International Society of Hair Restoration Surgery: 2017 Practice Census Results

Prepared for:
International Society of Hair Restoration Surgery
303 West State Street
Geneva, IL 60134, USA

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Prepared by Relevant Research, Inc.
Chicago, IL, USA

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INTRODUCTION

About ISHRS

The International Society of Hair Restoration Surgery (ISHRS) is a global non-profit medical association and a leading authority on hair loss treatment and restoration with more than 1,200 members throughout 70 countries worldwide. Above all, the ISHRS is dedicated to achieving excellence in patient outcomes by promoting the highest standards of medical practice, medical ethics, and research in the medical hair restoration industry. The ISHRS also provides continuing medical education to physicians specializing in hair transplant surgery and is committed to delivering the latest information on medical and surgical treatments to consumers suffering from hair loss, and most commonly from androgenetic alopecia – male pattern baldness and female pattern hair loss. It was founded in 1993 as the first international society to promote continuing quality improvement and education for professionals in the field of hair restoration surgery.

ISHRS Mission Statement

A global society of physicians committed to improving patient outcomes by promoting member education, collegiality, research, ethics, and public awareness.

2017 Practice Census Objective

The objective of the *2017 ISHRS Practice Census* was to gather reliable statistics with regard to the volume of hair restoration procedures performed, patient demographics, surgical techniques, treatments used, and other practice dynamics.

Study Procedures

The content of the research was developed by the ISHRS Communications & Public Education Committee.

Communications & Public Education Committee:

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Victoria Ceh, MPA, ISHRS Executive Director – *Staff*

The ISHRS commissioned Relevant Research, Inc. to administer the survey instrument, conduct data collection, analyze the findings, and prepare the summary report. Relevant Research, Inc. is a market research firm specializing in surveys and analysis for professional societies and trade associations. All data collected from ISHRS members were kept completely confidential by Relevant Research, Inc.

Sampling and Data Collection

In mid-June 2017, all 990 physician members of the ISHRS were invited to participate in the *2017 ISHRS Practice Census* by e-mail. Of the 990 ISHRS e-mail invitations uploaded, 977 were valid e-mail invitations. Three reminders were sent over the course of the data collection period, ending on Wednesday, June 21, 2017. The *2017 ISHRS Practice Census* was conducted online only.

Of the 977 physician members invited to participate, 300 responses were received by the June 21, 2017, cutoff, representing a 31 percent response rate. The margin of error for the sample is within +/- 4.9 percent at the 95 percent confidence level. However, the margin of error should be treated as an estimate, since pure random selection is not possible in a voluntary study with an incentive for participation.

Data Preparation and Weighting

Prior to weighting, the data were checked for inconsistencies and errors and then cleaned. A few statistical outliers were removed from the data to prevent them from skewing results. In addition, for questions where responses to individual items should total to 100 percent, minor adjustments were made if the total was greater or less than 100. For example, if a respondent indicated that 85 percent of hair restoration surgical procedures were performed on men and 20 percent were performed on women, the total would equal 105 percent and would thus skew results. In order to correct this error, 2.5 percent would be subtracted from both male and female estimates so that the total estimated percent of males (82.5%) and females (17.5%) would now equal 100 percent.

The proportion of respondents in the *2017 Practice Census* from each geographic area was similar to the proportion of all ISHRS members from that area. However, since population estimates were needed, results were weighted to estimate the total population of ISHRS members by geographic area.

For a list of definitions to common statistical terms used throughout this report, see Appendix A.

Statistical Extrapolations

The sample data collected in this study were used to extrapolate the volume of hair restoration procedures performed by all ISHRS members, as well as the volume of procedures worldwide. The extrapolation of the data to all ISHRS members was calculated by taking the average number of procedures performed by participants in the survey (which is representative of all members within +/- 4.9 percent), then multiplying the average by the total number of members.

Worldwide extrapolations were made by first estimating the portion of all hair restoration procedures that are performed by the ISHRS membership in various geographic regions, then taking the membership total for each region and expanding the numbers accordingly. For example, it is estimated that ISHRS members in the U.S. account for 50 percent of all hair restoration procedures performed in the United States. Therefore, the remaining 50 percent was added to the ISHRS membership total for U.S. members.

Relevant Research, Inc. and Confidentiality

Relevant Research, Inc. is an independent third party that was hired by ISHRS to conduct the 2017 *Practice Census.* Relevant Research, Inc. followed strict procedures to protect the confidentiality of respondent data. All surveys were submitted directly to Relevant Research, Inc. in Chicago, Illinois, USA, and only aggregated results have been presented in this report.

Under no circumstance will any individual ISHRS member, including the Board of Governors, committee members, or headquarters staff, be allowed to access individual respondent data.

Important Note

The report was prepared to serve as a useful reference for ISHRS members, non-members, and the media. However, keep in mind the following:

- The results provide estimated information only. The results from the sample of ISHRS members who responded may be different from results if the entire population of ISHRS members had participated.
- The results provide historical information only and are not intended to represent industry standards.
- Statistics have not been presented in cases where fewer than five participants reported. Any statistics that are based on a small number of respondents (n<30) may not be strongly representative.

Neither ISHRS nor Relevant Research independently verified the data provided by each respondent.

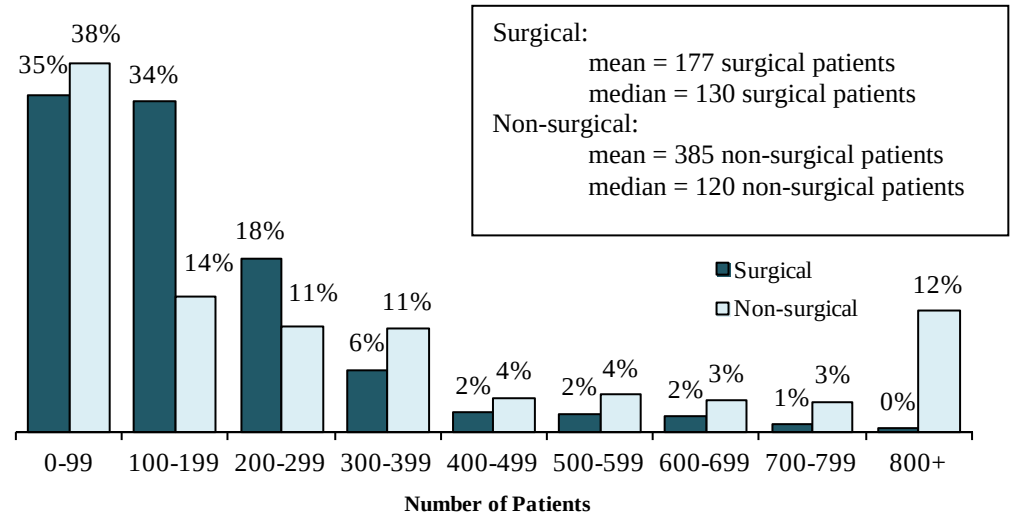
RESULTS AT A GLANCE

	2016 Results	% Change '14 to '16		2014 Results	% Change '12 to '14	2012 Results	% Change '10 to '12	2010 Results	% Change '08 to '10	2008 Results	% Change '06 to '08	2006 Results
Extrapolated worldwide volume of surgical hair restoration procedures performed in past year:												
United States	133,136	18%		112,409	27%	88,304	-13%	101,252	3%	98,727	-2%	100,445
Canada	7,855	43%		5,488	-49%	10,758	25%	8,598	63%	5,268	-58%	12,625
Mexico/Central & South America	65,930	132%		28,456	82%	15,611	-14%	18,072	38%	13,102	23%	10,668
Europe	79,513	70%		46,849	-14%	54,343	64%	33,194	3%	32,320	8%	29,818
Asia	195,284	36%		143,239	39%	102,702	12%	92,075	17%	78,822	37%	57,542
Australia	4,071	9%		3,724	-3%	3,820	25%	3,055	-2%	3,116	30%	2,394
Africa/Middle East	149,400	163%		56,883	62%	35,086	52%	23,136	12%	20,647	68%	12,287
TOTAL	635,189	60%		397,048	28%	310,624	11%	279,381	11%	252,002	12%	225,779
Extrapolated worldwide number of hair restoration patients in past year:												
Surgical patients	597,181	67%		358,109	25%	285,425	14%	251,208	6%	236,468	9%	216,547
Nonsurgical patients	1,241,764	78%		697,372	2%	686,035	2%	672,391	17%	574,894	34%	428,734
TOTAL	1,838,946	74%		1,055,480	9%	971,460	5%	923,599	14%	811,363	26%	645,281
Average number of patients per member in past year:												
Surgical patients	177	8%		164	-3%	169	4%	163	-10%	181	-8%	196
Nonsurgical patients	385	25%		307	-20%	385	-7%	414	15%	361	9%	330
TOTAL	476	0%		475	-15%	560	-3%	577	6%	542	3%	526
Average number of hair restoration surgeries performed per member in past year:												
	188	3%		183	0%	184	-2%	187	-2%	190	-6%	203
Average number of hair restoration surgeries performed per member per month:												
	16	7%		15	-2%	15	-2%	16	0%	16	-8%	17
Percent of hair restoration surgical patients:												
Male	85.7	1%		84.7	-2%	86.3	0%	85.9	1%	84.9	-2%	86.2
Female	14.3	-7%		15.3	12%	13.7	-3%	14.1	-7%	15.1	9%	13.8
Percent of hair restoration non-surgical patients:												
Male	61.8	3%		59.9	-10%	66.8	2%	65.2	-4%	68.2	-5%	71.8
Female	38.2	-5%		40.1	21%	33.2	-5%	34.8	9%	31.8	13%	28.2
Average Number of Procedures Per Patient to Achieve Desired Result:												
	5	0%		5	67%	3	43%	2.1	50%	1.4	-22%	1.8

