

Probiotics, prebiotics & synbiotics: the evidence behind the claims

Selena Ryan-Vig for *Evidently Cochrane*, 13 October 2023, updated 24 October

References and further reading

Collinson S, Deans A, Padua-Zamora A, Gregorio GV, Li C, Dans LF, Allen SJ. **Probiotics for treating acute infectious diarrhoea**. *Cochrane Database of Systematic Reviews* 2020, Issue 12. Art. No.: CD003048. DOI: 10.1002/14651858.CD003048.pub4
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003048.pub4/full>

Related Cochrane Clinical Answer:

Ciapponi A. “What are the effects of probiotics for treating acute infectious diarrhoea?” Cochrane Library, Cochrane Clinical Answer, 7 April 2021. Web. 25 August 2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.3568/full>

Related Cochrane Podcast:

Collinson S. Do probiotics help to treat acute infectious diarrhoea? Cochrane Library, Cochrane Podcast, 1 June 2021. Web. 25 August 2022. <https://www.cochrane.org/podcasts/10.1002/14651858.CD003048.pub4>

Coffey MJ, Garg M, Homaira N, Jaffe A, Ooi CY. Probiotics for people with cystic fibrosis. *Cochrane Database of Systematic Reviews* 2020, Issue 1. Art. No.: CD012949. DOI: 10.1002/14651858.CD012949.pub2.
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012949.pub2/full>

Cooke G, Watson C, Deckx L, Pirotta M, Smith J, van Driel ML. **Treatment for recurrent vulvovaginal candidiasis (thrush)**. *Cochrane Database of Systematic Reviews* 2022, Issue 1. Art. No.: CD009151. DOI: 10.1002/14651858.CD009151.pub2
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009151.pub2/full>

Related Cochrane Clinical Answer:

Daskalakis G. “For women with recurrent vulvovaginal candidiasis (thrush), how do antifungal treatments compare with placebo or no treatment?” Cochrane Library, Cochrane Clinical Answer, 3 August 2022. Web. 25 August 2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.4005/full>

Daskalakis G. “For women with recurrent vulvovaginal candidiasis (thrush), how do oral antifungal treatments compare with topical antifungal treatments?” Cochrane Library, Cochrane Clinical Answer, 3 August 2022. Web. 25 August 2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.4010/full>

Cooper TE, Khalid R, Chan S, Craig JC, Hawley CM, Howell M, Johnson DW, Jaure A, Teixeira-Pinto A, Wong G. Synbiotics, prebiotics and probiotics for people with chronic kidney disease. *Cochrane Database of Systematic Reviews* 2023, Issue 10. Art. No.: CD013631. DOI: 10.1002/14651858.CD013631.pub2.
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD013631.pub2/full>

Dalal R, McGee RG, Riordan SM, Webster AC. **Probiotics for people with hepatic encephalopathy.** *Cochrane Database of Systematic Reviews* 2017, Issue 2. Art. No.: CD008716. DOI: 10.1002/14651858.CD008716.pub3
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD008716.pub3/full>

Related Cochrane Clinical Answer:

Ronellenfitch U. “Does evidence from randomized controlled trials support the use of probiotics in people with hepatic encephalopathy?” Cochrane Library, Cochrane Clinical Answer, 14 June 2017. Web. 25 August 2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.1645/full>

Davidson SJ, Barrett HL, Price SA, Callaway LK, Dekker Nitert M. **Probiotics for preventing gestational diabetes.** *Cochrane Database of Systematic Reviews* 2021, Issue 4. Art. No.: CD009951. DOI: 10.1002/14651858.CD009951.pub3
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009951.pub3/full>

Related Cochrane Clinical Answer:

Burch J, Martin JE. “What are the effects of probiotics given for prevention of gestational diabetes on pregnancy and childbirth outcomes?” Cochrane Library, Cochrane Clinical Answer, 20 May 2019. Web. 25 August 2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.3662/full>

Goldenberg JZ, Yap C, Lytvyn L, Lo CKF, Beardsley J, Mertz D, Johnston BC. **Probiotics for the prevention of Clostridium difficile-associated diarrhea in adults and children.** *Cochrane Database of Systematic Reviews* 2017, Issue 12. Art. No.: CD006095. DOI: 10.1002/14651858.CD006095.pub4
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006095.pub4/full>

