

# Tinnitus Activities Treatment

## Thoughts and Emotions

### Session

# Overall Plan

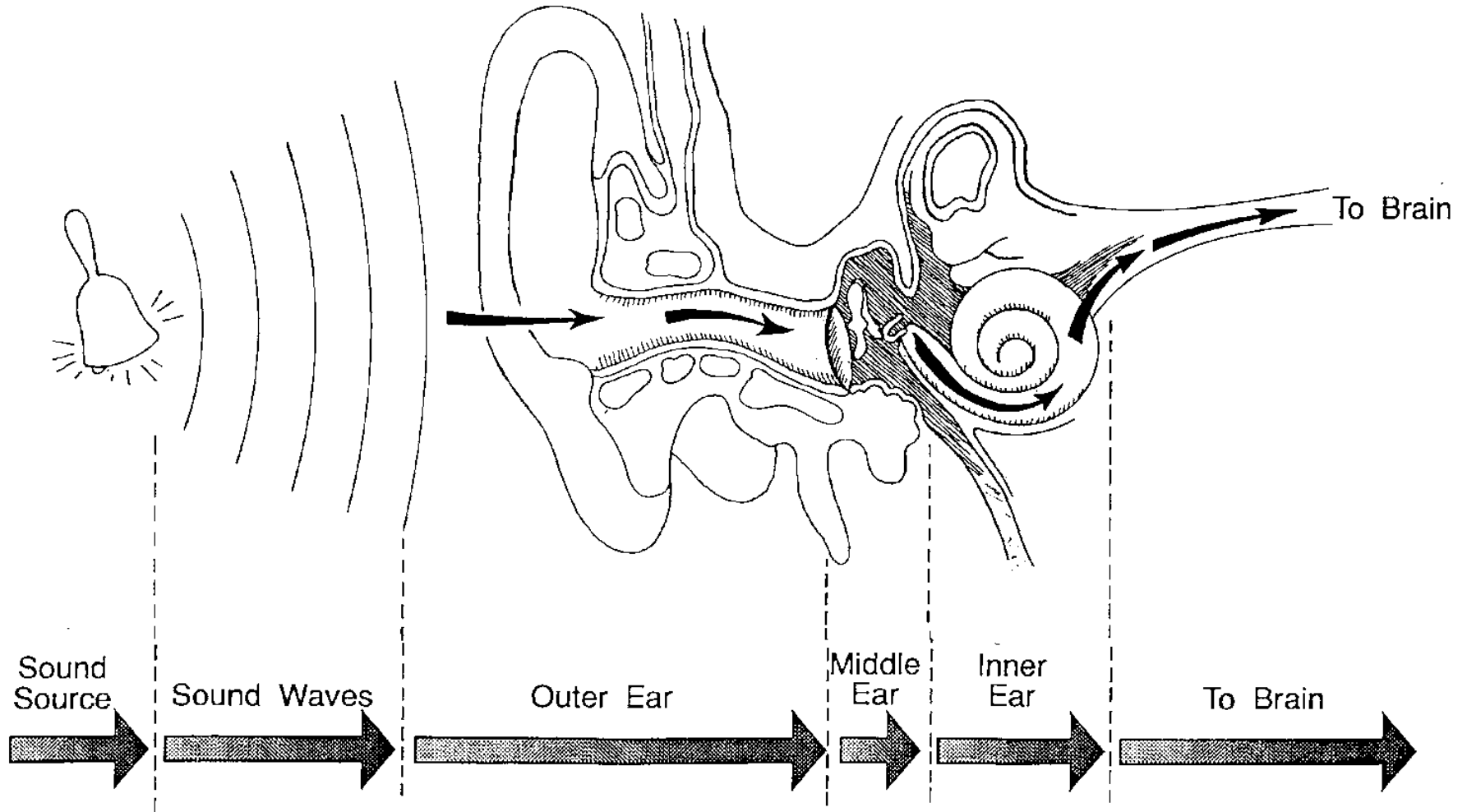
1. Hearing and hearing loss
2. Tinnitus
3. Attention, behavior, and emotions
4. Changing your reactions
5. Activities for home



