A Manual for clEAR® Hearing Healthcare Providers (HHPs)©
Clearworks4ears.com

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Chapter 1: The clEAR® Philosophy

clEAR is a powerful clinical tool that allows audiologists and other hearing healthcare professionals to provide customized hearing healthcare to their patients. Although the centerpiece of clEAR is customized auditory training, clEAR represents a comprehensive hearing healthcare philosophy and allows you to implement the four core components of customized care:
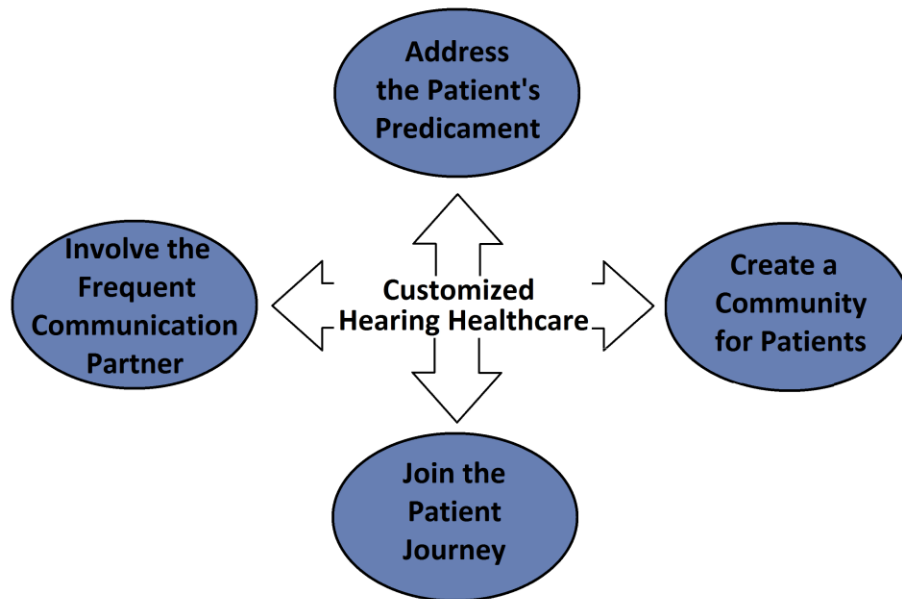
1. Address the patient's predicament: With clEAR, you can provide auditory training that specifically addresses a patient's communication difficulties and promotes conversational fluency in the patient's everyday conversations. clEAR provides auditory training in an engaging, game-like format and can be customized either with the generic voices that are stored on the website or with voices that are important for your patients to hear, such as those of a spouse and grandchild.

2. Involve the important people in the patient's life: You can use a personal computer microphone to record the voice of a patient's frequent communication partner (FCP) speaking the training stimuli. A patient's subscription allows for up to five voices to be recorded and a voice can be replaced by a new set of recordings made by a different frequent communication partner at any time.

3. Become a part of the patient journey: clEAR allows you to become a partner in each patient's journey and a presence in the patient's life as he or she navigates the road that may be peppered with hearing-related challenges. You stay in contact with the patient through an automated semi-canned email system that is incorporated into your clEAR HHP page and you can also provide feedback to the patient about performance and progress. Feedback graphs show all matter of performance data, such as amount of time trained, percent correct answers, amount of background noise tolerated, and changes in cognitive indices, such as auditory processing speed.

4. Create a sense of community for your patients: As a clEAR HHP, you have your own clEAR bulletin board, which allows you to communicate with all of your clEAR patients at once and set communal goals for spending the "clEAR coins". Coins are earned each time a patient plays the games. If you would like, you may invite patients to email you messages that they would like to post on the community bulletin board.

What makes clEAR auditory training successful? The clEAR solution has four key elements: 1) the option of selecting specific talkers and talker types to use for a patient's training; 2) the games themselves, which are engaging and fun to play; 3) the training goals, which are based on solid principles of learning; and 4) your professional oversight and guidance, which are absolutely key to ensuring a successful experience for your patients.
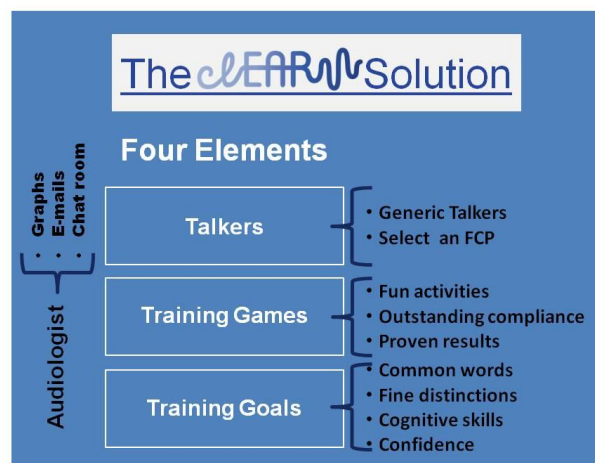
Chapter 2: Candidacy for Receiving Auditory Training with clEAR®

1. **The new hearing aid user:** clEAR can be used to help new hearing users acclimate to their new hearing aids. clEAR will teach them to listen first in quiet surroundings and then noisy surroundings. clEAR may even serve to prevent returns of the devices.

Tip: Many patients who have mild to moderate hearing loss and who receive well-fitted hearing aids may not be prime candidates for clEAR auditory training, especially if they score better than 5 dB on the Speech Perception and Noise Test (SPIN) or score similarly well on a comparable speech in noise test (e.g., the *Hearing in Noise Test;* the *QuickSIN)* while wearing their hearing aids.

2. **The experienced hearing aid user who is not satisfied with his or her current listening performance:** The patient who is experiencing poor conversational fluency in everyday interactions, despite having well-fit hearing aids, is a good candidate for clEAR. Not only will clEAR provide the patient with a sense of taking control of his or her communication difficulties, clEAR can work to increase a patient's self-confidence and can reduce the perceptual effort that is required for everyday listening.

Tip: If the patient reports a persisting listening challenge on the Client Oriented Scale of Improvement (COSI) or scores below 40 on the Communication Confidence Profile (CCP, Sweetow & Sabes, 2007; can be found by clicking the *Resources for My Office* tab on the left side of your dashboard and then the subtab, *Questionnaires*), the patient is a good candidate for clEAR auditory training.

3. **The patient who complains of listening in noise:** Most of the clEAR games provide auditory training in the presence of background noise. In some games, the level of the noise adapts according to a patient's performance (e.g., TreasEAR Island©; FarmEAR in the Dell©; MountainEAR©) and in some games, the patient can adjust the level of the noise to a set level (e.g., pEARI Crunch©; EARonaught©).

Tip: If a patient scores 7 dB SNR or worse on a speech in noise test such as the SPIN, that patient is a good candidate for clEAR.

4. **The patient who is not yet ready to purchase hearing aids:** clEAR offers an alternative hearing healthcare treatment to those patients who, for whatever reasons, are not ready to purchase hearing aids. For many such patients, enrolling in clEAR might be the first step in the journey that ultimately leads to hearing aid use.

Tip: If a patient scores 80% or worse on a word recognition test such as the CID W-22 or NU-6, that patient is a good candidate for clEAR.

5. The patient who wants to engage more effectively in conversations with an FCP: With clEAR's proprietary recording/editing system, you can easily record the speech of a patient's FCP and the patient can receive training with that person.

Tip: If the patient reports having decreased conversational fluency with an FCP as a concern on the COSI, that patients is a good candidate for clEAR auditory training using the FCP's speech.

6. The patient who expects to interact with a new communication partner: Suppose a patient is expecting a visit from a grandchild who lives in another state. It is possible for that grandchild to record training items before the visit and for the patient to practice recognizing the child's voice before the child arrives, thereby bypassing that acclimation process that typically takes place when a patient encounters a new communication partner.

Tip: You can use your HHP messaging system to interact with the FCP via the Internet and provide any guidance or support that might be needed in recording the training items.

7. The patient who has received a new cochlear implant: Speech through a cochlear implant will sound different than the speech a patient remembers hearing. Auditory training can accelerate a patient's ability to interpret the new signal.

Tip: Every patient who receives a cochlear implant should receive auditory training like that offered through clEAR.

8. The patient who has experienced sudden hearing loss: Patients who have incurred a sudden hearing loss through trauma or use of ototoxic drugs are prime candidates for clEAR as not only do they need to adjust to their abrupt change in hearing loss, but many desire to gain a sense of control over what has most likely been a traumatic experience.

Tip: Although all patients benefit from support and guidance from a clEAR HHP, it is strongly recommended that these patients receive more than the usual amount of counseling and support during their clEAR subscription.

9. The patient who is a poor lipreader: People vary widely in their abilities to benefit from the visual speech signal, with some people receiving great benefit by having the auditory signal complemented by visual speech and some people receiving little and even no benefit.

Tip: You may use the speechreading tests that are stored on your HHP site to assess vision-only and audiovisual speech recognition abilities (see Chapter 17 of this manual).

Who is not an ideal candidate for clEAR?

1. The patient who rarely experiences hearing-related communication breakdowns in everyday conversations. For example, a patient who scores better that 40 on the CCP (access the *Questionnaires* subtab under your *Resources for My Office* tab on the left side of your dashboard) is likely not a good candidate.
2. The patient who wants to train at home but who does not have access to a personal computer.
3. The patient who is either unwilling or unable to devote time and effort to computerized auditory training.
4. The patient who has very little hearing ability, even with hearing aids, and scores below 15% words correct on a word recognition test such as the W-22 or NU-6.

Chapter 3: How to enroll a patient into cIEAR®

- **There are three basic steps to creating a patient account.**
    1. Obtain a subscription code
    2. Create a user account
    3. Apply the subscription code to get your patient

Once you have enrolled a patient, fill out a subscription certificate and print it for your patient. This certificate will show the name of your practice, your name, and the dates of enrollment. It will also show which lesson plan (Chapter 8) you have recommended. Along with the certificate, you will want to provide a copy of the recommended lesson schedule, found in Chapter 8. The certificate can be found at the end of this chapter and in the *Resources for My Office* tab on the left side of your HHP dashboard.

Step 1. Obtaining Subscription Codes

On your HHP dashboard is a tab called 'Purchase a Subscription'. Under this tab is the ability to purchase a 15 character subscription code. You can use one subscription code for many patients. This makes keeping track of subscription codes much easier. You can do this by increasing the number of users for the new code. Or you could purchase one at a time.

If you already have an active subscription code you could just copy the number from the list of active codes on the bottom part of this tab.

Step 2. Create a New User Account (two options)

Option 1- <u>The HHP creates the account for the patient</u>

On the left side of your HHP dashboard is a button labeled "Enroll a Patient". Under this option you can enter the basic profile information needed to create a patient account. Enter all of this information and select "Enroll Now" at the bottom of the page. After the patient account is created, you can logout (under the upper-right icon of you or your clinic) and log in using the new user's account. Move to step three.

Option 2 – <u>The User creates their own account</u>

You could provide the subscription code to your patient and let them create their own account. They can do this from the homepage (www.clearworks4ears.com) by selecting "How to Subscribe" from the top of the screen and then "Subscribe Now" at the bottom of the page. After entering the basic profile information, they would select "Continue to Secure Payment" at the bottom of the screen. Move to step three.

Zip Code / Postal Code:*

> Zip Code / Postal Code

Note: Only numbers, alphabets and '-' symbol is allowed.

First Name:*

> First Name

Last Name:*

> Last Name

Username:❓*

> Username

Email:*

> Email

Password:❓*

> Password

Confirm Password:*

> Confirm Password

Show Password ❓

Strength

By clicking Enroll Now, you accept our **Terms of Service.**

ENROLL NOW **BACK**

Step 3. Apply the Subscription Code to the new User

You or your patient can enter the subscription code on the payment screen. Selecting the "Apply" completes the process and the new user is directed to their Dashboard where they can begin to Message, Play Games, Record FCPs, and become part of your community.

Important Note: The expiration clock on the subscription code begins as soon as the code is applied. The typical subscription starts with 3 months.

Please enter a Subscription Code or choose a clEAR subscription plan below.

Subscription Code: [Subscription Code]

Select the plan that's best for you

Basic Package
Basic three-month subscription without renewal

Basic Package +
Basic three-month subscription with monthly renewal

$150 for 3 months

$150 for 3 months

- **What if a person creates an account and pays for themselves?**

Although we do not recommend clEAR to users without being part of an HHP's community, it is possible for them to create an account on their own. They will, however, be required to choose an HHP from a list of providers in their area in order to continue to the website. The list of HHPs will be populated with professionals that that have created HHP accounts on the clEAR system.

If you are selected as an HHP for a new user that has created an account on their own, you will be notified via email and in the Notifications tab on your HHP dashboard. You can accept them as part of your community and begin following them from there. And, if you have completed the W-9 information (button on the left side of your screen at the bottom), you will receive ½ of their subscription fee.

Chapter 4: Why clEAR® is Different from Other Auditory Training Programs

- **clEAR is more than auditory training games, clEAR is a clinical approach and philosophy for providing customized hearing healthcare.** Research has shown that patients are more likely to stay engaged in auditory training if they have support and guidance from an audiologist or other hearing healthcare provider, which is why we have made the involvement of the professional central in the delivery of the clEAR program. Patients can only receive clEAR through their hearing healthcare provider. If a user comes directly to the clEAR website, they are assigned to a clEAR HHP (and the HHP receives half of the subscription fee). If there is no clEAR HHP in the patient's region, the patient is assigned to the in-house clEAR HHP.

- **clEAR is the only auditory training program that allows patients to train with the speech of someone who is important to them, a "frequent communication partner" (FCP).** clEAR's unique recording system allows FCPs to record the training words using a computer's built-in microphone or using the recording system that is available in your audiology clinic. As soon as the recordings are made, a patient can begin to play the clEAR games with the FCP's voice.

- **For patients who choose not to use FCP recordings, clEAR allows patients to receive customized hearing healthcare with different voices.** Four kinds of "generic" voices (male, female, child, British male) are stored on the website. A patient who experiences difficulty in recognizing female voices might train primarily with female voices. Each game exercises particular listening skills. A training schedule can be designed with a specific combination of games that will meet the user's needs.

- **The games are fun to play.** They are based on game design principles of meaningful play, provision of positive and negative feedback, ease of learning, reward systems, and what is known as "flow," meaning a merging of awareness and action.

- **clEAR incorporates the scientific principle of transfer-appropriate processing (TAP).** According to TAP, the more similar tasks are during auditory training and application in the real world, the better the learning. Therefore, clEAR is designed to be customized to match a patient's goals. For example, if the goal is to improve a patient's ability to recognize the speech of an FCP, then the patient should receive training with the speech of the FCP.

- **The clEAR training activities are meaning-based.** clEAR trains only with meaningful words and sentences and never with nonsense syllables or simple *same-different* discrimination

activities. Evidence for the superiority of meaning-based training has a long history within the field of second-language acquisition.

- **cIEAR trains auditory attention and other auditory cognitive skills.** The most common complaints of persons with hearing loss pertains to listening in the presence of background noise, so training teaches them to attend to a target voice in noise. cIEAR also provides training in auditory processing speed and auditory working memory.

Chapter 5: What the Research Shows About clEAR®

✓ Customized auditory training works.

✓ clEAR auditory training reduces perceptual effort.

✓ clEAR auditory training increases confidence to engage in everyday conversations.

✓ Coaching and oversight from a hearing healthcare professional enhances the auditory training experience.

✓ clEAR auditory training with the speech of a frequent communication partner (FCP, such as a spouse) enhances word discrimination and reduces everyday listening challenges.

✓ clEAR auditory training with an unfamiliar talker (who may become an FCP) is beneficial.

✓ Patients have flexibility in pursuing a training schedule with clEAR, and can either opt to train in training sessions that are "massed" together or that are "spaced" over longer time periods.

✓ clEAR incorporates proven principles of cognitive psychology and second-language learning.

For more detail and references, visit the clEAR homepage (clearworks4ears.com) under the *Learn More* tab.

Chapter 6: Listening Skills Trained by clEAR®

The clEAR auditory training games provide training in eight categories that are important for successful conversations:

- Phoneme discrimination
- Most frequently used words in the language
- Auditory attention
- Auditory processing speed
- Auditory working memory
- Bound morpheme discrimination
- Discourse comprehension
- Confidence

- The goal of training **phoneme discrimination** is to develop patients' abilities to make phonetic distinctions because phoneme confusion is a common source of difficulty for people with hearing loss. An example would be distinguishing the word "mat" from the word "bat."

- The goal of training the **most frequently occurring words** in the English language is to develop patients' abilities to recognize words that are likely to occur during everyday conversations (i.e. the words "boy" and "chair").

