperacusis, questionnaires, therapeutics, tinnitus.

## INTRODUCTION

Tinnitus Retraining Therapy (TRT) is a well-defined method for treatment of individuals who suffer from tinnitus [1–4]. TRT is based on the “neurophysiological model” that was originally described by Jastreboff and

Hazell [2]. The model identifies different areas of the brain that can be involved in tinnitus and theorizes as to how those areas interact to create a clinical condition of tinnitus [5,6]. The treatment approach is aimed to induce and facilitate habituation by the patient to his or her tinnitus.

Habituation is a concept that has been a part of the learning and conditioning literature for many years and refers to a decrease in responsiveness because of repeated stimulation with an inconsequential stimulus [7]. It is estimated that about 80 percent of individuals who experience constant tinnitus naturally habituate to their tinnitus to such a degree that their tinnitus does not constitute a problem requiring clinical intervention [1,8]. Such natural habituation apparently does not occur for about 20 percent of these individuals.

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**Abbreviations:** TRT = Tinnitus Retraining Therapy, VAMC = Veterans Affairs Medical Center.

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Treatment with TRT has two components, and each component addresses a different aspect of habituation. The individual with problematic tinnitus first must habituate to any emotional responses to the tinnitus. Second, he or she must habituate to the perception of tinnitus. Habituation to tinnitus perception can only occur if there has been habituation to the associated emotional responses. TRT employs "sound therapy," which is the long-term use of constant low-level sound, to promote habituation to tinnitus perception [4]. Sound therapy is thought to be effective only when the emotional responses have been neutralized. "Directive counseling" is a structured educational program that is designed to remove fears and anxieties associated with tinnitus. The directive counseling protocol is considered the most essential aspect of TRT [9].

Prospective controlled studies have not been reported to document outcomes of treatment with TRT [10,11]. Outcomes data have been reported from a number of clinics, however, indicating that treatment with TRT significantly benefited 70 to 85 percent of their patients (reviewed by Henry et al. [12]).

### **Growth of TRT**

TRT was first offered to patients at the University of Maryland Tinnitus and Hyperacusis Center in 1990. The Center has since treated over 1,800 patients with TRT [13]. In 1999, Jastreboff created another center to treat tinnitus and hyperacusis patients at the Emory University School of Medicine in Atlanta, Georgia. In the past 7 years, he has conducted 13 three-day instructional courses in the United States that have been offered to physicians and audiologists to learn the TRT protocol. Twenty-one such courses have been offered abroad. Courses are offered also in London by Dr. Jonathan Hazell. Proper training to perform TRT requires attendance at one of these courses, which have been completed by over 300 health professionals in the United States and over 600 in other countries.

### **Use of TRT Interview Forms**

Clinical implementation of TRT requires patients to receive a thorough audiological and medical evaluation before entering treatment [6]. In addition, patients must demonstrate that their tinnitus condition is sufficiently problematic to warrant implementation of long-term treatment with TRT. A patient's consent to receive treatment represents a 1- to 2-year commitment to attend

repeated counseling sessions and to use sound enrichment (in the majority of cases involving use of wearable ear-level devices, i.e., hearing aids and/or sound generators). It is thus critical to accurately assess the patient's condition, need for treatment, and motivation to comply with all treatment requirements.

The examiner recommends treatment for TRT based primarily upon patients' audiological test results and their verbal responses from the TRT initial interview [14]. The TRT initial interview is a structured set of questions that are designed specifically to determine proper placement of patients into TRT treatment categories (described in TRT Patient Categories section). In addition to questions about tinnitus, the TRT interview includes questions about decreased sound tolerance (hyperacusis) and about subjective hearing difficulties [6,15]. Hyperacusis is a condition that is observed to occur to some degree for approximately 30 to 40 percent of patients who are evaluated for TRT [4,16,17]. For some patients, hyperacusis is the primary problem and must be treated accordingly. Misophonia reflects dislike of sound [6,18] and is present in the majority of patients [17]. Subjective hearing difficulty is a problem that patients often assume to be the result of their tinnitus [6,19]. In most of these cases, the hearing assessment reveals reduced hearing sensitivity of the sensorineural type. Thus, most likely, the tinnitus is not causing their hearing difficulties but rather the decline in sensory cell population in the cochlea is causing their hearing loss [6,20].

The TRT initial interview is designed to delineate a patient's relative problems with tinnitus, hearing loss, and loudness intolerance. Using the TRT Initial Interview form, each of these three potential problems is discussed individually, enabling the clinician to differentially assess the subjective impact of each. In addition, use of the interview educates the patient to understand these problems and how they differ. The process helps the examiner and patient to mutually determine the optimal course of treatment.

### **PURPOSE**

The original version of the TRT Initial and Follow-up Interview forms appears in a condensed format that is intended to simplify administration of the interviews as well as record keeping [14]. Each "question" is written telegraphically to fit each form on a single page. The

abbreviated nature of the questionnaire items requires the clinician to fully understand the intent of each item in order to phrase the questions appropriately and is a reminder to assure that all questions are asked. To help conduct the interview in a standard manner, the main questions are presented verbatim at the bottom of the forms. The inherent variability in administering the TRT interviews can be reduced further by scripting each question. Furthermore, for outcomes research, standardization of wording is vital to ensure consistent administration of the interviews within and across patients and within and across examiners.

Because TRT is often used for treating tinnitus, practitioners must have access to standardized TRT assessment tools. For that reason, the TRT initial and follow-up interviews have been revised and expanded. This paper provides the expanded forms of the initial and follow-up interviews to clinicians who are practicing, or who intend to practice, TRT with their tinnitus patients. Further, to ensure that the TRT practitioner fully understands the intent of each question, detailed explanations are provided. Further details regarding administration of the Initial Interview form have been provided elsewhere [6]. The TRT Follow-up Interview form is a shortened version of the Initial Interview form because some items in the initial interview would not be relevant to evaluate treatment outcomes at follow-up visits. The Follow-up Interview form also contains specific instructions for obtaining outcomes information. With these forms and the instructions provided herein, TRT clinicians have the tools necessary to administer the TRT interviews in a standardized fashion.