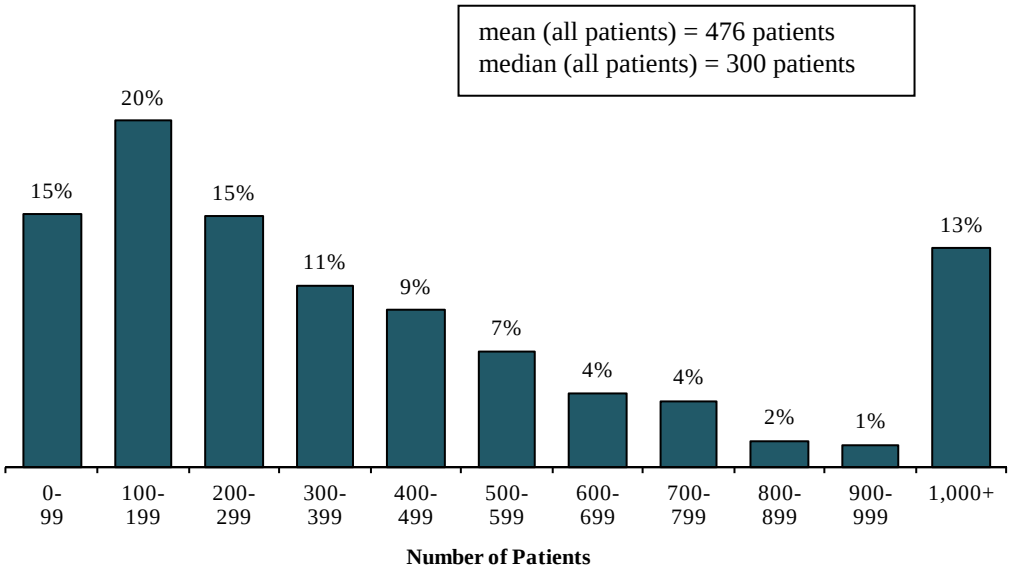
HAIR RESTORATION PATIENTS AND PROCEDURES

The number of surgical and nonsurgical hair restoration patients treated by ISHRS physicians in 2016 is presented in the figures below. In 2016, an ISHRS member treated on average 177 surgical patients and 385 non-surgical patients. In total for 2016, an ISHRS physician treated on average 476 surgical and non-surgical patients.

Number of Surgical and Non-Surgical Hair Restoration Patients Treated by ISHRS Members in 2016(*n*=295)



Total Number of Hair Restoration Patients (Surgical and Non-surgical, combined) Treated by ISHRS Members in 2016 (*n*=300)

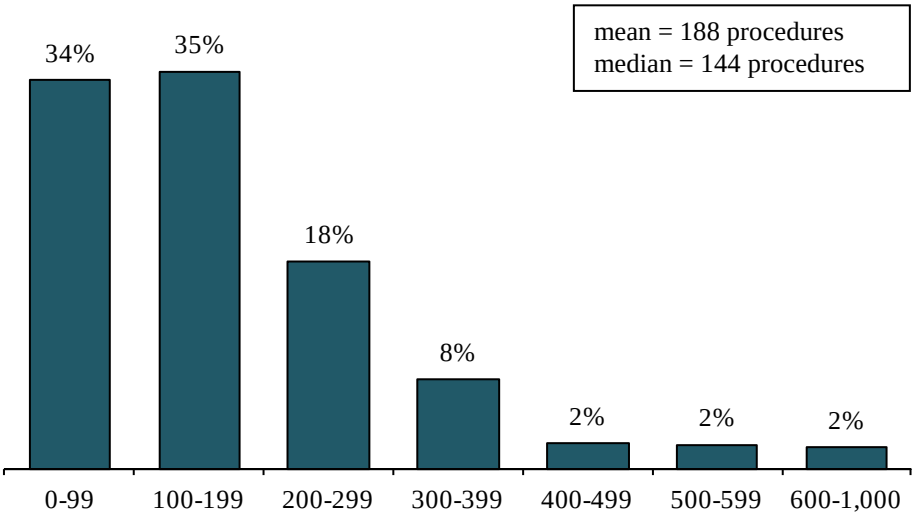


HAIR RESTORATION PATIENTS AND PROCEDURES

The following figures present data on the number of surgical procedures performed by ISHRS members in 2016. The previous page presented data on the number of surgical patients treated by ISHRS members. Please note that a patient treated may have more than one procedure.

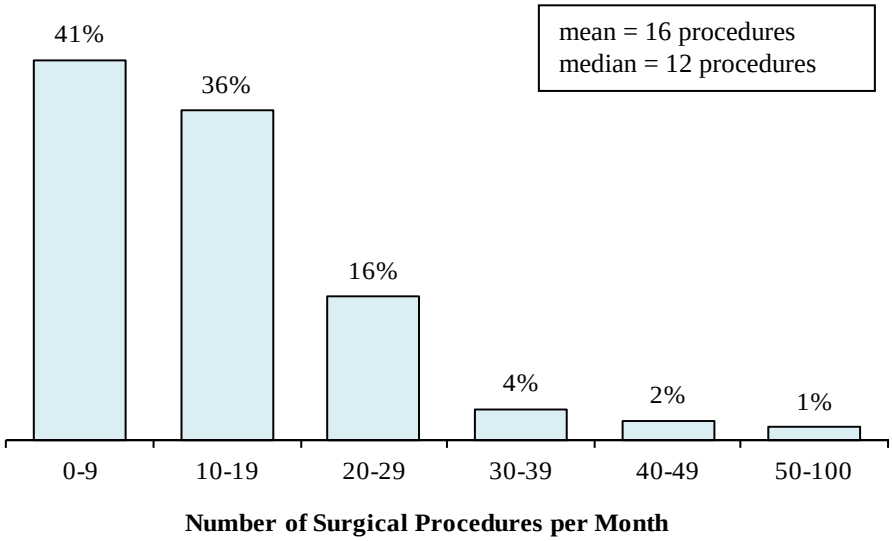
In 2016, two-thirds (69%) of ISHRS members performed between zero and 199 hair restoration surgical procedures; the average number of hair restoration surgical procedures performed by an ISHRS member in 2016 was 188.

Total Number of Hair Restoration Surgical Procedures Performed in 2016 (*n*=249)



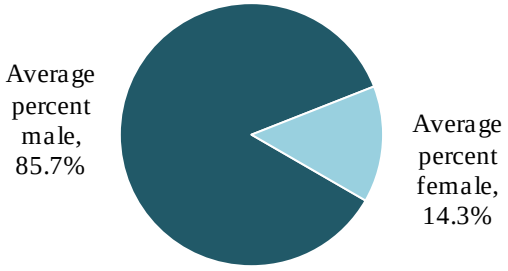
In 2016, over three-quarters (77%) of ISHRS members performed between zero and 19 hair restoration surgical procedures per month. Members performed an average of 16 hair restoration surgical procedures per month in 2016.

Total Number of Hair Restoration Surgical Procedures Performed per Month in 2016 (*n*=249)



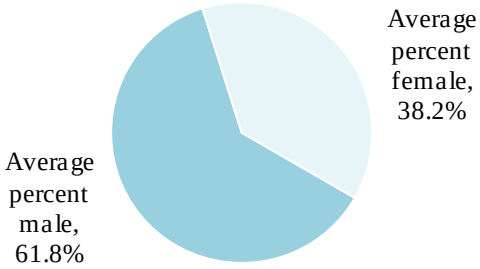
In 2016, members treated more men than women with respect to surgical procedures. On average, 85.7 percent of procedures were performed on men, while 14.3 percent were performed on women.

Average Percent Male and Female Hair Restoration Surgical Procedures (*n*=249)



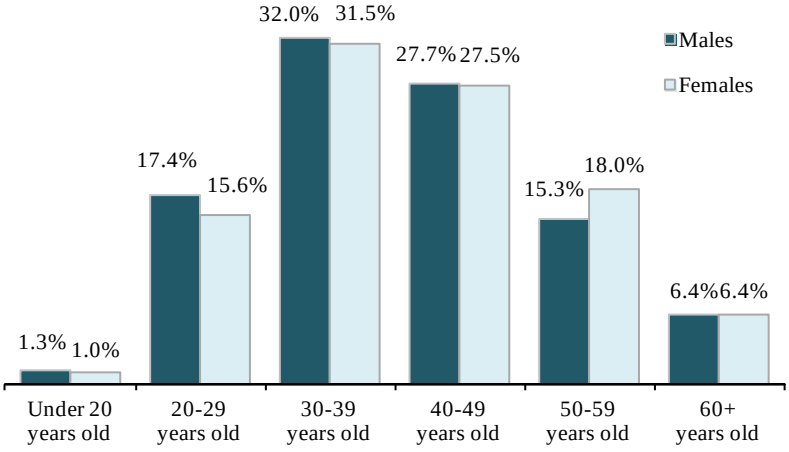
Members treated a higher percentage of men with non-surgical hair restoration procedures (61.8%) compared to women (38.2%).

Average Percent Male and Female Hair Restoration Non-surgical Procedures (*n*=249)



Members provided percentages of male and female surgical patients treated by age category. Over half of both male and female patients fell between the ages of 30 to 49 years old, 59.7% and 59.0% respectively. On average, males tended to be slightly younger than females.

