Tinnitus Treatment Triage
Filling the Gap Between ENT and TRT

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INTRODUCTION

Audiologists have a leading role in providing non-medical tinnitus treatment services. Researchers (Henry et al., 2005) recommend that audiologists use a progressive tinnitus management approach. Clinics offering tinnitus care "can manage tinnitus patients most efficiently by providing a hierarchical program of services that address different levels of need" Henry et al., 2005a. Services are provided only as necessary depending on each individual's degree of tinnitus distress. Audiologists can triage clients with tinnitus through progressive options that could be available through their own clinic so that referral to formal treatment is reserved for more severe or complex cases. Audiologists can and should offer Tinnitus Management Services that fill the gap between ENT and TRT for many clients with tinnitus.

POTENTIAL DISADVANTAGES OF ENT REFERRALS TO TRT

Prior to any treatment, all clients with tinnitus should be evaluated by an ENT to rule out the need for any medical treatment. Currently many ENTs in BC automatically refer people with tinnitus distress to Tinnitus Retraining Therapy (TRT). However, audiologists should have the lead role in determining candidacy for non-medical tinnitus treatment. There are several disadvantages to the current situation:

- Not everyone with tinnitus distress is a candidate for formal therapy.
- In B.C., TRT is only available in Vancouver.
- Approximately 65% to 80% of people obtain tinnitus relief from TRT (Baracca et al., 2007; Henry et al., 2002). Other options are needed.
- Some people with tinnitus find the counselling, structured approach, time commitment and/or travel involved for TRT does not meet their individual needs.
- When given the choice, many people prefer to receive tinnitus management services through their local audiologist.

TINNITUS TREATMENT TRIAGE AT WORKSAFEBC AUDIOLOGY UNIT

The WorkSafeBC Audiology Unit has been using a progressive tinnitus management approach since 2005. Cost of treatment is covered for cases where tinnitus is accepted as work related. The key remaining considerations are availability, travel and motivation to attend TRT. Despite the fact they could attend TRT at no personal cost, many clients choose not to attend TRT. More clinics offering Tinnitus Management Services are needed to provide services to people with tinnitus living throughout B.C. The model of tinnitus treatment triage used at the WorkSafeBC Audiology Unit could easily be adapted by other audiologists. It is targeted to each individual client's needs, and includes assessment, tinnitus counselling and review of applicable treatment options.

ASSESSMENT	
Tinnitus Evaluation	• Hearing evaluation (case history, otoscopy, tympanometry, pure-tone air and bone conduction, speech reception & word recognition testing). • No acoustic reflex testing. • Pulsed tones used for pure-tone air conduction threshold testing. • Subjective measurements completed as necessary (e.g. tinnitus pitch and loudness matches). Their main benefit is to help reassure the client that their tinnitus can be compared to real world sounds.
Tinnitus Distress Evaluation	• Subjective self-report -How does it make you feel? -Are you losing any sleep over it? • Evidence based tinnitus questionnaire - *Tinnitus Handicap Inventory (THI)* - used for clients not in formal therapy who are provided with tabletop sound machines. -*THI* estimates distress rating based on score: no handicap (0 – 16%), mild (18 – 36%), moderate (38 – 56%) or severe (58 – 100%). Changes of 20% over time are significant.

At the end of a tinnitus assessment, the audiologist should have a good understanding of their client's needs and concerns including need for further ENT referral (e.g. red flag conditions including unilateral tinnitus), candidacy for hearing aids, potential for hazardous noise exposure occupationally or recreationally, tinnitus distress severity, etc.

Counselling is then targeted to the client's individual situation. Educational counselling on the client's assessment results and on tinnitus should be provided. Mayes (2010, p. 34) states, "The provider should also give reassurance. A person may already be using appropriate coping strategies that they should continue. The provider might also recommend fine-tuning or altering strategies for better benefit. In some cases, the client might be reassured that they don't need any further treatment. In other cases, people can be reassured that there are helpful coping strategies and treatments available." At the WorkSafeBC Audiology Unit, specific blocks of time are booked for tinnitus counselling in addition to the time required for the assessment.

BASIC TINNITUS COUNSELLING	
Education	• Client's assessment results. • How we hear. • How we hear tinnitus (e.g. overactive hearing system: current theories suggest that neurons within the auditory system that are tuned for silence become overactive, and this activity is interpreted by the brain as sound). • If distressed, how tinnitus distress relates to how we react to or think about tinnitus rather than the characteristics of tinnitus itself (e.g. overactive emotion system: negative emotions such as anxiety, worry, sadness, frustration or anger can cause or aggravate tinnitus distress. • Two individuals can have similar tinnitus based on pitch/loudness matches, and one person will not be bothered by it at all and the other person can be severely distressed. It all depends on how the person reacts to having tinnitus.
Reassurance	• How tinnitus is a benign, natural symptom. TRT expert Dr. Jonathan Hazell's website describes tinnitus as "the background music of the brain". • Although there is no cure yet, there are helpful treatments and coping strategies available.

