

Results

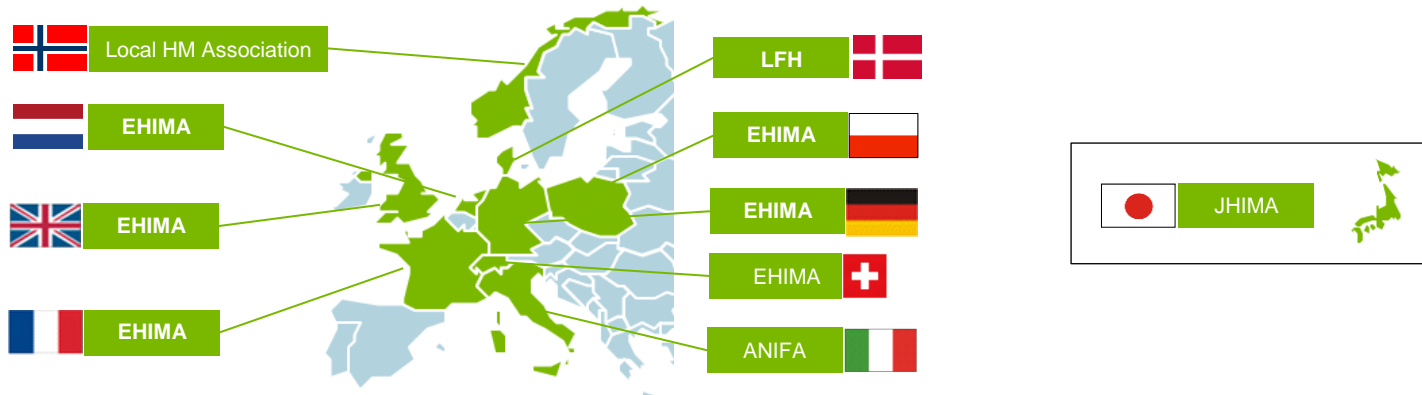
EuroTrak Netherlands 2016

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

Summary

1. Introduction

- EuroTrak Netherlands 2016 was designed and executed by Anovum (Zurich) on behalf of EHIMA.
- Sample sizes Netherlands 2016:
 - Representative sample (sample 1): n=14'339 people
 - Hearing impaired (sample 2): n=1'350 people
 - Hearing impaired non-owners: n=795 people with hearing loss (**HL**)
 - HA owners: n=555 people with hearing aid (**HA**)
- EuroTrak Netherlands 2016 is part of the EuroTrak studies:



Summary

2. Market overview

- Stated hearing loss prevalence
 - Total: 10.1 %, 18+: 11.8%
 - Binaural hearing loss: HA owners: 78%, HA non-owners: 60%.
 - Hearing Tests: 27% had a hearing test in the last 5 years, most tests done by audiologists (37%)
- Hearing aid adoption rate (HA penetration)
 - Total: 41.1%
 - Total age group 18+: 41.8%
 - 74% of HA owners have binaural treatment.
- The route to the hearing aid
 - 68% of the hearing impaired discussed hearing loss with an ENT doctor or family doctor.
 - 47% got hearing aids recommended from the ENT or family doctor (drop out rate=31%).
 - 72% of the GP consultations referred to an ENT. 11% recommended no action.
 - 44% of ENT consultations referred to a audiologist, 33% 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.
 - 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
 - 91% of all HA owners asked got some kind of 3rd party reimbursement.
 - 61% of the currently owned HAs were acquired in 2014 or later.
 - The average age of the currently owned HAs is 3.1 years.
 - The median age of hearing aids before replacement is 5 years.
 - On average, HAs are worn 9.1 hours a day.
 - 31% of today's hearing aid owners are aware of their hearing aid brand, 30% would preferably choose the same brand if they would plan to obtain new hearing aids.
 - Ownership of accessories is generally low, TV box is the one accessory used most often: 11% of hearing aid owners claim to have it – 42% claim to have heard of it but don't own it.
 - 18% of hearing aid owners know what Telecoil is but only 10% have used it – mainly in a house of worship or in a theatre. Most of those who use it are satisfied.
- Importance of listening situations and satisfaction with HAs
 - 85% of the hearing aid owners say their hearing aid works better than or as expected.
 - 73% 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 and talking on the phone are the most important listening situations.
- Positive impact of HAs
 - Significant positive impact of HAs on different aspects: Especially communication effectiveness, ability to participate in group activities and social life improves with hearing aids.
 - 93% 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
 - **While 61% of the hearing impaired without hearing aids don't know whether a third party would pay any part of hearing aids - 93% of the hearing aid owners received some kind of 3rd party reimbursement.**
 - The main reasons for not using hearing aids are that people say "they hear well enough", "hearing loss is not severe enough", "the ENT's opinion" and that they think they are "uncomfortable".
 - **5% who own HAs don't use them at all; 15% use them less than one hour/day. Main reasons for this are: "having hearing loss with high pitch sounds only" and "They do not work well in noisy situations".**

- Social rejection, buying intentions and triggers to buy
 - 90% 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 influencing factors for getting hearing aids are the ENT** and worsening hearing loss. Insurance coverage/price of hearing aids is more relevant for the non owners.
 - 13% of non-owners intend to get a hearing aid within the next year.

Results

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Detailed Results: Roadmap

1. Introduction

- Organisation of EuroTrak 2016
- 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 2016

Organisation

- Principal of the project EuroTrak Netherlands is EHIMA.
- 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

- EHIMA may use the anonymous data (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 EHIMA uses 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 – Netherlands/[year]/n=[relevant sample size]”
- Any member of EHIMA 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=14'339** people based on census data.

Step 2: Target population interviews

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

Process:

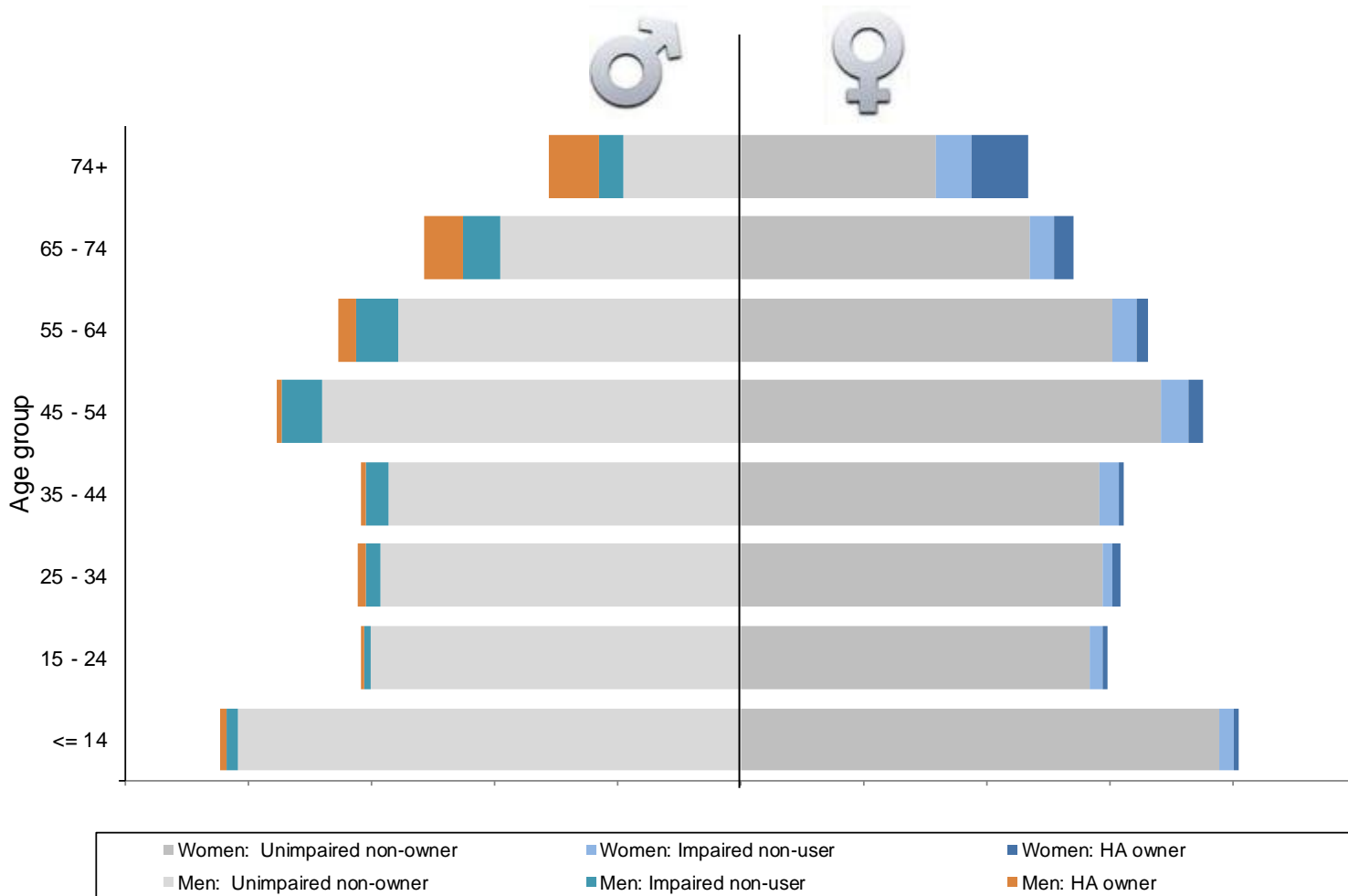
1. Main questionnaires: Owners and hearing impaired non-owners
2. Balancing through weighting according to representative screening interviews
3. Resulting sample: **n=555** hearing aid owners and **n=795** hearing impaired non-owners