- The goal of training **auditory attention** is to develop patients' abilities to extract meaningful speech from a background of competing speech babble, as they might be required to do when listening in a noisy restaurant or at a family dinner table.

- The goal of training **auditory processing speed** is to develop patients' abilities to recognize speech quickly. This is important because during everyday conversation, one word follows another in rapid succession and words must be recognized quickly.

- The goal of training **auditory working memory** is to develop patients' abilities to keep words in short term memory so they can process the meaning of a word and the word in its linguistic context.

- The goal of **bound morpheme training** is to develop patients' abilities to distinguish words that vary in bound morphemes, such as "boy" versus "boys" or "can" versus "can't." This is vital because the presence or absence of a bound morpheme can greatly affect the meaning of an utterance.

- The goal of training **discourse comprehension** is to develop patients' abilities to comprehend connected speech and to make inferences about discourse content, because we most often hear connected speech during everyday conversations.

- The goal of **confidence training** is to help patients increase their sense of self-efficacy in being able to manage communication difficulties in everyday conversation.

Chapter 7: The clEAR® Games

There are six clEAR auditory training games. In each game, patients earn coins that add to their treasure chest and your communal treasure chest. At the beginning of each game, there is an opportunity to read instructions that will explain how to play the game.

TreasEAR Island ©

Game activity: Patients will see three pictures in the slot machine windows. They will then hear three words. They must decide if the pictures they see match the three words they just heard, in the same order. They place a bet by clicking one of the three coin buttons (on left side of slot machine) based upon how confident they are about their response---the more confident they are about

hearing the words correctly, the more clEAR™ coins they bet (and the more coins they risk of winning or losing). Once they place a bet, they click either the "Match" or "No match" button. If they are right, the amount of coins placed in the bet will fall from the sky.

Game goals:

- To develop auditory attention by teaching to extract a word from background noise
- To teach phoneme discrimination
- To develop confidence
- To teach recognition of the most frequently used words in the English language

FarmEAR in the Dell©

Game activity: Patients hear a word in noise and then choose the word that they heard from an array of four picture choices. If they respond correctly on the first presentation, four new pictures appear. If they respond incorrectly, the incorrect response disappears from the windmill and the target word is spoken again. Patients earn the most coins if they respond correctly on the first

presentation of a word. Coins load into a horse and cart at the end of the game.
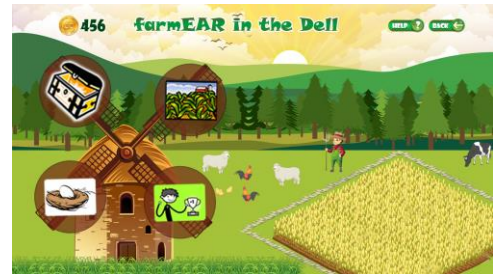
Game goals:

- To develop auditory attention by teaching to extract a word from background noise
- To teach phoneme discrimination
- To teach recognition of the most frequently used words in the English language

MountainEAR ©

Game activity: Patients see a picture and then hear a word. They must click "yes" or "no" to determine whether or not the word matches the picture. If they are right, the mountaineer moves up the mountain; if they are wrong,

they are hit with a snowball. The faster they respond, the more coins that they will earn.

Game goals:

- To develop auditory processing speed
- To develop patients' abilities to recognize the most frequent words in English
- To develop auditory attention by teaching them to extract a word from background noise

ShakespEARe©

Game activity: Patients first listen to a five-sentence paragraph. They must then organize the sentences back into the original order of the paragraph. To play the game, they can press letters of the alphabet to hear single sentences. By clicking on a suspended wooden disc, they assign the sentence to a position in the paragraph. For example, in the adjacent figure, the patient assigned the sentence corresponding to the "A" to the first position of the paragraph; the patient assigned the sentence corresponding to the "C" to the fifth position. Once all sentences have been assigned, patients can listen to their paragraph by clicking the "Play all" button. They can choose to rearrange the sentences again if they do not believe that their ordering of the sentences match the original order. On the other hand, if they believe that they have reconstructed the paragraph accurately, they can move to the answer screen by clicking the *Submit* tab.

Game goals:

- To develop discourse comprehension
- To develop auditory memory
- To increase confidence in listening to dialogue
- To develop auditory processing speed

pEARI Crunch©

Game activity: Patients hear a phrase that may contain a bound morpheme (e.g., plural "s" or negative contraction "'t") and then must choose between two illustrations of the phrase, one with the bound morpheme and one without. For instance, they may hear the phrase, *The cook smells the apples,* and then must select which picture illustrates the phrase by clicking the corresponding picture. After five presentations, they create a pearl necklace, with the colored pearls indicating correct responses and the black pearls indicating incorrect responses. They earn coins for correct responses. There is a "noise bar" at the bottom of the screen, which allows patients to adjust the level of background noise. The more noise that is scrolled in, the more coins earned per each correct response.

Game goals:

- To develop auditory processing speed

- To distinguish between bound morphemes

EARonaught©

Game activity: The game begins by showing patients all of the pictures that lay behind the nine planets of the solar system. The pictures display for 15 seconds so they can memorize as many as possible. The planets then return and cover the pictures. Patients hear a word and must find its picture match on the screen. The game has an "arrow bar" that allows a patient to adjust the level of the background noise. The more noise the patient plays the game with, the more coins are earned. Moreover, they earn more coins if they make fewer mistakes in finding the right picture. One planet will be illuminated with a halo: When a patient gets this planet right, bonus coins are earned. Once all pictures are revealed, the EARonaut takes off.

Game goals:

- To develop word memory
- To teach recognition of the most frequently used words in the English language
- To develop patients' confidence for listening in the presence of background noise

Chapter 8: Sample 12-Week Lesson Plans for clEAR®

A clEAR training program can be customized for each of your patients, either using the speech of the generic talkers that are stored on the clEAR website or using the speech of the FCP. If a patient desires to train with the speech of the FCP, we offer two lesson plans: one for when the FCP records the clEAR training items over the course of several sessions (see 8.e)) and one for when the FCP records the clEAR training items in a single session (see Section 8.f).
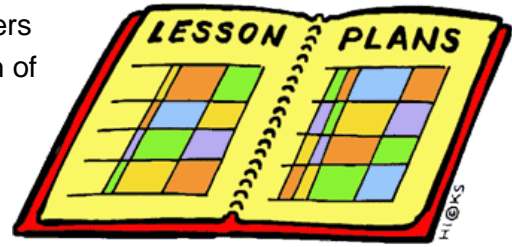
Training begins with games that are easy for the patient. For example, pEARI Crunch, EARonaught, and ShakespEARe can be played with no background noise, so these games often appear early on in a lesson plan. The remaining games have patients listen with background noise. The noise level varies adaptively with performance so patients get on average, about 75% words correct.

Recommendations for implementing a lesson plan:

- If possible, the first training session should occur in your practice space so you are there to answer questions and help the patient learn how to use the games. Of course, all training can occur at the practice site, and can be overseen by an audiology assistant or even an office staff member, with you there on an as-needed basis.

- You may want to print out the schedule for each patient or paste it into the patient's file.

- The lesson plans include a column for "Comments/Notes". You might encourage the patient to make notes about his or her experience with the assigned game and to share them with you either by email or at the next office visit or telephone call.

- At the onset of training, you might provide your patient with a training schedule. Ideally, each week, you will email your patient your comments and encouragement about the patient's progress and remind the patient what training activities are to be completed during the coming week.

- In the sample "12-week lesson plans", patients play two games each week. Patients should play the games for at least 20 minutes at least three times per week, about 10 minutes per game.

- The training schedule can either be one of the schedules included in this chapter or it can be one that you design.

- If you opt to design a training schedule using generic talkers, Table 8.1 provides useful information about how to move the patient from easier activities to more difficult activities by ordering the games and talker types.

Table 8.1. A guide to use when designing a training schedule for your patient. As a general rule of thumb, training should begin with easier tasks and end with more difficult tasks.

Difficulty Level	Game	Talker Type
Easiest	pEARl Crunch, in quiet	Male
↓	EARonaught, in quiet	↓
	ShakespEARe	Female
↓	MountainEAR	↓
	FarmEAR in the Dell	Child
↓	TreasEAR Island	↓
	EARonaught, in high noise	All three talker types, mixed
Most Difficult	pEARl Crunch, in high noise	

In this chapter, you will find two versions of each lesson plan. The first page of each lesson plan is to be given to the patient along with their certificate of enrollment. This will serve as a printed or web-based guideline about the patients training program. The second section is meant for you, the clEAR HHP. In this elongated version, you will find suggested comments to share with your patient as he or she progresses through the lesson plan.

Lesson plan for the patient with a new hearing aid

Week	Games	Voices	Comments/Notes
1	* pEARI Crunch, in quiet * EARonaut, in quiet	Male Male	
2	* ShakespEARe * pEARI Crunch, in light noise	Male Female	
3	* EARonaut, in light noise * MountainEAR	Female Male	
4	* MountainEAR * FarmEAR in the Dell	Female Male	
5	* FarmEAR in the Dell * Treasure EARland	Female Male	
6	* Treasure EARland * pEARI Crunch, in moderate noise	Female All types	
7	* EARonaut, in moderate noise * ShakespEARe	All types All types	
8	* MountainEAR * FarmEAR in the Dell	Child Child	
9	* Treasure EARland * EARonaut, in high noise	Child All types	
10	* pEARI Crunch, in high noise * MountainEAR	All types All types	
11	* FarmEAR in the Dell * Treasure EARland	All types All types	
12	* pEARI Crunch, in high noise * Patient's choice	All types Patient's choice	

	Goals	**Tips**
Week 1	Play pEARl Crunch at least 10 minutes twice this week with a male talker in quiet.	"pEARl Crunch forces you to pay attention to those endings of words that add subtle meaning, such as the plural "s" on a word such as *boys* or the negative "n't" in a word such as *can't.* These endings are often hard to hear and easy to ignore." "During every day listening, we tend to listen for the 'meat' of the word and not subtle nuances. For instance, we often do not distinguish between the word *smile* and *smiles*. pEARl Crunch forces you to pay attention to word endings. Think about it: There's a big difference between the sentence, "I *can* pick you up from the airport" and "I *can't* pick you up from the airport."
	Play EARonaut at least 10 minutes twice this week with a male talker in quiet.	"Try playing a few rounds of EARonaut, first with your hearing aids turned on and then with your hearing aids turned off. You will likely find that you are much more relaxed and confident when you are playing with your hearing aids turned on. Hearing aids can reduce the 'mental effort' associated with listening with a hearing loss." "Especially early in your training, it is easier if you try and remember where 3 or 4 pictures are when they are presented on the screen instead of attempting to memorize all of them."
Week 2	Play ShakespEARe at least 10 minutes twice this week with a male talker.	"This game may help develop your ability to remember the details of a story. ShakespEARe exercises your 'auditory memory', which is the brain's ability to hold in memory words and sentences that you have recently heard." "Try playing a few rounds of ShakespEARe with your hearing aids turned on and then play a few rounds with your hearing aids turned off. You will likely find that you do much better with your hearing aids turned

		on. There are two reasons for the better performance: 1) You are hearing more of the words so you can better select the sentences in the correct order and 2) you are using less 'perceptual effort' to recognize the words. As a result, your brain can concentrate more deeply on remembering the paragraph.
	Play pEARl Crunch at least 10 minutes twice this week with a female talker in light noise.	"You can determine what is "light noise". Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting four pearls for every necklace. Do not move the bar again but train at this noise level."
		"Try to ignore the noise and pay attention to which picture matches the word you've just heard. This activity will develop your 'auditory attention', which is the brain's ability to focus on one auditory stimulus and ignore other auditory stimuli that are irrelevant and distracting."
		"Female voices are often harder to hear than male voices. Many times a new hearing aid will make female voices easier and more pleasant to hear. Try playing a few rounds with your hearing aids turned off and then play a few rounds with your hearing aids turned on. Do you notice a qualitative difference in how the voices sound?"
Week 3	Play EARonaut at least 10 minutes twice this week with a female talker in light noise.	"Female voices are particularly difficult to hear in background noise, even when you have optimally-fitted hearing aids. Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds of the game, gradually increase the level of background noise and try to determine the maximum amount of noise that can be present during the game and yet allow you still to hear the female voice. You might find that you are using a lot

		more 'mental effort' when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon."
	Play MountainEAR about 10 minutes twice this week with a male talker.	"This game may help you to recognize words quickly, which is important when you are listening to connected speech. The typical talker of English speaks between 110 and 150 words per minute. This means that you must have good 'auditory processing speed' to understand speech, which is the brain's ability to quickly process the meaning of words."
		"This game may help you to listen more effectively in the presence of background noise because it forces you to pay attention to the target word and ignore competing speech."
		"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you perform, the more noise is introduced into the training task. The game is programmed to add more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers."
Week 4	Play MountainEAR at least 10 minutes twice this week with a female talker.	"Listening to talkers in a noisy environment can take some adjusting when you have a new hearing aid. You might find that you are more aware of background sounds and that you are hearing some sounds that you had not noticed before. clEAR auditory training will accelerate the adjustment phase."
		"Hearing aids can help you to recognize words faster because your brain can allocate more mental resources to understanding the meaning of the word as opposed to simply trying to figure out what word your ears just heard. Try playing a few rounds with your hearing aid turned on

| | | and then play a few rounds with your hearing aids turned off. Do you notice a difference in your speed of responding? "

"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to add more noise after you make consecutive correct answers and to subtract noise after you make consecutive incorrect answers." |
| | Play FarmEAR in the Dell at least 10 minutes twice this week with a male talker. | "clEAR teaches you to recognize common words that occur frequently in everyday conversation. Over time, this kind of training will make listening easier for you."

"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to add more noise after you make consecutive correct answers and to subtract noise after you make consecutive incorrect answers." |
| **Week 5** | Play FarmEAR in the Dell at least 10 minutes twice this week with a female talker. | "You may find that some of the pictures are a little ambiguous and that it takes some thought to match the word that you hear with the pictures that you see. This ambiguity is intentional. Research has shown that when listening tasks which force the brain to focus on meaning and it requires the brain to think of different possibilities, learning occurs more quickly." |
| | Play Treasure EARland at least 10 minutes twice this week with a male talker. | "Hearing aids often improve people's confidence in their listening skills. Try playing a few rounds of the game with your hearing aids turned on and then play a few |

| | | rounds with your hearing aids turned off. Do you notice a difference in how confident you feel about your responses? Do you bet more coins when the hearing aids are turned on?"

"One purpose of Treasure EARland is to increase your confidence in your ability to recognize words. Research has shown that when you doubt your ability to hear words correctly, you actually don't hear them as well as when you have high confidence in your ability. The mind becomes distracted by the doubt." |
|---|---|---|
| **Week 6** | Play Treasure EARland at least 10 minutes twice this week with a female talker. | "This game may help you learn to recognize common, everyday words more easily. This is important because during everyday conversations, we tend to speak and hear many of the same words over and over again. For example during a typical day, you are likely to hear someone say the words *girl, boy, table,* and *chair.* These are all examples of 'frequently spoken words'."

"Female voices are often harder to hear than male voices. Many times a new hearing aid will make female voices easier to understand and more pleasant to hear. Try playing a few rounds with your hearing aids turned off and then play a few rounds with your hearing aids turned on. Do you notice a qualitative difference in how the voices sound when listening with the aids versus without the aids? |
| | Play pEARl Crunch at least 10 minutes twice this week with all types of talkers in moderate noise. | "Try playing a few rounds of the game with your hearing aids turned off and then a few rounds with your hearing aids turned on. You will likely find that the different talkers are much more distracting to your performance when your hearing aids are turned off than when they are turned on. One advantage of using hearing aids is that they allow you to better acclimate to the speech of 'multiple talkers'." |

| | | "Even though listening to all types of talkers is more difficult than listening to a single type of talker, such as a male voice, research has shown that training with all types mixed together leads to faster learning and to better generalization into everyday listening than does training with a single talker type."

