

# How's Your Otolaryngology Training? A Survey of Recent Otolaryngology Residents

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## ABSTRACT

### Objectives:

To survey graduating or recent graduates of otolaryngology residency programs to evaluate their otology experience in residency and discern if they had received adequate otology training to pursue a fellowship in otology or neurotology..

### Study Design: Internet-based Survey

Methods: A survey was distributed to program directors of all US otolaryngology residency programs to distribute to 5<sup>th</sup> year residents and recent graduates of last 4 years. The survey assessed overall satisfaction in otology experience as well as overall quality of training based on several metrics.

Results: 106 responses were obtained. 89/106 (84%) of respondents felt they had adequate training in otology to pursue a fellowship and were found to observe and perform surgeries significantly earlier in training by post-graduate year (PGY) including: mastoidectomy (observed PGY 1.9 vs. PGY 2.3, performed PGY 2.9 vs. PGY 3.5), ossiculoplasty (observed 2.1 vs 3.0, performed 3.6 vs. 4.3), stapedectomy (observed 2.3 vs 3.0, performed 3.9 vs. 4.5), and cochlear implant (observed 2.1 vs 2.8, performed 3.4 vs. 4.1) all  $p < 0.05$ . 19/106 (17.9%) of respondents had fellows in residency in which 15/19 (78.9%) believed fellows were beneficial to their otology experience.

Conclusion: Early exposure to otology surgeries benefits residents' decision on pursuing a fellowship in otology or neurotology. The presence of fellows appears to enhance resident training.

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## INTRODUCTION

- To our knowledge, surgical experience in Otolaryngology/Neurotology in residency training has not been evaluated
- Surgical exposure to otologic procedures may be limited to senior years of residency in some programs
- Applying for an Otolaryngology/Neurotology fellowship occurs in the 4<sup>th</sup> year of residency which could pose a problem concerning adequate exposure to the field prior to applying.
- We hypothesized that trainees with earlier exposure and ability to perform certain otologic procedures may be better informed and prepared to decide on pursuing a fellowship.

## METHODS

- An anonymous, web-based survey of senior residents, and graduates from the last 4 years from approved ACGME programs was performed.
- The survey was prepared using the Research Electronic Data Capture (Redcap), internet-based data capture platform at West Virginia University.
- Survey respondents could elect to enter their emails into a pool for random drawing of a \$100 gift card to encourage participation.

Demographics of Survey Participants		
<b>Current Status</b>		
Total participants	106	100.0%
PGY-5	38	35.8%
Otology fellow/faculty	9	8.5%
Other graduate	59	55.7%
<b>Location of residency program</b>		
Northeast	30	28.3%
Southeast	34	32.1%
Midwest	30	28.30%
Northwest	4	3.8%
Southwest	8	7.5%
<b>Residents in graduating class</b>		
1 Res	7	6.6%
2 Res	39	36.8%
3 Res	36	34.0%
4 Res	8	7.5%
5 Res	16	15.1%
<b>Otology/Neurotology faculty</b>		
Mean faculty #	3.66	
<b>Otology/Neurotology fellows present</b>		
Fellows	19	17.9%
No fellows	87	82.1%
<b>Adequate training to decide on pursuing Otology/Neurotology fellowship?</b>		
Yes	89	84.0%
No	17	16.0%

