If you are viewing this course as a recorded course after the live webinar, you can use the scroll bar at the bottom of the player window to pause and navigate the course.

This handout is for reference only. Non-essential images have been removed for your convenience. Any links included in the handout are current at the time of the live webinar, but are subject to change and may not be current at a later date.
Technical issues with the Recording?

- Clear browser cache using these instructions
- Switch to another browser
- Use a hardwired Internet connection
- Restart your computer/device

Still having issues?

- Call 800-753-2160 (M-F, 8 AM-8 PM ET)
- Email customerservice@AudiologyOnline.com
Learning Outcomes

After this course, participants will be able to:

- Explain how to objectively evaluate device performance capabilities and corresponding appropriateness for a given audiometric configuration.
- Describe two residual limitations of PSAPs objectively verified to meet NAL-NL2 targets for a given audiometric configuration.
- List 3 potential PSAP distribution models for clinical practice.
OBJECTIVES

- PSAP overview
- PSAP vs Hearing Aid Performance
- Objective evaluation of PSAP performance
- Performance Profiles
- Distribution Models

PERSONAL SOUND AMPLIFICATION PRODUCT

designed to amplify sounds in specific environments and situations; intended to help with soft sounds difficult for individuals with normal hearing to hear
<table>
<thead>
<tr>
<th>Hearing Aid Type</th>
<th>For Hearing Loss?</th>
<th>Adult?</th>
<th>Pediatric?</th>
<th>Main Purpose</th>
<th>Degree of Hearing Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hearing Instrument</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>Treatment for Hearing Loss</td>
<td>MILD to SEVERE</td>
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<tr>
<td>OTC Hearing Aid</td>
<td>✔️</td>
<td>✔️</td>
<td>✗</td>
<td>Option for Perceived Hearing Loss</td>
<td>MILD to MODERATE</td>
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<tr>
<td>PSAP</td>
<td>✗</td>
<td>✔️</td>
<td>✗</td>
<td>Situational Listening</td>
<td>VERY MILD to MILD*</td>
</tr>
<tr>
<td>Earable</td>
<td>✗</td>
<td>✔️</td>
<td>✗</td>
<td>Ear-Level Entertainment and/or Health</td>
<td>NA</td>
</tr>
</tbody>
</table>

**PSAP vs Hearing Aid**

**PLAID**

(PSAP)
PSAP vs Hearing Aid

PLAID
(PSAP)

QUIET

NOISE

PSAP vs Hearing Aid

PLAID
(PSAP)

CliKEZ
(Hearing Instrument)

continued
<table>
<thead>
<tr>
<th>MODEL</th>
<th>PSAP</th>
<th>HEARING AID</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWEAK</td>
<td>✓</td>
<td>✗</td>
<td>DIRECT TO CONSUMER</td>
</tr>
<tr>
<td>PLAID</td>
<td>✓</td>
<td>✗</td>
<td>PROFESSIONAL ONLY</td>
</tr>
<tr>
<td>CliKEZ</td>
<td>✗</td>
<td>✓</td>
<td>PROFESSIONAL ONLY</td>
</tr>
</tbody>
</table>

<table>
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<th>MODEL</th>
<th>PSAP</th>
<th>HEARING AID</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEAN</td>
<td>✓</td>
<td>✗</td>
<td>DIRECT TO CONSUMER &amp; PROFESSIONAL</td>
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<tr>
<td>QSA</td>
<td>✓</td>
<td>✗</td>
<td>PROFESSIONAL ONLY</td>
</tr>
</tbody>
</table>

**PSAP CATEGORIES**

[Continued]**
PSAP CATEGORIES BASED ON RETAIL PRICE

LOW END

OUR PRICE

< $50

Smith, Wilber & Cavitt, 2016

Reed et al., 2015

HIGH END

OUR PRICE

$150-$350

OUR PRICE

$800

$150-$349

$150-$400

$19.99

$30

PSAP CATEGORIES BASED ON RETAIL PRICE

ADV

$199-299

Soundhawk

SWS $510

INTER

$48 - $289

$2199/

$2549

$649-

$839

BASIC

$48 - $499

$199-299

$2199/

$2549

Voss, Valente, Oeding, Bankaitis & Pumford 2017

EXSILENT

Soundhawk SWS CS10

Plaid

Soundhawk Tweak-Focus

Tweak-Focus

Widex Fashion 110

Phonak

Phonak

Phonak

Phonak Audeo Q90

Phonak Audeo Q30

EXSILENT

EXSILENT

Widex Fashion 440

Widex Fashion 440

Widex Fashion 440

Phonak Fashion 110

Phonak Audeo Q30
OBJECTIVES

- PSAP overview
- PSAP vs Hearing Aid Performance
- Objective evaluation of PSAP performance
- Performance Profiles
- Distribution Models
PSAPS: Our role in this disruptive environment

