Vaccines have had dramatic health benefits to the world and eradicated disease. What are some reasons people may not want to be vaccinated? Can these concerns be resolved scientifically? What should medical practitioners and scientists do to address these concerns?

There are various reasons why people may choose not to get vaccinated, which can range from personal beliefs and philosophical convictions to individual concerns. For instance, some parents believe that natural immunity is better suited to adapt to a constantly changing environment, and they may perceive vaccines as offering limited protection against non-lethal pathogens, preferring not to introduce chemical or foreign substances into their children's bodies. Additionally, vaccine safety is a significant concern, especially during the COVID-19 pandemic, where some individuals have hesitated to trust governmental authorities.

To address concerns about vaccine safety, several strategies can be employed:

1. Extensive validation trough testing on cell-lines, biological models, or animal studies.
2. Conducting in-silico research or hypotheses testing on clinical data (translational analysis) with results that can be easily understandable or interpretable and accessible to the large public.
3. Acknowledging the contributions of researchers involved in vaccine discovery only when studies confirming vaccine safety have been published and validated.
4. Providing education, or using of social media, that explains, in layman’s term, how vaccines work their mechanisms of actions, their past successes in eradicating life-threatening or life-changing diseases (e.g. polio, Hepatitis A, Tetanus) (ref) and the FDA approval process (ref). It can take 10 year or longer before a vaccine (with some exceptions like COVID 19 vaccines) before a vaccine enters the drug market.
5. Permanent and thorough monitoring by the FDA and CDC of the safety of the vaccines after they are approved.
6. The existence of a legal framework to protect patients against poorly validated or unanticipated side-effects of a vaccine.