2. Market overview

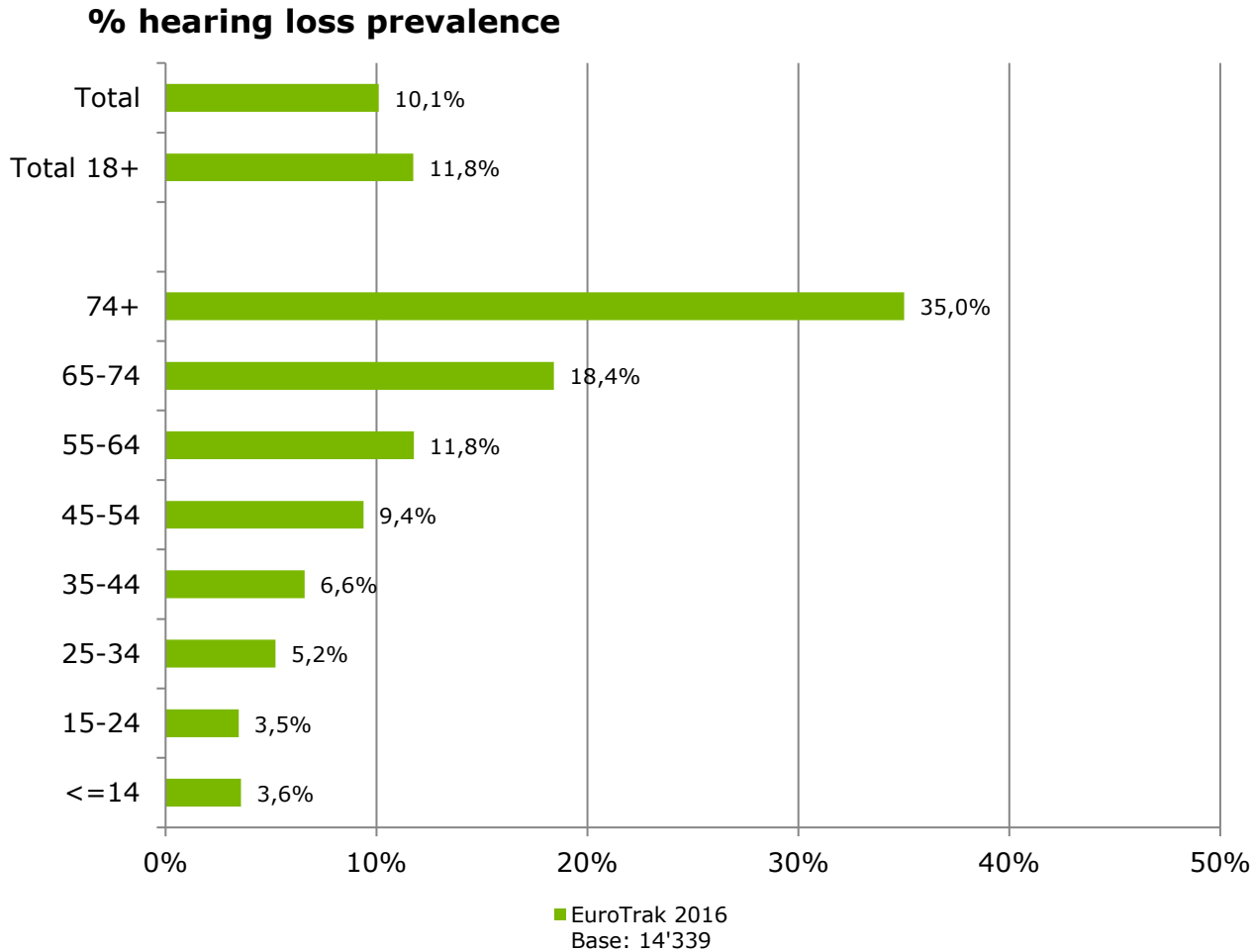
Prevalence of hearing loss and adoption rate



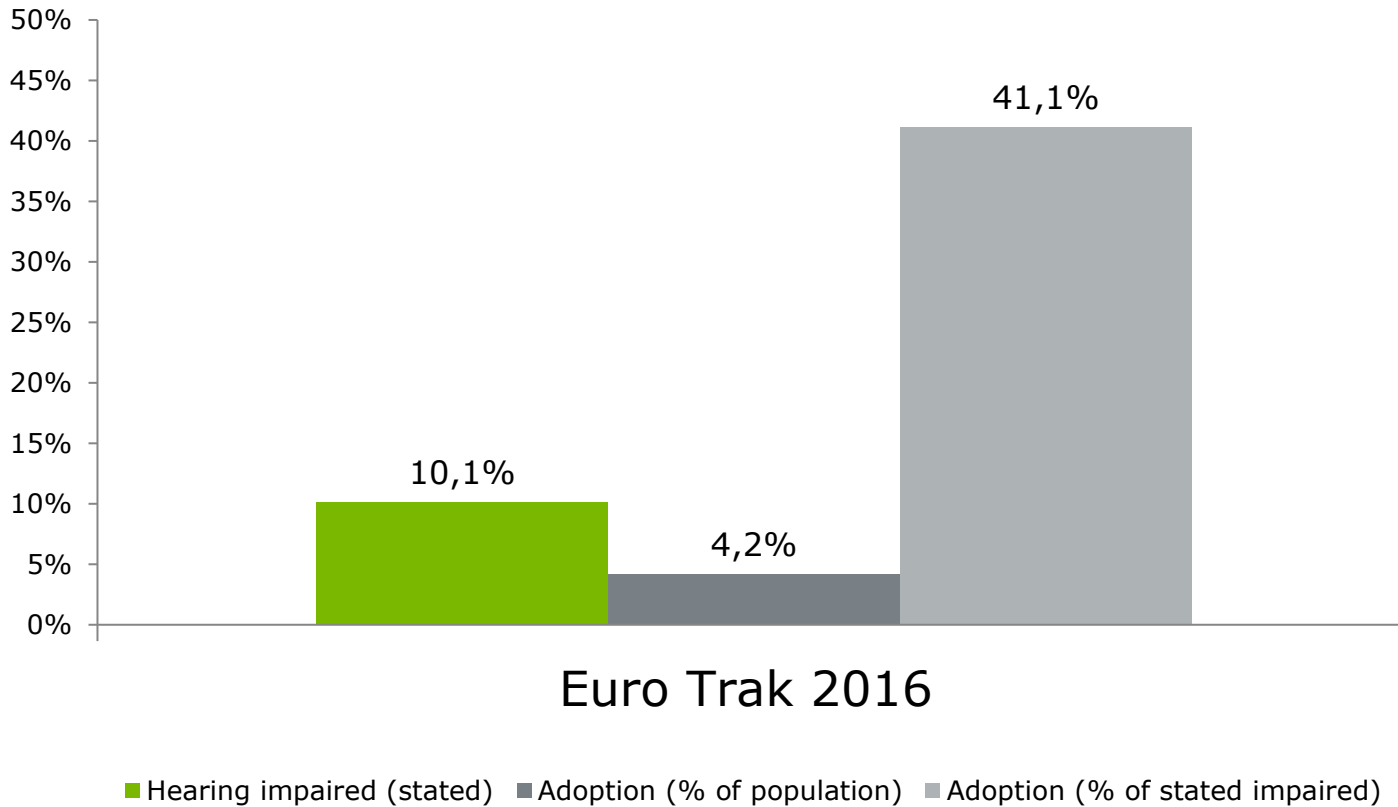
Hearing loss and hearing instrument ownership by gender/age



Hearing loss prevalence Netherlands 2016



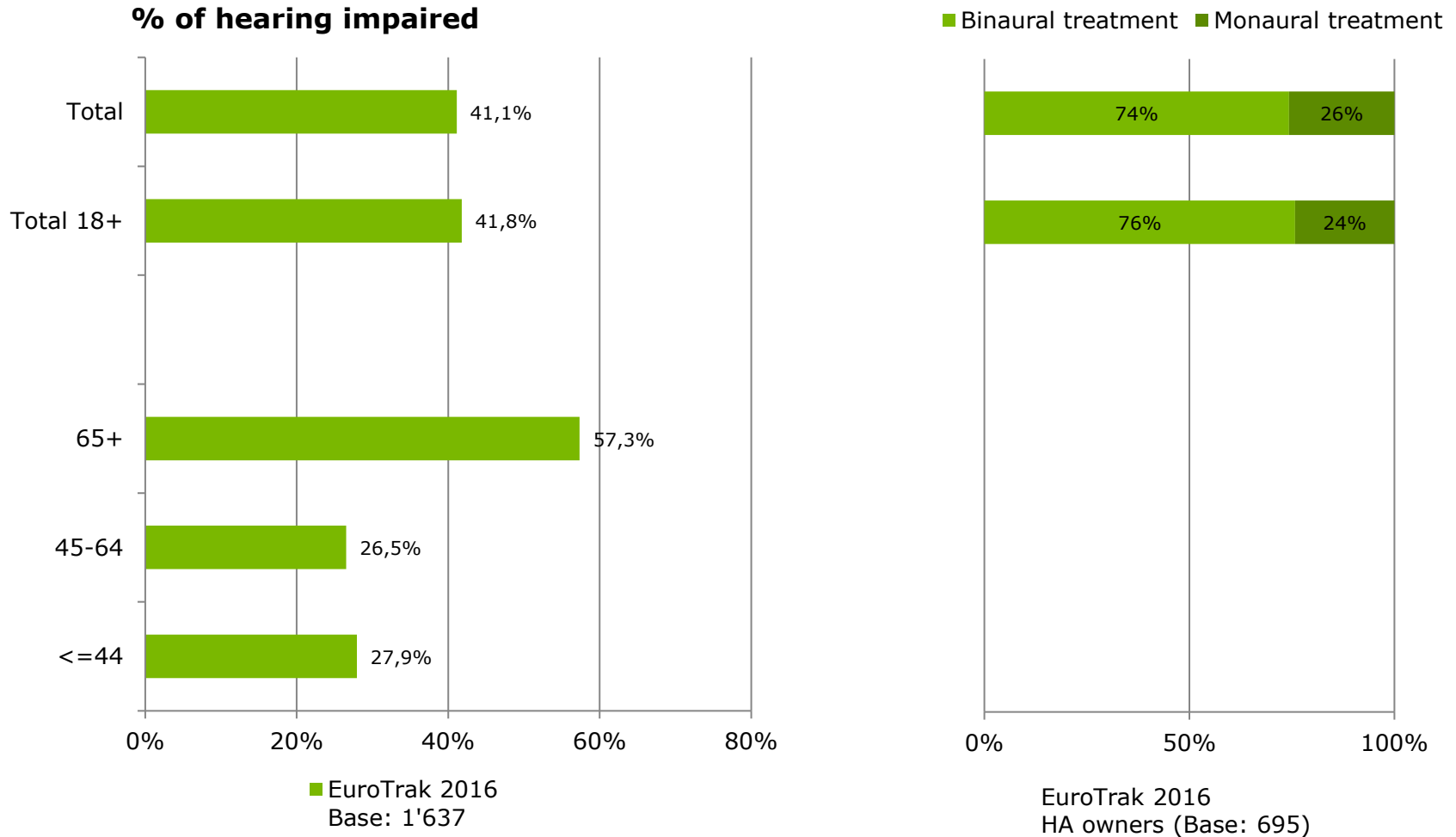
Overview hearing loss prevalence and hearing aid adoption





