



Results

EuroTrak Germany 2015

- 1. Introduction
- Market overview
- 3. Analysis of hearing aid owners
- 4. Analysis of hearing impaired non-owners
- 5. Appendix







Summary 1. Introduction

- EuroTrak Germany 2015 was designed and executed by Anovum (Zurich) on behalf of the European Hearing Instrument Manufacturers Association (EHIMA).
- Sample sizes Germany 2015:

Representative sample (sample 1): n=13'775 people

- Hearing impaired (sample 2): n=1'304 people

• Hearing impaired non-owners: n=799 people with hearing loss (**HL**)

• HA owners: n=505 people with hearing aid (**HA**)

EuroTrak Germany 2015 is part of the EuroTrak studies:













Summary 2. Market overview

- Stated hearing loss prevalence
 - Total: 12.1%, 18+: 13.9% (2012: 12.5%, 18+: 14.3%).
 - Binaural hearing loss: HA owners: 81%, HA non-owners: 63%.
 - Hearing Tests: 45% (2012: 47%) had a hearing test in the last 5 years, most tests done by ENTs
- Hearing aid adoption rate (HA penetration)
 - Total: 34.9% (2012: 34.0%).
 - Total age group 18+: 35.0% (2012: 34.1%).
 - 75% of HA owners have binaural treatment.
- The route to the hearing aid
 - 79% of the hearing impaired discussed hearing loss with an ENT doctor or family doctor.
 - 50% got hearing aids recommended from the ENT or family doctor (drop out rate=36% / 2012: 40%).
 - 67% (2012:73%) of the GP consultations referred to an ENT. 12% (2012: 11%) recommended no action.
 - 35% of ENT consultations referred to a audiologist, 39% (2012: 44%) recommended no action.
- Potential social cost-savings due to the use of hearing aids
 - Hearing aids are believed to have a positive impact on the job.
 - Hearing aid owners have a lower risk of being depressed.
 - Quality of sleep seems to improve if hearing impaired use hearing aids.







Summary 3. Analysis of hearing aid owners

- Hearing aid ownership and usage, accessories and Telecoil
 - 92% (2012: 93%) of all HA owners asked some kind of 3rd party reimbursement.
 - 45% of the currently owned HAs were bought in the last two years (EuroTrak 2012: 49%)
 - The average age of the currently owned HAs is 2.9 years (2012: 3.0 years).
 - The median age of hearing aids before replacement is 5 years.
 - On average, HAs are worn 8.7 hours a day (2012: 8.0).
 - 38% of today's hearing aid owners are aware of their hearing aid brand, 38% would preferably choose the same brand if they would plan to obtain new hearing aids (52% are indifferent).
 - The ownership of accessories is very low in Germany.
 - 10% of hearing aid owners know what Telecoil is but only 5% have used it mainly at home. More than half
 of of those who use it are satisfied.
- Importance of listening situations and satisfaction with HAs
 - 87% of the hearing aid owners say their hearing aid works better than or as expected
 - 77% (2012:77%) of the HA owners are satisfied with their HAs.
 - The more hours worn per day, the higher the satisfaction.
 - Satisfaction with newer hearing aids is higher than with older hearing aids.
 - Talking at home with family members, conversations with 1 person and talking on a phone are the most frequent important listening situations.
- Positive impact of HAs
 - Significant positive impact of HAs on different aspects especially communication, participation in group activities and sense of safety.
 - 98% of hearing aid owners declare that their hearing aids improve their quality of life at least sometimes







Summary 4. Analysis of hearing impaired non-owners

- Reasons not to own/use HAs
 - Only 39% (2012: 33%) of the hearing impaired without hearing aids think that a third party would pay any part of hearing aids.
 - The main reasons for not using hearing aids are that people say "they hear well enough", "hearing loss is not severe enough" and that they are uncomfortable.
 - 3% who own HAs don't use them at all (0 hour); 10% use them less than one hour/day (0-1 hour).
- Social rejection, buying intentions and triggers to buy
 - 89% of hearing aid owners think people don't make fun of or reject them because of their hearing aids. It is more likely somebody makes fun or rejects a hearing impaired without hearing aid.
 - The most important trigger to buy a hearing aid is worsening hearing loss and the ENT followed by "Akustiker" and spouse. Insurance coverage/price of hearing aids is much more relevant for the non owners.
 - 19% (2012: 13%) of non-owners intend to get a hearing aid within the next year.







Results

EuroTrak Germany 2015

- 1. Introduction
- 2. Market overview
- 3. Analysis of hearing aid owners
- 4. Analysis of hearing impaired non-owners
- 5. Appendix









Detailed Results: Roadmap

New topics for EuroTrak 2015 are highlighted in red

1. Introduction

- Organisation of EuroTrak 2015
- Recruitment process: In search of hearing impaired people

2. Market overview

- Prevalence of hearing loss and hearing aid adoption rate
- Hearing tests and where hearing is tested
- The route to the hearing aid: Sources of information and drop-out rates
- Potential social cost-savings due to the use of hearing aids: Work competitiveness, depressive and dementia symptoms, sleep quality

3. Analysis of hearing aid owners

- Hearing aid ownership, awareness of hearing loss before getting hearing aids, lifetime of hearing aids and usage
- Awareness and usage of accessories and Telecoil
- Satisfaction with hearing aids and drivers
- Importance of listening situations
- Positive impact of hearing aids, quality of life

4. Analysis of hearing impaired non-owners

- Reasons for not having hearing aids and why some people can consider hearing aids as uncomfortable
- Social rejection because of hearing loss compared to the acceptance of hearing aids
- Buying intentions and most important triggers to buy

5. Appendix

Demographics: Hearing instrument adoption rates and populations







1. Introduction









Organisation of EuroTrak 2015

Organisation

- Principal of the project EuroTrak is the European Hearing Instrument Manufacturers Association [EHIMA].
 Members of EHIMA are: GN Resound, Oticon, Phonak, Sivantos, Starkey and Widex [EHIMA Companies].
- Anovum Zurich developed the concept of EuroTrak, designed the questionnaire and conducted the fieldwork in cooperation with a panel company. Furthermore Anovum analysed the data and prepared the presentation.
- The European Hearing Instrument Manufacturers Association [EHIMA] approved the questionnaire.

Use of the data

- The principal as well as the EHIMA companies may use the anonymous delivered tables, charts, reports and conclusions of the survey for further research projects, for archiving and publication in any form whatsoever.
- The raw dataset remains at Anovum. If the principal or the EHIMA companies use the anonymous data (delivered tables, charts, reports) and conclusions of the survey for publications the source of the data needs to be mentioned in the following way:

"Source: Anovum - EuroTrak - Germany/2015/n=[relevant sample size]"

- The principal and EHIMA companies can ask Anovum to further analyse the raw data in specific ways at their own expense.
- EHIMA companies can order a report with satisfaction scores for their brand. The other brands will be shown as benchmarks without denomination (brand A, brand B etc.). The report will show all satisfaction values. It is not allowed to communicate any information from these reports outside the EHIMA company.









Recruitment process: In search of hearing impaired people

Step 1: Screening interviews

Objective: Prevalence of hearing loss and hearing aid ownership

Process:

- 1. Representative sample with strict quotas that represent the overall population (Age/Gender interlocked; soft quota on region)
- 2. Contacts from panelist pools of more than 40'000 people
- 3. Screening questionnaire: Stated hearing loss and hearing aid usage + demographics
- 4. Result: Representative sample of **n=13'775** people based on census data.

Step 2: Target population interviews

Objective: Details about satisfaction with hearing aids and reasons for non-adoption

Process:

- 1. Main questionnaires: Owners and hearing impaired non-owners
- 2. Balancing through weighting according to representative screening interviews
- 3. Resulting sample: n=799 hearing aid owners and n=505 hearing impaired non-owners









