

Theory and Practice.

MISOPHONIA REFLEXES AND TREATMENT

by Tom Dozier, MS

tom@MisophoniaTreatment.com

www.MisophoniaTreatment.com

October 25, 2013

Presented at the 1st Misophonia Association Conference, Portland, OR, October 2013

Content of Presentation

- Misophonia – Individual differences
- Human reflexes
- Acquired reflexes
 - Research on acquired, complex reflexes
- Misophonia and reflexes
- How to explain misophonia to others
- What to do when you hear a trigger
- How to prevent acquiring new triggers
- How to reduce the overall severity of triggers
- How to rewire your brain to reduce/eliminate a trigger.

Misophonia Survey (3/13)

- ⦿ Individuals with misophonia
- ⦿ 194 responses: 44 men, 150 women
- ⦿ Average age: 42 yrs
- ⦿ Onset of misophonia:
 - Most common – 10 yrs
 - Average – 11.6 yrs
 - Range – 4 to 55 yrs
- ⦿ Age for severe misophonia
 - Most common – 12 yrs
 - Average – 17.1 yrs
 - Range – 4 to 64 yrs

Misophonia by Age Group

Survey of 194 Individuals with Misophonia (3/13)

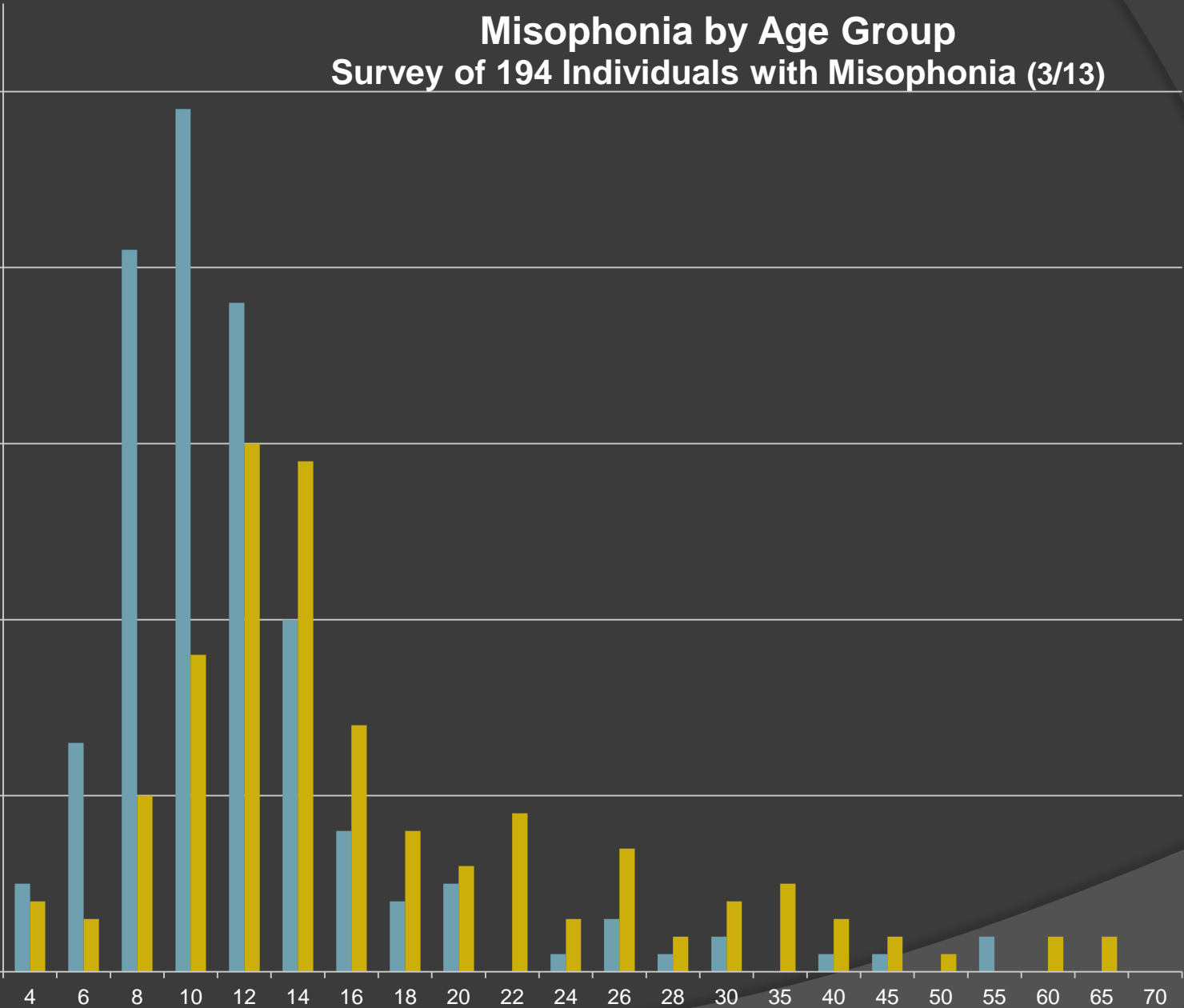
Number of Individuals

50
40
30
20
10
0

■ Onset
■ Severe

4 6 8 10 12 14 16 18 20 22 24 26 28 30 35 40 45 50 55 60 65 70

Age Group



Misophonia Response

Response	Maximum	Minimum
Anger/rage only	30%	18%
Severe physical pain and overpowering emotions	4%	0%
Physical pain and extreme emotions	18%	9%
Emotional pain and very strong emotions	16%	16%
Elevated physical sensation and strong emotions	12%	16%
Elevated physical sensation and negative emotions	14%	14%