## TRT PATIENT CATEGORIES

At the end of the TRT Initial Interview form is a space to indicate “patient category,” which includes categories 0, 1, 2, 3, or 4. These categories have been fully described elsewhere [4–6,21] and thus are only briefly described here (see the **Table**). Category 0 identifies patients whose tinnitus condition requires only basic counseling and sound therapy without the need for wearable sound generators or hearing aids. Typically, these patients achieve enrichment of their sound background using tabletop sound generators and other sound-generating devices [22]. These patients require fewer follow-up visits than do patients in the other TRT categories.

**Table.**

Criteria for determining TRT patient categorization.

Patient Category	Criteria
0	Tinnitus a minimal problem
1	Tinnitus a significant problem Hearing loss not a significant subjective problem
2	Hearing loss a significant subjective problem Tinnitus a significant problem
3	Hyperacusis a significant problem Hearing difficulties irrelevant Tinnitus irrelevant
4-Tinnitus	Prolonged tinnitus exacerbation caused by sound Hearing difficulties irrelevant
4-Hyperacusis	Prolonged exacerbation of hyperacusis caused by sound Hearing difficulties irrelevant Tinnitus irrelevant

Category 1 patients require extended treatment for their tinnitus condition but do not require the use of hearing aids. They are fitted with wearable ear-level sound generators and counseled repeatedly, usually over a period of 1 to 2 years. Category 2 patients also require extended treatment for their tinnitus condition, but in addition, they report significant hearing difficulties. They receive the same treatment as for Category 1 patients except that they are fitted with either hearing aids or ear-level combination devices that incorporate both hearing aids and sound generators. Category 3 patients have the primary problem of hyperacusis and are treated for this condition with a specific TRT protocol that involves use of wearable sound generators or combination instruments. Category 4 patients are relatively uncommon and suffer from a condition in which their tinnitus or their hyperacusis is significantly worsened because of exposure to certain types of sounds. Category 4 patients are the most difficult to treat successfully [21,23].

Proper patient categorization requires the clinician to clearly understand the patient’s subjective difficulties with each of the conditions of tinnitus, reduced sound tolerance, and hearing loss. Completion of the TRT initial interview will provide this information. The treatment approach will vary according to category; thus, accurate placement of patients into these categories is critical to provide proper treatment.

## ADMINISTERING TRT INITIAL INTERVIEW

### Instructions

At the beginning of the TRT Initial Interview form (Figure 1) are scripted instructions for the clinician to read to the patient. These instructions emphasize to the patient the importance of understanding the functional differences between “tinnitus,” “sound tolerance,” and “hearing loss.” It is particularly important to address the common misconception that tinnitus is a problem because it interferes with the ability to hear clearly [20]. The questionnaire form is divided into four parts: (1) evaluation of tinnitus, (2) evaluation of decreased sound tolerance (if present), (3) evaluation of subjective hearing difficulties, and (4) general ranking of the reported complaints [14].

### Questions 1 to 4

These questions obtain descriptive information concerning the tinnitus percept. Responses to these questions do not affect the patient’s TRT categorization. The tinnitus description defines the symptom for both patient and clinician, providing a common reference for the remainder of the tinnitus-related questions. This baseline description might also be useful for the clinician to compare during and following treatment to determine if the patient’s tinnitus characteristics have changed as a result of treatment. A study by Sheldrake et al. reported that treatment with TRT either reduced or eliminated a patient’s tinnitus perception in approximately 20 percent of a clinical population [24]. This study was an analysis of clinical data from 149 patients, of which 28 of the patients reported a total absence of their tinnitus even when attempting to focus their attention on it. The average time for the elimination of tinnitus percept was about 10 days.

### Question 5

This question seeks to determine the duration of the patient’s chronic tinnitus. Understanding the patient’s natural tinnitus history is considered important for counseling [8]. Further, this information can be useful in determining the tinnitus etiology. U.S. military veterans who are evaluated for tinnitus are distinctive because they commonly report noise exposure as the cause of their tinnitus [25]. From a group of 784 nonveteran tinnitus patients, however, 47 percent was reported as not being able to identify any precipitating event that could be associated with their tinnitus onset [26]. This sub-

group would be classified as having tinnitus of unknown etiology. If generalizable, these data would indicate that approximately half of the nonveteran tinnitus patient population do not know the cause of their tinnitus, and this may be a major reason why they seek professional help. This finding leads to the question, Does tinnitus of unknown onset result in greater tinnitus distress than when the cause is clearly identified?

Tinnitus of recent onset (up to about 6 months duration) may be more labile than longer-duration tinnitus and thus may resolve spontaneously [27]. The potential for spontaneous improvement is important to consider in the assessment of patients for treatment. With an increase in tinnitus duration, the likelihood of tinnitus being a permanent condition also increases. There are two schools of thought on this issue. The first is that the patient who has recent-onset tinnitus should be started on full treatment as soon as possible. The reasoning is that the tinnitus condition can become more severe as the patient enters a “vicious cycle” of thinking about tinnitus and reacting to it [1]. The sooner treatment is started, the sooner this vicious cycle can be broken and the patient’s normal life can be restored. The second school of thought is that patients should be informed of the potentially labile nature of tinnitus during its first few months. Whether or not the tinnitus resolves completely, the patient’s fears may be sufficiently allayed by the hopeful information. Neither of these schools of thought is necessarily right in every case. Each patient should be treated individually, and treatment decisions should be made solely according to what will provide the greatest benefit to the patient. The common approach with TRT is that a patient with recent-onset tinnitus mainly needs a full evaluation and counseling. These patients are thus initially categorized as Category 0. Follow-up is essential, however, to determine if further treatment is necessary.