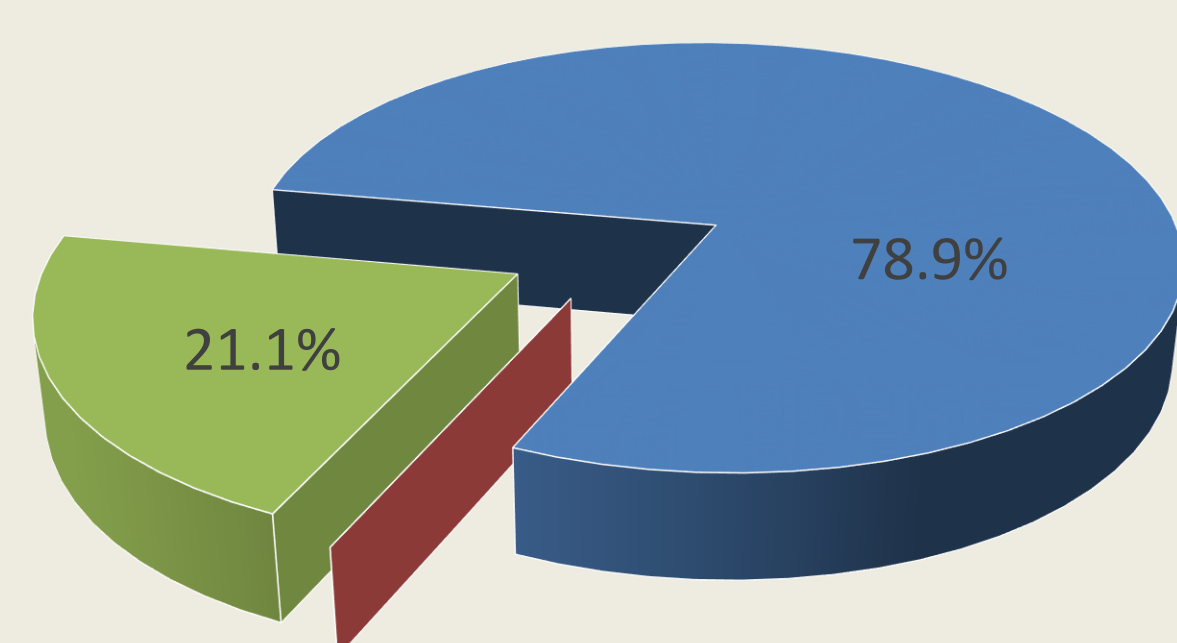
Table 1. Demographics of survey participants



Figure 1. Overall quality of training

- "Excellent" = I feel very comfortable handling nearly all otologic patients and would only need to refer highly complex patients.
- "Good" = I feel comfortable handling most otologic patients.
- "Adequate" = I feel comfortable handling some otologic patients, but would likely refer many of these patients.
- "Poor" = I feel uncomfortable managing these patients, and would refer nearly all of these patients.

## Benefit of Fellows



- Fellow was beneficial
- Fellow was not beneficial
- Fellow made no difference

Figure 2. Shows how respondents evaluated the presence of a fellow in their training.

## RESULTS

- 106 survey responses were recorded
- Respondent demographics including year of training, location, faculty number, and presence of fellows, overall impression of otology training, and if training was adequate to decide on Otology fellowship (Table 1).
- Overall, 87 respondents (84%) thought they had adequate exposure to otology in time to decide on fellowship while 19 (16%) did not.
- Respondents who thought they had adequate otologic training to decide on pursuing a fellowship **observed** all five procedures at earlier PGY levels than those who did not (Table 2).
- Respondents with adequate training **performed** four of the five procedures at significantly earlier PGY levels, with tympanoplasty approaching but not reaching statistical significance (Table 2).
- Respondents with fellows in their training program **performed** three of the five procedure earlier than those without fellows (Table 2).
- Respondents with fellows were statistically more likely to attain self-sufficiency with stapedectomy regardless of PGY level (Table 4) and were more likely to perform stapedectomy in their future practice than those without fellows (52.6% vs. 19.5%,  $p = 0.003$ ) (Table 3).
- 100% (19/19) of respondents who had fellows in their program felt they had adequate training to decide to pursue fellowship vs. 80.5% (70/87) in the non-fellow group ( $p = 0.0380$ )
- It is also important to note that 15/19 (78.9%) thought fellows were beneficial to their training, and 4/19 (21%) thought fellows made no difference, while no respondents thought the fellow detracted from their training.

## DISCUSSION

- Our survey represents a variety of resident otologic experiences through training.
- The data indicates that those residents that thought they had adequate exposure to decide on whether or not to pursue fellowship in otology had earlier exposure in all otologic cases in question.
- Overall fellows within the residency program appeared to be beneficial to resident training.
- Respondents with fellows were more likely to perform stapedectomy and cochlear implant earlier and, in the case of cochlear implant, they reached autonomous proficiency earlier.
- The presence of fellows in a program was associated with higher likelihood of performing stapedectomy in respondents' future practice.
- The presence of fellows did not appear to affect plans to perform the other four procedures in respondents' future practice.