Different Misophonia Reflexes

- Arms, shoulders, and legs
- Legs and chest
- Chest (3x)
- Pain through sternum, in front and out back
- Shoulders
- Jaw
- Shoulders and jaw
- Upper back and shoulders
- Stomach knots up (internal) (3x)
- Esophagus tightens (internal)
- Sexual arousal (internal)
- Only anger, no identified physical reflex (emotion)

Different Misophonia Triggers

- ⦿ General triggers (by anyone, anywhere)

- Popcorn
- Gum popping
- Typing
- “S” sound of speech

- ⦿ Very specific triggers

- Mom eating Frito (but not others)
- Husband saying “uh” but not others
- Husband eating crunchy bread
- Parent’s voice

- ⦿ Unusual triggers

- Birds chirping

- ⦿ Non-Human triggers

- Clocks ticking

Reflexes and Misophonia

- ⦿ Trigger is heard or seen → Reflex reaction
 - Involuntary reaction
 - Physical action (muscles or glands/hormones)
 - Emotional reaction
- ⦿ Stop the reflex → Stop the emotion

Human Behavior

- ◎ Purposeful behavior (Operant behavior)
 - Behavior that “works”
 - Operates on the world to produce a desired effect
 - Almost all thinking and doing
- ◎ How purposeful behavior works
 - See the situation
 - Action
 - Get something

Human Behavior

- ⦿ Reflex (respondent) behavior
 - Reflexes
 - Involuntary response of muscles and glands
 - Automatic
 - Includes feelings
- ⦿ How reflexes work
 - Stimulus – See, hear, smell, touch, taste, internal
 - Response – blink, jerk, gag, salivate, breathe, sweat, fast heart rate, relax

