

years in primary schools in Upolu and Savaii using a portable echocardiography ultrasound machine. Preliminary results show a RHD prevalence of 14 per 1000. Although there are some concerns regarding the screening of RHD with echocardiography,^{9,10} the utilisation of echocardiographic screening in Samoa may prove cheaper and more effective in the long term, as more RHD cases are identified much earlier. There will be a greater chance of preventing RHD deterioration by the secondary prophylaxis programme, thus reducing the number of costly cardiac operations needed. It must be emphasised, however, that echocardiographic screening should not be carried out without a good secondary prophylaxis programme.

References

1. Kaplan MH, Bolande R, Rakita L, Blair J. Presence of bound immunoglobulins and complement in the myocardium in acute rheumatic fever—association with cardiac failure. *N Engl J Med.* 1964;271:637–645.
2. Viali S, Saena P, Futi V. Rheumatic Fever Programme in Samoa. *NZ Med J.* 2011; 24(1329):26–35.
3. Carapetis JR, Hardy M, Fakakovikaetau T, Taib R, Wilkinson L, Penny DJ, et al. Evaluation of a screening protocol using auscultation and portable echocardiography to detect asymptomatic rheumatic heart disease in Tongan schoolchildren. *Nat Clin Pract Cardiovasc Med.* 2008;5(7):411–417.
4. Steer AC, Kado J, Wilson N, Tuiketeei T, Batzloff M, Waqatakirewa L, et al. High prevalence of rheumatic heart disease by clinical and echocardiographic screening among children in Fiji. *J Heart Valve Dis.* 2009;18(3):327–335.
5. Wilson N. Rheumatic heart disease in indigenous populations—New Zealand experience. *Heart Lung Circ.* 2010;19(5–6):282–288.
6. Carpetis JR, Currie BJ, Mathews JD. Cumulative incidence of rheumatic fever in an endemic region: a guide to the susceptibility of the population? *Epidemiol Infect.* 2000;124:239–244.
7. Remenyi B, Wilson N, Steer A, Ferreira B, Kado J, Kumar K, et al. World Heart Federation criteria for echocardiographic diagnosis of rheumatic heart disease—an evidence-based guideline. *Nat Rev Cardiol.* 2012;9:297–309.
8. Marijon E, Ou P, Celermajer DS, Ferreira B, Mocumbi AO, Jani D, et al. Prevalence of rheumatic heart disease detected by echocardiographic screening. *N Engl J Med.* 2007;357:470–476.
9. Marijon E, Mirabel M, Celermajer D, Jouven X. Rheumatic heart disease. *Lancet.* 2012;379:953–64.
10. Roberts K, Colquhoun S, Steer A, Remenyi B, Carapetis J. Screening for rheumatic heart disease: current approaches and controversies. *Nat Rev Cardiol.* 2013;10:49–58.

Nasal saline for chronic rhinosinusitis

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Chronic rhinosinusitis is a common medical condition presenting to the general practice team and one that creates ongoing problems for people who suffer from it. The use of nasal irrigation for the management of nose and sinus complaints has its foundations in yogic and homeopathic traditions. So, how effective is nasal saline in this setting?

AVAILABLE BRAND: NeilMed Sinus Rinse™ (also contains sodium bicarbonate).

ACTIVE CONSTITUENTS: Isotonic saline solution most commonly used in studies; however, hypertonic solutions are also commercially available.

MANUFACTURER CLAIMS: A natural, soothing, saline nasal wash. A large volume, low positive pressure (easy squeeze bottle) nasal wash is the most effective way to irrigate the nose based on current medical studies. Nasal irrigation is an excellent way to clean mucus from the nose, making medication more effective. Nasal irrigation also cleans allergens, irritants, bacteria and viruses from the nose, reducing the frequency of infection. Furthermore, it helps decrease swelling in the nose and increases air flow. It can be used for all ages; it is available in isotonic, paediatric and hypertonic concentrations.

EVIDENCE FOR EFFICACY: There is a single Cochrane Database Systematic Review of nasal saline irrigations for treatment of the symptoms of chronic rhinosinusitis. Randomised controlled trials were evaluated, which included comparison with no treatment (three trials), a placebo (one trial), as an adjunct to other treatments (one trial) or versus other treatments (one trial). Comparisons of hypertonic versus isotonic solutions have been made (two trials). The review provides evidence that saline is beneficial in the treatment of the symptoms of chronic rhinosinusitis when used as the sole modality of treatment, and as an adjunct. The impact of hypertonic over isotonic solutions on symptoms is not clear. Although based on a single study, the review authors highlight that saline is not as effective as an intranasal steroid. A more recent BMJ clinical review highlighted that no distinction has been made between the effects of saline in patients with and without polyps. However, evidence does exist to support the use of saline douches following sinus surgery.

ADVERSE EFFECTS: There are no significant side effects reported in trials. Saline irrigations are well tolerated. Minor side effects are common and include nasal burning, irritation, nose bleeds, headache and pooling of saline in the sinuses and subsequent draining.

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.

Summary Message

There is evidence to support nasal saline flushing for symptom management in chronic rhinosinusitis and in the treatment setting, as an adjunct to intranasal steroid therapy. Although relatively well tolerated, minor side effects are common and relate to the local effect of the saline, including burning, irritation, nose bleeds, and headache. There is a commercially available preparation that delivers a high volume rinse. Studies suggest significant effort is involved in preparing and delivering solutions and that excessive drainage subsequent to administration can occur. According to a Cochrane review, the beneficial effect of saline appears to outweigh these drawbacks for the majority of patients.

CONTRAINDICATIONS: Patients who are unable to stand up or bend near the sink or who are bed-bound or severely debilitated. Do not use if nasal passages are completely blocked or if an ear infection or blocked ears.

PRECAUTIONS: Recent ear or sinus surgery. Do not swallow the solution; however, if this occurs there is no harm, as the amount of sodium chloride or bicarbonate ingested in one swallow is insignificant.

DRUG INTERACTIONS: None reported.

Key references

- Ah-see KL, Mackenzie J, Ah-see KW. Management of chronic rhinosinusitis. *BMJ*. 2012;345:e7054 doi: 10.1136/bmj.e7054.
- Harvey R, Hannan SA, Badia L, Scadding G. Nasal saline irrigations for the symptoms of chronic rhinosinusitis. *Cochrane Database Syst Rev*. 2007;3:CD006394.
- Fountain B, editor. 2013 Healthcare Handbook: incorporating the OTC products guide. MIMS (NZ) Ltd: Auckland, New Zealand; 2013.

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