



# SYLLABUS

## InfodemicOlympics



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<http://bit.ly/intolympics>

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<http://bit.ly/bvolympics>





## HOW TO SPOT FAKE NEWS COVID-19

(*IFLA International Federation of Library Associations*)

**CONSIDER THE SOURCE.** Is there an author? Check out their credentials on relevant issues.

**READ BEYOND.** Headlines can be outrageous in an effort to get clicks. What's the whole story?

**SUPPORTING SOURCES?** Click on links or check with official sources. Do they support the story?

**DO OTHERS AGREE?** Are any other sites reporting this? What sources are they citing?

**IS IT A JOKE?** If it is too outlandish, it might be satire. Research the source to be sure.

**CHECK YOUR BIASES.** Consider if your own beliefs or concerns could affect your judgement.

**ASK THE EXPERTS.** Ask a librarian, or consult a fact-checking site, official source like the WHO.

**LOOK BEFORE YOU SHARE.** Don't share posts or stories that you haven't checked out first!

**Source** How to Spot Fake News – COVID-19 Edition 2021 by IFLA

<https://www.ifla.org/publications/node/93015>





## FINDING GOOD HEALTH INFORMATION ON THE INTERNET (by MEDLINE PLUS)

**CONSIDER THE SOURCE.** Use recognized, responsible authorities. Ask some key questions: #Who is providing the content? #What do they know about the topic? #Why are they providing this information? #Where does it come from? #Is it up-to-date? #How is the site funded? #Is there advertising on the site, and, if so, is it clearly labeled?

**FOCUS ON QUALITY. ALL WEBSITES ARE NOT CREATED EQUAL.** #Does the site have an editorial board? #Is information reviewed before it is posted? #Are the board members experts in the subject of the site? #Look for a description of the process for selecting or approving information on the site. It is usually in the ABOUT US section and may be called EDITORIAL POLICY, SELECTION POLICY, or REVIEW POLICY.

**BE A CYBER-SKEPTIC. IF IT SOUNDS TOO GOOD TO BE TRUE, IT PROBABLY IS.** #Beware of remedies that claim to cure a variety of illnesses, are BREAKTHROUGHS, or rely on SECRET INGREDIENTS. #Use caution if the site uses a sensational writing style (lots of exclamation points, for example).

**LOOK FOR THE EVIDENCE. RELY ON MEDICAL RESEARCH, NOT OPINION.** #Look for the author of the information, either an individual or an organization, such as BY JANE SMITH, RN, or COPYRIGHT 2016, AMERICAN CANCER SOCIETY.

**LOOK FOR TIMELINESS. IS THE INFORMATION CURRENT? LOOK FOR DATES ON THE RESEARCH.** #Click on a few links on the site. If a number are broken, the site may not be kept up-to-date.

**BEWARE OF BIAS. WHO PAYS FOR THE SITE? WHAT IS THE PURPOSE?** #For example, if a page about treatment of depression recommends a drug by name, is the information from the drug's manufacturer?

**PROTECT YOUR PRIVACY. HEALTH INFORMATION SHOULD BE CONFIDENTIAL.** #There should be a link saying PRIVACY or PRIVACY POLICY. Read the policy to verify your privacy is protected.

**Source MEDLINE PLUS Trusted Health Information from the National Institutes of Health 2016 fall**

<https://magazine.medlineplus.gov/pdf/MLPFall16.pdf>





## DECALOGUE TO SAVE YOURSELF FROM ONLINE HOAXES

(UNAMSI, *Unione Nazionale  
Medico Scientifica di Informazione*)

**CHECK THE SOURCE.** Always check who owns the site, newspaper, blog, whether it is an institution, publisher, industry, association or individual citizen. This is useful to understand who is interested in conveying that type of information. Institutional sites include those of the Ministry of Health, the Istituto Superiore di Sanità, the Agenzia Italiana del Farmaco, hospitals and medical-scientific societies. It is important that the reference site always reports, in the news published, authoritative sources of origin, a characteristic that is a measure of the reliability of the site itself.

**MAKING SURE THE SITE IS UP TO DATE.** It is very important to check the date of publication. It is a clear indication of the topicality of the news. In fact, nothing is lost on the Internet and it can happen, using a search engine, to arrive at news that is even years old.

**MEDICAL TREATMENT: AVOID 'DO-IT-YOURSELF'.** No written information can replace a visit to the doctor. The doctor and pharmacist must remain the main points of reference for health matters. Content on the Internet should "only" have an informative purpose and in no case can it replace a doctor's visit or prescription or the advice of a pharmacist.

