

Update on Rheumatic Fever Prevention and Control



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The RF RISK Study

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Outline

- **Why** do we need to do this study?
- **What** are we hoping to learn?
- **What** are our methods?
- **How** are we getting on?
- **How** can you help?



Rheumatic Fever (RF) is a **complex 2-stage disease**, with risk factors for both **Group A Streptococcus (GAS) infection** and **progression to RF.**



RF is a disease of childhood – with peak incidence occurring between the ages of **5-19 years**.



In New Zealand, RF is almost exclusively a disease of **Māori and Pacific peoples**...
...and is most common among those residing in **high-deprivation areas**.



The strong ethnic and socioeconomic patterning of this disease suggests that primarily **poverty-related exposures** are responsible for RF development.



However, there are
very few high-quality studies
that have actually quantified the risk
factors for RF...
...and none that have done so in the
Australasian context.



The **RF RISK Study** aims to address this gap in our knowledge base.



*The New Zealand Rheumatic Fever Risk
Factors (**RF RISK**) study*



Understanding the risk factors that drive
RF development in New Zealand will both
explain an appalling ethnic inequity,
and
contribute to international RF knowledge.



Our Aims

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1. Identify potentially modifiable **environmental risk factors** for RF, (e.g. household crowding).
2. Identify potentially modifiable **host factors** for RF, such as vitamin D deficiency and anaemia.
3. Establish whether current or recent **skin infection** is associated with an increased risk of RF.
4. Establish whether **access to healthcare**, including pharyngitis treatment, is protective for RF.
5. Establish whether **poor oral health** is associated with an increased risk of RF.
6. Establish whether specific **group A streptococcus** (GAS) organisms are associated with RF.
7. Contribute to identifying **immunological factors** associated with an increased risk of RF.
8. Establish whether certain **genetic factors** (the HLA-DRB1 locus) are associated with RF.



Questions We Could Answer

Is RF associated with risk factors that are **potentially modifiable** such as:

- Household crowding, bed sharing
- Household cold, damp, mould & fuel poverty
- Environmental Tobacco Smoke (incl. hair nicotine)
- Limited resources for personal hygiene (e.g. hot water for washing)
- Poor diets & vitamin D deficiency
- Skin infections & insect bites
- Limited health services (incl. sore throat treatment)
- Poor oral health

Our Methods

- **Design:** Case-control study
- **Interview team:** CBG Health Research
- **Location:** National (North Island)
- **Time period:** 2 years, from mid-2014
- **Cases:** 150 RF cases meeting NZ case definition (confirmed, probable)
- **Controls:** 2 groups
 - Matched controls (300)
 - NZ Health Survey controls (4000)



Our Methods

- Design: Case-control study
- Interview team: CBG Health Research
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Our Methods

Data gathering:

- **Interview** with questionnaire.
- **Blood testing** for immune function, vitamin D, iron stores and genetics.
- **Throat & nasal swabs** for GAS, *Staph*, microbiome.
- **Hair sample** for nicotine.
- **Linked records**: NHI (hospitalisations etc), dental records, school-based throat-swabbing programme.



Our Progress

Since September 2014, we have
recruited and interviewed

52 RF cases.

(...as well as **104 matched controls.**)



Our Progress

That's **less than we anticipated** based on disease incidence rates before the study began...

...as such, we need all the help we can get regarding **recruitment of RF cases.**



Our Progress

So far, we have successfully recruited
around 60% of all RF cases notified to
ESR.



