

Eating meat, drinking milk: mRNA vaccination, selective trust, and purity

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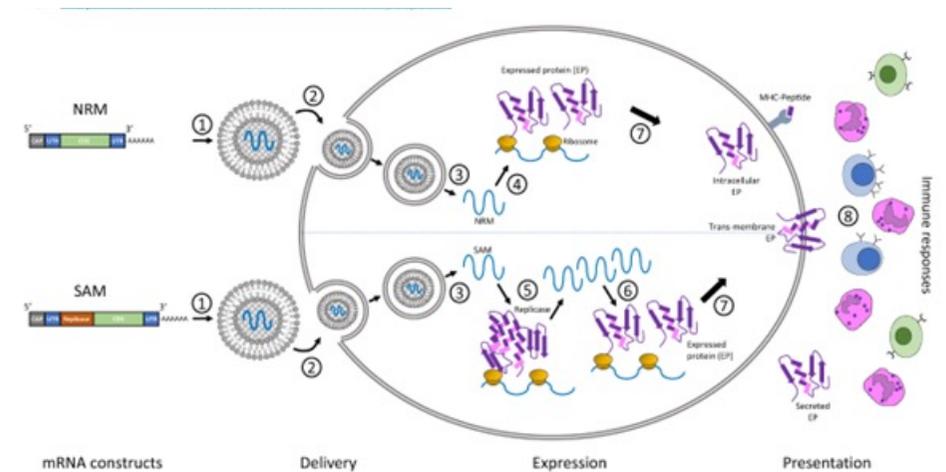
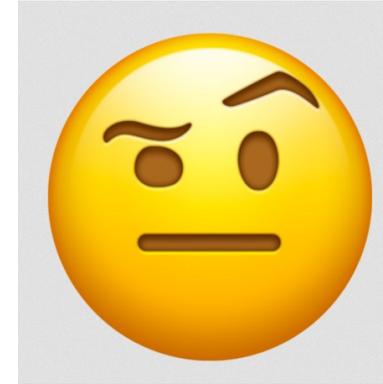
mRNA vaccines

Not new tech, but new to many of us

Vector vaccines (e.g. measles, flu) use a bit of a pathogen to teach the body to mount an immune response

mRNA technology (e.g. some COVID-19 vaccines) uses synthetic messenger RNA to instruct a person's cells to make a protein that triggers a response

Each has pros and cons



Jackson, N.A.C., Kester, K.E., Casimiro, D. *et al.*
The promise of mRNA vaccines: a biotech and industrial perspective. *npj Vaccines* 5, 11 (2020).

Background: COVID vaccinations in 2021-22

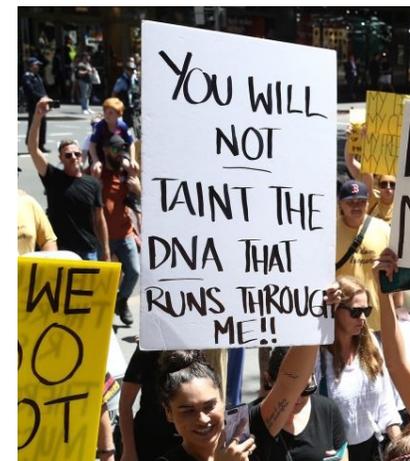
- Australia's COVID-19 vaccination program included vector and mRNA vaccines
- Vaccine availability and recommendations were politicised and contested



Anti vaccination protests across Australia in 2021-22
<https://www.nytimes.com/2021/11/18/world/australia/covid-protests-australia.html>

