

What is in a vaccine?

ANTIGENS (FIRST MAIN INGREDIENT)

The antigens used in a vaccine are designed to trigger a specific protective response by the immune system to a specific pathogen. Therefore, each vaccine contains a different set of antigens. These could include:

- killed whole pathogen
- components of the pathogen
- inactivated toxin produced by the pathogen.

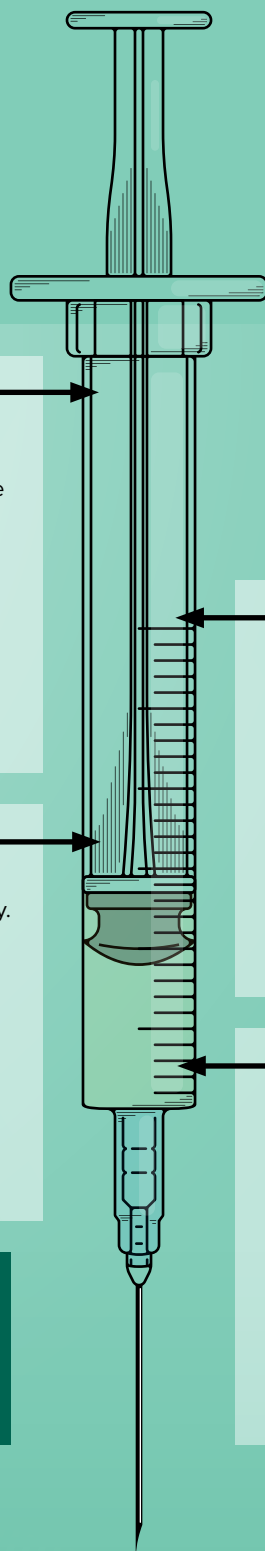
ADJUVANTS (SECOND MAIN INGREDIENT)

Adjuvants amplify immune responses more generally. They may include:

- aluminium
- oil in water emulsion
- sugars and fats from bacterial cell walls, or synthetic **nucleic acids** from microorganisms.

NUCLEIC ACIDS

Nucleic acids are DNA and RNA, and are the way that cells store their blueprints to build proteins and cells.



PRESERVATIVES

Preservatives are chemicals designed to prevent the growth of bacteria in vaccines. In the past, they were added to vaccines in very small amounts and have never been shown to be harmful.

In practice, preservatives are no longer needed in vaccines given in Australia, as they are now generally produced in single-use sealed vials. The only exception is if multi-dose vials are used during a pandemic as an emergency measure.

GELATINE (AND OTHER ANIMAL PRODUCTS)

Some current injectable vaccines contain small amounts of stabilisers like gelatine, salts, sugars and **surfactants**. In some cases, tiny amounts of residue from the manufacturing process remain such as egg protein, yeast or antibiotics. Except for gelatine and possibly egg protein that can very rarely induce allergies, none of these ingredients are known to lead to adverse events.

SURFACTANTS

Surfactants are substances that help two ingredients mix together where they don't naturally do so.