



Helicobacter pylori populations can be managed through diet.

Dietary interventions are reasonable to consider as standalone management of mild or asymptomatic cases. Diet can also be incorporated into any *H. pylori* treatment protocol.

Generally, a diet low in micronutrients is a risk factor for *H. pylori* infection. Diets high in fruits, vegetables and fiber have shown protective effects.

Smoking, alcohol, and hyperglycemia have been found to be risk factors in *H. pylori* infection.

Proper dietary modifications for *H. pylori* can have the following actions:

- Bactericidal/Bacterostatic
- Control growth, virulence, and expression of *H. pylori*
- Immune modulation
- Anti-inflammatory
- Antioxidant
- Anti-adhesive
- Mucosal repair & protection

What to Eat Less of

Food Categories to Avoid	
Foods categories shown to promote <i>H. pylori</i> colonization and virulence	High salt
	High nickel – <i>Cocoa and chocolate, soy beans, oatmeal, nuts (especially almonds), fresh and dried legumes</i>
	Smoked, pickled, salt-preserved foods
	Nitrites

What to Eat More of

Fruits	Actions
Berries: blueberry, bilberry, elderberry, cranberry, raspberry, strawberry	Bacteriostatic in vitro, may increase susceptibility to clarithromycin and other antibiotics, anti-adhesive
Cranberry	Anti-adhesive
Grapes – Especially red	Anti-adhesive, anti-inflammatory, antioxidant, immune modulating
Pomegranate	Anti-inflammatory
Apple	Anti-inflammatory

Vegetables	Actions
Cruciferous vegetables: broccoli, broccoli sprouts, cabbage, cabbage juice, radish	Bactericidal/static, mucosal healing, anti-inflammatory, antioxidant, may increase susceptibility to antibiotics
Pepper: red bell & hot red	Bactericidal, antioxidant
Garlic	Bactericidal
Algae & sea vegetables	Antioxidant, mucosal repair & protection
Burdock	Synergistic with other <i>H. pylori</i> treatment

Oils – Away from Food	Actions
PUFAs, especially linolenic acid (flax oil)	Strong anti- <i>H. pylori</i> activity in vitro, reduce risk of atrophic gastritis
Fish oil	Anti-adhesive, anti-inflammatory
Garlic oil	Bactericidal
Black currant seed oil	Bacteriostatic in vitro
Carrot seed oil	Bacteriostatic in vitro
Grapefruit seed oil	Bacteriostatic in vitro
Monolaurin	Bactericidal/static

Dairy	Actions
Yogurt	Anti-inflammatory, immune modulator
Colostrum	Immune modulating
Lactoferrin	Anti-inflammatory, reduces <i>H. pylori</i> colonization & gastritis in vivo, synergistic with antibiotic protocols

Honey & Bee Products	Actions
Propolis	Anti-inflammatory, antioxidant, bacteriostatic in vitro
Honey	Anti-inflammatory, inversely associated with <i>H. pylori</i> infection, bacteriostatic in vitro
Manuka Honey	Anti-inflammatory, urease inhibition, bacteriostatic in vitro

What to Eat More of

Culinary Herbs and Spices	Actions
Nutmeg	Anti-inflammatory
Curcumin	Mucosal repair/protection, bacteriostatic, anti-inflammatory
Black cumin seed	Bactericidal in vitro
Cumin	Bactericidal in vitro, anti-inflammatory
Ginger	Anti-inflammatory
Borage	Anti-inflammatory
Caraway	Anti-inflammatory
Oregano	Anti-adhesive, bactericidal
Licorice	Bactericidal, mucosal repair & protection, anti-inflammatory, anti-adhesive
Thyme	Bactericidal
Cinnamon	Bactericidal
Peppermint	Anti-inflammatory
Nutmeg	Anti-inflammatory

Other	Actions
Red Wine & resveratrol	Anti- <i>H. pylori</i> activity in vitro
Fermented Foods	Anti-inflammatory, immune modulator,
Green tea	Bactericidal, anti-adhesive, anti-inflammatory, antioxidant
<i>Lactobacillus</i>	Anti-inflammatory, immune modulator, decrease side effects of antibiotics, anti-adhesive, secrete anti-microbial products
<i>Bifidobacteria</i>	Anti-inflammatory, immune modulator, anti-adhesive, secrete anti-microbial products
<i>Saccharomyces boulardii</i>	Anti-inflammatory, immune modulator, increase eradication rate of antibiotics, decrease side effects, anti-adhesive, secrete anti-microbial products

Important Nutrients	Actions
Vitamin C	Synergistic with other <i>H. pylori</i> treatment, anti-inflammatory, antioxidant, tissue repair, immune modulating, increase efficacy of antibiotics
Vitamin E	Synergistic with other <i>H. pylori</i> treatment, anti-inflammatory, antioxidant
Vitamin D	Inverse relationship w/ <i>H. pylori</i> infection
Selenium	Antioxidant, immune modulating
Zinc carnosine	Mucosal protection & repair
Iron (if indicated)	Immune modulating