Expert Reaction

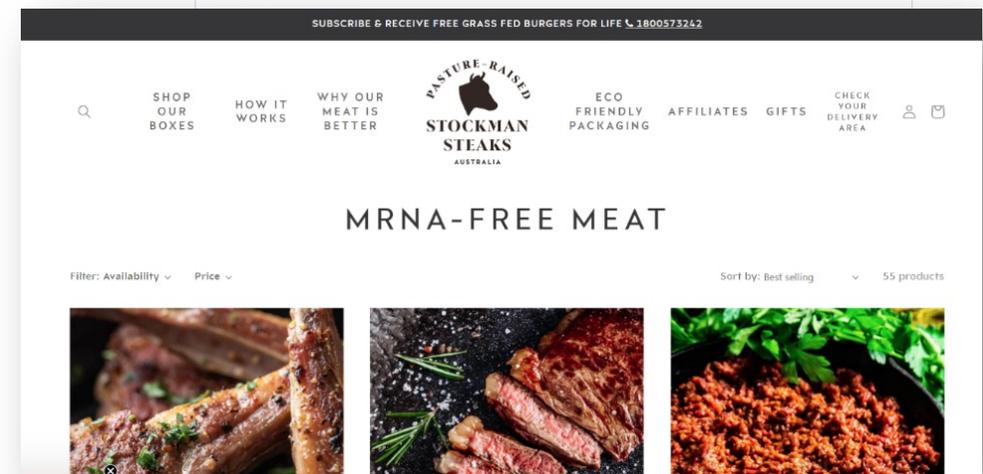
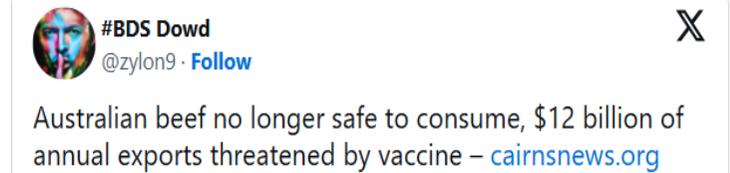
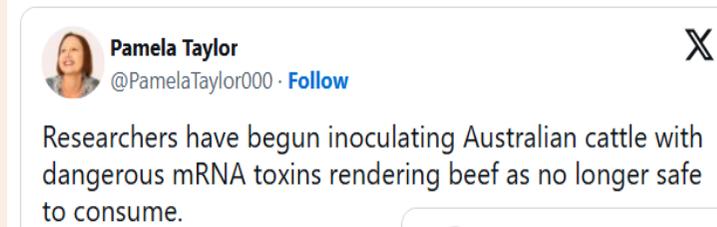
EXPERT REACTION: AstraZeneca or Pfizer? Australia's COVID-19 jab confusion



<https://edition.cnn.com/2021/02/22/australia/australian-open-vaccine-boo-intl-hnk>

Background: “mRNA free meat”

- 2023 internet campaign: people can be “vaxxed” by eating meat vaccinated with mRNA vaccines
- Cattle associations and government agencies responded by saying that mRNA vaccines are not used in livestock
- Meat producers in Australia still advertise mRNA-free meat as a selling point



Is this an issue? Or just a small but noisy group?

- Are Australians aware of what mRNA vaccines are?
- How worried are they about having an mRNA vaccine themselves?
- How worried are they about vaccinated meat and milk?