"You can determine what is "moderate noise". Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting between three and four pearls for every necklace. Do not move the bar again but train at this noise level." |
| --- | --- | --- |
| **Week 7** | Play EARonaut at least 10 minutes twice this week with all types of talkers in moderate noise. | "You can determine what is 'moderate' noise. Start by setting the noise bar to its midway setting. If this makes it too difficult to hear the words, decrease the noise where you can hear the talkers, but you are still aware of noise. If in the midway setting, you can still easily hear the talkers, adjust the noise to be louder. During this process, you will not only exercise your 'auditory attention', or the brain's ability to focus on a single speech stimulus, but you will also develop an awareness of the levels of noise that you can tolerate. This awareness will be helpful when you have to assess whether you will have to make accomodations for a particular setting, such as asking for a quiet section of a noisy restaurant." |
| | Play ShakespEARe at least 10 minutes twice this week with all types of talkers. | "Try to ignore the sound of the talkers' voices and to focus on the meaning of the sentences that they are speaking. This will develop your ability to understand spoken stories." |

		"At first you may have a hard time remembering which sentence came first, second, third, fourth and fifth. Try to get at least three sentences in the correct order for each paragraph."
Week 8	Play MountainEAR at least 10 minutes twice this week with a child talker.	"The voices of children are typically more difficult to understand than those of adults, especially for people who have hearing loss. This is because children's voices have a high pitch and people with hearing loss often lose their ability to hear high pitches. In addition, some children do not enunciate their words as clearly as adults do, so they might sound as if they are mumbling."
	Play FarmEAR in the Dell at least 10 minutes twice this week with a child talker.	"Background noise will make children's voices especially difficult to understand. This is because children tend to talk more softly than adults and because noise is especially detrimental to high pitched voices." "Children's voices are often the most difficult types of voices to hear. Try playing a few rounds of the game with your hearing aids turned on and then play a few rounds with them turned off. Do you notice a difference in how the voices sound?"
Week 9	Play Treasure EARland at least 10 minutes twice this week with a child talker.	"This game is difficult, especially when listening to children's voices. Pay attention to how confident you feel in your responses as you play this game with children's voices." "Even though this game is designed to develop your phoneme discrimination, which is your ability to decide whether two sounds are the same or different, it is also developing your ability to focus on the meaning of words and developing your sense of self-confidence in your listening abilities."

	Play EARonaut at least 10 minutes twice this week with all types of talker in varying noise.	"Try first playing the game with your hearing aids turned off. See how much noise you can tolerate and still feel as if you are performing well. Next, try playing the game with your hearing aids turned on. Are you able to tolerate more noise and still feel that you are performing as best you possibly can?"
Week 10	Play pEARl Crunch at least 10 minutes twice this week with all types of talkers in varying noise.	"Try first playing the game with your hearing aids turned off. See how much noise you can tolerate and still feel as if you are performing well. Next, try playing the game with your hearing aids turned on. Are you able to tolerate more noise and still feel that you are performing as best you can?" "If you feel that the training is getting too hard, go ahead and turn down the noise with the noise bar. If you feel that the training is getting too easy, turn up the noise."
	Play MountainEAR at least 10 minutes twice this week with all types of talkers.	"You may not realize it, but you will likely be just a little bit slower in playing this game now that you are playing with many types of voices. The reason for this is that when you listen to multiple talker types, the brain has to use more 'mental effort' to process the meaning of words than when you listen to the same talker type speak the words. As a result of increased mental effort, the brain has to take more time to process meaning, and this will slow down your response time."
Week 11	Play FarmEAR in the Dell at least 10 minutes twice this week with all types of talkers.	"Training with all types of talkers is the most difficult training task. However, research shows that training with a mix of talker types is most effective in training the

		brain to recognize common, everyday words."
	Play Treasure EARland at least 10 minutes twice this week with all types of talkers.	"Playing with all types of talkers is more effortful than playing with a single type of talker. Try playing a few rounds with your hearing aids turned off and then play a few rounds with your hearing aids turned on. Do you feel more relaxed when you are playing with your hearing aids turned on? One goal of Treasure EARland is to reduce the amount of mental effort you need to recognize speech."
Week 12	Play pEARl Crunch at least 10 minutes twice this week with all types of talkers in high noise.	"You can determine what is "high noise". Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting only two or three pearls for every necklace. Do not move the bar again but train at this noise level." "When background noise is present, often the first thing a person with hearing loss will notice is that word endings seem to 'disappear'." pEARl Crunch is designed to focus your attention specifically on these word endings and let you experiment with how your ears and brain respond to the presence of background noise." "Even with hearing aids, listening in noise may always be difficult. However, do you feel like you have become better at listening in noise during the past twelve weeks?"
	Your choice of game, at least 10 minutes twice this week.	

Lesson plan for the patient who complains of listening in noise

Week	Games	Voices	Comments/Notes
1	* pEARI Crunch, in quiet, then moderate, then high noise	Male	
	* EARonaut, in quiet, then moderate, then high noise	Male	
2	* pEARI Crunch, in quiet, then moderate, then high noise	Female	
	* EARonaut, in quiet, then moderate, then high noise	Female	
3	* MountainEAR	Male	
	* MountainEAR	Female	
4	* pEARI Crunch, in quiet, then moderate, then high noise	Child	
	* EARonaut, in quiet, then moderate, then high noise	Child	
5	* MountainEAR	Child	
	* MountainEAR	All types	
6	* FarmEAR in the Dell	Male	
	* Treasure EARland	Male	
7	* FarmEAR in the Dell	Female	
	* Treasure EARland	Female	
8	* FarmEAR in the Dell	Child	
	* Treasure EARland	Child	
9	* pEARI Crunch, in quiet, then moderate, then high noise	All types	
	* EARonaut, in quiet, then moderate, then high noise	All types	
10	* FarmEAR in the Dell	All types	
	* Treasure EARland	All types	
11	* pEARI Crunch, in high noise	All types	
	* EARonaut, in high noise	All types	

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	* FarmEAR in the Dell	All types
	* Treasure EARland	All types

	Goals	**Tips**
Week 1	Play pEARl Crunch for at least 10 minutes twice this week with a male talker in quiet, in moderate noise and then in high noise. You can determine what is "moderate" and "high" noise for you by experimenting with the setting of the noise bar at the bottom of the screen.	"pEARl Crunch forces you to pay attention to those endings of words that add subtle meaning, such as the plural "s" in the word *boys or* the negative "n't" in the word *can't.* These endings are often hard to hear and easy to ignore." "During every day listening, we tend to listen for the 'meat' of the word and not for subtle nuances. For instance, we often do not distinguish between the word *smile* and *smiles*. pEARl Crunch forces you to pay attention to word endings. Think about it: There's a big difference between the sentences, *"*I *can* pick you up from the airport" and "I *can't* pick you up from the airport."
	Play EARonaut for at least 10 minutes twice this week with a male talker in quiet, in moderate and then in high noise. You can determine what is "moderate" and "high" noise for you by experimenting with the setting of the noise bar at the bottom of the screen.	"You will likely find that you are much more relaxed and confident when you are playing the game in quiet than when you are playing the game in high noise. When a person with hearing loss spends time listening in a noisy room, the person must expand an increased amount of 'mental effort' to understand the meaning of words than when listening in a quiet room. The reason why you may sometimes feel exhausted after having had to listen in a noisy room is that you have been forced to expend an inordinate amount of mental effort to understand what people were saying." "Playing EARonaut develops your auditory memory, which is your ability to keep words in your mind as you listen."
Week 2	Play pEARl Crunch for at least 10 minutes twice this week with a female talker in quiet, in moderate noise and then in high noise.	"Playing pEARl Crunch in increasing amounts of noise will develop your 'auditory attention', which is your brain's ability to focus on one auditory stimulus

		and ignore other auditory stimuli that are irrelevant and distracting."
		"When background noise is present, often the first thing a person with hearing loss will notice is that word endings seem to 'disappear'." pEARl Crunch is designed to focus your attention specifically on these word endings and let you experiment with how your ears and brain respond to the presence of background noise."
	Play EARonaut for at least 10 minutes twice this week with a female talker in quiet, in moderate and then in high noise. You can determine what is "moderate" and "high" noise for you by experimenting with the setting of the noise bar at the bottom of the screen.	"Female voices are often harder to hear than male voices. Many times the presence of background noise will make female voices even harder to hear and to understand. This is because women tend to have voices that are higher in pitch than those of men, and noise is especially detrimental to hearing the high pitches. When you have finished training with the female voices, you might want to play one more time, but with the male voices. You will likely find that you are able to increase the level of noise for your perceived 'moderate' and 'high' levels of noise."
Week 3	Play MountainEAR about 10 minutes twice this week with a male talker.	"MountainEAR may help you learn to recognize common, everyday words more easily. This is important because during everyday conversations, we tend to speak and hear many of the same words over and over again. For example during a typical day, you are likely to hear someone say the words *girl, boy, table,* and *chair.* These are all examples of 'frequently spoken words'."
		"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to add more noise after you make consecutive correct answers and to subtract noise after you make consecutive incorrect answers."

	Play MountainEAR about 10 minutes twice this week with a female talker.	"MountainEAR may teach you to recognize words more quickly, which is important when you are listening to connected speech. The typical talker of English speaks between 110 and 150 words per minute. This means that you must have good 'auditory processing speed' to understand speech, which is the brain's ability to quickly process the meaning of words." "You may find that listening to female voices requires more 'mental effort' than listening to male voices, especially when there is background noise present. This means that you have to exert more energy to simply recognize a word. This is because noise tends to wipe out, or 'mask', high-pitched sounds more so than low-pitched sounds. Because women tend to speak in a higher pitched voice than do men, noise is especially detrimental for listening to their speech."
Week 4	Play pEARl Crunch for at least 10 minutes twice this week with a child talker type in quiet, in moderate noise and then in high noise. You can determine what is "moderate" and "high" noise for you by experimenting with the setting of the noise bar at the bottom of the screen.	"Children's voices are often harder to hear than male voices. Many times the presence of background noise will make children's voices even harder to hear and to understand. This is because children tend to have voices that are higher in pitch than those of men, and noise is especially detrimental to hearing the high pitches. When you have finished training with the child voices, you might play one more time, but with the male voices. You will likely find that you are able to increase the level of noise for your perceived 'moderate' and 'high' levels of noise."
	Play EARonaut for at least 10 minutes twice this week with a child talker in quiet, in moderate and then in high noise. You can determine what is "moderate" and "high" noise for you by experimenting with the	"Children often do not enunciate their words as clearly as do adults because they have more immature control of their articulators. When you have finished training with the child voices, you might

	setting of the noise bar at the bottom of the screen.	play one more time, but with the female voices. You will likely find that you are able to increase the level of noise for your perceived 'moderate' and 'high' levels of noise when listening to the female voices as compared to when listening to the child's voices."
Week 5	Play MountainEAR at least 10 minutes twice this week with a child talker.	"This game may help you listen more effectively in the presence of background noise because it forces you to pay attention to the target word and ignore competing speech." "Try to ignore the background noise and pay attention to which picture matches the word you've just heard. This activity will develop 'auditory attention', which is the brain's ability to focus on one auditory stimulus and ignore other auditory stimuli that are irrelevant and distracting." "Background noise will make children's voices especially difficult to understand. This is because children tend to talk more softly than adults and because noise is especially detrimental to high pitched voices."
	Play MountainEAR at least 10 minutes twice this week with all types of talkers.	"You may not realize it, but you will likely be just a little bit slower in playing MountainEAR now that you are playing with many types of voices. The reason for this is that when you listen to multiple talker types, the brain has to use more 'mental effort' to process the meaning of words than when you listen to only males or only females speak the words. As a result of increased mental effort, the brain has to take more time to process meaning, and this will slow down your response time." "Sometimes you might be confused and not be able to decide which picture matches

		the word that you just heard. This is okay. This game will require that you make quick decisions about what you heard and sometimes this is hard to do.”
Week 6	Play FarmEAR in the Dell at least 10 minutes twice this week with a male talker.	“You may find that some of the pictures are a little ambiguous and that it takes some thought to match the word that you hear with the pictures that you see. This ambiguity is intentional. Research has shown that when listening tasks force the brain to focus on meaning and consider different possibilities, learning occurs more quickly.”

“You are learning to recognize common words that occur frequently in everyday conversation. Over time, this kind of training will make listening easier for you.”

“If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers.” |
| | Play Treasure EARland at least 10 minutes twice this week with a male talker. | “One purpose of Treasure EARland is to increase your confidence in your abilities to recognize words. Research has shown that when you doubt your ability to hear words correctly, you actually don’t hear them as well as when you have high confidence in your ability. The mind becomes distracted by the doubt.” |
| **Week 7** | Play FarmEAR in the Dell at least 10 minutes twice this week with a female talker. | “As you play FarmEAR in the Dell, the noise in the background will gradually get louder. Try to ignore the noise and pay attention only to the word that names one of the four pictures. This game will also develop |

		your auditory attention."
		"Once you hear a word, try to pick the corresponding picture as quickly as you can. This will help you learn how to recognize words when people speak quickly and will develop your auditory processing speed."
	Play Treasure EARland at least 10 minutes twice this week with a female talker.	"Even though Treasure EARland is designed to develop your phoneme discrimination, which is your ability to decide whether two sounds are the same or different, it is also developing your ability to focus on the meaning of words and developing your sense of self-confidence in your listening abilities."
Week 8	Play FarmEAR in the Dell at least 10 minutes twice this week with a child talker.	"Sometimes the pictures in FarmEAR in the Dell may be a little confusing. This is okay. The goal is to make you think very hard about the meaning of the words."
	Play Treasure EARland at least 10 minutes twice this week with a child talker.	"The noise will get louder as you learn how to pay more attention to hearing the words and learn to discriminate between words that sound similar. More noise is a good sign, not a bad sign."
Week 9	Play pEARl Crunch for at least 10 minutes twice this week with all types of talkers in quiet, in moderate noise and then in high noise.	"Even though listening to all types of talkers is more difficult than listening to all male voices or to all female voices, research has shown that training with all types of talker voices mixed together leads to faster learning and to better generalization to everyday listening than does training with a single-talker type."
	Play EARonaut for at least 10 minutes twice this week with all types of talkers in light, moderate, and high levels of noise.	"Focus on what is 'moderate' noise for you. Start by setting the noise bar to its midway setting. If this makes it too difficult to hear the words, decrease the noise where you can hear the talkers, but you are still aware of noise. If in the midway setting, you can still easily hear the talkers, adjust the noise to be louder. During this process, you will

		not only exercise your 'auditory attention', or the brain's ability to focus on a single speech stimulus, but you will also develop an awareness of the levels of noise that you can tolerate. This awareness will be helpful when you have to assess whether you will have to make accomodations for a particular setting, such as asking for a quiet section of a noisy restaurant."
Week 10	Play FarmEAR in the Dell at least 10 minutes twice this week with all types of talkers.	"Training with all types of talkers is the most difficult training task. However, research shows that training with "multiple talkers" is most effective in training the brain to recognize common, everyday words" "If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the harder it gets to identify the words."
	Play Treasure EARland at least 10 minutes twice this week with all types of talkers.	"A common complaint the people with hearing loss have when they are forced to listen in the presence of background noise is, *I can hear the talker but I can't understand the words she is saying.* The speech may sound mumbled and unclear because noise tends to wipe out, or 'mask', those high-pitched consonants, such as the "s", "f", "sh", "t", and "p" sounds. Imagine if you had to read text that had only the vowel letters and none of the consonant letters. For some people with hearing loss, this is analogous to listening in noise---they hear the vowel sounds but not the consonant sounds."
Week 11	Play pEARl Crunch at least 10 minutes twice this week with all types of talkers in high noise.	"Start with a softer level of noise. Once you get a pEARl necklace fully "correct" (i.e., you make five right answers in a row with the same necklace), bump up the noise. Then, again, when you get a necklace fully correct, bump up the noise. See how much distance there is between where you first set the noise bar and your

		"high noise" level, which is the point on the noise bar where you reached a plateau in the level of noise you were able to tolerate before you started making incorrect responses."
	Play EARonaut at least 10 minutes twice this week with all types of talkers in high noise.	"Start with a softer level of noise. With every other set of new planets, bump up the noise level by an amount of your choosing. After you play for 10 minutes, see how much distance there is between where you first set the noise bar and your "high noise" level, which is the point on the noise bar where you reached a plateau in the level of noise you were able to tolerate."
Week 12	Play FarmEAR in the Dell at least 10 minutes twice this week with all types of talkers.	"Try to ignore the noise and pay attention to which picture matches the word you've just heard. This activity will develop your 'auditory attention', which is the brain's ability to focus on one auditory stimulus and ignore other auditory stimuli that are irrelevant and distracting."
	Play Treasure EARland at least 10 minutes twice this week with all types of talkers.	"Even with hearing aids, listening in noise may always be difficult. However, do you feel like you have become better at listening in noise during the past twelve weeks?"