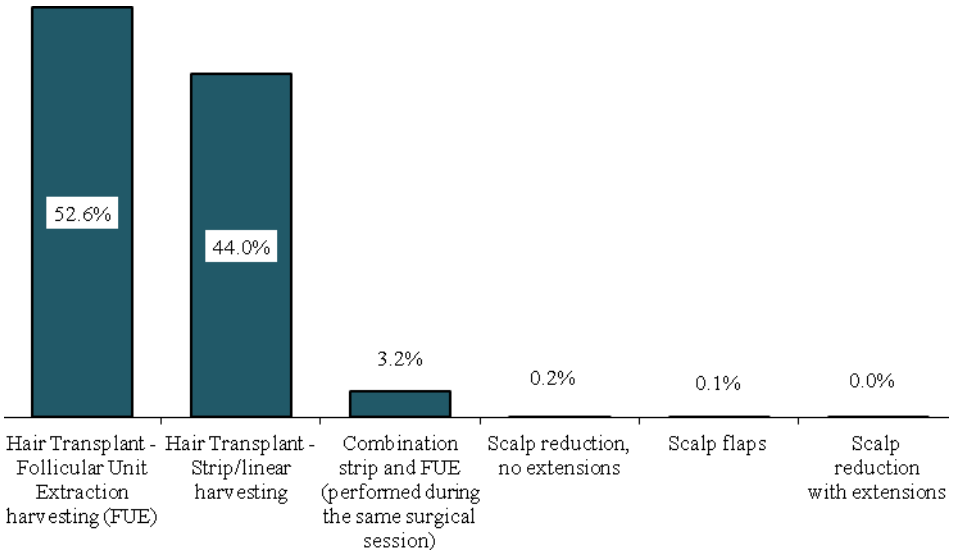
Hair Restoration Surgical Patients by Sex and Age (*n*=229)



HAIR RESTORATION PATIENTS AND PROCEDURES

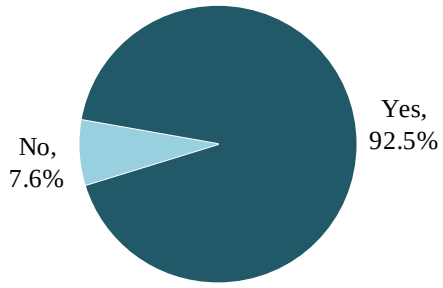
When asked what percent of total male and female hair restoration surgical procedures were performed using six different methods, the most common method was Hair Transplantation with FUE harvesting (52.6%), followed by Hair Transplantation with strip/linear harvesting (44.0%) and combination strip and FUE performed during the same surgical session (3.2%).When asked 'what percentage of your strip/linear harvesting cases received trichophytic closure,' the response was 60.7%, on average (N=178).

Hair Restoration Surgical Procedures by Type of Procedure (*n*=226)
(In 2016, what percent of your total male and female hair restoration surgical procedures were performed using the following methods?)

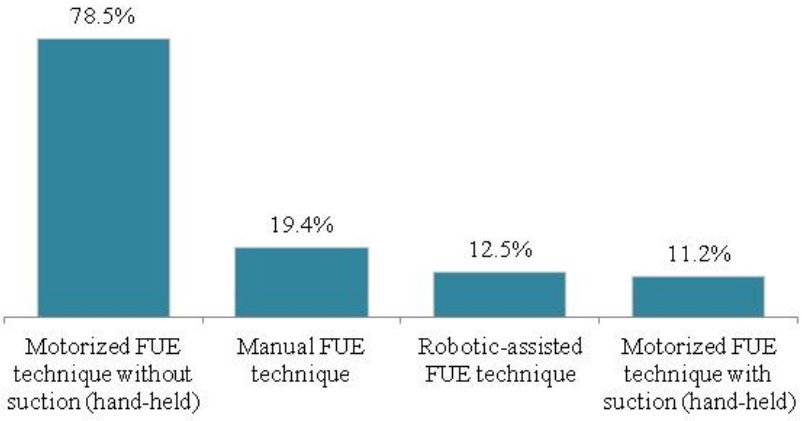


The majority of ISHRS members (92.5%) performed FUE on their patients. When asked which methods they used for FUE cases, more than three-fifths used 'motorized FUE technique without suction (hand-held)' (78.5%), followed by 'manual FUE technique' (19.4%), 'robotic-assisted FUE technique' (12.5%) and 'motorized FUE technique with a suction (hand-held)' (11.2%).

In 2016, did you perform FUE on your patients? (N=228)

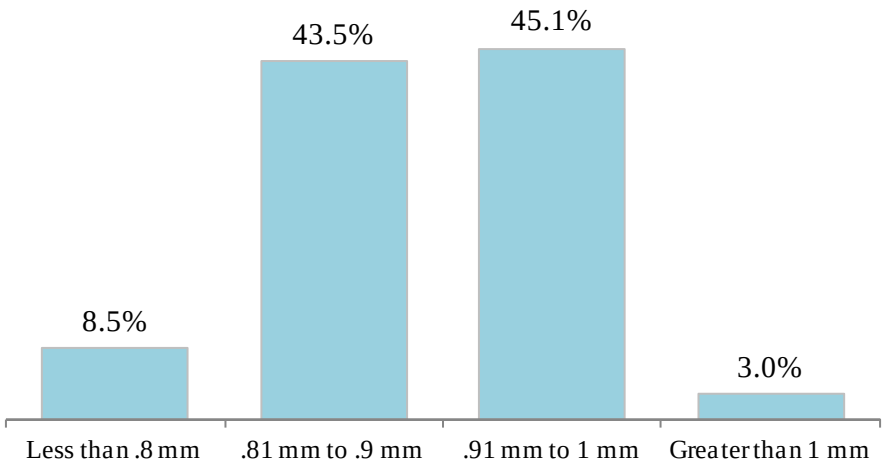


Percentages of the FUE cases using the following methods (N=194)



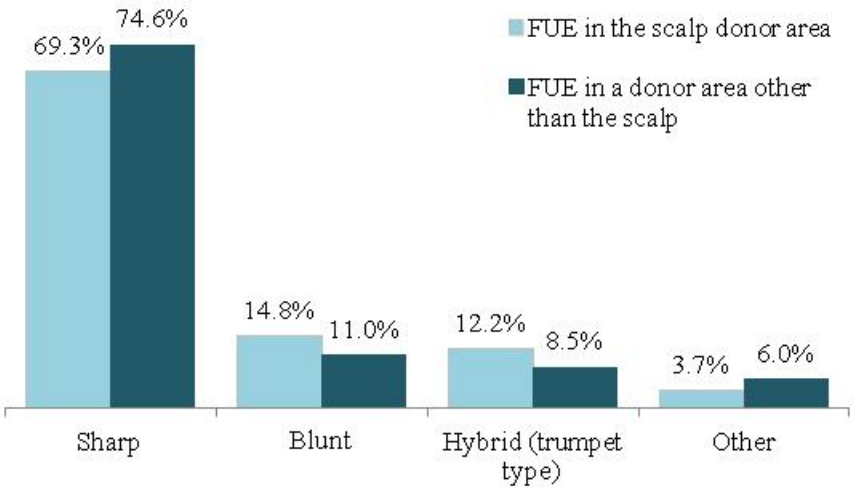
When asked what size punch ISHRS members use when performing FUE, most respondents indicated .81 mm to .9 mm (43.5%) or .91 mm to 1 mm (45.1%).

When performing FUE, what size punch do you typically use? (N=205)



Most ISHRS members reported using a sharp punch system to perform FUE. Slightly more members used the sharp punch system to perform FUE when using a donor area other than the scalp (74.6%) vs. using the scalp donor area (69.3%).

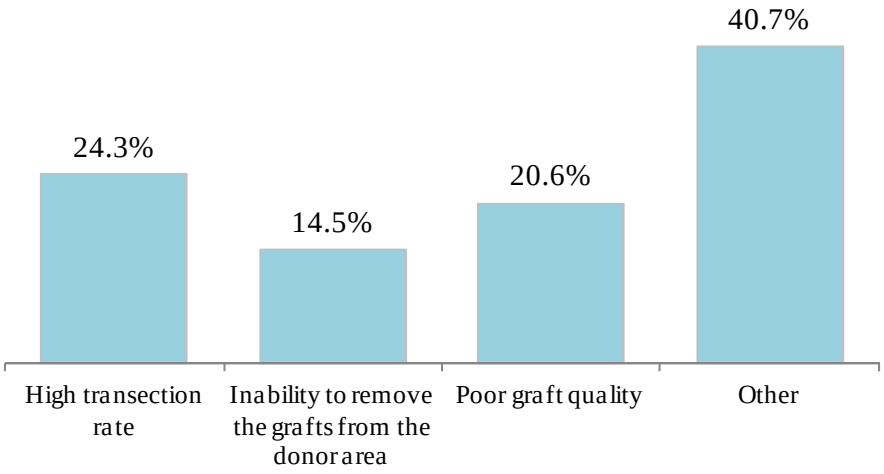
When performing FUE what type of punch system do you utilize most frequently? (N=206)