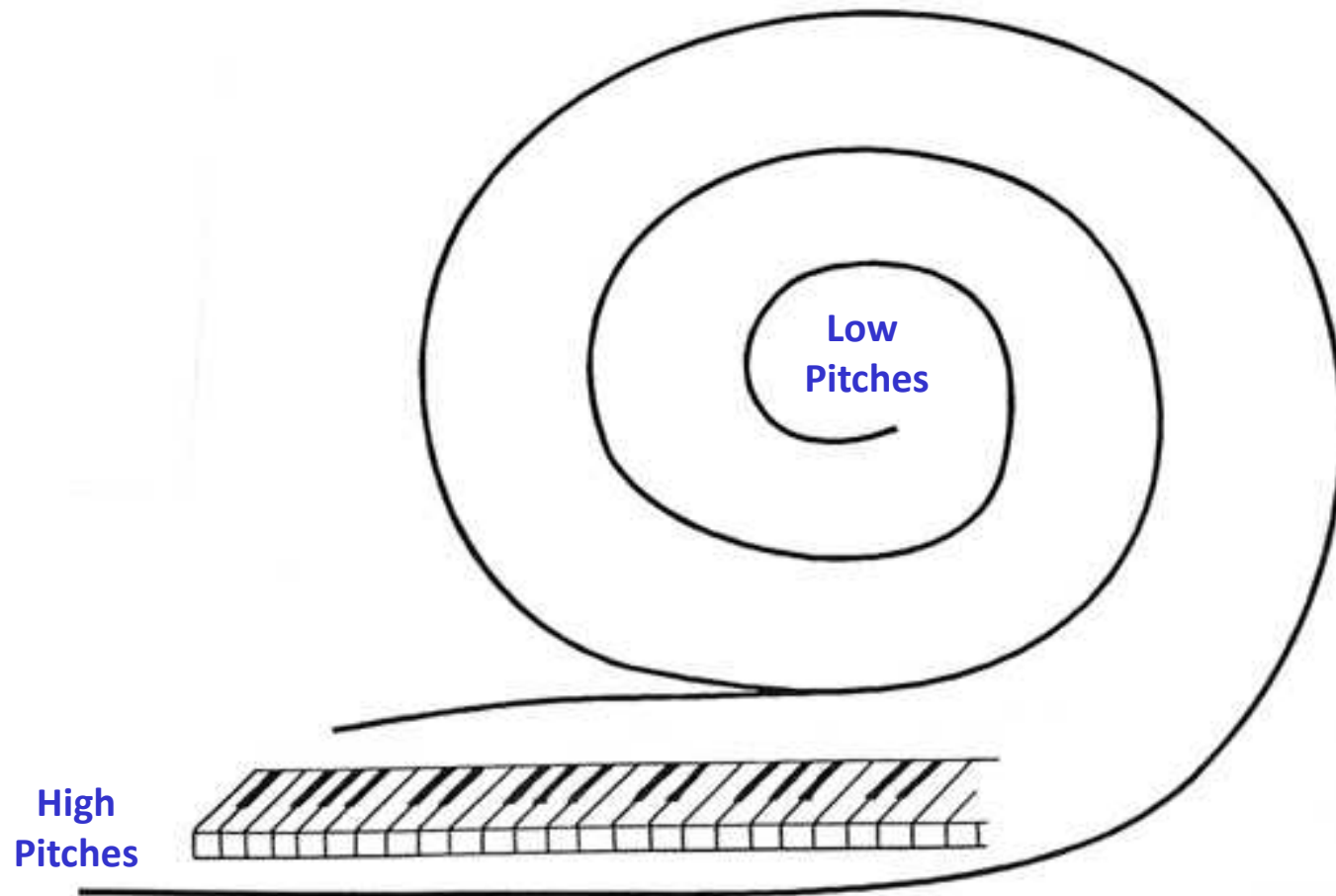
# **PART 1: HEARING & HEARING LOSS**

1. How we hear, and what is hearing loss
2. Causes of hearing loss

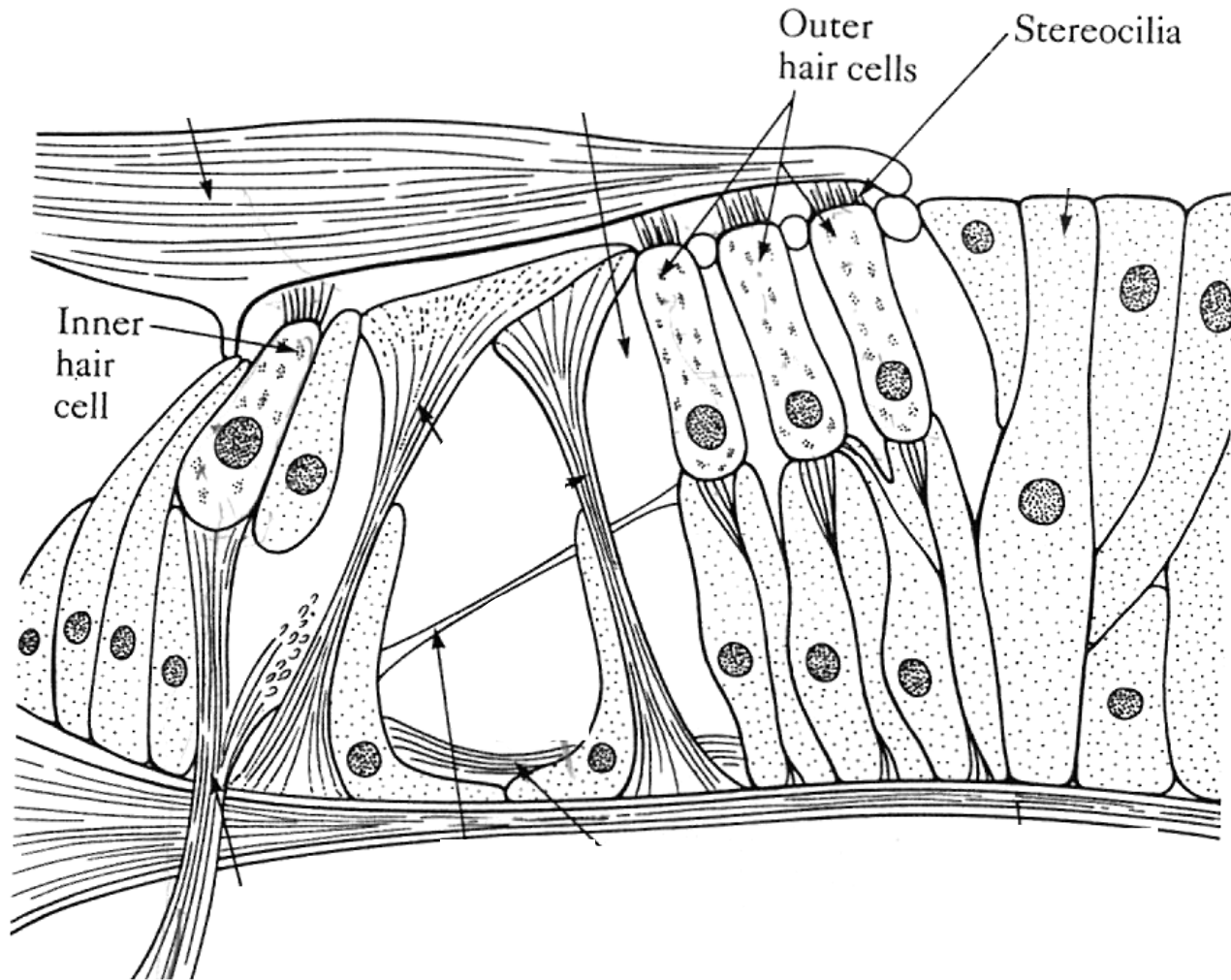
# How We Hear



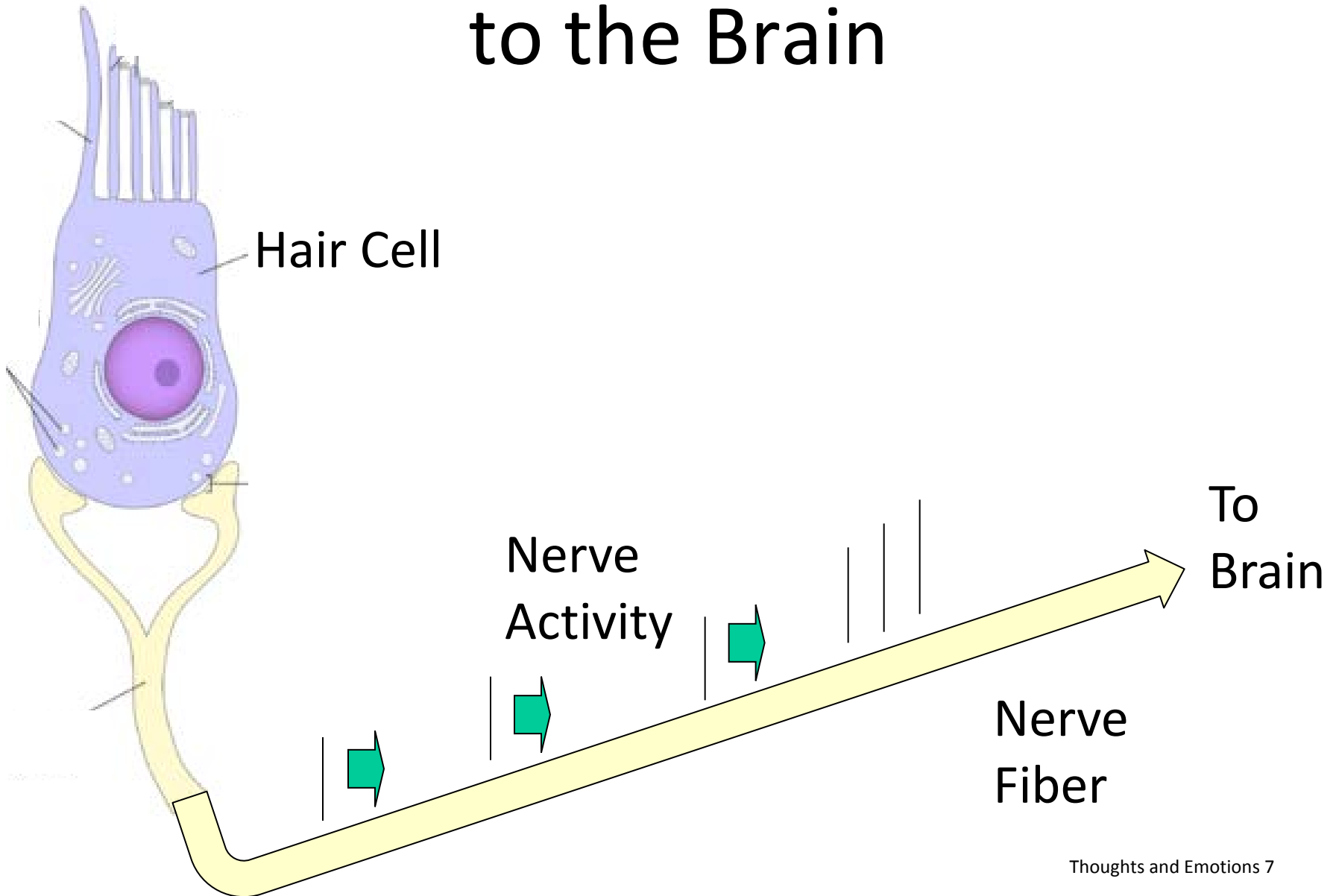
# Cochlea like piano



# Hair Cells in Cochlea

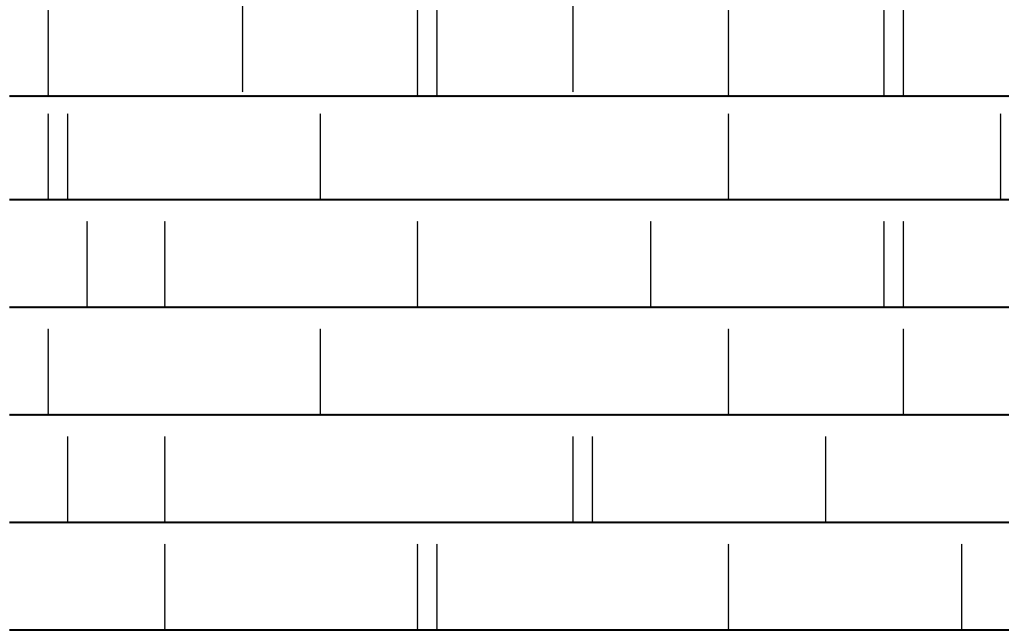


# Nerve Activity Carries Information to the Brain



# Spontaneous Activity on Hearing Nerves

No Sound  
(Quiet)



Hear  
Silence



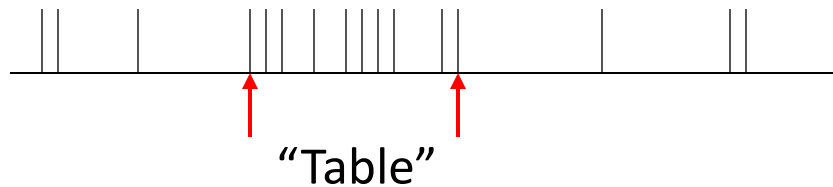
# Different Nerve Responses Result in the Perception of Different Sounds

No Sound  
(Quiet)



Hear  
Silence

Word  
"Table"



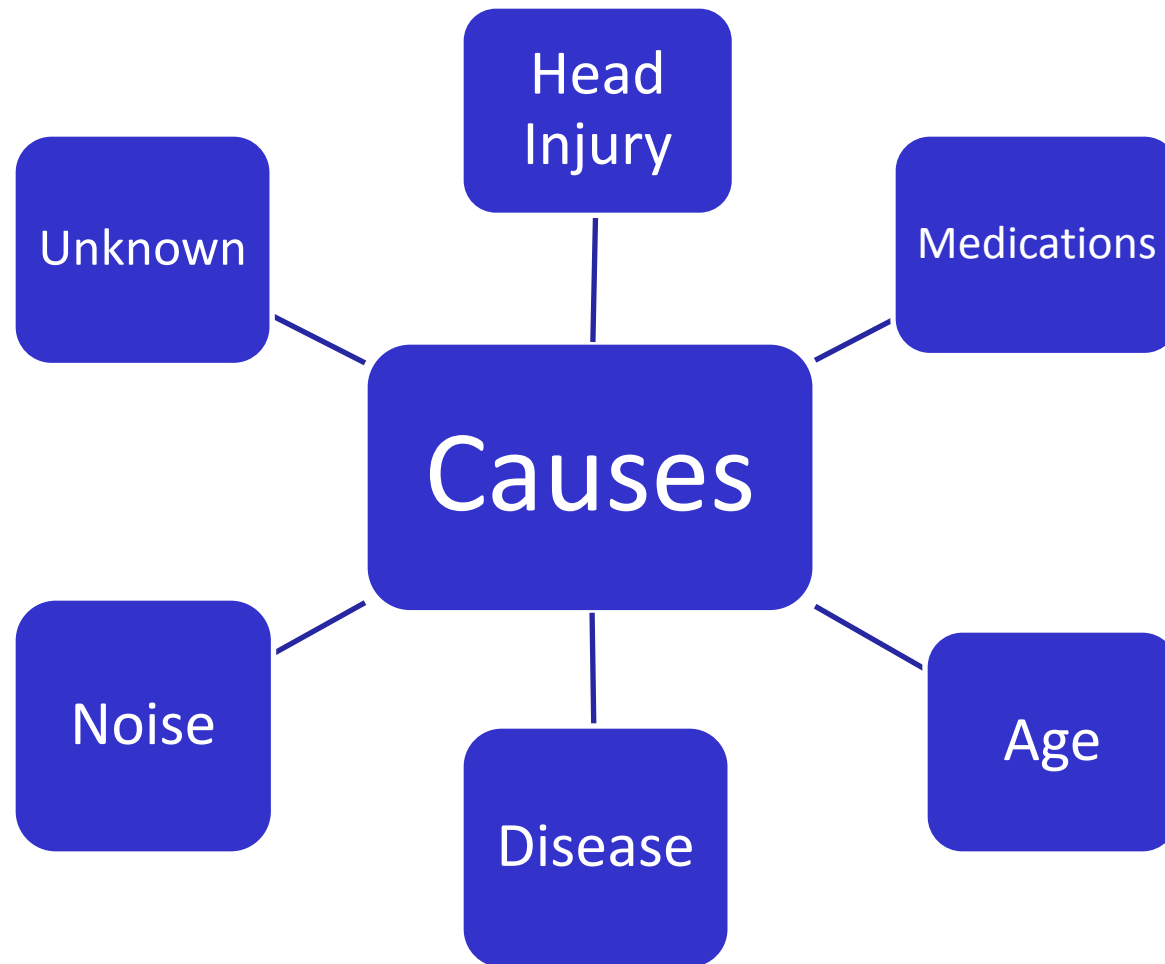
Hear  
"Table"

