

# USE OF FM WITH HEARING AIDS: A PRACTICE MANAGEMENT AND PATIENT-FOCUSED APPROACH

ADVANCES IN AUDIOLOGY – TOMORROW'S SOLUTIONS  
FOR TODAY'S CHALLENGES

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# Fact

There is ample evidence that FM systems work for understanding speech in noise and for many other everyday situations.

# Fact

FM systems can be used not only for communication, but for access to any desired sound source.

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# Problem

Why is there low adoption  
of FM systems by  
patients?

# Possible Causes of Low FM Adoption

## Who/What is to blame?

**Cost/  
Access**



**Knowledge/  
Application/  
Compatibility/  
Maintenance**



**Shifting  
Responsibility**



**Inconvenience  
or Stigma?**



# Possible Causes of Low FM Adoption

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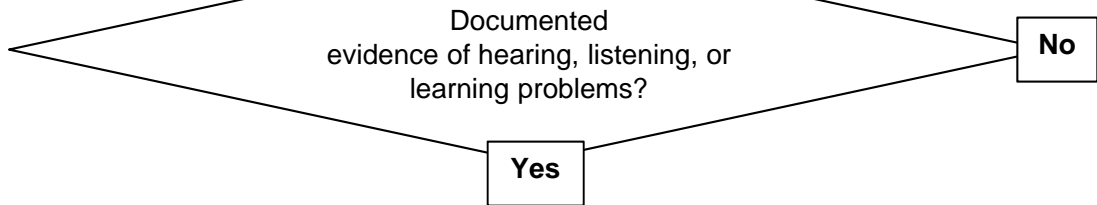
For individuals older than 21, what guidelines are there?

How can I introduce FM technology into my practice?

How can I help patients see the value of FM technology beyond hearing aids (and cochlear implants?)

Who else might benefit?

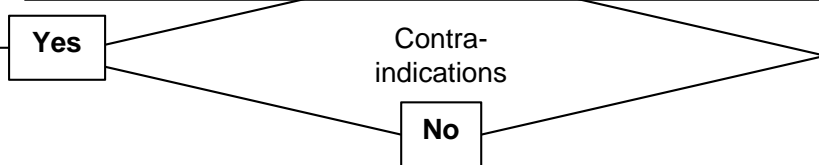
**Step 1. Potential Candidacy for HAT**  
Hearing Loss | Auditory Processing Deficit | Learning Disability  
Auditory Neuropathy Spectrum Disorder | Language Deficit  
Attention Deficit | English Language Learner



Reconsider

**Step 2. Considerations** [In and out of school]  
Acoustic environment | Social/emotional | Functional | Support

Counsel Monitor Review



**Step 3. Device Selection**

**Step 4. Fitting and Verification**

**Step 5. Implementation and Validation**

# Fact

Patients with hearing loss have varying degrees of difficulty in noise, and most, if not all complain about background noise.

# Practice Management Approach

## FM Systems as Part of Your Practice

### Anticipation



In my practice, who might benefit and adopt, and how can I test?

### Application



Would I be able to demonstrate FM technology on demand?

### Availability



Do I have equipment to show on demand?

# Practice Management Approach

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*“Knowing is not enough;  
we must apply.*

*Willing is not enough;  
we must do.”*

(Johann Wolfgang van Goethe)



# Anticipation

## Complete a Communication/Needs Assessment

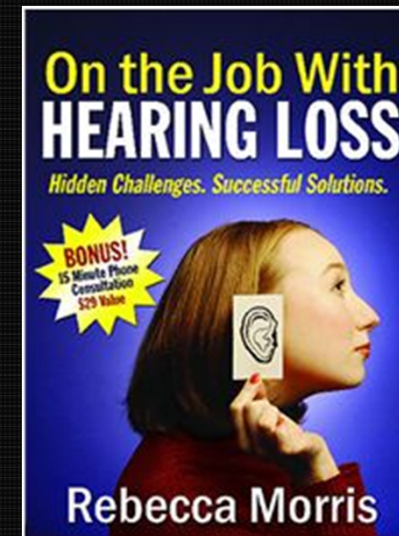
- ▶ **Formal and Informal Methods**
- ▶ **Getting Beyond the Hearing Aids**
- ▶ **Think Beyond Classic Listening Situations**
- ▶ **Think About Communication Partners and Sound Access**



# Anticipation

## Complete a Communication/Needs Assessment

- ▶ One of my favorites:  
**Communication  
Questionnaire** by  
Rebecca Morris

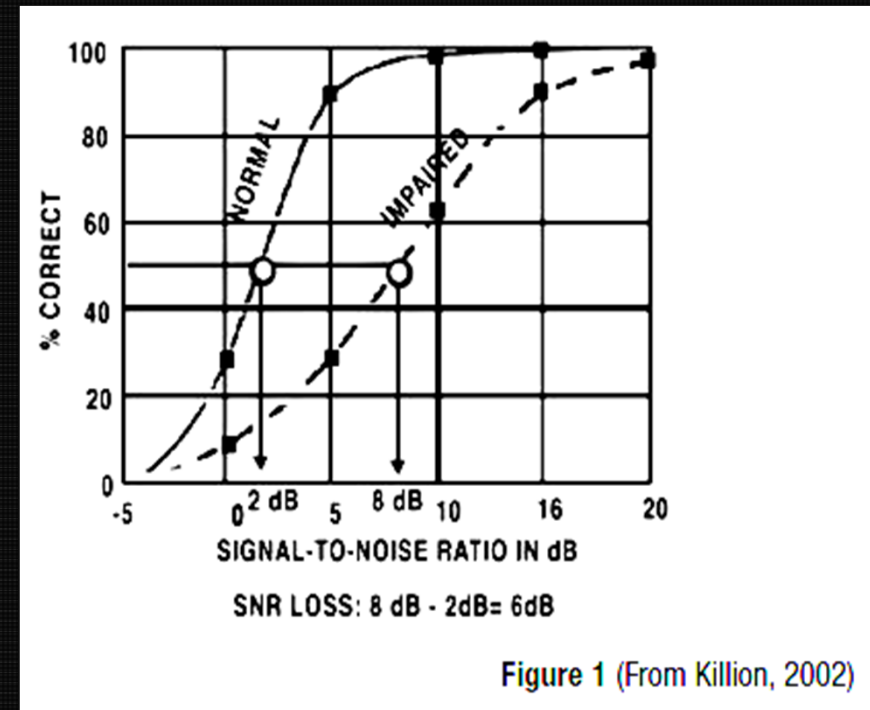
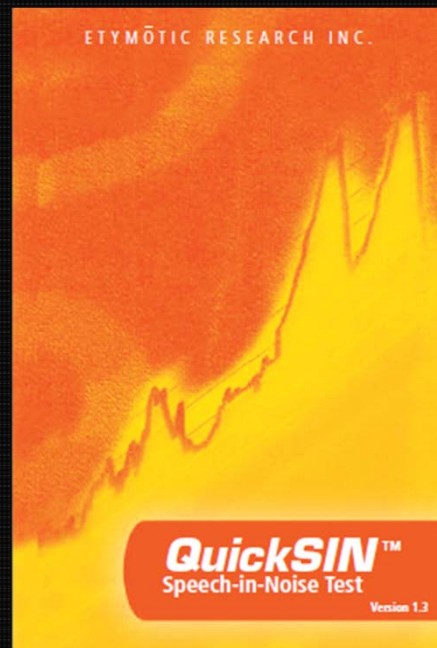