Regulatory Issues & Research Findings
Course: #30068  Level: Introductory  1 hour

Clinical and Business Practice Issues
Course: #30085  Level: Introductory  1 hour

Probe-mic
Electroacoustic

Speech

RESEARCH REVIEW
Electroacoustic Performance

> 120 dB SPL

• Chan & McPherson 2015
• Voss, Oeding, Bankaitis, Pumford & Valente 2017
• Reed, Betz, Grabowski, Korczak, Lin, & Mamo 2015; Smith, Wilbur & Cavitt 2016; Brody, Wu & Stangl 2018
• Callaway & Punch 2008
• Smith, Wilbur & Cavitt 2016
• Voss, Oeding, Bankaitis, Pumford & Valente 2017

Probe-Mic Fitting Capabilities

• Ability to match prescriptive targets
  - MILD TO MODERATE
    - NAL-NL2
    - +/- 25 dB re

• Applied tolerances
  - Callaway & Punch 2008
    - +/- 3 dB
  - Smith, Wilbur & Cavitt 2016
    - +/- 10 dB
  - Voss, Oeding, Bankaitis, Pumford & Valente 2017
    - +/- 5 dB

Very Mild To Mild

75 dB SPL (loud)
Sound Quality & Speech in Noise

- Cox 2014; Cox, Johnson, & Xu 2014; Xu, Johnson, Cox & Breitbart 2015

Sound Quality & Speech in Noise

- Cox 2014; Cox, Johnson, & Xu 2014; Xu, Johnson, Cox & Breitbart 2015
- Reed, Betz, Grabowski, Korczak, Lin, & Mamo 2015
- Reed, Betz, Kendig, Korczak & Lin 2017
Sound Quality & Speech in Noise

Personal sound amplification products: For some, an affordable alternative to hearing aids

Growing up I had to wear glasses. Back then it was considered socially unacceptable, but necessary to be able to see. Thirty years since, everyone wears glasses and they are a fashion statement. Now as an aging adult, I need to wear hearing aids. This isn’t and still is to many age groups considered socially unacceptable—a sign of being old and maybe a little senile. But it appears that hearing aids are in the process of a similar transformation.

The Best Sound Amplifiers on Amazon, According to Hyperenthusiastic Reviewers

For mild to moderate hearing loss, you may not need a costly hearing aid.

Sound Quality & Speech in Noise

Her shoes were very dirty

Her shoes were very dirty

/b/ boat

• Reed, Betz, Grabowski, Korczak, Lin, & Mamo 2015

• Reed, Betz, Kendig, Korczak & Lin 2017

Valente. Oeding, Brockmeyer, Smith & Kallogjieri 2018

CONTINUED
Sound Quality & Speech

- **PSAPs self-adjusted**
- **HI verified**
  - Cox 2014; Cox, Johnson, & Xu 2014; Xu, Johnson, Cox & Breitbart 2015
  - Reed, Betz, Grabowski, Korczak, Lin, & Mamo 2015
  - Reed, Betz, Kendig, Korczak & Lin 2017

- **Audibility**
- **Speech recognition**
- **Listening effort**

Brody, Wu & Stangl 2018

PSAPs vs Hearing Instruments:

- **Coupler measurements:**
  - Range from weak to excessive
  - Overamplification of lows
  - High EIN

- **Probe mic measurements**
  - Hearing instruments match targets across broader range of audiometric configurations
  - PSAPs potentially appropriate up to MILD loss

- **Speech data limited**
OBJECTIVES

- PSAP overview
- PSAP vs Hearing Aid Performance
- Objective evaluation of PSAP performance
- Performance Profiles
- Distribution Models

PSAP VETTING PROCESS

- Subjective Assessment
- Electroacoustic Analysis
- Probe-Mic Measurements
PSAP VETTING PROCESS

- +/- 5 dB at 250-6000 Hz
- NAL-NL2
- 50 dB SPL (soft)
- 65 dB SPL (AVG)

PROBE-MIC MEASUREMENTS

Standard Audiometric Configurations
Bisgaard, Vlaming, & Dahlquist 2010

[Graph showing standard audiometric configurations]
**Audiogram 1**

**DEGREE:** Very Mild

**CONFIGURATION:** Flat and Moderately Sloping Group

*AVG HEARING LOSS: 12 dB HL*

![Audiogram 1](image)

**Audiogram 2**

**DEGREE:** Mild

**CONFIGURATION:** Flat and Moderately Sloping Group

*AVG HEARING LOSS: 27 dB HL*

![Audiogram 2](image)
Audiogram 3

DEGREE: Moderate
CONFIGURATION: Flat and Moderately Sloping Group
*AVG HEARING LOSS: 42 dB HL

FREQUENCY (Hz)