Sound of  
a Cricket

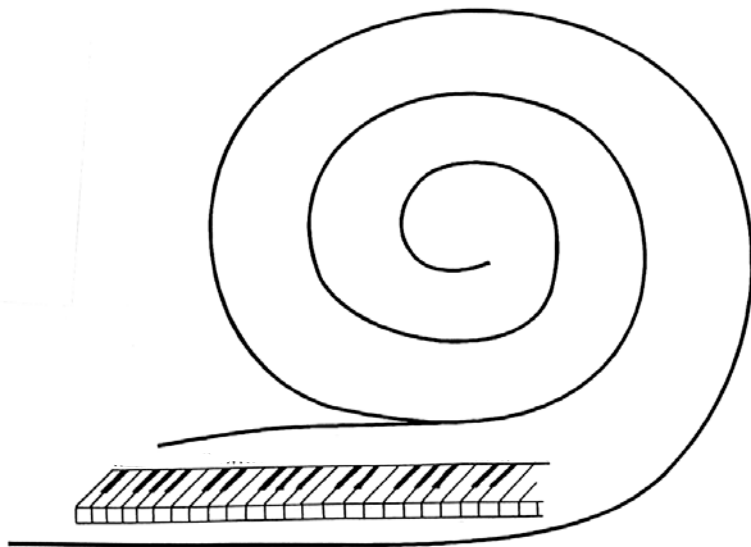


Hear a  
Cricket

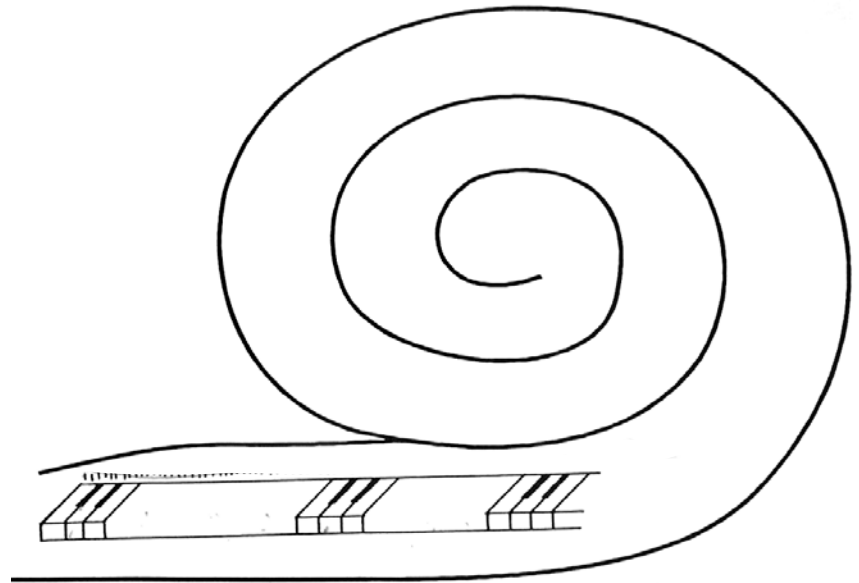
# Causes of hearing loss



# Hearing Loss Similar to Missing Piano Keys

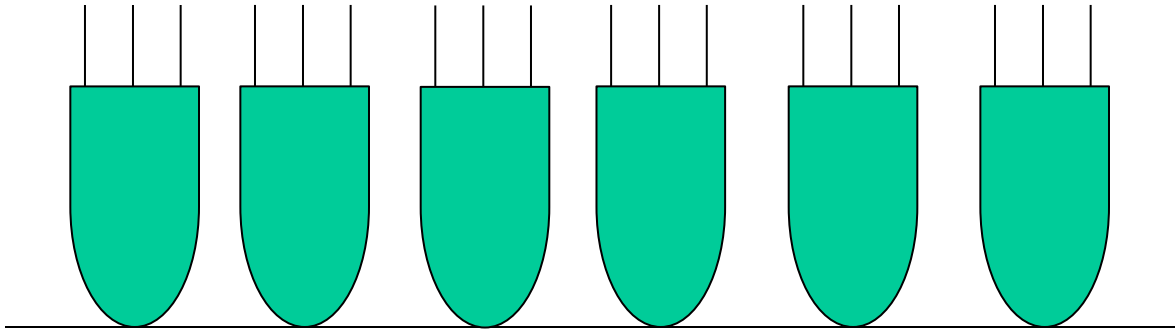


Normal Cochlea

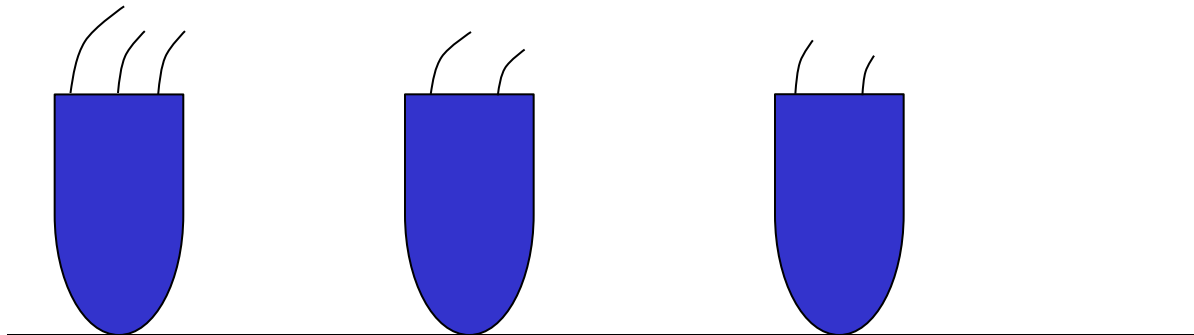


Cochlea with hearing loss and missing hair cells

# Hearing Loss and Missing Hair Cells



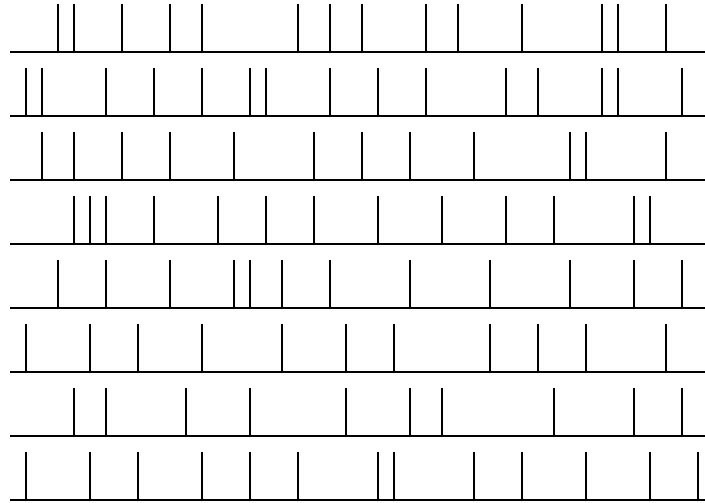
Normal  
Hair cells



Abnormal  
Hair cells,  
Hearing Loss

# Nerve Activity

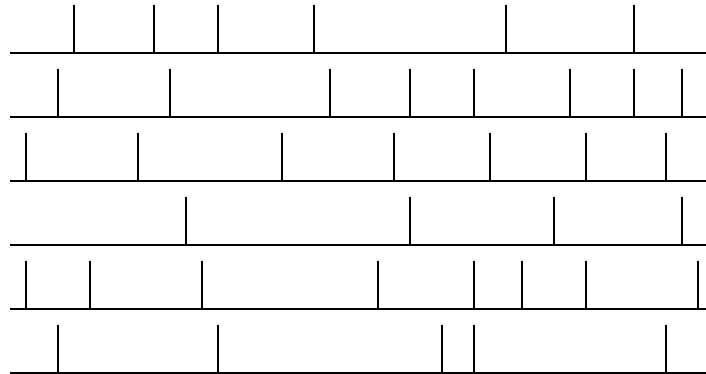
Normal  
Hearing



Lots of information  
sent to the brain

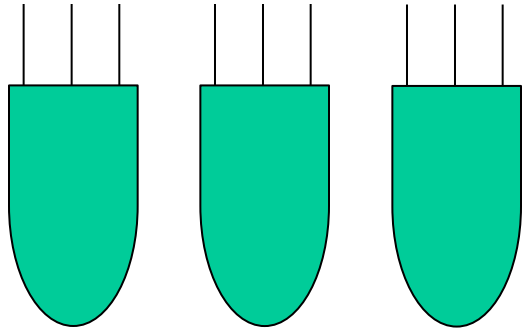
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Hearing  
Loss



Limited information  
sent to the brain

# Solutions for Hearing Loss



Cannot Replace Hair Cells

Hearing aids can help make sounds:

- Louder
- Easier to understand
- Do not restore normal hearing

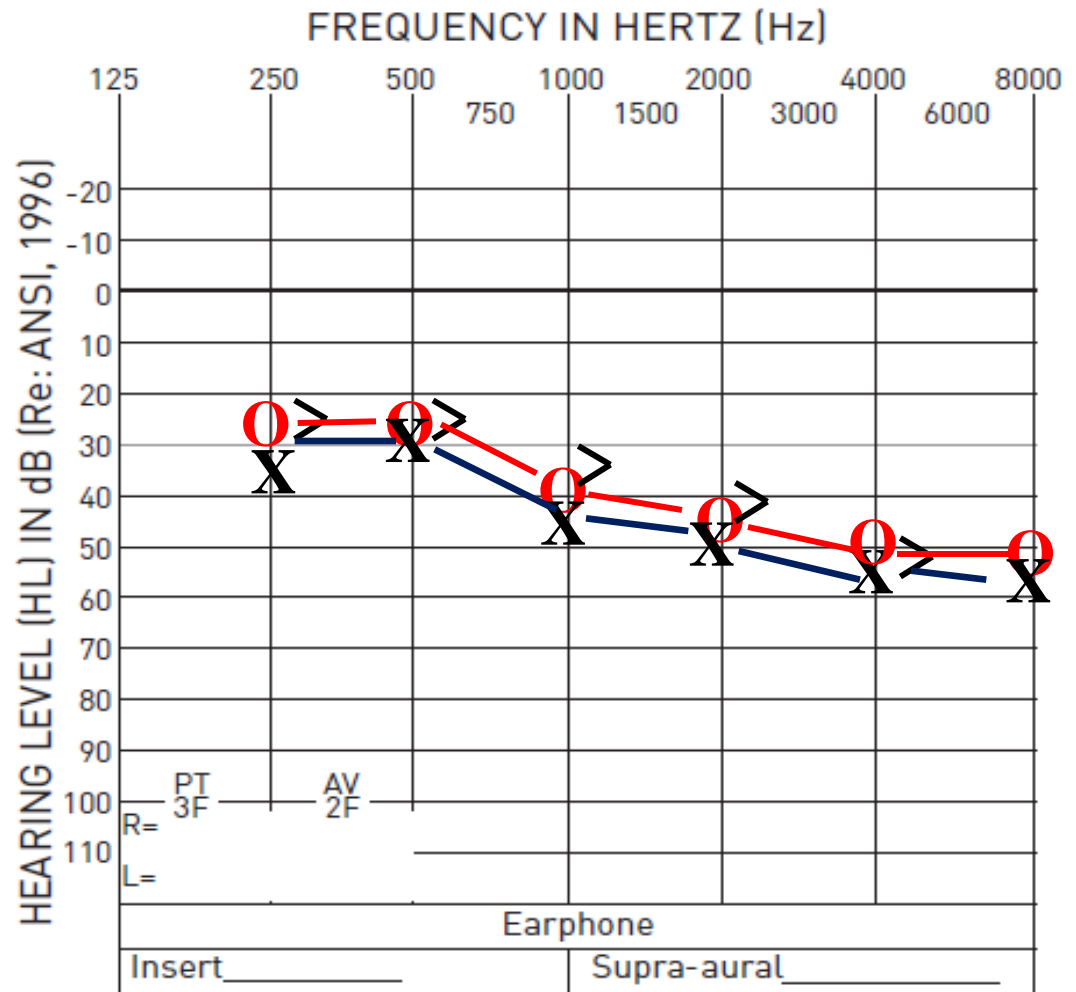


# Protecting Your Hearing

- Avoid exposure to loud sounds whenever possible
- If noise is unavoidable, wear ear protection to prevent damage to your ears