<http://www.onthejobwithhearingloss.com/>

# Anticipation

## QuickSIN Test as Part of Your Test Battery

- ▶ QuickSIN Test offers 1-minute assessment of SNR Loss



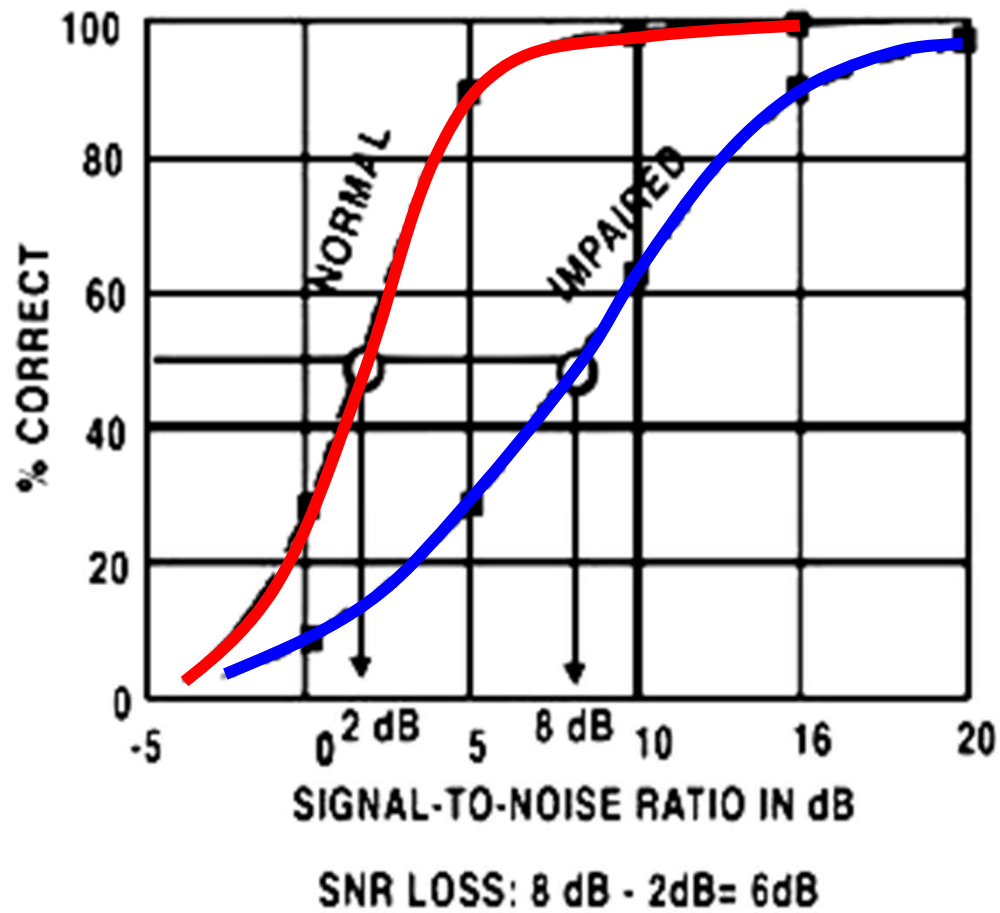
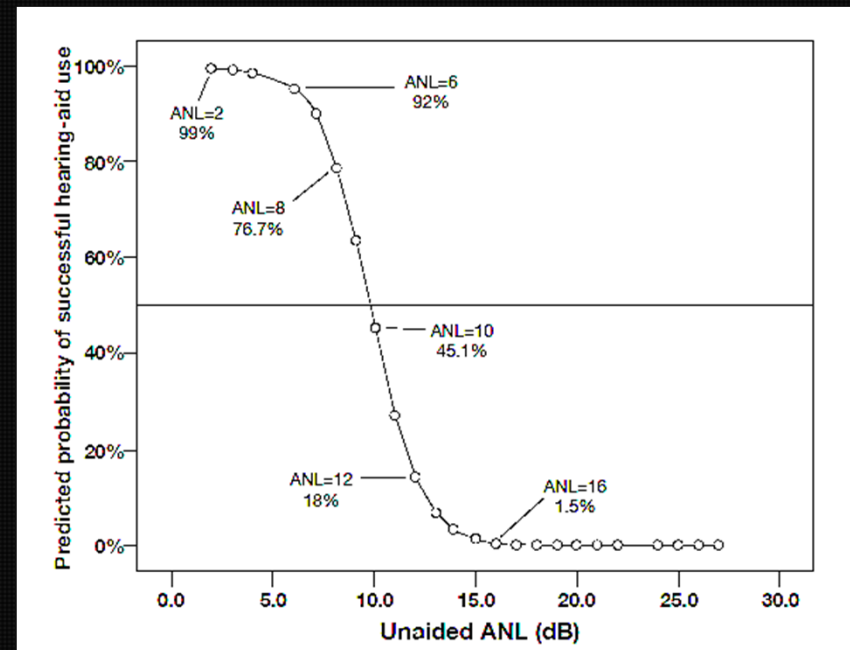


Figure 1 (From Killion, 2002)

# Anticipation

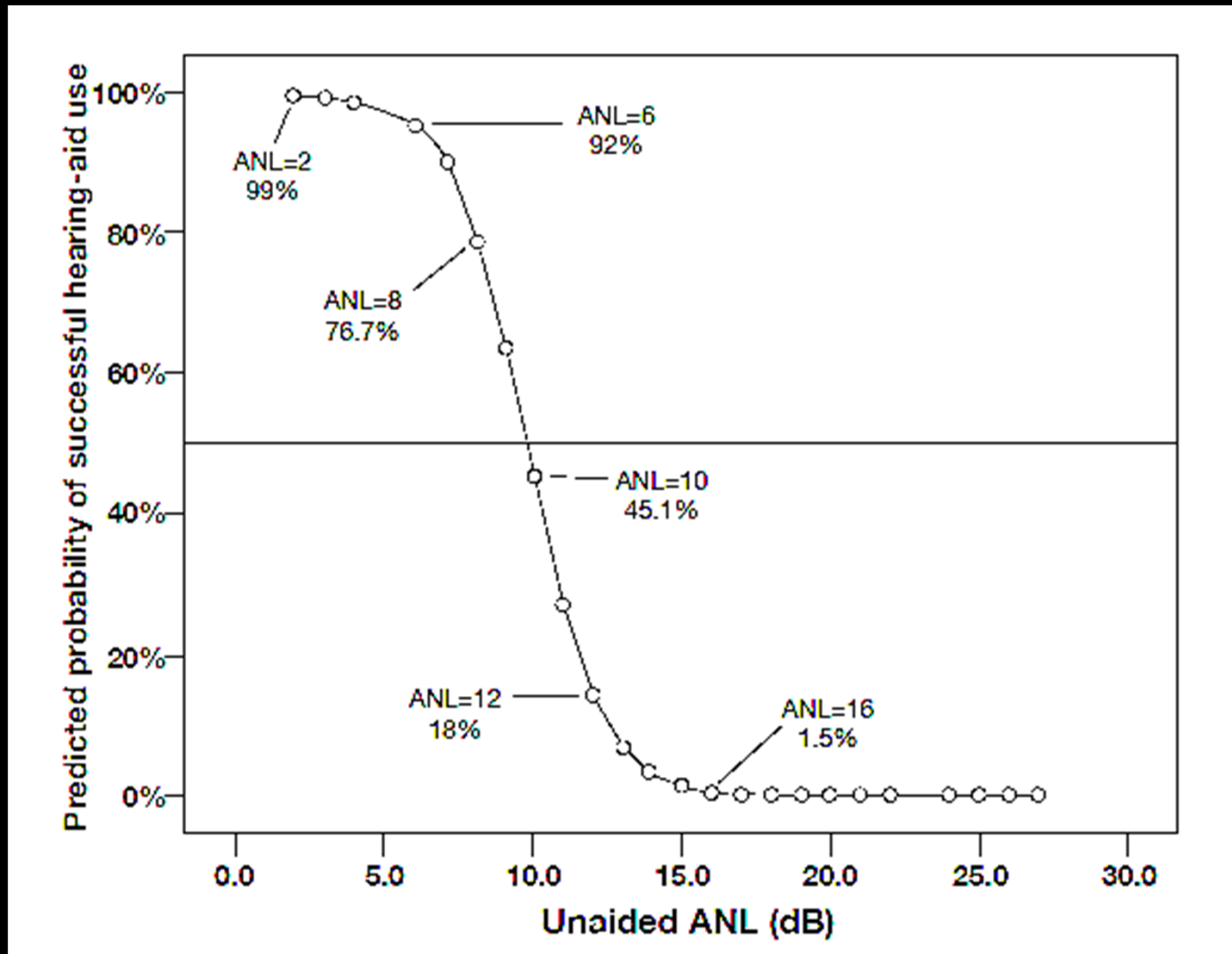
## ANL Test as Part of Your Test Battery

- ▶ The Acceptable Noise Level (ANL) Test offers a quick assessment of tolerance of noise
  - Low ANL Score (Good Hearing Aid User)
  - High ANL Score (Poor Hearing Aid User)



$$\text{MCL} - \text{BNL} = \text{ANL}$$

## Tolerates Noise Well (ANL is SMALL)



Does Not Tolerate Noise Well (ANL is LARGE)