HAIR RESTORATION PATIENTS AND PROCEDURES

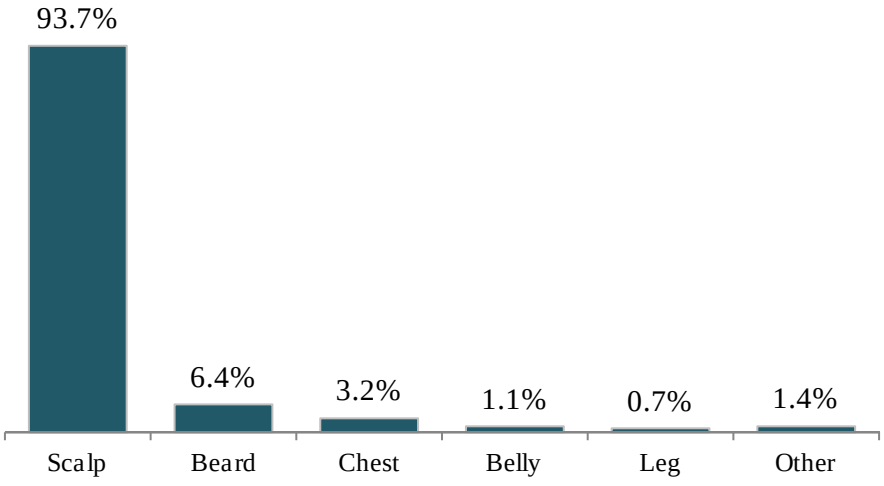
When ISHRS members were asked what percentage of cases they had to cancel in 2016, on average, they cancelled 3.4% of cases. Reasons for canceling cases varied, the most commonly cited reason was 'other' (40.7%), followed by 'high transection rate' (24.3%), 'poor graft quality' (20.6%), and 'inability to remove the grafts from the donor area' (14.5%).

When canceling an FUE case what is the most typical reason for doing so? (N=123)



When asked about donor harvest sites, scalp was the most common donor harvest site (93.7%), followed by beard (6.4%) and chest (3.2%).

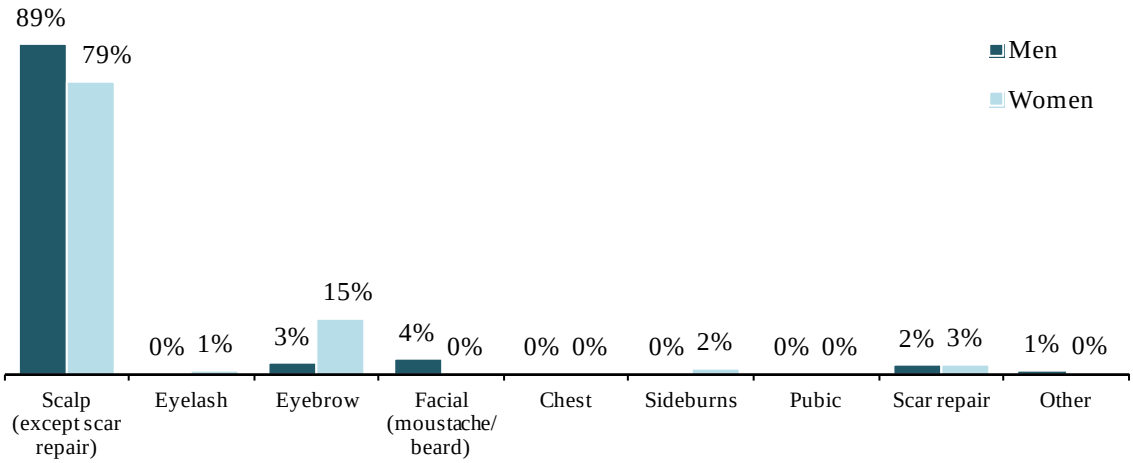
What percentage of your FUE donor harvest sites were in the following areas? (N=205)



HAIR RESTORATION PATIENTS AND PROCEDURES

In 2016, the majority of hair transplant procedures targeted the scalp area for men (89%) and women (79%). About 11 percent of male procedures targeted non-scalp areas of the body, of which facial (moustache/beard) accounted for 4 percent of procedures, eyebrow accounted for 3 percent of procedures and scar repair accounting for 2 percent of procedures. For women, 21 percent of procedures targeted non-scalp areas of the body with eyebrow targeting 15 percent of areas and scar repair targeting 3 percent of recipient areas.

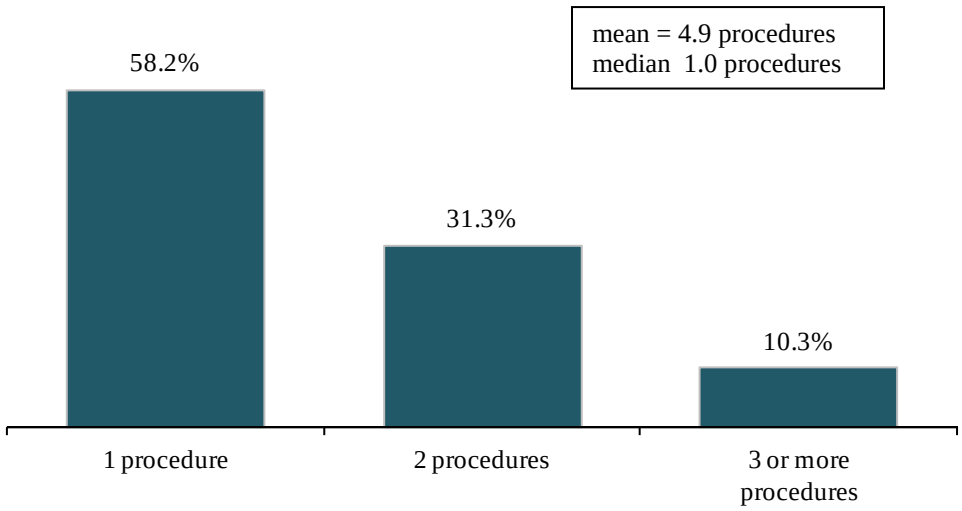
Hair Restoration Surgical Procedures by Target Recipient Area (*n*=216)



HAIR RESTORATION PATIENTS AND PROCEDURES

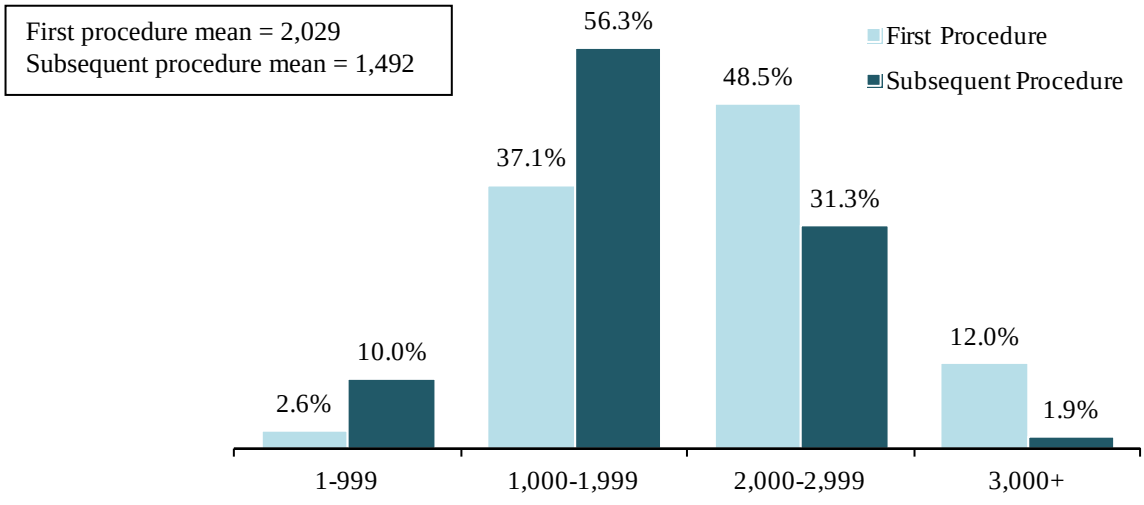
More than half (58.2%) of members reported performing an average of one procedure to achieve the desired hair restoration result. The average number of procedures needed to achieve the desired hair restoration result was 4.9, while the median was 1.0 procedure.

The Average Number of Procedures Each Patient Received in Order to Achieve the Desired Result (*n*=213)



On average, about two in five members (37.1%) performed 1,000 to 1,999 grafts per session to achieve the desired hair restoration result for the first procedures and more than half (56.3%) performed 1,000 to 1,999 for a subsequent procedure. The average number of grafts performed per session was 2,029 for the first procedure and 1,492 for a subsequent procedure.

The Average Number of Grafts per Session Received in Order to Achieve the Desired Result (*n*=214)



HAIR RESTORATION PATIENTS AND PROCEDURES

The survey asked about the various treatments prescribed to patients in 2016. The most commonly prescribed treatments were Propecia/finasteride 1mg (61.1%), followed by Rogaine/5% minoxidil foam (58.0%) and Rogaine/2% or 5% minoxidil solution (43.4%). The complete list of treatments included in the 2017 *ISHRS Practice Census* is listed in the table below, rank ordered by mean.