Survey

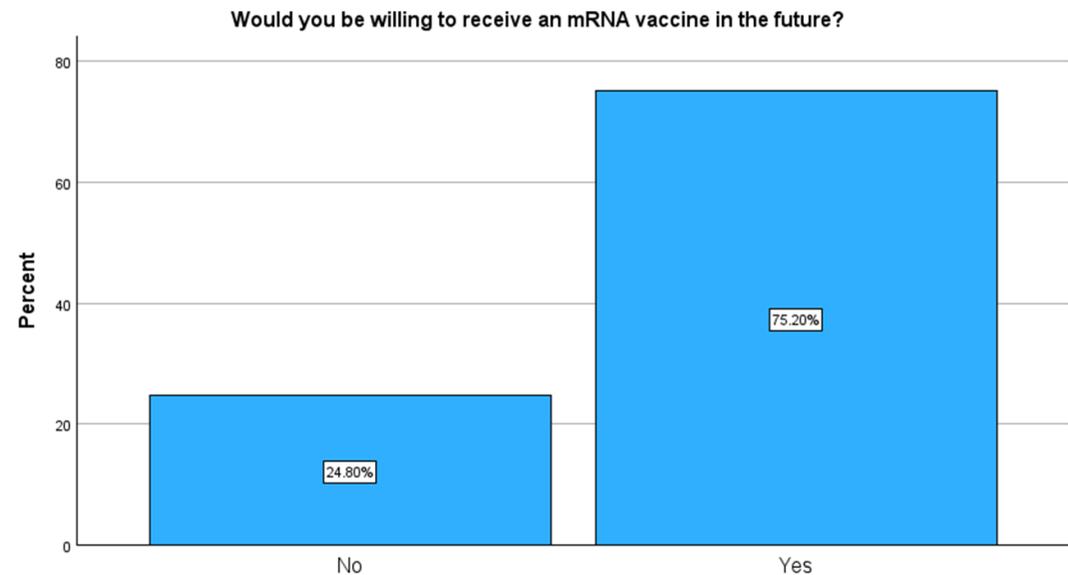
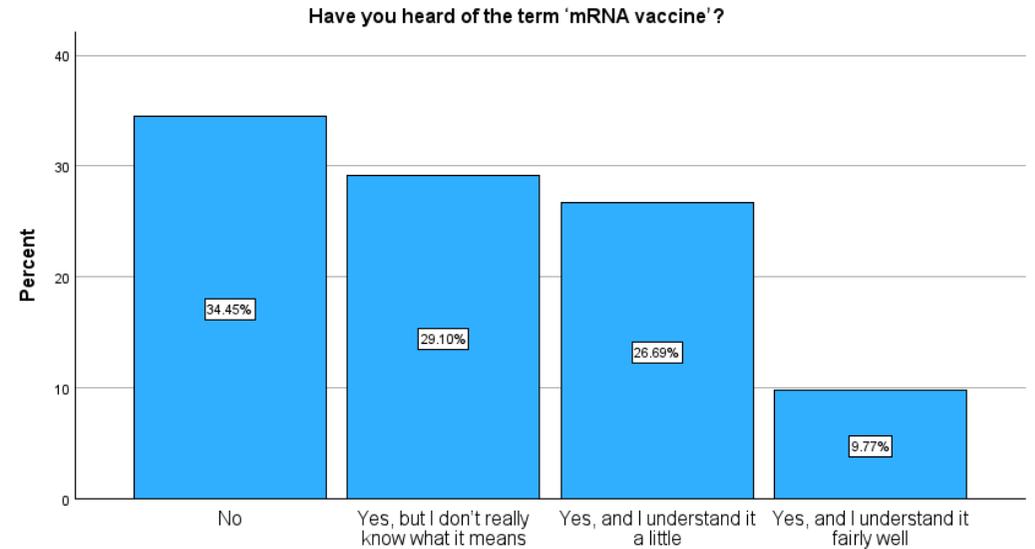
- Survey n=2488 Australians >18 years of age
- Sample was broadly representative of the Australian public
- Questions
 - General attitudes toward human vaccines (4 qns)
 - Attitudes and uptake re COVID vaccines (4 qns)
 - Attitudes toward and intentions re mRNA vaccines for humans (4 qns + 2 open text)
 - Understanding about livestock vaccination, attitudes towards consumption of products from mRNA vaccinated livestock (7 qns + 1 open text)



Finding:

mRNA vaccines are not well understood, but people are still mostly willing

- 64% had never heard of mRNA vaccine, or didn't know what it means
- We provided a simple explanation, including that some COVID-19 vaccines use mRNA technology
- 75% said they'd receive an mRNA vaccine in the future
- This is lower than vector vaccine willingness, and people thought COVID-19 vaccines were less safe than vector vaccines ($P < 0.001$)



25% said no to a future mRNA vaccine: Why?

Safety:

- Generally: Insufficient testing, lack of confidence in long term safety
- Personally: Unacceptable side effects from COVID vaccines

Mandates:

- Anger about reduced or removed choice in 2021-22
- Decreased trust in government, health bodies, media, pharma

Ineffective:

- Disappointment at catching COVID-19 post-vaccination

"I don't think they work. I had 4 Covid shots and still caught covid 4 times."

"I suffered auto immune issues after taking the covid vaccination. I'm still suffering effects from this. The fact that it was mandated by the government and my employer was disappointing"

"I was forced to take it and as a form of protest against forced vaccinations I will not take one again unless it is for a real deadly illness."

Animal vaccination is not well understood, and provokes concern

- **59%** did not know that vaccines could be used in livestock
- **26% Moderately or very concerned** about eating **meat** from an mRNA vaccinated animal
- **37% Moderately or very concerned** about drinking **milk** from an mRNA vaccinated animal



What concerns, if any, do you have about consuming meat or milk from mRNA vaccinated animals?

Top 4 concerns*	N (%)
Insufficient research on long-term safety	1261 (51)
Potential effects on human health	1087 (44)
No concerns	725 (29)
Lack of trust in food safety regulations	694 (28)

"The side effects that occurred when the mRNA vaccines were forced upon people give me great concerns about side effects being passed on if they were used on animals."