2. Market overview







Prevalence of hearing loss and adoption rate

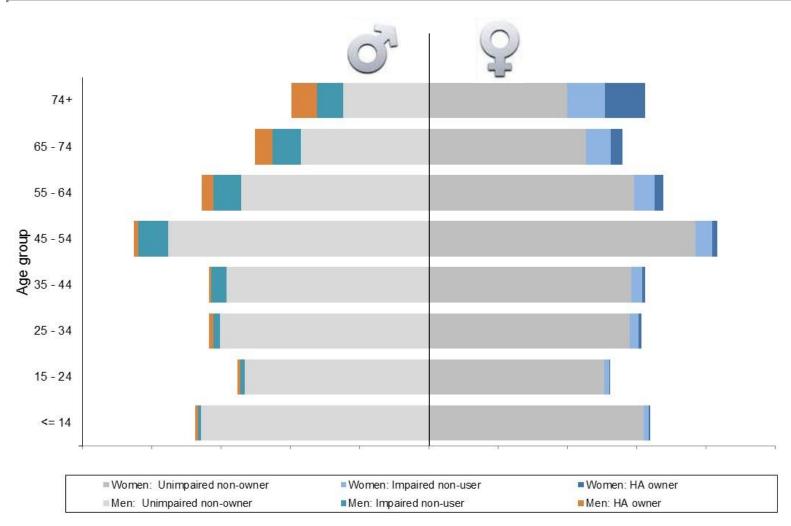








Hearing loss and hearing instrument ownership by gender/age





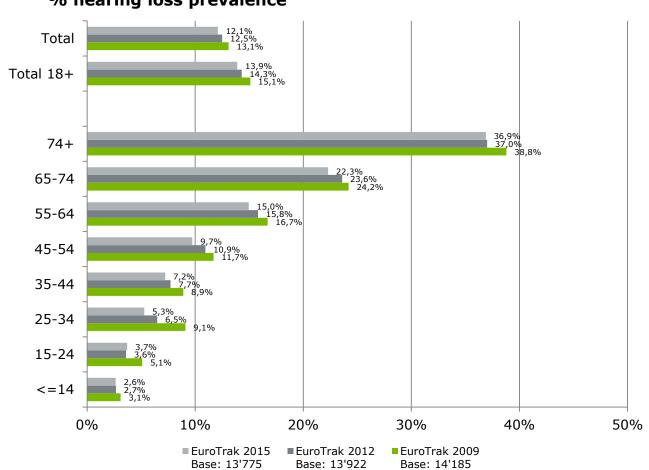






Hearing loss prevalence Germany

% hearing loss prevalence



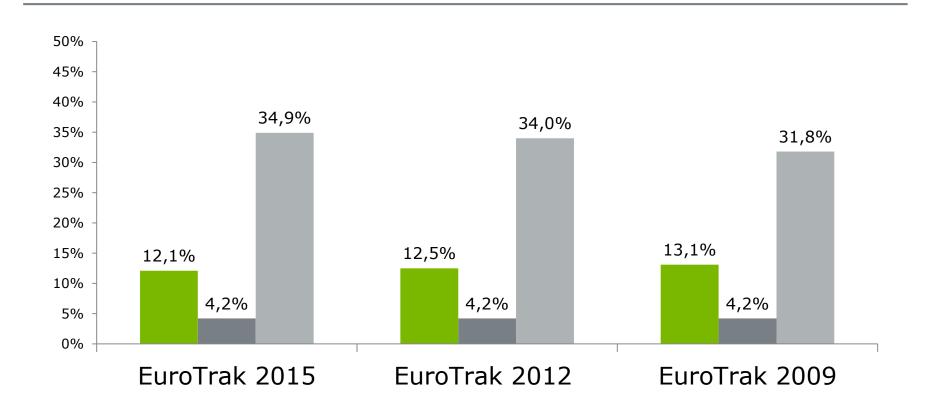








Overview hearing loss prevalence and hearing aid adoption



■ Hearing impaired (stated)
■ Adoption (% of population)
■ Adoption (% of stated impaired)

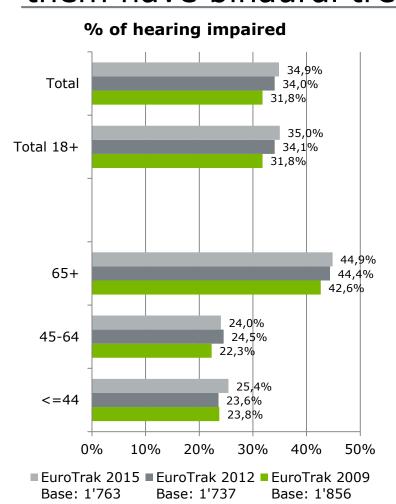


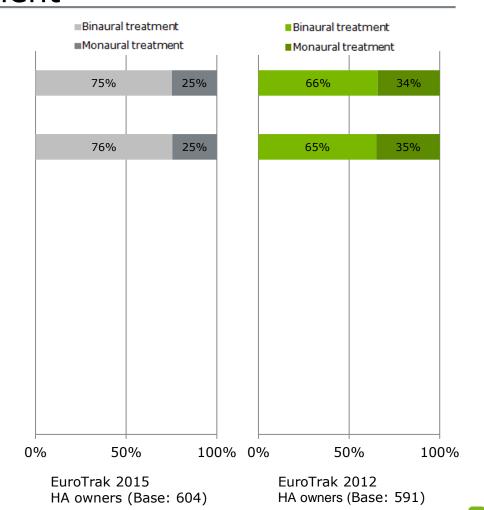






Hearing aid adoption rate Germany: 35% of hearing impaired have hearing aid(s), 75% of them have binaural treatment



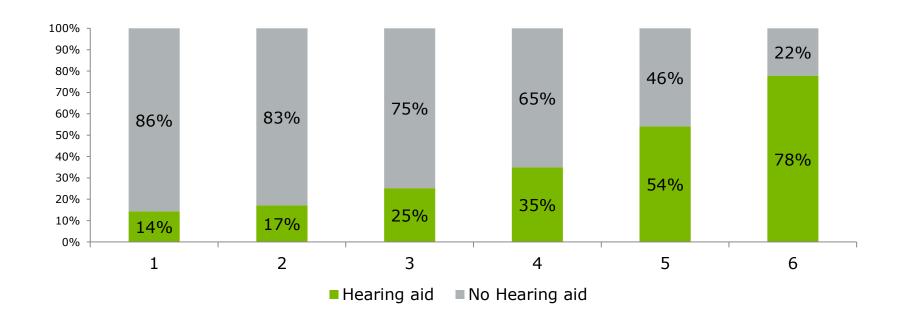








The more severe the hearing loss, the higher the adoption rate



Hearing loss 6-groups

HA-non-owner, n=799 HA-owner, n=505

* Construction of 6-groups: A factor analysis was performed to identify one factor "degree of hearing loss". The following questions were included in the factor:

- Number of ears impaired (one or two)
- Stated hearing loss (Mild to Profound)
- Scores on 6 APHAB-EC like questions (Scaled 1-5)
- When NOT using a hearing aid, how difficult is it for you to follow conversations in the presence of noise
- → People were segmented into 6 groups of same size (16.67% of all hearing impaired in the sample).







Hearing loss

Hearing loss characteristics: Owners compared to non-owners

	HA-Non-owner 2015: n=799 (2012: n= 864/ 2009: n= 805)	HA Owner 2015: n=505 (2012: n= 500/ 2009: n= 503)	Hearing Aid Adoption (%)
Ears impaired (stated)			
Unilateral loss	37% (42%/43%)	19% <i>(22%/25%)</i>	23% (23%/22%)
Bilateral loss	63% (58%/57%)	81% (78%/75%)	43% (43%/39%)
Perceived loss			
Mild ⁺	49% (<i>42%/31%</i>)	10% <i>(10%/6%)</i>	10% (11% /8%)
Moderate ⁺	43% (<i>43%/50%</i>)	54% (45%/31%)	41% (36%/22%)
Severe ⁺	5% (12%/15%)	26% (29%/43%)	72% (62%/62%)*
Profound ⁺	2% (3%/4%)	10% (16%/21%)	

n's are unweighted whereas the shown results are weighted



^{*} combined "severe" and "profound" because n is too small

^{2009:} Schwach- Mässig-Stark-Sehr stark 2012/15: Leicht-Mittel-Schwer-Hochgradig





Hearing tests and where hearing is tested

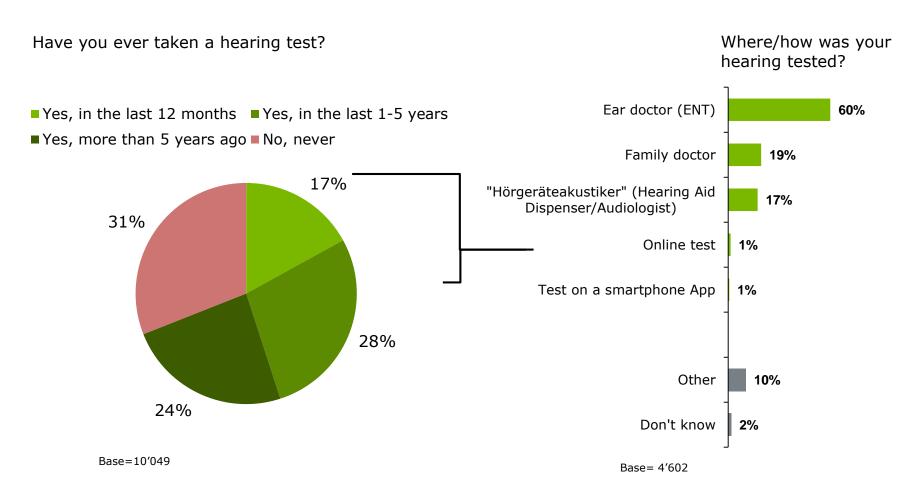








Hearing Tests: 45% (2012: 47%) had their hearing tested in the last 5 years – most tests are done by ENT's









The route to the hearing aid: Sources of information and drop-out rates



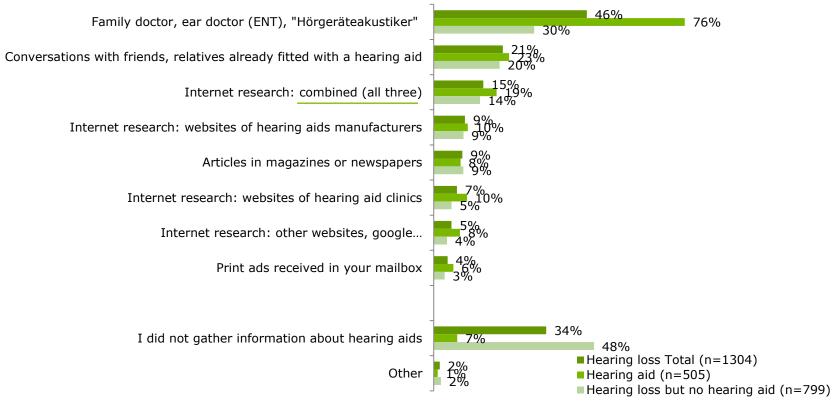






Doctors and "Hörgeräteakustiker" are the most important sources of information and therefore the major gatekeepers – followed by other people with hearing aids.

Where did you gather information about hearing aids? Please check all that apply.