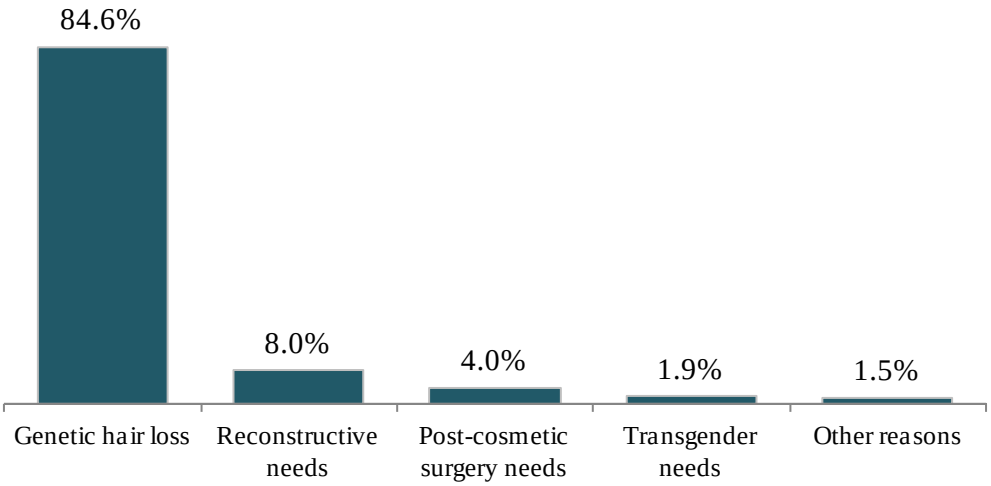
How Often Various Treatments Were Prescribed to Patients in 2016

In rank order by mean	Always/ Often (NET)	Always (1)	Often (2)	Some-times (3)	Rarely (4)	Never (5)	Rarely/ Never (NET)	Mean
	%	%	%	%	%	%	%	
Propecia/finasteride 1mg	61.1	18.1	43.0	22.1	9.8	7.0	16.8	2.4
Rogaine/5% minoxidil foam	58.0	20.7	37.3	26.3	6.4	9.3	15.7	2.5
Rogaine/2% or 5% minoxidil solution	43.4	12.8	30.6	28.5	14.1	14.0	28.1	2.9
Other nutritionals/herbs/vitamins	27.7	9.5	18.2	23.8	16.4	32.2	48.5	3.4
Ketoconazole 2% shampoo	20.6	5.0	15.6	33.9	19.7	25.8	45.5	3.5
Biotin	26.7	9.0	17.7	20.5	16.9	36.0	52.9	3.5
Proscar or Generic Finasteride 5mg	27.2	4.4	22.9	16.7	21.4	34.7	56.1	3.6
Low level laser therapy (home use)	27.0	7.8	19.2	14.6	21.3	37.0	58.4	3.6
Other special shampoos/hair care products	18.9	6.4	12.6	27.3	21.3	32.5	53.8	3.6
Low level laser therapy (in-office)	17.2	6.1	11.1	8.8	14.2	59.7	74.0	4.1
2% Pyrithione Zinc Shampoo	8.5	0.0	8.5	20.0	20.9	50.6	71.5	4.1
Compounded/modified minoxidil (w/additives like Retin-A, no propylene glycol, high % creams, etc.)	9.3	2.0	7.3	12.2	17.4	61.2	78.6	4.3
Hairpiece, wig, weave, toupee, extensions	1.2	0.0	1.2	19.0	27.0	52.8	79.8	4.3
Avodart (dutasteride)	3.3	0.0	3.3	14.1	25.3	57.3	82.5	4.4
Saw palmetto	6.2	0.5	5.7	15.3	13.6	65.0	78.5	4.4
Nioxin shampoo/treatments	3.0	0.4	2.5	14.6	24.2	58.2	82.4	4.4

HAIR RESTORATION PATIENTS AND PROCEDURES

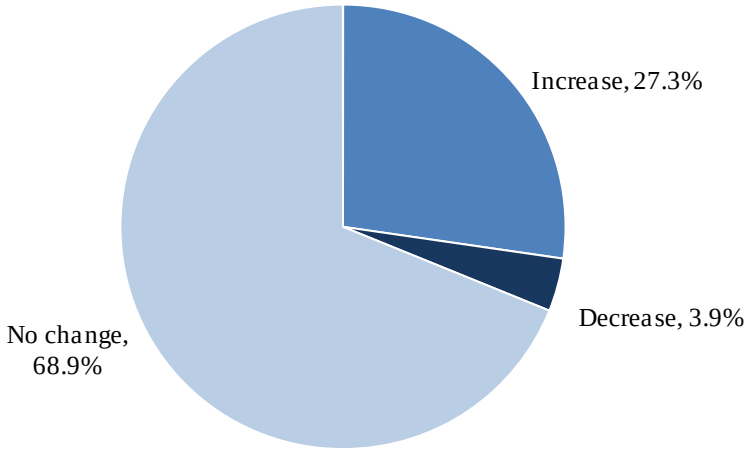
Members were asked what percentage of their patients sought treatment because of genetic hair loss, reconstructive needs, post-plastic surgery needs, transgender needs or other reasons. Most patients (84.6%) sought treatment due to genetic hair loss, followed by reconstructive needs (8.0%) and post-cosmetic surgery needs (4.0%). Other reasons mentioned included diseases (i.e. alopecia, vitiligo, etc.), chemotherapy induced hair loss, and post-scar or burn treatments.

Percent Hair Restoration Patients by Treatment Need (*n*=208)



When members were asked about the change in transgender hair transplants seen by their practice, most indicated there was no change (68.9%), while one-quarter (27.3%) indicated there was an increase in transgender hair transplants.

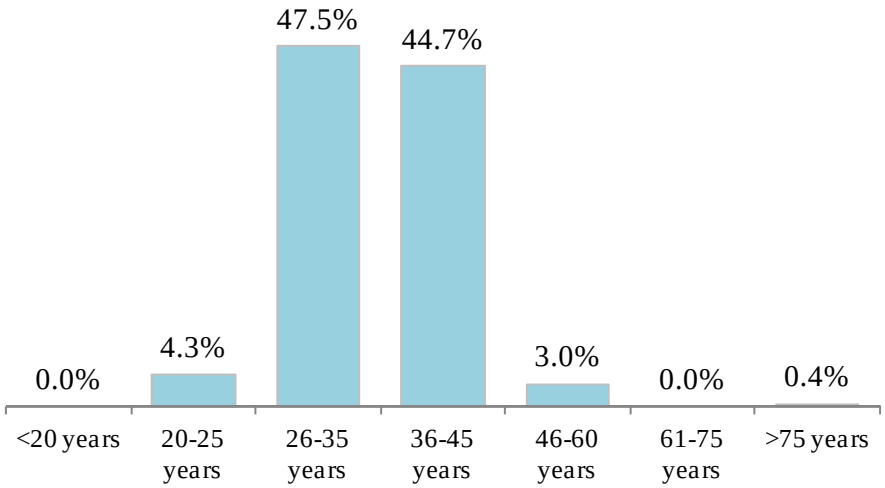
With regards to transgender hair transplants, have you seen an increase, decrease or no change in your practice? (N=192)



HAIR RESTORATION PATIENTS AND PROCEDURES

Members were asked to report the average age of their patients who underwent hair restoration surgery for the first time in 2016. Patients were most likely to be between 26 to 35 years old (47.5%) or 36 to 45 years old (44.7%). A small percentage were 20-25 years old (4.3%) or 46-60 years old (3.0%). Very few were greater than 75 years old (0.4%).

Average Age Patients Underwent Surgery for the First Time in 2016 (*n*=205)



When asked which healing therapies members used perioperatively or post hair transplantation, the most common response was 'minoxidil' (73.6%), followed by 'platelet rich plasma (PRP)' (58.8%), and 'low-level laser therapy (home device)' (25.1%), or 'low-level laser therapy (in office unit)' (20.4%). Examples of 'Other specify' responses include 'finasteride,' 'propecia,' 'nothing,' 'saline spray,' 'Vaseline,' and 'zinc.'

Which Healing Therapies Perioperatively or Post Hair Transplantation did You Routinely Use in 2016? (*Select all that apply*; *n*=189)

	Percent
Minoxidil	73.6%
Platelet rich plasma (PRP)	58.8%
Low-level laser therapy (home device)	25.1%
Low-level laser therapy (in office unit)	20.4%
Liposomal ATP spray	16.8%
Copper peptides solution	15.6%
Other	12.5%
Extracellular matrix (e.g. Acell)	11.5%
Homeopathic remedies	4.2%
Hyperbaric oxygen	0.7%

Regarding complaints patients expressed to members following hair transplant surgery, the most common complaint was 'density less than expected' (54.8%), followed by 'post-operative shock loss' (36.9%) and 'pain after strip procedure' (24.5%). Other specify responses included such things as 'post-operative swelling,' 'folliculitis,' 'pain/itchiness,' and 'time it takes to grow hair back.'

What Were the Most Common Complaints that Patients Expressed to You Following Hair Transplant Surgery?
(*Select all that apply*; *n*=199)

	Percent
Density less than expected	54.8
Post-operative shock loss	36.9
Pain after strip procedure	24.5
Post-operative graft shedding	18.4
Other	15.9
Pain during procedure	13.0
Pain after FUE procedure	7.7
Not natural looking	2.5

When asked what percentage of respondents' patients complained of the following, members were most likely to respond 'density less than expected' (18.4%), followed by 'other' (15.0%), 'post-operative graft shedding' (14.4%) and 'pain after procedure' (14.3%).

What Percentage of Your Patients Complained of the Following?
(*Select all that apply*; *n*=198)

	Percent
Density less than expected	18.4%
Other	15.0%
Post-operative graft shedding	14.4%
Pain after procedure	14.3%
Post-operative shock loss	11.6%
Pain during procedure	9.5%
Pain after FUE procedure	6.5%
Not natural-looking enough	1.4%

STATISTICAL EXTRAPOLATIONS

Based on the data collected in the survey and on estimations about the volume of procedures being performed worldwide among ISHRS members, ISHRS estimates that approximately **635,189** hair restoration procedures were performed worldwide in 2016.