References

- Assaad, S., Chaaban, R., Tannous, F., & Costanian, C. (2018). Dietary habits and *Helicobacter pylori* infection: a cross sectional study at a Lebanese hospital. *BMC gastroenterology*, 18(1), 1-13.
- Beevers, D. G., Lip, G. Y., & Blann, A. D. (2004). Salt intake and *Helicobacter pylori* infection. *Journal of hypertension*, 22(8), 1475-1477.
- Biagi, M., Miraldi, E., Figura, N., & Giachetti, D. (2009). Antiradical activity and in vitro inhibition of *Helicobacter pylori* by Italian red wines. *Natural product communications*, 4(2), 1934578X0900400218.
- Fahey, J. W., Stephenson, K. K., & Wallace, A. J. (2015). Dietary amelioration of *Helicobacter* infection. *Nutrition Research*, 35(6), 461-473.
- Hołubiuk, Ł., & Imiela, J. (2016). Diet and *Helicobacter pylori* infection. *Przegląd gastroenterologiczny*, 11(3), 150.
- Hussain, A., Tabrez, E., Peela, J., Honnavar, P., Dr, & Tabrez, S. (2018). Vitamin C: A Preventative, Therapeutic Agent Against *Helicobacter pylori*. *Cureus*, 10(7), e3062. <https://doi.org/10.7759/cureus.3062>
- Loh, J. T., Torres, V. J., & Cover, T. L. (2007). Regulation of *Helicobacter pylori* cagA expression in response to salt. *Cancer research*, 67(10), 4709-4715.
- Mahady, G. B., Pendland, S. L., & Chadwick, L. R. (2003). Resveratrol and red wine extracts inhibit the growth of CagA+ strains of *Helicobacter pylori* in vitro. *The American journal of gastroenterology*, 98(6), 1440.
- O'Mahony, R., Al-Khtheeri, H., Weerasekera, D., Fernando, N., Vaira, D., Holton, J., & Basset, C. (2005). Bactericidal and anti-adhesive properties of culinary and medicinal plants against *Helicobacter pylori*. *World journal of gastroenterology*, 11(47), 7499.
- Paulo, L., Oleastro, M., Gallardo, E., Queiroz, J. A., & Domingues, F. (2011). Anti-*Helicobacter pylori* and urease inhibitory activities of resveratrol and red wine. *Food Research International*, 44(4), 964-969.
- Raei, N., Behrouz, B., Zahri, S., & Latifi-Navid, S. (2016). *Helicobacter pylori* infection and dietary factors act synergistically to promote gastric cancer. *Asian Pacific Journal of Cancer Prevention*, 17(3), 917-921.
- Mirmiran, P., Bahadoran, Z., Ghasemi, A., Jeddi, S., & Azizi, F. (2017). High-sulforaphane broccoli sprout powder reduces serum nitric oxide metabolites in *Helicobacter pylori* infected patients. *Journal of Functional Foods*, 34, 356-358.
- Seyyed Ali Mard, Hossein Khadem Haghighian, Vahid Sebghatollahi, Bijan Ahmadi, "Dietary Factors in Relation to *Helicobacter pylori* Infection", *Gastroenterology Research and Practice*, vol. 2014, Article ID 826910, 5 pages, 2014
- Sharma, Ashimav D. "Low nickel diet in dermatology." *Indian journal of dermatology* vol. 58,3 (2013): 240. doi:10.4103/0019-5154.110846
- Ullah, H., Di Minno, A., Santarcangelo, C., Khan, H., Xiao, J., Arciola, C. R., & Daglia, M. (2021). Vegetable Extracts and Nutrients Useful in the Recovery from *Helicobacter pylori* Infection: A Systematic Review on Clinical Trials. *Molecules*, 26(8), 2272.
- Xia, Y., Meng, G., Zhang, Q. *et al.* Dietary Patterns are Associated with *Helicobacter Pylori* Infection in Chinese Adults: A Cross-Sectional Study. *Sci Rep* 6, 32334 (2016).
- Yanaka, A. (2017). Role of sulforaphane in protection of gastrointestinal tract against *H. pylori* and NSAID-induced oxidative stress. *Current pharmaceutical design*, 23(27), 4066-4075.
- Yanaka, A., Fahey, J. W., Fukumoto, A., Nakayama, M., Inoue, S., Zhang, S., ... & Yamamoto, M. (2009). Dietary sulforaphane-rich broccoli sprouts reduce colonization and attenuate gastritis in *Helicobacter pylori*-infected mice and humans. *Cancer Prevention Research*, 2(4), 353-360.