Lesson plan for the patient who has difficulty hearing the voices of women and children

Week	Games	Voices	Comments/Notes
1	* pEARI Crunch, adjust noise to preference	Male	
	* EARonaut, in quiet	Female	
2	* EARonaut, adjust noise to preference	Male	
	* pEARI Crunch, in quiet	Female	
3	* FarmEAR in the Dell	Male	
	* MountainEAR	Female	
4	* Treasure EARland	Male	
	* MountainEAR	Female	
5	* ShakespEARe	Female	
	* pEARI Crunch, adjust noise to preference	Female	
6	* EARonaut, in high noise	Female	
	* Treasure EARland	Female	
7	* MountainEAR	Male	
	* EARonaut, in quiet	Child	
8	* Treasure EARland	Male	
	* pEARI Crunch, in quiet	Child	
9	* MountainEAR	Child	
	* ShakespEARe	Child	
10	* FarmEAR in the Dell	Child	
	* Treasure EARland	Child	
11	* pEARI Crunch, in high noise	Child	
	* EARonaut, in high noise	Child	
12	Patient's choice	Female	
	Patient's choice	Child	

	Goals	Tips
Week 1	Play pEARl Crunch at least 10 minutes twice this week with a male talker with the noise adjusted to your preference	"pEARl Crunch forces you to pay attention to those endings of words that add subtle meaning, such as the plural "s" in a word like *boys* or the negative "n't" in a word like *can't*. These endings are often hard to hear and easy to ignore. You are starting with male voices to develop your ability to pay attention to word endings. In later lessons, you will to listen to women's and children's voices." "During every day listening, we tend to listen for the 'meat' of the word and not subtle nuances. For instance, we often do not distinguish between the words *smile* and *smiles*. This game forces you to pay attention to word endings. Think about it: There's a big difference between, "I *can* pick you up from the airport" and "I *can't* pick you up from the airport."
	Play EARonaut at least 10 minutes twice this week with a female talker in quiet. Adjust the noise bar to 0.	"This game is important because it is developing your auditory memory, which is your ability to keep words in your mind as you listen." "Female voices are particularly difficult to hear in background noise, even when you have optimal hearing aids. Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you still to hear the female voice speak the words. You might find that you are using a lot more 'mental effort' when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon."
Week 2	Play EARonaut at least 10 minutes twice this week with a male talker with the noise adjusted to your preference.	"Try playing the game in both quiet and with noise. You will likely find that you are much more relaxed and confident when

		you are playing the game in quiet than when you are playing the game in high noise. When a person with hearing loss spends time listening in a noisy room, the person must expand an increased amount of 'mental effort' to understand the meaning of words than when listening in a quiet room. The reason why you may sometimes feel exhausted after having had to listen in a noisy room is that you have been forced to expend an inordinate amount of mentall effort to understand what people were saying."
	Play pEARl Crunch at least 10 minutes twice this week with a female talker in quiet.	"Female voices are often harder to hear than male voices. This is because women tend to have voices that are higher in pitch than those of men, and people with hearing loss often lose their ability to hear high pitches. When you have finished training with the female voices, you might want to play one more time, but with the male voices. You will likely find that you are able to play the game much faster and with less perceptual effort, or mental energy."
Week 3	Play FarmEAR in the Dell at least 10 minutes twice this week with a male talker.	"FarmEAR in the Dell may help you learn to recognize common, everyday words more easily. This is important because during everyday conversations, we tend to speak and hear many of the same words over and over again. For example during a typical day, you are likely to hear someone say the words *girl, boy, table,* and *chair.* These are all examples of 'frequently spoken words'."
		"You may find that some of the pictures are a little ambiguous and that it takes some thought to match the word that you hear with the pictures that you see. This ambiguity is intentional. Research has shown that when listening tasks which force the brain to focus on meaning and it requires the brain to think of different possibilities, learning occurs more quickly."

		"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers."
	Play MountainEAR about 10 minutes twice this week with a female talker.	"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers."
		"MountainEAR teaches you to recognize words quickly, which is important when you are listening to connected speech. The typical talker of English speaks between 110 and 150 words per minute. This means that you must have good 'auditory processing speed' to understand speech, which is the brain's ability to quickly process the meaning of words."
Week 4	Play Treasure EARland at least 10 minutes twice this week with a male talker.	"Treasure EARland may help you listen more effectively in the presence of background noise because it forces you to pay attention to the target word and ignore competing speech."
		"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less

		noise after you make consecutive incorrect answers."
	Play MountainEAR at least 10 minutes twice this week with a female talker.	"Sometimes you might be confused and not be able to decide which picture matches the word that you just heard. This is okay. MountainEAR will require that you make quick decisions about what you heard and sometimes this is hard to do."
Week 5	Play ShakespEARe at least 10 minutes twice this week with a female talker.	"ShakespEARe may help develop your ability to remember the details of a story. It exercises your 'auditory memory', which is the brain's ability to hold in memory words and sentences that you have recently heard." "At first you may have a hard time remembering which sentence came first, second, third, fourth and fifth. Try to get at least three sentences in the correct order for each paragraph."
	Play pEARl Crunch at least 10 minutes twice this week with a female talker with the noise adjusted to your preference.	"Playing pEARl Crunch in increasing amounts of noise will exercise your 'auditory attention', which is your brain's ability to focus on one auditory stimulus and ignore other auditory stimuli that are irrelevant and distracting. As you play, gradually increase the level of noise." "When background noise is present, often the first thing a person with hearing loss will notice is that word endings seem to 'disappear'." pEARl Crunch is designed to focus your attention specifically on these word endings and let you experiment with how your ears and brain respond to the presence of background noise."
Week 6	Play EARonaut at least 10 minutes twice this week with a female talker in high noise.	"Start with a softer level of noise. With every other set of new planets, bump up the noise level by an amount of your

		choosing. After you play for 10 minutes, see how much distance there is between where you first set the noise bar and your "high noise" level, which is the point on the noise bar where you reached a plateau in the level of noise you were able to tolerate."
	Play Treasure EARland at least 10 minutes twice this week with a female talker.	"One purpose of Treasure EARland is to increase your confidence in your abilities to recognize words. Research has shown that when you doubt your ability to hear words correctly, you actually don't hear them as well as when you have high confidence in your ability. The mind becomes distracted by the doubt."
Week 7	Play MountainEAR at least 10 minutes twice this week with a male talker.	MountainEAR requires that you make very quick decisions about the meaning of a word. How quickly you decide is referred to as your 'auditory processing speed.' Most people with hearing loss tend to have faster auditory processing speed with male voices than with female or child voices.
	Play EARonaut for at least 10 minutes twice this week with a child talker in quiet.	"Children often do not enunciate their words as clearly as do adults because they have more immature control of their articulators. When you have finished training with the child voices, you might play one more time, but with the female voices. You will likely find that you are able to increase the level of noise for your perceived 'high' level of noise when listening to the female voices as compared to when listening to the child's voices."
Week 8	Play Treasure EARland at least 10 minutes twice this week with a male talker.	"Even though this game is designed to develop your phoneme discrimination, which is your ability to decide whether two sounds are the same or different, it is also developing your ability to focus on the meaning of words and developing your sense of self-confidence in your listening abilities."

	Play pEARl Crunch for at least 10 minutes twice this week with a child talker in quiet. Adjust the noise bar to 0.	Children tend to speak more softly than do adults and sometimes the level of their voices become softer at the endings of words. For this reason, their speech is often difficult to understand. pEARl Crunch will exercise your ability to attend to word endings that are spoken by children.
Week 9	Play MountainEAR at least 10 minutes twice this week a child talker.	MountainEAR requires you to decide very quickly whether or not a picture matches the word spoken. The time it takes to make this kind of decision is called 'auditory processing speed.' Research has shown that people with hearing loss tend to have slower auditory processing speed when listening to children than when listening to adults because children's speech is harder to hear. MountainEAR is designed to develop your auditory processing speed.
	Play ShakespEARe at least 10 minutes twice this week with a child talker.	Listening to children's voices can sometimes be difficult because you must concentrate very hard on recognizing each word. This concentration reduces you ability to comprehend the meaning of what is being said. ShakespEARe exercises your ability to attend to the meaning of sentences, even when you must use a lot of mental energy to recognize each word the child speaks.
Week 10	Play FarmEAR in the Dell at least 10 minutes twice this week with a child talker.	"You may find that some of the pictures are a little ambiguous and that it takes some thought to match the word that you hear with the pictures that you see. This ambiguity is intentional. Research has shown that when listening tasks which force the brain to focus on meaning and it requires the brain to think of different possibilities, learning occurs more quickly." "Try to ignore the noise and pay attention to which picture matches the word you've just heard. This activity will develop

		'auditory attention', which is the brain's ability to focus on one auditory stimulus and ignore other auditory stimuli that are irrelevant and distracting."
	Play Treasure EARland at least 10 minutes twice this week with a child talker.	"You are learning to discriminate common words that occur frequently in everyday conversation. Over time, this kind of training will make listening easier for you." "Background noise will make children's voices especially difficult to discriminate and understand. This is because children tend to talk more softly than adults and because noise is especially detrimental to high pitched voices."
Week 11	Play pEARl Crunch at least 10 minutes twice this week with a child talker in high noise.	"Children's voices are often harder to hear than male voices. Many times the presence of background noise will make children's voices even harder to hear and to understand. This is because children tend to have voices that are higher in pitch than those of men, and noise is especially detrimental to hearing the high pitches. When you have finished training with the child voices, you might play one more time, but with the male voices. You will likely find that you are able to increase the level of noise for your perceived 'high' level of noise."
	Play EARonaut at least 10 minutes twice this week with a child talker in high noise.	"Start with a softer level of noise. With every other set of new planets, bump up the noise level by an amount of your choosing. After you play for 10 minutes, see how much distance there is between where you first set the noise bar and your "high noise" level, which is the point on the noise bar where you reached a plateau in the level of noise you were able to tolerate."
Week 12	Your choice of a game and play at least 10	

| | minutes twice this week with a female talker.

Your choice of a game and play at least 10 minutes twice this week with a child talker. | |

Lesson plan for the patient who is not yet ready for hearing aids but desires hearing healthcare

Week	Games	Voices	Comments/Notes
1	* pEARI Crunch, adjust noise to preference * EARonaut, adjust noise to preference	Male Male	
2	* ShakespEARe * MountainEAR	Male Male	
3	* FarmEAR in the Dell * Treasure EARland	Male Male	
4	* pEARI Crunch, adjust noise to preference * EARonaut, adjust noise to preference	Female Female	
5	* ShakespEARe * MountainEAR	Female Female	
6	* FarmEAR in the Dell * Treasure EARland	Female Female	
7	* pEARI Crunch, adjust noise to preference * EARonaut, adjust noise to preference	Child Child	
8	* ShakespEARe * MountainEAR	Child Child	
9	* FarmEAR in the Dell * Treasure EARland	Child Child	
10	* pEARI Crunch, adjust noise to preference * EARonaut, adjust noise to preference	All types All types	
11	* ShakespEARe * MountainEAR	All types All types	
12	* FarmEAR in the Dell * Treasure EARland	All types All types	

	Goals	Tips
Week 1	Play pEARl Crunch at least 10 minutes twice this week with a male talker with the noise adjusted to your preference.	"pEARl Crunch forces you to pay attention to those endings of words that add subtle meaning, such as the plural "s" in the word *boys* or the negative "n't" in the word *can't*. These endings are often hard to hear and easy to ignore." "Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting three pearls for every necklace. Do not move the bar again but train at this noise level."
	Play EARonaut at least 10 minutes twice this week with a male talker with the noise adjusted to your preference.	"Especially early in your training, it is easier if you try and remember where 3 or 4 pictures are when they are presented on the screen instead of attempting to memorize all of them." "Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you to still hear the male voices speak the words. You might find that you are using a lot more 'mental effort' when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon."
Week 2	Play ShakespEARe at least 10 minutes twice this week with a male talker.	"This game may help develop your ability to remember the details of a story. It exercises your 'auditory memory', which is the brain's ability to hold in memory words and sentences that you have recently heard."
	Play MountainEAR about 10 minutes twice this week with a male talker. Listen to the single words in noise and try to increase your coins each round.	"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced

| | | into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers."

"This game is important because it may help you to recognize words quickly, which is important when you are listening to connected speech. The typical talker of English speaks between 110 and 150 words per minute. This means that you must have good 'auditory processing speed' to understand speech, which is the brain's ability to quickly process the meaning of words." |
|---|---|---|
| **Week 3** | Play FarmEAR in the Dell at least 10 minutes twice this week with a male talker. Try to complete 3 rounds in less than 3.5 minutes per round. | "You may find that some of the pictures are a little ambiguous and that it takes some thought to match the word that you hear with the pictures that you see. This ambiguity is intentional. Research has shown that when listening tasks which force the brain to focus on meaning and it requires the brain to think of different possibilities, learning occurs more quickly." |
| | Play Treasure EARland at least 10 minutes twice this week with a male talker. | "If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers." |
| **Week 4** | Play pEARl Crunch at least 10 minutes twice this week with a female talker with the noise adjusted to your preference. | "During every day listening, we tend to listen for the 'meat' of the word and not subtle nuances. For instance, we often do not distinguish between the words *smile* and *smiles*. This game forces you to pay attention to word endings. Think about it: |

		There's a big difference between, "I *can* pick you up from the airport" and "I *can't* pick you up from the airport." "Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting three pearls for every necklace. Do not move the bar again but train at this noise level."
	Play EARonaut at least 10 minutes twice this week with a female talker with the noise adjusted to your preference.	"Female voices are particularly difficult to hear in background noise. Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you to still hear the female voice speak the words. You might find that you are using a lot more 'mental effort' when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon." "This game is important because it is developing your auditory memory, or ability to keep words in your mind as you listen." "Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you to still hear the female voices speak the words. You might find that you are using a lot more 'mental effort' when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon."

Week 5	Play ShakespEARe at least 10 minutes twice this week with a female talker.	"At first you may have a hard time remembering which sentence came first, second, third, fourth and fifth. Try to get at least three sentences in the correct order for each paragraph."
	Play MountainEAR at least 10 minutes twice this week with a female talker.	"This game may help you listen more effectively in the presence of background noise because it forces you to pay attention to the target word and ignore competing speech."
		"Sometimes you might be confused and not be able to decide which picture matches the word that you just heard. This is okay. This game will require that you make quick decisions about what you heard and sometimes this is hard to do."
Week 6	Play FarmEAR in the Dell at least 10 minutes twice this week with a female talker.	"Try to ignore the background noise and pay attention to which picture matches the word you've just heard. This activity will develop 'auditory attention', which is the brain's ability to focus on one auditory stimulus and ignore other auditory stimuli that are irrelevant and distracting."
		"Try to ignore the noise and pay attention to which picture matches the word you've just heard. This activity will develop 'auditory attention', which is the brain's ability to focus on one auditory stimulus and ignore other auditory stimuli that are irrelevant and distracting."
	Play Treasure EARland at least 10 minutes twice this week with a female talker.	"Even though this game is designed to develop your phoneme discrimination, which is your ability to decide whether two sounds are the same or different, it is also developing your ability to focus on the meaning of words and developing your sense of self-confidence in your listening abilities."

Week 7	Play pEARl Crunch for at least 10 minutes twice this week with a child talker with the noise adjusted to your preference.	"Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting three pearls for every necklace. Do not move the bar again but train at this noise level."

"When background noise is present, often the first thing a person with hearing loss will notice is that word endings seem to 'disappear'." pEARl Crunch is designed to focus your attention specifically on these word endings and let you experiment with how your ears and brain respond to the presence of background noise." |
| | Play EARonaut for at least 10 minutes twice this week with a child talker with the noise adjusted to your preference. | "Remembering words is very important when you are listening to everyday conversations. When you hear a word, try to visualize which planet hides the corresponding picture."

"Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you to still hear the child voices speak the words. You might find that you are using a lot more 'mental effort' when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon." |
| **Week 8** | Play ShakespEARe at least 10 minutes twice this week with a child talker. | "Very often in conversations, we "tell stories" about what happened during the day. In this game, you will practice paying attention to the beginnings, middles, and endings of stories." |
| | Play MountainEAR at least 10 minutes twice this week a child talker. | "Background noise will make children's voices especially difficult to understand. This is because children tend to talk more |

		softly than adults and because noise is especially detrimental to high pitched voices."
Week 9	Play FarmEAR in the Dell at least 10 minutes twice this week with a child talker.	"You are learning to recognize common words that occur frequently in everyday conversation. Over time, this kind of training will make listening easier for you."
	Play Treasure EARland at least 10 minutes twice this week with a child talker.	"One purpose of Treasure EARland is to increase your confidence in your abilities to recognize words. Research has shown that when you doubt your ability to hear words correctly, you actually don't hear them as well as when you have high confidence in your ability. The mind becomes distracted by the doubt."
Week 10	Play pEARl Crunch at least 10 minutes twice this week with all types of talkers with the noise adjusted to your preference.	"Even though listening to all types of talkers is more difficult than listening to a single type of talker, such as a male voice, research has shown that training with all types mixed together leads to faster learning and to better generalization to everyday listening than does training with a single talker type."
		"Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting three pearls for every necklace. Do not move the bar again but train at this noise level."
	Play EARonaut at least 10 minutes twice this week with all types of talkers with the noise adjusted to your preference.	"Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you to still hear the voices speak the words. You might find that you are using a lot more 'mental effort' when you are listening in noise than when you are listening in quiet.