Many people with tinnitus mistakenly believe that they have trouble hearing and understanding conversations because of their tinnitus. A negative emotional reaction to the tinnitus can develop into tinnitus distress, when the hearing loss is actually the culprit for the communication problems (Henry et al., 2005b). Tinnitus does not cause hearing loss, and even if tinnitus were to stop completely people with significant hearing loss would still have communication difficulties. Once people with tinnitus realize the hearing loss is the problem, they may not need any further treatment other than an appropriate hearing aid fitting. Hearing aids should either make no difference to the tinnitus perception or may make it less intrusive.

Some people may need hearing aids along with additional treatment options. Keep in mind that if the client is severely distressed and will be attending formal therapy, it is usually best to get hearing aids or other devices as prescribed by the TRT specialist.

As discussed in Mayes (2010), treatment options may include sound enrichment, mind enrichment, or referral to formal therapy. Determining appropriate treatment options can only be based on what the client is motivated to do. Usually it is best if the audiologist gives an overview of available

options, pros and cons (including cost and availability), and then the client decides on what speaks most directly to their individual needs.

SOUND ENRICHMENT	
Hearing Aid Fitting	• Hearing aids can amplify external sounds making tinnitus less noticeable. • Hearing aids can decrease the stress of straining to hear and communication breakdowns which are known to aggravate tinnitus. • Open fittings are recommended for people with tinnitus as long as appropriate gain is available for the degree of loss present. • If the aid has multiple programs, the quiet setting should still allow soft background sound to be heard. Certain noise reduction features may need to be turned off or deactivated in the quiet program (Searchfield, 2005). • Technology options to help in various listening situations (e.g. telecoil, direct audio input, communication system capability, etc.) should be considered as needed. • Hearing aids should not be used around very loud sounds with potential to be a noise hazard. • Availability of aids with additional relaxation sound types could be considered as necessary for individual clients (e.g. Widex Mind 330/440 offers fractal music and/or pink noise programs in addition to amplification). • Hearing aids should not be used in hazardous noise environments. Appropriate hearing protection should be used instead (e.g. electronic earmuffs or high fidelity earplugs depending on communication demands).

Tabletop Sound Machine	• When they are in quiet environments, people with tinnitus often find it helpful to have background sound on so that their tinnitus is less noticeable or intrusive. • Tabletop sound machines offer a variety of sounds (e.g. white noise, pink noise, nature sounds, etc.), and are most often used to help with sleep. • White noise ("waterfall" or "wind" type sound) is most commonly recommended for sleep, and should be used nightly for maximum benefit. • The machine selected should offer a variety of sound types including white noise, adjustable volume control, no automatic shut off and auxiliary input jack in case a sound pillow is needed. • For sleep, the sound should be set to run continuously through the night at a low comfortable loudness level that does not cover up the tinnitus sound.
Referral to Formal Therapy	• TRT may include tabletop sound machine and appropriate hearing aids with sound adjusted and used according to specific protocols. Additional ear-level devices (e.g. white noise sound generators or combination instruments) may also be prescribed especially for cases of severe distress. • Neuromonics (not yet available in B.C.) uses an ear-level device that plays engineered music for sound enrichment. It would be available through audiologists who have taken Neuromonics training.

Experts on tinnitus recommend sound enrichment or sound therapy. This can be used to make tinnitus less noticeable during the day (e.g. by listening to enjoyable background music or TV). It can also help improve sleep for people with tinnitus who have sleep difficulties (e.g. can't fall asleep, have trouble staying asleep, etc.). Mayes (2010, pg. 111) states, "Using sleep sound can help people sleep more soundly". Just as a light in a dark room seems much brighter than the same light in a sunny room, tinnitus seems more intrusive in a quiet room than in a room with background sounds.

WorkSafeBC Audiology clients have been fit successfully with various tabletop sound machine models including Sound Oasis, Marsona and Brookstone. Some people may prefer to use a device they already own if the sound is acceptable (e.g. fan, air purifier, relaxing CD or CD track

set to repeat). WorkSafeBC Audiologists find greater client acceptance of tabletop sound machines when clients (and their sleep partner if possible) are able to listen to the sound through a demonstration machine during their clinic appointment.

