FASTER, BETTER HEALING FOR CHILDREN WITH BURNS

A Skin Microbe Project to create better burn treatments and reduce long-term harm.

01.

The Problem

Some children in Western Australia who get burn injuries have wounds that take a long time to heal. This can lead to more pain, infections, scarring, and emotional stress. Right now, doctors don't have a good way to tell early on how well a child's wound will heal or what treatments will work best.

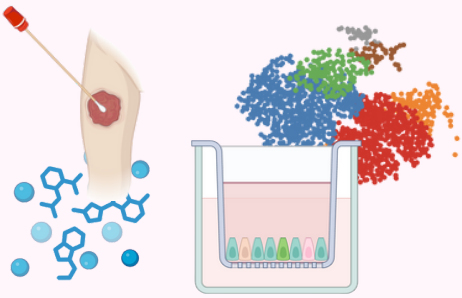
Our Research Goals

Using advanced techniques including 16S rRNA sequencing, RNA sequencing, predictive modelling (Machine learning), and *in vitro* skin models, we...

1. Study how microbes in burn wounds affect healing:
Microbes are tiny living organisms*—like bacteria—*that naturally live on our skin and sometimes in wounds. We're studying how the types and amounts of these microbes change over time in children's burn wounds to find out how they might be linked to better or worse healing.

2. Test how certain microbes influence the healing process:
In controlled lab experiments using cells (called ***in vitro* studies**), we're looking closely at specific microbes to see how they might help or slow down the body's ability to repair the skin after a burn.

3. Confirm how microbes and the body work together in living systems:
We then move to ***in vivo* studies**—research done in living models—to see how the body's immune system responds to these microbes in more complex, real life conditions. This helps us confirm which microbe-related patterns are truly important for healing.



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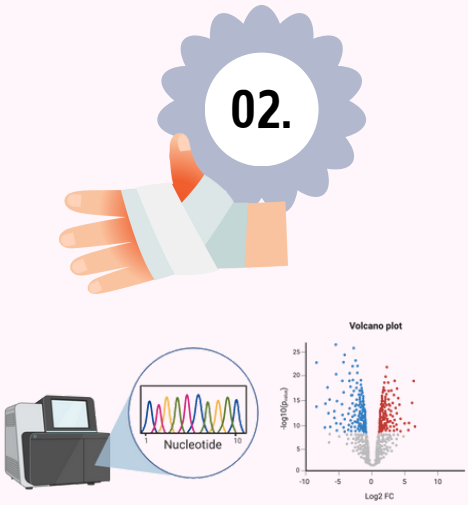

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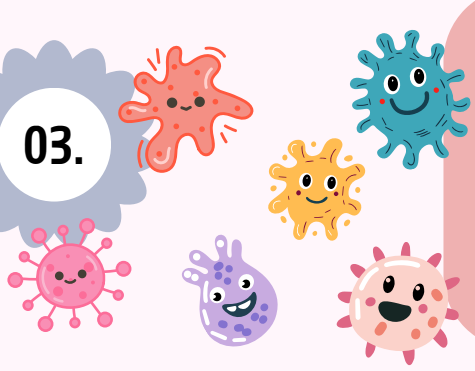

Why This Matters

This research is working to find **early signs** (called "**biomarkers**") that can help doctors predict how a child's burn wound will heal. It may also lead to new treatments that use good microbes to support faster and better recovery. ***Our goal is to help children in WA heal more quickly, with less pain, fewer complications, and better long-term outcomes.***