In calculating the worldwide estimates, we first projected the volume of procedures performed by all ISHRS members. This estimate was calculated by taking the average number of procedures performed by participants and multiplying this by the total number of members.

Worldwide extrapolations were made by estimating the portion of all hair restoration procedures that are performed by ISHRS members in various geographic regions. ISHRS leadership in various countries supplied the estimates of regional hair restoration procedures performed by all ISHRS members. Using these estimates, the volume by region was calculated accordingly. For example, it is estimated that ISHRS members account for 50 percent of all hair restoration procedures performed in the United States. Therefore, the remaining 50 percent was added to the ISHRS membership total for U.S. members to calculate the total estimate for the U.S. overall. This calculation was carried out for each region/country and for the world as a whole.

Extrapolated Number of Hair Restoration Surgical Procedures Worldwide in 2016

Region*	ISHRS Member-ship (Actual)	% of Total	Survey Sample	% of Total	% Response	Avg. # HR Surgical Procedures in 2016	**Total ISHRS Volume**	Est. % of Regional HR Procedures	**Total Worldwide Volume**
United States	314	31.8	68	25.1	21.66	212.0	***66,568***	50	***133,136***
Canada	42	4.3	9	3.3	21.43	121.6	***5,106***	65	***7,855***
Mexico/Central & South America	114	11.5	36	13.3	31.58	173.5	***19,779***	30	***65,930***
Europe	204	20.6	68	25.1	33.33	136.4	***27,830***	35	***79,513***
Asia	218	22.1	61	22.5	27.98	224.0	***48,821***	25	***195,284***
Australia	21	2.1	6	2.2	28.57	135.7	***2,850***	70	***4,071***
Africa/Middle East	75	7.6	23	8.5	30.67	199.2	***14,940***	10	***149,400***
Total	988	100	271	100.0	27.43	188.0	***185,893***	30	***635,189***

*Estimates for Canada, Australia and Africa/Middle East were derived from fewer than 30 respondents and should be viewed with caution.

STATISTICAL EXTRAPOLATIONS

Using the same calculations as described on the previous page, ISHRS estimates that approximately **597,181** surgical patients and **1,241,764** non-surgical patients were treated worldwide in 2016. In total, ISHRS estimates that approximately **1,838,946** surgical and non-surgical patients were treated worldwide with hair restoration in 2016.

Number of Hair Restoration Patients Worldwide in 2016

Region*	ISHRS Member-ship (Actual)	% of Total	Survey Sample	% of Total	% Res-ponse	Avg. # HR Patients in 2016	**Total ISHRS Patients**	Estimated % of Regional HR Patients	**Total Worldwide Patients**
SURGICAL									
United States	314	31.8	68	25.7	21.66	208.5	***65,469***	50	***130,938***
Canada	42	4.3	9	3.3	21.43	120.4	***5,057***	65	***7,780***
Mexico/Central & South America	114	11.5	36	13.0	31.58	153.8	***17,528***	30	***58,425***
Europe	204	20.6	67	25.0	32.84	133.3	***27,189***	35	***77,683***
Asia	218	22.1	61	22.7	27.98	195.3	***42,584***	25	***170,336***
Australia	21	2.1	6	2.3	28.57	132.3	***2,778***	70	***3,969***
Africa/Middle East	75	7.6	22	8.0	29.33	197.4	***14,805***	10	***148,050***
Total	988	100	269	100	27.23	177.4	***175,410***	30	***597,181***
NON-SURGICAL									
United States	314	31.8	61	25.7	19.43	410.7	***128,944***	50	***257,888***
Canada	42	4.3	9	3.3	21.43	180.0	***7,560***	65	***11,631***
Mexico/Central & South America	114	11.5	33	13.0	28.95	353.9	***40,348***	30	***134,493***
Europe	204	20.6	57	25.0	27.94	249.2	***50,827***	35	***145,219***
Asia	218	22.1	51	22.7	23.39	473.8	***103,288***	25	***413,154***
Australia	21	2.1	5	2.3	23.81	464.4	***9,752***	70	***13,932***
Africa/Middle East	75	7.6	17	8.0	22.67	353.9	***26,545***	10	***265,448***
Total	988	100	233	100	23.58	384.6	***367,264***	30	***1,241,764***
SURGICAL AND NON-SURGICAL									
United States	314	31.8	73	25.7	23.25	535.6	***194,413***	50	***388,826***
Canada	42	4.3	9	3.3	21.43	300.4	***12,617***	65	***19,410***
Mexico/Central & South America	114	11.5	39	13.0	34.21	530.3	***57,876***	30	***192,918***
Europe	204	20.6	71	25.0	34.80	330.5	***78,016***	35	***222,902***
Asia	218	22.1	68	22.7	31.19	533.8	***145,873***	25	***583,490***
Australia	21	2.1	6	2.3	28.57	522.7	***12,531***	70	***17,901***
Africa/Middle East	75	7.6	24	8.0	32.00	437.3	***41,350***	10	***413,498***
Total	988	100	290	100	29.35	475.7	***542,674***	30	***1,838,946***

Note: Un-rounded numbers were used to calculate the numbers appearing in this table. Since the numbers in this table are rounded, attempts to recalculate some of the totals will result in slightly different figures.

*Estimates for Canada, Australia and Africa/Middle East were derived from fewer than 30 respondents and should be viewed with caution.

STATISTICAL EXTRAPOLATIONS

Of the **635,189**hair restoration surgical procedures performed worldwide in 2016, the following table details the total number of procedures by recipient area in various geographic regions of the world. The largest number of hair restoration procedures for the scalp, eyebrow, and scar repair regions was handled within Asia. Mexico/Central and South America handled the largest number of eyelash and pubic hair transplants. The Middle East had the largest number of chest and facial hair transplants, while the U.S. conducted the largest amount of other area hair restoration procedures.

Number of Hair Restoration Procedures Worldwide by Recipient Area in 2016

	Scalp	Eyelash	Eyebrow	Facial (moustache/ beard)	Chest	Pubic	Scar Repair	Other	Total
United States	118,935	49	3,501	4,561	74	25	3,526	2,465	133,136
Canada	7,344	--	147	196	--	--	167	--	7,855
Mexico/Central & South America	55,187	407	2,695	3,917	58	116	1,803	1,745	65,930
Europe	72,915	98	2,023	2,274	84	112	1,981	28	79,513
Asia	176,364	87	6,423	8,376	260	43	3,559	174	195,284
Australia	3,664	--	92	142	92	--	81	--	4,071
Middle East	131,365	213	4,909	8,537	1,707	--	2,668	--	149,400
Total	***565,774***	***854***	***19,789***	***28,003***	***2,275***	***296***	***13,785***	***4,412***	***635,189***

Note: Un-rounded numbers were used to calculate the numbers appearing in this table. Since the numbers in this table are rounded and the total is a weighted estimate, attempts to recalculate some of the totals will result in slightly different figures.

STATISTICAL EXTRAPOLATIONS

Based on the estimated number of 635,189hair restoration surgical procedures performed in 2016, multiplied by the average fee* charged to patients for a procedure (strip harvest and follicular unit extraction combined), the estimated worldwide market for hair restoration was calculated as shown below. The worldwide market size is shown in various currencies.

The total market size for hair restoration surgery has increased 64% since 2014, or from $2.5 billion USD in 2014 to $4.1 billion USD in 2016.

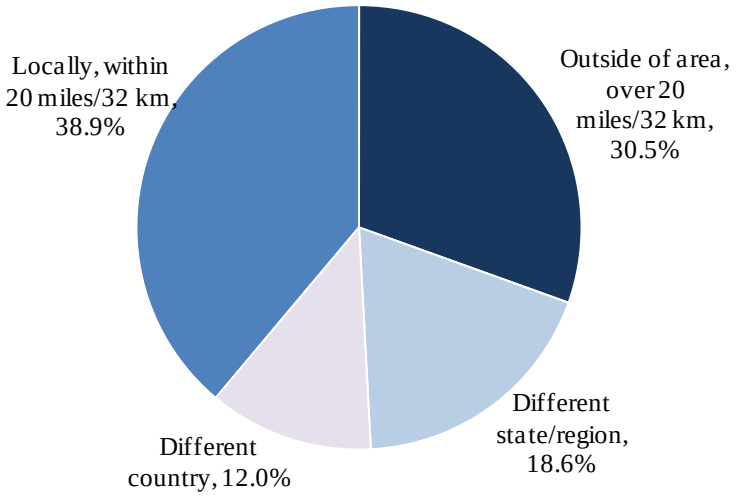
Surgical Hair Restoration Estimated Worldwide Market Size

Currency	2016 Market Size
U.S. Dollar	$4,166,721,893 (USD)
Australian Dollar	$5,465,697,444 (AUD)
Brazil Real	R$ 13,375,177,278 (BRL)
Canadian Dollar	$5,291,736,805 (CAD)
European Euro	€3,666,715,266 (EUR)
Hong Kong Dollars	$ 32,542,097,987 (HKD)
Indian Rupees	₹ 268,503,558,808 (INR)
Japanese Yen	¥ 471,672,918,327 (JPY)
Korean Won	₩ 4,740,687,834,160 (KRW)
Mexican Peso	$ 73,875,979,169 (MXN)
Saudi Riyal	SR15,625,207,100 (SAR)

**The "average fee" charged for a procedure reported by survey participants and used in this calculation represents the overall average fee charged to all patients treated. Since the cost of procedures performed on individual patients may vary depending on the number of grafts and several other factors, the "average fee" as it related to this survey did not represent what all patients would expect to pay for a procedure, and should not be construed as a typical price for a hair restoration procedure.*

