Is this worth a Shot?

Considering questions & concerns about COVID vaccinations
Goal

We are not here to force anyone’s opinion

Rather, to provide you with the best information we can for you to make your own informed decision
Who We Are

We are scientists, outreach professionals, parents, children, partners, community members.
We share the same concerns as everyone of you.

**FIGURE 1.1 Most Americans Plan to Get a COVID-19 Vaccine, But Nearly 3 in 10 Are Hesitant**

Percent who:

- **14%** are **Watchful**. They're waiting to see what happens next.

- **9%** are **Cost-Anxious**. They want the vaccine but can't afford the time or cost.

- **19%** are **System Distrusters**. They feel the health care system doesn't treat them fairly.

- **26%** are **Covid Skeptics**. They don't believe the threat.

In Illinois...

- **9%** are **Watchful**. They're waiting to see what happens next.

- **7%** are **Cost-Anxious**. They want the vaccine but can't afford the time or cost.

- **4%** are **System Distrusters**. They feel the health care system doesn't treat them fairly.

- **12%** are **Covid Skeptics**. They don't believe the threat.

Source: PRRI-IPYC March 2021 Survey.
Risks and Benefits:

A way to think about vaccines, and everything else in life
Risks & Benefits

Why you may want the vaccine

- concern about getting sick or loss of life,
- protecting those around you,
- regaining ability to live daily life without fear of COVID, other?

Why you may worry about the vaccine

- concern about known or unknown side effects, access, cost,
- concern about lack of efficacy, other?
Questions about Benefits
Can I just wait this out?

Herd immunity requires 70-90% (currently at 49% nationally)

Variants constantly change the equation
Vaccine Comparisons
Will it protect me?

Real world efficacy

~4072 out of 161,000,000+ (COVID hospitalizations)

0.00002529% chance of severe breakthrough case
(>99.9999% efficacy)
Recent Case Spike

Hospitalized per 100,000 and vaccination rate, by state

Change in Covid Cases By Age, in U.S.
Per 100,000 people, past four weeks

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 4 years old</td>
<td>+7.1</td>
</tr>
<tr>
<td>5 to 11</td>
<td>12.3</td>
</tr>
<tr>
<td>12 to 15</td>
<td>13.3</td>
</tr>
<tr>
<td>16 to 17</td>
<td>15.2</td>
</tr>
<tr>
<td>18 to 29</td>
<td>22.2</td>
</tr>
<tr>
<td>30 to 39</td>
<td>22.5</td>
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<tr>
<td>40 to 49</td>
<td>14.1</td>
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<tr>
<td>50 to 64</td>
<td>7.2</td>
</tr>
<tr>
<td>65 to 74</td>
<td>3.8</td>
</tr>
<tr>
<td>75 plus</td>
<td>1.5</td>
</tr>
</tbody>
</table>
Delta Variant

- Delta infections produce thousandfold more viral particles
  - Twice as contagious

- Dose matters (i.e., amount of viral particles you inhale)

- Recent study results: Pfizer vaccine still >88% effective against Delta, nearly matching 93% effectiveness against Alpha variant and 95% against original virus.
  - Single dose only 33% effective against Delta
How long will it last?

At least 6 months

• Still prevents over 90% of infections after six months (Moderna and Pfizer)
• U. Texas medical center 4 out of 8,121
• U. California medical center 7 out of 14,990

Future boosters are possible
Boosters?

- Likely for immunocompromised individuals
- Pfizer indicating a potential push for third shot among broader population
  - FDA and CDC have not verified that is necessary yet
  - Still high efficacy (>97%) against severe infections after 6 months
    - Though some additional mild breakthroughs have occurred after that time
Questions about Risks
Can it give me COVID?

None of the vaccines authorized or still in development contain a live virus, so you cannot get COVID-19 from the vaccine.
mRNA vaccine study and development has been ongoing for 20+ years
Is it safe?

Vaccination numbers

U.S.
- At least one dose: 188,729,282 (66.5%)
- Fully vaccinated: 163,025,726 (57.5%)

Champaign County
- At least one dose: 106,260 (57.96%)
- Fully vaccinated: 102,610 (55.97%)
Is it safe?

Side Effects

Majority of recipients experience no side effects

• Most common effects are mild and include general soreness at site of injection, headache, and fever lasting no more than two days

Cases of anaphylaxis are extremely rare (~2 cases per million doses) and occur within the first 10 minutes

• Why you are instructed to wait at the vaccination site for 15 minutes afterwards
Is it safe?