# Anticipation

## ANL Test as Part of Your Test Battery



- ▶ ANL Test on CD available from Frye Electronics
- ▶ ANL Test also available in Starkey's App "uHear" under the "Speech in Noise" test feature



# Anticipation



## ANL Test as Part of Your Test Battery






iPad 12:39 PM 79%

**Measure** ⓘ

 What is the quietest sound you can hear?  6 mins  
**Hearing Sensitivity**

 How well do you hear in noise?  1 min  
**Speech in Noise**

 Create your hearing performance profile  2 mins  
**Questionnaire**


 Measure  Results  Learn  Locate 

iPad 12:41 PM 79%



**Measure** **Speech / Noise** ⓘ

**STEP 1:** Go to a very quiet environment.

**STEP 2:** Wear your headphones/earbuds in the correct ear.

**STEP 3:** Set your volume to 75%.  


**STEP 4:** Are you ready to start?

 **Ready!** 



# Anticipation

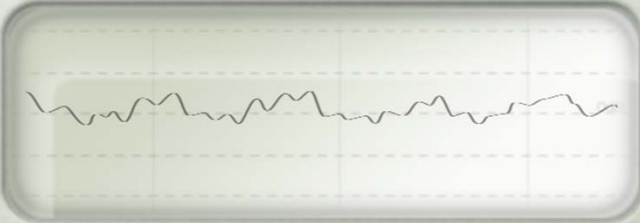
## ANL Test as Part of Your Test Battery

iPad


12:41 PM

79%

Measure Speech / Noise ⓘ



Scroll the wheel to adjust speech to a comfortable level, then press the middle lock button to proceed.