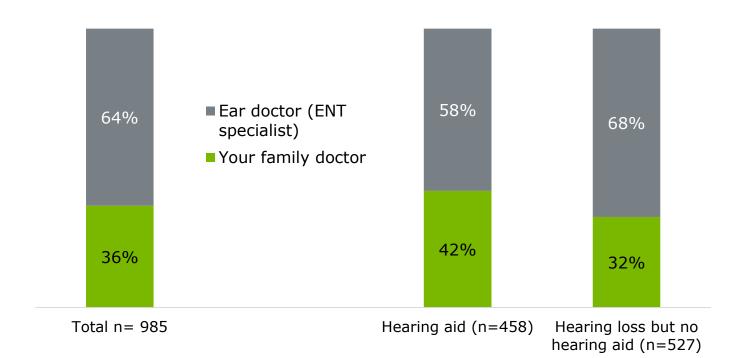






Of those who discussed the hearing loss with a doctor, about 2/3 talked to an ENT first and the other 1/3 talked to the family doctor first

Those who discussed hearing loss with family doctor and/or ENT: Who was the doctor you discussed your hearing loss with for the **first time** – your family doctor or the ENT specialist?



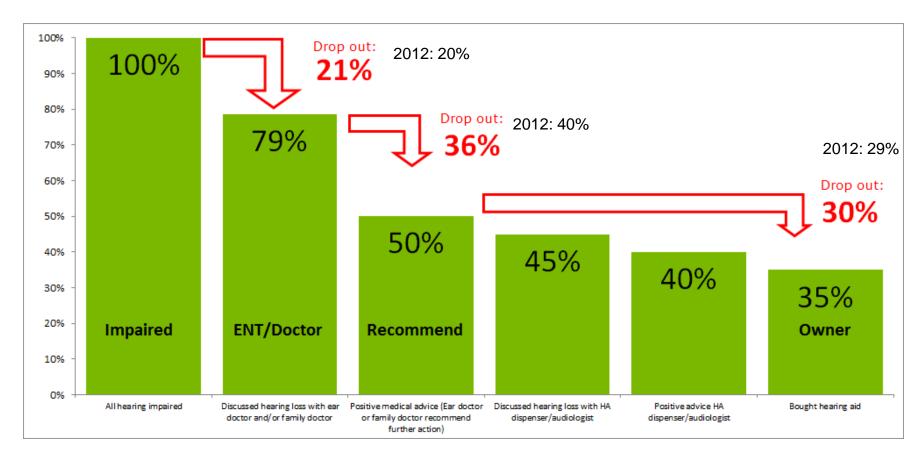








The route to the hearing aid: Compared to 2012 drop out 2 was reduced slightly



Base: n=1'304



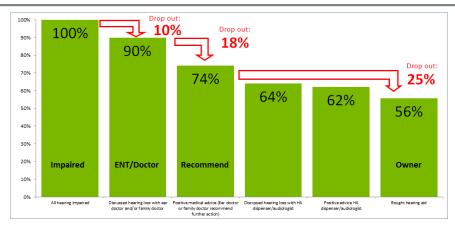
Page 24



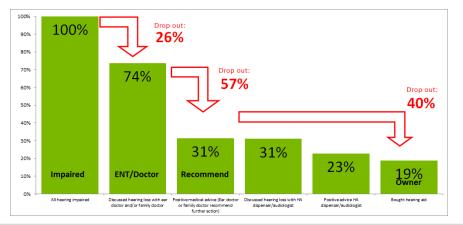


Much higher drop-out-rates for the lower hearing loss segments

Top 50% hearing loss*



Low 50% hearing loss*



Base: n=1'304

^{*} Construction of 6-groups: A factor analysis was performed to identify one factor "degree of hearing loss". The following questions were included in the factor:

Number of ears impaired (one or two)

Stated hearing loss (Mild to Profound)

Scores on 6 APHAB-EC - like questions (Scaled 1-5)

When NOT using a hearing aid, how difficult is it for you to follow conversations in the presence of noise

[→] People were segmented into 6 groups of same size (16.67% of all hearing impaired in the sample).

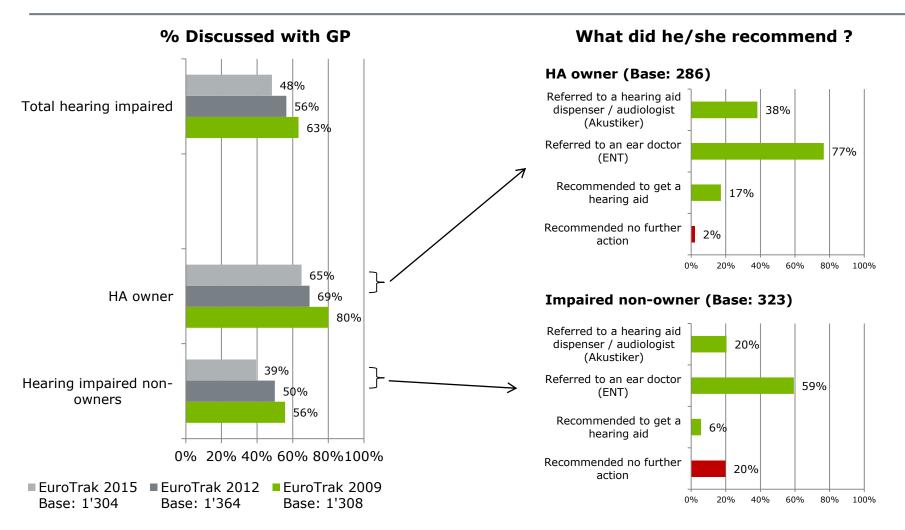






The route to the hearing aid: GP/Family doctor

Have you discussed your hearing problem with your family doctor?





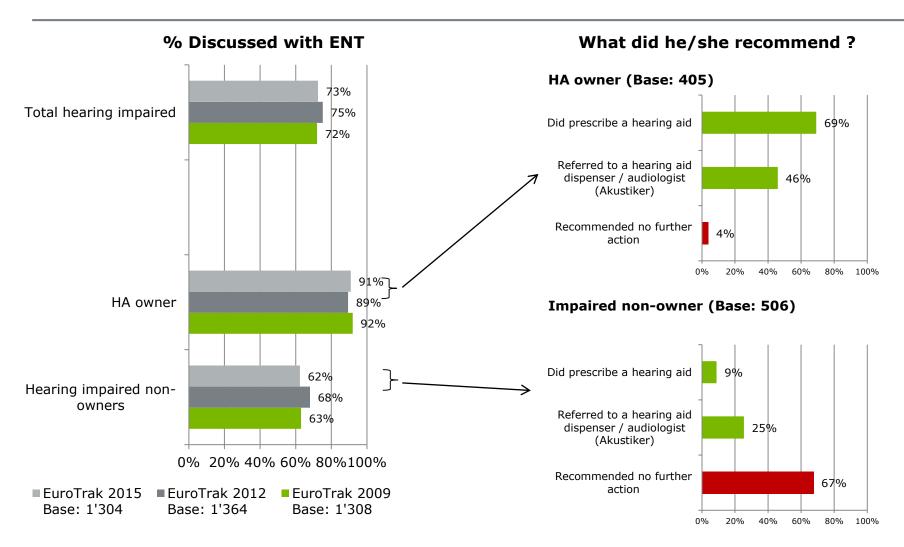






The route to the hearing aid: ENT

Have you discussed your hearing problem with an ear doctor (ENT)?





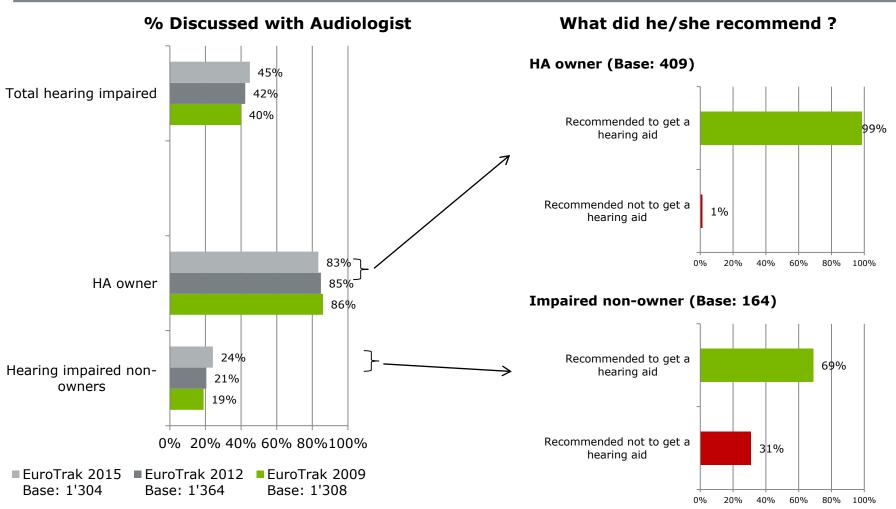






The route to the hearing aid: Akustiker

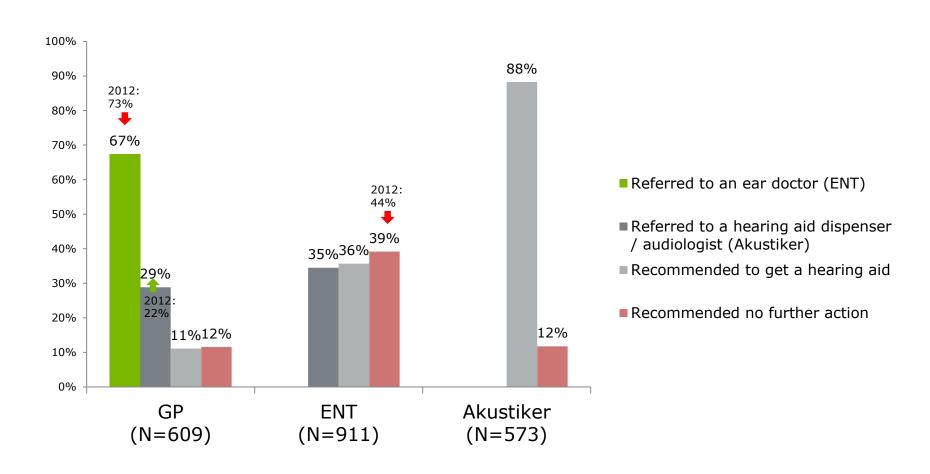
Have you discussed your hearing problem with a Hearing Aid Dispenser/Audiologist?