Related Cochrane Clinical Answer:

Rodrigo C. “What are the effects of probiotics for adults and children being treated with antibiotics?” Cochrane Library, Cochrane Clinical Answer, 2 July 2018. Web. 25 August 2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.2047/full>

Grev J, Berg M, Soll R. **Maternal probiotic supplementation for prevention of morbidity and mortality in preterm infants.** *Cochrane Database of Systematic Reviews* 2018, Issue 12. Art. No.: CD012519. DOI: 10.1002/14651858.CD012519.pub2.
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012519.pub2/full>

Related Cochrane Clinical Answer:

Kamath MS. “Can probiotics administered to pregnant women help prevent morbidity and mortality in preterm infants?” Cochrane Library, Cochrane Clinical Answer, 20 May 2019. Web. 25 August 2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.2493/full>

Guo Q, Goldenberg JZ, Humphrey C, El Dib R, Johnston BC. **Probiotics for the prevention of pediatric antibiotic-associated diarrhea.** *Cochrane Database of Systematic Reviews* 2019, Issue 4. Art. No.: CD004827. DOI: 10.1002/14651858.CD004827.pub5
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD004827.pub5/full>

Related Cochrane Clinical Answer:

Tort S, Pettersen K. “Can probiotics prevent antibiotic-associated diarrhoea in children?” Cochrane Library, Cochrane Clinical Answer, 25 July 2019. Web. 25 August 2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.2583/full>

Ihezor-Ejiofor Z, Kaur L, Gordon M, Baines PA, Sinopoulou V, Akobeng AK. **Probiotics for maintenance of remission in ulcerative colitis.** *Cochrane Database of Systematic Reviews* 2020, Issue 3. Art. No.: CD007443. DOI: 10.1002/14651858.CD007443.pub3
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007443.pub3/full>

Related Cochrane Clinical Answer:

Ronellenfitch U. “For maintenance of remission in people with ulcerative colitis, how do probiotics compare with mesalazine (5-ASA)?” Cochrane Library, Cochrane Clinical Answer, 30 April 2020. Web. 25 August 2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.3048/full>

Kaur L, Gordon M, Baines PA, Ihezor-Ejiofor Z, Sinopoulou V, Akobeng AK. **Probiotics for induction of remission in ulcerative colitis.** *Cochrane Database of Systematic Reviews* 2020, Issue 3. Art. No.: CD005573. DOI: 10.1002/14651858.CD005573.pub3
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD005573.pub3/full>

Related Cochrane Clinical Answer:

Gurusamy K. “Can adding probiotics to standard concomitant drug treatment improve outcomes over standard treatment alone in adults and children with ulcerative colitis?” Cochrane Library, Cochrane Clinical Answer, 17 July 2020. Web. 25 August 2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.3075/full>

Makrgeorgou A, Leonardi-Bee J, Bath-Hextall FJ, Murrell DF, Tang MLK, Roberts A, Boyle RJ. **Probiotics for treating eczema.** *Cochrane Database of Systematic Reviews* 2018, Issue 11. Art. No.: CD006135. DOI: 10.1002/14651858.CD006135.pub3
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006135.pub3/full>

Related Cochrane Clinical Answer:

Burch J, Fernandez-Penas P. “What are the benefits and harms of probiotics for people with eczema?” Cochrane Library, Cochrane Clinical Answer, 17 May 2019. Web. 25 August 2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.2488/full>

NHS. Probiotics. NHS.uk, page last reviewed 22 November 2022. Available from: <https://www.nhs.uk/conditions/probiotics/>

Ong TG, Gordon M, Banks SSC, Thomas MR, Akobeng AK. **Probiotics to prevent infantile colic.** *Cochrane Database of Systematic Reviews* 2019, Issue 3. Art. No.: CD012473. DOI: 10.1002/14651858.CD012473.pub2
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012473.pub2/full>

Related Cochrane Clinical Answer:

Lai NM. “How do probiotics compare with placebo for preventing colic in healthy babies?” Cochrane Library, Cochrane Clinical Answer, 16 July 2019. Web. 25 August 2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.2516/full>

