



A kinder way to deliver penicillin for rheumatic fever: Shouldn't children have this choice?

28 August 2025

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Summary

Acute rheumatic fever is a serious illness that can develop when the immune system reacts abnormally to a Group A Streptococcus (Strep A) throat or skin infection. It can lead to rheumatic heart disease, which damages heart valves and may result in heart failure and early death. For 70 years the only proven way to prevent disease progression has been through painful monthly intramuscular penicillin injections.

A new approach - SubCutaneous Injection of Penicillin (SCIP) - offers patients with acute rheumatic fever longer-lasting protection against breakthrough Strep A infections and disease progression. In an Aotearoa New Zealand (NZ) clinical trial, over 400 SCIP doses have been administered, with findings showing that children and young adults overwhelmingly prefer SCIP over the standard intramuscular injections.

As the trial ends, participants will be required to return to their four-weekly injections, raising an important question. If there's a safe, protective and more acceptable alternative, shouldn't children and whānau have the right to choose it?

This Briefing describes SubCutaneous Injection of Penicillin (SCIP) which offers many advantages over monthly injections of benzathine penicillin G which is the current prophylaxis used to prevent recurrent rheumatic fever. It argues that the evidence is sufficiently strong to justify making SCIP widely available to those who wish to choose this option.

What is rheumatic fever

Rheumatic fever is a preventable illness that develops when the immune system reacts abnormally to a Group A Streptococcus (Strep A) throat or skin infection.¹ It can cause inflammation in the heart, joints, skin and brain and disproportionately affects Māori and Pacific children in NZ.² Rates of acute rheumatic fever in these communities remain among the highest in the world, with most cases occurring in children aged 5–14 years.² Despite being preventable, rheumatic fever continues to drive inequitable health outcomes, including rheumatic heart disease, hospitalisations, and premature deaths. Each year, around 145 people are hospitalised with an initial episode of acute rheumatic fever and 269 are diagnosed with rheumatic heart disease.³ An estimated 2,000 individuals are currently receiving monthly penicillin injections. In 2024 the number of first-time rheumatic fever hospitalisations rose to 181.

Rheumatic fever is strongly linked to social and structural determinants such as household crowding, poverty, and barriers to accessing primary healthcare.⁴ Improving prevention and treatment options is critical to addressing this long-standing health inequity.

Painful injections and poor adherence

For over 70 years, intramuscular benzathine penicillin G has been the only proven way to prevent progression of acute rheumatic fever to rheumatic heart disease, which can lead to heart failure and early death. The current regimen requires painful injections into the buttocks every four weeks for a minimum period of 10 years. Given the complexity of busy lives, prioritising monthly injections is understandably challenging for many whānau. Missed

doses increase the risk of progression to heart disease, yet the treatment burden is high for children, young adults and their families.

What is SCIP and why does it matter?

SCIP allows penicillin to be delivered in higher-doses, which provides 10-weeks of protection per injection. That's fewer than half the number of injections in a typical treatment course and hence provides more flexibility and freedom for busy whānau.

There is a growing body of evidence building from Phase I^{5,6} and Phase II^{7,8} trials of SCIP which shows that:

- SCIP is **preferred** over intramuscular injections
- SCIP maintains **protective penicillin levels** better than intramuscular penicillin
- SCIP in general is **less painful** than intramuscular injections
- SCIP is **safe**
- SCIP is **protective** against breakthrough Strep A infections and recurrent rheumatic fever
- SCIP offers patients an **enhanced quality of life**, due to the reduced burden of treatment
- SCIP with wrap around whānau centred care provides **culturally responsive** services
- SCIP is **cost saving**, based on our analysis (submitted for publication)

The voices of participants reinforce the benefits of the SCIP Programme:⁹

"Would you rather be chased up every month or be seen four times a year?" – Wiremu

"He can just do more things, play rugby, helping around the home."- Mere (mother)

"It hurts for a couple of days, but it is way better than the injection trust me" – Teuila

The trial is ending, what happens now?

More than 400 SCIP injections have been delivered in the Aotearoa-based study, and the trial is now ending. That means children and young adults who've been receiving the longer-lasting, more tolerable SCIP injections may soon be required to return to their usual four-weekly intramuscular doses. For many, this is a step backwards. If a treatment is safe, effective, and preferred by the people receiving it, should we be asking them to go back to something more painful and burdensome?

Conclusion

SCIP has the potential to transform the way we prevent acute rheumatic fever from becoming rheumatic heart disease, offering a less painful and more acceptable treatment that is easier to stick with. As the trial ends, the question is: if it's safe and preferred by those who need it most, why take it away? Let's give them the right to choose.

What this Briefing adds

- The SCIP formulation of penicillin provides effective protection for 10 weeks with a single subcutaneous injection.
- Children, young adults and whānau strongly prefer SCIP over the standard injection regime currently provided.
- Over 400 SCIP doses have been safely administered in New Zealand.
- The end of the trial means children will lose access to this more acceptable treatment option.

Implications for policy and practice

- Children and families should be able to choose the form of penicillin that works best for them.
- SCIP may help improve access and reduce health inequities by improving adherence in communities disproportionately affected by acute rheumatic fever and rheumatic heart disease.
- Planning is needed to support the regulatory approval, procurement, and delivery of SCIP if it becomes the new standard of care.
- Fewer injections and lower pain burden could reduce healthcare workload and costs over time.

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Public Health Expert Briefing (ISSN 2816-1203)

Source URL:

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