HEARING THRESHOLD LEVEL IN DB

NORMAL HEARING ABILITY FOR ADULTS

*Average hearing loss for 500, 1000 & 2000 Hz
BECAUSE N. VLAMINCK MD, OH/JOEST M. Standard Audiograms for the IEC 481/1-6 measurement procedure. Trends Hear. 2010; 14(2): 115-120

Audiogram 4

DEGREE: Moderate/Severe
CONFIGURATION: Flat and Moderately Sloping Group
*AVG HEARING LOSS: 58 dB HL

FREQUENCY (Hz)

HEARING THRESHOLD LEVEL IN DB

NORMAL HEARING ABILITY FOR ADULTS

*Average hearing loss for 500, 1000 & 2000 Hz
BECAUSE N. VLAMINCK MD, OH/JOEST M. Standard Audiograms for the IEC 481/1-6 measurement procedure. Trends Hear. 2010; 14(2): 115-120
**Audiogram 5**

**DEGREE:** Severe  
**CONFIGURATION:** Flat and Moderately Sloping Group  
*AVG HEARING LOSS: 75 dB HL*

**Audiogram 6**

**DEGREE:** Very Mild  
**CONFIGURATION:** Precipitously Sloping Group  
*AVG HEARING LOSS: 12 dB HL*
Audiogram 7

DEGREE: Mild
CONFIGURATION: Precipitously Sloping Group
*AVG HEARING LOSS: 30 dB HL

Audiogram 8

DEGREE: Moderate/Severe
CONFIGURATION: Precipitously Sloping Group
*AVG HEARING LOSS: 57 dB HL
Probe-mic meas

TARGET MATCH DEFINITION

- Achieved output within +/-5dB of NAL-NL2 target
- One target per intensity level could be missed

2x9 = 18

16 + 18 > 88%

Voss, Valente, Oeding, Bankaitis & Pumford, 2018
PSAP Qualifications sold by Oaktree Products

<table>
<thead>
<tr>
<th>Oaktree Products offers vetted PSAPs that minimally meet the following criteria:</th>
</tr>
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<tbody>
<tr>
<td>KEY</td>
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</table>

**OBJECTIVES**

- PSAP overview
- PSAP vs Hearing Aid Performance
- Objective evaluation of PSAP performance
- Performance Profiles
- Distribution Models
18 Best PSAP Hearing Devices of 2018

1. LifeEar BOOST
2. Otofonix Elite
3. PockeTalker Ultra
4. Tweak Focus
5. RCA Symphonix
6. Digital Discovery
7. SWS CS50+
8. PockeTalker 2.0
9. Etymotic Bean
10. Audicus SOLO

BEST PSAPS
18 Best PSAP Hearing Devices of 2018

1. LifeEar BOOST
2. Otofonix Elite
3. PockeTalker Ultra
4. Tweak Focus
5. RCA Symphonix
6. Digital Discovery
7. SWS CS50+
8. PockeTalker 2.0
9. Nuheara IQBuds Boost
10. ZVOX VoiceBUD

CONTINUED
1. LifeEar Empower BOOST

- Intermediate level PSAP
  - VC + program
- Amazon purchase

- Battery door = ON/OFF
- Volume/Program Control
  - Quick press/release (3 VC levels)
  - Press/hold (4 programs)

- ALL
- HIGH
- ALL+NR
- HIGH+NR
- UP TO 40 dB

---

Customer reviews

5 stars: 585
4.1 out of 5 stars

5 star: 59%
4 star: 22%
3 star: 6%
2 star: 6%
1 star: 7%

---

Old Geezer

🌟🌟🌟🌟🌟 Great for the price
February 19, 2019

Size: Right Only, Color: Beige, Verified Purchase

My 97 year old threw away her $2,000 hearing aid by mistake. I bought this one and you get in first turn it because it does equal back but it works great.

Helpful | Report abuse

---

Sallee Frego

🌟🌟🌟🌟🌟 It works very well.
October 24, 2018

Size: Right Only, Color: Beige, Verified Purchase

It works, it's discrete and comfortable.
LifeEar Empower BOOST

PRODUCT RE-TEST

100 dB @4.7K

126 dB @668 Hz

115 dB @845 Hz

ORIGINAL

RE-TEST ONE

RE-TEST TWO

Customer reviews

★★★★★ 585
4.1 out of 5 stars

5 star 59%
4 star 22%
3 star 6%
2 star 6%
1 star 7%

Techady

Does not work for all hearing problems.
December 24, 2018
Size: Left Only  Color: Beige  Verified Purchase

Jenny Gohier

Waste of money!
September 21, 2017
Size: Left Ear  Color: Beige  Verified Purchase

Leveret

So disappointed.
March 1, 2017
Size: Right Ear  Color: Beige  Verified Purchase

Amazon Customer

My mother does NOT have a lot of money and this was like flushing it down the toilet
June 17, 2017
Size: Left Ear  Color: Beige  Verified Purchase