# Your Audiogram





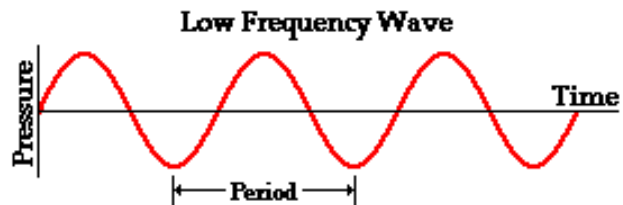
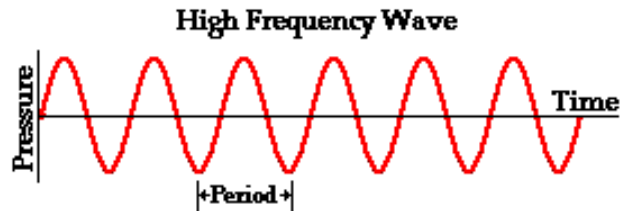
# Your Hearing?

- Do you have a significant hearing loss?
- What difficulties does your hearing loss create?
- What steps have you taken to improve your hearing?

# Pitch and Loudness

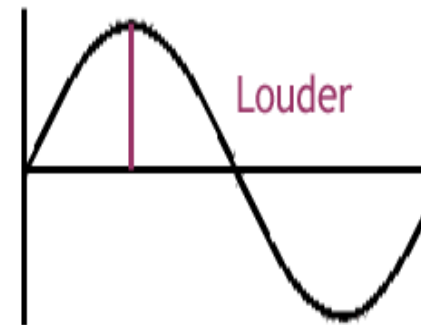
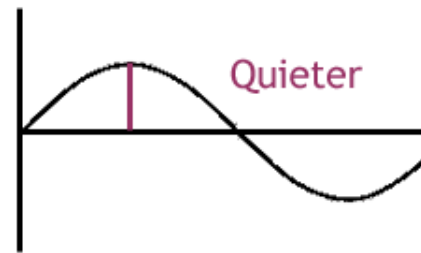
## Pitch (frequency)

- High pitch vs. low pitch



## Loudness (intensity)

- Soft vs. loud



# PART 2: TINNITUS



- A sound in ear(s) or head
- Heard differently by different people  
(e.g. ringing, buzzing, hissing, etc.)

# Tinnitus and Hearing

- Tinnitus results from damage to the hearing system
  - May be associated with hearing loss
- Tinnitus will not damage your hearing
- Hearing may continue to decrease, but not because of tinnitus

# There Are Many Different Causes of Tinnitus



# Tinnitus is Common

- 15 in 100 (15%) people have tinnitus
- 1 in 100 (1%) people have troublesome tinnitus
- 30 in 100 (30%) people over 60 years old have tinnitus



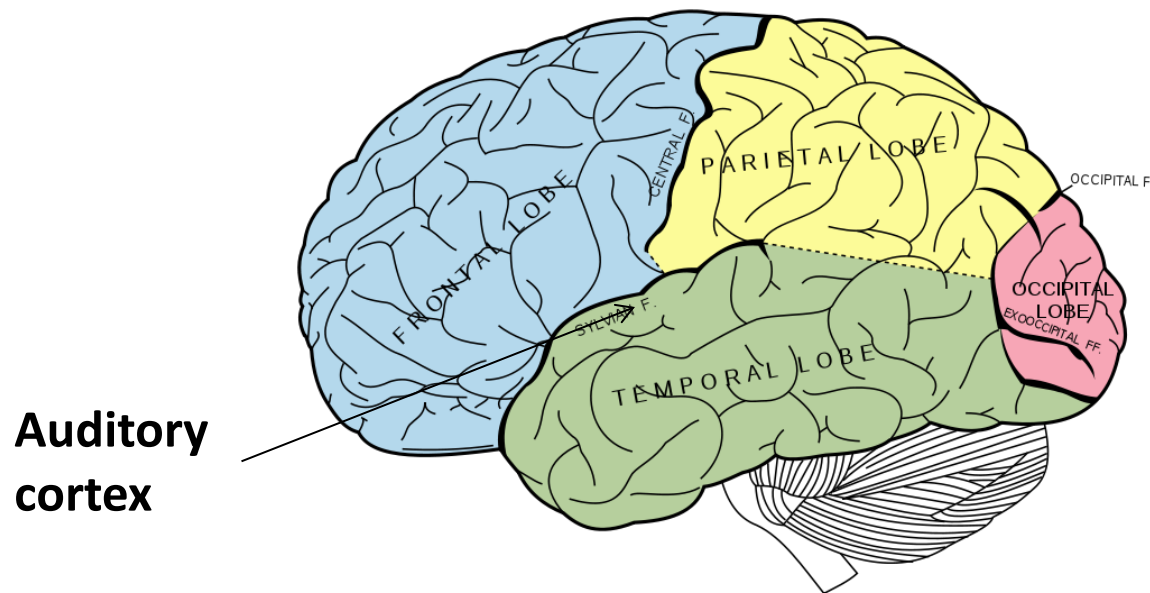
# Expectations for Relief

- Currently no drug or surgery can reliably eliminate the source of tinnitus
- However, **YOU** can change your reaction to tinnitus and how it affects you



# Auditory System

- Tinnitus, whatever the cause, must be represented in the brain in the auditory area. It is represented there like any other sound. It can be measured.





# Tinnitus is an Increase in Spontaneous Nerve Activity

Normal  
Hearing



Hear  
Silence

Hearing Loss  
(No Tinnitus)



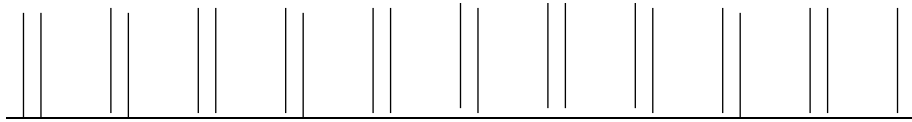
Hear  
Silence

Tinnitus

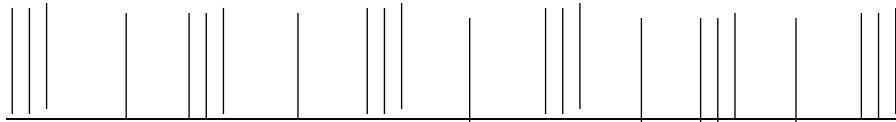


Hear  
Sound

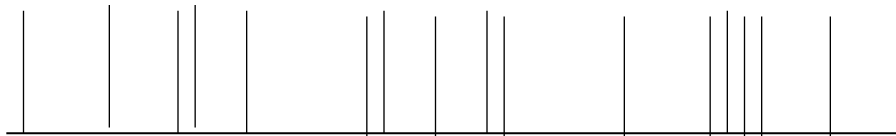
# What does your tinnitus sound like?



Whistle



Cricket



Another sound ?

# PART 3: ATTENTION

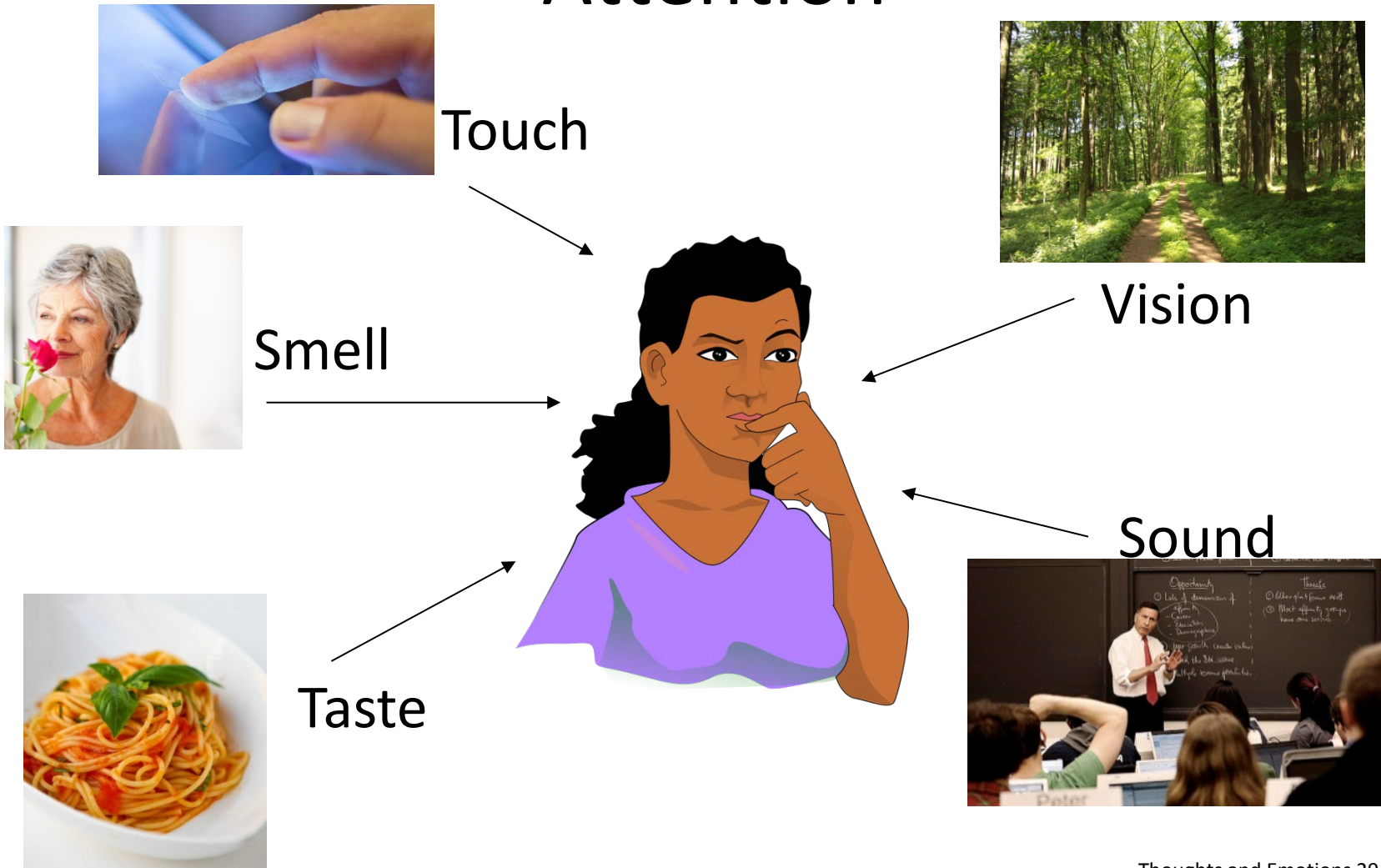
1. Types of attention
2. How things capture our attention
3. Emotional state has an effect on attention