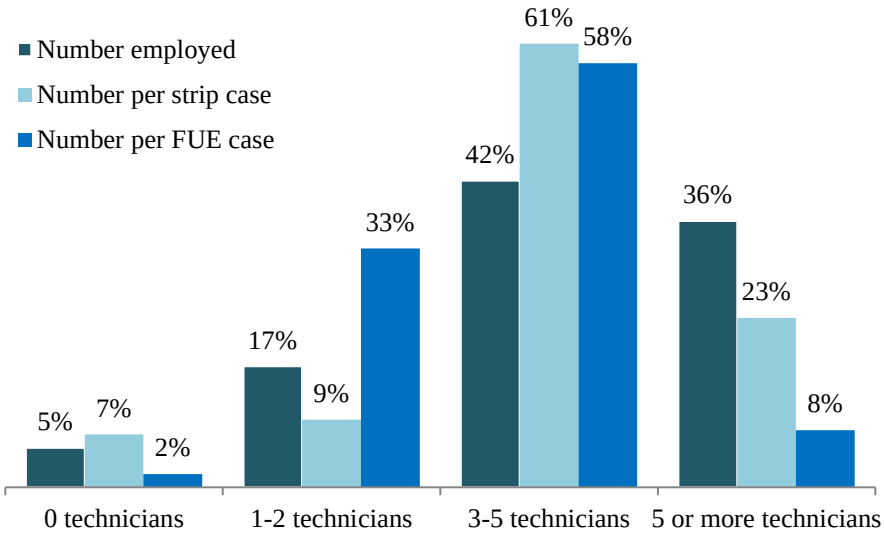
When ISHRS members were asked to indicate where their hair restoration patients were located, responses varied. Two-fifths of members (38.9%) indicated patients were local, or within 20 miles/32 km radius of their office. Three in ten members (30.5%) indicated patients were outside of their practice area, or over 20 miles/32 km radius of their office. The remaining members indicated patients were from a different state/region (18.6%) or a different country (12.0%).

In 2016, roughly what percent of your hair restoration patients were based in the following locations? (N=212)



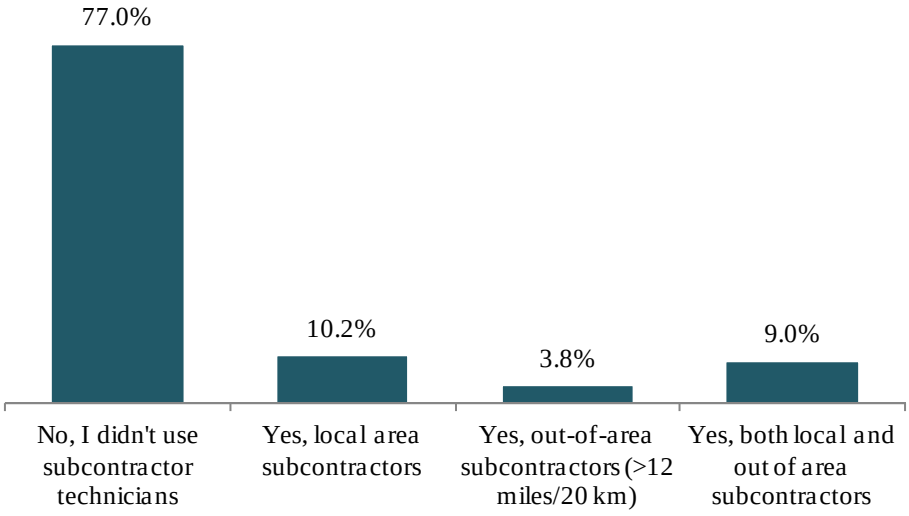
When members were asked how many technicians were exclusively employed by their practice, the average number of technicians employed by member practices was five, and ranged from zero to 25 technicians. Members reported using an average of four technicians for an average strip case and three technicians for an average FUE case.

How many technicians exclusive to your practice did you employ, use for a strip case or use for an FUE case? (N=200)

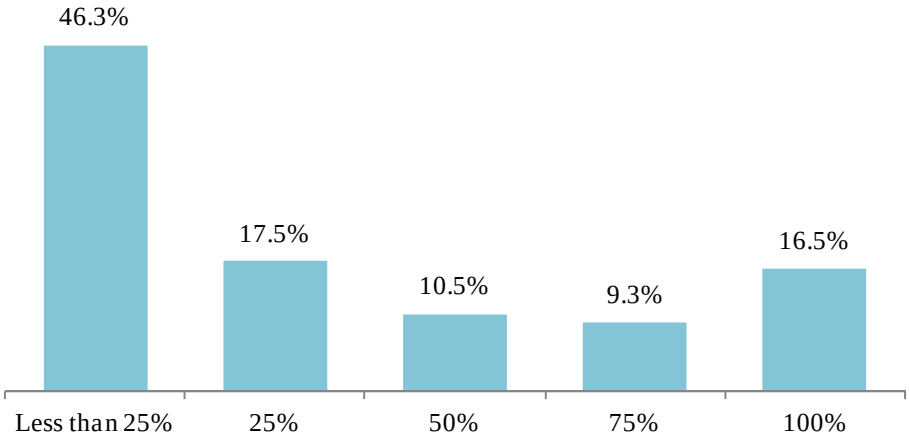


When asked if members used "subcontractor" technicians in 2016, three-fourths (77.0%) did not use them. Of those who did use "subcontractors," 10% used local "subcontractors," 9% used both local and out of area "subcontractors," and 4% used only out-of-area "subcontractors." Of those who used "subcontractors," almost half reported they accounted for less than 25% of their technician staff in 2016.

Did you use "subcontractor" technicians in 2016? (N=208)



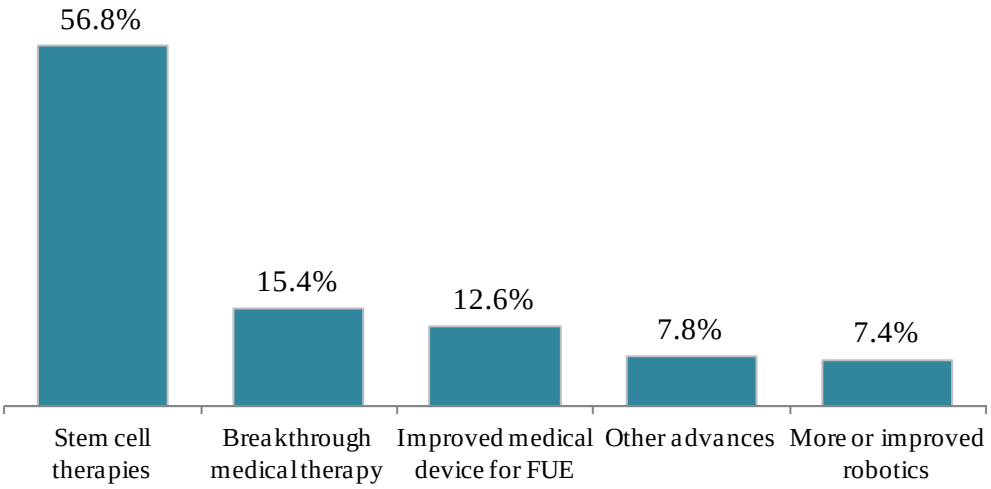
When using "subcontractor" technicians, on average what percentage of your technician staff do they account for? (N=59)



NEXT TECHNOLOGICAL LEAP

Members were asked what they thought would be the next technological leap in hair restoration. Among the 206 responses provided, stem cell therapy was the most common response (56.8%), followed by breakthrough medical therapy (15.4%) and improved medical device for FUE (12.6%).Less than 10 percent of respondents selected 'other advances' (7.8%) or 'more or improved robotics' (7.4%).

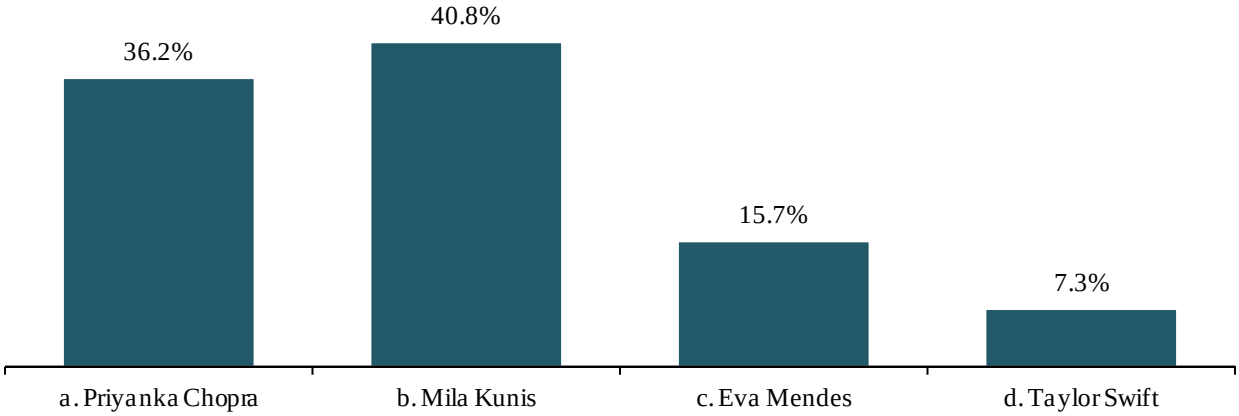
What do you think will be the next technological "leap" in hair restoration? (*n*=206)



CELEBRITIES

When asked which of the following four female celebrities had the best hair, members most frequently chose 'Mila Kunis' (40.8%), followed by 'Priyanka Chopra' (36.2%) and 'Eva Mendes' (15.7%).