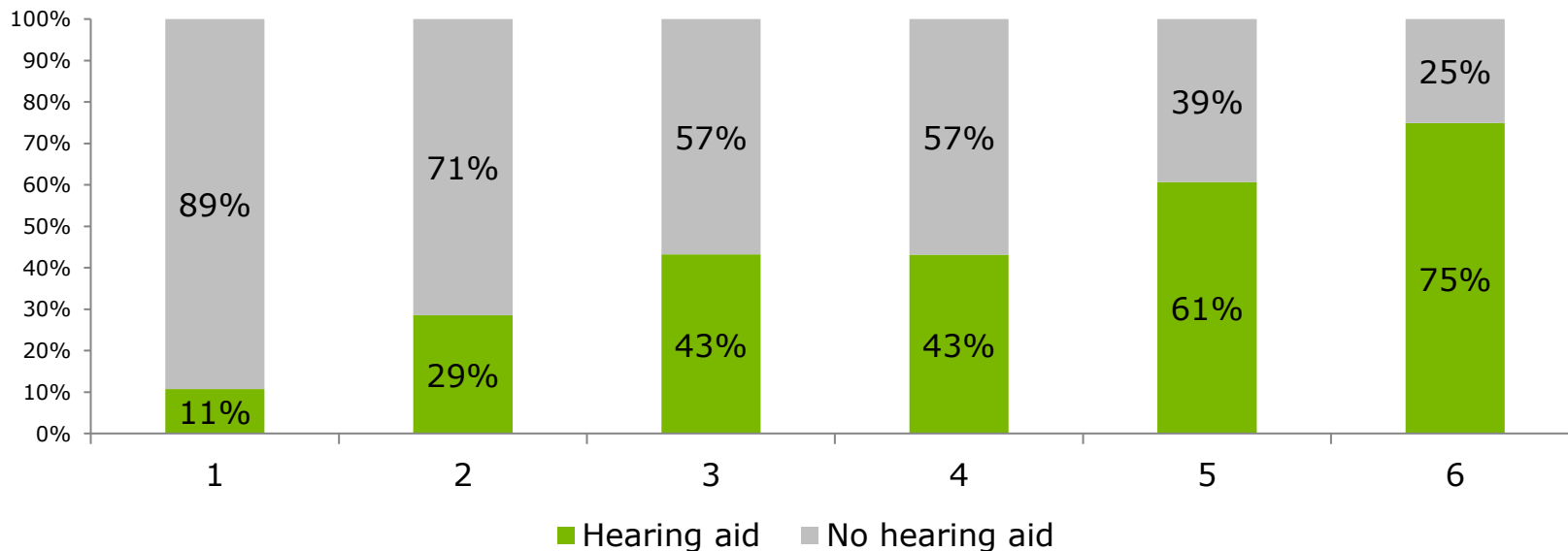
Hearing aid adoption rate Netherlands 2016

41.1% of hearing impaired have hearing aid(s), 74% of them have binaural treatment





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



Hearing loss 6-groups

HA-non-owner, n=795
HA-owner, n=555

* 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).

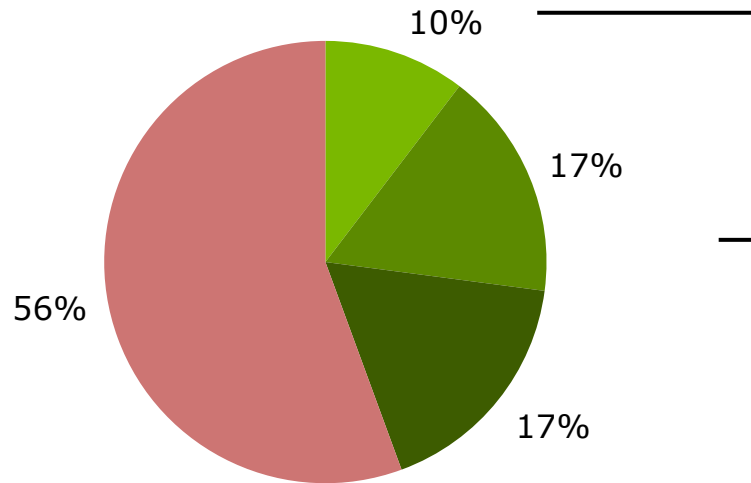


Hearing tests and where hearing is tested

Hearing Tests: 27% had their hearing tested in the last 5 years – most tests are done by audiologists

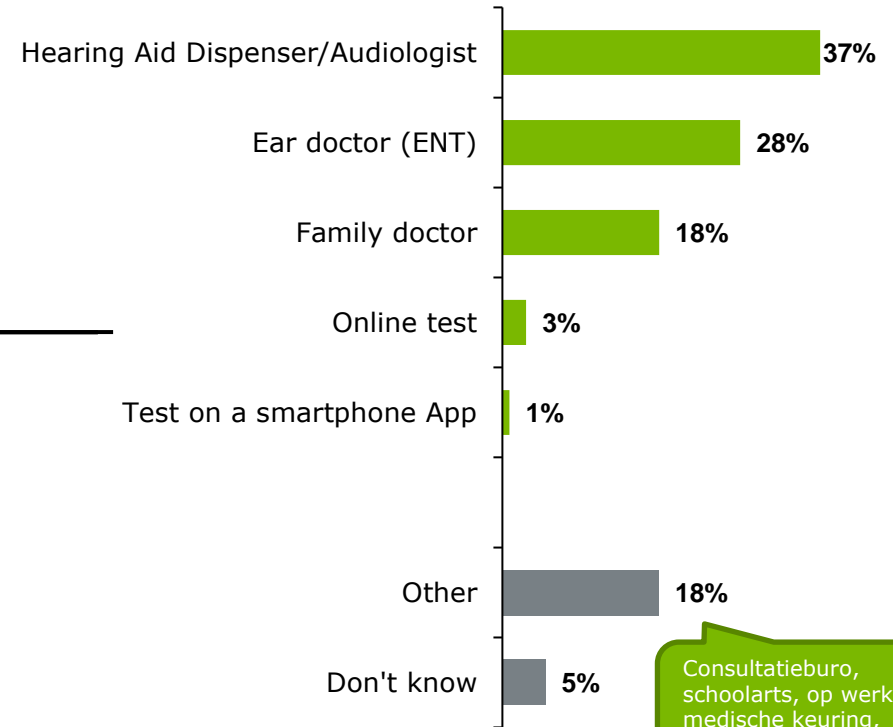
Have you ever taken a hearing test?

- Yes, in the last 12 months
- Yes, in the last 1-5 years
- Yes, more than 5 years ago
- No, never



Base=11'245

Where/how was your hearing tested?



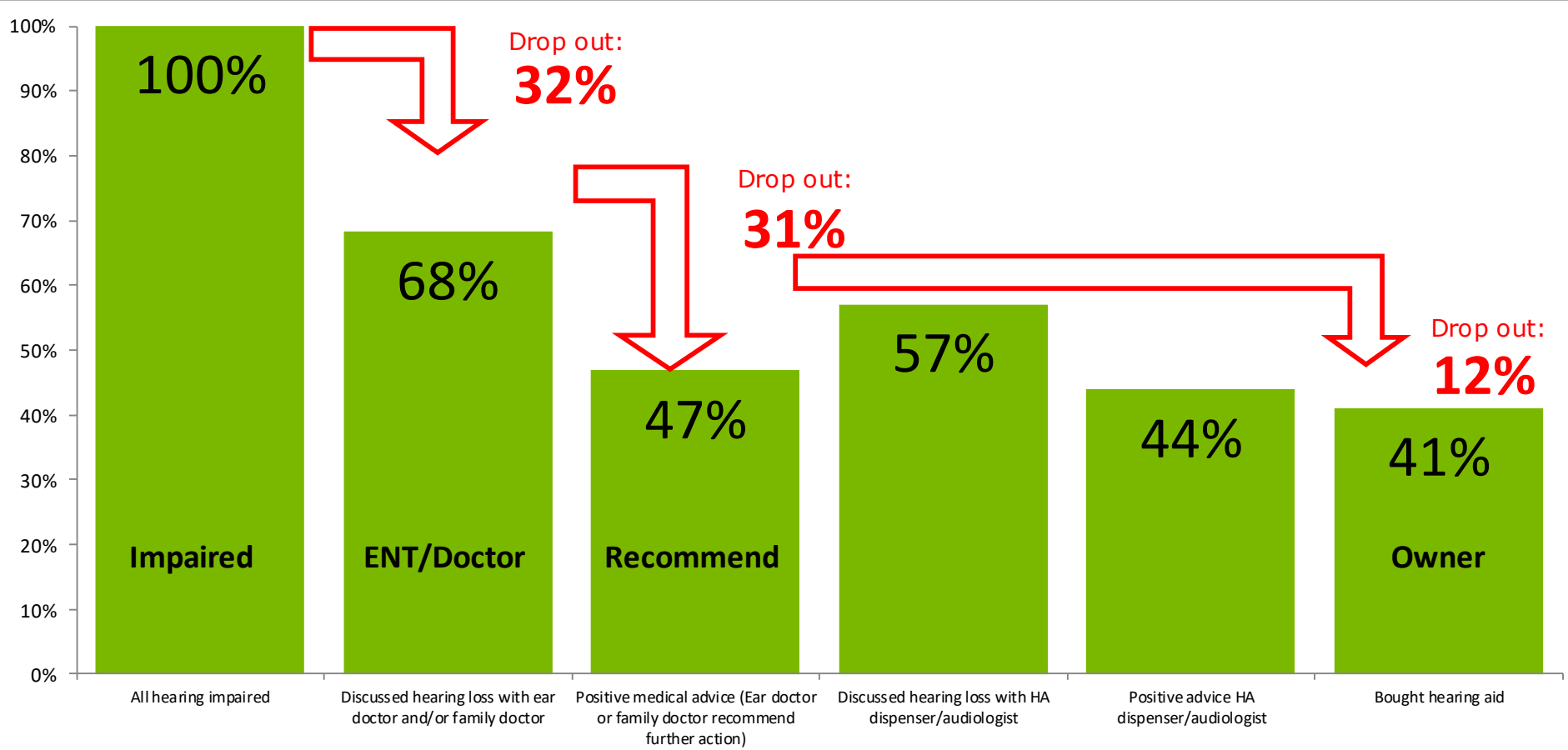
Base= 3'143

Consultatieburo, schoolarts, op werk, medische keuring, bedrijfsarts

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



The route to the hearing aid



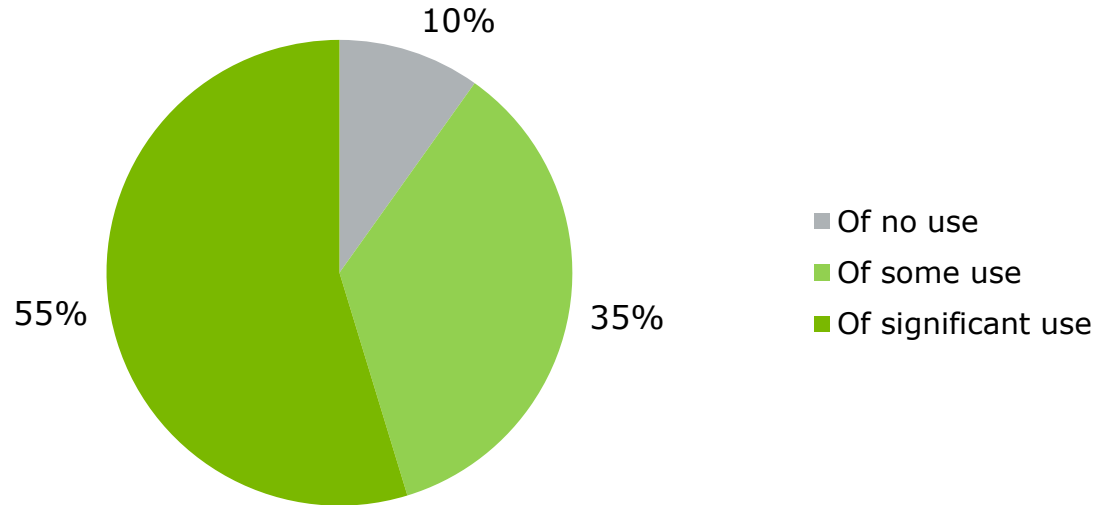
Base: n=1'350



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

Work competitiveness: 90% 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?