Recommendations by profession







Potential social cost-savings due to the use of hearing aids: Work competitiveness, depressive and dementia symptoms, sleep quality

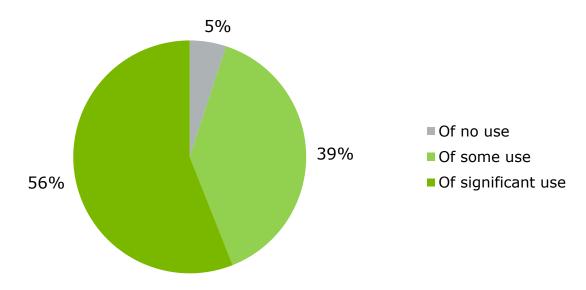






Work competitiveness: 95% of the working hearing aid owners state their hearing aid(s) are useful on their job.

How useful are your hearing aids on your job?



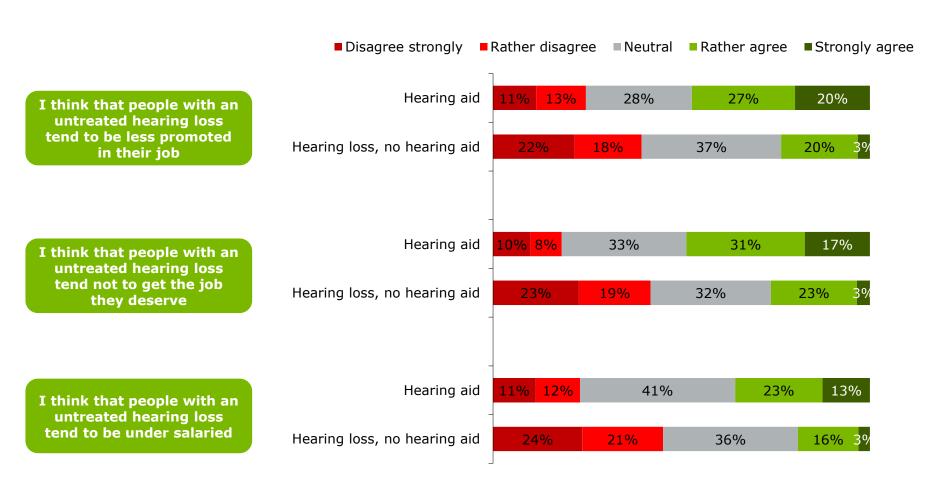
Base: N=145







Work competitiveness: People with hearing aids recognize that hearing aids increase the chance of hearing impaired to get promoted, to get the right job and to get more salary.



Base: hearing aid n=398 / Hearing loss, no hearing aid =612

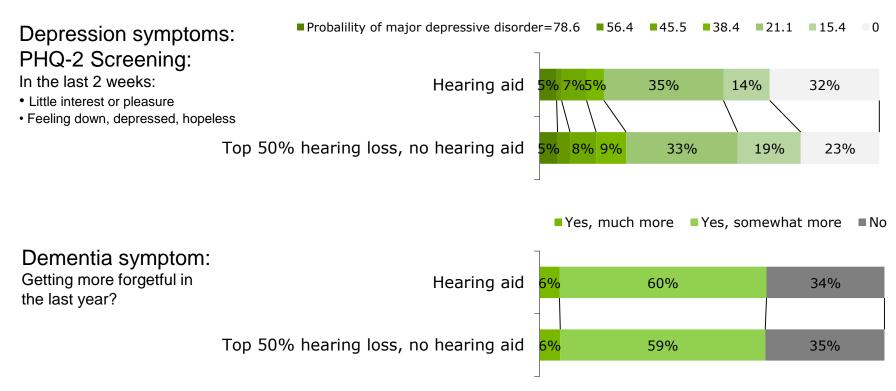








General health problems: Hearing aid owners have a lower risk of being depressed (PHQ-2 Screening) compared to impaired non-owners with comparable hearing loss (Top50% hearing loss group*).



Base: hearing aid n=367 / no hearing aid =134

*Construction of 6-groups: A factor analysis was performed to identify one factor "degree of hearing loss". The following questions were included in the factor:

- Number of ears impaired (one or two)
 - Stated hearing loss (Mild to Profound)
 - Scores on 6 APHAB-EC like questions (Scaled 1-5)
- When NOT using a hearing aid, how difficult is it for you to follow conversations in the presence of noise
- → People were segmented into 6 groups of same size (16.67% of all hearing impaired in the sample).

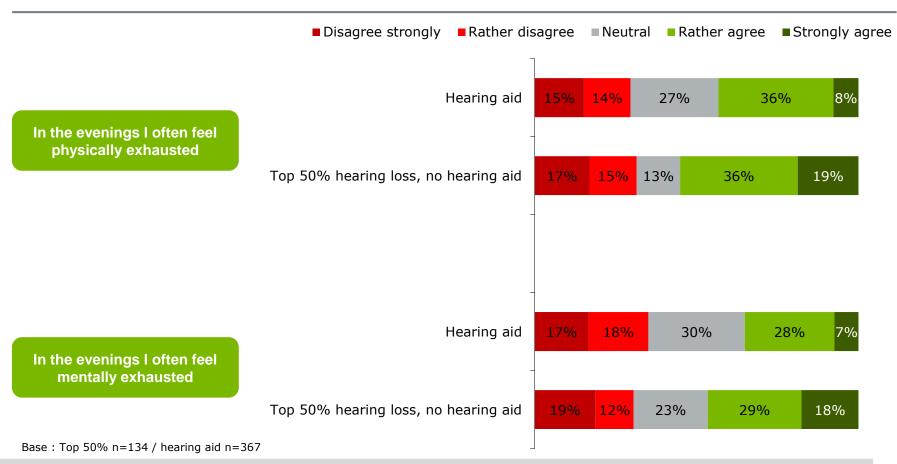








General health problems: Compared to impaired hearing aid non-owners with significant hearing loss (Top 50% hearing loss*), hearing aid owners feel less exhausted in the evenings



*Construction of 6-groups: A factor analysis was performed to identify one factor "degree of hearing loss". The following questions were included in the factor:

- Number of ears impaired (one or two)
- Stated hearing loss (Mild to Profound)
 - Scores on 6 APHAB-EC like questions (Scaled 1-5)
- When NOT using a hearing aid, how difficult is it for you to follow conversations in the presence of noise
- → People were segmented into 6 groups of same size (16.67% of all hearing impaired in the sample).



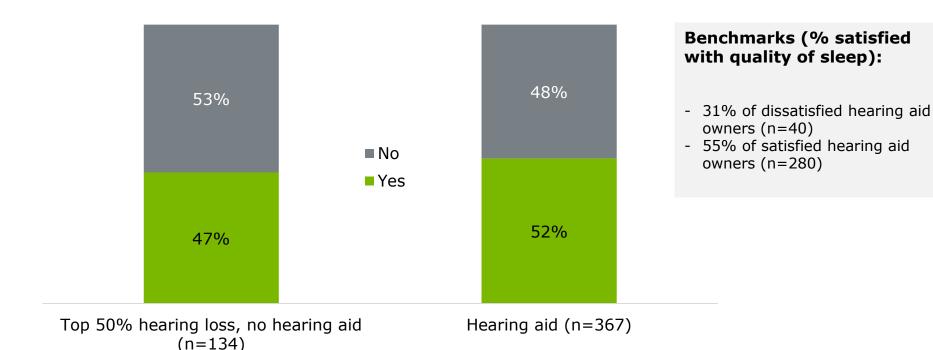






General health problems: Quality of sleep seems to improve if hearing impaired use hearing aids

Are you generally satisfied with the quality of your sleep?









3. Analysis of hearing aid owners







Hearing aid ownership, awareness of hearing loss before getting hearing aids, lifetime of hearing aids and usage





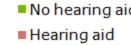




Low adoption rates within mild and moderate hearing loss

Stated hearing loss	(% of impaired population*)		Adoption rate %				
Profound+	(5%)	2% 3%	o.	2015 72%*	2012 62%*	2009 62%*	
Severe+	(13%)	3%9%		7 = 73	0_/0	0_70	
Moderate+	(47%)	28%	19%	41%	36%	22%	
Mild+	(35%)	32%	3%	10%	11%	8%	
Base: n=1'304	lue to rounding	■ No he	earing aid				

Sums can differ from 100% due to rounding



2009: Schwach- Mässig-Stark-Sehr stark 2012/15: Leicht-Mittel-Schwer-Hochgradig



^{*} combined "severe" and "profound" because n is too small

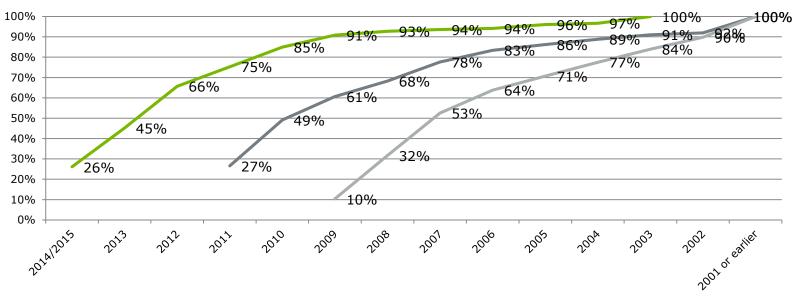






66% of the currently owned HAs were fitted in 2012 or later

Year of purchase



Age of currently owned HAs (Mean):

2015: 2.9 years2012: 3.0 years2009: 3.4 years

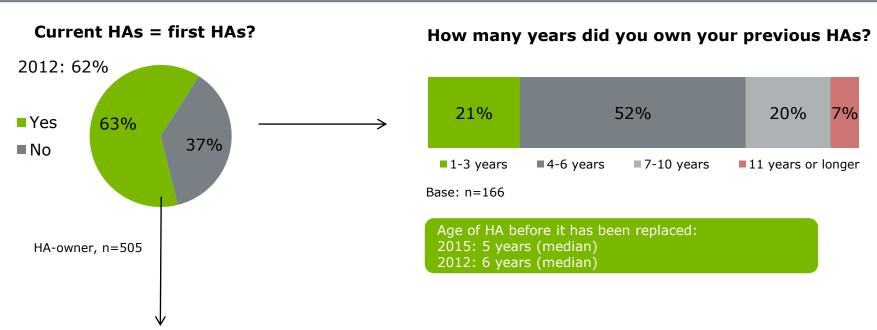




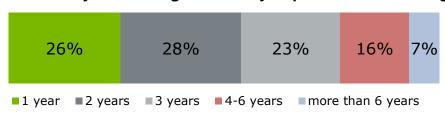




On average 2-3 years pass between becoming aware of the hearing loss and the purchase of hearing aids. Hearing aids are used for 5 years before they are being replaced.