RD

DO NOT BUY
April 29, 2017
Size: Left Ear  Color: Beige

expected a good product with all the review
March 2, 2017
Size: Left Ear  Color: Beige  Verified Purchase

expected a good product with all the review, but it does not work properly. when the volume is high, there is a chirping sound (like microphone adjustment). for low volume, can not hear properly.
LifeEar Empower
BOOST

PRODUCT SUMMARY
• Ranked #1 PSAP by everydayhearing.com
• At best, verified fit potentially ok for very mild to mild loss
• Electroacoustic analysis negates any potential (insufficient gain, high EIN, poor frequency response)

2. Otofonix ELITE
• Intermediate level PSAP – VC + program
• Amazon purchase
• Battery door = ON/OFF
• Volume/Program Control – Quick press/release (10 VC levels)
  – Press/hold (4 programs)
Otofonix Elite

81%

475 customer reviews

4.2 out of 5 stars

5 star: 65%
4 star: 16%
3 star: 8%
2 star: 5%
1 star: 6%

Review 1: Jeffro

Amazing
January 24, 2019
Size: Left Ear | Color: Beige | Verified Purchase

Review 2: John Hamilton

Excellent
January 5, 2019
Size: Right Ear | Color: Beige | Verified Purchase

Review 3: Bree

Seriously Awesome
December 14, 2018
Size: Right Ear | Color: Beige | Verified Purchase

Review 4: Woody

Don't waste money (a LOT of money) on a "Hearing Aid". Get this instead.
April 6, 2017
Size: Right Ear | Color: Beige | Verified Purchase

Otofonix Elite

Max OSPL90
109 @ 840Hz

EIN
28 dB

Up To
35 dB

Avg FOG
25 dB
### Otofonix Elite

<table>
<thead>
<tr>
<th>Audio 1</th>
<th>Audio 2</th>
<th>Audio 3</th>
<th>Audio 4</th>
<th>Audio 5</th>
<th>Audio 6</th>
<th>Audio 7</th>
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<tr>
<td>83%</td>
<td>72%</td>
<td>56%</td>
<td>22%</td>
<td>17%</td>
<td>72%</td>
<td>61%</td>
<td>28%</td>
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</table>

**Frequency (Hz)**

250  500  1000  1500  2000  3K  4K  6K

10 dB  20 dB  35 dB  40 dB

---

### 475 customer reviews

11%

#### 4 out of 5 stars

- **5 star**: 65%
- **4 star**: 16%
- **3 star**: 9%
- **2 star**: 5%
- **1 star**: 6%

---

**BROUY**

- **Very poor gadget**
  - October 22, 2018
  - The hearing aid doesn't give you much help. The sound is very low, even after pressing the volume-up button several times. It was really disappointing.

**Funk**

- **Time to go to the Pro's**
  - August 19, 2018
  - Wayyy too much money, poor performance - my own fault. When you have tried various other, cheaper brands and then find yourself thinking of spending this much money, go to the hearing aid stores, get tested, try some out and, like with good booze, spend the money. This was nowhere near worth what they charge.

**Don D**

- **Save you money**
  - July 1, 2018
  - Save your money and stay away from this unit. I purchased one about a year ago. I had to return it 3 times for repairs. It has broken again, but now it is out of warranty. A waste of over $500 dollars. Also, please be aware that these do not clarify any sound, nor do they work for all types of hearing loss. These hearing amplifiers will amplify the sound for all frequencies. Most folks with hearing problems need amplification for specific frequencies. You should consult an audiologist instead of buying these.
Otofonix Elite

PRODUCT SUMMARY

• Ranked #2 PSAP by everydayhearing.com
• At best, verified fit potentially viable for very mild loss only
• Gain weaker than what is specified
BEST of 2019

7. SWS CS50+ $349

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<th>Audio 4</th>
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<td>28%</td>
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<td>0%</td>
<td>67%</td>
<td>39%</td>
<td>6%</td>
</tr>
</tbody>
</table>

- Mamo, Reed, Nieman, Oh & Lin 2015)

9. Etymotic Bean (QSA) $214

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<tr>
<th>Audio 1</th>
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<td>72%</td>
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<td>28%</td>
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<td>50%</td>
<td>61%</td>
<td>28%</td>
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</tbody>
</table>

- Smith, Wilber & Cavitt 2016)

Best of 2019

PRODUCT SUMMARY

- Ranked in top 10 PSAPs by everydayhearing.com
- Previous research identified both products as appropriate for age-related hearing loss
- Recent product vetting showed NAL-NL2 targets could not be met for any standard audiometric configuration
1. LifeEar BOOST ✅
2. Otofonix Elite ✅
3. PockeTalker Ultra
4. Nuheara IQBuds Boost
5. RCA Symphonix
6. Bose Hearphones
7. SWS CS50+
8. PockeTalker 2.0
9. Etymotic Bean
10. ZVOX VoiceBUD