### Question 6

From a population of over 1,800 tinnitus patients, 43 percent were reported to have described their tinnitus as consisting of multiple sounds [28]. For the remaining 57 percent, only one distinct sound could be perceived. Based on these data, tinnitus is likely to consist of multiple sounds for about half of all patients attending tinnitus clinics. For the TRT evaluation, it is important for patients to identify which of the tinnitus sounds is most bothersome. Constraining the psychoacoustic evaluation to the most bothersome tinnitus sound can save a

### TRT INITIAL INTERVIEW

**Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Before I ask these questions, I need to explain that we are evaluating three different things: (1) tinnitus, (2) sound tolerance, and (3) hearing. Each question is specific to *tinnitus*, *sound tolerance*, or *hearing*. **Tinnitus** refers to any kind of sound in your head—ringing, hissing and so on. **Sound tolerance** refers to how you react to different sounds in your environment. **Hearing** refers to your ability to detect sounds in your environment or to your ability to understand the speech of others. Before we go on, is it clear how these differ?

The questions about your tinnitus generally refer to the *last month*. Answer these questions thinking about your tinnitus *over the last month*. I also need to tell you that some of these questions may seem repetitive or redundant to you. However, I need all the answers to come directly from you, even if I may already know the answer. This is because we must be consistent with each patient to minimize any possibility of bias. Also, please know that there are *no wrong answers*.

#### TINNITUS

The first series of questions are specific to your *tinnitus*. Please think only about your *tinnitus* when you answer these questions.

1. Where is the location of your tinnitus?

- Head                       Right ear                       Left ear                       Both ears

2. Is your tinnitus louder on one side of your head than the other?

- Right > Left                       Left > Right                       Both ears

3. Is your tinnitus a constant sound or an intermittent sound?  Constant  Intermittent

4. Does your tinnitus fluctuate in volume? (i.e., does the volume change *on its own*?)  No  Yes

(IF YES) How often does it fluctuate? \_\_\_\_\_ times per \_\_\_\_\_

(Interviewer: If female respondent, ask if fluctuation in tinnitus volume is related to menstrual cycle.)

5. Please describe the onset of your tinnitus:  Gradual  Sudden

When did it start? \_\_\_\_\_

6. What does your *most bothersome* tinnitus sound like? \_\_\_\_\_

7. Do you have days when your tinnitus is more bothersome than on other days?  No  Yes

(IF YES) How often do you have these “bad days?” \_\_\_\_\_ days per week/month

8. Does any kind of sound have an impact on your tinnitus? That is, does sound make your tinnitus louder, softer, or is there no effect?

- No effect                       Softer                       Louder

(IF “LOUDER” OR “SOFTER”) What kind of sound has an impact on your tinnitus? \_\_\_\_\_

How long does this last? \_\_\_\_\_

**Figure 1.**

TRT Initial Interview form of scripted instructions for clinician to read to patient.

Is it still louder until *at least* the next morning after you've slept? No Yes (Circle one.) **(IF EFFECT LASTS AT LEAST UNTIL NEXT MORNING)** Please give an example of the kind of sound that would cause this to happen.

9. Do you use ear protection (earplugs or earmuffs)?  No  Yes

**(IF YES)** When do you use ear protection? \_\_\_\_\_

**(Interviewer:** Determine if patient uses ear protection specifically because of tinnitus—this would usually be to prevent the tinnitus from getting louder, which should not be suggested to the patient because of “negative counseling.”)

**(IF EAR PROTECTION IS USED FOR TINNITUS)** What percent of the time do you use earplugs or muffs *for your tinnitus*? \_\_\_\_\_%

Do you use your earplugs or muffs *for your tinnitus* when it's fairly quiet?  No  Yes

**(Interviewer:** Does patient *overprotect* ears because of tinnitus?  No  Yes

10. Are you currently receiving any other treatment specifically for your tinnitus?  No  Yes

**(IF YES)** What? \_\_\_\_\_

**(Interviewer:** This can be professional or self-administered “alternative” therapies, e.g., herbs, vitamins, tapes.)

11. What is the *major reason* your tinnitus is a problem? \_\_\_\_\_

12. I'm going to describe certain activities that may be a part of your life. Please tell me if the tinnitus prevents you from conducting these activities or if your tinnitus negatively affects these activities in any way.

	Prevented	Affected	No Effect
Concentration?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sleep?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quiet resting activities (reading, relaxing, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Going to restaurants?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participating in or observing sports events?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anything else? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

People can be *aware* of their tinnitus some of the time and not aware of it at other times.

13. What percent of your *total awake time*, over the last month, have you been *aware* of your tinnitus? Please give an average percentage over the last month. \_\_\_\_\_%

14. What percent of your *total awake time*, over the last month, were you *annoyed, distressed, or irritated* by your tinnitus? Please give an average percentage over the last month. \_\_\_\_\_%

**Figure 1. (Continued)**

TRT Initial Interview form of scripted instructions for clinician to read to patient.

**(Interviewer:** Double-check that patient responded appropriately to questions 13 and 14, i.e., to *total awake time for each condition of awareness and annoyance.*)

I'm now going to ask you to rank your tinnitus, on a scale of 0 to 10, with regard to severity, annoyance, and effect on your life. Please do not include hearing difficulties when you answer these questions.

15. How *strong*, or *loud*, was your tinnitus, on average, over the last month? "0" would be "no tinnitus"; "10" would be "as loud as you can imagine."

0      1      2      3      4      5      6      7      8      9      10

16. How much has tinnitus *annoyed you*, on average, over the last month? "0" would be "not annoying at all"; "10" would be "as annoying as you can imagine."

0      1      2      3      4      5      6      7      8      9      10

17. How much did tinnitus *impact your life*, on average, over the last month? "0" would be "not at all"; "10" would be "as much as you can imagine."

0      1      2      3      4      5      6      7      8      9      10

18. Do you have any other comments about your tinnitus? \_\_\_\_\_

### SOUND TOLERANCE

The next series of questions are only about your *ability to tolerate sound*. Please think only about your *sound tolerance* when you answer these questions.

19. Do you have a *decreased tolerance* to sound? That is, are sounds bothersome or unpleasant to you when they *seem normal to other people* (family and friends) around you? No or Yes **(IF NO, GO TO QUESTION 31.)**

**(Examples:** TV, children screaming, dishes clattering, dishwasher in operation, etc.)

20. **(IF YES)** Do sounds cause you pain or physical discomfort?  No  Yes

21. Do you have days when your sound tolerance is more of a problem than on other days?  No  Yes

**(IF YES)** How often do you have these "bad days"? \_\_\_\_\_ days per \_\_\_\_\_

22. Does any kind of sound have an impact on your ability to tolerate sound? That is, does exposure to sound make your sound tolerance better, worse, or is there no effect?