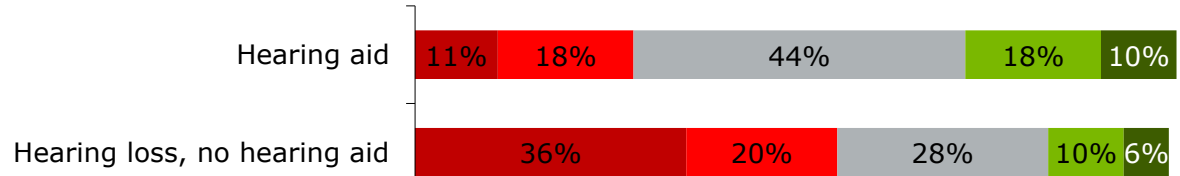




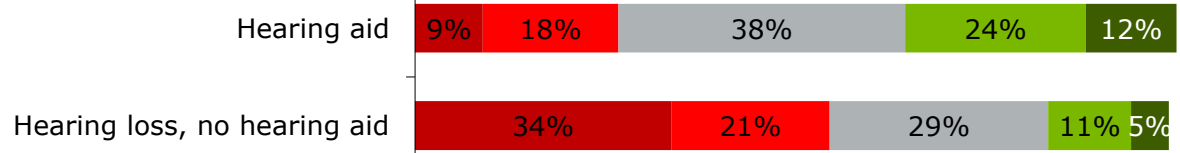
Work competitiveness: People with hearing aids recognize that hearing aids increase the chance of hearing impaired to get promoted, to get the right job and to get more salary.

■ Disagree strongly ■ Rather disagree ■ Neutral ■ Rather agree ■ Strongly agree

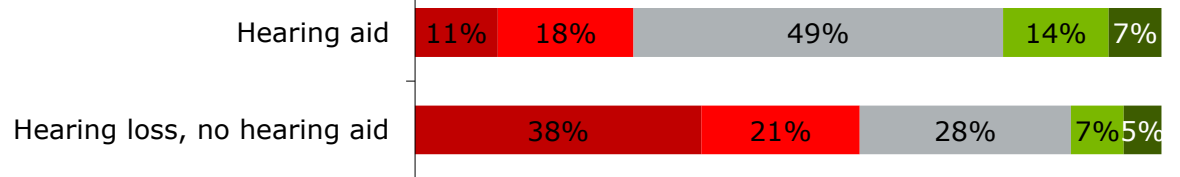
I think that people with an untreated hearing loss tend to be less promoted in their job



I think that people with an untreated hearing loss tend not to get the job they deserve



I think that people with an untreated hearing loss tend to be under salaried



Base: Hearing loss, no hearing aid =559/ hearing aid n=384





General health problems: Hearing aid owners have a lower risk of becoming depressive and being forgetful compared to impaired non-owners with comparable hearing loss (Top50% hearing loss group*).

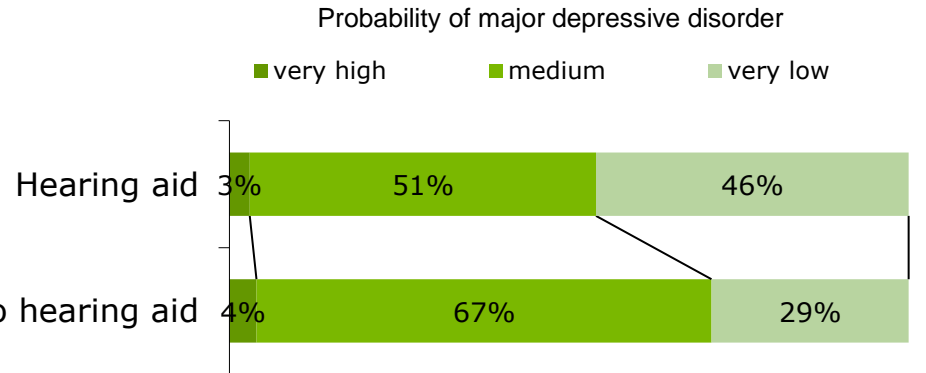
Depression symptoms:

PHQ-2 Screening:

In the last 2 weeks:

- Little interest or pleasure
- Feeling down, depressed, hopeless

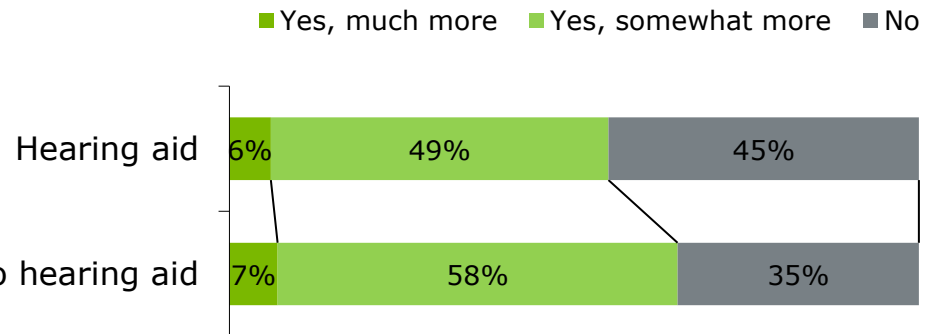
Top 50% hearing loss, no hearing aid



Dementia symptom:

Getting more forgetful in the last year?

Top 50% hearing loss, no hearing aid



Base: hearing aid n=436 / top 50% no hearing aid =158

*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).

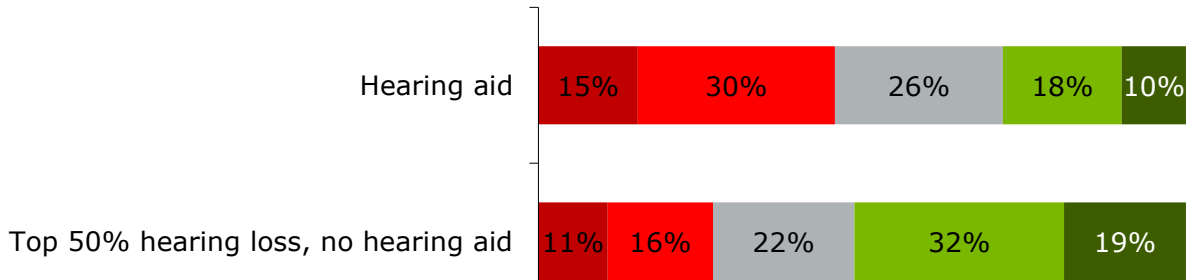




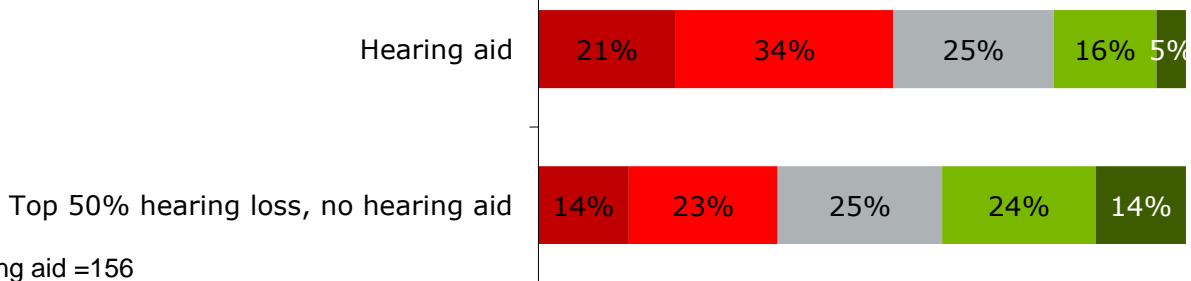
General health problems: Compared to impaired hearing aid non-owners with significant hearing loss (Top 50% hearing loss*), hearing aid owners feel less exhausted in the evenings

■ Disagree strongly ■ Rather disagree ■ Neutral ■ Rather agree ■ Strongly agree

In the evenings I often feel physically exhausted



In the evenings I often feel mentally exhausted



Base: hearing aid n=423 / top 50% no hearing aid =156

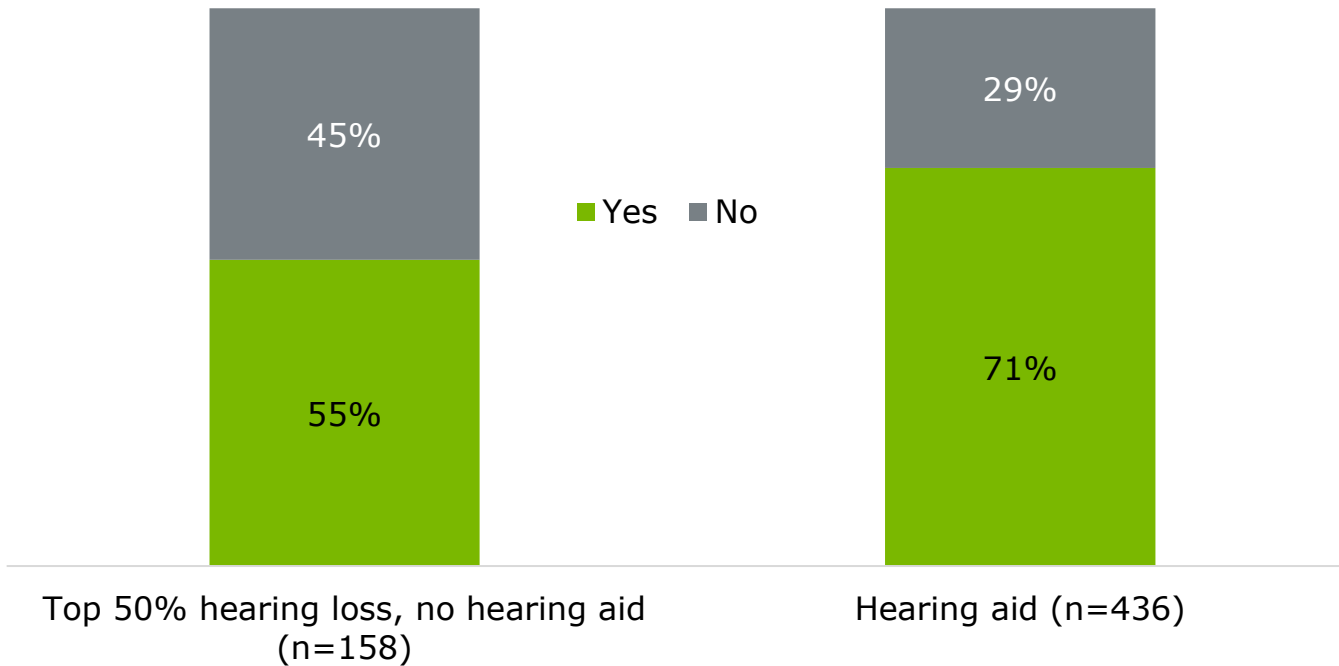
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- Number of ears impaired (one or two)
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 - Scores on 6 APHAB-EC – like questions (Scaled 1-5)
 - When NOT using a hearing aid, how difficult is it for you to follow conversations in the presence of 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?