		This is a very natural phenomenon."
Week 11	Play ShakespEARe at least 10 minutes twice this week with all types of talkers.	"Try to ignore the sound of the talkers' voices and to focus on the meaning of the sentences that they are speaking. This will develop your ability to understand spoken stories."
	Play MountainEAR at least 10 minutes twice this week with all types of talkers.	"Sometimes you might be confused and not be able to decide which picture matches the word that you just heard. This is okay. This game will require that you make quick decisions about what you heard and sometimes this is hard to do."
Week 12	Play FarmEAR in the Dell at least 10 minutes twice this week with all types of talkers.	"Training with all types of talkers is the most difficult training task. However, research shows that training with "multiple talkers" is most effective in training the brain to recognize common, everyday words."
	Play Treasure EARland at least 10 minutes twice this week with all types of talkers.	

Lesson plan for the patient who wants to understand the speech of an FCP (crash course). The voice designation of "M/F" stands for "Male or Female" and means that the patient should train with the generic voice type that is the same sex as his or her FCP.

Note: This lesson plan is appropriate for patients who have an FCP who has recorded the training stimuli in a single session at the onset of the patient's training program. If the FCP hasn't recorded all stimuli, the missing words, phrases, or sentences will be replaced by generic recordings stored in the clEAR™ software.

Week	Games	Voices	Comments/Notes
1	* pEARI Crunch, adjust noise to preference	M/F	
	* EARonaut, adjust noise to preference	M/F	
2	* ShakespEARe	M/F	
	* pEARI Crunch, in light noise	FCP	
3	* EARonaut, in light noise	FCP	
	* MountainEAR	M/F	
4	* MountainEAR	FCP	
	* FarmEAR in the Dell	M/F	
5	* FarmEAR in the Dell	FCP	
	* Treasure EARland	M/F	
6	* Treasure EARland	FCP	
	* pEARI Crunch, in moderate noise	FCP	
7	* EARonaut, in moderate noise	FCP	
	* ShakespEARe	FCP	
8	* MountainEAR	FCP	
	* FarmEAR in the Dell	FCP	
9	* Treasure EARland	FCP	
	* EARonaut, in high noise	FCP	
10	* pEARI Crunch, in high noise	FCP	
	* MountainEAR	FCP	
11	* FarmEAR in the Dell	FCP	
	* Treasure EARland	FCP	
12	* pEARI Crunch, in high noise	FCP	
	* Patient's choice	FCP	

Week 1	Play pEARl Crunch at least 10 minutes twice this week with the talker type that is the same sex as your FCP with the noise adjusted to your preference.	"pEARl Crunch forces you to pay attention to those endings of words that add subtle meaning, such as the plural "s" in the word *boys* or the negative "n't" in the word *can't.* These endings are often hard to hear and easy to ignore."
		"During every day listening, we tend to listen for the 'meat' of the word and not subtle nuances. For instance, we often do not distinguish between the words *smile* and *smiles*. This game forces you to pay attention to word endings. Think about it: There's a big difference between, "I *can* pick you up from the airport" and "I *can't* pick you up from the airport."
		"This game will get a little easier the more you play because you are training your ears to pay attention to word endings."
	Play EARonaut at least 10 minutes twice this week with the talker type that is the same sex as your FCP with the noise adjusted to your preference.	"Especially early in your training, it is easier if you try and remember where 3 or 4 pictures are when they are presented on the screen instead of attempting to memorize all of them."
		"Earonaut exercises your auditory memory, which is the ability to keep words in your mind as you listen."
Week 2	Play ShakespEARe at least 10 minutes twice this week with the talker type that is the same sex as your FCP.	"ShakespEARe may help develop your ability to remember the details of a story. It exercises your 'auditory memory', which is the brain's ability to hold in memory words and sentences that you have recently heard."
		"At first you may have a hard time remembering which sentence came first, second, third, fourth and fifth. Try to get at least three sentences in the correct order for each paragraph."

	Play pEARl Crunch at least 10 minutes twice this week with your FCP's voice in light noise.	"pEARl Crunch forces you to pay attention to those endings of words that add subtle meaning, such as the plural "s" in a word like *boys* or the negative "n't" in a word like *can't*. These endings are often hard to hear and easy to ignore." "You can determine what is "light noise". Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting four pearls for every necklace. Do not move the bar again but train at this noise level."
Week 3	Play EARonaut at least 10 minutes twice this week with your FCP's voice in light noise.	"Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you to still hear your FCP speak the words. You might find that you are using a lot more 'mental effort' when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon." "Remembering words is very important when you are listening to everyday conversations. When you hear a word, try to visualize which planet hides the corresponding picture."
	Play MountainEAR about 10 minutes twice this week with a talker type that is the same sex as your FCP.	"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers." "Playing MountainEAR may help you to recognize words more quickly, which is important when you are listening to

		connected speech. The typical talker of English speaks between 110 and 150 words per minute. This means that you must have good 'auditory processing speed' to understand speech, which is the brain's ability to quickly process the meaning of words."
Week 4	Play MountainEAR at least 10 minutes twice this week with your FCP's voice.	"Sometimes you might be confused and not be able to decide which picture matches the word that you just heard. This is okay. This game will require that you make quick decisions about what you heard and sometimes this is hard to do."
	Play FarmEAR in the Dell at least 10 minutes twice this week with a talker type that is the same sex as your FCP.	"You may find that some of the pictures are a little ambiguous and that it takes some thought to match the word that you hear with the pictures that you see. This ambiguity is intentional. Research has shown that when listening tasks which force the brain to focus on meaning and it requires the brain to think of different possibilities, learning occurs more quickly." "If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers."
Week 5	Play FarmEAR in the Dell at least 10 minutes twice this week with your FCP's voice.	"Try to ignore the noise and pay attention to which picture matches the word you've just heard. This activity will develop 'auditory attention', which is the brain's ability to focus on one auditory stimulus and ignore other auditory stimuli that are irrelevant and distracting."

| | | Play Treasure EARland at least 10 minutes twice this week with a talker type that is the same sex as your FCP. | "One purpose of Treasure EARland is to increase your confidence in your abilities to recognize words. Research has shown that when you doubt your ability to hear words correctly, you actually don't hear them as well as when you have high confidence in your ability. The mind becomes distracted by the doubt."

"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers." |
|---|---|---|---|
| **Week 6** | Play Treasure EARland at least 10 minutes twice this week with your FCP's voice. | | "Learning to discriminate and recognize words in the presence of background noise will increase your confidence to engage in social situations, such as eating out at restaurants. Treasure EARland exercises your word discrimination abilities and your ability to hear your FCP in noisy settings." |
| | Play pEARl Crunch at least 10 minutes twice this week with your FCP's voice in moderate noise. | | "Even though your FCP's voice may be very familiar to you because you have listened to and talked with your FCP for a long time, you may not realize that you have not been attending to important word endings. When listening becomes difficult, the brain tends to pay less attention to word endings. Training with pEARl Crunch will exercise your auditory attention and lead you to pay more attention to word endings."

"You can determine what is "moderate noise". Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting three pearls |

		for every necklace. Do not move the bar again but train at this noise level."
Week 7	Play EARonaut at least 10 minutes twice this week with your FCP in moderate noise.	"You can determine what is 'moderate' noise. Start by setting the noise bar to its midway setting. If this makes it too difficult to hear the words, decrease the noise where you can hear the talkers, but you are still aware of noise. If in the midway setting, you can still easily hear the talkers, adjust the noise to be louder. During this process, you will not only exercise your 'auditory attention', or the brain's ability to focus on a single speech stimulus, but you will also develop an awareness of the levels of noise that you can tolerate. This awareness will be helpful when you have to assess whether you will have to make accomodations for a particular setting, such as asking for a quiet section of a noisy restaurant."
	Play ShakespEARe at least 10 minutes twice this week with your FCP.	"Your FCP's voice may sound different to you because of your hearing loss, and will sound especially different if you have just received a new hearing aid or cochlear implant. By listening to your FCP speak sentences, you will likely begin to recognize the speech rhythms and cadences that the FCP employs when speaking, and this will help you recognize the FCP's words more quickly."
Week 8	Play MountainEAR at least 10 minutes twice this week with your FCP.	"Many people with hearing loss feel that they only can understand what their FCP says if the FCP speaks very slowly. Training with MountainEAR will exercise your ability to understand your FCP when the FCP speaks with a normal speaking rate."
	Play FarmEAR in the Dell at least 10 minutes twice this week with your FCP.	"By playing FarmEAR in the Dell, you are learning to recognize common words that occur frequently in everyday conversations with your FCP. Over time, this kind of training will make listening easier for you."

Week 9	Play Treasure EARland at least 10 minutes twice this week with your FCP.	"Even though this game is designed to develop your phoneme discrimination, which is your ability to decide whether two sounds are the same or different, it is also developing your ability to focus on the meaning of words and developing your sense of self-confidence in your listening abilities."
	Play EARonaut at least 10 minutes twice this week with your FCP's voice in high noise.	"You can determine what is 'high' noise. Start by setting the noise bar to its midway setting. If this makes it too difficult to hear the words, decrease the noise where you can hear the talkers, but you are still aware of noise. At first, you may find that what is a high noise level for you is very near the quiet position on the noise bar. With continued practice, you might be able to tolerate more noise."
Week 10	Play pEARl Crunch at least 10 minutes twice this week with all your FCP's voice in high noise.	"You can determine what is "high noise". Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting three pearls for every necklace. Do not move the bar again but train at this noise level." "When background noise is present, often a person with hearing loss will notice that word endings seem to 'disappear'." pEARl Crunch is designed to focus your attention specifically on these word endings and let you experiment with how your ears and brain respond to the presence of background noise."
	Play MountainEAR at least 10 minutes twice this week with your FCP's voice.	"You may found that you can recognize the words more quickly when they are spoken by your FCP than when they are spoken by a talker of the opposite sex. Try playing MountainEAR with your FCP's voice. After several trials, then play MountainEAR with the voice of talkers of the same sex as your

		FCP. Do you find that you recognize words faster with your FCP's voice? Does it seem easier to recognize the words when they are spoken by your FCP? Familiarity of the talker has a very positive effect upon your ability to recognize speech."
Week 11	Play FarmEAR in the Dell at least 10 minutes twice this week with your FCP's voice.	"Sometimes you might be confused and not be able to decide which picture matches the word that you just heard. This is okay. This game will require that you make quick decisions about what you heard and sometimes this is hard to do."
	Play Treasure EARland at least 10 minutes twice this week with your FCP's voice.	"Even though this game is designed to develop your phoneme discrimination, which is your ability to decide whether two sounds are the same or different, it is also developing your ability to focus on the meaning of words and developing your sense of self-confidence in your listening abilities."
Week 12	Play pEARl Crunch at least 10 minutes twice this week with your FCP's voice in high noise.	"You can determine what is "high noise". Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting three pearls for every necklace. Do not move the bar again but train at this noise level."
	You choose a game, but play with the voice of your FCP	

Lesson plan for the patient who wants to understand the speech of an FCP (staged in over time). The voice designation of "M/F" stands for "Male or Female" and means that the patient should train with the generic voice type that is the same sex as his or her FCP.

Note: this lesson plan is appropriate for patients who have an FCP who does not want to record the training stimuli in a single session. FCP should record the stimuli in 3 sessions:
Before Week 1, session 1: Stimuli for pEARI Crunch,   ShakespEARe
Before Week 7, sessions 2 & 3: Word stimuli

Week	Games	Voices	Comments/Notes
1	* EARonaut, adjust noise to preference * pEARI Crunch, in quiet	M/F FCP	
2	* ShakespEARe * MountainEAR	FCP M/F	
3	* pEARI Crunch, in light noise * FarmEAR in the Dell	FCP M/F	
4	* ShakespEARe * Treasure EARland	FCP M/F	
5	* pEARI Crunch, in high noise * EARonaut, in light noise	FCP M/F	
6	* pEARI Crunch, in high noise * ShakespEARe	FCP FCP	
7	* MountainEAR * FarmEAR in the Dell	FCP FCP	
8	* Treasure EARland * EARonaut, in high noise	FCP FCP	
9	* MountainEAR * FarmEAR in the Dell	FCP FCP	
10	* Treasure EARland * pEARI Crunch, in high noise	FCP FCP	
11	* ShakespEARe * Patient's choice	FCP FCP	
12	* Patient's choice * Patient's choice	FCP FCP	

	Goals	**Tips**
Week 1	Play EARonaut at least 10 minutes twice this week with a talker type that is the same sex as your FCP with the noise adjusted to your preference.	"Especially early in your training, it is easier if you try and remember where 3 or 4 pictures are when they are presented on the screen instead of attempting to memorize all of them."
	Play pEARl Crunch at least 10 minutes twice this week with your FCP's voice in quiet.	"pEARl Crunch forces you to pay attention to those endings of words that add subtle meaning, such as the plural "s" or the negative "n't" These endings are often hard to hear and easy to ignore."

"During every day listening, we tend to listen for the 'meat' of the word and not subtle nuances. For instance, we often do not distinguish between the words *smile* and *smiles*. This game forces you to pay attention to word endings. Think about it: There's a big difference between, "I *can* pick you up from the airport" and "I *can't* pick you up from the airport." |
| **Week 2** | Play   ShakespEARe at least 10 minutes twice this week with your FCP's voice. | "Your FCP's voice may sound different to you because of your hearing loss, and will sound especially different if you have just received a new hearing aid or cochlear implant. By listening to your FCP speak sentences, you will likely begin to recognize the speech rhythms and cadences that the FCP employs when speaking, and this will help you recognize the FCP's words more quickly." |
| | Play MountainEAR about 10 minutes twice this week with a talker type that is the same sex as your FCP. | "If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers." |

		"This game is important because it may help you to recognize words quickly, which is important when you are listening to connected speech. The typical talker of English speaks between 110 and 150 words per minute. This means that you must have good 'auditory processing speed' to understand speech, which is the brain's ability to quickly process the meaning of words."
Week 3	Play pEARl Crunch at least 10 minutes twice this week with your FCP's voice in light noise.	"You can determine what is "light noise". Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting four pearls for every necklace. Do not move the bar again but train at this noise level." "Even though your FCP's voice may be very familiar to you because you have listened to and talked with your FCP for a long time, you may not realize that you have not been attending to important word endings. When listening becomes difficult, the brain tends to pay less attention to word endings. Training with pEARl Crunch will exercise your auditory attention and lead you to pay more attention to word endings."
	Play FarmEAR in the Dell at least 10 minutes twice this week with a talker type that is the same sex as your FCP.	"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers." "You may find that some of the pictures are a little ambiguous and that it takes some thought to match the word that you hear

		with the pictures that you see. This ambiguity is intentional. Research has shown that when listening tasks which force the brain to focus on meaning and it requires the brain to think of different possibilities, learning occurs more quickly."
		"You are learning to recognize common words that occur frequently in everyday conversation. Over time, this kind of training will make listening easier for you."
Week 4	Play ShakespEARe at least 10 minutes twice this week with your FCP's voice.	"ShakespEARe may help develop your ability to remember the details of a story. It exercises your 'auditory memory', which is the brain's ability to hold in memory words and sentences that you have recently heard."
		"At first you may have a hard time remembering which sentence came first, second, third, fourth and fifth. Try to get at least three sentences in the correct order for each paragraph."
	Play Treasure EARland at least 10 minutes twice this week with a talker type that is the same sex as your FCP's voice.	"One purpose of Treasure EARland is to increase your confidence in your abilities to recognize words. Research has shown that when you doubt your ability to hear words correctly, you actually don't hear them as well as when you have high confidence in your ability. The mind becomes distracted by the doubt."
		"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers."
		"Don't get discouraged if you have to play more than 2 rounds to meet your goal."