1x

iPad


12:41 PM

79%

Measure Speech / Noise ⓘ



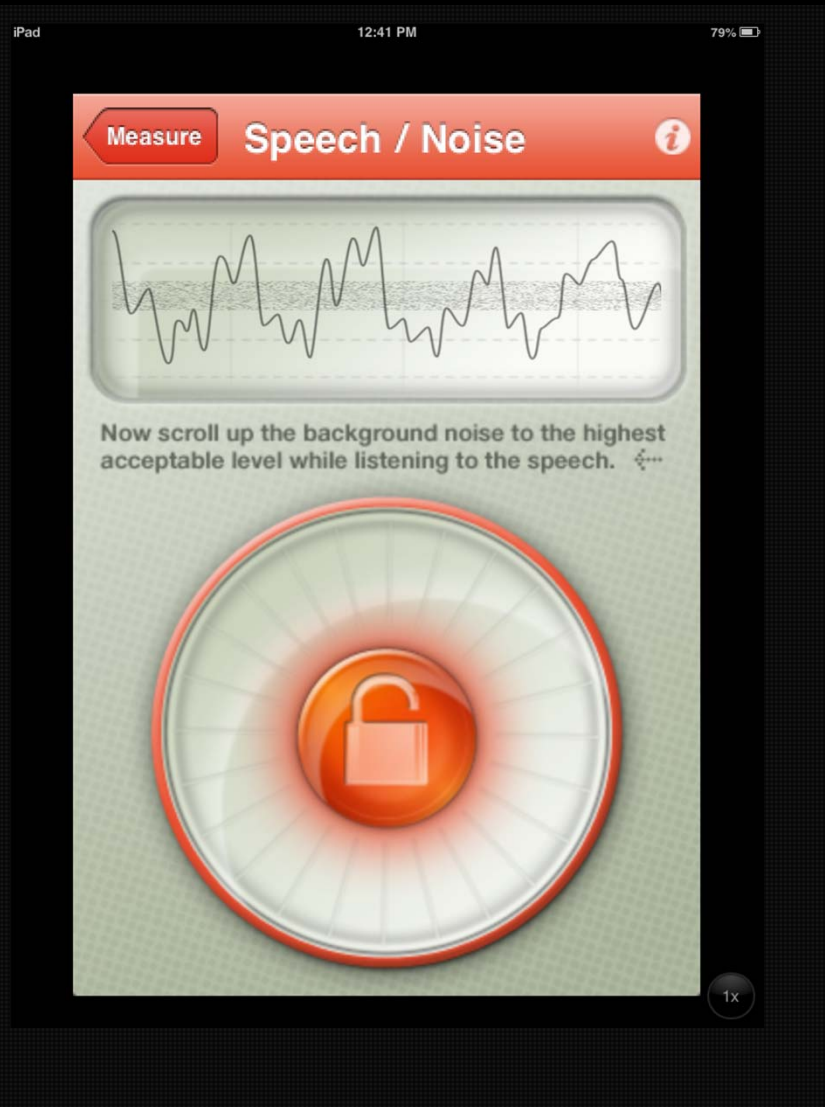
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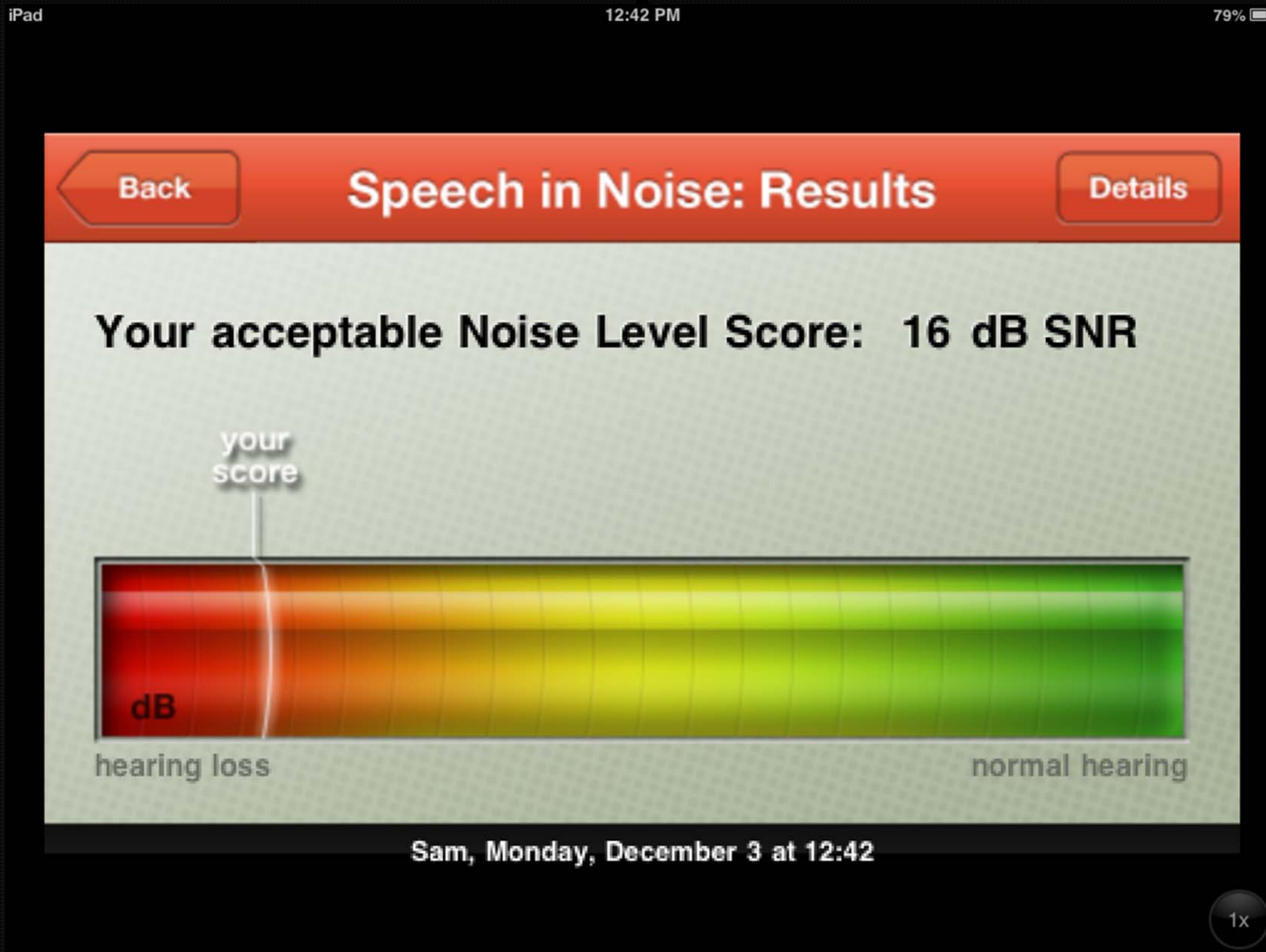
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