Reflexes

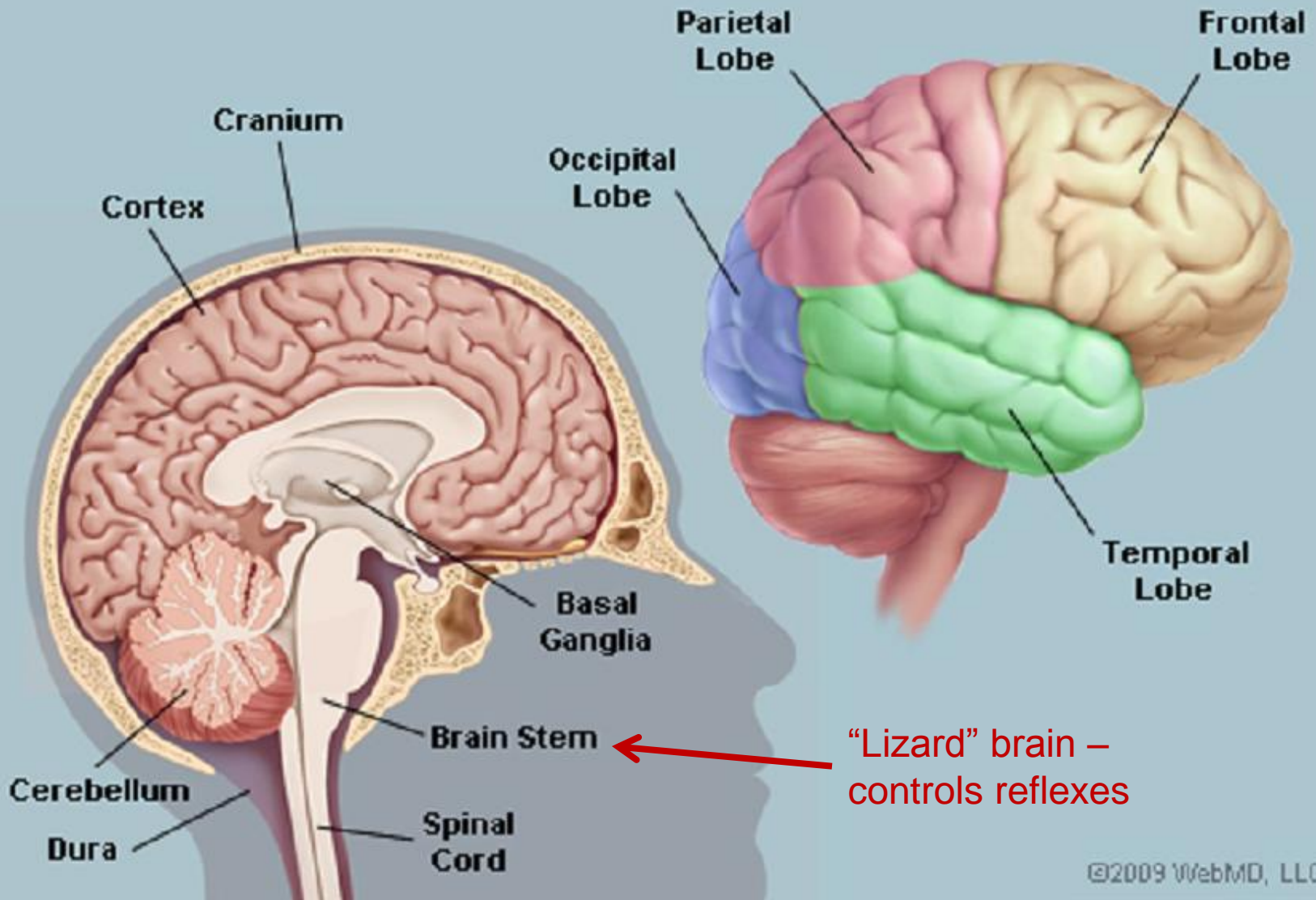
- ◎ Action of muscles / glands
 - At birth, but go away – Baby sucking
 - At birth, but remain – Blink, knee jerk
 - Develop during puberty – sexual responses
 - Change during puberty – intensity, level, speed
 - Decline with age – response time
 - Keep you alive – Breathing, digestion, heart rate
 - Action of glands – Produce hormones
 - Regulates everything in your body
 - Emotional responses