Week 5	Play pEARl Crunch at least 10 minutes twice this week with your FCP's voice in high noise.	You can determine what is "high noise". Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting three pearls for every necklace. Do not move the bar again but train at this noise level."
	Play EARonaut at least 10 minutes twice this week with a talker type that is the same sex as your FCP in light noise.	"Remembering words is very important when you are listening to everyday conversations. When you hear a word, try to visualize which planet hides the corresponding picture."
		"You can determine what is 'light' noise. Start by setting the noise bar to its midway setting. If this makes it too difficult to hear the words, decrease the noise where you can hear the talkers, but you are still aware of noise. If in the midway setting, you can still easily hear the talkers, adjust the noise to be louder. During this process, you will not only exercise your 'auditory attention', or the brain's ability to focus on a single speech stimulus, but you will also develop an awareness of the levels of noise that you can tolerate. This awareness will be helpful when you have to assess whether you will have to make accomodations for a particular setting, such as asking for a quiet section of a noisy restaurant."
Week 6	Play pEARl Crunch at least 10 minutes twice this week with your FCP's voice in high noise.	"You can determine what is "high noise". Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting three pearls for every necklace. Do not move the bar

		again but train at this noise level."
	Play ShakespEARe at least 10 minutes twice this week with your FCP's voice.	"ShakespEARe is designed to enhance your everyday conversations with your FCP by making listening easier and more successful. Very often in conversations, we "tell stories" about what happened during the day. In this game, you will practice paying attention to the beginnings, middles, and endings of stories, as told by your FCP."
Week 7	Play MountainEAR at least 10 minutes twice this week with your FCP's voice.	"You may found that you can recognize the words more quickly when they are spoken by your FCP than when they are spoken by a talker of the opposite sex. Try playing MountainEAR with your FCP's voice. After several trials, then play MountainEAR with the voice of talkers of the same sex as your FCP. Do you find that you recognize words faster with your FCP's voice? Does it seem easier to recognize the words when they are spoken by your FCP? Familiarity of the talker has a very positive effect upon your ability to recognize speech." "You are learning to recognize common words that occur frequently in everyday conversations with your FCP. Over time, this kind of training will make listening easier for you and participating in conversations much easier."
	Play FarmEAR in the Dell at least 10 minutes twice this week with your FCP's voice.	"Try to ignore the noise and pay attention to which picture matches the word you've just heard. This activity will develop 'auditory attention', which is the brain's ability to focus on one auditory stimulus and ignore other auditory stimuli that are irrelevant and distracting." "Sometimes you might be confused and not be able to decide which picture matches the word that you just heard. This is okay. This game will require that you make quick decisions about what you heard and

		sometimes this is hard to do."
Week 8	Play Treasure EARland at least 10 minutes twice this week with your FCP's voice.	"Even though this game is designed to develop your phoneme discrimination, which is your ability to decide whether two sounds are the same or different, it is also developing your ability to focus on the meaning of words and developing your sense of self-confidence in your listening abilities."
	Play EARonaut at least 10 minutes twice this week with your FCP's voice in high noise.	"Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you still to hear your FCP speak the words. You might find that you are using a lot more 'mental effort' when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon."
Week 9	Play MountainEAR at least 10 minutes twice this week with your FCP's voice.	"Many people with hearing loss feel that they only can understand what their FCP says if the FCP speaks very slowly. Training with MountainEAR will exercise your ability to understand your FCP when the FCP speaks with a normal speaking rate."
	Play FarmEAR in the Dell at least 10 minutes twice this week with your FCP's voice.	"Sometimes you might be confused and not be able to decide which picture matches the word that you just heard. This is okay. This game will require that you make quick decisions about what you heard and sometimes this is hard to do."
Week 10	Play Treasure EARland at least 10 minutes twice this week with your FCP's voice.	Learning to discriminate and recognize words in the presence of background noise will increase your confidence to engage in social situations, such as eating out at restaurants. Treasure EARland exercises

		your word discrimination abilities and your ability to hear your FCP in noisy settings.
	Play pEARl Crunch at least 10 minutes twice this week with all your FCP's voice in high noise.	"You can determine what is 'high' noise. Start by setting the noise bar to its midway setting. If this makes it too difficult to hear the words, decrease the noise where you can hear the talkers, but you are still aware of noise. At first, you may find that what is a high noise level for you is very near the quiet position on the noise bar. With continued practice, you might be able to tolerate more noise."
Week 11	Play ShakespEARe at least 10 minutes twice this week with your FCP's voice.	"ShakespEARe is designed to enhance your everyday conversations with your FCP by making listening easier and more successful. Very often in conversations, we "tell stories" about what happened during the day. In this game, you will practice paying attention to the beginnings, middles, and endings of stories, as told by your FCP."
	Your choice of game, at least 10 minutes twice this week, but play with the voice of your FCP.	
Week 12	Your choice of game, at least 10 minutes twice this week, but play with the voice of your FCP. Your choice of game, at least 10 minutes twice this week, but play with the voice of your FCP.	

Lesson plan for the patient with central auditory processing disorder or cognitive difficulties

Week	Games	Voices	Comments/Notes
1	* pEARI Crunch, adjust noise to quiet and then with each "new necklace", add just a little more noise	Male	
	*FarmEAR in the Dell	Male	
2	* EARonaut, adjust noise to quiet and then with each new trial, add just a little more noise	Male	
	* Treasure EARland	Male	
3	* MountainEAR	Male	
	* ShakespEARe	Male	
4	* pEARI Crunch, adjust noise to quiet and then with each "new necklace", add just a little more noise	Female	
	* FarmEAR in the Dell	Female	
5	* EARonaut, adjust noise to quiet and then with each new trial, add just a little more noise	Female	
	* Treasure EARland	Female	
6	* MountainEAR	Female	
	* ShakespEARe	Female	
7	* pEARI Crunch, adjust noise to quiet and then with each "new necklace", add just a little more noise	Child	
	*FarmEAR in the Dell	Child	
8	* EARonaut, adjust noise to quiet and then with each new trial, add just a little more noise	Child	
	* Treasure EARland	Child	
9	* MountainEAR	Child	
	* ShakespEARe	Child	
10	* pEARI Crunch, adjust noise to preference	All types	
	* EARonaut, adjust noise to preference	All types	
11	* ShakespEARe	All types	
	* MountainEAR	All types	
12	* FarmEAR in the Dell	All types	
	* Treasure EARland	All types	

	Goals	Tips
Week 1	Play pEARl Crunch at least 10 minutes twice this week with a male talker starting in quiet and then adding noise on the scroll bar with each play.	"pEARl Crunch forces you to pay attention to those endings of words that add subtle meaning, such as the plural "s" in the word *boys* or the negative "n't" in the word *can't*. These endings are often hard to hear and easy to ignore."
		"During every day listening, we tend to listen for the 'meat' of the word and not subtle nuances. For instance, we often do not distinguish between the words *smile* and *smiles*. This game forces you to pay attention to word endings. Think about it: There's a big difference between, "I *can* pick you up from the airport" and "I *can't* pick you up from the airport."
	Play FarmEAR in the Dell at least 10 minutes twice this week with a male talker.	"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers."
		"Try to ignore the background noise and pay attention to which picture matches the word you've just heard. This activity will develop 'auditory attention', which is the brain's ability to focus on one auditory stimulus and ignore other auditory stimuli that are irrelevant and distracting."
		"You may find that some of the pictures are a little ambiguous and that it takes some thought to match the word that you hear with the pictures that you see. This ambiguity is intentional. Research has shown that when listening tasks which force the brain to focus on meaning and it requires the brain to think of different possibilities, learning occurs more quickly."

Week 2	Play EARonaut at least 10 minutes twice this week with a male talker starting in quiet and then adding noise on the scroll bar with each play.	"Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you still to hear the male talkers speak the words. You might find that you are using a lot more 'mental effort' when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon."
	Play Treasure EARland for about 10 minutes twice this week with a male talker.	"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers." "One purpose of Treasure EARland is to increase your confidence in your abilities to recognize words. Research has shown that when you doubt your ability to hear words correctly, you actually don't hear them as well as when you have high confidence in your ability. The mind becomes distracted by the doubt."
Week 3	Play MountainEAR at least 10 minutes twice this week with a male talker.	"If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers."
	Play ShakespEARe Island at least 10 minutes twice this week with a male talker.	"This game may help develop your ability to remember the details of a story. It exercises your 'auditory memory', which is

		the brain's ability to hold in memory words and sentences that you have recently heard." "At first you may have a hard time remembering which sentence came first, second, third, fourth and fifth. Try to get at least three sentences in the correct order for each paragraph."
Week 4	Play pEARl Crunch at least 10 minutes twice this week with a female talker starting in quiet and then adding noise on the scroll bar with each play.	"The noise will make this task more difficult so really pay attention to the end of words." "This game is important training because the ends of words often convey a lot of meaning." "If you feel that the training is getting too hard, go ahead and turn down the noise with the noise bar. If you feel that the training is getting too easy, turn up the noise."
	Play FarmEAR in the Dell at least 10 minutes twice this week with a female talker.	"Sometimes the pictures may be a little confusing. This is okay. The goal is to make you think very hard about the meaning of the words." "Try to ignore the noise and pay attention to which picture matches the word you've just heard. This activity will develop 'auditory attention', which is the brain's ability to focus on one auditory stimulus and ignore other auditory stimuli that are irrelevant and distracting."
Week 5	Play EARonaut at least 10 minutes twice this week with a female talker starting in quiet and then adding noise on the scroll bar with each play.	"Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you still to hear the voice speak the words. You might find that you are using a lot more 'mental effort' when you are listening in noise than when you are listening in quiet. This is a

		very natural phenomenon."
	Play Treasure EARland for about 10 minutes twice this week with a female talker.	"If the noise gets louder as you play, this means you are doing better. You are developing an important cognitive skill called 'auditory attention', which is your ability to ignore noise and attend only to the important speech."
Week 6	Play MountainEAR at least 10 minutes twice this week with a female talker.	"This game is important because it may help you to recognize words quickly, which is important when you are listening to connected speech. The typical talker of English speaks between 110 and 150 words per minute. This means that you must have good 'auditory processing speed' to understand speech, which is the brain's ability to quickly process the meaning of words." "Sometimes you might be confused and not be able to decide which picture matches the word that you just heard. This is okay. This game will require that you make quick decisions about what you heard and sometimes this is hard to do."
	Play ShakespEARe Island at least 10 minutes twice this week with a female talker.	You may have a hard time remembering which sentence came first, second, third, fourth and fifth. As you play, you will develop your ability to remember the ordering of the sentences.
Week 7	Play pEARl Crunch at least 10 minutes twice this week with a child talker starting in quiet and then adding noise on the scroll bar with each play.	Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting three or four pearls for every necklace. Do not move the bar again but train at this noise level."

	Play FarmEAR in the Dell at least 10 minutes twice this week with a child talker.	"This game is designed to help you to recognize common, everyday days more easily." "Background noise will make children's voices especially difficult to understand. This is because children tend to talk more softly than adults and because noise is especially detrimental to high pitched voices."
Week 8	Play EARonaut at least 10 minutes twice this week with a child talker starting in quiet and then adding noise on the scroll bar with each play. Play Treasure EARland for about 10 minutes twice this week with a child talker. Listen to the single words in noise and try to increase your coins each round.	"When you listen in noise, you may find that it is more difficult to remember what people say. This game exercises your ability to remember words, even if listening conditions are difficult." "Children's voices are harder to hear than those of men or women. You might find that you have a hard time remembering the words. That's okay because this is only natural." "Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you still to hear hear the voice the words. You might find that you are using a lot more 'mental effort' when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon." "This game teaches you to hear differences between words that sound very similar. Discriminating words is a very important skill for successful listening." "Even though this game is designed to develop your phoneme discrimination, which is your ability to decide whether two sounds are the same or different, it is also

		developing your ability to focus on the meaning of words and developing your sense of self-confidence in your listening abilities."
Week 9	Play MountainEAR at least 10 minutes twice this week with a child's voice.	"Remember, if the noise seems to be getting louder as you play, this means you are getting better at listening and paying attention to the words." "Children's voices are especially hard to hear when you are listening in noise. MoutainEAR exercises your ability to understand the meaning of words, even if you are having a hard time hearing."
	Play ShakespEARe Island at least 10 minutes twice this week with a child talker.	"Because children's voices are especially hard to hear, you may have a difficult time remembering the story. This is okay. You will get better with practice." "This game is developing your ability to remember the beginning, middle, and endings of stories. This is an important skill when listening to people in your everyday conversations."
Week 10	Play pEARl Crunch at least 10 minutes twice this week with a mix of talkers starting in quiet and then adding noise on the scroll bar with each play.	"Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting two or three pearls for every necklace. Do not move the bar again but train at this noise level." "Concentrate on hearing the endings of the words as this will help you to select the correct picture."
	Play EARonaut at least 10 minutes twice this week with a mix of talkers starting in quiet and then adding about steps of noise on the scroll bar with each play.	"Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you still to hear the voices speak the words. You might find that you are using a lot more

		'mental effort' when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon."
Week 11	Play MountainEAR at least 10 minutes twice this week with a mix of talkers.	"You may not realize it, but you will likely be just a little bit slower in playing this game now that you are playing with many types of voices. The reason for this is that when you listen to multiple talker types, the brain has to use more 'mental effort' to process the meaning of words than when you listen to the same talker type speak the words. As a result of increased mental effort, the brain has to take more time to process meaning, and this will slow down your response time."
	Play ShakespEARe Island at least 10 minutes twice this week with a mix of talkers.	"Take your time in playing this game. The goal in this game is to remember what you heard and not to finish the game quickly." "Try to ignore the sound of the talkers' voices and to focus on the meaning of the sentences that they are speaking. This will develop your ability to understand spoken stories." "Even though listening to all types of talkers is more difficult than listening to a single type of talker, such as a male voice, research has shown that training with all types mixed together leads to faster learning and to better generalization to everyday listening than does training with a single talker type."
Week 12	Play FarmEAR in the Dell at least 10 minutes twice this week with a mix of talkers.	"Training with all types of talkers is the most difficult training task. However, research shows that training with "multiple talkers" is most effective in training the brain to recognize common, everyday words." "Listening to a variety of talkers is

| | Play Treasure EARland for about 10 minutes twice this week with a mix of talkers. | challenging so don't become discouraged if you have difficulty in distinguishing the words."

"As you continue to play, try betting more coins and increasing your confidence in your ability to listen." |

Chapter 9: Guidelines for Recording the FCP's Speech

Overview

Recording the speech of the FCP can be a very powerful tool in this program. However, it may be a challenge for your practice and for the FCP to make the recordings. For this reason, you may want to start with the lesson plan 7.f, and have the first recording session last no more than 15 minutes. If the patient is motivated and excited by training with the FCP's voice, arrange for the remaining stimuli to be recorded.

clEAR also provides the option of using the speech samples that are stored on the website, and customizing auditory training with these voices. If for some reason, recording the entire corpus of speech stimuli is not an option for an FCP, patients can still use clEAR. For example, the clEAR™ software replaces any missing training stimuli with stored stimuli that have been spoken by a generic talker of the same sex as the FCP.

One possibility is for an FCP to have one session in your practice setting so to learn how to use the recording module and then record the remaining samples at home using a personal computer equipped with a microphone. The FCP page is self-explanatory, so it is also possible for an FCP to make the recordings independently at home.

Recording Lists

Every patient may choose up to five FCPs to record training stimuli. Each FCP has the option of recording three types of training stimuli:

Stimuli for Word Games (I.e. for TreasEAR Island, MountainEAR, FarmEAR in the Dell, and EARonaught):

There are 17 lists, with each list containing 25 words (e.g., *fit, girl, table*)

Sentences for ShakespEARe:

There are 3 lists, with each list containing 40 sentences (e.g., *Bill and Sandy planned a picnic.*).

Phrases for pEARl Crunch:

There are 11 lists, with each list containing 16 phrases (e.g., *Boy can smile; Boy can't smile*).

The Audio Management Tab

The sidebar on the left side of the FCP page offers an *Audio Management* tab. By clicking this tab, you and the FCP can see what stimuli have been recorded and which stimuli remain to be recorded. This tab also will allow you to delete and re-record stimuli. For example, if a patient discovers that an FCP stumbled while recording a word, the FCP can replace the word.

Procedures

To begin, an FCP creates a login name and enters an email address. The FCP is then taken to the FCP page. The stimuli are divided into lists so each list requires only a short amount of time to record (e.g., 1-3 minutes).

Recording should occur in a quiet room. This room may be in the home or the HHP's practice. If recording occurs at the practice, a staff member (e.g., an audiology assistant, an administrative assistant, an audiologist) might be nearby or even in the room to monitor and assist with the recordings.

The FCP page presents these instructions to the FCP:

- Feel free to stop and resume recording at any time that is convenient for you.

- The word or phrase you're recording will appear in a red box. Once the box turns green, you may begin speaking.

