

## Letter

# Gender based price differences in 5% minoxidil foam: The impact of generic alternatives and bulk packaging

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### To the Editor

Minoxidil is an over-the-counter treatment for androgenetic alopecia in both men and women. Historically, there has been a gender pricing disparity in men's versus women's 5% minoxidil foam, known as the "pink tax."<sup>1</sup> A price analysis of 5% minoxidil foam has not been conducted since the patent expiration of women's name-brand topical minoxidil. We tested whether gender pricing disparities persisted after the introduction of generic alternatives of 5% minoxidil and bundled packaging options.

We assessed the cost, supply duration in months, number of bottles in the package, visual packaging characteristics, and gendered marketing strategies of name-brand and generic 5% minoxidil foam products from retailers (Amazon, CVS, Rite Aid, Costco, Walmart, and Target). All bottles of minoxidil included in the study were 2.11 oz. The price per ounce was compared using 2-sample T tests. A significance level of  $P < .05$  was used to determine whether the differences were statistically significant. Mean values are  $\pm$  SD. Subgroup analyses were performed to determine if product bundling influenced pricing differences. Pricing trends were examined to determine if specific brands contributed to inequities.

A total of 41 products were analyzed, 21 marketed for male and 20 for female consumers ([Table 1](#)). The mean price per bottle and per ounce for male-marketed topical minoxidil was  $22.08 \pm 9.14$  dollars and  $10.46 \pm 4.3$  dollars, respectively, compared to  $26.78 \pm 9.24$  dollars and  $12.68 \pm 4.4$  dollars for female-marketed topical minoxidil ( $P = .11$ ) ([Table 2](#)). Female-marketed topical minoxidil was more often sold in packages containing fewer bottles (mode = 1) versus male-marketed minoxidil (mode = 3). Costco's Kirkland and Amazon Basic were the only brands that offered female-marketed minoxidil in packages with more than 3 bottles. Female-marketed ( $n = 7$ ;

mean =  $16.09 \pm 3.3$  dollars) cost more than male-marketed ( $n = 8$ ; mean =  $11.19 \pm 4.0$  dollars) name-brand topical minoxidil ( $P = .0181$ ). There was no difference in price per ounce between generic female-marketed ( $n = 13$ ; mean =  $10.86 \pm 3.8$  dollars) and generic male-marketed ( $n = 11$ ; mean =  $9.80 \pm 4.7$  dollars) topical minoxidil ( $P = .36$ ). There were no differences in the topical applicators of minoxidil marketed to men versus women.

Subtle gender-based disparities still exist in topical minoxidil marketing. Male-marketed packaging is labeled "not for use by women," which may mislead women into believing that the ingredients are unsafe for them. This warning is because of differences in FDA approved dosing. The 5% foam is FDA approved for men to apply twice daily but only once daily for women.<sup>2</sup> Multi-unit packaging plays a role in gender-based pricing inequalities. Female-marketed minoxidil is typically sold in single-bottle packages, while male-marketed products are often available in cost-saving multi-bottle bundles, resulting in higher long-term costs for women. Generic topical minoxidil may contribute to more equitable pricing. Some generics are sold in gender neutral packaging and multi-unit bundles. Educating patients on packaging language and broader availability of bulk packaging for female-marketed products could help mitigate these disparities.

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### Potential conflicts of interest

Steven R. Feldman, MD, PhD, has received research, speaking, and consulting support from a variety of companies including Galderma, GSK/Stiefel, Almirall, Leo Pharma, Boehringer Ingelheim, Mylan, Celgene, Pfizer, Valeant, Abbvie, Samsung, Janssen, Lilly, Menlo, Merck, Novartis, Regeneron, Sanofi, Novan, Quriert, National Biological Corporation, Caremark, Advance Medical, Sun Pharma, Suncare Research, Informa, UpToDate, and the

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**Table 1.** Gender Based Price and Packaging Comparison of 5% Minoxidil Foam Products: Most to Least Expensive Price per Ounce.

Brand	Distributor	Sex	Marketed Supply, mo	Bottles, n	Price per Bottle, \$	Price per Ounce, \$	Box Color	Gendered Language	Can Color
Rogaine	Rite Aid	Female	4	2	45.00	21.32	Purple, blue	Once a day foam for women	Gray, blue
Rogaine	CVS	Female	2	1	41.29	19.57	Purple, blue	Once a day foam for women	Gray, blue
Rogaine	CVS	Male	1	1	41.29	19.57	Blue	Not for use by women	Gray
BosleyMD	CVS	Female	2	1	39.99	18.95	Pink	Once a day foam for women	Gray, pink
BosleyMD	CVS	Male	1	1	39.99	18.95	Blue	Not for use by women	Gray
Rogaine	Rogaine	Female	2	1	33.99	16.11	Purple, blue	Once a day foam for women	Gray, blue
Rogaine	Amazon	Male	1	1	33.34	15.80	Blue	Not for use by women	Gray
Rogaine	CVS	Female	4	2	32.75	15.52	Purple, blue	Once a day foam for women	Gray, blue
Rogaine	Rite Aid	Male	3	3	30.00	14.22	Blue	Not for use by women	Gray
Rogaine	Amazon	Female	4	2	29.50	13.98	Purple, blue	Once a day foam for women	Gray, blue
Rogaine	Rogaine	Female	4	2	29.50	13.98	Purple, blue	Once a day foam for women	Gray, blue
CVS Health	CVS	Male	1	1	28.99	13.74	N/A	Not for use by women	Blue
CVS Health	CVS	Female	1	1	28.99	13.74	N/A	Once a day foam for women	Blue, green
Amazon Basic	Amazon	Female	2	1	28.57	13.54	Purple	Foam for women, once a day	N/A
CVS Health	CVS	Female	2	1	28.49	13.50	Purple, pink	Once a day foam for women	Gray, purple, pink
CVS Health	CVS	Male	1	1	28.49	13.50	Blue	Not for use by women	Gray, blue
Walgreens	Walgreens	Female	2	1	26.99	12.79	Pink	Foam for women	N/A

