Traditional Vaccine Development Timeline

1. **Design & exploratory preclinical studies**
2. **Process development, preclinical & toxicology studies**
3. **Clinical Trial Authorisation**
   - **Phase I**: Small numbers, Safety, Dosage
   - **Phase II**: Immune response
   - **Phase III**: Protection against disease
4. **Regulatory Review**
5. **Large Scale Production and Distribution**

Safety assessment ongoing throughout

Several years
SARS-CoV-2 Accelerated Vaccine Development Timeline

Phase I
Rolling Regulatory Review
Clinical Trials (months)
Phase I
Phase II
Phase III
Large Scale Production (At Risk)

Design & exploratory preclinical studies (months)
Process development, preclinical & toxicology studies (months)
Clinical Trial Authorisation

Development, preclinical & toxicology studies (months)
Design & exploratory preclinical studies (months)
Clinical Trial Authorisation

Safety assessment ongoing throughout
Overlapping Clinical Trials
At Risk Manufacturing

10 months +
<table>
<thead>
<tr>
<th>Vaccine Type</th>
<th>Description</th>
<th>Vaccine Developer</th>
</tr>
</thead>
<tbody>
<tr>
<td>mRNA</td>
<td>Sends a coded message to the immune system to make COVID antibodies</td>
<td>BioNTech/Pfizer</td>
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<tr>
<td>Adenoviral Vector</td>
<td>COVID spike protein inserted inside a harmless weakened common cold virus</td>
<td>Oxford/AstraZeneca, Janssen</td>
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<tr>
<td>Protein Adjuvant</td>
<td>Broken up pieces of COVID proteins stimulate antibody production</td>
<td>Novavax</td>
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<tr>
<td>Inactivated Whole Virus</td>
<td>The whole virus is killed. This stimulates antibody production</td>
<td>Valneva</td>
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