- Say the word or phrase in a normal voice, as if the listener were across the table from you.

- To listen to your recording once it's completed, select the "Listen" button on the display.

- If you are unhappy with the recording and would like to redo it, select the "Reject" button to rerecord that word or phrase.

- Reasons to reject your recording:
    - You stumbled on a word when speaking.

    - The waveform (graphic display of your recording) didn't completely fit into the display box.

    - An extraneous sound occurred while you were recording (e.g., your dog barked).

- If you are happy with the recording, select "Accept" to move on to the next word or phrase in the list.

Chapter 10: Guidelines for Interpreting the Feedback Graphs

You can monitor your patients' improvement from the HHP Dashboard. To view, print, and download each patient's progress reports from HHP Dashboard, under the *Manage and Message My Patient* tab, select one of the "PATIENT'S INFO" buttons. Note that each patient will have access to his or her own progress charts too.

At the top of the page you will see a chart for Total Progress Over Time. Here you can monitor the combined activity over time across all the games that they may have played. To the left the line chart is the cumulative activity only for the current day. To access data for specific days in the past, you can move the cursor over the date on the time chart and the information will appear in a hovering box.

Total Progress Overtime

- 'Coins Earned' shows the number of coins that were accumulated across all games. The clEAR games are designed to give more coins for the best performance
- 'Time Spent in Training' is given in minutes and is the sum of all time spent actually listening to stimuli across the games.
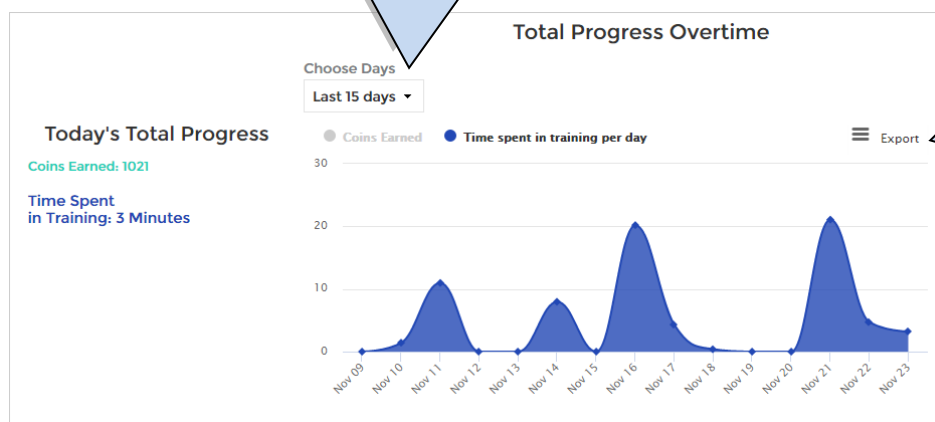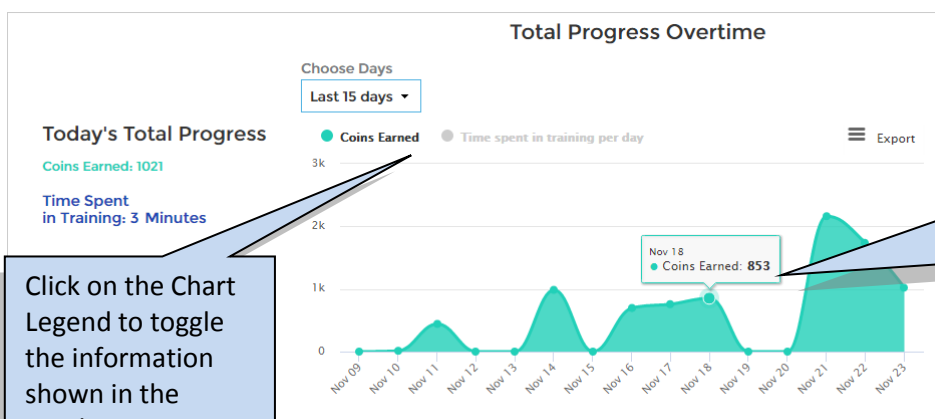
Game-Specific Progress Charts

Click on the plus sign ⊕ next to each game title to display the progress charts of specific games.

TreasEAR Island
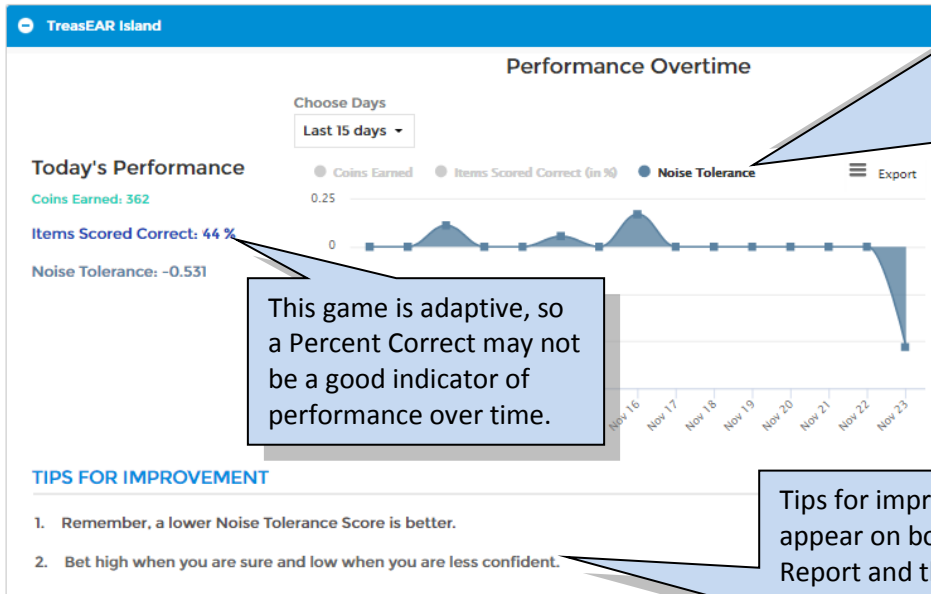
Noise Tolerance is the average difference between the babble noise and the target signal (in volume units). This patient eventually improved in their ability to tolerate the background babble.

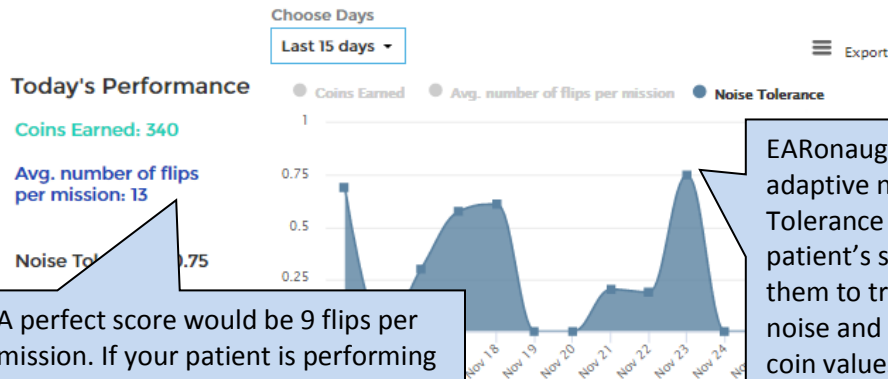This game is adaptive, so a Percent Correct may not be a good indicator of performance over time.

Tips for improvement appear on both the HHP Report and the Patient's Feedback screen.
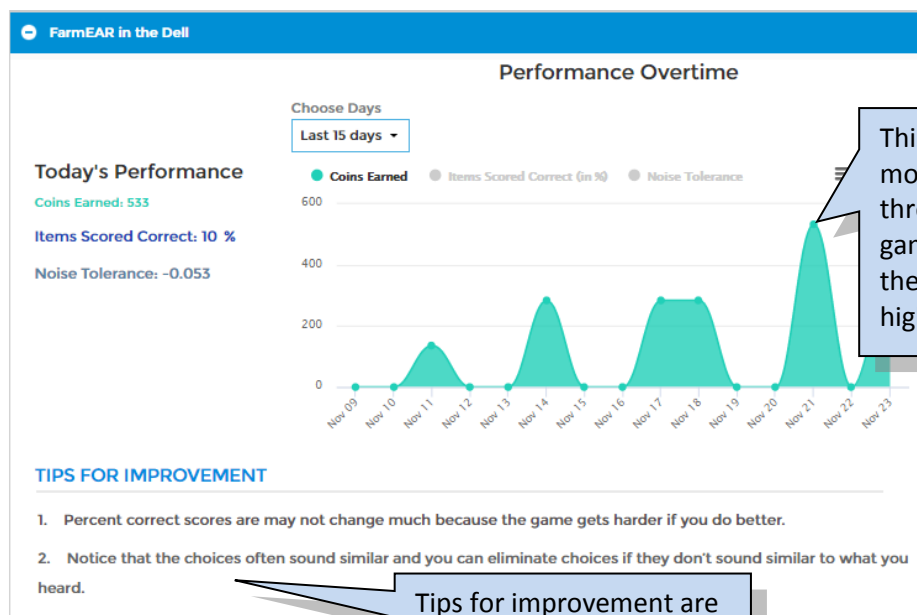
This patient has earned more coins by advancing through the game. In all games (except EARonaught) the higher levels have higher reward values.

Tips for improvement are specifically for each game.

EARonaught

Performance Overtime

Choose Days
Last 15 days ▾

≡ Export

Today's Performance

○ Coins Earned   ○ Avg. number of flips per mission   ● **Noise Tolerance**

Coins Earned: 340

Avg. number of flips per mission: 13

Noise To‌...0.75

> EARonaught does not use adaptive noise. The Noise Tolerance indicates the patient's settings. Encourage them to try harder levels of noise and increase the clEAR coin values for correct answers.

> A perfect score would be 9 flips per mission. If your patient is performing below 12 or 13, encourage them to increase the noise level.

1. You get about 15 seconds to remember the location of all the words in the beginning, use that time wisely.

2. Increasing the noise will increase the number of coins you earn.

3. Getting a word correct early in each screen will increase the number of coins you earn.

> ShakespEARe is focused on training discourse comprehension and auditory memory. The average number of sentences correctly recalled in position is the primary index of performance on this task.

ShakespEARe

Performance Over)

Choose Days
Last 15 days ▾

Today's Performance

○ Coins Earned   ● **Average sentences in correct position tod**

Coins Earned: 0

Avg. for sentences in correct position: 0

Noise Tolerance: 0
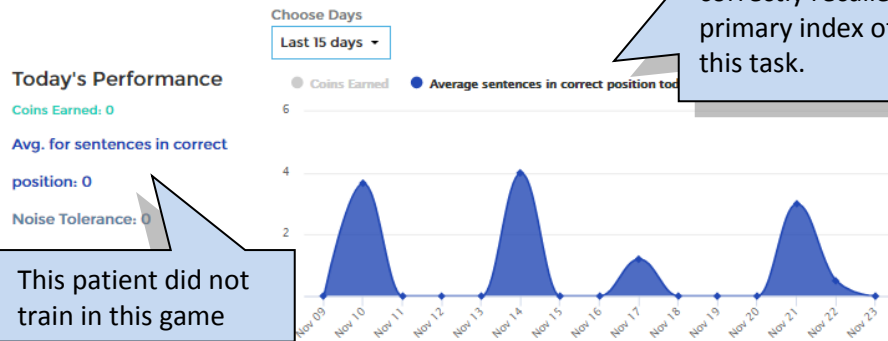
> This patient did not train in this game

TIPS FOR IMPROVEMENT

1. Our research has indicated this is a tough game, but stick with it. It should pay off.

2. You get more coins for going fast AND getting the sentences in the correct place.

> Patient feedback for this game is very positive after a small learning curve. It truly encourages focused attention.

⊖ pEARl Crunch

For games that allow the patient to adjust the noise level (pEARL Crunch and EARonaught) encourage them to increase the noise level if they are getting more than 75% correct.

Choose Days

Last 7 days ▾

Today's Performance

● Coins   Correct trials today (in %)   ● Noise Tolerance   ≡ Export

Coins Earned: 248

300

Items Scored Correct: 67 %

Noise Tolerance: 0.3

200

You can place multiple indices on one graph. The printout will match your current setting.

Nov 18   Nov 19   Nov 20   Nov 21   Nov 22   Nov 23

TIPS FOR IMPROVEMENT

1. Hearing the fine distinctions of subtle language cues can be the difference between understanding and being confused later.

2. Increasing the noise will increase the number of coins you earn.

The pEARl Crunch game trains the distinction for various bound morphemes (for example possessive /s/, and present and past tense /d/).

Chapter 11: Using the clEAR™ Semi-Canned E-mail System

On your clEAR™ HHP page, you will find a tab labelled, *Manage and Message My Patients.* This tab will allow you to see the feedback charts for each of your clEAR™ patients and will allow you to send personal messages to the patient, which will only be seen by that particular patient. You may choose to compose original messages or if you wish to streamline the process, you may choose to send a "semi-canned" message. Some messages invite a response from the patient and initiate a conversation whereas some do not. Below are some of the message options available to you. The clEAR™ system automatically fills in the patient's name. The messages are categorized by topic headings:

Key:
Messages that initiate conversation are in Blue
Messages that don't initiate conversation are in Red

Messages about amount of time played

"Congratulations [name], I see you played [number] minutes today. I'm excited by your progress. Keep up the good work!"

"Hi [name], I just want to let you know that you're my star patient this week because you played longer than anyone else. Congratulations, and keep up the great effort."

"Hi [name], I see that you spent the majority of your time playing [name of game]. What do you like about that game in particular? We can try and phase it into your training program on a more regular basis."

Messages about the FCP

"Hi [name], I see you practiced listening to [FCP's name] for [number] minutes. Keep practicing, because this will really pay off."

"Hi [name], you might try training with [FCP's name]'s voice on [name of game] this evening. Let's shoot for [number] minutes. I'll check back with you tomorrow."

"Hi [name], I see you practiced listening to [FCP's name] for [number] minutes. Do you see an improvement in everyday communication with him/her?"

"Hi [name], I see you practiced listening to [FCP's name] for [number] minutes. Is [FCP name] noticing that you are able to hear him/hear better?"

Messages about the device/website

"Hi [name], we're trying to gather information from our patients about what people like/don't like about the clEAR™website. I'd really value your opinion- can you tell me what you like and dislike?

"Hi [name], we're trying to gather information from our patients as to what is difficult about the games/website/tablet. Are you having a hard time with anything?

Generic messages for those who play a lot

"Great job, [name], keep up the good work! I'll check up on you in a few days, so keep working hard and let me know if you have any questions."

"Hi [name], you put a lot of time and attention into playing [name of game]. I'm glad to see you're improving, and just wanted to send you a quick message to say so. Keep up the good work."

"Wow, [name], playing [name of game] for [number] minutes took a lot of patience. I'm impressed. Keep it up."

"Hi [name]. Your playing really paid off! You went from [baseline score] to [current score] in [name of game]. You're scoring more and more every day! Congratulations."

"Hi [name]. I see that you've played [number of days] in a row. That shows dedication! Keep up the great work."

"Hi [name]. I've been monitoring your progress with clEAR, and was just wondering- which part of the program do you like the most?"

"Hi [name]. That's a tough game you've been playing, and you're making a lot of progress. Great dedication!"

"Hi [name]. I'm amazed at your ability to play these games so diligently. Keep up the good work."

Messages for those not playing a lot

"Hi [name]. I see you haven't spent a lot of time playing [name of game]. Why don't you give it a try? Practice makes perfect, and I'd really like for you to be able to take advantage of this program."

"Hi [name]. I see you're not playing the clEAR™games very much. Could you explain to me what your hesitation is? I'd love to work out a way for you to really take advantage of this beneficial program."

"Hi [name]. I see you're not playing the games very much. I just wanted to let you know it's worth a shot! I'm always here to help you out if you have any questions. Is there anything I can do?

"Hi [name]. I see you're not playing the clEAR™games very much. What are you waiting for? I think you could really benefit from using this program more regularly.

"Hi [name]. I see you're not playing the clEAR™games very much. I'd really encourage you to start playing more often- what do you have to lose?

Messages to use when someone is having trouble/ playing less and less

"Hi [name]. I see that you're [not playing as much/not improving]. Hang in there- auditory training takes time."

"Hi [name]. I see that you're having a hard time with the games. Don't give up- even if you just practice for a few minutes, every step toward better hearing can help."

"Hi [name]. I see that you're having a hard time with the games. Keep pushing and give them a shot."

"Hi [name]. I see that you're having a hard time with the games. Is there something I can help you with?