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<b>Brand</b>	<b>Distributor</b>	<b>Sex</b>	<b>Marketed Supply, mo</b>	<b>Bottles, n</b>	<b>Price per Bottle, \$</b>	<b>Price per Ounce, \$</b>	<b>Box Color</b>	<b>Gendered Language</b>	<b>Can Color</b>
Walgreens	Walgreens	Male	1	1	26.99	12.79	Blue	Not for use by women	N/A
Rogaine	Rogaine	Female	6	3	25.66	12.16	Purple, blue	Once a day foam for women	Gray, blue
Hers	Walmart	Female	2	1	24.96	11.83	Green	Foam for women	Green
Hims	Walmart	Male	1	1	24.96	11.83	Beige	Not for use by women	Beige
Rogaine	CVS	Male	3	3	23.83	11.29	Blue	Not for use by women	Gray
Equate	Walmart	Female	2	1	21.98	10.42	Purple	Foam for women	Purple
CVS Health	CVS	Female	4	2	21.75	10.31	Purple, pink	Once a day foam for women	Gray, purple, pink
Rogaine	Amazon	Male	4	4	20.00	9.48	Blue	Not for use by women	Gray
Rogaine	Rogaine	Male	3	3	20.00	9.48	Blue	Not for use by women	Gray
Daylogic	Rite Aid	Female	4	2	20.00	9.48	Purple, blue	Once a day foam for women	Gray, purple
CVS Health	CVS	Male	3	3	17.66	8.37	Gray	Not for use by women	Gray
Rogaine	Rogaine	Male	4	4	17.25	8.17	Blue	Not for use by women	Gray
Rogaine	Rogaine	Male	6	6	17.17	8.14	Blue	Not for use by women	Gray
Rogaine	Amazon	Male	3	3	16.66	7.90	Blue	Not for use by women	Gray
Rogaine	Target	Male	3	3	16.66	7.90	Blue	Not for use by women	Gray
Up&Up	Target	Female	4	2	16.50	7.82	Pink	Foam for women	Gray, pink
Walgreens	Walgreens	Female	6	3	16.00	7.58	Pink	Foam for women	N/A
Walgreens	Walgreens	Male	3	3	16.00	7.58	Blue	Not for use by women	N/A
Amazon Basic	Amazon	Female	12	6	15.29	7.25	Purple	Foam for women, once a day	N/A
Amazon Basic	Amazon	Male	6	6	13.39	6.35	Blue	Not for use by women	Blue
Up&Up	Target	Male	3	3	11.66	5.53	Blue	Not for use by women	Blue

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<b>Brand</b>	<b>Distributor</b>	<b>Sex</b>	<b>Marketed Supply, mo</b>	<b>Bottles, n</b>	<b>Price per Bottle, \$</b>	<b>Price per Ounce, \$</b>	<b>Box Color</b>	<b>Gendered Language</b>	<b>Can Color</b>
Equate	Walmart	Male	3	3	10.99	5.21	Blue	Not for use by women	Blue
Kirkland	Costco	Female	12	6	8.33	3.95	Purple	Hair regrowth treatment for women, foam for women	N/A
Kirkland	Costco	Male	6	6	8.33	3.95	Blue	Hair regrowth treatment for men, not for use by women	Blue

**Table 2.** *Descriptive Statistics for Price per Bottle and Dose of Minoxidil 5% Foam by Sex.*

<b>Measure</b>	<b>Sex</b>	<b>Price per Bottle, \$</b>	<b>Price per Ounce, \$<sup>a</sup></b>
Mean	Male	22.08	10.46
	Female	26.78	12.68
Median	Male	20.00	9.48
	Female	27.74	13.15
Mode	Male	16.66	7.89
	Female	N/A	N/A

<sup>a</sup> There was no statistically significant difference in the price per ounce of male versus female marketed minoxidil ( $P = .11$ ).

National Psoriasis Foundation. He is founder and majority owner of [www.DrScore.com](http://www.DrScore.com) and founder and part owner of Causa Research, a company dedicated to enhancing patients adherence to treatment. The remaining authors declare no conflicts of interest.

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