Thinking back before you purchased your first hearing aid: How many years have passed since you became aware of your hearing loss until you purchased a hearing aid?



Base: n=330

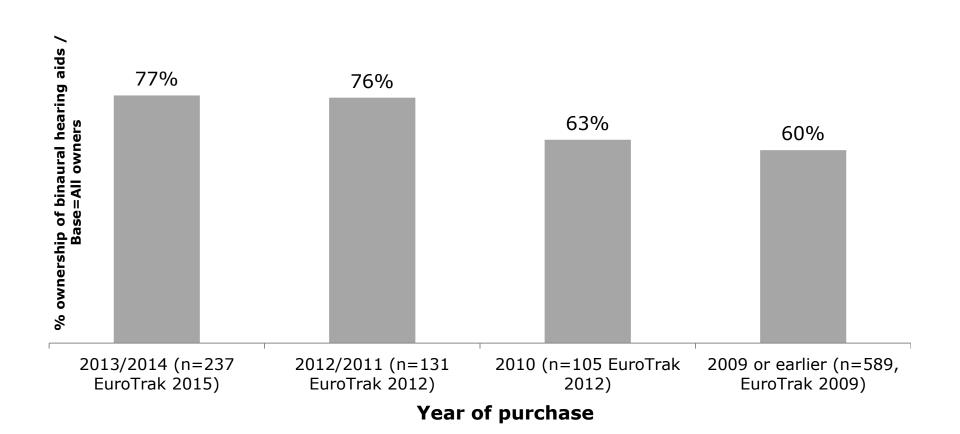








Monaural-binaural treatment by purchase date





Page 41



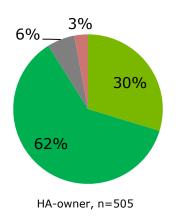


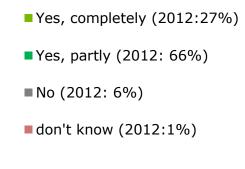


While hearing impaired without hearing aids tend not to know whether a third party would pay any part of hearing aids – more than 90% of the hearing aid owners received some kind of 3rd party reimbursement

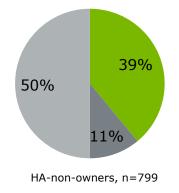
2015

Owners: Was any part or all of your hearing aid(s) paid for by a third party? (Insurance, Government, ...)





Non-owners: Based on your current knowledge, would any part or all of your hearing aid(s) be paid for by a third party? (Insurance, Government, ...)



■ Yes (2012: 33%)
■ No (2012: 14%)
■ don't know (2012:53%)

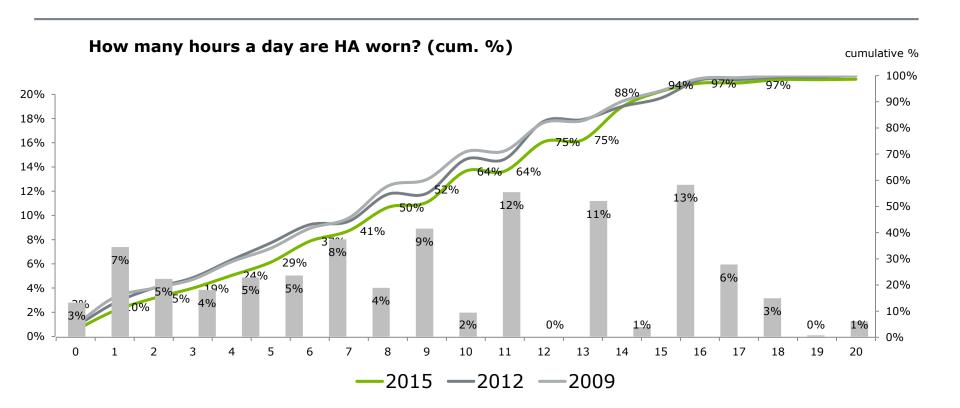








On average, HAs are worn 8.7 hours a day



HA-owner: 2015: n=505

2012: n=500 2009: n=503 HA worn: 2015 Mean: 8.7 hours/day 2012 Mean: 8.0 hours/day 2009 Mean: 7.7 hours/day





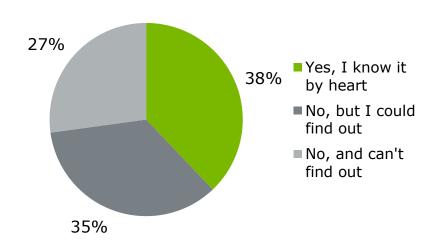


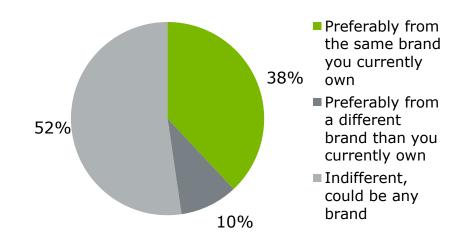


38% of today's hearing aid owners are aware of their hearing aid brand

Are you aware of the brand of your hearing aid(s)?

In case you plan to obtain new hearing aid(s), what brand would you choose?





Base: N=505 / 395



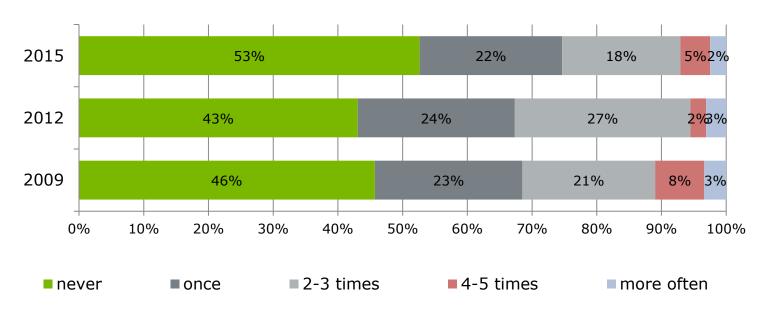






75% of the currently owned HAs either had no repair need or only once

How often has your current hearing aid required a repair because it was not working properly?



HA-owner: 2015: n=505 2012: n=500 2009: n=503







Awareness and usage of accessories and Telecoil



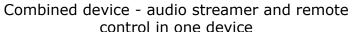






Accessories are owned seldom in Germany

Which of the following accessories have you heard of and which ones do you own?

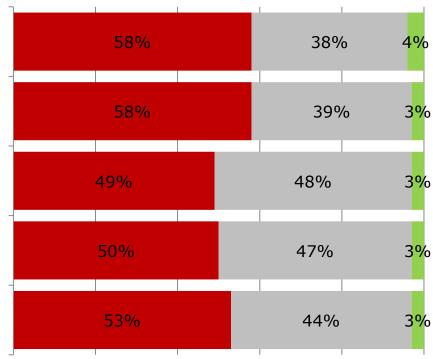


Additional microphone for conversations with one person, conversations in a group etc.

Phone clip, plugged into the mobile phone to stream calls to the hearing aid

TV Box connected to the tv set to stream audio to your hearing aid

Audio streamer to connect my hearing aids to other devices like cell phones, mp3 players, tv sets, etc



■ Never heard of this before

■ Heard of this before but don't own one

■I own one

Base: N=505





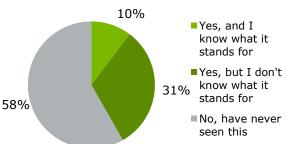




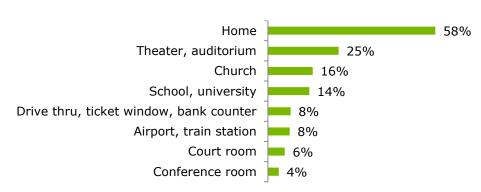
10% of hearing aid owners know what Telecoil is, 5% have used it - mainly at home. More than 50% of those who use it are satisfied.

Have you seen this logo before?

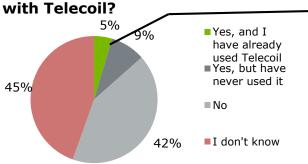




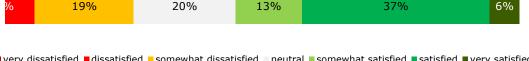
On what type of venues have you used hearing aids in a hearing loop (Telecoil)?



Are your hearing aids equipped



How satisfied are you with the use of Telecoil overall?



■ very dissatisfied ■ dissatisfied ■ somewhat dissatisfied ■ neutral ■ somewhat satisfied ■ satisfied ■ very satisfied

HA-owner, who have used Telecoil, n=28 (low sample!)