## CONCLUSIONS

- The results of the study confirmed the hypothesis that earlier exposure to otologic procedures better informs trainees about whether or not to pursue a fellowship in this field.
- The presence of fellows in the training program enhanced training in many ways; being associated with earlier performance and higher likelihood of achieving proficiency in some otologic procedures.

### When in residency was the respondent exposed to each surgery?

		Adequate otology exposure to decide on fellowship in otology?				Neurotology/Otology fellows present in residency training?		
		All (106)	Yes (89)	No (17)	p value	Yes (19)	No (87)	p value
	PGY	PGY	PGY		PGY	PGY		
Tympanoplasty	Observed	1.92	1.83	2.41	0.0002	1.84	1.94	0.5199
	Performed	2.92	2.86	3.23	0.0809	2.63	2.99	0.0784
	Autonomously	4.46	4.42	4.69	0.1227	4.44	4.44	0.9103
Mastoidectomy	Observed	1.98	1.91	2.35	0.0236	2	1.98	0.9034
	Performed	3.04	2.94	3.53	0.0115	2.89	3.07	0.4384
	Autonomously	4.56	4.53	4.78	0.2371	4.59	4.55	0.8148
Ossiculoplasty	Observed	2.28	2.12	3.06	0.0002	1.89	2.36	0.0593
	Performed	3.70	3.59	4.31	0.0012	3.26	3.80	0.0114
	Autonomously	4.73	4.69	5.00	0.1092	4.75	4.72	0.8494
Stapedectomy	Observed	2.40	2.28	3.00	0.0022	2.26	2.42	0.4803
	Performed	3.93	3.86	4.45	0.0272	3.58	4.03	0.0366
	Autonomously	4.82	4.82	5.00	0.6473	4.67	4.90	0.0553
Cochlear Implant	Observed	2.26	2.16	2.76	0.0094	2.16	2.28	0.5929
	Performed	3.49	3.40	4.10	0.0315	2.82	3.68	0.0008
	Autonomously	4.50	4.49	4.67	0.6146	4.08	4.64	0.0032

Table 2. Displaying the PGY level at which the respondents observed, performed, and autonomously performed each of the five otologic procedures stratified between those who DID and DID NOT think they had adequate exposure to decide on whether or not to pursue Otology/Neurotology fellowship, as well as between respondents who DID and DID NOT have Otology/Neurotology fellows in their training program. PGY = Post Graduate Year.

### Plan to or currently performing these surgeries after training?

	All respondents	Adequate otology exposure to pursue fellowship in otology?			Neurotology/Otology fellows present in residency training?		
		Yes (89)	No (17)	p value	Yes (19)	No (87)	p value
	# (%)	# (%)	# (%)		# (%)	# (%)	
Tympanoplasty	75 (70.7%)	64 (71.9%)	11 (64.7%)	0.5496	13 (68.4%)	62 (71.3%)	0.805
Mastoidectomy	59 (55.6%)	52 (58.4%)	7 (41.2%)	0.1896	11 (57.9%)	48 (55.2%)	0.8287
Ossiculoplasty	50 (47.2%)	7 (41.2%)	43 (48.3%)	0.589	10 (52.6%)	40 (45.9%)	0.5986
Stapedectomy	27 (25.5%)	27 (30.3%)	0 (0%)	0.0085	10 (52.6%)	17 (19.5%)	0.0027
Cochlear implant	30 (28.3%)	27 (30.3%)	3 (17.6%)	0.3449	5 (26.3%)	25 (28.7%)	0.81

Table 3. Displaying whether respondents are currently performing or plan to perform the five procedures stratified between those who DID and DID NOT think they had adequate exposure to decide on whether or not to pursue Otology/Neurotology fellowship, as well as between respondents who DID and DID NOT have Otology/Neurotology fellows in their training program.

### How did fellows in training effect performing stapedectomy?

		Fellows in training		p value	Fisher's exact
		Yes (19)	No (87)		
Stapedectomy	% performed in residency	100	83.91	0.4803	0.0693
	Mean PGY	Observed	2.2632	2.4253	0.0366
		Performed	3.5789	4.0274	0.0366
	Autonomously	4.6667	4.9	0.0553	
	% who attained self sufficiency	78.9%	34.5%	0.0006	

Table 4. Displaying the impact of fellows in attaining self sufficiency in stapedectomy. Fellows did not have the same impact on the other 4 procedures (data not displayed)