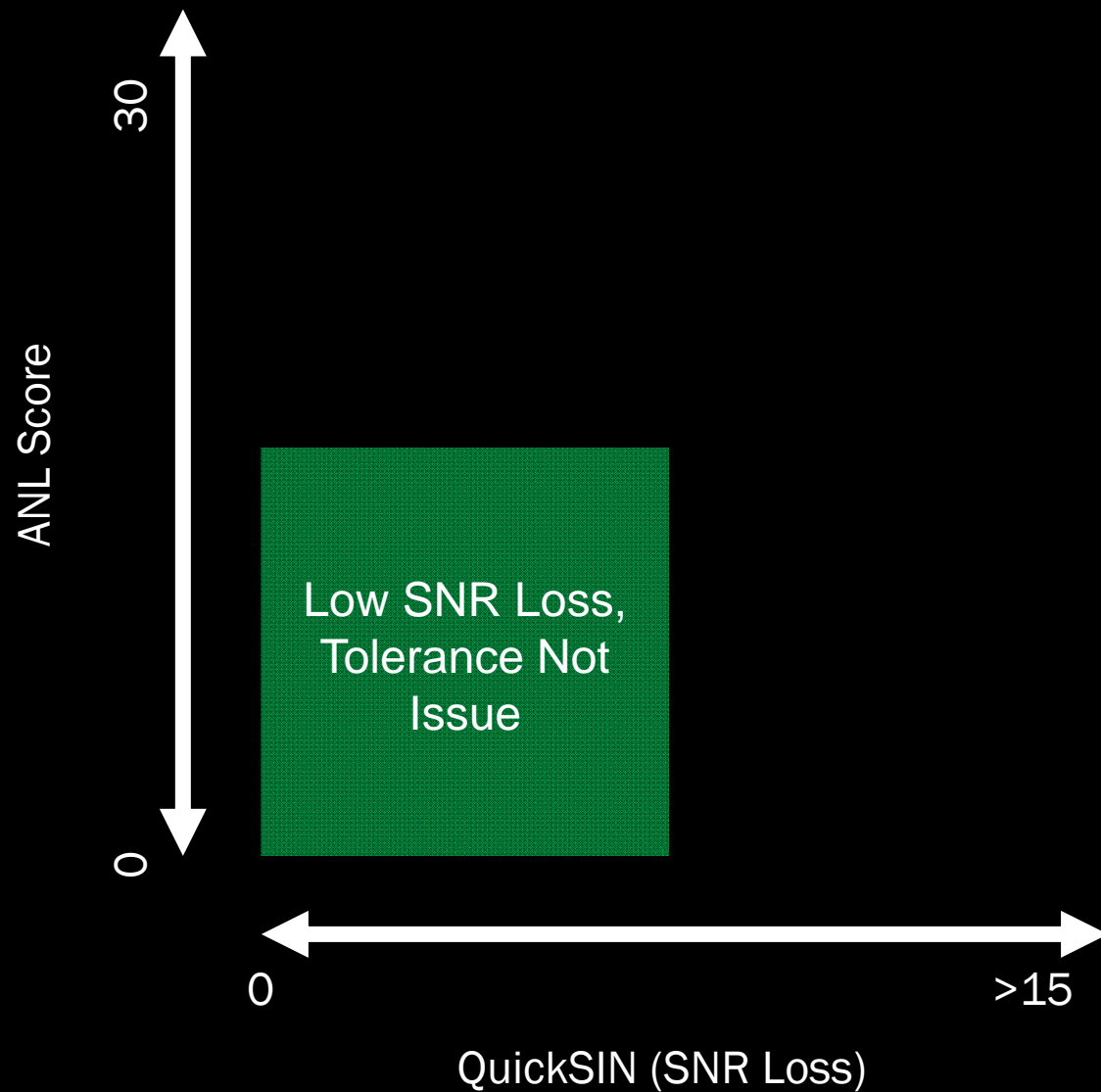
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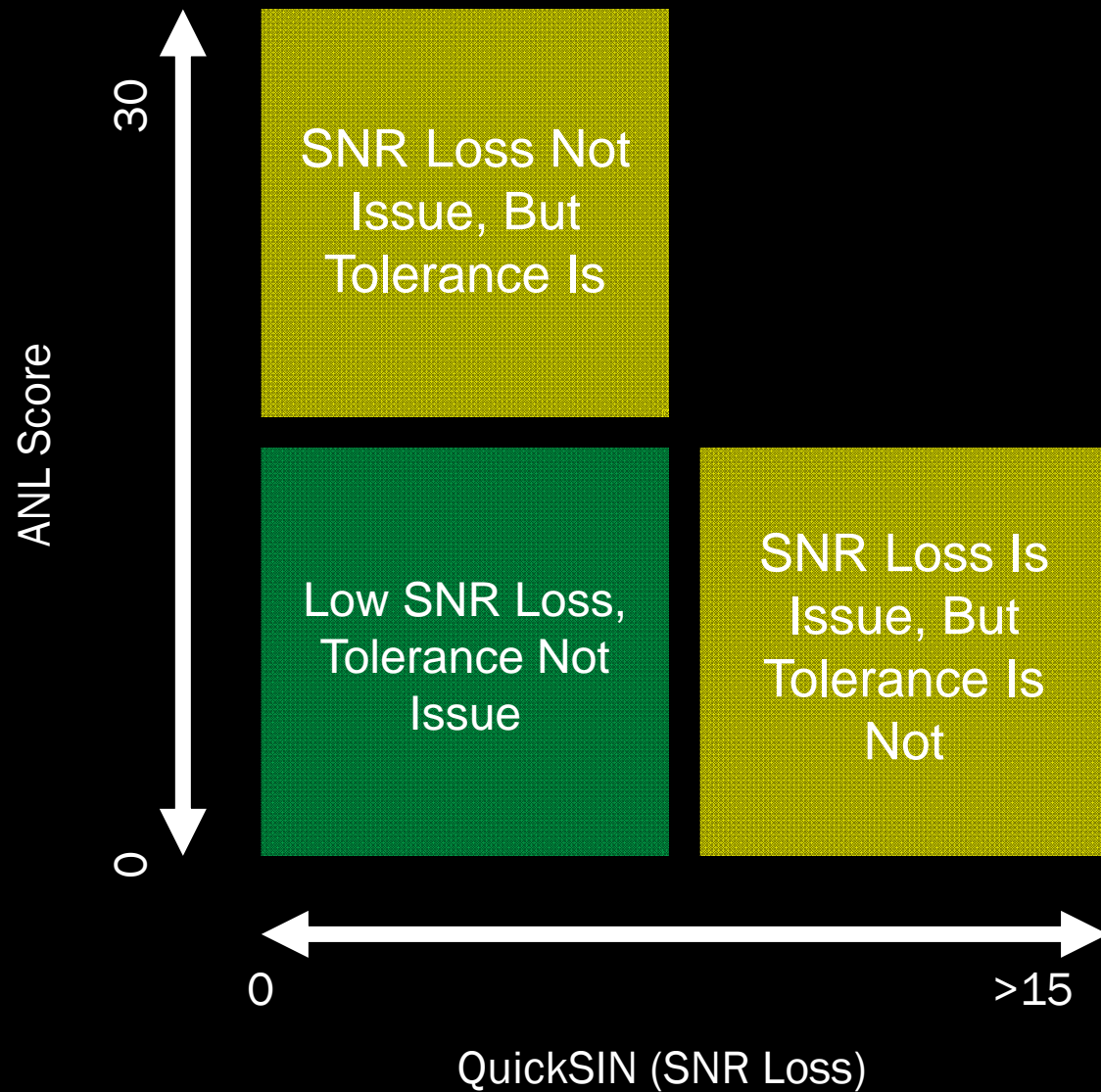
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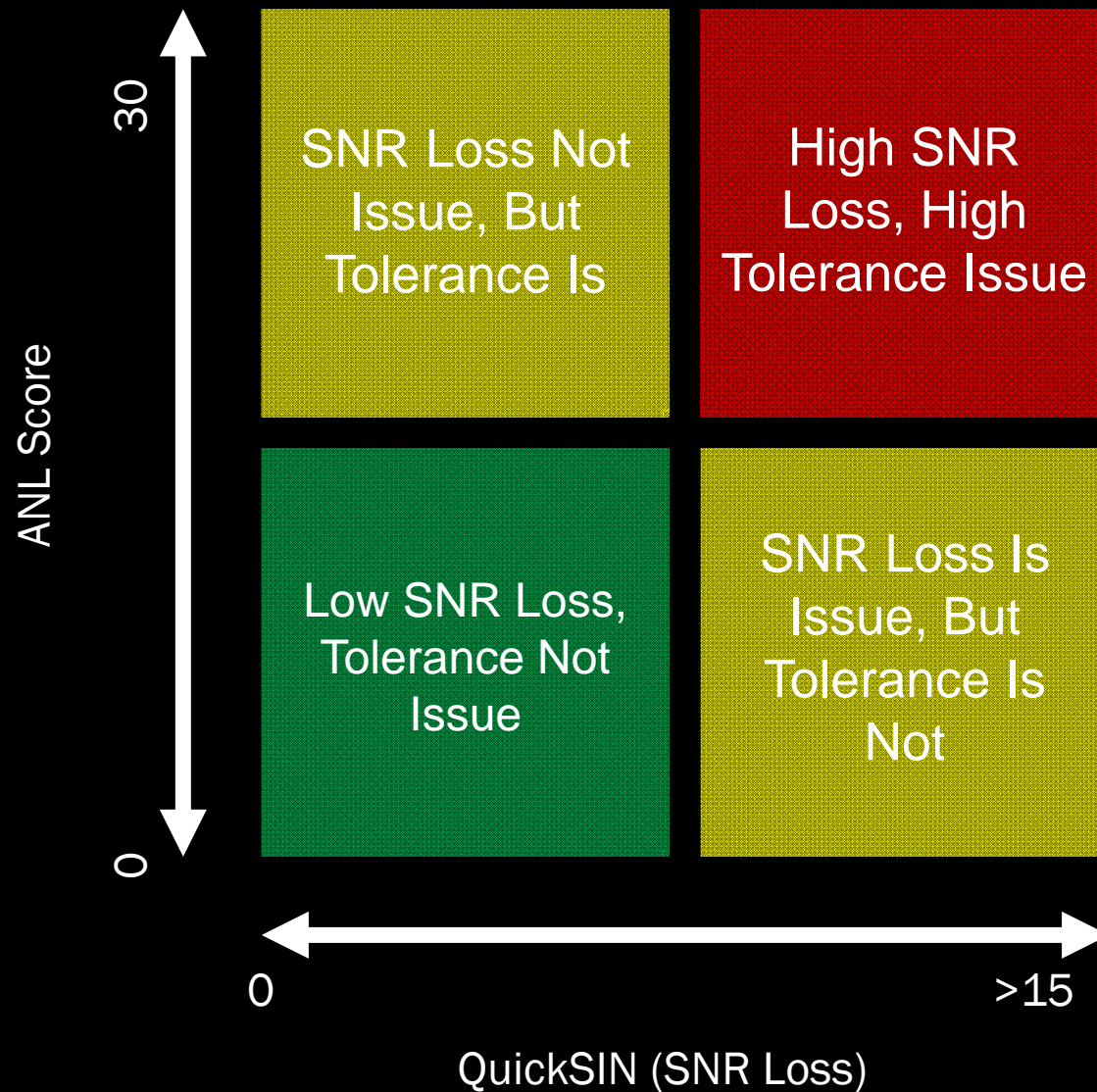