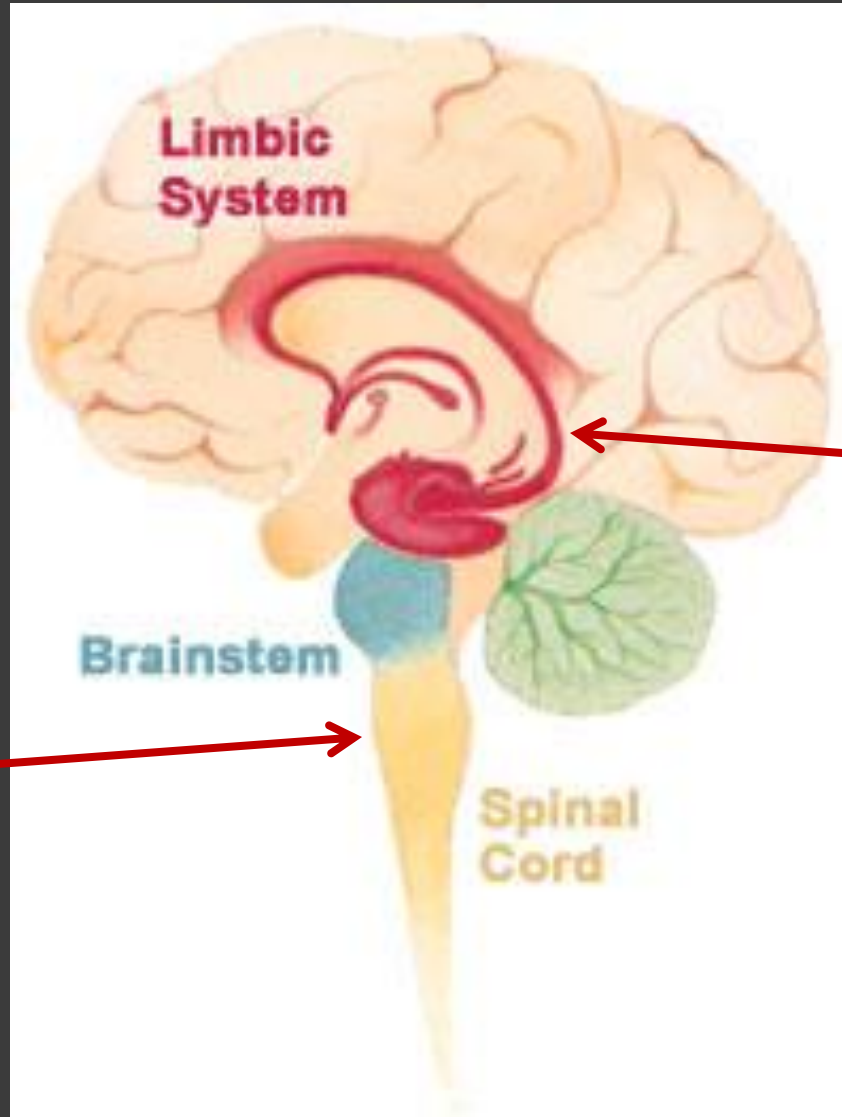
Reflexes

- ⊙ Action of glands (produce hormones)
 - Insulin – use of glucose
 - Growth hormone – cell reproduction
 - Leptin – decrease appetite, increase metabolism
 - Estrogen – female hormone (but males also)
 - Testosterone – male hormone (but females also)
- ⊙ “Feeling” hormones
 - Cortisol (hydrocortisone) – stress
 - Adrenaline (epinephrine) – heart rate, instant strength
 - Endorphins (endogenous opioid peptides) – feel good
 - Serotonin (neurotransmitter) – happiness

Reflexes and Your Brain

- ⦿ Autonomic nervous system (ANS)
 - Lower brain stem or medulla oblongata
 - Sympathetic (excites) nervous systems
 - Parasympathetic (inhibits) nervous systems
- ⦿ Some conscious control
 - Breathing
 - Swallowing
 - Blinking





Limbic System

Brainstem

Spinal Cord

Limbic System – involved in emotions

“Lizard” brain – controls reflexes (medulla oblongata)

Simple Acquired Reflex

- ⦿ Unconditioned Stimulus (UCS), natural trigger
- ⦿ Unconditioned Response (UCR), natural reflex
 - UCS → UCR (reflex)
 - Loud sound → startle reflex (plus emotion)
- ⦿ Neutral Stimulus (NS), not a trigger
 - NS → No reflex response
 - Click sound → no response
 - Bell sound → no response
 - Sight → no response