No effect                       Better                       Worse

**(IF "WORSE" OR "BETTER")** What kind of a sound has any kind of impact on your sound tolerance?

\_\_\_\_\_

How long does this last?

\_\_\_\_\_

Does the effect last *at least* until the next morning after you've slept?  No  Yes

**(IF EFFECT LASTS AT LEAST UNTIL NEXT MORNING)** Please give an example of the kind of sound that would cause this to happen. \_\_\_\_\_

**Figure 1. (Continued)**

TRT Initial Interview form of scripted instructions for clinician to read to patient.

**23. (Interviewer:** Refer to question 9. If patient does not use hearing protection, go to question 24. If patient does use hearing protection, determine if such usage is specifically because of sound tolerance.)

Do you use earplugs or earmuffs specifically *because of sound tolerance*?  No  Yes

**(IF YES)** What percent of the time do you use ear protection *because of sound tolerance*? \_\_\_\_\_%

**(IF YES)** Do you use your earplugs when it's fairly quiet *because of sound tolerance*?  No  Yes

**(Interviewer:** Does patient *overprotect* ears *because of sound tolerance*?  No  Yes)

**24.** Are you currently receiving any other treatment specifically for your *sound tolerance*?  No  Yes

**(IF YES)** What treatment? \_\_\_\_\_

**25.** What is the major reason your *sound tolerance* is a problem? \_\_\_\_\_

**26.** I'm going to describe certain activities that may be a part of your life. Please tell me if the sound tolerance prevents you from conducting these activities, or if your sound tolerance negatively affects these activities in any way.

	Prevented	Affected	No Effect
Concerts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shopping?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Movies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Going to restaurants?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Driving?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participating in or observing sports events?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attending church?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Housekeeping activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Childcare?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anything else? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I'm now going to ask you to rank your *sound tolerance*, on a scale of 0 to 10, with regard to severity, annoyance, and effect on your life.

**27.** How *severe* was your sound tolerance, on average, over the last month? "0" would mean "you can tolerate all sounds"; "10" would mean "you cannot tolerate any sounds."

0    1    2    3    4    5    6    7    8    9    10

**28.** How much has your problem with sound tolerance *annoyed you*, on average, over the last month? "0" would be "not annoying at all"; "10" would be "as annoying as you can imagine."

0    1    2    3    4    5    6    7    8    9    10

**Figure 1. (Continued)**

TRT Initial Interview form of scripted instructions for clinician to read to patient.



29. How much did sound tolerance affect your life, on average, over the last month? “0” would be “not at all”; “10” would be “as much as you can imagine.”

0      1      2      3      4      5      6      7      8      9      10

30. Do you have any other comments about your *sound tolerance*? \_\_\_\_\_

**HEARING**

I now have just a few questions about your hearing ability.

32. Have you ever worn hearing aids?  No  Yes

33. Have you ever had hearing aids recommended to you?  No  Yes  
(IF YES) From who: A professional? Family? Friend? \_\_\_\_\_

**RANKING PROBLEMS**

On a scale of 0 to 10, I would like you to rank the importance of tinnitus, sound tolerance, and hearing, with regard to how much they are a problem for you *on average over the last month*. “0” would be “no problem at all”; “10” would be “as much as you can imagine.”

34. How much of a problem is *tinnitus*? “0” would be “no problem at all”; “10” would be “as much as you can imagine.”

0      1      2      3      4      5      6      7      8      9      10

35. How much of a problem is *sound tolerance*? “0” would be “no problem at all”; “10” would be “as much as you can imagine.”

0      1      2      3      4      5      6      7      8      9      10

36. How much of a problem is *hearing*? “0” would be “no problem at all”; “10” would be “as much as you can imagine.”

0      1      2      3      4      5      6      7      8      9      10

**Interviewer:**

1. Indicate patient TRT *category*: \_\_\_\_\_

2. Recommendation: \_\_\_\_\_

3. Patient decision: \_\_\_\_\_

4. Next visit: \_\_\_\_\_

**Figure 1. (Continued)**

TRT Initial Interview form of scripted instructions for clinician to read to patient.

substantial amount of time and, therefore, is subsequently used as a reference during the tinnitus matching procedures. When treatment is provided with TRT, the psychoacoustic characterization of tinnitus is irrelevant and is mentioned only briefly during counseling. Thus,

precise delineation of all components of tinnitus is not needed.

For many patients, their “most bothersome” tinnitus sound will further be referenced when adjusting output from the ear-level devices during treatment. Patients fitted

with sound generators or combination instruments are instructed to adjust the output from their sound generators so that the sound just “mixes” or “blends” with the tinnitus, without covering up (masking) the tinnitus [1,22].

#### **Question 7**

Most patients responding to the TRT initial interview will have negative emotions associated with their tinnitus, with consequent effects on certain life activities. This question seeks to determine if there are days when these tinnitus effects are noticeably worse than on other days. The patient is asked how often these “bad days” occur per week or per month. This information provides one outcome variable when assessing the efficacy of treatment. It is important for the clinician to be sensitive to the patient’s potential need for psychological or psychiatric evaluation and treatment and to refer the patient as necessary [6].

#### **Question 8**

Question 8 obtains the critical information for determining Category 4 placement. Patients commonly report that their tinnitus becomes louder as a result of exposure to certain sounds. This effect typically lasts for minutes or for hours. If the tinnitus remains louder until the following day, however, the condition of “prolongation of exacerbation” or “kindling” is indicated [4,6]. Patients in Category 4 are the most difficult to treat effectively, and a specific variation of TRT is implemented for these patients [21,23].