When  
Considering  
Unaided  
Hearing to  
Predict  
Hearing Aid  
Use...

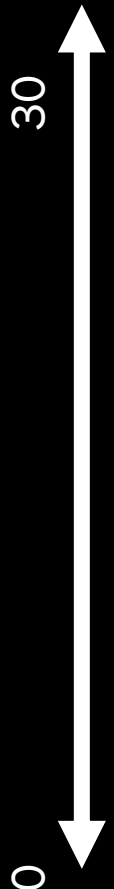


When Considering Unaided Hearing to Predict Hearing Aid Use...



When Considering Unaided Hearing to Predict Hearing Aid Use...

ANL Score

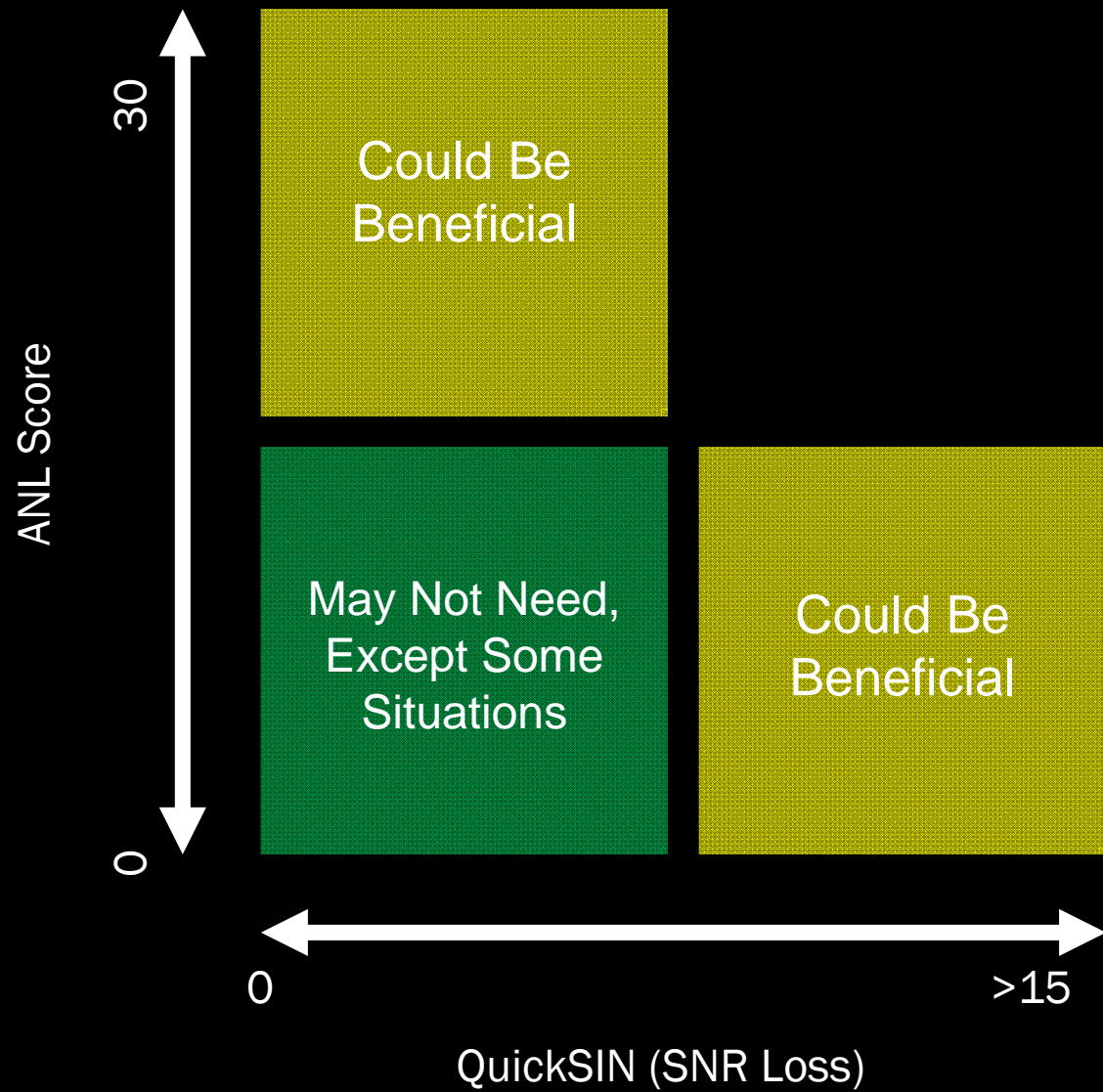


May Not Need,  
Except Some  
Situations



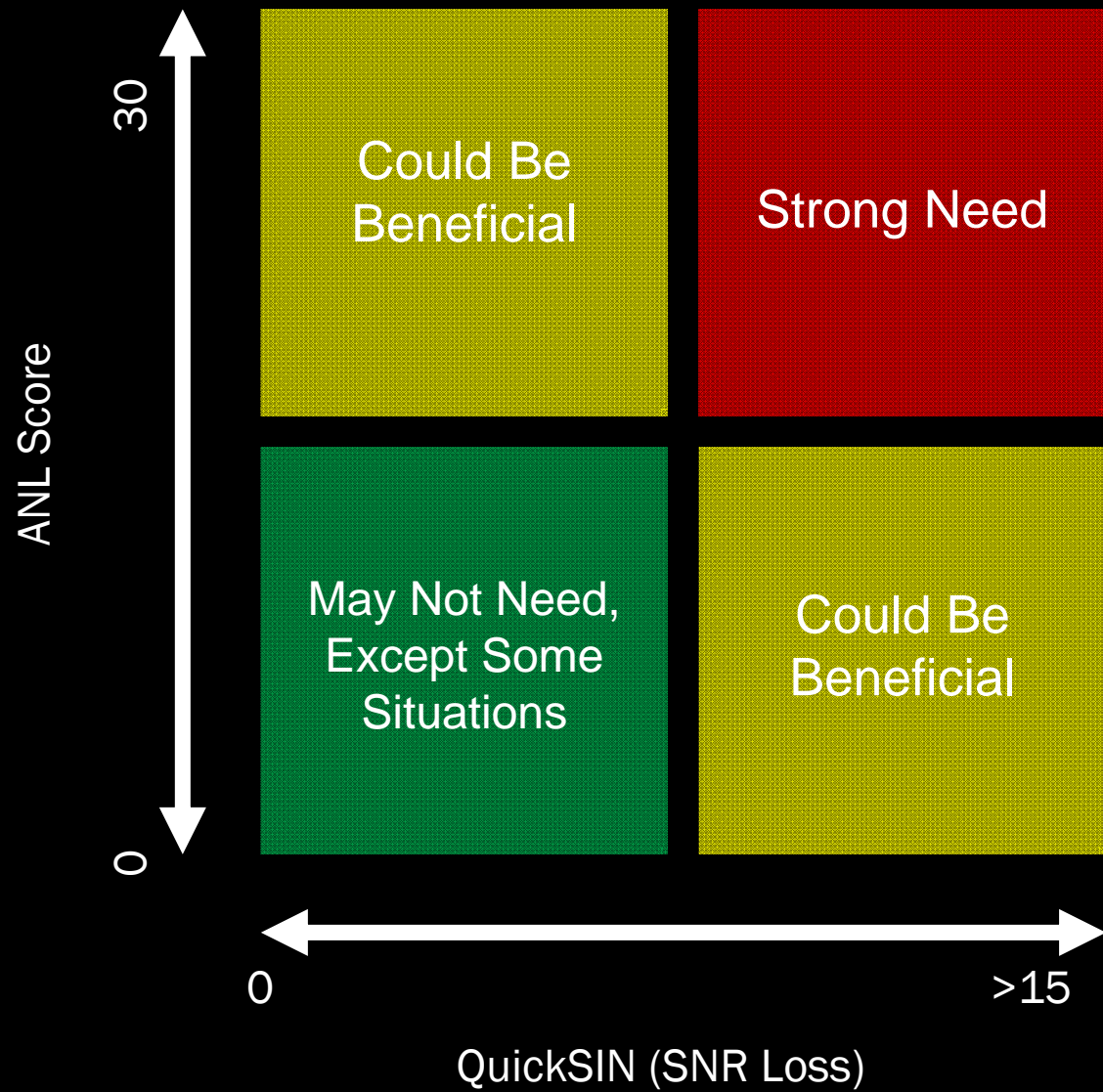
QuickSIN (SNR Loss)

When  
Considering  
FM  
Technology...

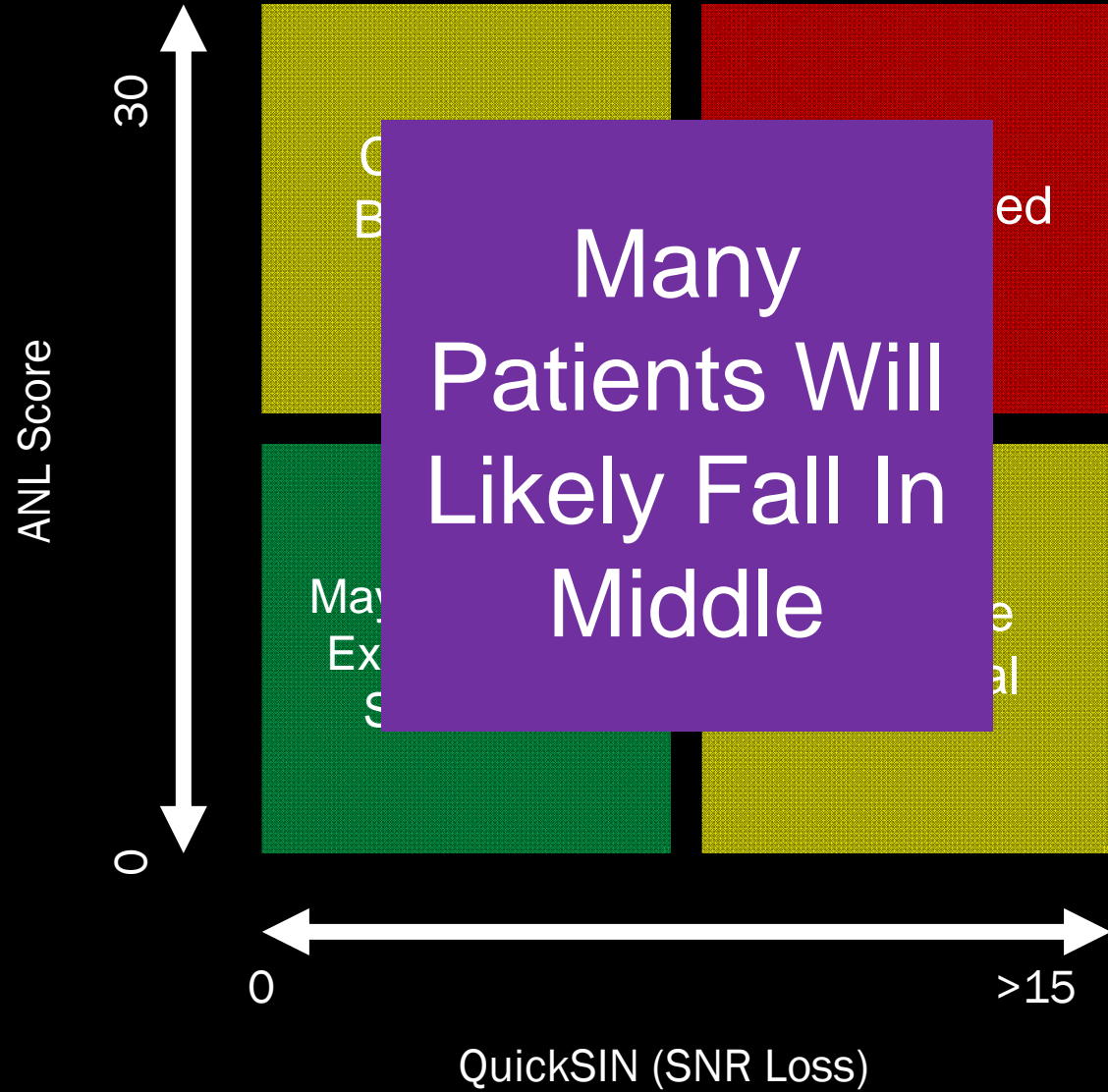


When  
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Technology...