# Two Types of Attention

- Conscious—Selectively attend to and think about information
- Subconscious—Monitor background information. Stimuli that are monitored may grab attention and move to conscious attention



# Many Stimuli Compete for Our Attention



# We can only consciously attend to one thing



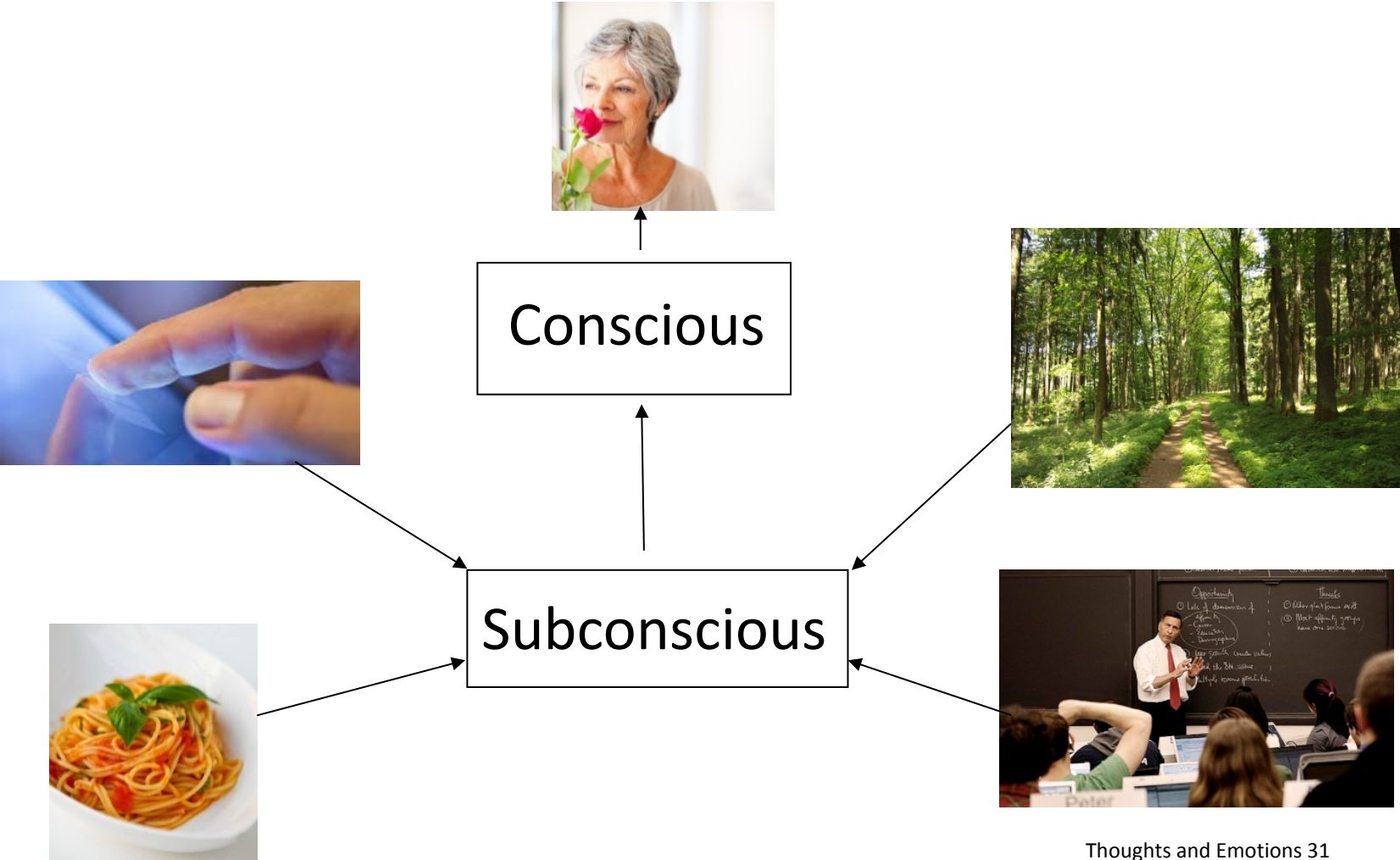
Conscious



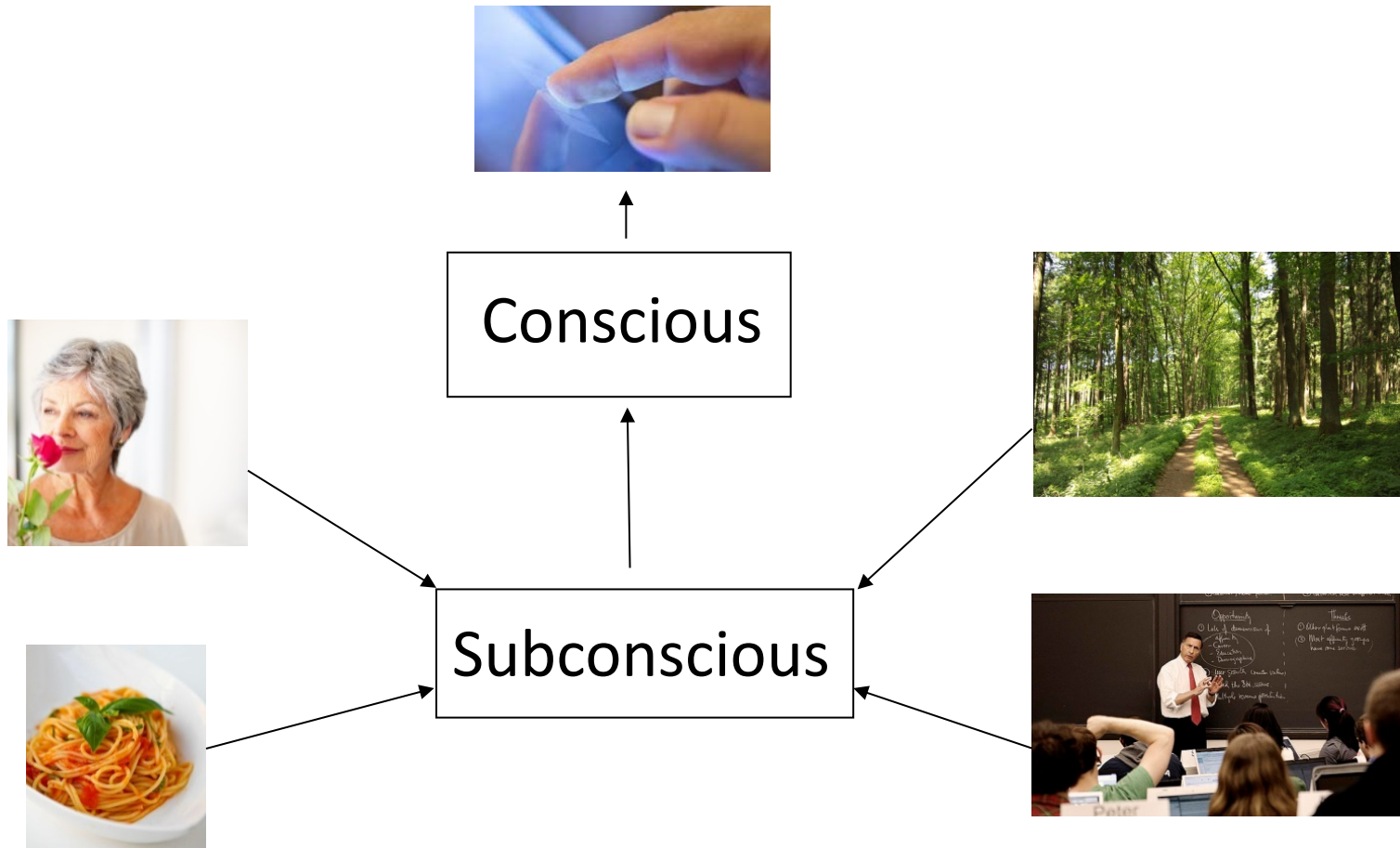
Subconscious



# We can typically direct our conscious attention to another stimulus



# We can direct our conscious attention to different smells, sounds, or things we feel





# We are not even aware that our subconscious monitoring goes on all the time

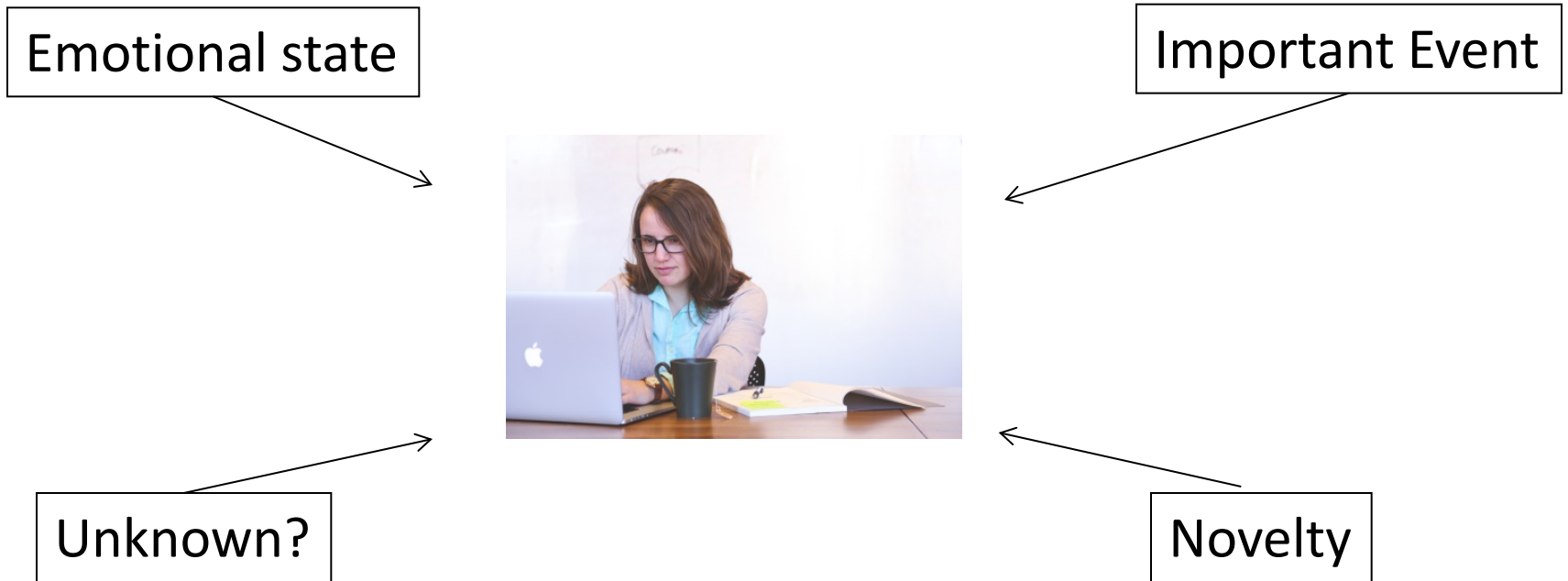
Blah, blah, blah,  
Fred, blah...