BEST of 2019

$249

- 10. ZVOX VoiceBUD (VB20)

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<th>Audio 5</th>
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<td>22%</td>
<td>115</td>
<td>72%</td>
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<td>28%</td>
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</tbody>
</table>

continued
1. LifeEar BOOST
2. Otofonix Elite
3. PockeTalker Ultra
4. Nuheara IQBuds Boost
5. RCA Symphonix
6. Bose Hearphones
7. SWS CS50+
8. PockeTalker 2.0
9. Etymotic Bear
10. ZVOX VoiceBUD

BEST of 2019
- 4. Nuheara IQBuds Boost
  - Nuheara IQBuds
  - $499
  - $285

- 6. Bose Hearphones

Audio 1  Audio 2  Audio 3  Audio 4  Audio 5  Audio 6  Audio 7  Audio 8
78%  78%  61%  22%  0%  83%  67%  28%

Audio 1  Audio 2  Audio 3  Audio 4  Audio 5  Audio 6  Audio 7  Audio 8
89%  83%  94%  94%  33%  89%  83%  100%

58 dB PTA
75 dB PTA
PRODUCT SUMMARY: Best of 2019

1. LifeEar BOOST
2. Otofonix Elite
3. Frequency (Hz)
4. 5. MD Hearing Aid Pro
6. Bose Hearphones
7. SWS CS50+
8. PockeTalker 2.0
9. Etymotic Bean
10. ZVOX VoiceBUD

Au Bankaitis shared a link.
October 29, 2018

In search of a few more PSAPs/OTC to objectively assess and add to the ongoing database we have compiled. Any specific requests?
<table>
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<tr>
<td>CliKEZ</td>
<td>✗</td>
<td>✓</td>
<td>PROFESSIONAL ONLY</td>
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</table>

Tweak PLAID & CliKEZ

Max OSPL90
110 @ 800Hz

EIN
22 dB

AVG FOG
43 dB
### Tweak

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### PLAID

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### CliKEZ

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<td>22%</td>
<td>89%</td>
<td>83%</td>
<td>39%</td>
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</tbody>
</table>
PRODUCT SUMMARY

• All products seem the same, just re-packaged
• Ranked #4 Best PSAP in 2018
• PLAID met NAL-NL2 targets up to a mild loss
• ClicKEZ met NAL-NL2 targets for very mild loss
Britzgo BHA 220

- Intermediate level PSAP
  - VC + program
- Amazon purchase
- ON/OFF
- Volume Control
- Program button

Britzgo BH220

920 customer reviews

- 5 star: 54%
- 4 star: 18%
- 3 star: 11%
- 2 star: 6%

Olive c
Amazing
February 14, 2019
Verified Purchase

I've been almost completely deaf in my right ear for years and always struggled to find the right hearing aid-costed time and money with no avail, so I decided to try something new for once. I got these and at first getting use to the background noise took a little time but being able to finally hear everything is the most amazing feeling I've had for years I used. The sounds are so crystal clear and adjusting it with a simple click of a button makes it well worth the money!

DustbinBerlin
★★★★☆ Omg I can hear!
February 6, 2019
Verified Purchase

I'm 42 and have had mild hearing issues my life. I've never had hearing aids or anything, but the last year or so my hearing has really started declining. I don't have the money for full-blown hearing aids, so I decided to try one of these after reading reviews. I figured $60 wasn't much to lose if it didn't work, but if it did it could make things better. I have young kids and a husband and found myself asking them to repeat themselves three or more times because I just couldn't hear them, which made me very depressed. Because they got very frustrated with me. Well, I'll tell you, this has changed my life! I can hear everything. Everything is crisp, clear, and I can finally hear even the smallest sounds again. I never want to take this off! I'm going to buy one more for my other ear. I'm so happy!

dhdJtias
★★★★★★ A fantastic value!
January 28, 2019
Verified Purchase

This works as well as my dad's previous expensive hearing aids. The different settings are excellent to cut down on ambient noise.
Britzgo BH220

Max OSPL90
123 @ 1680

EIN
28 dB

AVG FOG
33 dB

Britzgo BH220

17%

920 customer reviews
3.9 out of 5 stars

5 star
54%

4 star
18%

3 star
11%

2 star
6%

1 star
1%

Stanley Eugene
Loud noises were overwhelming
January 27, 2018
Verified Purchase

Mom never could get it adjusted to work for her; if she used it at a level to work for conversation, any loud noise was overwhelming; broke down and bought a $100 one at Costco...she loves it

My Green Room CBD Dispensary
Way too much background noise
June 17, 2018
Verified Purchase

Maybe y'all could work on filtering the. Sick ground noise? Had HARDER time hearing with it on.