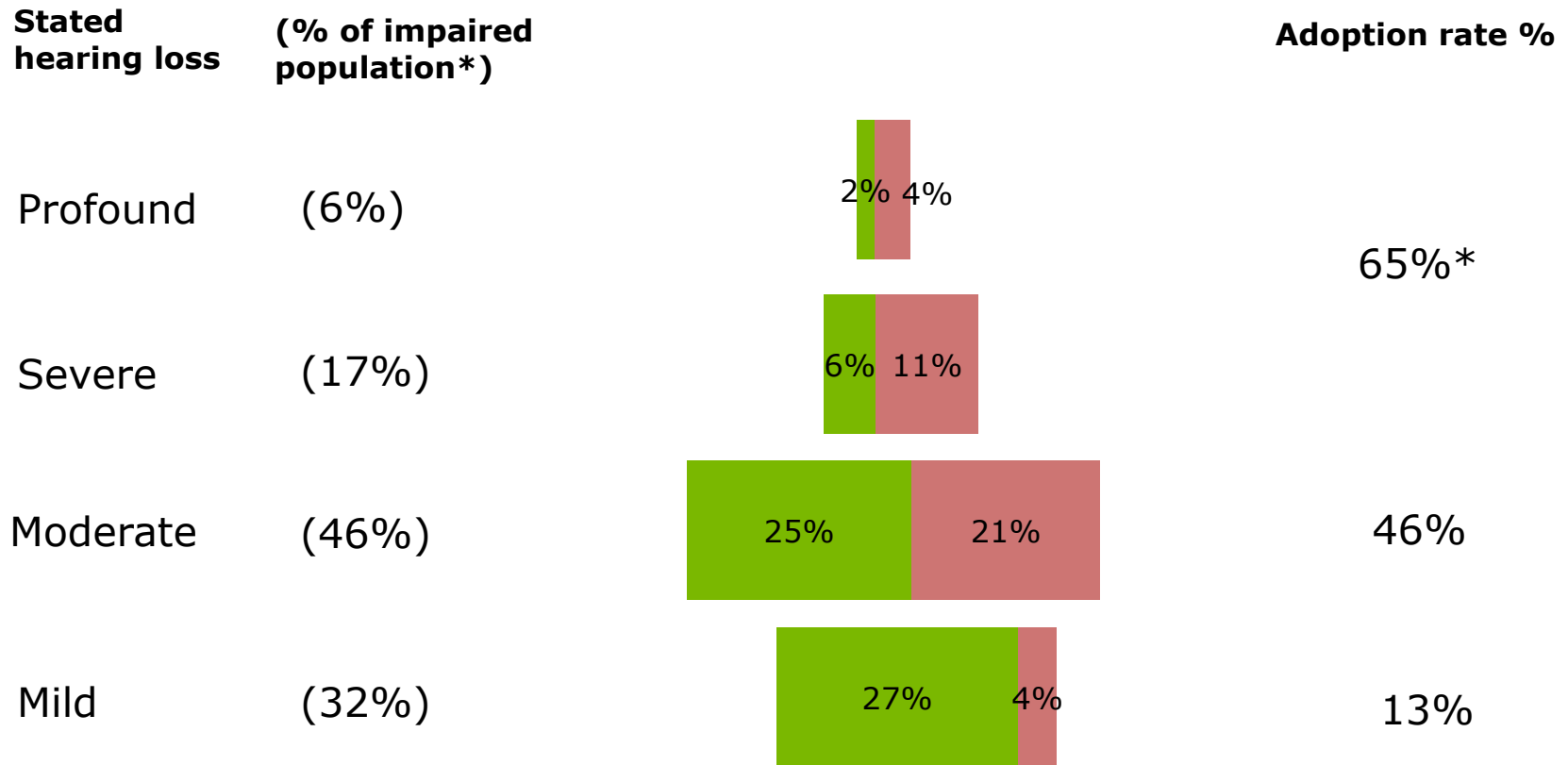


3. Analysis of hearing aid owners

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



Very low adoption rates within mild hearing loss



Base: n=1'350

Sums can differ from 100% due to rounding

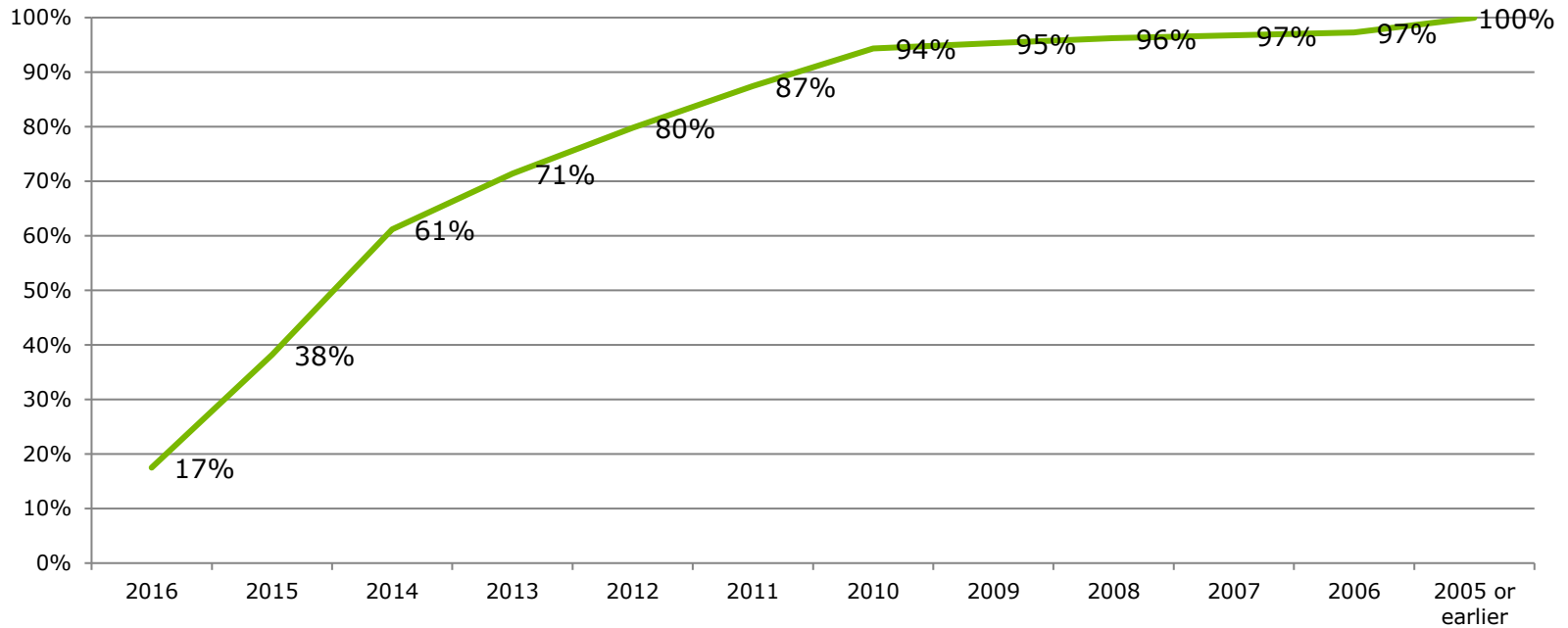
* combined "severe" and "profound" because n is too small





61% of the currently owned HAs were acquired in 2014 or later

Year of purchase



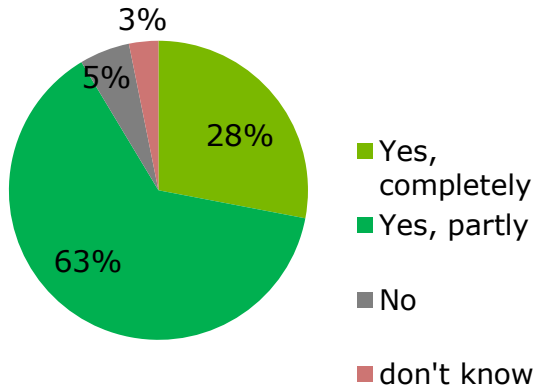
Age of currently owned HAs (Mean): 3.1 years

HA-owner, n=543



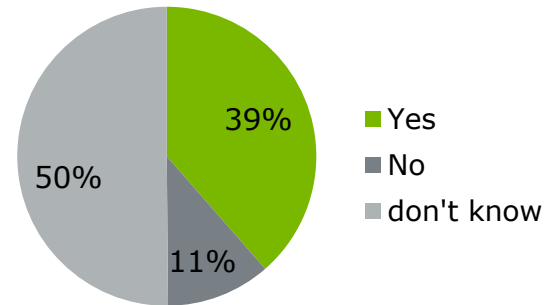
91% received some kind of 3rd party reimbursement.
 Information deficit non-owners: **only 39% know whether government/insurance would pay**

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



HA-owner, n=555

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, ...)