Blood Clots

• J&J 28 confirmed cases out of 13+ million doses (most in women 18-49)

• Blood clots/year:
  • 1 in 500, US natural
  • 1 in 1000, UK natural
  • 1 in 100 smokers
  • 1 in 3000 oral contraceptives
  • 1 in 5 hospitalized COVID patients
  • 1 in 500,000 J&J
• Rare neurological disorder where immune system attacks nerves and causes muscle weakness
  • Most cases result in full recovery

• J&J 100 “suspected” cases out of 13+ million doses (most in men >50)
  • No direct causal evidence
  • Regularly affects ~6000/yr in US
Is it safe?

Myocarditis

- Extremely rare side effect of mRNA vaccines
  - Fewer than 1200 people “reported” (mostly men under 30)
  - Out of >328,294,686 doses
- Most cases are very mild
  - Usually limited to fatigue and minor chest pain
  - Symptoms dissipated quickly
Can it cause infertility?

Absolutely zero evidence to any links between vaccines and infertility

136,543+ pregnant women have been vaccinated
Can it cause infertility?

Rumor started by vaccine skeptic who claimed similarity between spike protein and syncytin-1 protein (component of placenta)

Level of genetic overlap is miniscule, has been likened to equivalent chance of misdial between phone numbers sharing only a single digit

123-555-1234

789-676-8904
April 21st study in NEJM of 35,691 pregnant women

- 30,887 received vaccine while pregnant
- 4,804 became pregnant after vaccination
Can it affect pregnancy?

Vaccines found to be completely safe

• Many side effects (headache, fever, chills, fatigue) even showed lower incidences among pregnant women
• 827 Study participants have already given birth successfully
  • Pregnancy complications no more frequent than pre-COVID averages
Can it affect breastfeeding?

Antibodies generated after vaccination can be passed through breast milk

- No evidence the virus can be transmitted from breastmilk, only antibodies

Studies suggest it could be good protection that would last as long as the antibody-laden milk is consumed
What if I already had COVID?

- Yes, CDC says the vaccine is still recommended
- Unknown how long antibodies developed during COVID-19 illness will protect from reinfection
- Studies indicate vaccine conveys higher immunity than prior infection
Kids:

Risks and benefits of children receiving the vaccine
What about vaccinating children?

- **Pfizer 12-15yr trial**
  - 2,260 participants, 18 cases in placebo, 0 in vaccine

- **Moderna and J&J 12-17yr trials ongoing**

- **Pfizer and Moderna current testing 6mos-12yrs**

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**Covid is among the top five causes of death among adults. Among kids, it ranks 10th.**

Leading death cause by age group

![Bar chart showing leading causes of death by age group](chart.png)

- **Notes:**
  - C.L.R.D. is chronic lower respiratory disease.
  - Source: C.D.C.
When can we relax?

General restrictions can relax when case counts fall to 5,000-10,000 per day (comparable to average seasonal flu rates)

Context:

• Last summer average 20,000/day
• Winter average 250,000/day
• Currently over 80,000/day
How do variants change the situation?

- Delta is more transmissible across all age groups
- As children become the most unvaccinated group, they will also become the most susceptible group
  - Must continue to take safety precautions (e.g., masking and distancing)
- School should still be a priority
- Individual decisions for extracurricular activities though
Final Thoughts
Masking

2 out of 3 rule

• Outdoors
• Distanced
• Masked
When should a vaccinated person mask up?

• Are the people I’m with also vaccinated?

• What’s the case rate and vaccination rate in my community?

• Will I be in a poorly ventilated indoor space, or outside? Will the increased risk of exposure last for a few minutes or for hours?

• What’s my personal risk (or the risk for those around me) for complications from Covid-19?
Annual flu vaccine efficacy 40-60%

Annual flu deaths (12,000-61,000 past 10 years) ~35,900/yr

COVID 15x more deadly than average seasonal flu
Covid-19 has killed many times more adults than seasonal flu.

Deaths per 100,000 population

Note: Seasonal flu data for 2012-2019 seasons.  Source: C.D.C.
• Local case data
Vaccines are Free!

No cost, regardless of financial or health insurance status

Three quality options available

Many ways to make an appointment

https://vaccinefinder.org/

https://www.c-uphd.org/covid-vaccinations.html

https://dph.illinois.gov/covid19/vaccinedata?county=Champaign
Making the Decision

Does not have to be today (or even tomorrow...)

Some of our favorite resources
IGB scientists, personal doctor, public health officials

Discuss experiences with friends and family who have been vaccinated
Your Questions

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