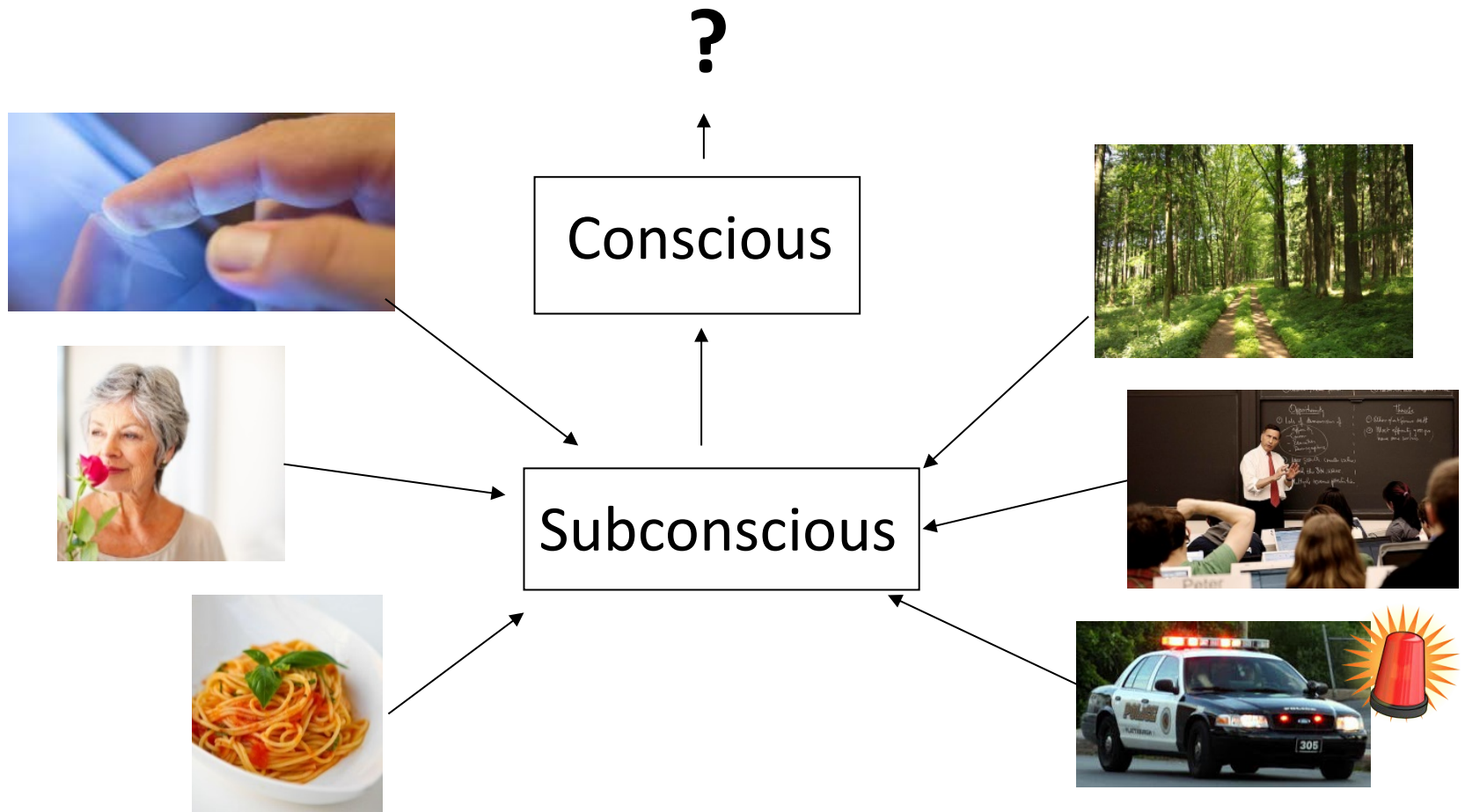
Did I hear my  
name?



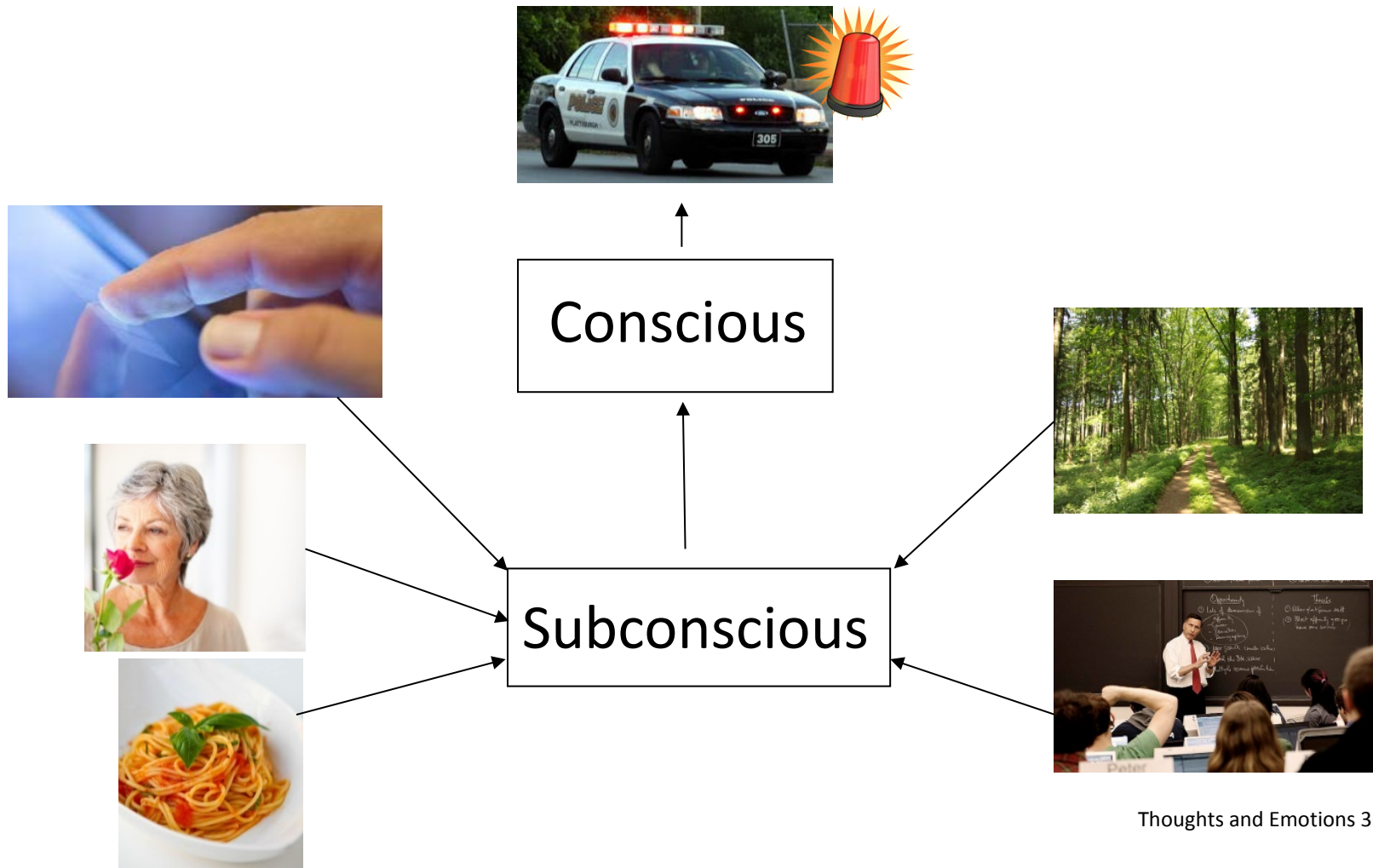
# Several things can influence our attention



# How do we respond to important stimuli?



# An important sound can *grab* our attention



# Things That Capture Our Conscious Attention



Unusual



Important



Scary

Unexpected



# Deciding to Pay Attention



Everything is OK  
(no longer attend)

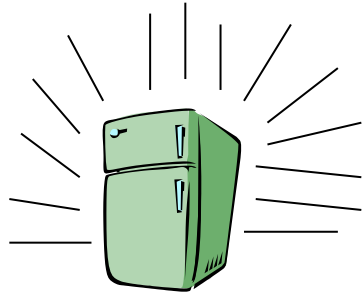
Do something,  
then will be OK  
(and will no longer attend)

Uncertain, may be  
important?  
(continue to attend)