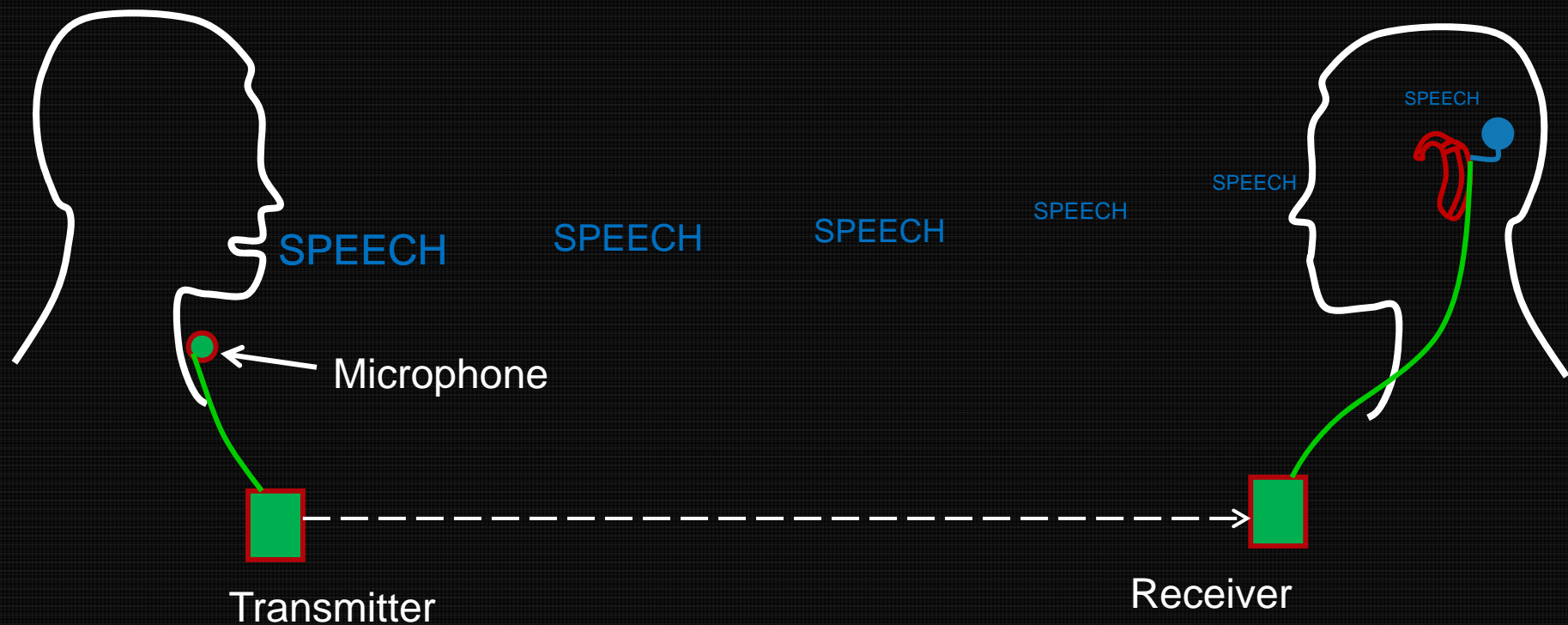
When  
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When Considering FM Technology...

# Application

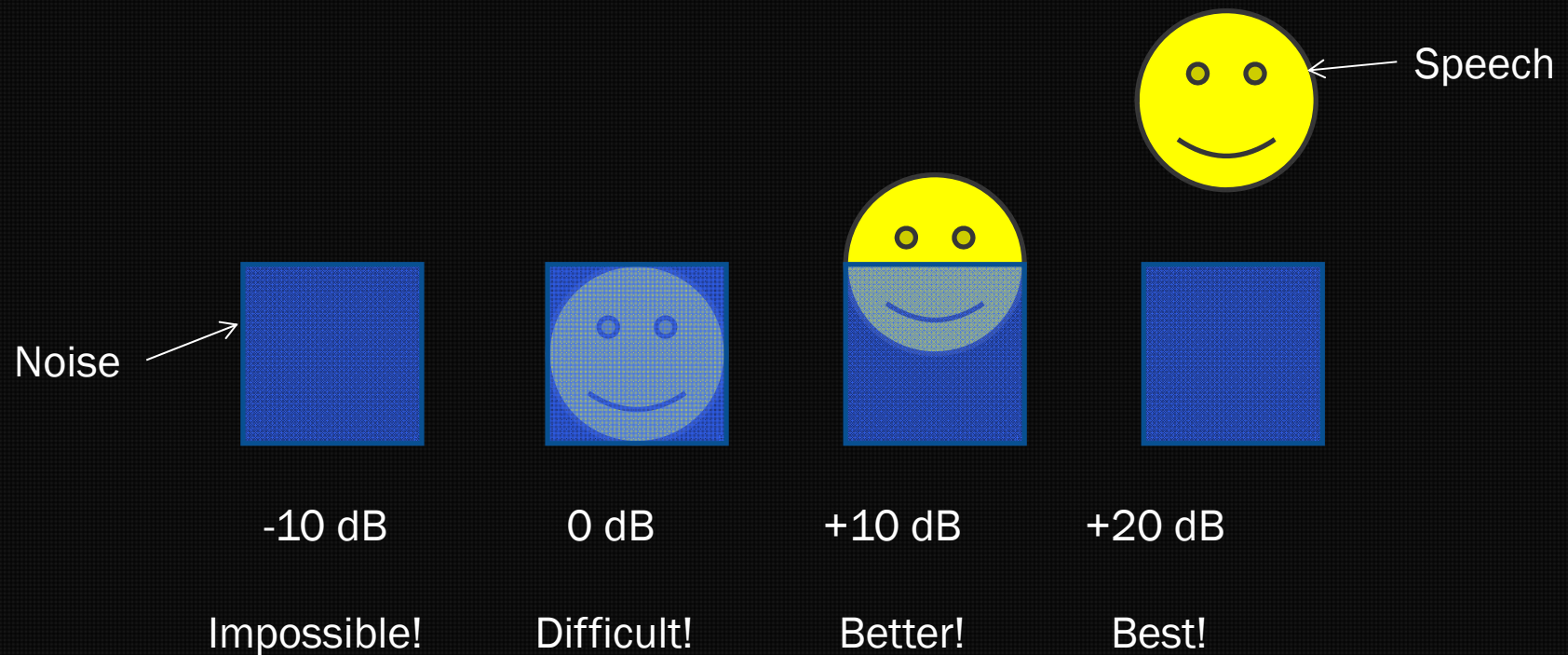
Nothing is More Powerful Than a Demonstration



“See It To Understand It”

# Application

Nothing is More Powerful Than a Demonstration



# Application

Nothing is More Powerful Than a Demonstration

No FM System

DO YOU SEE ME?

DO YOU SEE ME?

DO YOU SEE ME?



FM System

DO YOU SEE ME?

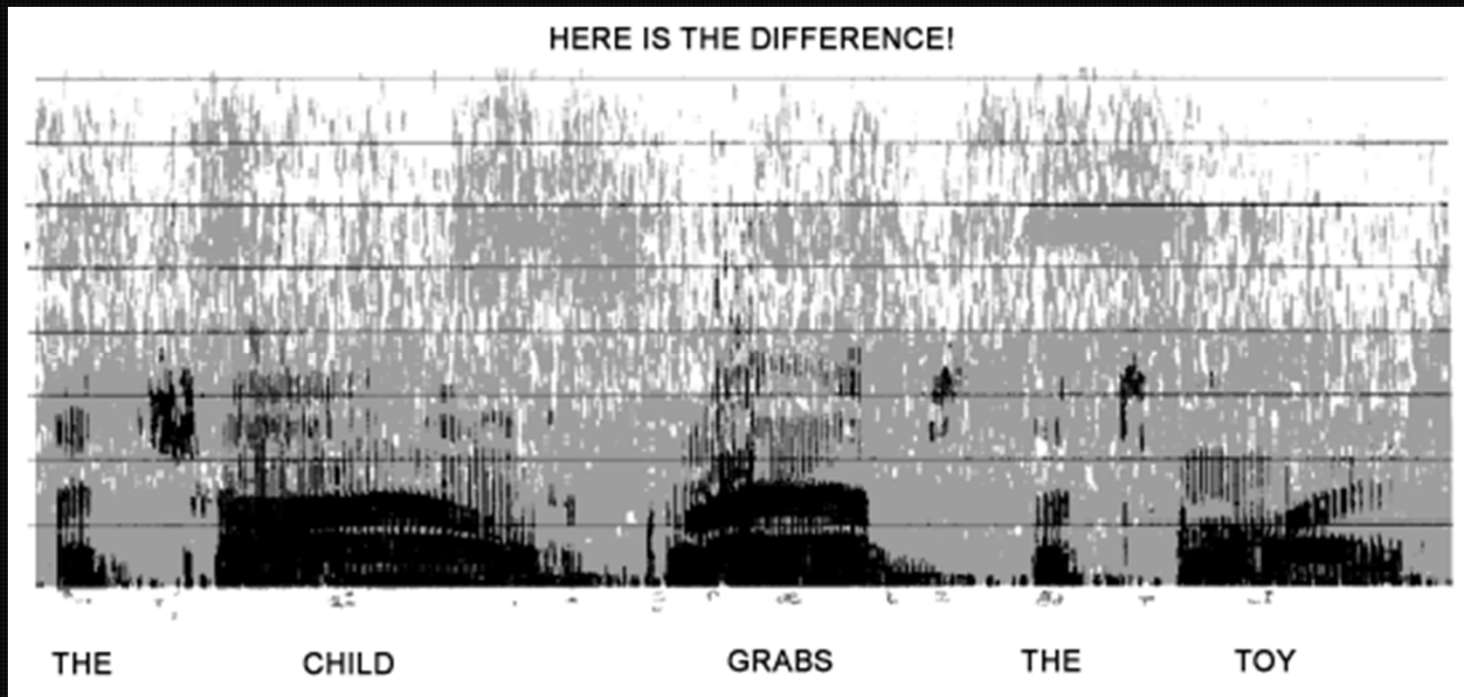
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DO YOU SEE ME?