#### **Question 9**

This item comprises a series of questions related to the patient’s use of hearing protection. The questions will stimulate discussion about the need to provide hearing protection in dangerously noisy situations, but the main purpose is to determine if the patient is overprotecting his or her hearing. Many patients with tinnitus use earplugs or earmuffs to prevent their tinnitus from becoming worse. Such action in fact will result in the tinnitus sounding louder, because of the occlusion effect, and is reported to cause reduced loudness tolerance [29–35]. It is thus an important issue, but the examiner must use caution during the questioning so as not to give patients the new concern that sound might make their tinnitus worse. Patients need to know that the use of hearing protection for any reason other than protection from damaging levels of sound constitutes overprotection.

#### **Question 10**

Question 10 is straightforward in asking if the patient is receiving any other tinnitus treatment. Other forms of

tinnitus treatment could be from an alternative health care provider (e.g., acupuncturist, hypnotist) or various types of self-treatment (e.g., herbal remedies, bedside sound generators). This information is important for the clinician to help the patient determine the best overall course of treatment. Many of these other types of treatment have no scientific basis and the patient should be educated regarding realistic expectations.

#### **Question 11**

This open-ended question identifies the most bothersome aspect of a patient’s tinnitus. The patient’s answer should indicate the main objective of treatment. Patients will provide very different responses to this question. Some will report that their tinnitus interferes with sleep. Others will indicate effects on concentration or emotional consequences. Many patients will report that the main problem with tinnitus is that it interferes with their hearing ability. These examples represent very different kinds of problems that would indicate different strategies of treatment.

#### **Question 12**

Question 12 identifies bothersome aspects of tinnitus from a closed set of different activities that can be adversely affected by tinnitus. Often, patients have not analyzed specifically why tinnitus is a problem for them and this list prompts them with the most likely concerns. Each of the activities on the list must be discussed individually. The responses will serve as a baseline against which to monitor progress during treatment.

#### **Questions 13 and 14**

These two questions will obtain an estimate of the percentage of waking hours that patients are consciously aware of, and annoyed by, their tinnitus. Patients are asked to average those percentages over the previous month. Since habituation is the primary goal of TRT, these questions are particularly helpful in assessing this outcome of treatment. Question 13 determines the amount of time patients spend thinking about their tinnitus; thus, it is specific to habituation of tinnitus perception. Question 14 evaluates how much of their time they are annoyed by their tinnitus, which helps to determine if they are habituating to their tinnitus reaction. Habituation to both the perception of and the reaction to tinnitus would indicate that the program has been successful

[1,36,37]. If treatment is fully successful, these percentages of time will drop to zero or close to zero.

### Questions 15 to 17

For these three questions a visual analog scale of 0 to 10 is used. Patients are asked to rank their tinnitus with respect to loudness, annoyance, and life impact. Only the end points of each scale have labels; thus, patients must select a number on the continuum in relation to the two extremes. These rankings are particularly useful when assessing treatment outcome.

### Question 18

Patients are given an opportunity to provide any additional information concerning their tinnitus. In most cases, the TRT initial interview will have covered all the issues and patients will have nothing further to add.

### Question 19

This question starts the series of questions that are specific to sound tolerance. Patients must clearly understand the intent of Question 19 because their response to it will determine whether or not they are identified as having a problem with sound tolerance. If not, the remaining questions in this section are passed over. The main consideration is to determine whether patients have trouble tolerating everyday sounds that are otherwise tolerated comfortably by most other persons. If this occurs, patients can generally recall the types of everyday sounds that cause loudness discomfort.

### Question 20

Decreased sound tolerance can involve different components, including hyperacusis, misophonia, and phonophobia [4]. These conditions have subtle differences that often make their differentiation difficult. Hyperacusis is a physiological response to certain sounds; thus, some level of physical discomfort is involved. Misophonia refers to “dislike of sound” that does not include physical discomfort [6,15,38]. If the person dislikes sound but also fears sound, phonophobia is indicated.

### Questions 21 to 30

These questions are the same as questions 7 through 18 for tinnitus, but focus on effects of reduced sound tolerance. Patients will often confuse functional effects of reduced sound tolerance with tinnitus effects. It is thus

important to guide the patient to respond appropriately, keeping in mind the different components of reduced sound tolerance as described for Question 20. It is an educational process for some patients who will gradually begin to understand how these different factors have affected their lives differentially.

Question 8 was the key tinnitus question for determining Category 4 placement. There can also be Category 4 placement specific to hyperacusis as shown in the **Table**, page 159. In the latter case, certain sounds will exacerbate the hyperacusis for an extended period of time (at least until the next day).

### Questions 31 to 33

Question 31 is the first of three questions that are specific to hearing loss. No clear relationship exists between patients’ audiograms and how they feel about their hearing [39]. Some patients will reveal a significant reduction in hearing sensitivity and yet will not be bothered particularly by their hearing loss. Other patients complain about considerable hearing difficulties that would seem incongruous with their mild hearing loss. The objective of these questions is to determine the patients’ subjective feelings about their hearing, regardless of their hearing thresholds. The responses will determine whether placement in Category 2 is appropriate, which would indicate the use of amplification.

### Questions 34 to 36

Visual analog scales of 0 to 10 are again used for these questions. During the preceding questioning, patients will have learned to distinguish between the conditions of tinnitus, reduced sound tolerance, and hearing loss. These three questions now allow them to consider how much each condition is a problem in relation to the other. The responses should provide the final information needed to determine category placement.

## ADMINISTERING TRT FOLLOW-UP INTERVIEW

The TRT Follow-up Interview form (**Figure 2**) duplicates those questions from the TRT initial interview that would be considered necessary to monitor treatment progress and to determine treatment outcomes [14]. Some of these questions have been modified relative to the initial interview as appropriate for follow-up evaluation.

### TRT FOLLOW-UP INTERVIEW

Name: \_\_\_\_\_ Date: \_\_\_\_\_

These questions will be essentially the same as the questions I asked you at your initial evaluation. Recall that we are evaluating three different things: (1) tinnitus, (2) sound tolerance, and (3) hearing. Each question is specific to *tinnitus*, *sound tolerance*, or *hearing*. **Tinnitus** refers to any kind of sound in your head—ringing, hissing and so on. **Sound tolerance** refers to how you react to different sounds in your environment. **Hearing** refers to your ability to detect sounds in your environment, or to your ability to understand the speech of others. Before we go on, is that clear?

The questions about your tinnitus generally refer to the *last month*. Answer these questions thinking about your tinnitus *over the last month*. These questions may seem repetitive or redundant to you. However, I need all of the answers to come directly from you, even if I may already know the answer. We must be consistent with each patient to minimize any possibility of bias. Also, remember that there are *no wrong answers*.

#### TINNITUS

The first series of questions are specific to your *tinnitus*. Please think only about your *tinnitus* when you answer these questions.

1. Do you have days when your tinnitus is more bothersome than on other days?  No  Yes

(IF YES) How often do you have these “bad days?” \_\_\_\_\_ days per week/month

(IF YES) Are they *as frequent* as they were before you started treatment?  No  Yes

(IF YES) Are they *as bad* as they were before you started treatment?  No  Yes

2. Does any kind of sound have an impact on your tinnitus? That is, does sound make your tinnitus louder or softer or is there no effect?

No effect

Softer

Louder

(IF “LOUDER” OR “SOFTER”) What kind of a sound has an impact on your tinnitus? \_\_\_\_\_

How long does this last? \_\_\_\_\_

Is it still louder until *at least* the next morning after you’ve slept?  No  Yes

(IF EFFECT LASTS *AT LEAST* UNTIL NEXT MORNING) Please give an example of the kind of sound that would cause this to happen. \_\_\_\_\_

3. Do you use ear protection (earplugs or earmuffs)?  No  Yes

(IF YES) When do you use ear protection? \_\_\_\_\_

(Interviewer: Determine if patient uses ear protection specifically because of tinnitus—This would usually be to prevent the tinnitus from getting louder, which should not be suggested to the patient because of “negative counseling.”)

(IF EAR PROTECTION IS USED FOR TINNITUS) What percent of the time do you use earplugs or muffs for your tinnitus? \_\_\_\_\_%

(Interviewer: Does patient *overprotect* ears because of tinnitus?  No  Yes)

**Figure 2.**  
TRT Follow-up Interview form.

4. Are you currently receiving any other treatment specifically for your tinnitus?  No  Yes

(If YES) What? \_\_\_\_\_

(Interviewer: This can be professional or self-administered “alternative” therapies, e.g., herbs, vitamins, tapes.)

5. I’m going to describe certain activities that may be a part of your life. Please tell me if the tinnitus prevents you from conducting these activities or if your tinnitus negatively affects these activities in any way.

(Interviewer: Indicate patient’s previous responses. Telling patients “improvement” is ok, but don’t tell them previous answers.)

	Prevented	Affected	No Effect
Concentration?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sleep?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quiet resting activities (reading, relaxing, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Going to restaurants?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participating in or observing sports events?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anything else? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

People can be *aware* of their tinnitus some of the time and not aware of it at other times.

6. What percent of your *total awake time*, over the last month, have you been *aware* of your tinnitus? Please give an average percentage over the last month. \_\_\_\_\_%

Has this percentage changed since the beginning of treatment?  No  Yes

(Interviewer: Indicate patient’s previous response. \_\_\_\_\_%)

7. What percent of your *total awake time*, over the last month, were you *annoyed/distressed/irritated* by your tinnitus? Please give an average percentage over the last month. \_\_\_\_\_%

Has this percentage changed since the beginning of treatment?  No  Yes

(Interviewer: Indicate patient’s previous response. \_\_\_\_\_%)

(Interviewer: Double-check that patient responded appropriately to questions 6 and 7, i.e., to *total awake time* for each condition of *awareness* and *annoyance*.)

I’m now going to ask you to rank your tinnitus, on a scale of 0 to 10, with regard to severity, annoyance, and effect on your life. Please do not include hearing difficulties when you answer these questions.

(Interviewer: Underline patient’s previous responses for questions 8, 9, and 10; telling patients “improvement” is ok, but don’t tell them previous numbers.)

Figure 2. (Continued)  
TRT Follow-up interview form.

8. How *strong*, or *loud*, was your tinnitus, on average, over the last month? “0” would be “no tinnitus”; “10” would be “as loud as you can imagine.”

0      1      2      3      4      5      6      7      8      9      10

9. How much has tinnitus *annoyed you*, on average, over the last month? “0” would be “not annoying at all”; “10” would be “as annoying as you can imagine.”

0      1      2      3      4      5      6      7      8      9      10

10. How much did tinnitus *affect or impact your life*, on average, over the last month? “0” would be “not at all”; “10” would be “as much as you can imagine.”

0      1      2      3      4      5      6      7      8      9      10

11. Do you have any other comments about your tinnitus?

---

**SOUND TOLERANCE**

The next series of questions are only about your *ability to tolerate sound*. Please think only about your *sound tolerance* when you answer these questions.

**(Interviewer: Ask these questions only if patient had a sound tolerance problem at the initial visit.)**

12. Describe the sounds that cause you pain or physical discomfort.

---

13. Do you have days when your sound tolerance is more of a problem than on other days?  No  Yes  
**(IF YES)** How often do you have these “bad days”? \_\_\_\_\_ days per \_\_\_\_\_  
**(IF YES)** Are they *as frequent* as they were before you started treatment?  No  Yes  
**(IF YES)** Are they *as bad* as they were before you started treatment?  No  Yes

14. Does any kind of sound have an impact on your ability to tolerate sound? That is, does exposure to sound make your sound tolerance better, worse, or is there no effect?

No effect                       Better                       Worse

**(IF “WORSE” OR “BETTER”)** What kind of a sound has any kind of impact on your sound tolerance?

---

How long does this last?

---

Does the effect last *at least* until the next morning after you’ve slept?  No  Yes

**(IF EFFECT LASTS AT LEAST UNTIL NEXT MORNING)** Please give an example of the kind of sound that would cause this to happen. \_\_\_\_\_

15. **(Interviewer: Refer to question 3. If patient does not use hearing protection, go to question 16. If patient does use hearing protection, determine if such usage is specifically because of sound tolerance.)**

Figure 2. (Continued)

TRT Follow-up interview form.

Do you use earplugs or earmuffs specifically *because of sound tolerance*?  No  Yes

**(IF YES)** What percent of the time do you use ear protection *because of sound tolerance*? \_\_\_\_\_%

**(IF YES)** Do you use your earplugs when it's fairly quiet *because of sound tolerance*?  No  Yes

**(Interviewer:** Does patient *overprotect* ears *because of sound tolerance*?  No  Yes)

**16.** Are you currently receiving any other treatment specifically for your *sound tolerance*?  No  Yes

**(IF YES)** What treatment? \_\_\_\_\_

**17.** I'm going to describe certain activities that may be a part of your life. Please tell me if the sound tolerance prevents you from conducting these activities, or if your sound tolerance negatively affects these activities in any way.

**(Interviewer:** Underline patient's previous responses. Telling patients "improvement" is ok, but don't tell them previous answers.)

	Prevented	Affected	No Effect
Concerts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shopping?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Movies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Going to restaurants?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Driving?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participating in or observing sports events?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attending church?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Housekeeping activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Childcare?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anything else? _____			

I'm now going to ask you to rank your *sound tolerance*, on a scale of 0 to 10, with regard to severity, annoyance, and effect on your life.

**(Interviewer:** Underline patient's previous responses for questions 18, 19, and 20. Telling patients "improvement" is ok, but don't tell them previous numbers.)

**18.** How *severe* was your sound tolerance, on average, over the last month? "0" would mean "you can tolerate all sounds"; "10" would mean "you cannot tolerate any sounds."

0    1    2    3    4    5    6    7    8    9    10

**19.** How much has your problem with sound tolerance *annoyed you*, on average, over the last month? "0" would be "not annoying at all"; "10" would be "as annoying as you can imagine."

0    1    2    3    4    5    6    7    8    9    10

**Figure 2. (Continued)**  
TRT Follow-up interview form.

20. How much did sound tolerance affect your life, on average, over the last month? "0" would be "not at all"; "10" would be "as much as you can imagine."

0      1      2      3      4      5      6      7      8      9      10

21. Do you have any other comments about your *sound tolerance*? \_\_\_\_\_

#### HEARING

22. Do you think you have a hearing problem?  No  Yes

#### RANKING PROBLEMS

On a scale of 0 to 10, I would like you to rank the importance of tinnitus, sound tolerance, and hearing, with regard to how much they are a problem for you *on average over the last month*. "0" would be "no problem at all"; "10" would be "as much as you can imagine."

(**Interviewer:** Underline patient's previous responses for questions 23, 24, and 25. Telling patients "improvement" is ok, but don't tell them previous numbers.)

23. How much of a problem is *tinnitus*? "0" would be "no problem at all"; "10" would be "as much as you can imagine."

0      1      2      3      4      5      6      7      8      9      10

24. How much of a problem is *sound tolerance*? "0" would be "no problem at all"; "10" would be "as much as you can imagine."

0      1      2      3      4      5      6      7      8      9      10

25. How much of a problem is *hearing*? "0" would be "no problem at all"; "10" would be "as much as you can imagine."

0      1      2      3      4      5      6      7      8      9      10

26. Considering tinnitus, sound tolerance and hearing, would you say your problem in general is the *same, better, or worse*? \_\_\_\_\_

27. How would you feel if you had to give back your instruments? \_\_\_\_\_

28. Are you glad you started this program?  No  Yes  Not sure

#### Interviewer:

1. Indicate main problems discussed during this questionnaire:

\_\_\_\_\_

2. Recommendation: \_\_\_\_\_

3. Next visit: \_\_\_\_\_

Figure 2. (Continued)

TRT Follow-up interview form.



In the scripted instructions to the follow-up interview, patients are told to consider their tinnitus and its effects over the previous month when answering the questions. Thus, they are not asked to respond in relation to any particular day or circumstance, but to think of how the tinnitus has affected them generally during the previous 30 days.

### **Question 1**

Question 1 contains a series of questions about whether patients experience some days that are more affected by their tinnitus than others. Additional questions have been added to determine if the patient feels that these “bad days” are fewer than before treatment started. It is thus important to know if patients feel that they are having fewer bad days than before. The clinician should be aware if the patient is concurrently receiving treatment with anxiolytics or other psychotropic medications and should consider potential effects of such treatment.

### **Question 5**

Question 5 determines the impact of tinnitus on various activities, as does Question 12 from the initial interview. The clinician should have the patient’s responses to the initial interview in hand during administration of the follow-up interview. Indicating the previous responses on the follow-up interview form is helpful when asking about these activities. Patients can be told if they have shown improvement or not, but it is not advised to inform them of their previous responses.

### **Questions 6 and 7**

Questions 6 and 7 are the key questions that assist in determining if patients are habituating to, respectively, tinnitus perception and tinnitus reaction. Similar to Question 1, patients are asked to report if they feel that the amount of time they have been aware of their tinnitus, or annoyed by their tinnitus, has changed during the previous month.

### **Questions 8, 9, and 10**

Questions 8, 9, and 10 ask patients to estimate, respectively, their tinnitus loudness, annoyance, and life impact. For these questions, as well as Questions 23, 24, and 25, clinicians are again advised to have the patient’s previous answers available to indicate to the patient whether improvement has been noted. An awareness that

improvement has occurred can be very encouraging to the patient and is an important incentive to maximize compliance with the treatment protocol.

Of course some patients will not demonstrate any improvement. If improvement is not noted after 1 to 2 years of treatment, the clinician must assess honestly as to whether continued treatment with TRT is in the patient’s best interest. In some cases, TRT can require up to 4 years to show positive results (S. Gold, personal communication, 2002). Thus, for some patients, it is simply a matter of continuing to encourage them in spite of their lack of progress. At some point, however, the clinician and patient should mutually decide if another form of treatment is the best option.

### **Questions 12 through 21**

Questions 12 through 21 are specific to reduced sound tolerance. If reduced sound tolerance was not noted as a problem during the initial interview, these questions are bypassed during the follow-up interview. If reduced sound tolerance was initially reported, completing these questions will enable an evaluation of treatment efficacy.