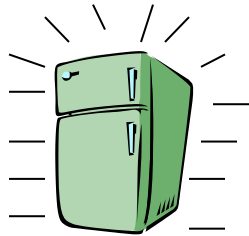
# Some Stimuli Cannot Be Ignored



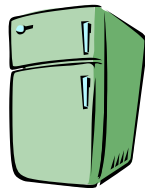
# Background Sounds Monitored



New Refrigerator is loud at first



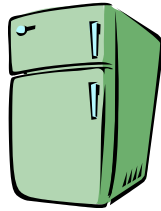
Soft



Not even aware it is present



# We Notice Important Things And Ignore Unimportant Stimuli



Refrigerator: Ignore



Lion: Cannot ignore



Crowd: Monitor information automatically

# Tinnitus and Attention

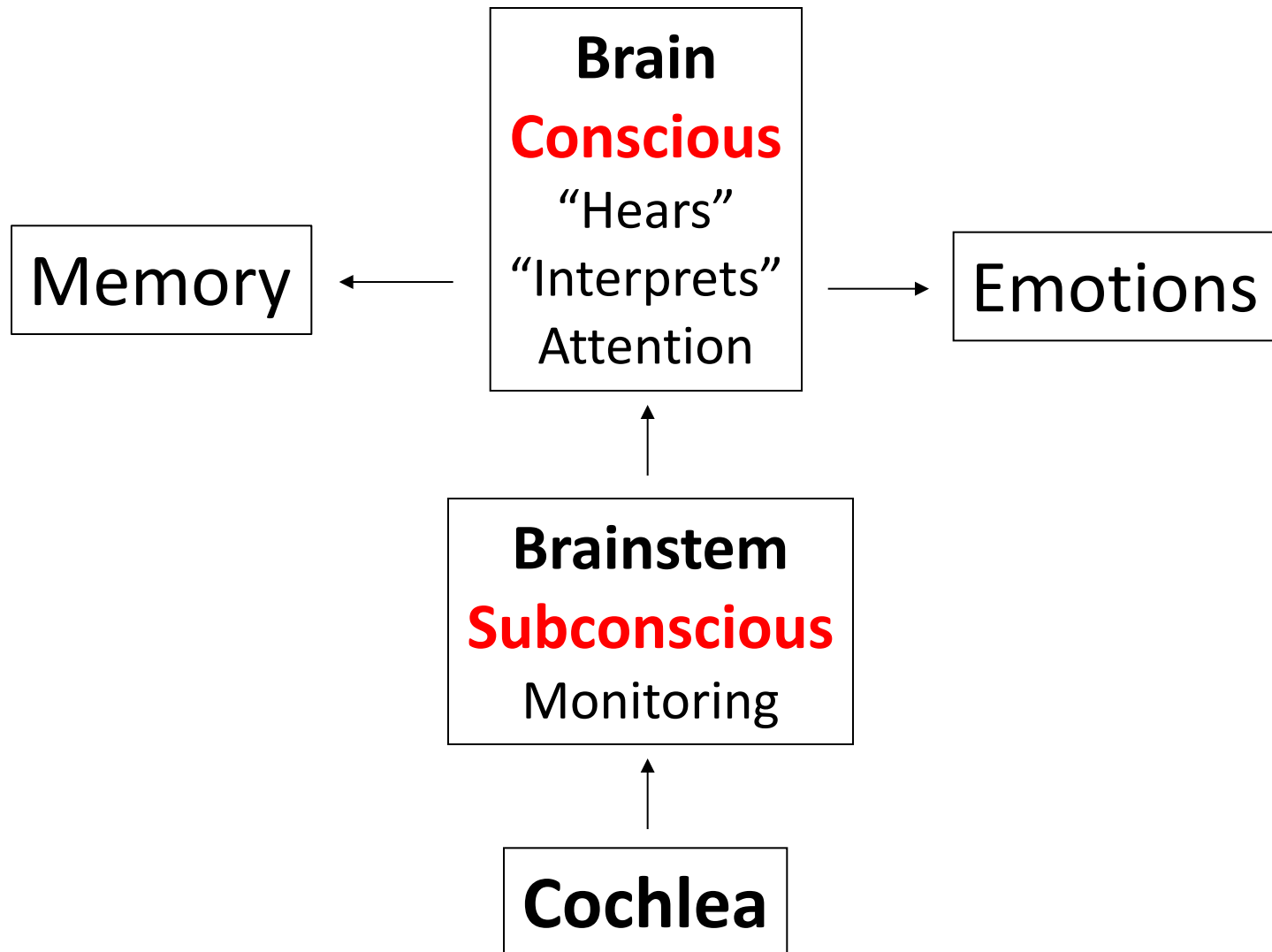
If brain determines  
**tinnitus is not important,**  
the tinnitus can be ignored



If brain determines  
**tinnitus is important,**  
we will pay attention to it



# How We Attend



# Tinnitus does not...

- Make you deaf
- Lead to senility
- Imply a sign of mental illness
  
- When you worry about such things, you can become preoccupied with tinnitus

# If the brain decides tinnitus is not important

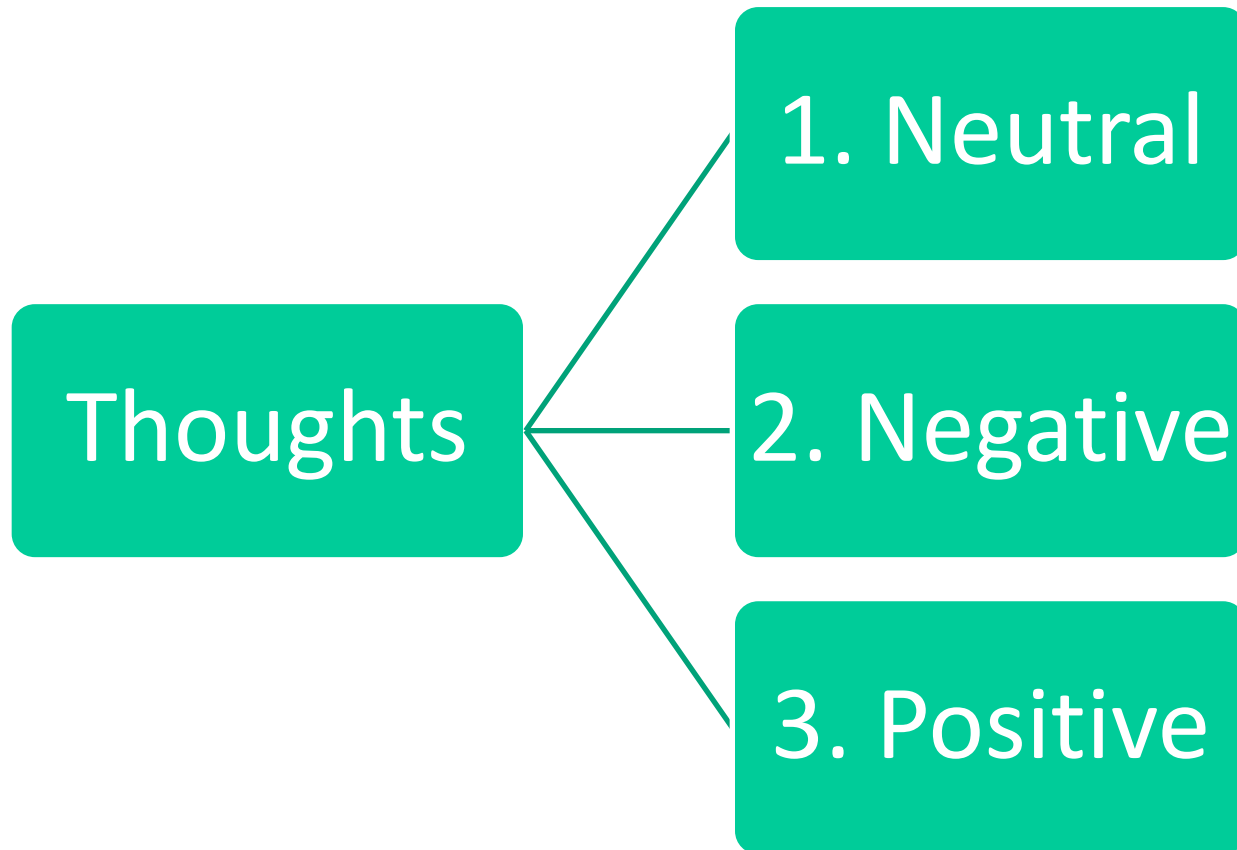
- Not attend to it
- Becomes less noticeable/bothersome
- Can take some time (several months)
- For some people it may occur quickly
- For other people it will take longer

# Activities

- Describe an image you like (e.g. a new car) and one you don't like (e.g. a snake)
- Describe a sound you like (e.g. music) and one you don't like (e.g. a siren)
- Describe your tinnitus

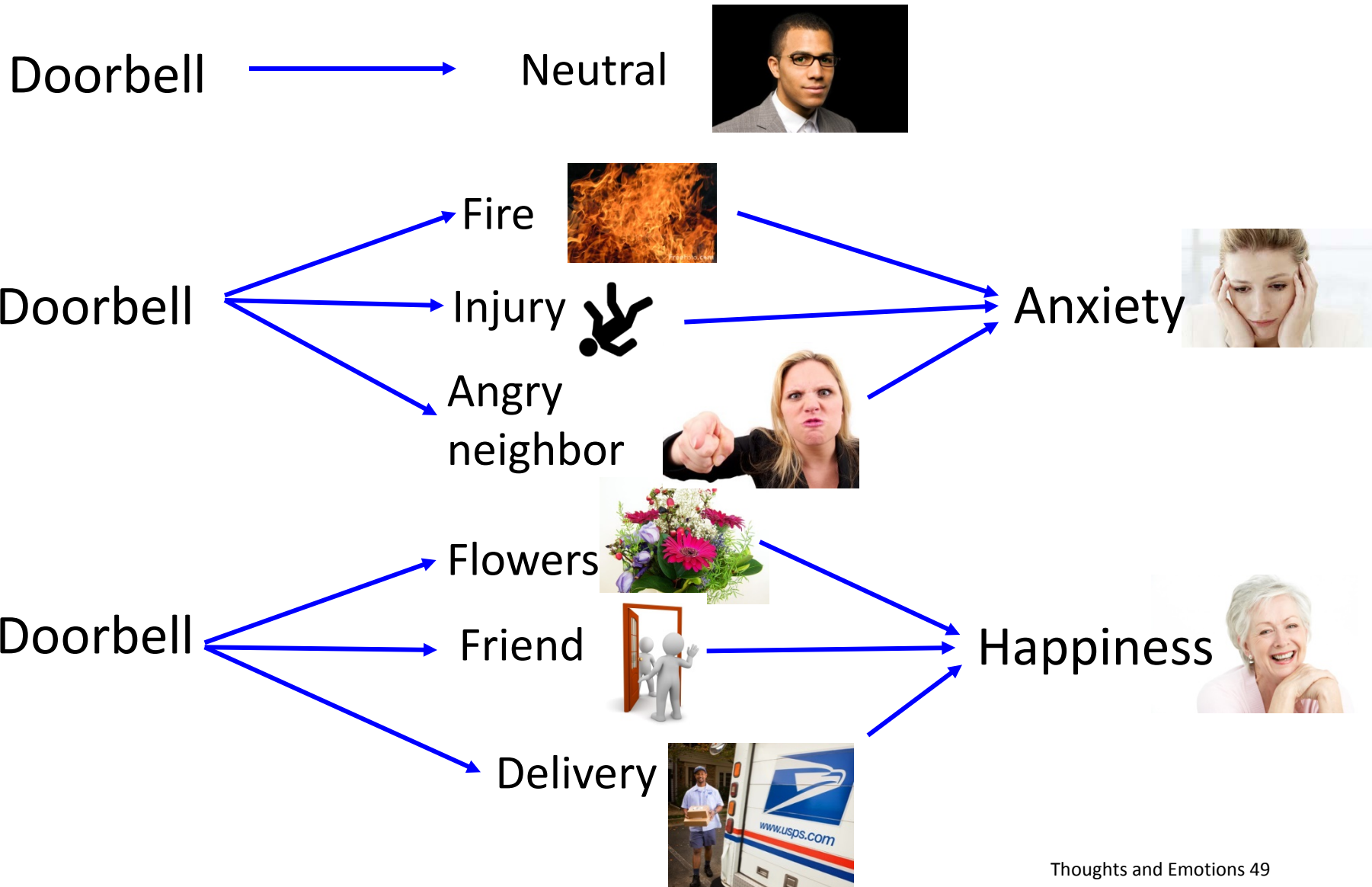
# **PART 4: CHANGE THE EMOTIONAL REACTION TO TINNITUS**

# Understand the Connection Between our Thoughts and Emotions





# Our Thoughts and Emotions



# Identify Unhealthy (negative) Thoughts

# Change Negative Thoughts

- What kind of thoughts have you had about your tinnitus?
  - Situations where tinnitus is bothersome
  - Thoughts and beliefs about tinnitus
  - Feelings about tinnitus



# Restructure Unhealthy (negative) Thoughts

# Change Negative Thoughts

I hate this noise!  
I can't live the rest of my life  
with this noise in my head!  
I can't concentrate with this  
sound in my head!



This noise isn't pleasant, but I  
can learn to ignore it.  
It's OK if this noise doesn't go  
away because I can teach my  
brain to ignore it.



# How to Change Our Reaction to Tinnitus

1. Change Interpretation of Importance
2. Change Emotional Reaction
3. Refocus on Other Activities
4. Reduce Contrast Between Background Sound and Tinnitus

# 1. Change Interpretation of Importance

- Tinnitus is likely the result of increased spontaneous nerve activity
- Many people have tinnitus – you are not alone
- Tinnitus is not threatening your health or hearing
- Tinnitus and **YOUR REACTION** to tinnitus are two different things

# Decreasing attention to tinnitus

- Our goal is to help you move from the group of people who are bothered by their tinnitus to the group of people who are not bothered by it.