HA-owner, n=505





Satisfaction with hearing aids and drivers



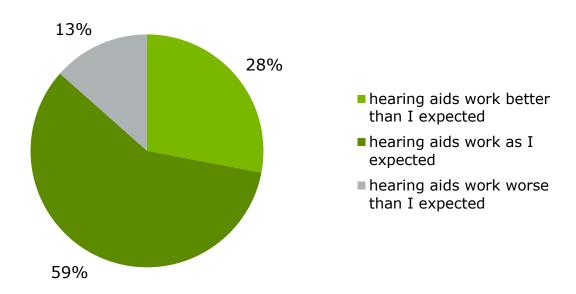






87% of the hearing aid owners say their hearing aid works better than or as expected

How have the expectations you had towards hearing aids before trying them on for the first time been met?



Base: N=505

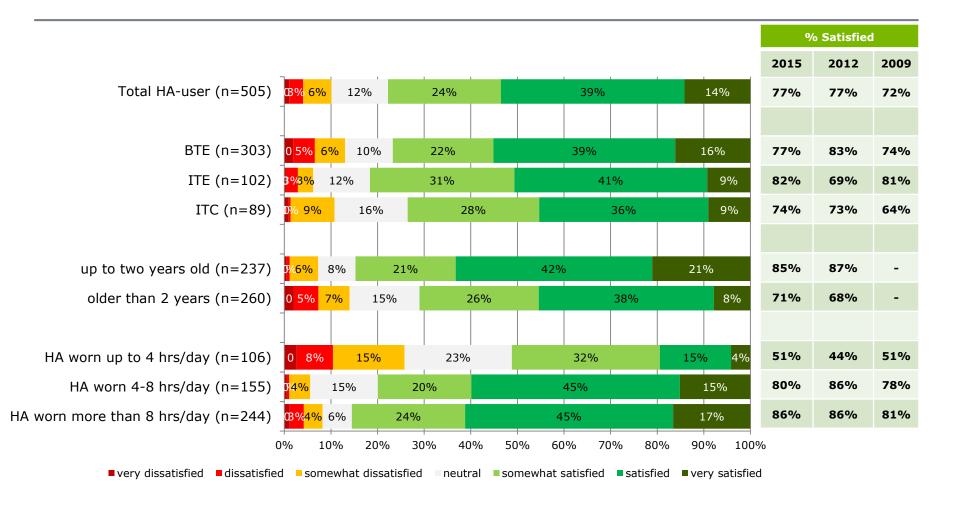








Overall satisfaction is stable since 2012



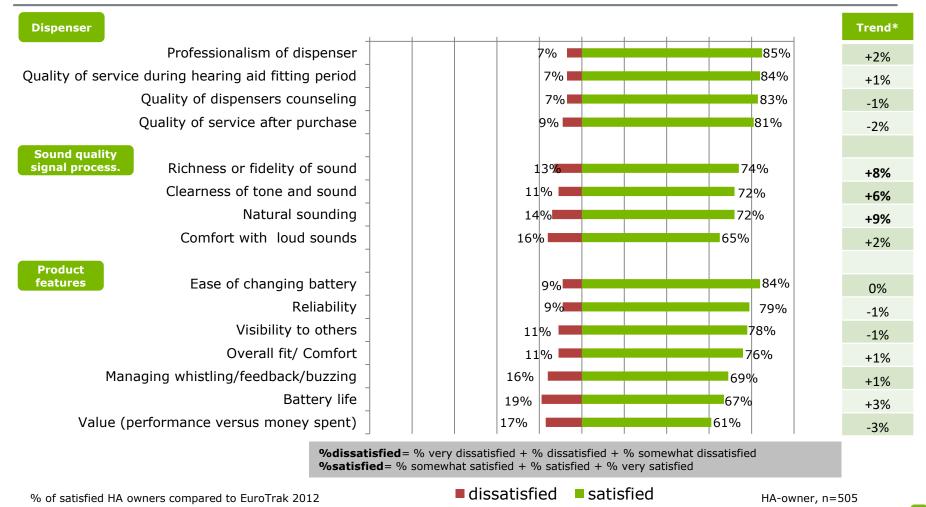








Satisfaction with current hearing aids

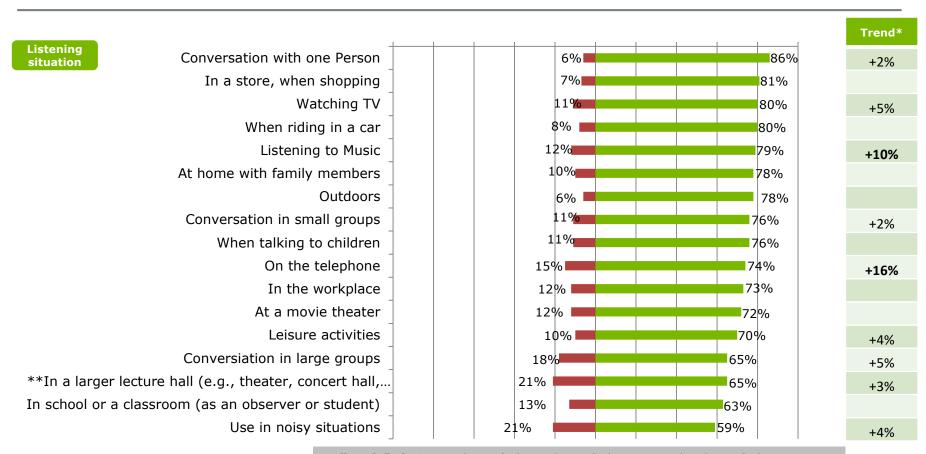








Satisfaction with current hearing aids



% dissatisfied = % very dissatisfied + % dissatisfied + % somewhat dissatisfied % satisfied + % very satisfied

dissatisfied satisfied

HA-owner, n=505



[%] of satisfied HA owners compared to EuroTrak 2012

^{**} question slightly changed: 2012=Understanding a lecture in a large public place







Factors influencing satisfaction with current HA: Sound quality/signal processing is most important for overall satisfaction with HA

Dispenser

Quality of service after purchase
Quality of service during hearing aid fitting period
Quality of dispensers counseling
Professionalism of dispenser

Sound quality signal process.

Richness or fidelity of sound Clearness of tone and sound Natural sounding Comfort with loud sounds

Product features

Reliability
Overall fit/ Comfort
Managing whistling/feedback/buzzing
Value (performance versus money spent)
Visibility to others
Ease of changing battery
Battery life

Influence on overall satisfaction with HA*

0.71	
0.67	
0.63	
0.62	

0.76	
0.74	
0.74	
0.72	

0.63	
0.62	
0.60	
0.58	
0.56	
0.55	
0.40	



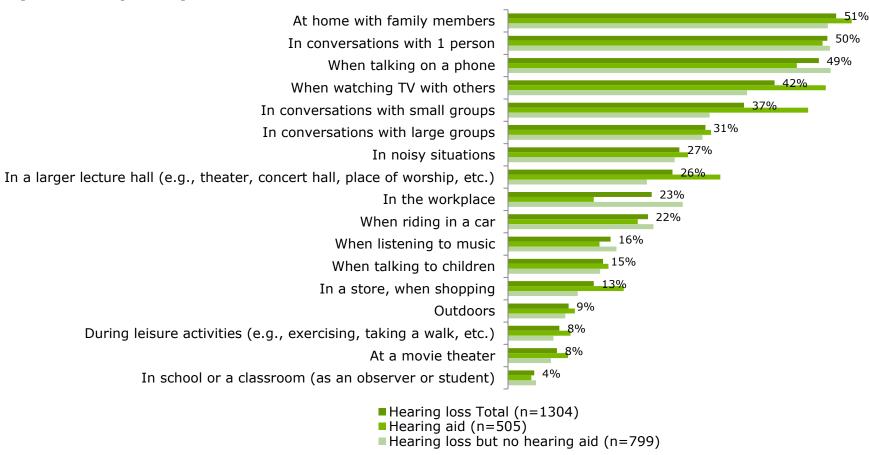






Important listening situations

In which of these situations is it most important for you to hear well? (choose up to 5)









Positive impact of hearing aids, quality of life



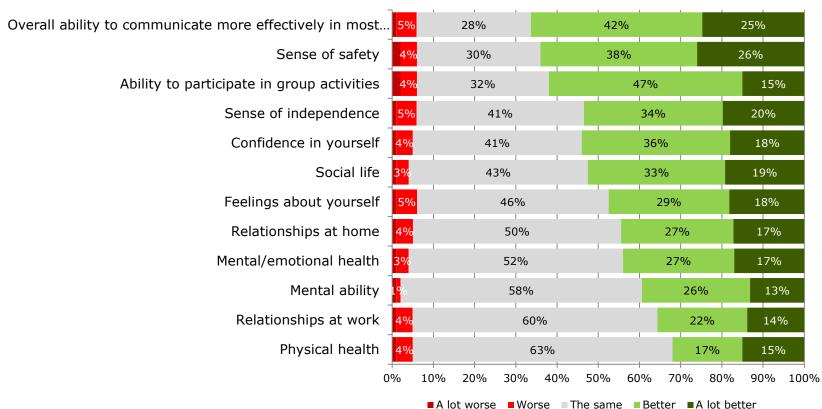






Significant positive impact of HAs on different aspects: Especially communication effectiveness, sense of safety and participation in group activities improve with hearing aids.

Since you started using your hearing aid(s), please rate the changes you have experienced in each of the following areas, that you believe are due to your hearing aid(s).



