

SOCIAL MEDIA

An Analysis of Recommended Anti-Aging Skin Supplement Videos and Products on TikTok

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INTRODUCTION

With the rising popularity of skin-care influencers, many patients are turning to TikTok for dermatologic advice and product recommendations.^{1,2} One such product includes oral supplements, due to reported anti-aging benefits, collagen production, and antioxidative properties. To better understand what content patients are exposed to when searching for anti-aging skin supplements, this study aims to comprehensively summarize the videos and products recommended by TikTok's algorithm.

METHODS

Using the query “anti-aging skin supplements,” TikTok was searched between June and July 2024 for the top 100 videos and TikTok Shop product listings. The inclusion criteria included videos and products featuring oral supplements for anti-aging skin benefits in the English language. Videos and product listings that did not meet these criteria, such as those that focus on topical products or do not mention specific anti-aging benefits, were excluded. For videos meeting criteria, creator

characteristics were documented, and video content was analyzed. For product listings meeting criteria, seller characteristics and product characteristics were recorded.

RESULTS

Of the top 100 videos, 66 videos met the inclusion criteria. Twenty videos were posted by physicians, fourteen of which were from dermatologists. 6 of these fourteen videos recommended against oral supplements, 3 of which questioned its limited bioavailability and efficacy in oral form and the other 3 videos discussing limited research showing an association between these supplements and positive clinical outcomes. The average like-to-follower ratio was 3.3 times higher for non-physician created videos compared to physician-created ones. Of the 46 non-physician-created videos, none included disclaimers about potential side effects and 43.5% (n=20) were financially incentivized by advertisements or sponsorships (**Table 1**). In comparison, only 15% (n=3) of physician-created videos were financially incentivized.

Of the top 100 product listings, 78 met the criteria. Sixteen listings were created by verified sellers. Four listings used edited

Table 1. Characterization of Top Included Videos and Creators

Video Demographics	Number of videos (n,%)	Mean number of followers	Mean number of likes	Mean like:follower ratio	Number of financially incentivized videos*
Physician-created (including dermatologists)	20, 30.3%	1,976,611	52,460	0.09	3
Dermatologist-created	14, 21.2%	1,029,308	45,289	0.1	0
Non-Physician-created	46, 69.7%	367,713	15,522	0.3	20
Content: Recommending against supplements	6, 9.1%	1,440,150	65,786	0.04	0
Content: Endorsing use of supplements	60, 90.9%	763,765	22,248	0.2	23

A total of 66 videos were included in the analysis.

*Financially incentivized videos include videos with advertisements or sponsored products

images where the original manufacturer's logo was removed. Seventeen of the listings did not include a legible supplement facts label.

Collagen (n=23 videos, 52 listings) was the most recommended supplement, specifically for its reported ability to improve skin elasticity.³ Other commonly recommended ingredients included nicotinamide riboside/mononucleotide (n=15 videos, 15 listings) and vitamin C (n=7 videos, 24 listings), which were respectively advertised to reverse aging through improving cellular metabolism and increasing collagen synthesis (**Table 2**).⁴ Hyaluronic acid supplements were also among the top recommended ingredients featured on TikTok shop (n=16 listings, 0 videos), with some randomized controlled trials showing increased water retention in the skin and improved wrinkle appearance.⁵

DISCUSSION

The lack of FDA regulation on supplement production and minimal research validating their efficacy for anti-aging skin benefits means that consumers must exercise more caution when seeking advice online. Schouten et. al showed that consumers were more likely to identify with internet “influencers” due to the personal content that they share and ability to closely interact with followers through social media. As a result, consumers often find online influencers to be more trustworthy, resulting in increased purchasing intentions for influencer-marketed products.⁶

While some of these creators may have a background in healthcare, our study shows that the ratio of engagement with physician-created videos is much less than that of non-physician created videos. However, a content

Table 2. Recommended Supplement Ingredients in Top Included Videos and Product Listings

Ingredient	# of product listings (n,%)	# of videos (n,%)
Collagen	52, 66.7%	23, 34.9%
Vitamin C	24, 30.8%	7, 10.6%
Vitamin D	4, 5.1%	5, 7.6%
Nicotinamide Mononucleotide/ Riboside/Nicotinamide Adenine Dinucleotide (NAD+)	15, 19.2%	15, 22.7%
Resveratrol	2, 2.6%	6, 9.1%
Biotin	9, 11.5%	0, 0%
Glutathione	5, 6.4%	0, 0%
Vitamin E	3, 3.9%	0, 0%
Vitamin A	2, 2.6%	0, 0%
Vitamin K	2, 2.6%	0, 0%
Fisetin	2, 2.6%	0, 0%
Hyaluronic Acid	16, 20.5%	0, 0%
Essential fatty acids	0, 0%	5, 7.6%
Helicore	0, 0%	4, 6.1%
Berberine	0, 0%	3, 4.6%
Astaxanthin	0, 0%	3, 4.6%
Zinc	0, 0%	3, 4.6%
Curcumin	0, 0%	2, 3.0%
Metformin	0, 0%	2, 3.0%
CoQ10	0, 0%	2, 3.0%
Glutathione	0, 0%	2, 3.0%
Urolithin A	0, 0%	2, 3.0%
Vitamin B Complex	0, 0%	2, 3.0%
Vitamin K	0, 0%	2, 3.0%
Turmeric	0, 0%	2, 3.0%

NAD+: Nicotinamide Adenine Dinucleotide. A total of 66 videos and 78 product listings were included for analysis. Only ingredients that were recommended more than once were included in this table

creator's expertise may not correlate with user trust, which could account for the engagement discrepancy in our findings.

CONCLUSION

This study characterizes the current information on oral supplementation for dermatologic benefits on TikTok and encourages patients to critically evaluate the content that they see when using social media for medical decision-making. This study also allows healthcare providers to be more aware of what information patients are exposed to online when considering anti-aging methods.

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References:

1. Zhao Y, Zhang J. Consumer health information seeking in social media: a literature review. *Health Inform Libr J.* 2017;34(4):268–283.
2. Goodyear VA, Armour KM, Wood H. Young people and their engagement with health-related social media: new perspectives. *Sport Educ Soc.* 2018;24(7):673–688.
3. Kim, D., Chung, H., Choi, J., Sakai, Y., & Lee, B. (2018). Oral Intake of Low-Molecular-Weight Collagen Peptide Improves Hydration, Elasticity, and Wrinkling in Human Skin: A Randomized, Double-Blind, Placebo-Controlled Study. *Nutrients.* 2018;10(7):826.
4. Katayoshi T, Nakajo T, Tsuji-Naito K. Restoring NAD⁺ by NAMPT is essential for the SIRT1/p53-mediated survival of UVA- and UVB-irradiated epidermal keratinocytes. *J Photochem Photobiol B.* 2021;221:112238.
5. Hsu TF, Su ZR, Hsieh YH, Wang MF, Oe M, Matsuoka R, Masuda Y. Oral Hyaluronan

- Relieves Wrinkles and Improves Dry Skin: A 12-Week Double-Blinded, Placebo-Controlled Study. *Nutrients.* 2021;13(7):2220.
6. Schouten AP, Janssen L, Verspaget M. Celebrity vs. Influencer endorsements in advertising: the role of identification, credibility, and Product-Endorser fit. *Int J Advert.* 2019;39(2):258–281.