DO YOU SEE ME?

# Application

Nothing is More Powerful Than a Demonstration



Adapted from Bess and Tharpe (1986) *Ear Hear* 7(1)

# Application

## Nothing is More Powerful Than a Demonstration

- ▶ **Demonstrate FM System Technology in a Sound Booth.**
  - Present white or speech-shaped noise, or some environmental sound, into the sound field
  - Wear microphone transmitter and talk to your patient while he/she is wearing a receiver
- ▶ **Demonstrate FM System Technology by using your iPhone/ iPad to enrich the room with noise**
- ▶ **Consider Aversiveness Subscale in the APHAB Questionnaire for Outcome Measures**

# Availability

Are You Ready for ON DEMAND?





# Availability

Are You Ready for ON DEMAND?

- ▶ **The beauty of FM technology is:**
  - It is wireless
  - It gives remote access
  - It can be integrated into hearing aids
  - It is smarter with dynamic FM

**You Must Have  
These To Show  
and Be  
Prepared to  
Demonstrate!**

A black and white portrait of George Bernard Shaw, an elderly man with a full white beard and glasses, looking down at a book or document he is holding. The background is a plain, light color.

**The single  
biggest problem  
in communication  
is the illusion  
that it has  
taken place.**

**-George Bernard Shaw**

# Ask Me 3™



What Is My  
Main Problem?

Diagnosis



What Do I  
Need to Do?

Treatment



Why Is It  
Important for Me  
to Do This?

Context

# To the Heart of Matters

## What Are the Inherent Motivators?

### ▶ **Motivators for the Hearing Professional**

- Increased compliance with hearing aids (less return)
- Increased satisfaction by doubling functionality of hearing aids

### ▶ **Motivators for Patient**

- Unobstructed access to a variety of desired sounds
- Portability and flexibility
- Benefits outweigh cost

# To the Heart of Matters

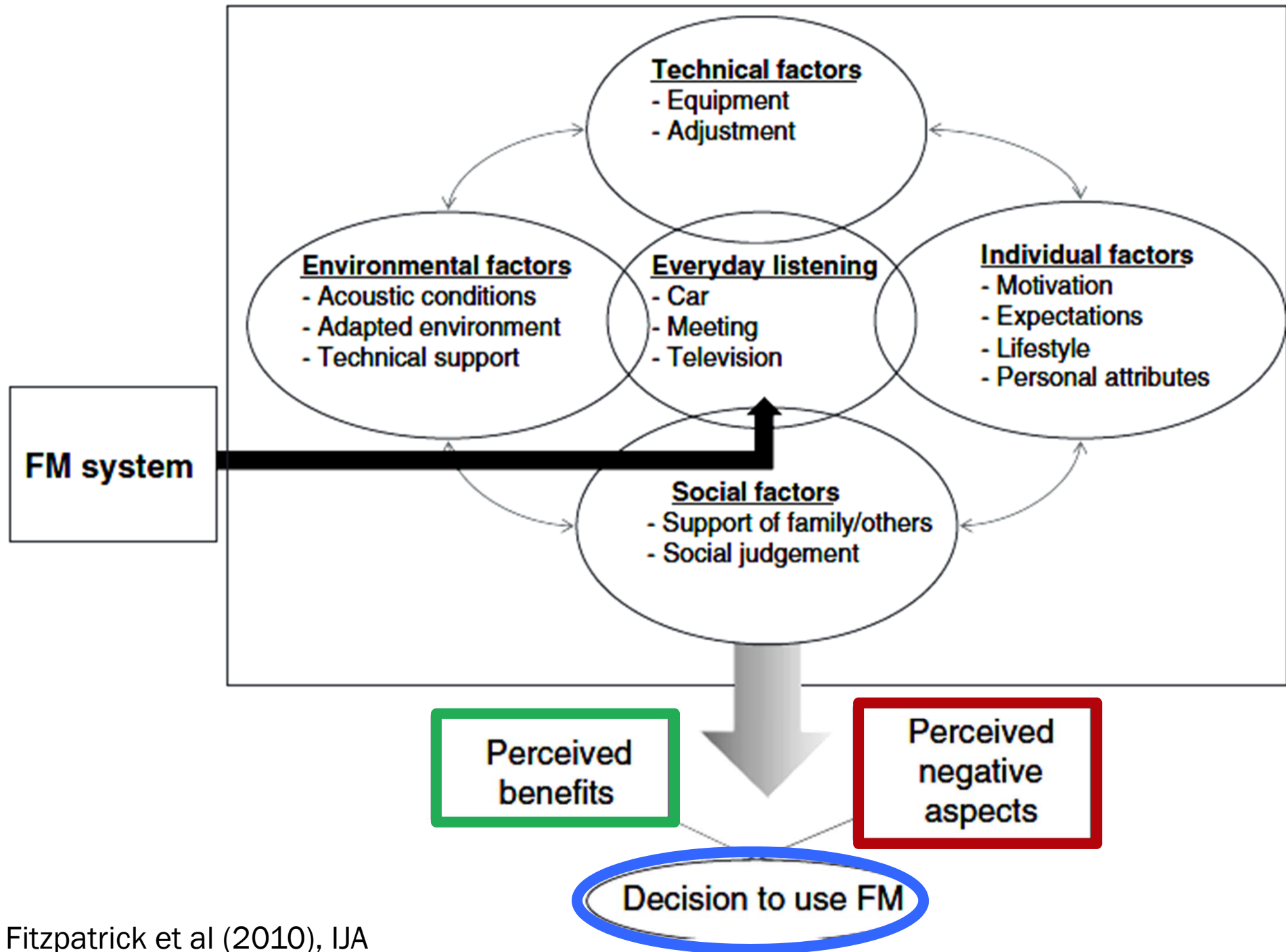
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# Fact

Patients can be the best advocates of FM technology by telling others about it. But they need to learn about it from YOU!

## HAT Training

Home » Training

Courses

Student Login

**HAT Training**

## HAT Training

### HLAA Completes Another Successful HAT Training

Consumers from around the country joined HLAA's Hearing Assistive Technology (HAT) Training Program October 26-28. Supported by a grant through the National Institute on Deafness and Rehabilitation Research (NIDRR) and the Rehabilitation Engineering Research Center on Hearing Enhancement (RERC-HE) at Gallaudet University, HLAA's HAT Training program seeks to ensure that consumers get the information they need about HAT. The people who are selected for this hands-on train-the-trainer program agree to take what was learned and teach others in their local community about HAT.

This year a terrific group of 21 motivated people gathered at the Marion Downs Hearing Center in Aurora, Colorado. We covered everything from hearing aids and cochlear implants to listening systems to alerting systems and hearing aid accessible phones. Trainees were immersed in the technology that makes lives easier for people with hearing loss, taught by experts in the field. The training was accessible to the consumers via CART and an assistive listening system.

Even as the session came to a close, plans are underway for the 2013 HAT Training. If you are interested in joining the training, please send an email to [HAT@hearingloss.org](mailto:HAT@hearingloss.org)







Questions?

# Contact Me:

UAMS/UALR Department of  
Audiology and Speech Pathology

<http://www.uams.edu/chrp/audiospeech/>



[sratcherson@ualr.edu](mailto:sratcherson@ualr.edu)