MIND ENRICHMENT	
Informal Distraction Techniques	• What you focus on increases. The more people focus on their tinnitus or sound sensitivity, the more distressing it can become. Distraction techniques help people turn their thoughts away from their tinnitus. • TRT expert Dr. Jonathan Hazell recommends a "10 second" rule. People can think about their tinnitus for 10 seconds, but then they need to stat thinking about something else. • The most commonly used distraction techniques include keeping busy with enjoyable activities or hobbies.
Informal Relaxation Techniques	• Stress can make any chronic condition (like tinnitus or sound sensitivity) worse. Relaxation techniques can help people feel more relaxed and better able to cope. • Relaxation techniques include deep breathing, gentle exercise (e.g. walking, swimming, yoga), warm bath, cup of tea, or whatever makes the person feel relaxed or at ease.
Referral to formal therapy	• TRT includes directive counselling according to specific protocols. • Cognitive Behavioural Therapy (CBT) is counselling offered through a psychologist that includes cognitive therapy as well as distraction and relaxation techniques. CBT has been shown to result in improved quality of life for people with tinnitus. • Neuromonics includes counselling according to specific protocols.

Many people with tinnitus do not need specialized professional counselling therapy or mind enrichment. In BC, formal counselling therapy for tinnitus is available through TRT providers in Vancouver. A modified form of TRT called Auditory Retraining Therapy can also be helpful for people with sound sensitivity (alone or in combination with tinnitus). WorkSafeBC Audiologist referrals to formal therapy typically include any clients with sound sensitivity and/or people with severe tinnitus distress who are motivated to attend formal treatment. TRT typically takes up to 2 years to complete and involves regular counselling sessions along with sound enrichment.

Cognitive Behavioural Therapy has also been shown to be an effective treatment approach for people with tinnitus. It is obtained through psychologists and includes counselling and specific relaxation and distraction techniques. It takes approximately 8 – 10 sessions to complete. Psychologists offering CBT who have an understanding of tinnitus are not widely available in BC. However, if the psychologist understands that tinnitus distress is very similar to chronic pain distress, good therapy outcomes are possible especially when there is a good working relationship between the psychologist and the audiologist involved in the client's care. Research shows that people with tinnitus who receive CBT report an improved quality of life.

Research is constantly ongoing into new or adapted tinnitus treatments. For example, Neuromonics (a specially processed music based approach) has been available in Australia and the United States for several years and is expected to be introduced into Canada.

CASE EXAMPLES

Case studies and treatment plans described are for illustrative purposes only and do not represent any real person. In all cases, education and reassurance tinnitus counselling would be provided as appropriate for client's individual needs.

Case 1

Status: Client is used to tinnitus. Tries not to pay attention to it.

Treatment: Reassured tinnitus is a normal, natural symptom. Hearing aid services provided as necessary.

Case 2

Status: Client is used to tinnitus. Sometimes has difficulty falling asleep at night because of the tinnitus.

Treatment: Reassured tinnitus is a normal, natural symptom. Explained use of sleep sound and potential options (e.g. air purifier, fan, relaxing CD or CD track set to repeat, tabletop sound machine). Demonstrated white noise through tabletop sound machine. Client not interested at the present time. Hearing aid services provided as necessary.

Case 3

Status: Client thinks tinnitus is making it hard to understand what people are saying. If only it would go away.

Treatment: Reassured tinnitus is a normal, natural symptom. Educated on hearing loss as the source of communication problems. Hearing aid services provided as necessary.

Case 4

Status: Client has hearing loss. Doesn't notice tinnitus so much during the day. Having trouble sleeping because of tinnitus.

Treatment: Reassured tinnitus is a normal, natural symptom. Explained use of sleep sound and potential options. Demonstrated white noise through tabletop sound machine. Client very interested in obtaining machine for sleep. THI administered to obtain baseline score (scored at mild distress). At time of pick-up, client given directions on how to use (e.g. set to comfortable loudness level, set to run all night, use nightly for best results). Appropriate hearing aid fitting provided. Ongoing follow-up and tinnitus counselling provided as necessary.

Case 5

Status: Client is bothered by tinnitus. Using TV at night to try to cover it up.

Treatment: Reassured tinnitus is a normal, natural symptom. Encouraged that using sound at night is a good idea, but educated on problems with using TV (e.g. irregular sound that does not promote relaxing sleep). Explained use of appropriate sleep sound and potential options. Demonstrated white noise through tabletop sound machine. Client very interested in obtaining machine for sleep. THI administered to obtain baseline score (scored at moderate distress). At time of pick-up, client given directions on how to use. Appropriate hearing aid fitting provided. Ongoing follow-up and tinnitus counselling provided as necessary.