Scott AM, Clark J, Julien B, Islam F, Roos K, Grimwood K, Little P, Del Mar CB. **Probiotics for preventing acute otitis media in children.** *Cochrane Database of Systematic Reviews* 2019, Issue 6. Art. No.: CD012941. DOI: 10.1002/14651858.CD012941.pub2
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012941.pub2/full>

Related Cochrane Clinical Answer:

Ciapponi A. “Can probiotics help prevent acute otitis media (AOM) in children?” Cochrane Library, Cochrane Clinical Answer, 1 October 2019. Web. 25 August 2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.2701/full>

Sharif S, Meader N, Oddie SJ, Rojas-Reyes MX, McGuire W. **Probiotics to prevent necrotising enterocolitis in very preterm or very low birth weight infants.** *Cochrane Database of Systematic Reviews* 2020, Issue 10. Art. No.: CD005496. DOI: 10.1002/14651858.CD005496.pub5
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD005496.pub5/full>

Related Cochrane Clinical Answer:

Sguassero Y. “For very preterm or very low birth weight infants, what are the effects of probiotics for preventing necrotizing enterocolitis?” Cochrane Library, Cochrane Clinical Answer, 11 December 2020. Web. 25 August 2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.3399/full>

Related Cochrane Podcast:

McGuire W. Probiotics for prevention of necrotising enterocolitis in very preterm or very low birthweight infants. Cochrane Library, Cochrane Podcast, 11 January 2021. Web. 25 August 2022. <https://www.cochrane.org/podcasts/10.1002/14651858.CD005496.pub5>

Toh SL, Boswell-Ruys CL, Lee BSB, Simpson JM, Clezy KR. **Probiotics for preventing urinary tract infection in people with neuropathic bladder.** *Cochrane Database of Systematic Reviews* 2017, Issue 9. Art. No.: CD010723. DOI: 10.1002/14651858.CD010723.pub2.
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010723.pub2/full>

Wallace C, Sinopoulou V, Gordon M, Akobeng AK, Llanos-Chea A, Hungria G, Febo-Rodriguez L, Fifi A, Fernandez Valdes L, Langshaw A, Saps M. **Probiotics for treatment of chronic constipation in children.** *Cochrane Database of Systematic Reviews* 2022, Issue 3. Art. No.: CD014257. DOI: 10.1002/14651858.CD014257.pub2
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD014257.pub2/full>

Walton R. Probiotics to prevent colds and flu: what’s the evidence? *Evidently Cochrane* blog, 07 October 2022. Available from: <https://www.evidentlycochrane.net/probiotics-to-prevent-colds-and-flu-whats-the-evidence/>

Wei D, Heus P, van de Wetering FT, van Tienhoven G, Verleye L, Scholten RJPM. **Probiotics for the prevention or treatment of chemotherapy- or radiotherapy-related diarrhoea in people with cancer.** *Cochrane Database of Systematic Reviews* 2018, Issue 8. Art. No.: CD008831. DOI: 10.1002/14651858.CD008831.pub3.
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD008831.pub3/full>

Williams NC, Jayaratnasingam J, Prayle AP, Nevitt SJ, Smyth AR. Probiotics for people with cystic fibrosis. *Cochrane Database of Systematic Reviews* 2023, Issue 9. Art. No.: CD015236. DOI: 10.1002/14651858.CD015236.pub2.

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD015236.pub2/full>

Xie HY, Feng D, Wei DM, Mei L, Chen H, Wang X, Fang F. **Probiotics for vulvovaginal candidiasis in non-pregnant women.** *Cochrane Database of Systematic Reviews* 2017, Issue 11. Art. No.: CD010496. DOI: 10.1002/14651858.CD010496.pub2

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010496.pub2/full>

Related Cochrane Clinical Answer:

Grillo-Ardila CF. “What are the benefits and harms of adjunctive probiotics in non-pregnant women with vulvovaginal candidiasis?” *Cochrane Library, Cochrane Clinical Answer*, 25 July 2018. Web. 25 August

2022. <https://www.cochranelibrary.com/cca/doi/10.1002/cca.2050/full>

Zhao Y, Dong BR, Hao Q. **Probiotics for preventing acute upper respiratory tract infections.** *Cochrane Database of Systematic Reviews* 2022, Issue 8. Art. No.: CD006895. DOI: 10.1002/14651858.CD006895.pub4

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006895.pub4/full>