

Probiotics

Some community pharmacies are recommending purchase of probiotics with antibiotic prescriptions: Where does the evidence lie?

SOME AVAILABLE BRANDS: These include Natren, Blackmores, Inner Health, Nature's Way, NFS, Orogenics, Thompson's.

ACTIVE CONSTITUENTS: These vary depending on the product, but the most common probiotics include *Lactobacilli spp.*, *Bifidobacterium spp.*, *Streptococcus spp.* and *Saccharomyces boulardii*.

MANUFACTURER CLAIMS: Probiotics are deemed to be 'good bacteria' claimed to help relieve a variety of health problems, including chronic diseases, autoimmune diseases, acid reflux, coronary heart disease, irritable bowel syndrome, food poisoning and lactose intolerance. There are claims probiotics have an involvement with autism and yeast infections and that they may restore the 'natural balance' of bacteria in the intestinal tract depleted through antibiotic use.

EVIDENCE FOR EFFICACY: There are 26 Cochrane Library Reviews covering a range of indications, including one on antibiotic-associated diarrhoea (AAD) in children, which suggests that *Lactobacillus rhamnosus* and *Saccharomyces boulardii* at a high dosage of 5–40 billion CFU/day may prevent the onset of AAD, but this needs to be confirmed by a large, well-designed blinded randomised trial. No conclusions about effectiveness and safety of other probiotic agents for paediatric AAD can be drawn. More refined studies are needed to evaluate strain-specific probiotics and report both effectiveness (e.g. incidence and duration of diarrhoea) and safety of probiotics.

There is insufficient evidence to recommend probiotic therapy in adults as an adjunct to antibiotic therapy for *Clostridium difficile* colitis. There is no evidence to support the use of probiotics alone in adults for the treatment of *C. difficile* colitis.

Summary Message

Two types of probiotic (*Lactobacillus rhamnosus* and *Saccharomyces boulardii*) at high doses may prevent the onset of antibiotic-associated diarrhoea in children. Probiotics are generally well tolerated. Clinical benefit needs to be confirmed in larger studies across a greater range of probiotics. There is insufficient evidence to recommend probiotic therapy in adults as an adjunct to antibiotic therapy, specifically for *Clostridium difficile*-induced colitis.

ADVERSE EFFECTS: Probiotics are reported to be generally well tolerated in children. Minor side effects occur infrequently. Rash, nausea, gas, flatulence, vomiting, increased phlegm, chest pain, constipation, taste disturbance, and low appetite have been reported.

CONTRAINDICATIONS: These include hypersensitivity to lactose or milk (*Lactobacillus*) and yeast allergies (*S. boulardii*).

PRECAUTIONS: Probiotics should be used with caution in the critically ill or severely immune-compromised, those with short bowel syndrome, and those using central venous catheters.

DRUG INTERACTIONS: More drug interaction studies and surveillance is required. It is recommended to separate administration of probiotics from antibiotics by at least two hours. Probiotics should not be taken with systemic antifungals, immunosuppressants or chemotherapeutics.

Key references

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- Pillai A, Nelson RL. Probiotics for treatment of clostridium difficile-associated colitis in adults. Cochrane Library www.cochranelibrary.com 16th July 2008, DOI: 10.1002/14651858.CD004611.pub2
- Williams NT. Probiotics. American Journal of Health-System Pharmacy. 2012; 67(6):449–458.

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Herbal medicines are a popular health care choice, but few have been tested to contemporary standards. **POTION OR POISON?** summarises the evidence for the potential benefits and possible harms of well-known herbal medicines.