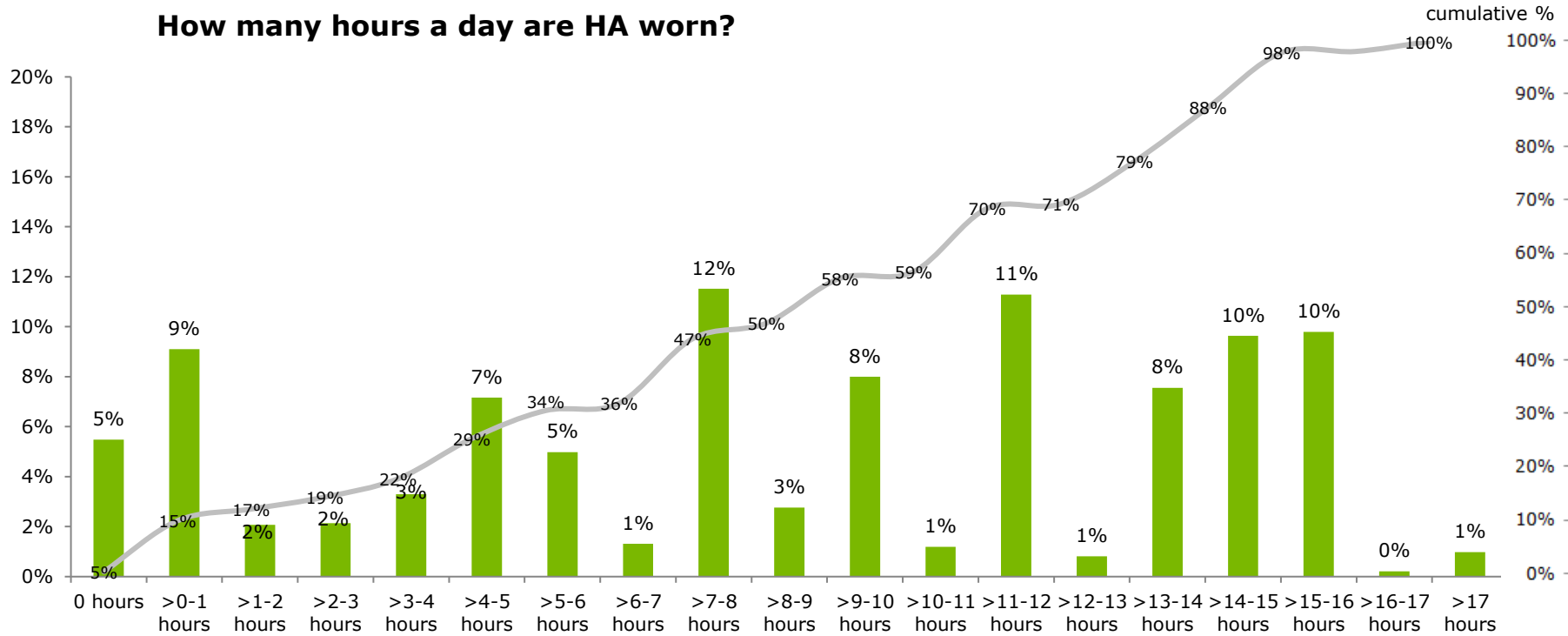


HA-non-owners, n=795



On average, HAs are worn 9.1 hours a day

How many hours a day are HA worn?



HA worn:
Mean: 9.1 hours/day

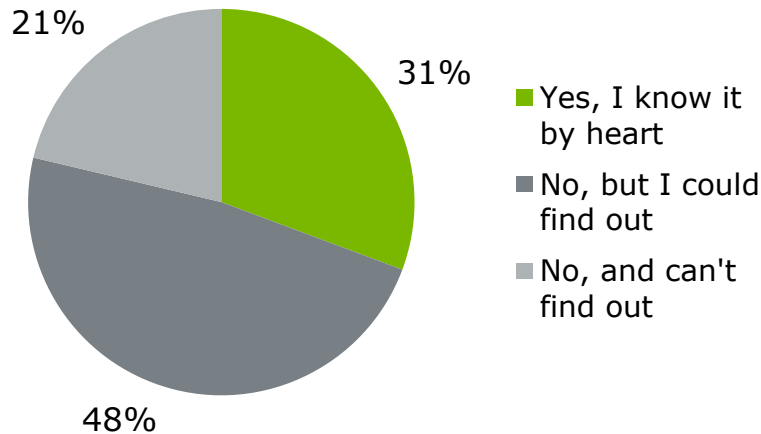
In the drawer (0 hours): 5%

HA-owner, n=555

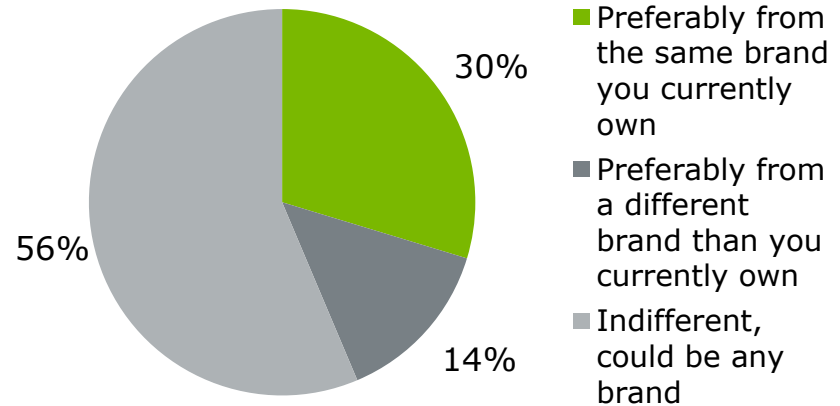


31% of today's hearing aid owners are aware of their hearing aid brand

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



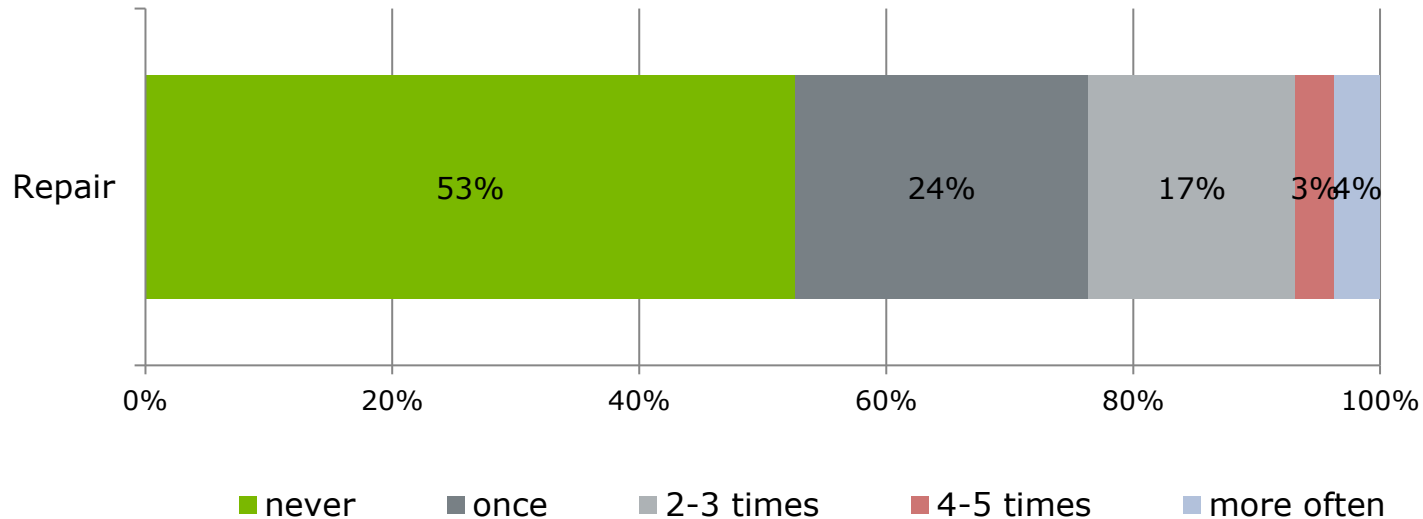
In case you plan to obtain new hearing aid(s), what brand would you choose?





77% 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, n=555

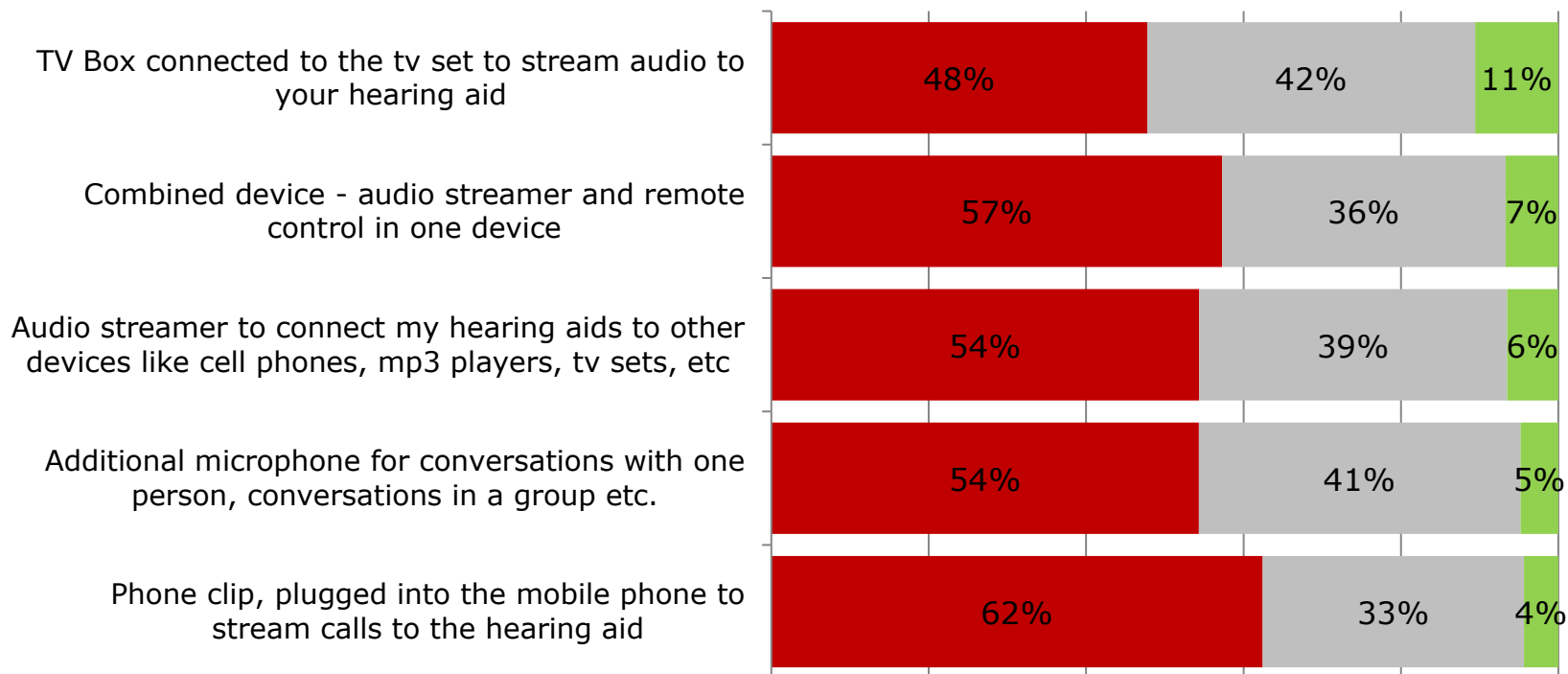


Awareness and usage of accessories and Telecoil



Ownership of accessories is generally low, TV box is the one accessory used most often