"There's already too much modification to the food we eat"

"No knowledge on the effects that vaccines have on the animal products that humans consume."

*Participants could select more than one, and write in 'other'

Finding

- There was more concern about “mRNA meat” than mRNA vaccines in human arms*
- There was more concern about children drinking mRNA milk than any other concern
- Is this unexpected?
- Not really – receiving vaccines and eating food are different



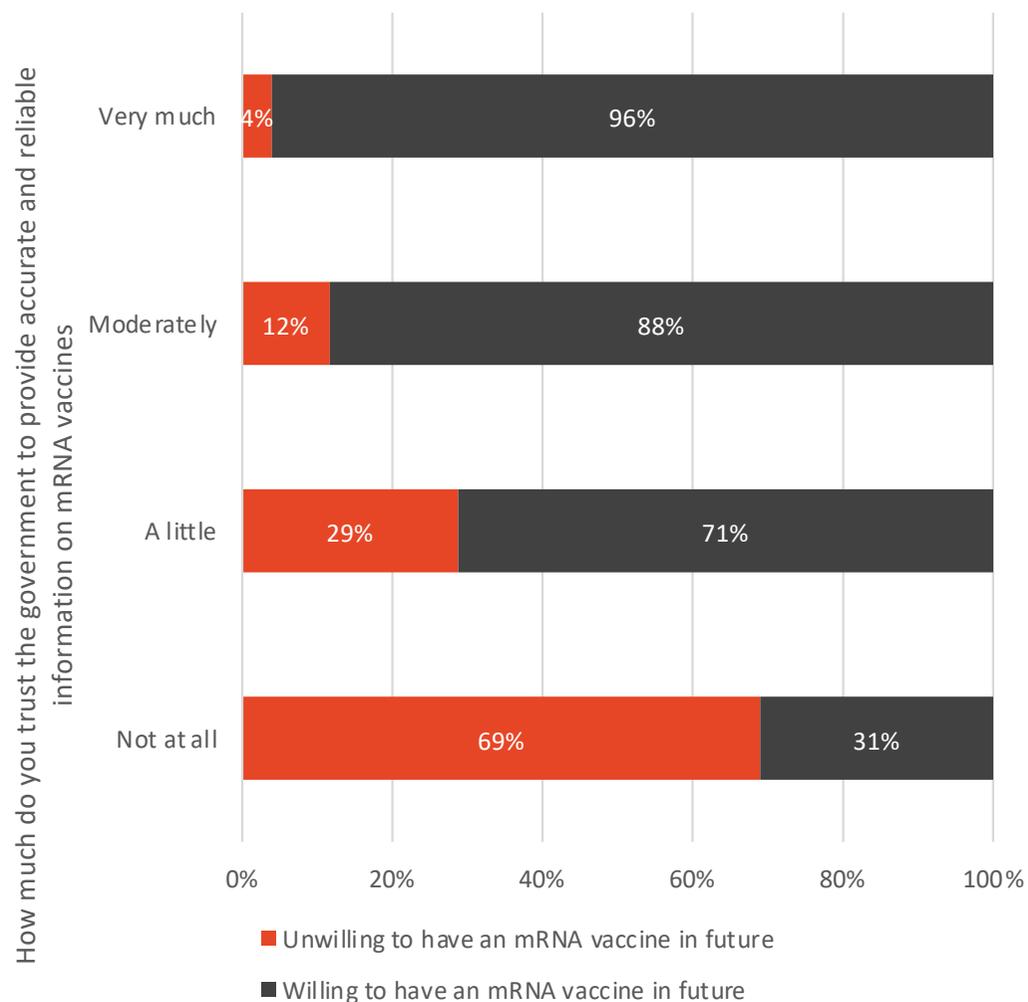
Is it a trust problem?

- We receive unequivocal messages from institutions: vaccination is a crucial component of (public) health
- Food messaging is more complicated and comes from more sources – institutions plus industry
- Willingness to have an mRNA vaccine is strongly correlated with trust in government to provide accurate info about vaccines

BUT!