HA-owner, n=505



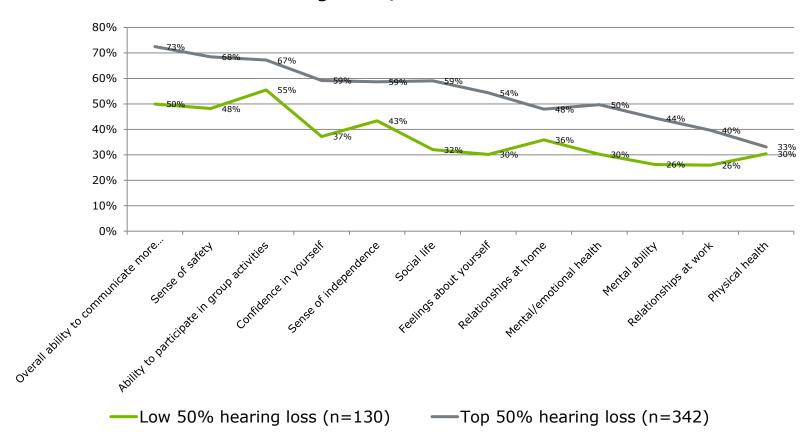






Impact of HAs is perceived more positive by patients with a Top 50% hearing loss in all aspects

% of HA owners feeling better/a lot better





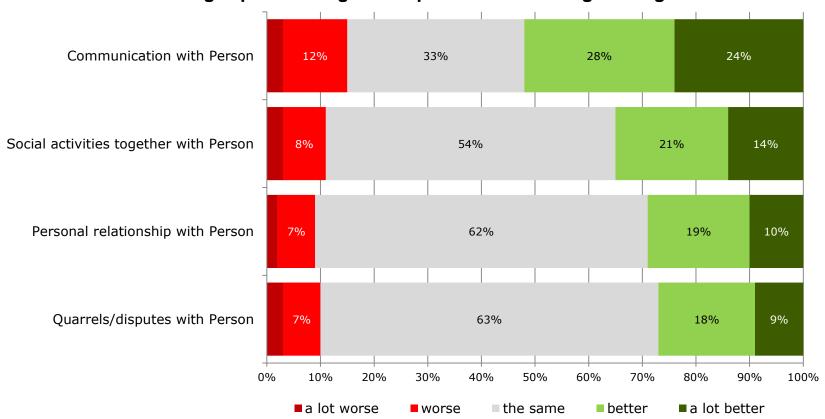






Even for other people in the household/relatives, the situation improves when the person with hearing loss starts wearing hearing aids

How did the following aspects change since person X is wearing hearing aids?



Someone in HH / parent has HA, n=435-465



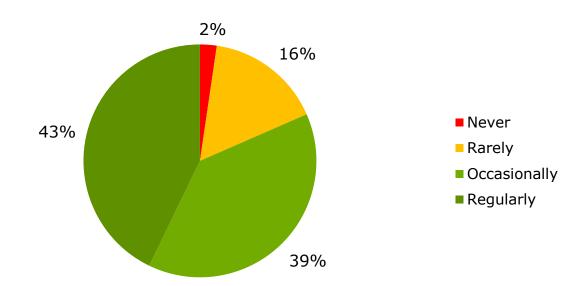






98% of hearing aid owners declare that their hearing aids improve their quality of life at least sometimes

How often do your hearing aids improve your quality of life?



Base: N=505







4. Analysis of hearing impaired non-owners







Reasons for not having hearing aids and why some people can consider hearing aids as uncomfortable









To analyse reasons of non-adoption we look at the Top 50% HL group, as the structure of hearing loss is more similar to that of HA owners

Hearing loss characteristics: Owners compared to non-owners

	% HA Owner (n=505)		%HA-Non- owner Low 50% HL (n=465)	%HA-Non- owner Top 50% HL (n=209)		
Ears impaired						
Unilateral loss	19	%	40%	32%		
Bilateral loss	81	%	60%	68%		
Perceived loss			More similar hearing loss- structure			
Mild	10	%	62%		20%	
Moderate	54	%	34%		62%	
Severe	26	%	2%		14%	
Profound	10	%	2%		5%	

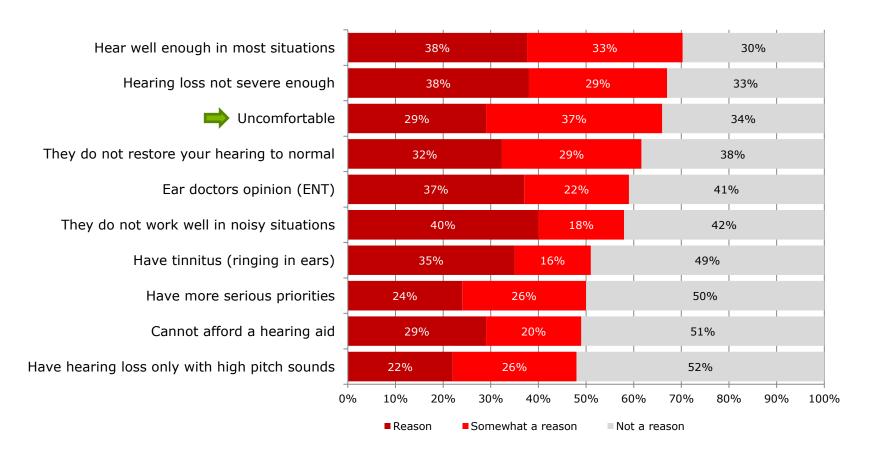








Top 10 reasons for not having a hearing aid (I/II)





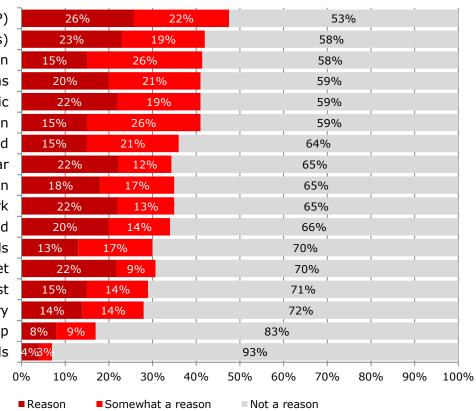






Less important reasons for not having a hearing aid (II/II)

Family doctors opinion (GP) Have sensorineural hearing loss (nerve deafness) Hearing Aid Dispenser/Audiologists opinion I have vision or dexterity problems Do not admit I have a hearing loss in public Another hearing aid owners opinion Social / Family opinion such as child, spouse, friend Have hearing loss in only one ear Bad design Have tried hearing aid and they do not work Would be embarrassed to wear a hearing aid Have hearing loss only with low frequency sounds Have not had hearing tested yet Do not trust Hearing Aid Dispenser/Audiologist Hearing problem requires surgery Had surgery - hearing aids wont help Do not know where to get hearing aids



Base: non owners Top 50% HL: n=209

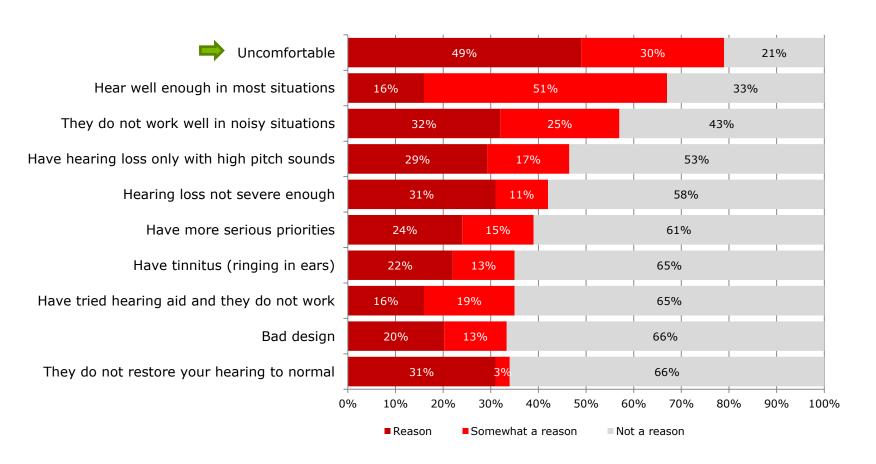








Top 10 reasons for HA owners NOT using them



Owners who don't use, n=22

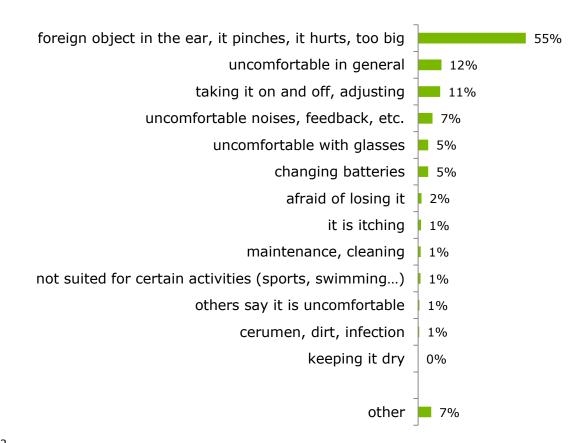






Meaning of «uncomfortable» (open question)

You mentioned "uncomfortable" as a reason why you don't own/use hearing aid(s). Please describe in detail why you consider your hearing aids uncomfortable.



Base: n=332



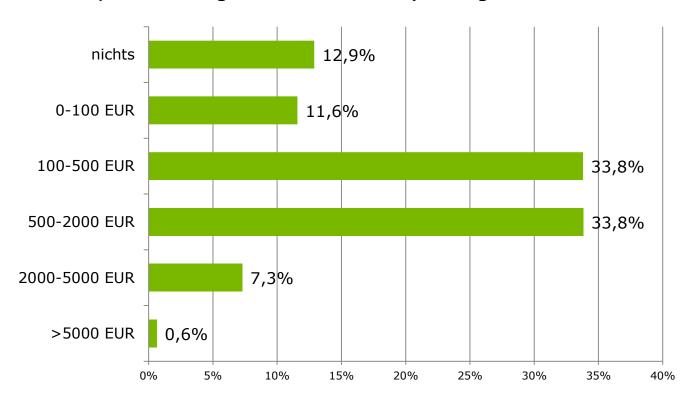






More than 50% of the non owners think that a hearing aid (including service) should cost them less than 500 Euro.

Wieviel denken Sie müssten Sie für ein passendes Hörgerät sowie den dazugehörigen Service bezahlen (also inkl. Diagnose, individuelle Anpassung und dem Service nach dem Kauf)?