B. Bursen
Don’t bother!
November 12, 2018
Verified Purchase

Worthless product

Maria Barrera-oro
Don’t buy it
August 9, 2018
Verified Purchase

The worst possible

Ed Huber
Don’t waste your money.
November 20, 2018
Verified Purchase

midifinder
Cheap...no quality
January 8, 2019
Verified Purchase

Cheap...no quality
Britzgo BH220

PRODUCT SUMMARY

<table>
<thead>
<tr>
<th>Audio 1</th>
<th>Audio 2</th>
<th>Audio 3</th>
<th>Audio 4</th>
<th>Audio 5</th>
<th>Audio 6</th>
<th>Audio 7</th>
<th>Audio 8</th>
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<tr>
<td>33%</td>
<td>50%</td>
<td>50%</td>
<td>33%</td>
<td>22%</td>
<td>33%</td>
<td>56%</td>
<td>39%</td>
</tr>
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• $57
• Max OSPL90 exceeds what is deemed appropriate for mild to moderate hearing loss
• Did not meet targets for any audiometric configuration
MD Hearing Aid Pro

80 Days Warranty

<table>
<thead>
<tr>
<th>DAYS FROM INVOICE</th>
<th>AMOUNT REFUNDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-20</td>
<td>90% w/ RMA, 80% w/o RMA</td>
</tr>
<tr>
<td>21-45</td>
<td>100% w/ RMA, 80% w/o RMA</td>
</tr>
<tr>
<td>46+</td>
<td>No Refund, No Refund</td>
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</table>

Contact customer support for an RMA number before mailing to this address.

Return Facility:
RMA #
MDHearingAid
PO Box 5014
Southfield, MI 48034

OFF NORMAL HIGH

350 customer reviews 4.6 out of 5 stars

What a Miracle! ******
Posted by John and Laura P on August 06, 2018
Click to see which hearing aid John and Laura P have>

Great product for the price ******
Posted by Steve G on July 26, 2018
I recently purchased these and am very happy. I couldn’t afford thousands of dollars for hearing aids, and I have pretty significant hearing loss from years of construction noise. Two of my friends also decided to order a pair
Click to see which hearing aid Steve G has>

Very impressive ******
Posted by Kim F on March 03, 2018
I got left ear to try first to see how good they are. I will be getting the right ear. Very impressive. I hear things I couldn’t. A clock ticking, my floor creaking. They are worth every penny especially considering a doctor tried selling me a pair for 3,000. I told him no freaking way would I spend that kind of money even if I had it.
Click to see which hearing aid Kim F has>
MD Hearing Aid Pro

PRODUCT SUMMARY

- Did not meet targets for any audiometric configuration
MSA 30X

$29.95

WARRANTY
30 DAYS

WARRANTY

MSA30x

FTC Settlement Turns Down the Volume on Deceptive Sound Amplifier Ads

Defendants could not back up efficacy claims made for their MSA 30X device

FTC Fines Global TV Concepts for Deceptive claims about MSA 30X

PSAP

May 1, 2015

Published on May 8, 2018

According to a press release from the Federal Trade
Commission (FTC), Global TV Concepts London Inc. and its
associated companies, are violating Federal Trade
Commission orders and agreements.

They are using a product called a MSA 30X sound amplifier that
promises to improve hearing. FTC alleges that
Global TV Concepts and its associated companies are
violating Federal Trade Commission orders and agreements.

Listen up! FTC Challenges hearing claims for MSA 30X
device

Deerfield company agrees to pay feds $500,000 for its claim that devices can make people hear '30 times better'

continued
MSA30x 40%

Max OSPL90 126 @ 750 Hz
EIN 48 dB
AVG FOG 21 dB

5 customer reviews
2.7 out of 5 stars

Samantha Kinzie
My dad is extremely hard of hearing and I was ...
April 17, 2018
Verified Purchase
My dad is extremely hard of hearing and I was skeptical that these would even help. They have turned out to be a god send. They work wonderfully.

Cheryl Nelson
Possibly dangerous. Definitely useless.
January 26, 2019

Amazon Customer cancelled
October 6, 2016

continued
MSA30x

<table>
<thead>
<tr>
<th>Audio 1</th>
<th>Audio 2</th>
<th>Audio 3</th>
<th>Audio 4</th>
<th>Audio 5</th>
<th>Audio 6</th>
<th>Audio 7</th>
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<tbody>
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<td>44%</td>
<td>44%</td>
<td>39%</td>
<td>22%</td>
<td>44%</td>
<td>56%</td>
<td>28%</td>
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</tbody>
</table>