Simple Acquired Reflex

- Conditioned (acquired) Stimulus (CS), trigger
- Conditioned (acquired) Response (CR), reflex
 - NS + UCS → UCR (reflex)
 - CS → CR (occasionally UCS/UCR)
 - Extensive basic research
 - Pavlov's dog
 - Stimulus: Pavlov + Meat → Salivation
 - Stimulus: Pavlov → Salivation
 - Blink reflex
 - Click + Puff of air in face → Blink
 - Click → Blink

Acquired Reflex Critical Timing

- ⦿ Neutral Stimulus
- ⦿ Critical time
 - 5 seconds immediately after the stimulus
 - 0.5 seconds is most important
- ⦿ Brain stem perceives stimulus
 - “Scans” body for actions
 - Are specific muscles tight or tightening?
 - Are specific muscles relaxed or relaxing?
 - Are other reflexes happening?

Research on Acquired Reflexes

- ⊙ Infants exposed to odor while calm
 - Two independent studies (2005, 2007)
 - Exposed infant to vanilla odor when calm
 - 11-16 hours
 - Exposed infants to vanilla after heel-stick
 - Calmed down quickly
 - Exposed infants to vanilla during heel-stick
 - Greatly reduced reaction – they didn't cry!
 - Vanilla was an acquired trigger for a “calm” response
- ⊙ This show that emotional state of arousal (reflex) is affected by an experienced stimulus
- ⊙ Example of an acquired reflex

Research on Acquired Reflexes (#2)

- ◎ Calming effect of mother's voice (1977)
 - Infants were picked up, recording of mother's voice was played
 - Group 2 - Hear mother's voice, no pickup
 - Group 3 – Pickup, no mother's voice
 - Infants tested when spontaneously crying
 - Pickup+voice group calmed quicker to mother's voice
- ◎ This show that emotional state (calming reflex) is affected by experienced
- ◎ Example of an acquired reflex

Misophonia

- ⦿ Often starts with one situation/person
- ⦿ Other sounds/settings are added with time
- ⦿ Often selective to settings and people
 - Brenda: Reacts to chewing of family, but not others
 - Deb: Reacts to eating sounds, but not of Chinese
 - Jack: Reacts to subtle sound differences in “crunch”
- ⦿ Implication:
 - Not solely caused by genetics
 - Developed behavior – acquired reflex
 - Triggers are complex – multiple stimuli
 - Context plus sound
 - Triggers can be very specific
- ⦿ Survey (3/13): 55% reported stressful situations

Examples of first triggers

- ① “I was trapped in the car with my father when he was chewing gum.”
- ① Child arguing with brother at dinner – Brother’s chewing was the first trigger.
- ① “Couldn’t sleep and heard the clock ticking. It got louder and louder.”
- ① Sat by grandmother in church – Her sniffing was the first trigger.
- ① “I was forced to sit at the table while my father ate loudly and my mother crunched.”
- ① “I had anxiety, couldn’t sleep, and my brother was breathing loudly.”
- ① Father yelled at brother for smacking lips at dinner – Smacking lips was the first trigger.

Acquired Misophonia Reflex

- ⦿ Same as infant calming and vanilla odor
- ⦿ “Distress” – anxious, tense, upset, stressed
 - Accompanying tight muscles or other reflex
- ⦿ Acquisition process #1
 - Distress + sound (crunch)
 - Distress + sound (crunch)
 - Higher Distress + sound (crunch)
 - Extreme Distress + sound (crunch)
- ⦿ Acquisition process #2
 - Tight muscles (for any reason) + sound (crunch)
- ⦿ Sound (crunch) → muscles tighten (reflex)

Emotional Response

- ⦿ Misophonia is characterized by strong emotions to the trigger sound.
- ⦿ Several of my patients reported emotion but no physical reaction
- ⦿ After the first treatment
 - One had only emotional reaction
 - All others: physical reactions to trigger, but no emotion
- ⦿ Physical reaction was separate from the emotional reaction
- ⦿ Tom's theory: Trigger → Physical → Emotional

Acquired Reflex Won't Go Away

- ⦿ Calm + sound (crunch)
- ⦿ Upset + sound (crunch)
- ⦿ Distress + sound (crunch)
- ⦿ Higher Distress + sound (crunch)
- ⦿ Extreme Distress + sound (crunch)
- ⦿ This strengthens the acquired reflex

How do you explain misophonia?