Question for Germany only

Base: N=799







Social rejection because of hearing loss compared to the acceptance of hearing aids









89% of hearing aid owners think people don't make fun of or reject them because of their hearing aids. It is more likely somebody makes fun or rejects a hearing impaired without hearing aid.

Hearing aid owners: How often do you feel you are made fun of or rejected because you are wearing a hearing aid?

Hearing impaired non-owners: How often do you feel you are made fun of or rejected because your hearing loss?



Base: N=505





Buying intentions and most important triggers to buy



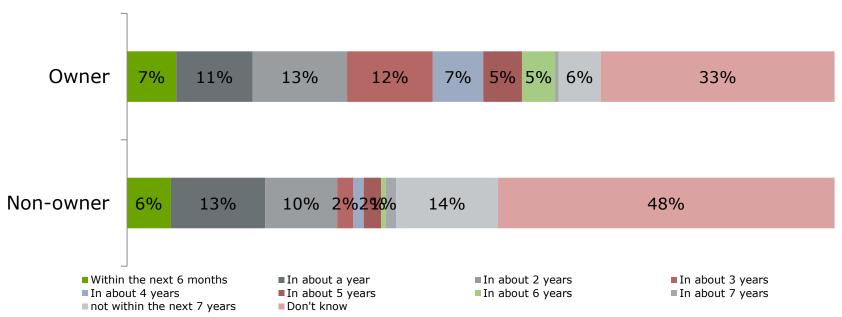






19% (2012:13%) of non-owners intend to get a hearing aid within the next year.







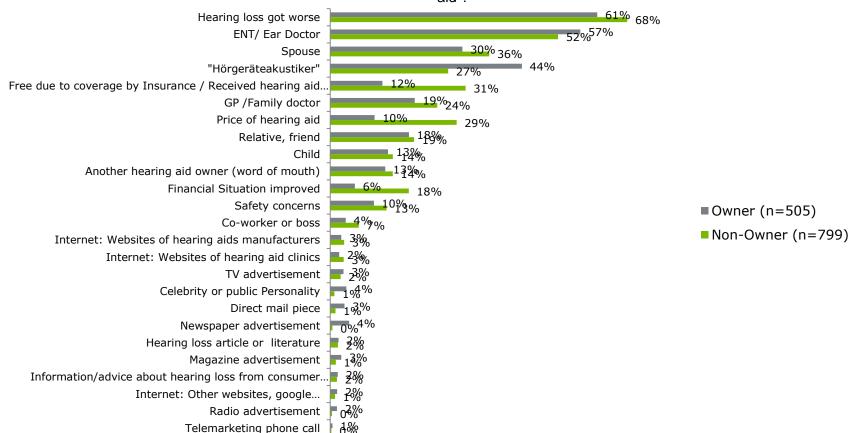




The most important influencing factors are worsening hearing loss, ENT/"Akustiker" and Spouse. Insurance coverage/price of hearing aids is much more relevant for the non owners.

Owner: Thinking back to when you obtained your first hearing aid(s), what influenced you to obtain /purchase the hearing aid(s)?

Non-owner: Think about the option to obtain / purchase a hearing aid. What do you think would influence you to obtain / purchase a hearing aid?



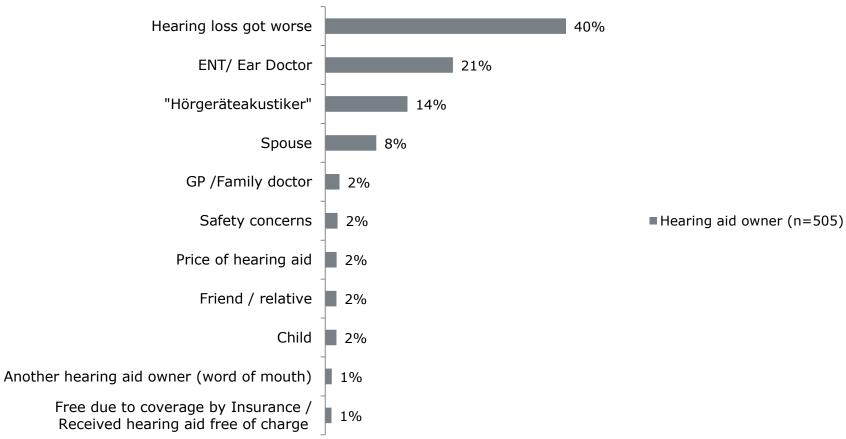






The most important trigger to buy a hearing aid is worsening hearing loss and the ENT followed by "Akustiker" and spouse.

What made you finally decide to get your actual hearing aid(s)?







Stefan Ruf lic. rer. pol.

Anovum GmbH Sumatrastrasse 25 CH-8006 Zürich

Telefon +41 (0)44 576 76 77 Mobil +41 (0)78 717 88 01 Email stefan.ruf@anovum.com

www.anovum.com



Christian Egger lic. phil.

Anovum GmbH Sumatrastrasse 25 CH-8006 Zürich

Telefon +41 (0)44 576 76 78 Mobil +41 (0)76 318 57 51

E-Mail christian.egger@anovum.com

www.anovum.com





EHIMA

Soeren Hougaard

EHIMA secretary general Phone: (+45) 4045 7135

Email: sh@ehima.com







APPENDIX







Sample size and random sample error: Rules of thumb

READ: At a sample size of n=500 and a value of 15% we would expect the real value in an interval +-3.1 around 15% - which means between 11.9% and 18.1% (Conservative assumption: 95% confidence level)

Sample size	Random sample error					
	Real value is within interval:					
	Level of proportion: 50%/50%	Level of proportion: 15%/85%				
50	+- 13.9	+- 9.9				
100	+- 9.8	+- 7.0				
250	+- 6.2	+- 4.4				
500	+- 4.4	+- 3.1				
1000	+- 3.1	+- 2.2				
5′000	+- 1.4	+- 1.0				
10′000	+- 1.0	+- 0.7				









Demographics (1): Hearing instrument adoption rates and populations

Profiles: Categories add to 100%*

	Floilles. Categories and to 100%					0070
	Count	Hearing difficulty	Hearing aid adoption rate % (Base=hearing impaired)	No hearing loss	Hearing loss but no hearing aid	Hearing aid
Gender						
Male	6747	12.7%	33.1%	48.7%	52.5%	48.5%
Female	7028	11.6%	36.7%	51.3%	47.5%	51.5%
Age recoded						
1 - 14	1809	2.6%	33.8%	14.5%	2.9%	2.8%
15 - 24	1482	3.7%	28.4%	11.8%	3.6%	2.7%
25 - 34	1721	5.3%	32.9%	13.5%	5.6%	5.2%
35 - 44	1734	7.2%	15.5%	13.3%	9.8%	3.3%
45 - 54	2322	9.7%	17.7%	17.3%	17.2%	6.9%
55 - 64	1837	15.0%	29.2%	12.9%	17.9%	13.8%
65 - 74	1461	23.0%	35.5%	9.4%	19.4%	20.0%
74+	1408	36.9%	50.7%	7.3%	23.6%	45.3%
Type of household						
single household	1902	19.0%	42.3%	12.7%	19.2%	26.3%
Couple, no kids	4462	16.4%	35.3%	30.9%	43.1%	44.0%
Couple with kid(s)	5453	6.9%	26.0%	41.9%	25.6%	16.8%
Single mom/dad with kid(s)	702	5.8%	10.0%	5.5%	3.4%	0.7%
Retirement home, hospital etc.	135	39.2%	48.5%	0.7%	2.5%	4.4%
Other	1121	10.1%	40.3%	8.3%	6.2%	7.8%











Demographics (2) Hearing instrument adoption rates and populations

	Profiles: Categories add to 100%*						
	Count	Hearing difficulty	Hearing aid adoption rate % (Base=hearing impaired)		No hearing loss	Hearing loss but no hearing aid	Hearing aid
Status							
The head of the household (alone or together with someone)	6652	16.3%	35.0%		46.5%	66.1%	68.0%
The spouse of the head of the household	3304	11.8%	31.2%		24.3%	25.2%	21.8%
Daughter/son of head of household	2896	2.2%	24.3%		23.6%	4.6%	2.8%
Other Person	762	11.1%	48.3%		5.6%	4.1%	7.4%
Employment							
Full time employed	4854	9.0%	19.8%		43.1%	33.3%	15.4%
Part time employed	1445	8.6%	26.0%		12.9%	8.8%	5.8%
Unemployed / not working	839	8.2%	34.0%		7.5%	4.3%	4.2%
Retired under a disability pension scheme (fully or partly)	202	15.3%	38.5%		1.7%	1.8%	2.1%
Early retired under an early retirement benefit scheme	1358	25.5%	42.3%		9.9%	18.8%	25.6%
Retired (at the official retirement age)	1960	29.4%	45.3%		13.6%	29.7%	45.7%
Student / pupil / in training	1208	3.4%	17.1%		11.4%	3.3%	1.3%
Education							
Hauptschule	1606	20.7%	41.4%		12.4%	18.5%	24.3%
Mittlere Reife (Realschule)	2435	10.8%	33.0%		21.2%	16.7%	15.3%
Abitur/Fachabitur	1693	8.3%	35.4%		15.1%	8.6%	8.8%
Lehrabschluss/Anlehre	2606	16.3%	36.8%		21.3%	25.4%	27.6%
Höhere Berufsausbidlung (Techniker, Meister o.Ä.)	792	16.2%	28.1%		6.5%	8.6%	6.2%
Fachhochsulabschluss	887	14.3%	29.0%		7.4%	8.5%	6.4%
Universitätabschluss	1494	11.1%	27.5%		13.0%	11.4%	8.0%
Anderes	351	12.2%	43.3%		3.0%	2.3%	3.3%