# Decreasing Attention

- Consider subconscious and conscious attention
- Brain monitors background sounds all the time
- We pay attention to important, strange, fearful sounds
- If tinnitus is not important, it is less likely you will pay attention to it

## 2. You Can Unlearn/Change Your Emotional Reactions

Tinnitus → Negative Reaction



→ Negative thoughts

Tinnitus → Anxiety, Irritation



→ Negative thoughts

Tinnitus → Less Irritation



→ Constructive thoughts

Tinnitus → No Reaction



→ Tinnitus not as prominent

# 3. Refocus on Other Activities

- What hobbies do you have?
- What activities help you ignore your tinnitus?
- What new activities could you become involved in?



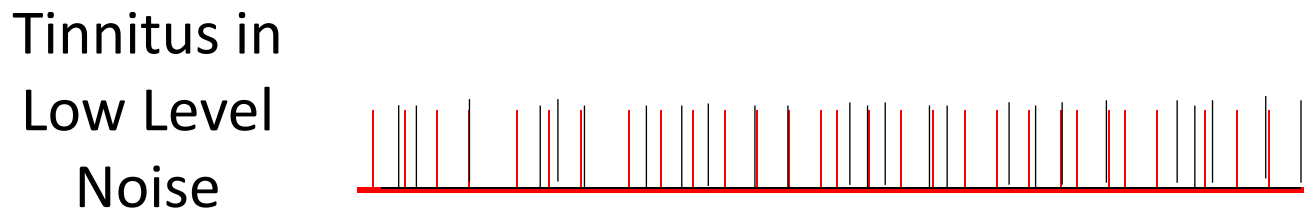
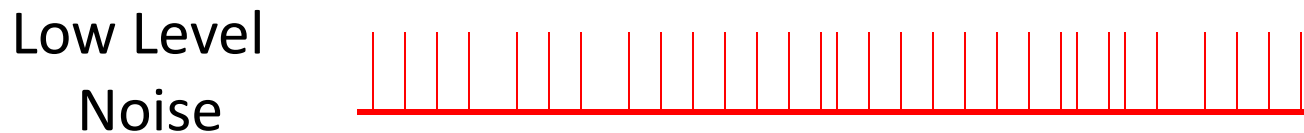
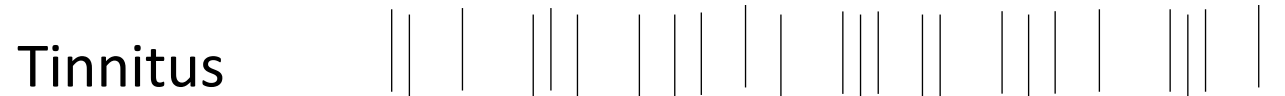
# Activities in Your Life

- Involving yourself in activities that you enjoy—that bring intrinsic value—will also be helpful to focus away from tinnitus

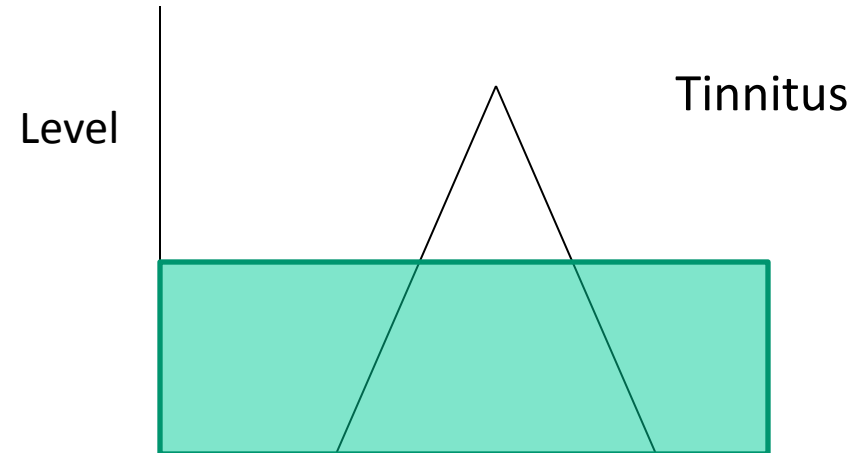
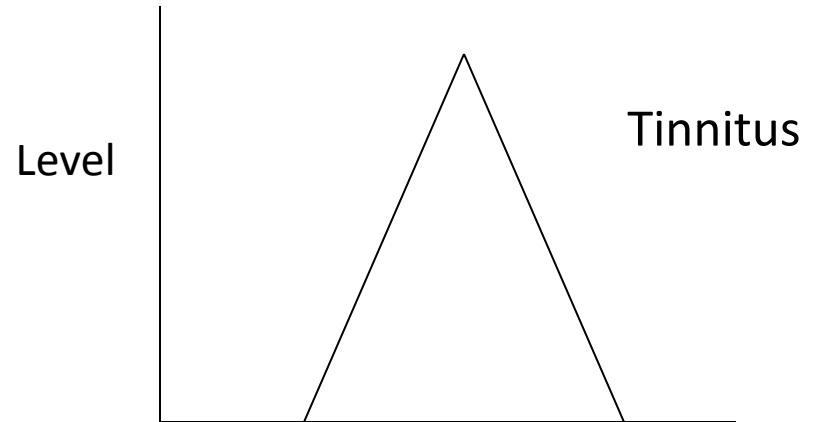


# 4. Reduce the Contrast Between Tinnitus and Background Sounds

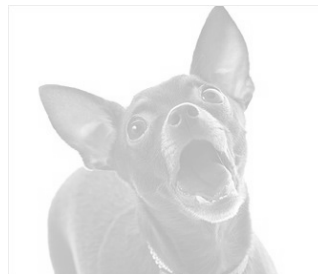
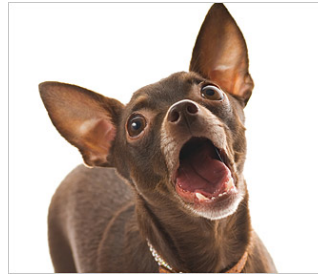
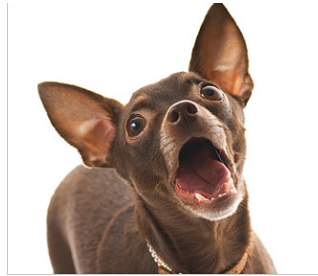
# Low level noise makes tinnitus more difficult to detect



# Decrease Prominence of Tinnitus



# Background sound masks unwanted sounds





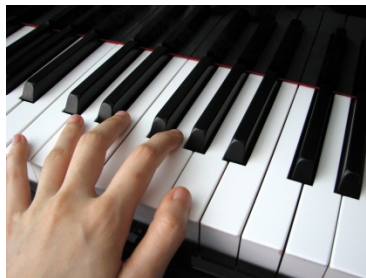
# Ways to Add Low Level Background Sound

- Use sound in the environment



# Ways to Add Low Level Background Sound

- Listen to recorded material:
  - Relaxation CDs
  - Smartphone apps
  - Nature sounds
  - Music



# Ways to Add Low Level Background Sound

- Use a sound playing device



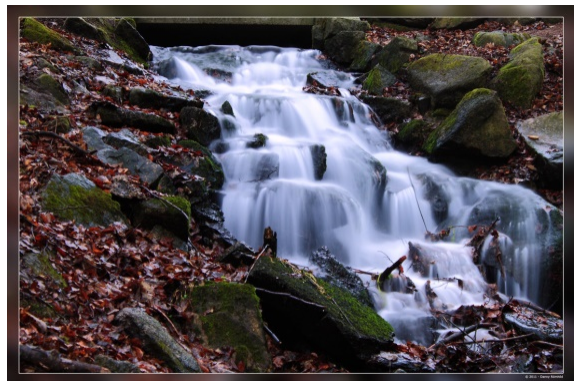
# Do Any Sounds Make Your Tinnitus Less Noticeable?



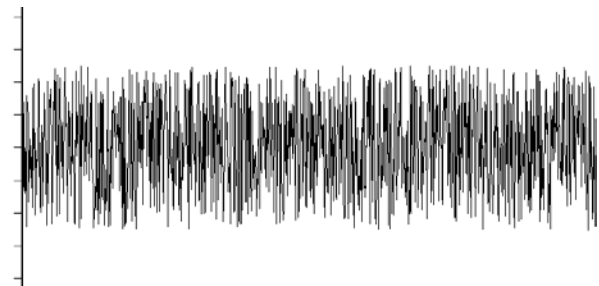
Rain



Music



Waterfall



Static

# **PART 5: ACTION PLAN**

# Activities

1. Practice focusing your attention on your tinnitus, and then on something else
2. Identify alternative activities you enjoy
3. Try different low-level background sounds



# Task: Complete a Tinnitus Diary

- Neutralize negative thoughts about tinnitus
- Modify your lifestyle to engage in enjoyable activities
- Use low-level background sound to make tinnitus less prominent



# Example Tinnitus Diary

1. Write down your thoughts and worries about tinnitus
  - *My tinnitus will get worse over time.*
2. Check to see if these thoughts match what actually happens
  - *Though some days can be worse, my tinnitus is about the same.*
3. List the alternative ways of thinking about tinnitus that you find helpful
  - *I have tinnitus, but it is really a small part of my life.*
4. We will discuss your thoughts at your next visit.



# Tinnitus Diary, cont'd

1. List the things that reduce your tinnitus
2. List the things that worsen your tinnitus
3. List activities you enjoy
4. List sounds you enjoy
5. List alternative activities to engage in when you find tinnitus bothersome
6. List any low level sounds you used, and their effect on your tinnitus

# Tinnitus Diary, cont'd

- For two weeks, keep a list of new activities you engage in each day, and the effect your activities have on your tinnitus.

# Example Tinnitus Diary – Week 1

- Make changes in your daily life so you are doing more activities where your tinnitus is better and fewer activities where your tinnitus is worse. List the new activities and how your tinnitus was affected.

## **Activity**

- Day 1: *Walking*
- Day 2:
- Day 3:
- Day 4:
- Day 5:
- Day 6:
- Day 7:

## **Effect on Tinnitus**

- Day 1: *Heard birds chirping, did not notice tinnitus*
- Day 2:
- Day 3:
- Day 4:
- Day 5:
- Day 6:
- Day 7:

# Example Tinnitus Diary – Week 2

## Activity

- Day 1: *Gardening*
- Day 2:
- Day 3:
- Day 4:
- Day 5:
- Day 6:
- Day 7:

## Effect on Tinnitus

- Day 1: *Focused on yard work, tinnitus less noticeable*
- Day 2:
- Day 3:
- Day 4:
- Day 5:
- Day 6:
- Day 7:

# Tinnitus Diary Review

- After two weeks, you may stop journaling
- The intent is NOT to think of your tinnitus, but to find other activities you can engage in that take your mind off tinnitus.
- **YOU** can then make changes in your daily life so you are doing more activities where tinnitus is better and fewer activities where tinnitus is worse.