Reed, Betz, Kendig, Korczak, & Lin 2017

MSA30X

PRODUCT SUMMARY

<table>
<thead>
<tr>
<th>Audio 1</th>
<th>Audio 2</th>
<th>Audio 3</th>
<th>Audio 4</th>
<th>Audio 5</th>
<th>Audio 6</th>
<th>Audio 7</th>
<th>Audio 8</th>
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</thead>
<tbody>
<tr>
<td>44%</td>
<td>44%</td>
<td>44%</td>
<td>39%</td>
<td>22%</td>
<td>44%</td>
<td>56%</td>
<td>28%</td>
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</tbody>
</table>

- $29.95
- Max OSPL90 exceeds what is deemed appropriate for mild to moderate hearing loss
- Did not meet targets for any audiometric configuration
- Degrades speech understanding
OBJECTIVES

- PSAP overview
- PSAP vs Hearing Aid Performance
- Objective evaluation of PSAP performance
- Performance Profiles
- Distribution Models

Would **YOU** Offer PSAPs?

N=383

Bankaitis 2017
PSAP DISTRIBUTION MODELS

- PSAP direct
- PSAP indirect
- PSAP alternative

PSAP DIRECT DISTRIBUTION MODEL

RECEPTION AREA  PATIENT CARE AREA
PSAP DIRECT DISTRIBUTION MODEL

• PROS
  – Offering low cost alternative
  – Save time
  – Gateway to future hearing aid?

• CONS
  – Inventory
  – Vetting products, keeping up
  – Confusion as to Audiologist’s role
  – Device may not work out and turn user off

PSAP DISTRIBUTION MODELS

• PSAP direct
• PSAP indirect
• PSAP alternative
Retail Store

Professional Component

PSAP INDIRECT DISTRIBUTION MODEL

www.yourpracticewebsite.com

E-SHOP

ORDER

CLICK TO PAY NOW

YOUR CLINICAL PRACTICE

continued
PSAP INDIRECT DISTRIBUTION MODEL

• **PROS**
  — Draw clear line in the sand
  — Extension of service
  — No or minimal inventory

• **CONS**
  — Start up & maintenance costs
  — Access to IT
  — Marketing needs
  — Device may not work out and turn user off

PSAP DISTRIBUTION MODELS

• PSAP direct
• PSAP indirect
• OTC hybrid
OTC HYBRID DISTRIBUTION MODEL

Terms and Conditions

OTC Hearing Aid PSAP OTC

continued
FACTS about OTC

ACTUAL HEARING LOSS

PERCEIVED HEARING LOSS

<table>
<thead>
<tr>
<th>Decibel Level</th>
<th>Normal Hearing</th>
<th>Mild Hearing Loss</th>
<th>Moderate Hearing Loss</th>
<th>Moderately Severe Hearing Loss</th>
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<tr>
<td>0-15</td>
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<td>85-120</td>
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</table>

CONTINUED
First Fit Algorithms vs Targets

- 10 dB or more from fitting targets for high frequencies (Hawkins & Cook, 2003)
- 10 dB below NAL typical for soft input, with some 15dB below (Mueller, 2014)
- >10 dB at 3KHz for 4 of 5 hearing aids (Sanders, Stoody, Weber, & Mueller, 2015)

OTC HYBRID DISTRIBUTION MODEL

- WALK AWAY WITH PROGRAMMED FIT
- UNbundled
- LOW COST
- ONLINE
- CVS pharmacy

CONTINUED
OTC HYBRID DISTRIBUTION MODEL

• PROS
  – Draw clear line in the sand
  – Leveraging your expertise
  – Dispensing a quality hearing aid
  – Verifying the fit

• CONS
  – Cost may still be too high
  – Turn away consumers

PSAPs

• Outperformed
• Limited
• Questionable benefit
• Ethical considerations
### OSPL90 (dB SPL) & Full-On Gain (dB SPL)

<table>
<thead>
<tr>
<th></th>
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<td>SwissiMPlay*</td>
<td>VA-5</td>
<td>110</td>
<td>114</td>
<td>108</td>
<td>105</td>
<td>100-105</td>
<td>103</td>
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<tr>
<td>AST HEP®</td>
<td>VA-1</td>
<td>123</td>
<td>125</td>
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<td>104</td>
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<tr>
<td>Audris TEC®</td>
<td>VA-5</td>
<td>111</td>
<td>111</td>
<td>108</td>
<td>105</td>
<td>100</td>
<td>101</td>
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<td>101</td>
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<tr>
<td>Oticon Stelara R1</td>
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<td>114</td>
<td>104</td>
<td>107</td>
<td>100</td>
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<tr>
<td>Audris TCM</td>
<td>VA-1</td>
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<td>113</td>
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<td>109</td>
<td>100</td>
<td>101</td>
<td>96</td>
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</table>

* Discontinued
PSAP OVERVIEW

- Amplification Device Definitions
- Intended Use
- Product Spectrum
- PSAPs: Basic Info & Limitations
- Resources