Case 6

Status: Client has hearing loss. Tinnitus sometimes bothersome. Using earplugs to sleep. Using high sound reduction earmuffs at work, but having problems communicating with co-workers when in noise hazard areas.

Treatment: Reassured tinnitus is a normal, natural symptom. Educated on problem of using earplugs at night (overly quiet sound input can aggravate tinnitus and make it seem more intrusive). Explained use of appropriate sleep sound and potential options. Demonstrated white noise through tabletop sound machine. Client very interested in obtaining machine for sleep. THI administered to obtain baseline score (scored at moderate distress). Electronic earmuffs demonstrated. Client very interested. At time of pick-up, client given directions on how to use devices. Appropriate hearing aid fitting provided. Ongoing follow-up and tinnitus counselling provided as necessary.

Case 7

Status: Client has Widex Mind hearing aids and tabletop sound machine obtained through your clinic. Their last hearing evaluation was 8 months ago. THI indicated moderate distress. They book an appointment for a re-test. They are very distressed because they think their hearing is worse and their tinnitus is really bothering them.

Treatment: Quick hearing screening completed. Tympanograms and thresholds at 500, 1000, 2000, 4000 demonstrate no significant change from the previous test (thresholds within 10 dB test-retest variability). THI score indicates a significant increase. Counselled on tinnitus as a chronic symptom that can fluctuate similar to what happens for people with chronic pain. Discussed potential triggers (e.g. stress related to change in health, family, job, finances, etc.). Reassured that tinnitus should settle down with time once stress eased. Widex Mind settings adjusted. Encouraged client to continue using hearing aids and tabletop sound machine. Discussed formal therapy, but client not interested in attending at the current time. Ongoing follow-up and tinnitus counselling provided as necessary.

Case 8

Status: Client has hearing aids and tabletop sound machine obtained through your clinic two months ago. THI indicated moderate to severe distress. At their hearing aid fitting follow-up appointment, they indicate that the hearing aids make their tinnitus worse and they don't like using the tabletop sound machine.

Treatment: Options were explained. The client can keep the hearing aids, but no return is possible after the trial period ends. The client can return the hearing aids and be referred to formal therapy for assessment and fitting of aids and/or other devices as recommended by the TRT provider. The TRT provider can provide additional counselling on use of the tabletop sound machine. The client decides to attend formal therapy and the referral is made.

Case 9

Status: Client has hearing loss and is worried about their tinnitus.

Treatment: Education and reassurance counselling is provided. Options are explained including formal therapy (takes approximately 2 years to complete, may involve tabletop or ear-level devices, need to follow-up recommendations of TRT specialist to maximize results). The client decides to attend TRT and a referral is made. The client obtains counselling at the 2 hour assessment appointment, and decides that they do not need to attend further therapy. They return to your clinic for ongoing follow-up.

Case 10:

Status: Client has severe tinnitus distress (86% on THI) and some sound sensitivity. They are willing to "do anything" that could help.

Treatment: Education and reassurance counselling is provided. Options are explained including formal therapy. The client is motivated to attend formal therapy, and a referral is made.

TINNITUS MANAGEMENT SERVICES

Can your clinic offer a progressive approach to Tinnitus Management Services for your clients?

- ✓ Can you let doctors and ear specialists who make referrals to your clinic know that you can evaluate the client and determine if a TRT referral is necessary?
- ✓ Can you adapt your hearing evaluation for clients with tinnitus (e.g. no acoustic reflexes; threshold testing using pulsed tones)?
- ✓ When appropriate, can you use an evidence based tinnitus questionnaire (e.g. Tinnitus Handicap Inventory) to document status or improvement over time through your services?
- ✓ Can you book time for tinnitus counselling? (15 – 30 minute blocks are recommended).
- ✓ Tinnitus counselling is often lengthy. Can you use a tinnitus counselling checklist to quickly summarize what was covered as documentation for the client file?
- ✓ Can you provide hearing aid fitting services specific for tinnitus needs?
- ✓ Can your clinic offer tabletop sound machines for sleep sound enrichment including demonstration machines for clients and significant others to listen to?
- ✓ Can your front end staff be trained to be supportive and positive especially about use of tabletop sound machines? (You don't want to spend time counselling and deciding on a treatment plan, only to have your front end staff make a comment like "Oh, I could never stand having noise on at night.")
- ✓ Can you have examples of appropriate hearing protection in your clinic including high fidelity earplugs or electronic earmuffs?
- ✓ Are you open to using new tinnitus management options as they become available (e.g Neuromonics)?

References:

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