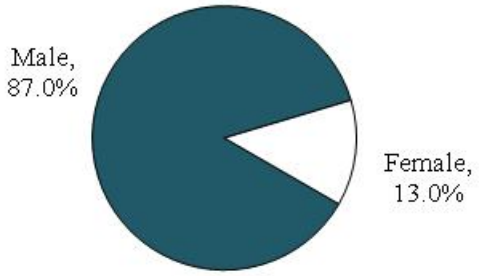
Which of the following <u>female</u> celebrities do you think has the best hair? (*n*=202)



DEMOGRAPHICS

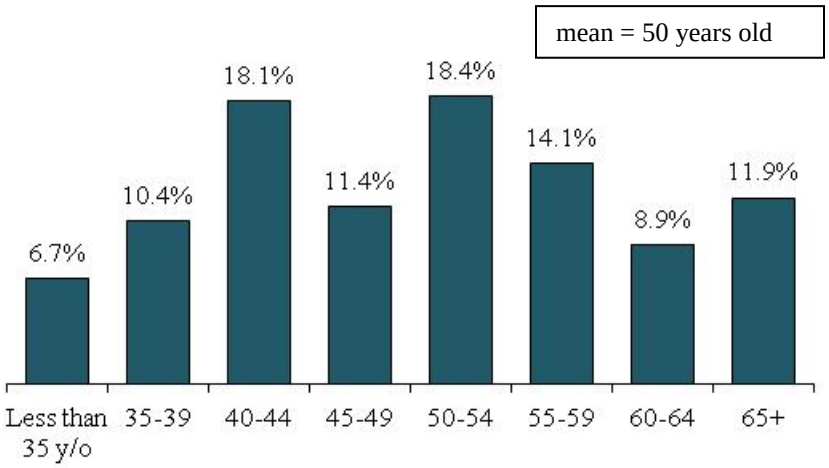
Respondent Gender (*n*=221)

About 87 percent of ISHRS members who responded to the survey are male and 13 percent are female.



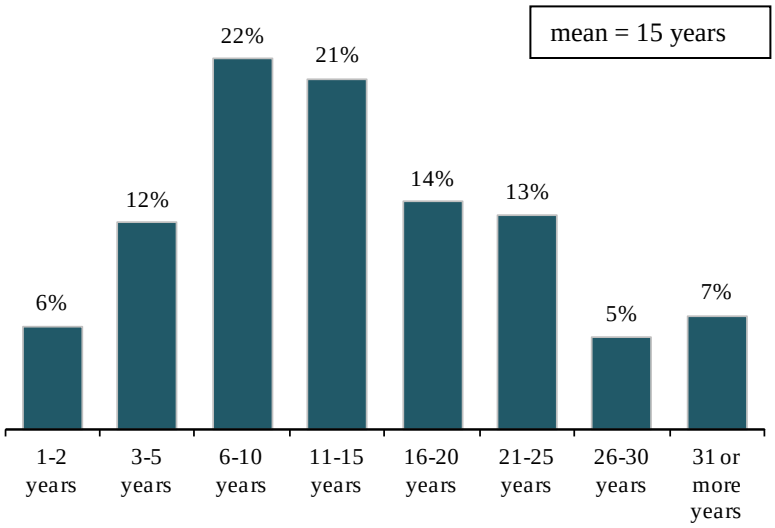
Respondent Age (*n*=221)

The mean age of ISHRS members is 50 years old. Respondents were most likely to be between the ages of 50 to 59 years old (y/o).



How many years have you been practicing hair restoration? (*n*=300)

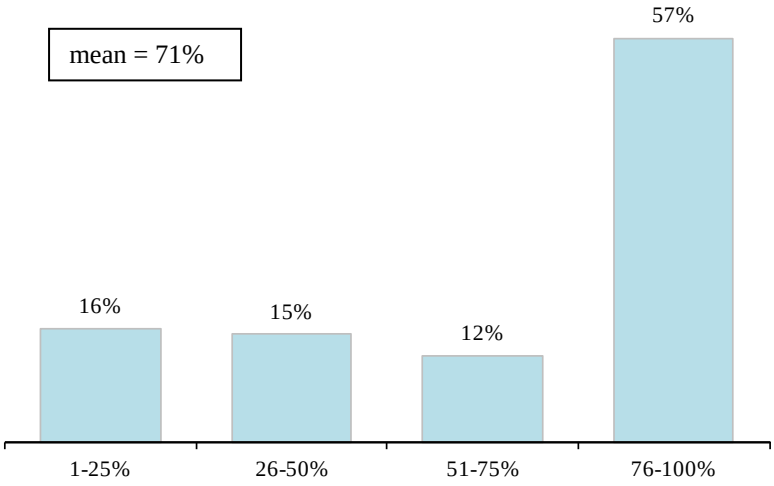
As of 2016, ISHRS members have been practicing hair restoration for an average of 15 years; 25% percent have been practicing hair restoration for more than 20 years.



Of your entire personal medical practice, roughly what percent is specifically devoted to hair restoration? (*n*=300)

Members were asked what percent of their practices are devoted to hair restoration surgery. More than half (57%) devoted the majority (76% or more) of their practice to hair restoration surgery.

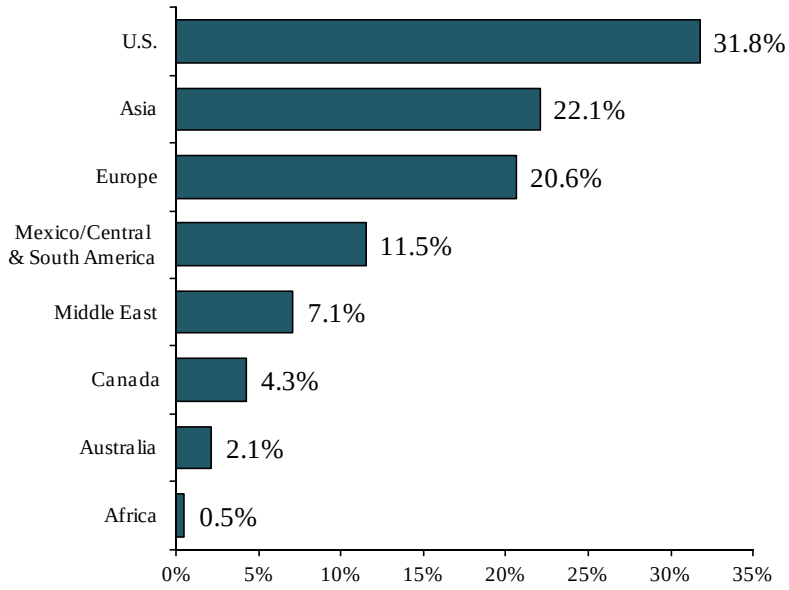
On average, members reported devoting nearly 71% of their practice to hair restoration.



The 2017 un-weighted survey estimates were similar to the actual ISHRS membership with regard to geographic region (see the table presented below). However, in order to make the survey estimates by region match the ISHRS membership, a weight was applied to the data.

Weighting the results in this manner ensured that the statistical extrapolations of worldwide estimates more accurately reflected the true population estimates by geographic region.

Primary Region/Country of Practice of ISHRS Members



Weighting of 2017 Survey Results

Region	Total ISHRS Membership		Un-weighted Respondents		Weighted Estimates			
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Rounded Frequency	Weighting Factor
US	314	31.8	77	25.7	95.3	31.8	95	1.2382
Asia	218	22.1	68	22.7	66.2	22.1	66	0.9734
Europe	204	20.6	75	25.0	61.9	20.6	62	0.8259
Mexico/Central & South America	114	11.5	39	13.0	34.6	11.5	35	0.8876
Middle East	70	7.1	23	7.7	21.3	7.1	21	0.9241
Canada	42	4.3	10	3.3	12.8	4.3	13	1.2753
Australia	21	2.1	7	2.3	6.4	2.1	6	0.9109
Africa	5	0.5	1	0.3	1.5	0.5	2	1.5182
Total	988	100.0	300	100.0	300	100	300	

* Weighting estimates based on total ISHRS membership. Uninvited participants were treated as non-responders for weighting purposes.

APPENDIX A

STATISTICAL TERMS USED

Following are definitions of statistical terms used throughout this report:

Percentage: Unless otherwise noted, percentages appearing in graphs and tables represent the percentage of persons who selected a particular response choice to a question in the survey. Percentages or results shown in 'Total' are based on all survey respondents, while percentages shown for breakout groups/segments are reflective only of the persons in that particular group. The sum of percentages may be off as much as one percent (e.g., totaling 99% or 101%) due to rounding. In some charts and tables, the percentages shown are not the percentage of respondents who selected a particular response choice, but are the "average percent" that was reported by respondents when they were asked to break-out their activities or procedures by indicating percentages in various categories.

Average and Mean: The average is the sum of all answers divided by the number of persons responding. Means for rating scale questions are weighted averages based on the assigned scale values.

Median: The median is the value that lies in the middle of the data, i.e., half of all values in the data set are equal to or lower than the median and half are higher. The median is often abetter measure of the "typical" response, since it is not subject to skewing by large or small values in the data set.

Base (*n*): The number of respondents upon which percentages or statistics are based is indicated as (*n*). Statistics that are based on a small sample (n<30) may not be strongly representative.