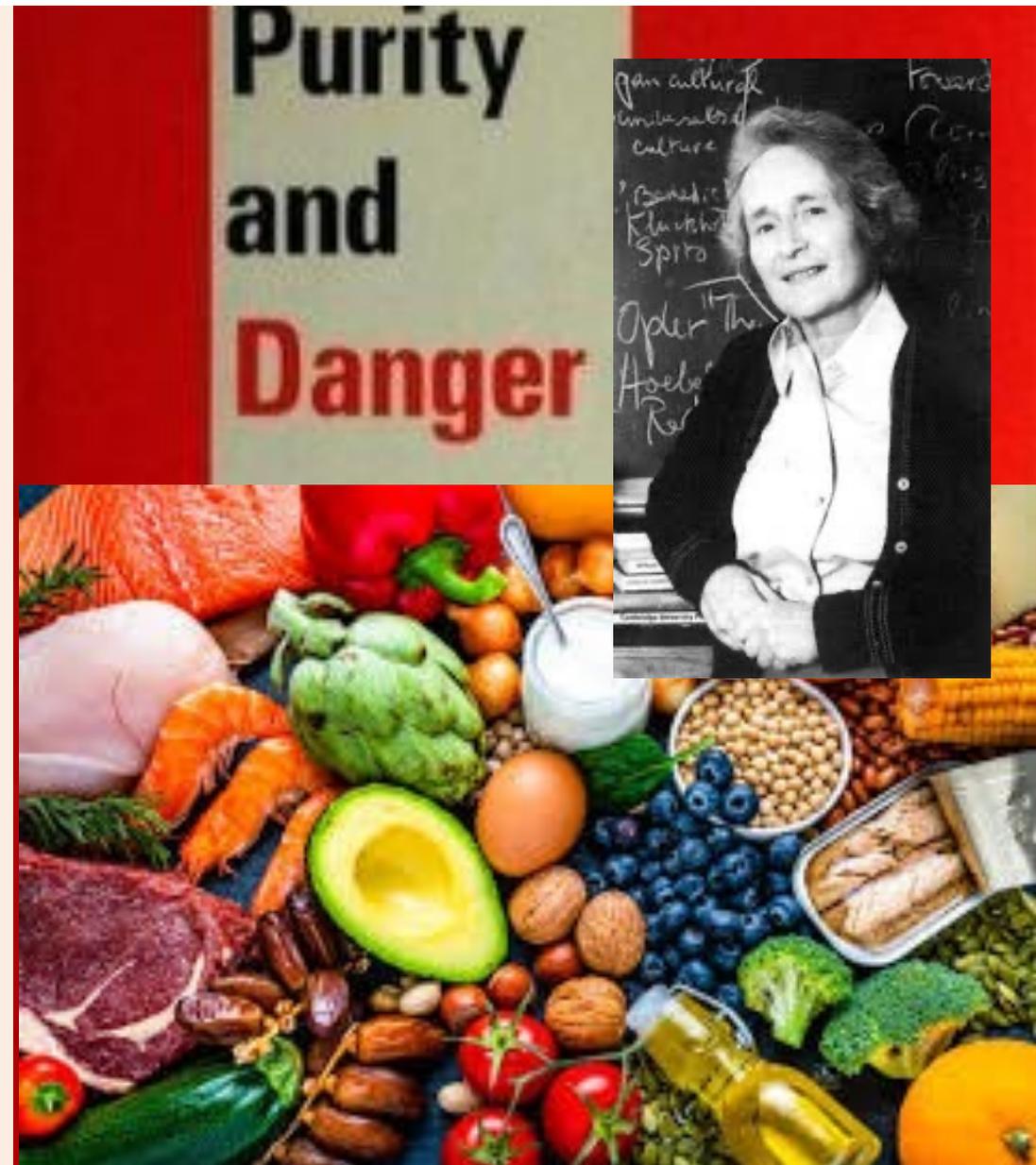
- People had higher trust in government to provide accurate info about food than vaccines
- So trust might not explain the higher concern about food

Willingness to have an mRNA vaccine in future and trust in government to provide accurate and reliable information



Is it a purity problem? A classification problem?

- Mary Douglas on dirt as “matter out of place” i.e. as outside of a contextual classification
- Dirt → “Clean” food / eating, which now means pure and unadulterated food
- Parallels with GMOs and synthetic biology? The more ‘unnatural’ an addition or change is, the more it is resisted



So what?

- It's about preparing for new things and communicating in ways that are useful and meaningful, that speak to people's values
- While also not alarming the (many) people who did not know that the livestock they eat receive vaccines