### **Question 22**

Question 22 is the only question about hearing difficulties. The question requires only a yes or no response, but its intent is to raise the issue as a discussion point to evaluate whether the patient considers hearing loss a problem [39]. This perception often changes from appointment to appointment, which can potentially result in making changes in ear-level devices. Such changes will usually involve the addition of amplification as the patient recognizes the degree to which hearing loss is a problem. Many patients will be “borderline” hearing aid candidates during their initial evaluation, and it is probably best to err on the side of fitting amplification if the decision is not unambiguous. Otherwise, there is the potential that the patient would be constantly frustrated by hearing difficulties. For patients who were initially fitted with hearing aids, it will be important, of course, to provide appropriate follow-up care to ensure that the amplification is performing adequately. Patients using amplification therefore should be asked any questions that would be important for assessing any problems.

### Questions 23, 24, and 25

Questions 23, 24, and 25 are particularly important for a clinician to determine the relative effects of tinnitus, reduced sound tolerance, and hearing loss on the patient's life. In some cases, only one of these is a problem at the beginning of treatment and treatment will be specific to that condition throughout the program. In other cases, more than one of these conditions will be a problem at the outset of treatment and their relative effects can change during treatment. For example, if hyperacusis is the primary problem at the beginning of treatment, the treatment protocol will be specific to the hyperacusis. At a follow-up visit, the hyperacusis may become less of a problem and the tinnitus might become the primary concern. In such a case, the treatment effort would shift to address primarily the tinnitus condition. It is thus important at each of the follow-up visits to redefine the extent of each of these auditory problems.

### Questions 26 to 28

Question 26 determines if patients feel that their auditory condition has benefited overall, considering tinnitus, sound tolerance, and hearing loss. Question 27 is somewhat unusual because it asks patients how they would feel about giving back their ear-level devices. Their responses to this question can be quite revealing. In most instances, patients will indicate adamantly that they would not be comfortable giving up their devices. Question 28 is quite general in asking if patients are glad or not that they started the program. It provides a global indicator of their overall satisfaction with the program.

## DISCUSSION

This article provides tools to evaluate patients for treatment with TRT and to monitor the efficacy of treatment with TRT. The original one-page interview forms, both initial and follow-up [14], can work effectively for the experienced TRT clinician. Many clinicians, however, especially those who are relatively new to TRT, have expressed the need for scripting of questions and for explaining the various questions in the forms. This paper responds to this need. Our hope is that this information will be useful for promoting a higher level of standardization in conducting TRT.

The TRT Initial and Follow-up Interview forms were revised primarily to help determine outcomes of treatment

in a standardized manner for a randomized clinical study currently being conducted at the Portland Department of Veterans Affairs (VA) Medical Center (VAMC) in which subjects receive treatment with either Tinnitus Masking or TRT. Since all subjects in both groups were to receive the TRT initial and follow-up interviews, administering the interviews in a consistent fashion was essential. The interview forms therefore were revised so that exact wording of each question would be provided on each form. These revised forms now are being used in the TRT training seminars, and their clinical application will minimize variability in administration of the questionnaires.

There are accepted methods for developing and testing scales that measure health or functional status. Such methods would assess reliability, validity, and responsiveness of the scale. Such an approach has not yet been taken with the TRT interview forms, which were originally developed by the second and third authors of this paper because of their perception that take-home questionnaires were inadequate for assessing tinnitus patients [14]. These authors therefore designed structured interviews to be a guide for acquiring information from patients and to evaluate potential changes during treatment. The interview forms are a clinical tool to conduct TRT and, while not claimed as a universal tinnitus assessment technique, can potentially be used with other types of tinnitus treatment methods.

Substantial literature exists concerning tinnitus outcomes instruments—some of which have undergone the more traditional method of development and testing. None of these instruments, however, has achieved discipline-wide consensus as a standardized method of evaluating the negative effects of tinnitus. Meikle and Griest have reviewed the various outcome measures that have been developed and have noted the many discrepancies between them [40]. Meikle and Griest emphasized the need for a single standardized instrument to assess tinnitus-related distress and resulting functional impairment.

With regard to the preceding comments, a need exists to provide further development and testing for the TRT interview forms to be documented as valid and reliable. An effort is currently underway to accomplish this objective. A working group has been formed that is presently evaluating four tinnitus outcomes instruments, including the TRT interview forms, the Tinnitus Handicap Inventory [41,42], the Tinnitus Handicap Questionnaire [19], and the Tinnitus Severity Index [43]. With advice from experts in outcomes evaluation and questionnaire development,

these instruments are being closely examined to determine differences in their content domains (topics addressed) and item construction (e.g., phrasing of questions, numbers of response categories, and whether or not subquestions are asked) [40]. Most importantly, the four questionnaires are being evaluated with respect to how the patients themselves respond to the questionnaire items. Such an analysis is possible because each of the questionnaires has been used in the tinnitus treatment study that is presently being conducted at the Portland VAMC. An important outcome of this effort will be an assessment of the performance of the expanded TRT interview forms in relation to the three self-administered tinnitus instruments that have been documented for validity and reliability. Following this effort, a further revised TRT interview form may be proposed that will require testing for validity and reliability. Most likely, a generalized version of a self-administered tinnitus outcomes instrument will be developed and promoted for standardized clinical and research application. For TRT, however, the interview format will be retained for the purposes just mentioned [14].

Finally, it should be noted that the developers of the original TRT interview forms administer the Tinnitus Handicap Inventory to all of their patients in addition to performing the interviews [41,42]. Jastreboff and Jastreboff state that the choice of supplemental questionnaires is a matter of personal preference of the provider [14]. Dobie has also addressed the issue of evaluating treatment effectiveness [11]. He recommends use of either the Tinnitus Handicap Inventory or the Tinnitus Handicap Questionnaire as “the best candidates for a consensus yardstick” [41,42,19]. Thus, for the clinician or researcher who is actively involved in conducting TRT, we suggest that the interview forms be used along with one of the self-administered questionnaires that has undergone documentation for validity and reliability.

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