Chapter 12: Outcome Measures

When patients comes to the end of a clEAR® subscription, many will ask the question, "Have I improved with my listening skills?" clEAR provides you with three ways to address this question: 1) speech recognition tests that can be found on your clEAR HHP home page, 2) the feedback charts that are filled out as patients play the games, and 3) subjective questionnaires.

General Procedures

If possible, the speech recognition tests and the subjective questionnaires should be administered before the first training session or after an introductory training session and then again after the patient has trained for a 3-month period. Assessment can be customized. For example, a patient with a severe-to-profound hearing loss should likely not be tested for speech recognition in noise as the individual will likely have floor performance. A patient with a mild hearing loss should likely not be tested in quiet as the individual will likely have ceiling performance.

Speech Recognition Tests

Important outcomes for having trained with the clEAR auditory training games include improved word and sentence recognition, an improved ability to recognize female or male voices or both kinds of voices, and an improved ability to recognize speech in the presence of background noise. Your HHP page has audio test lists and orthographic scoring sheets for assessing these three outcomes.

On the left side of your HHP dashboard is a tab called *Resources for My Office.* Clicking this tab will lead to two sub-tabs, one called *Test Stimuli* and one called *Score Sheets.* In the first tab, you will find eight audio files and in the second tab, you will find eight corresponding score sheets, which can be printed out and used for scoring during the presentation of the audio files.

Tests. The audio files are speech tests that can be played through the built-in speakers of a personal computer or with an audiometer, simply by clicking the corresponding tab. In each list, the first half of the stimuli are spoken by a male talker and the second half is spoken by a female talker so you have the option of creating an overall score or two scores as a function of talker sex. There are a total of 8 audio files:

- clEAR Word lists in quiet, 1 and 2. Each list contains a total of 50 commonplace words with 25 spoken by a male talker and 25 spoken by a female talker. The words are presented in quiet.
- clEAR Word lists in noise, 3 and 4.   Each list contains a total of 50 commonplace words with 25 spoken by a male talker and 25 spoken by a female talker. The words are presented with a background of speech babble at a signal-to-noise ratio of +2.
- clEAR Sentence lists in quiet, 1 and 2. Each list contains a total of 20 of the types of sentences that are trained in the ShakespEARe game, with 10 spoken by a male talker and 10 spoken by a female talker. The words are presented in quiet.
- clEAR Sentence lists in noise, 3 and 4. Each list contains a total of 20 of the types of sentences that are trained in the ShakespEARe game, with 10 spoken by a male talker

and 10 spoken by a female talker. The words are presented in with a background of speech babble at a signal-to-noise ratio of +2.

Scoring. For the word tests, an item must be repeated verbatim by the patient in order to be scored as correct. For the sentence tests, the key words must be repeated verbatim. A percent correct score may be computed for male talker, female talkers, and/or both. For example, the patient who followed the lesson plan of 7.c from Chapter 7 (interested in hearing female and child voices), might be particularly interested in learning how his or her ability to recognize female speech has improved as a result of training. There are three ways to compare pre- and post-training percent scores for each kind of test. We recommend the normalized score as it customizes improvement gains according to a patient's entry level performance:

- Simple difference score: Post-training score (post) minus pre-training score (pre)
- Ratio score: Pre- divided by post- training score
- Normalized score: (Post- score minus Pre-training score) divided by (100% minus Pre-training score)

If the patient is particularly interested in learning how performance in noise has improved, in addition to reporting the three kinds of scores noted above, a comparison in quiet and noise can be made before and after training using this formula:

- Noise score: (Pre-training score in quiet minus Pre-training score in noise) divided by (Post- training score in quiet minus Post- training score in noise).

Game Feedback Graphs

Chapter 10 gives detailed explanation of how to interpret the feedback graphs for each game. These graphs may be especially useful as outcome measures of you were unable to perform a formal pre-training and/or post-training assessment with a patient. Simply review performance over time with the patient for each graph and discuss how performance has changed for each type of measure.

Subjective Questionnaire

A questionnaire, the *Qualitative Outcomes Assessment for clEAR (QOAc),* can be found by clicking the *Resources for My Office* tab on the left side of the page, and then the *Questionnaires* tab. It can be used to assess subjective changes in communication and conversational fluency. This questionnaire can be printed out and the patient can complete it before and after training. A total percent score can be computed and then scores compared before and after training.

Chapter 13: Creating Your clEAR® Community Using Your clEAR Message Board and the clEAR Coins

All clEAR HHPs are encouraged to create a sense of community amongst their clEAR patients. A community is created when there is communication between members and when there are common interests and shared goals. People with hearing loss appreciate connecting with one another and gaining a sense that they are not the only ones suffering the consequences of impaired conversational fluency. clEAR provides you with two important tools that serve to create community, your own clinic clEAR message board and your clEAR patient treasure chest.

At the top of your clEAR HHP dashboard, you will find a tab labelled *My Community,* which will lead you to your message board, your treasure chest, and your list of community members. It will also lead you to tools that will allow you to edit your community information.

Overview: This Dashboard allows you to create a community amongst your clEAR™ patients. All patients in your clEAR community will have access to the information here, and you will be able to communicate with your patients on a communal basis. You will also be able to inspire them to achieve communal goals by helping the community earn clEAR coins that can then be used for a good purpose.

Post Message to the Community tab: Under this tab, you will be able to send a global message to all the members of your community. For example, you might share news about your clinic with your clEAR patients, you might provide encouragement, or you might talk about how many clEAR coins your community has collected and the purpose for which you will be using the coins. You might also welcome new members (by their user name) to the community. Only you are allowed to post on the message board. Your patients can respond by email or by sending you a message through the clEAR messaging system. If patients wish to post on the message board, or if you solicit posts from your clEAR patients, you may use your discretion in deciding which emails to post on the communal message board.

Treasure Chest tab: The purpose of the treasure chest is to give a communal goal to your

patients to play the auditory training games and to earn clEAR coins. The treasure chest keeps a running total of the coins earned collectively by all of your patients. Using the *Edit Community* tab on the left side of the screen, you have the option of posting a goal for which these coins will be used. For example, you might post on your bulletin board that when your community has earned 100,000 clEAR coins, your clinic might donate a hearing aid to a needy child in your town or city. This treasure chest may be seen by the entire community, and you can use it as a training incentive. For example, a patient might check the treasure chest before training and see that the chest contains 100 coins. After the patient plays the games for 15 minutes and checks back, the number of coins in the chest may have grown to 150 coins. You may rewind the number of coins that have been collected back to zero at any time, as when your community achieves its target goal.

Community Members tab: This tab will provide a table that includes a list of all of the members in your clEAR community by user name (unless a patient has asked to remain anonymous, in which case that patient will be labeled "anonym, an "about me" description that the patient has provided, and a tally of the coins that the patient has earned to date. All members of your community will see the information stored here.

Edit Community: This tab can be found on the left side of the Community screen and allows you to personalize your community message board. You will have the opportunity to do the following: 1) create a name for your community (e.g., you might want to name it after your practice, after your first or last name, after a famous action figure), 2) write an overview of how your community works; 3) describe your treasure chest (e.g., it might be simply there for a group activity or you may have it as a way to create a common goal); 4) set a target for the amount of coins your group of users will strive to achieve; 5) describe how messages will be posted to the board (e.g., only you will post messages or alternatively, patients may make posts by routing them through you), 6) description of your community members (e.g., "people who like to play games"; "people who are taking charge of their hearing-related communication difficulties"), and 7) the purpose for which the community will use the coins from the treasures chest (e.g., donate a hearing aid to a needy child in the local community; give each other a group hug).

About Community: This tab can also be found on the left side of the Community screen. This will show what your patients see on their community bulletin board. If you have not used the *Edit Community* tabs, they will see default information that is provided by the clEAR™ website.

Chapter 14: Introducing Your Patients to clEAR®

It is strongly recommended that you introduce your patients to clEAR in person and if that is not possible, over the telephone. The Introduction might include a "Why clEAR?" introduction, an orientation to the website, and counseling about playing the games.

Why clEAR?

clEAR offers a number of helpful features that can be used to introduce clEAR to patients, to explain the goals of auditory training, and to provide motivation for subscribing.

The homepage itself. The mid-section of the home page lists the objectives of auditory training and has an arrow that will access a captioned introductory video about clEAR. The home page also includes boxes that can be opened up by scrolling across them that describe how clEAR is affordable, customizable, scientifically sound, and flexible. The home page also includes a tab labelled *Media Relations and Testimonials*, where comments by clEAR patients have been stored.

The *Learn More* tab. Under the *Learn More* tab, found on the homepage, there are the following sub-tabs:

- User benefits, which can be reviewed with the patient, one by one
- clEAR games, with tabs that describe each game and includes short videos about each one
- Auditory skills trained, where you can explain that there are specific skills related to speech recognition (e.g., distinguishing one word from another) and more general cognitive skills (e.g., auditory attention), and clEAR is designed to train both
- Informational videos, which provide testimonials and information for FCPs (especially useful if the FCP is part of the introduction)
- User FAQ, by which you can address each question that a patient might have and review the answers provided
- How to train, which shows in a very simple way how a patient will train

Resources for My Office. The left side of the clEAR HHP page has a tab called, *Resources for My Office*. Here can be found a patient brochure that can be used to explain clEAR and the benefits of auditory training. This brochure can be used for discussion and can be made available in your clinic waiting room.

Orienting Patients to the clEAR Website

This introduction might last anywhere from 15 minutes to one hour. The introduction can include the following components:

- Orientation to the website and the home page
- Instructions and demonstration about how to log on
- Orientation to the user page
- Demonstration of each of the six games, which usually will entail allowing the patient to play the game to get a "feel" for how it works; it is helpful to read aloud the instructions that are provided at the start of each game
- Review of the feedback graphs and how to interpret them
- Review of the community message board
- Demonstration of how to contact you via the *Messages with my Provider* tab

- Review of their training schedule (see Chapter 7)

Counseling Patients About the Games

Here are some comments that may be appropriate to make to patients during the orientation session:

- Don't get frustrated if your score doesn't improve, some of the games become more difficult as you get better at playing them.
- Once you have played the games a couple of times, you will be much more comfortable with training.
- This training is helping you listen better in noise, which is why some of the games have you listen with noise in the background.
- It is okay to get a wrong answer. You're not supposed to get every one right.

Chapter 15: Integrating cIEAR® into Your Practice

What are the advantages of being a cIEAR HHP?

- A means to provide better and customized hearing healthcare to your patients.

- A way to enhance speech recognition and hone auditory attention when listening in noise.

- A way to provide customized auditory training that is relevant to your patients' everyday lives because they learn to recognize the speech of people who are important to them.

- A way to enhance patients' confidence in engaging in conversation and to reduce perceptual effort.

- An active patient referral system, wherein direct users are referred to your practice.

- A means to be more competitive with stores that do not provide customized hearing healthcare .

- A means to stay in contact with your patients on a regular basis through the cIEAR™ semi-canned email and feedback systems.

- A way to create a sense of community amongst your patients.

- A way to provide a family-oriented aural rehabilitation plan since the FCP is very often a family member.

- A new source of revenue for your practice.

- Increase professional customer referrals by differentiating your practice by providing customized hearing healthcare.

How do patients receive cIEAR auditory training?

- Patients can train at home via the cIEAR website, with regular phone or email contact from you, their cIEAR HHP.

- A computer station can be established in your practice for patients to receive one-on-one training. Research shows that patients enjoy personalized contact with a clinical professional. cIEAR recommends that at least the first training session occurs in the clinic and optimally, the first four training sessions.

- Patients may receive treatment as part of a group aural rehabilitation program.

- If a patient opts to train with the speech of an FCP, the FCP can either record the training stimuli at your practice or at home on a personal computer. We recommend that if the FCP records the stimuli at your practice, the recording is accomplished in a quiet room. A staff member should demonstrate the recording procedures and then be nearby in case questions arise. The recordings can occur in one session or three sessions (see Chapter 9, Chapter 8, 8.e and 8.f). Even if the FCP records the stimuli at home, we recommend that a staff member demonstrates the recording procedure at the practice setting.

Example of how cIEAR might be integrated into a practice

1. The patient's hearing predicament is assessed and treated (e.g., with appropriately fitted hearing aids if aids are warranted and the patient is motivated).
2. If deemed a candidate for clEAR (see Chapter 2), the HHP enrolls the patient and provides both an orientation to the website and provides the patient with an auditory training schedule (Chapter 8).
3. The HHP has the option of using the clEAR assessment instruments to assess the patient prior to the onset of the patient's participation in clEAR.
4. If applicable (i.e., the auditory training session is either 8.e or 8.f), the FCP records the training items in a quiet room. This recording can occur in a single recording session or over three recording sessions. Ideally, the HHP or an assistant sets up the recording process and shows the FCP how it works. The HHP does not need to be physically present for the entire recording session(s).
5. Ideally, the first training session occurs at the clinic, because patients like to first get comfortable with the training.
6. Patients continue training at home; if desired by the patient and feasible for the clinic, the patient can return to the clinic for every training session or occasional sessions.
7. Midway through the training program, patients visit the clinic for an in-house training session, possible assessment, and conversation and counseling with the HHP or the HHP's assistant.
8. Throughout training, the HHP stays in contact with each patient via semi-canned emails. The emails provide feedback about performance and encouragement.
9. The HHP also stays in contact with the clinic's clEAR community of patients by posting regularly on a communal message board.
10. The HHP performs an assessment after the training, using the assessment materials stored on the clEAR website. The patient will be asked to schedule an appointment for these assessment sessions and any concomitant counseling.

Chapter 16: Using clEAR with English-Speaking Patients Who Have Accents Other than Standard American

Because clEAR offers the option of recording speech samples that are then inserted into the clEAR auditory training games, there is the option of providing customized hearing healthcare to patients who speak English with accents other than Standard American. At present, there are three options:

1) The clEAR HHP or an associate of the HHP can register as an FCP and record the training items. Then, whenever one of that HHP's patients subscribes to clEAR, the HHP can enter his or her user name in as being one of the new patient's FCPs.

2) The patient's FCP(s) can record the training stimuli and the patient can choose to train exclusively with the speech of that FCP.

3) The patient can select the "British" option when choosing a talker for a game and then train with a British male voice.

Note: Coming soon, the clEAR website will include the option of training with AUS English and India English with generic speech that will be stored on the clEAR website. Also scheduled for development is a version in Spanish.

Chapter 17: Assessing Audiovisual and Vision-Only Speech Recognition

Your HHP page allows you to access materials that will allow you to assess your patients' audiovisual and visual-only speech recognition abilities. These tests are provided to you to use with your patients for three reasons:

- Patients who are poor lipreaders may be especially good candidates for auditory training as they are more reliant on the auditory-only signal during face-to-face communication than are those patients who can use both the auditory and visual signal to recognize speech.
- One's ability to converse in an audiovisual condition may improve as a result of auditory training because the patient's ability to use the auditory signal to complement the visual signal may have improved.
- clEAR's philosophy is that the hearing healthcare provider must understand each patient's predicament (see Chapter 1). In order to understand a patient's predicament, it is important to have a measure of how well the patient can recognize speech in an audiovisual condition because most conversations occur in a face-to-face context.

Tests. The audiovisual files for three types of audiovisual speech tests can be accessed on your HHP dashboard. By clicking the *Resources for My Office* tab on the left side of the page, you will have access to two tabs, *Test Stimuli* and *Score Sheets.* The test stimuli can be played with the speakers and monitor of a personal computer or with an audiometer and a clinic video monitor, simply by clicking the corresponding tab. If the tests are played with the sound turned on, then testing occurs in an audiovisual condition. If the tests are played with the sound turned off, then testing occurs in a vision-only condition. There are a total of 6 test files:

- CAVET (Children's Audiovisual Enhancement Test), A and B. Each list contains a total of 20 commonplace words with 10 words that have been shown to be easy to recognize in a vision-only condition (e.g., *telephone*) and 10 words that have been shown to be difficult to recognize (e.g., *cheese*). A woman appears on the screen and speaks a word embedded in the carrier phrase, *Say the word ____.* The beauty of this test is that most patients will not score at either a floor or ceiling level.
- IST With Context, Lists 1 and 3 (Illustrated Sentence Test). Each list contains a total of 20 sentences, 10 spoken by a male and 10 by female talker. Before each sentence presentation, the patient will see a picture that illustrates the sentence. As a result, no patient should score at floor performance because context cues are provided.
- IST Without Context, Lists 2 and 4. These lists are like the IST With Context, but no picture clues are provided. These tests can be used with the very good lipreaders and may also be used as a means for assessing how well patients can utilize context cues (simply subtract the IST Without Context score from the IST With Context Score).