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



■ Never heard of this before
 ■ Heard of this before but don't own one
 ■ I own one

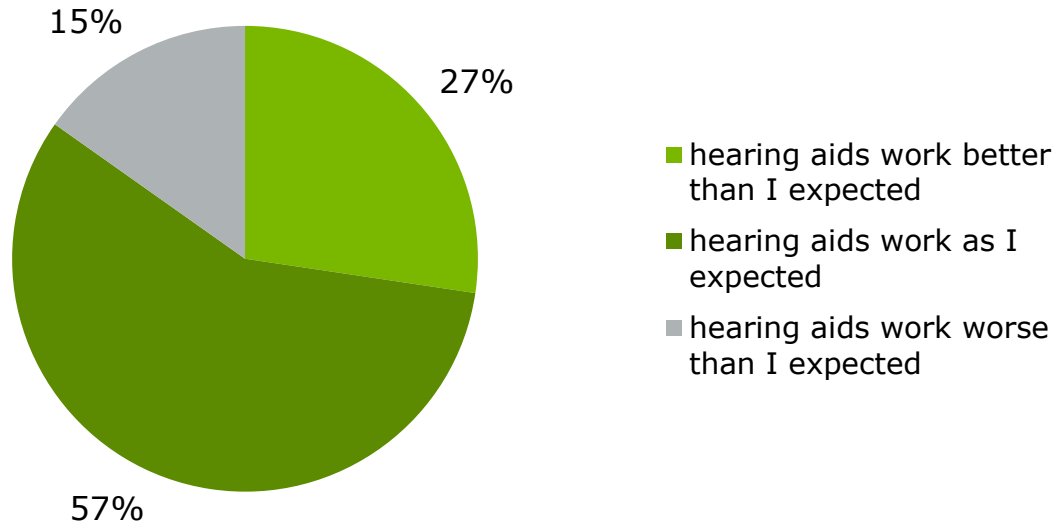
Base: N=555



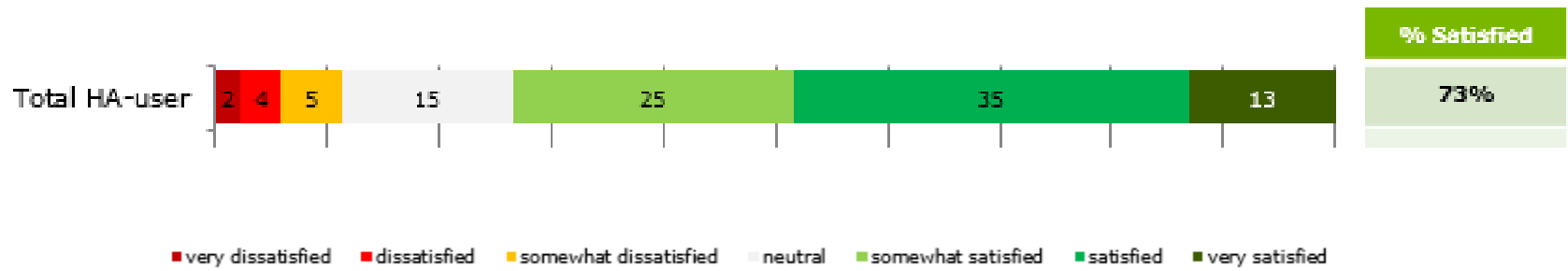
Satisfaction with hearing aids and drivers

85% 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?



Overall satisfaction with HA

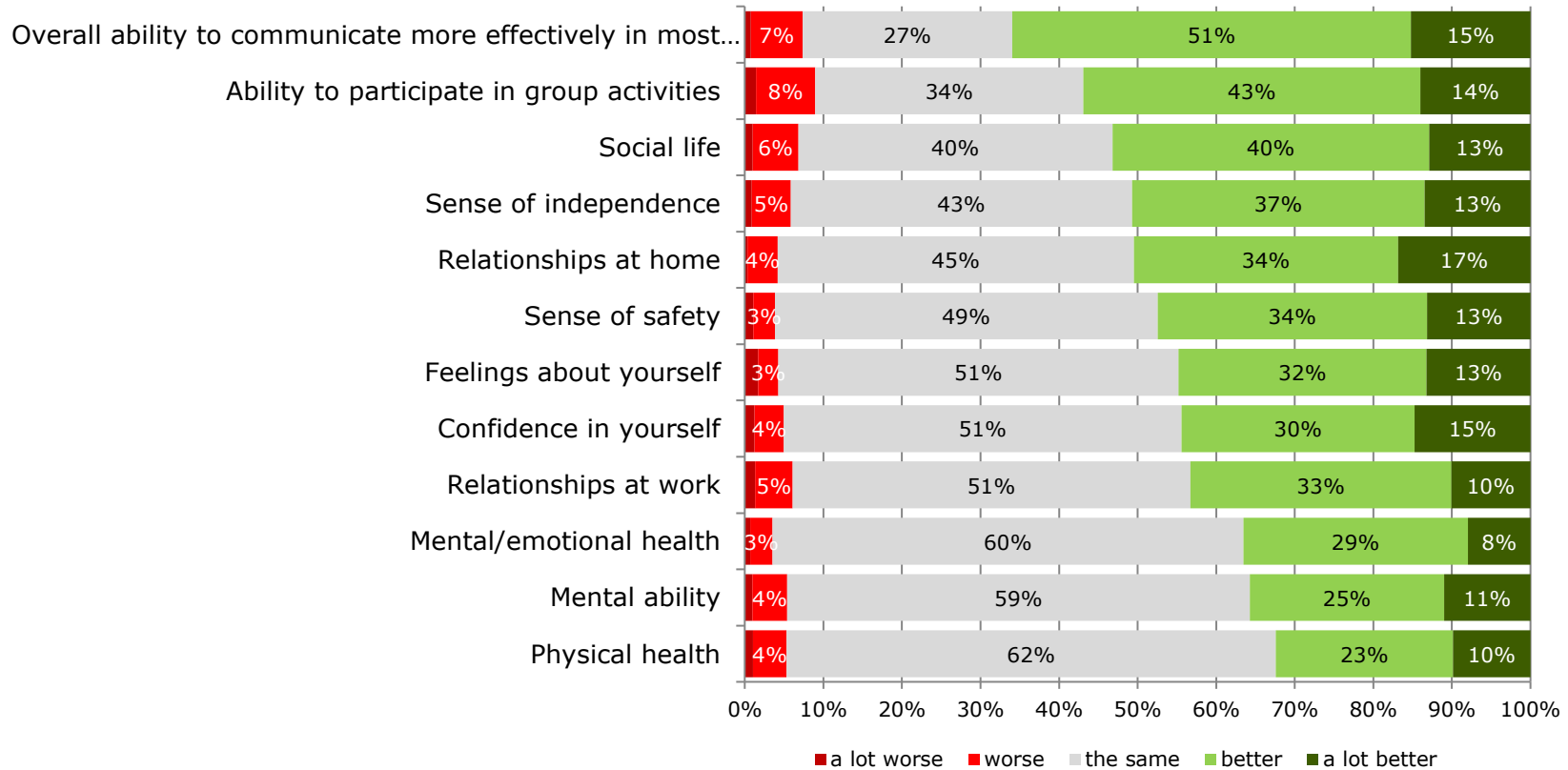


Overall Satisfaction with HA: Country comparison

	Netherlands	Poland	France	Switzerland	UK	Denmark	Norway	Italy	Japan
Overall satisfaction 2012	-	-	80%	84%	72%	70%	72%	70%	36%
Overall satisfaction 2015/16	73%	80%	84%	81%	70%	71%	-	79%	39%

Positive impact of hearing aids, quality of life

Significant positive impact of HAs on different aspects: Especially communication effectiveness, ability to participate in group activities and social life improves with hearing aids.



HA-owner, n=555



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

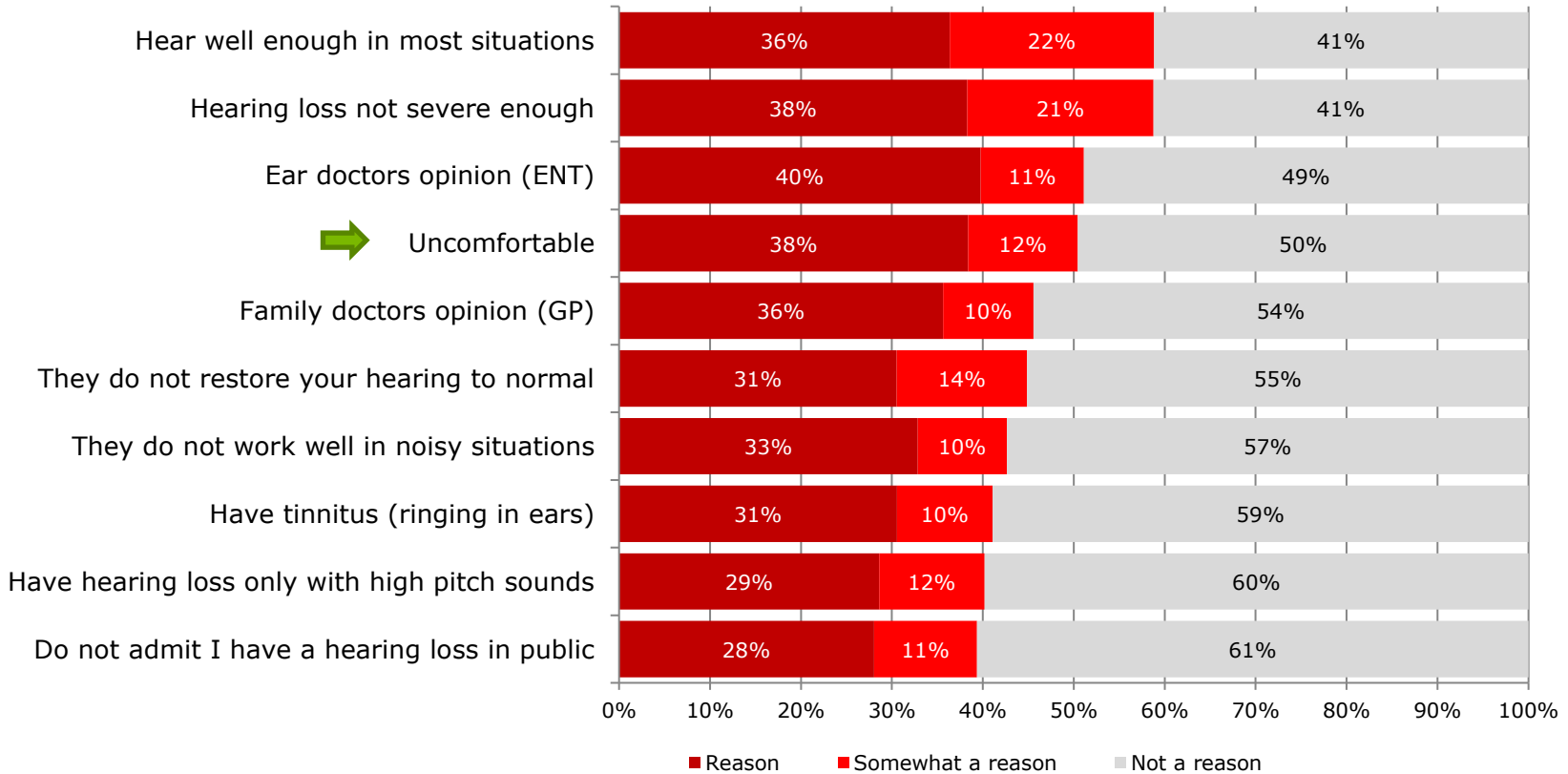
Hearing loss characteristics: Owners compared to non-owners

