



Pain medication and immunisation – yes or no?

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Introduction

Vaccines are amongst the most effective ways to prevent infectious diseases. They are designed to trigger an immune response so that the body can fight off and 'remember' specific germs. When those germs confront the immune system at a later stage, it can then react strongly and effectively prevent the disease.

Vaccinations not only protect the person that receives them, but they also keep other people safe by eliminating or significantly decreasing infectious diseases that used to easily spread from person to person.

Parents often want to prevent some of the possible side effects of vaccines, such as pain and fever, by giving their child a dose of a painkiller before taking them for vaccination. Even adults take painkillers prophylactically before going for vaccination and specifically when they get the COVID-19 vaccination. There have, however, been some studies done on how this may affect the immune system's response.

Two studies done in 2009 raised concerns about alleviating infants' symptoms by giving them painkillers before vaccinations. These studies found that because the medications lowered the immune system response to vaccines, those who got the painkiller also had a diminished immune system response to the vaccine itself. Centers for Disease Control and Prevention (CDC) physicians wrote that the 2009 studies made a compelling case against routine use of pain-reducing medication before vaccination.

More studies have been done more recently, most of which found that prophylactic use of pain and fever medication affect the immune responses to vaccines. However, the effects vary depending on the vaccine, the medication, and the time of administration.

Researchers acknowledge that the evidence is incomplete, but it is currently considered best to err on the side of caution and not give the medications unless they are truly needed.

For most people, it is not recommended to avoid, discontinue, or delay medications that they are routinely taking for prevention or treatment of other medical conditions around the time of vaccination. If the patient is taking medication that suppresses the immune system, like high doses of cortisone, they should talk to their doctor first before getting vaccinated.

There are other proven ways of reducing pain during vaccination that can be employed.

- Apply topical anaesthetics to numb the skin on the area that will be injected.
- Encourage mothers to breastfeed their infant before, during and after vaccination. Bottle feeding and using pacifiers also soothe infants after vaccination.
- When parents hold the child on their lap during vaccination, or hug them, they will often stay still and feel more secure.
- Relax and take slow deep breaths. Look away from the needle, and it will be over in no time at all.

What can be done after vaccination

Fevers can develop as soon as 1–2 days after vaccination with some inactivated vaccines, but may take as long as 2–4 weeks to develop after some live vaccines, for example, the chickenpox vaccine. For mild soreness and fevers, it is recommended not to give any painkillers. If, however, it becomes necessary, some paracetamol can be given; the dosage will depend on the patient's age and, in the case of children, their weight. (Table I).

It is important to remember that fevers are a normal part of the immune response. Unless the fever that develops is high, or is causing substantial discomfort, the best thing to do is to make sure the patient stays hydrated and drinks plenty of fluids. Another important point to remember is not to give children any aspirin-containing medication, as this has been associated with Reye's syndrome.

Table I: Dosage of paracetamol according to age

	3–12 months	1–5 years	6–12 years	Adults
Oral Given 4–6 hourly Max 4 doses in 24 hours	60–120 mg	120–240 mg	250–500 mg	500–1 000 mg max 4 g/24 hours
Rectal Given 4–6 hourly Max 4 doses in 24 hours	60–125 mg	125–250 mg	250–500 mg	
Dose from 1–3 months (oral or rectal)	20 mg/kg/dose Given 6 hourly Max 90 mg/kg/24 hours			

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