- ⦿ Reflex reaction to specific sounds
- ⦿ It is as if the sound jabs you in the ribs with a stick.

What to do when there is a trigger?

- Avoid and Escape
- **Tolerating the trigger will make it worse.**
- Tom's opinion: It is up to you – protect yourself.
- Feel free to leave
- White noise
- Use headphones and music
 - Use open ear headphones if you need to hear
(Sony sport headphones or open ear headphones)

Sony MDR-AS20J



MDR-AS200



MDR-J10



MDR-008 or W014



How to prevent new triggers? #1

- ⦿ Think of sound as environmental noise, not a personal attack.
- ⦿ Think of something positive about the sound.
- ⦿ Distract yourself.
 - Sing a song
 - Say a poem
- ⦿ Relax or Escape if you can't ignore it.
- ⦿ Distress + repeating sound = new trigger

How to prevent new triggers? #2

- ⦿ Avoid triggers
- ⦿ Hear Trigger → Miso Reflex
- ⦿ New sound (while experiencing Miso Reflex)
- ⦿ New sound → Miso Reflex
- ⦿ Demonstrated in research studies of simple reflexes

Reducing Severity of Reactions?

- Positive emotional state – reduced reactions
- CBT / DBT or other therapy
- Mindfulness or meditation
- Good health – eat and sleep
- Exercise
- Muscle relaxation (this is a skill to learn)
- Medication
- White noise

Reduce or Eliminate Triggers

- ⦿ Extinguish triggers – rewire the ANS (your lizard brain)
- ⦿ Theory:
 - Sound (+ physical response) = trigger
 - Sound (+ different response) = reduces old trigger
- ⦿ Results so far
 - A few triggers are completely cured
 - Many triggers are greatly reduced

Rewiring your Lizard Brain

- ⦿ Step 1: Select the trigger
- ⦿ Step 2: Determine how to provide a “low dose”
- ⦿ Step 3: Create a positive state or new response
 - Music
 - Happy talk
 - Massage
 - Exercise
- ⦿ Step 4: Lots of experience (100-300+ times)
- ⦿ Beware:
 - Spontaneous recovery
 - Many other triggers

Rewiring – What Works

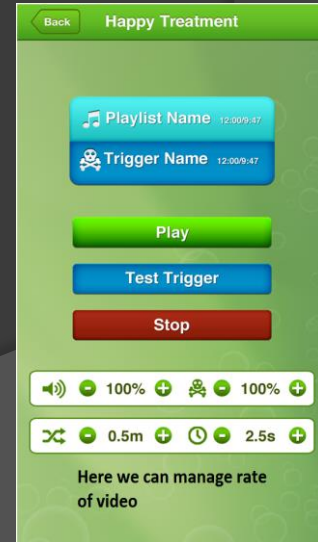
- ⦿ Very low reaction to trigger
 - Response goes away almost instantly
- ⦿ Better if response is a skeletal muscle
- ⦿ Better if you can block or halt the response
 - Muscle relaxation
 - Tickling for sexual arousal
- ⦿ Better with daily practice (30 min, 4-6 times/wk)
- ⦿ Problem if not triggered by recording
- ⦿ Problem if no “happy place” / can’t relax
- ⦿ Problem if reflex is an internal muscle

Rewiring Apps

Dozier Misophonia
Trigger Tamer



Dozier Misophonia
Visual Trigger
Tamer



Thank you!

- Tom Dozier
5801 Arlene Way
Livermore, CA 94550
tom@MisophoniaTreatment.com
925-371-1576
- Websites:
 - MisophoniaTreatment.com
 - 3LParenting.com
 - Guaranteedpt.com
 - LDSParentCoach.org