VEETING PROCESS & CONSIDERATIONS

- Our Vetting Process
- Coupler Data
- Probe-Mic Performance
- Features
- Considerations

PSAP & HEARING AID COMPARISON STUDIES

- Electroacoustic performance
- On-ear Fitting Capabilities
- Speech Performance
- Sound Quality

Quick snapshot of amplification technologies:

<table>
<thead>
<tr>
<th>Technology</th>
<th>Key Benefits</th>
<th>Key Drawbacks</th>
<th>Max of Appropriation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hearing Instrument</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>OTC Hearing Aid</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>PSAP</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Hand-Held</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
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</table>

Intended Use of PSAPs

According to the FDA, PSAPs are intended for use in the following scenarios:

- Limited reimbursement by health plans
- Not well suited for hearing loss that includes loss of high frequencies
- Not regulated by the FDA
- Not considered hearing aids under Medicare

Legend of PSAPs:

- OTC Hearing Aid: Can be sold over-the-counter without a prescription
- PSAP: Prescriptive sound processor for amplification
- Handheld: Portable device for hearing enhancement

CONTINUED
Step 1: Subjective Assessment
PSAPs are evaluated in terms of ease of use and offered features. A PSAP hearing check is performed to assess sound quality. In addition, device performance is subjectively assessed while manipulating available controls (e.g., volume control, program switch). Familiarity with the device is necessary in order to ensure appropriate settings are used for objective tests described below.

Step 2: Electroacoustic Analysis
Coupler measurements are performed to objectively evaluate Maximum Output Sound Pressure Level (OASPL90), Full Scale Average (FSWL), Average Full Scale (AFS), Full Scale Average (FSA), Full Scale Level (FSL), and Full Scale Noise Level (FSNL). No inter-stimuli-test (IST) is performed.

PSAP Qualifications sold by Oaktree Products
- Objective comparison of sound quality using rack-drawn graphs.
- Subjective comparison of functional performance (e.g., stability of volume control).
- OASPL90 measured to within ±1%.
- FSL to within ±5%.
- ISTS not considered.
- FSNL to within ±5%.
- FSWL to within ±5%.

Step 3: On-Ear Fitting Capabilities via Real Ear Measurements
Laboratory Real Ear-aided Response (REAL) measurements are used to identify potential audiometric configurations appropriate for use in specific PSAPs. Real ear measurements are performed at Washington University School of Medicine, St. Louis, MO, USA. Real ear measures include Maximum Output Sound Pressure Level (OASPL90) and Full Scale Average (FSWL) measurements. The data presented is based on a minimum of 20 measurements per PSAP.

<table>
<thead>
<tr>
<th>PSAP</th>
<th>Coupler</th>
<th>Max OASPL90 Manufacturer Specs</th>
<th>Measured Max OASPL90</th>
<th>AVG OASPL90 Manufacturer Specs</th>
<th>Measured AVG OASPL90</th>
<th>AVG FOG Manufacturer Specs</th>
<th>Measured AVG FOG</th>
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<td>Austar AST FEAG®</td>
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<td>Austar AST Filterer Group CC®</td>
<td>HA-1</td>
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<tr>
<td>ExSlient OliveLite</td>
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<td>76</td>
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<tr>
<td>PLAID (ANSI 2003)</td>
<td>HA-1</td>
<td>110</td>
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<td>100.3</td>
<td>99</td>
<td>28.1 (power on) or 37.3 (max volume)</td>
<td>24 or 34</td>
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<td>Tune Amp</td>
<td>HA-1</td>
<td>110</td>
<td>110 or 110</td>
<td>100.3</td>
<td>101 or 101</td>
<td>28.1 (power on) or 37.3 (max volume)</td>
<td>24 or 34</td>
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<td>The BEAN (QSA)</td>
<td>HA-1</td>
<td>112.5 (LO) or 113 (HI)</td>
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<tr>
<td>AST E33 AS05R Rechargeable</td>
<td>HA-1</td>
<td>115</td>
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</tbody>
</table>

* Discontinued
PLAID PERSONAL LISTENING AID (GRAY COLOR)

- Intermediate, ear-level personal sound amplifier available only through licensed healthcare professionals.
- Ideal for adults with perceived very mild to mild hearing loss; refer to audiogram image for objectively identified configurations.
- Semi-adjustable with volume control and program change ability.
- Pre-loaded with three acoustic algorithms.
- CIWIT features allows user to access and choose preferred amplification settings.
- Once the amplification setting is locked in, the user has two listening modes: Quiet and Noise.
- Program button allows user to switch between modes.
- Uses size 312 hearing aid battery.
- Single unit.
- Available in 2 colors - Beige and Gray.
- Six month warranty.
- NOTE: tip and tube replacement kit available (Item# HC-TIPSTUBES); same as ReSound Pulse (contact ReSound to order in smaller quantities that what is available in the kit).

References:


References:


