

Diet and Herpes: Diet Recommendations and Counseling Suggestions

Kelsea O'Rourke, University of Tennessee Martin, Dietetic Intern

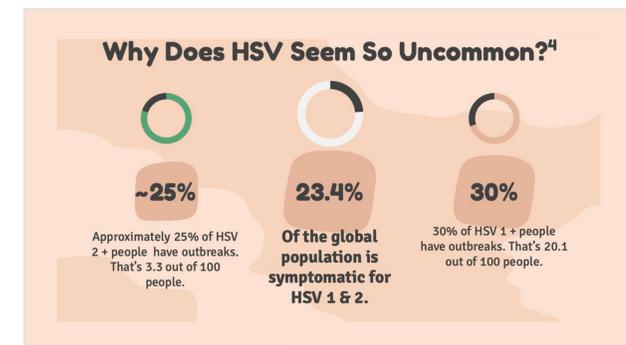
Introduction

Global estimates indicate that of people 50 years and under, approximately 67% have herpes simplex virus 1 and 13% have herpes simplex virus 2. 20-30 percent of the HSV2 population and 30% of the HSV1 population are symptomatic (roughly 23.4% of the global population).

Outbreak symptoms include painful lesions, swollen lymph nodes, body aches, fatigue, fever and headaches. **Those with a weakened immune system are at greater risk for severe and recurrent outbreaks.** The severity of an outbreak can vary from inconvenient to incapacitating.

Common misconceptions exist suggesting that reducing arginine and increasing lysine intake can reduce the frequency and severity of HSV outbreaks, but there is insufficient scientific evidence to back these claims. An effective dietary approach to thriving with HSV would be to focus on supporting one's immune system by consuming an anti-inflammatory diet.

The goal of this literature review is to offer evidence based MNT for HSV and to provide guidelines on how to have a conversation with clients in a way that is comfortable and supportive.



Greater than 4 out of 5 people carry antibodies for HSV, yet Less than 1 in 4 people will ever have an HSV outbreak.

Collage of marketing articles for HSV treatments, including:

- GETTING RID OF HSV IS POSSIBLE NOW
- L-lysine Benefits the Gut, Brain & Herpes Outbreaks
- How to Get Rid of HERPES NATURALLY
- Best Pre Workouts Without L-Arginine
- Lysine for cold sores: Does it work?
- HEKMA CENTER

This is what you see if you google "nutrition and herpes": a slew of marketing articles that promise to get rid of your stigmatized condition if you buy their product, and natural remedies that are not backed by science. The negative social stigma of herpes drives people to believe these damaging publications. The truth is that herpes is not curable, and the stigma around it is often more harmful than the virus itself.

Challenging a Popular Theory: Lysine .v. Arginine in the Treatment of Herpes

- There is an antagonistic relationship between Arginine and Lysine in the body, meaning that **Lysine and Arginine compete for cellular absorption.** Arginine is a precursor to nitric oxide, which is needed for Herpes viral replication.⁶
- The popular theory is that by supplementing with or eating a diet high in lysine, and avoiding arginine rich foods, you could **"starve out"** the virus and reduce the frequency and severity of HSV outbreaks. This hypothesis is supported by in-vitro studies, but **evidence is mixed in human trials.**

Lysine and HSV: Evidence

Almost all studies came to this conclusion:

- "L-lysine supplementation appears to be ineffective for prophylaxis or treatment of herpes simplex lesions... Doses in excess of 3 g/d appear to improve patients' **subjective experience** of the disease."
- "We have evaluated the prophylactic effect of L-lysine 1g daily on recurrent herpes simplex labialis in 65 patients in a double-blind, placebo-controlled, crossover study... On the whole, **lysine prophylaxis had no effect on the recurrence rate of herpes simplex.**"

Any studies indicating that lysine supplementation was prophylactic against HSV were based on subjective survey responses and/or were poorly managed.

Arginine and HSV: Evidence

- In-vitro studies using arginine synthase showed that in an arginine deficient environment viral replication was inhibited and cell-to-cell transmission was reduced, effectively blocking "the classic cytopathic effects of HSV."
- There are no human-trial studies to date observing the effects of a low arginine diet/ enzyme-induced arginine deficiency on the frequency and severity of HSV outbreaks.** Furthermore, such a diet may have harmful side effects. Arginine is essential for growth, wound healing, endothelial function, and nitric oxide production, so prolonged deficiency could be dangerous for those with cardiovascular disease, a weakened immune system, wounds and burns.

The Lysine .v. Arginine Theory is Debunked! Not quite...

Subjective data is valuable.

We are working with people, not lab rats.

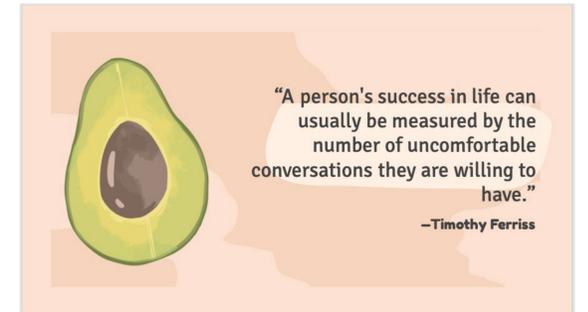
Compelling subjective Data:

- "To test the effect of lysine supplementation on herpes infection, **1543 subjects were surveyed** by questionnaire after a six-month trial period... the average dosage used was 936 mg of lysine daily. **84% said that lysine supplementation prevented recurrence or decreased the frequency of herpes [outbreaks]**... 79% described their symptoms as severe or intolerable without lysine ... 90% indicated that healing took six to 15 days [without lysine], but with lysine 83% stated that lesions healed in five days or less.. **Overall, 88% considered supplemental lysine an effective form of treatment for herpes infection.**"
- Every HSV + person responds to a high lysine/arginine ratio differently. **The placebo effect is still effective.** Antiviral therapy is currently the most effective method of treating HSV, but as long as a patient is well informed and their methods for treating themselves are not causing them physical, mental, or financial harm, **dietitians should be supportive in finding creative ways to treat HSV.**
- If someone recognizes a high arginine food as a trigger for an HSV outbreak, **believe them** and support them in removing that food from their diet.

MNT For HSV: A Modified Anti-Inflammatory Diet

Studies show that a pro-inflammatory diet impairs immune function. Our goal is to fortify the immune system by reducing physiological stress through diet, therefore reducing the rate and severity of HSV outbreaks.

- Eat the rainbow:** Consume a wide variety of fruits, vegetables, herbs, and spices.
- Cut the sugar:** consume a low glycemic diet.
- Keep it lean:** opt for lean sources of protein to avoid saturated fats.
- More omega-3's:** increase omega-3 intake and reduce omega-6 intake, which is pro-inflammatory.
- Healthy drinks:** cut or reduce your consumption of caffeine and alcohol.
- Most importantly:** reduce your mental and physical stress and get enough sleep!



"Can We Talk?"

Tips on how to have a comfortable, open conversation about HSV and nutrition.

- Assess your own comfort and identify any biases that you may have. If you are uncomfortable talking about herpes, your patient will be too.
- Try not to react overtly, even if you feel uncomfortable or embarrassed. Pay attention to what your body language and posture communicate.
- Make your patient feel comfortable by establishing a rapport before asking sensitive questions.
- Gain consent. For example: Do you mind if I ask you a few questions about a medication you're taking/ your medical history? I ask all my patients these questions.
- Rephrase your questions or briefly explain why you are asking a question if a patient seems offended or reluctant to answer.
- Start with "just the facts" to lessen discomfort. If you speak with a positive, comfortable attitude, your patient will take your lead.

References

- Whitley, R. J. (1996, January 1). Herpesviruses. Medical Microbiology, 4th edition. Retrieved March 25, 2022, from <https://www.ncbi.nlm.nih.gov/books/NBK8157/>
- World Health Organization. (22AD, March 11). Herpes simplex virus. World Health Organization. Retrieved March 29, 2022, from <https://www.who.int/news-room/fact-sheets/detail/herpes-simplex-virus>
- University of Santa Cruz, Ca Student Health Center. (n.d.). Herpes. Retrieved March 25, 2022, from <https://healthcenter.ucsc.edu/services/forms/student-handbook/HC-700.pdf>
- Luiking, Y. C., & Deutz, N. E. (2007). Biomarkers of arginine and lysine excess. The Journal of Nutrition, 137(6), 1662-1668. <https://doi.org/10.1093/jn/137.6.1662s>
- Becker, Y., Olshesky, U., & Levitt, J. (1967). The role of arginine in the replication of herpes simplex virus. Journal of General Virology, 1(4), 474-478. <https://doi.org/10.1099/0022-1317-1-4-471>
- Griffith, R. S., DeLong, D. C., & Nelson, J. D. (1981). Relation of arginine antagonism to herpes simplex growth in tissue culture. Chemotherapy, 27(3), 202-213. <https://doi.org/10.1159/000237979>
- Maiolo, V. J., & Ramesh, S. (2017, June). Lysine for herpes simplex prophylaxis: A review of the evidence. Integrative medicine (Encinitas, Calif.). Retrieved March 25, 2022, from <https://www.ncbi.nlm.nih.gov/pubmed/30881246>
- Milman, N., Scheibel, J., Jessen, O. (1980). Lysine prophylaxis in recurrent herpes simplex labialis: A double blind, controlled crossover study. PubMed. Retrieved March 25, 2022, from <https://pubmed.ncbi.nlm.nih.gov/6153847/>
- Grimes, J. M., Khan, S., Badaeux, M., Rao, R. M., Rowlinson, S. W., & Carvajal, R. D. (2021). Arginine depletion as a therapeutic approach for patients with covid19. International Journal of Infectious Diseases, 102, 566-570. <https://doi.org/10.1016/j.ijid.2020.10.100>
- Griffith, R. S., DeLong, D. C., & Nelson, J. D. (1981). Relation of arginine antagonism to herpes simplex growth in tissue culture. Chemotherapy, 27(3), 202-213. <https://doi.org/10.1159/000237979>
- Walsh, D. E., Griffith, R. S., & Behrooz, A. (1983). Subjective response to lysine in the therapy of herpes simplex. Journal of Antimicrobial Chemotherapy, 12(5), 489-496. <https://doi.org/10.1093/jac/12.5.489>
- Aronson, D. (2009, November). Cortisol-Its Role in Stress, Inflammation, and Indications for Diet Therapy. Today's Dietitian, 11(11), 38. Retrieved March 25, 2022, from <https://www.todaysdietitian.com/newarchives/111609p38.shtml>
- Centers for Disease Control and Prevention. (2019, October 21). Discussing sexual health with your patients. Centers for Disease Control and Prevention. Retrieved March 25, 2022, from <https://www.cdc.gov/hiv/clinicians/screening/discussing-sexual-health.html>