Our Progress

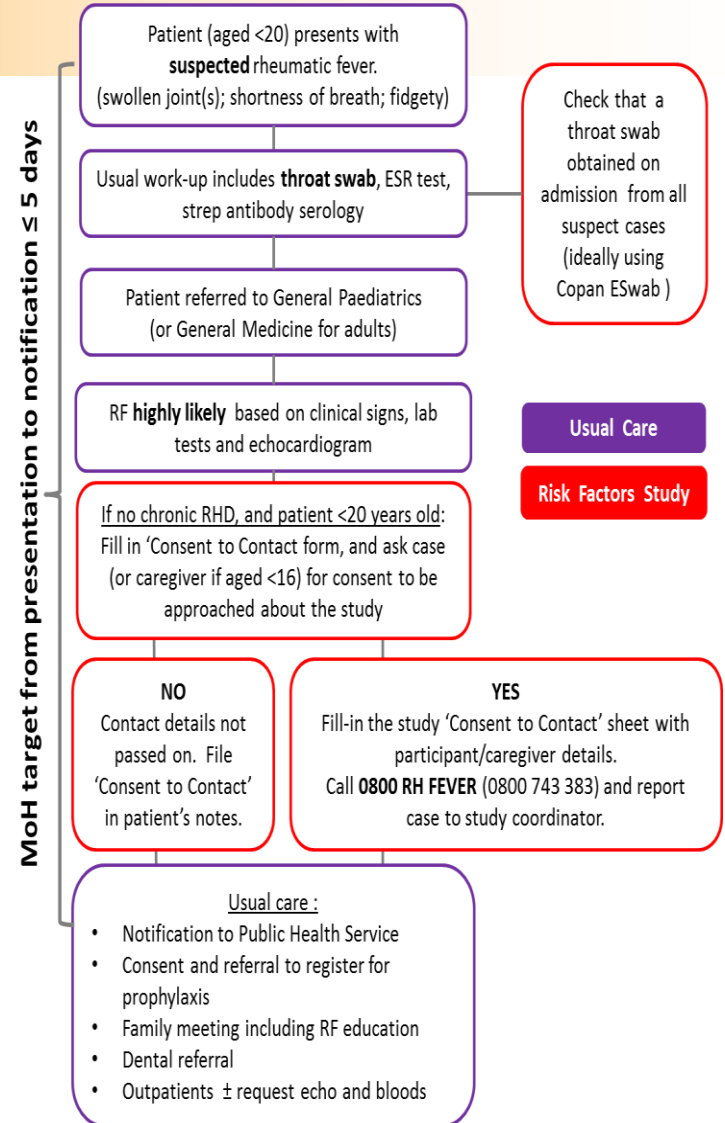
However, we believe a number of cases
(and their whānau) **aren't being given
the chance** to participate in the study.



What we need:

1. Take a throat swab at admission.
2. Gain consent to contact the case or caregiver.
3. Call 0800 RH FEVER (0800 743 383) if consent gained.

Rheumatic Fever Risk Factors Study – Key recruitment steps



If you would like to discuss whether a case meets diagnostic criteria for RF, phone: Diana Lennon 021 634 832; or Teuila Percival 021 760 000; or Nigel Wilson 021 565 508.

Summary

- We **still don't actually know** what exposures are most important in the development of RF.
 - The **RF RISK study** aims to address this gap in our knowledge base.
- The rapid change in rates of this disease means we **need every case we can get...**
 - ...because **knowing what causes RF is still important**, even if rates are declining.



The RF RISK Team

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Investigators

- **Michael Baker** (PI; University of Otago, Wellington)
- **Diana Lennon** (Co-PI; University of Auckland/Counties-Manukau District Health Board)
- **Jason Gurney** (University of Otago, Wellington)
- **Jane Oliver** (University of Otago, Wellington)
- **Teuila Percival** (University of Auckland/Counties-Manukau District Health Board)
- **Nevil Pierse** (University of Otago, Wellington)
- **Tony Merriman** (University of Otago, Dunedin)
- **Deborah Williamson** (University of Otago/ESR)
- **Nikki Moreland** (University of Auckland)
- **Colleen Murray** (University of Otago, Dunedin)
- **Nigel Wilson** (Auckland District Health Board)
- **Catherine Jackson** (Auckland District Health Board, Auckland Regional Public Health Service)
- **Richard Edwards** (University of Otago, Wellington)
- **Florina Chan Mow** (Counties-Manukau District Health Board)

Research Study Staff

- **Angela Chong** (CBG Health Research Ltd.)
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Māori Steering Group

- **Jason Gurney** (convenor, University of Otago, Wellington)
- **Christine Campbell** (Regional Public Health, Wellington)
- **Matire Harwood** (National Hauora Coalition/Te Kupenga Hauora Māori, University of Auckland)
- **Helen Herbert** (Ngati Hine Health Trust, Northland)
- **Pauline Koopu** (Auckland District Health Board)
- **Renee Muru** (Turuki Health Care, Auckland)
- **Bridget Robson** (Eru Pomare Health Research Centre, University of Otago, Wellington)
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Pacific Steering Group

- **Teuila Percival** (convenor, Counties-Manukau District Health Board/University of Auckland)
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- **Aumea Herman** (Ex DOH Cook Is)
- **Malakai Ofanoa** (University of Auckland, Langimalie Tongan Health Trust)
- **Ben Taufua** (Massey University)
- **Meia Schmidt-Uili** (Waitemata District Health Board)

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- Medical Officers of Health and other Public health service staff
- Laboratory staff
- ESR

Participants

- Children and their parents