	% HA Owner (n=555)	%HA-Non-owner Low 50% HL (n=482)	%HA-Non-owner Top 50% HL (n=270)
Ears impaired			
Unilateral loss	22%	45%	35%
Bilateral loss	78%	55%	65%
Perceived loss		More similar hearing loss-structure	
Mild	10%	56%	16%
Moderate	52%	34%	58%
Severe	28%	8%	19%
Profound	10%	2%	7%





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



Base: non owners Top 50% HL: n=227

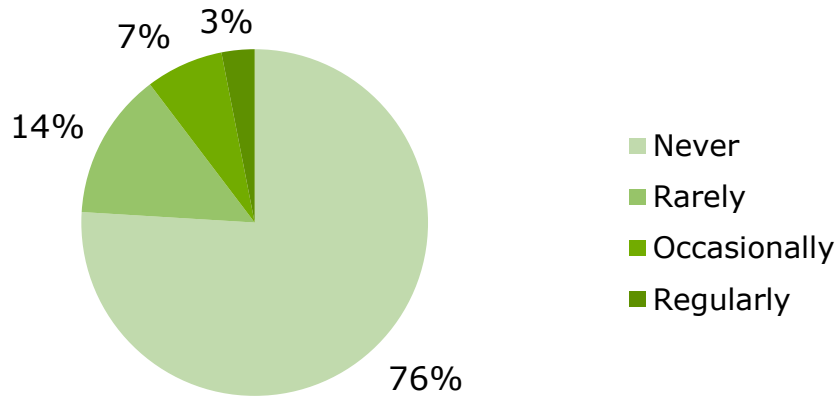


Social rejection because of hearing loss compared to the acceptance of hearing aids

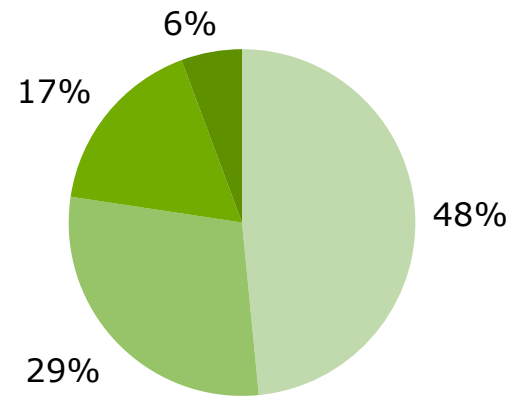


90% of hearing aid owners think people rarely or never make fun of or reject them because of their hearing aids. It is more likely somebody makes fun or rejects a hearing impaired without hearing aid.

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



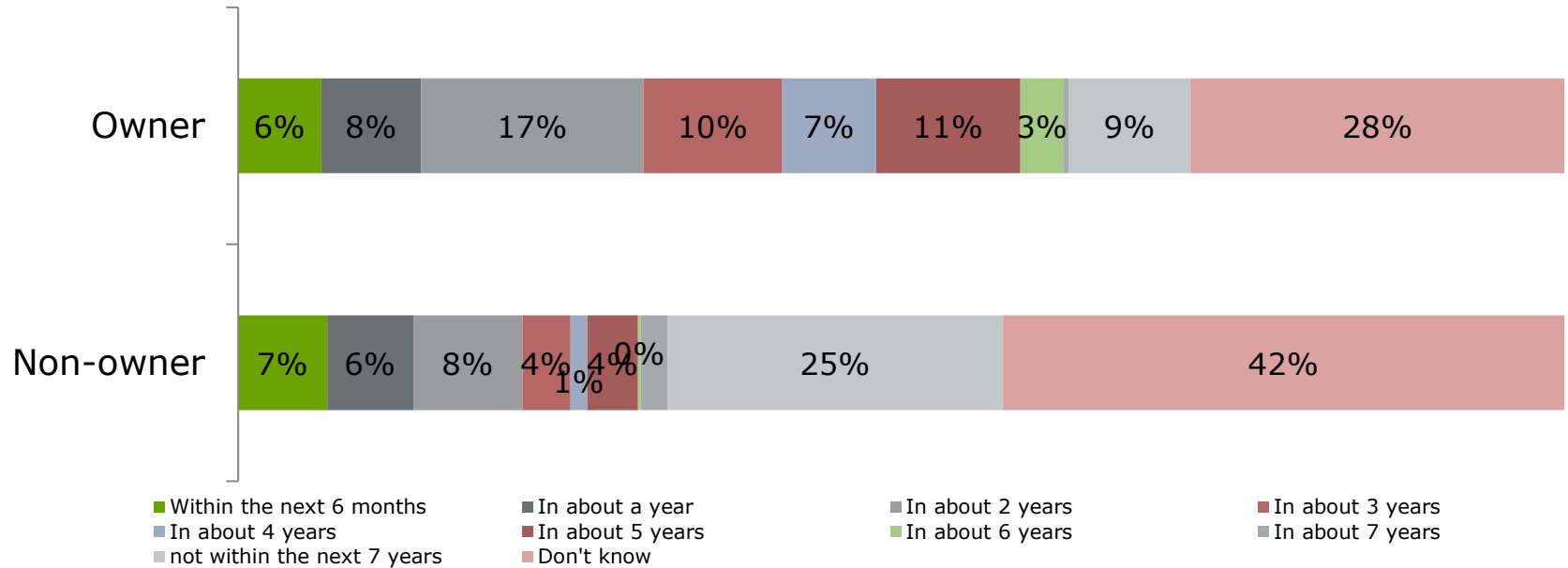
**Hearing impaired non-owners:
How often do you feel you are made fun of or rejected because your hearing loss?**



Buying intentions and most important triggers to buy

13% of non-owners intend to get a hearing aid within the next year. Re-buying intention is higher than first-buying intention

Buying intention hearing impaired in %



HA-non-owner, n=795
 HA-owner, n=555





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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	
	Level of proportion: 50%/50%	Level of proportion: 15%/85%
	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%*

	Count	Hearing difficulty	Hearing aid adoption rate % (Base=hearing impaired)	No hearing loss	Hearing loss but no hearing aid	Hearing aid
Gender						
Male	7'094	11.0%	40.1%	49.0%	54.6%	52.3%
Female	7'245	9.3%	42.3%	51.0%	45.4%	47.7%
Age recoded						
1 - 14	2'374	3.6%	28.9%	17.8%	7.1%	4.1%
15 - 24	1'737	3.5%	27.4%	13.0%	5.1%	2.8%
25 - 34	1'778	5.2%	38.0%	13.1%	6.7%	5.9%
35 - 44	1'775	6.6%	19.5%	12.9%	11.0%	3.8%
45 - 54	2'159	9.4%	22.5%	15.2%	18.4%	7.7%
55 - 64	1'885	11.8%	30.2%	12.9%	18.1%	11.2%
65 - 74	1'513	18.4%	47.7%	9.6%	17.1%	22.3%
74+	1'119	35.0%	64.2%	5.6%	16.4%	42.2%
Type of household						
single household	1'675	18.2%	45.9%	10.6%	19.3%	23.4%
Couple, no kids	3'663	13.5%	48.7%	24.6%	29.7%	40.4%
Couple with kid(s)	6'882	6.7%	27.8%	49.8%	38.9%	21.5%
Single mom/dad with kid(s)	943	5.7%	51.7%	6.9%	3.0%	4.7%
Retirement home, hospital etc.	152	34.0%	65.3%	0.8%	2.1%	5.7%
Other	1'024	8.4%	30.7%	7.3%	7.0%	4.4%



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)	5'856	14.5%	42.4%	39.2%	58.7%	64.3%
The spouse of the head of the household	3'880	10.1%	41.8%	27.3%	27.5%	29.3%
Daughter/son of head of household	3'897	2.8%	23.3%	29.6%	9.9%	4.5%
Other Person	543	7.9%	25.4%	3.9%	3.9%	1.9%
Employment						
Zelfstandig ondernemer	905	9.0%	26.5%	7.9%	7.6%	3.8%
Werkzaam in loondienst	5'001	6.9%	24.9%	44.4%	32.9%	15.1%
Werkzaam bij de overheid	490	10.3%	42.0%	4.2%	3.7%	3.7%
Arbeidsongeschikt	512	18.1%	41.6%	4.0%	6.8%	6.7%
Werkloos / werkzoekend / bijstand	524	8.8%	19.5%	4.6%	4.7%	1.6%
Gepensioneerd of VUT	2'255	26.5%	56.7%	15.8%	32.6%	59.2%
Studerend / schoolgaand	1'136	3.0%	12.0%	10.5%	3.8%	0.7%
Huisvrouw / huisman / anders	1'026	11.2%	45.7%	8.7%	7.9%	9.2%
Education						
Geen onderwijs / basisonderwijs / cursus inburgering / cursus Nederlandse taal	505	22.6%	58.4%	3.7%	6.0%	11.7%
LBO / VBO / VMBO (kader- of beroepsgerichte leerweg) / MBO 1 (assistentenopleiding)	1'485	17.9%	47.9%	11.6%	17.5%	22.3%
MAVO / HAVO of VWO (eerste drie jaar) / VMBO (theoretische of gemengde leerweg) / voortgezet speciaal onderwijs	1'265	13.6%	44.3%	10.4%	12.1%	13.3%
MBO 2, 3, 4 (basisberoeps-, vak-, middenkader of specialistenopleiding) of MBO oude structuur (voor 1998)	3'046	9.9%	35.4%	26.2%	24.5%	18.6%
HAVO of VWO (overgegaan naar de 4e klas)	1'047	9.3%	41.0%	9.1%	7.2%	7.0%
HBO propedeuse of WO propedeuse / HBO (behalve HBO-master) / WO-kandidaats of WO-bachelor	3'031	9.3%	36.8%	26.2%	22.4%	18.1%
WO-doctoraal of WO	1'078	8.4%	32.9%	9.4%	7.7%	5.2%
ander	391	10.9%	51.8%	3.3%	2.6%	3.8%