**BEWARE OF PRESCRIPTIONS WITHOUT AN EXAMINATION.** No serious doctor will ever give a prescription to an unknown patient without examining him or her. Therefore, be wary of websites and experts who indicate drugs and treatments on the basis of a simple description of symptoms. It is not serious, it is not professional, and it can be very dangerous.

**MONITORING RESPECT FOR PRIVACY.** Ensure that the owner of a site that handles users' health information (e.g. through the "expert answers" service) complies with privacy legislation and ensures data confidentiality.

**ASSESSING BLOGS AND FORUMS WITH DUE CARE.** They can be useful sources, but they can also be insidious because they offer stories of patients and their families that arouse empathy and involve emotions. Be careful because they are almost always subjective accounts, but not necessarily scientifically reliable. Critical reading is rigorous.

**WATCH OUT FOR SEARCH ENGINES.** When typing a keyword, the search result does not show a list of sites in order of importance, but the selection may depend on other factors. To clarify, search engines work like "machine learning", i.e. they memorise the user's choices and tastes and then propose topics in line with the preferences expressed in previous choices. Therefore, do not stop at the first search, but try to cross-reference more searches and more data.





**DON'T BITE INTO DISGUISED ADVERTISING.** A quality website must always keep independent information separate from advertising, which should always be overt and declared.

**BUY DRUGS ONLINE WITH CAUTION.** Only buy medicines online from authorised pharmacies. In Italy, such establishments must have the appropriate identification logo on their website, common throughout the European Union, "Click here to check if this website is legal". Just click on the logo and you will be redirected to the Ministry of Health's website where you can check whether the online seller is registered on the list of authorised ones. If, on the other hand, the website is not linked to a pharmacy, buying a medicine online can be very dangerous.

**DON'T FALL FOR CONSPIRACY PSYCHOSIS.** It is common to come across catastrophic news on the Web about the effect of vaccines and drugs. Never lose your ability to analyse and criticise, and always consult your doctor.

**SOURCE:**

<http://unamsi.it/salute-internet-un-decalogo-salvarsi-dalle-bufale/>



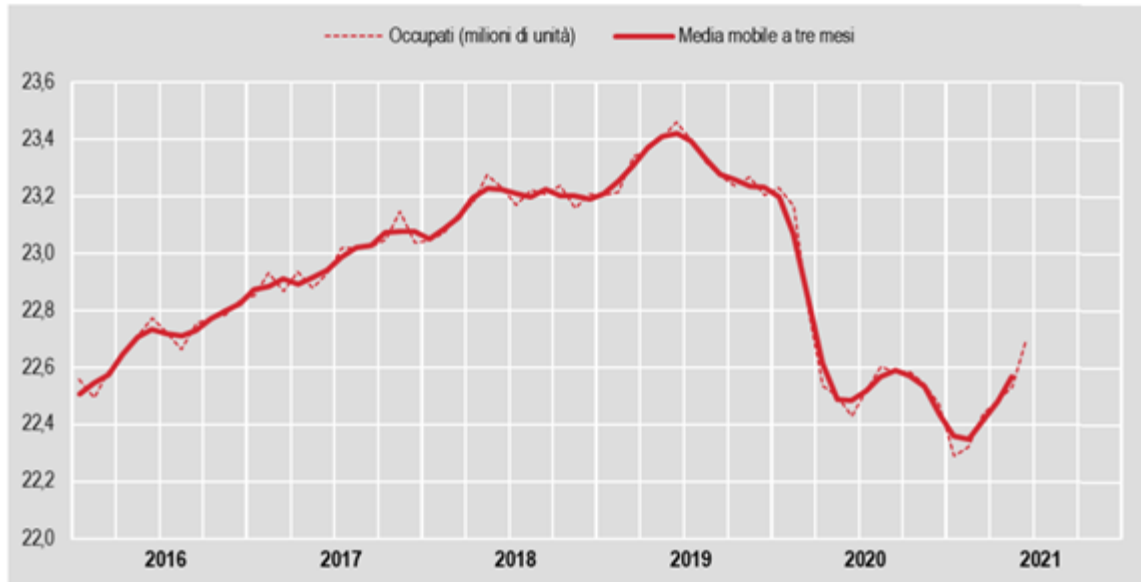


## ISTAT EMPLOYED AND UNEMPLOYED

2016 2020

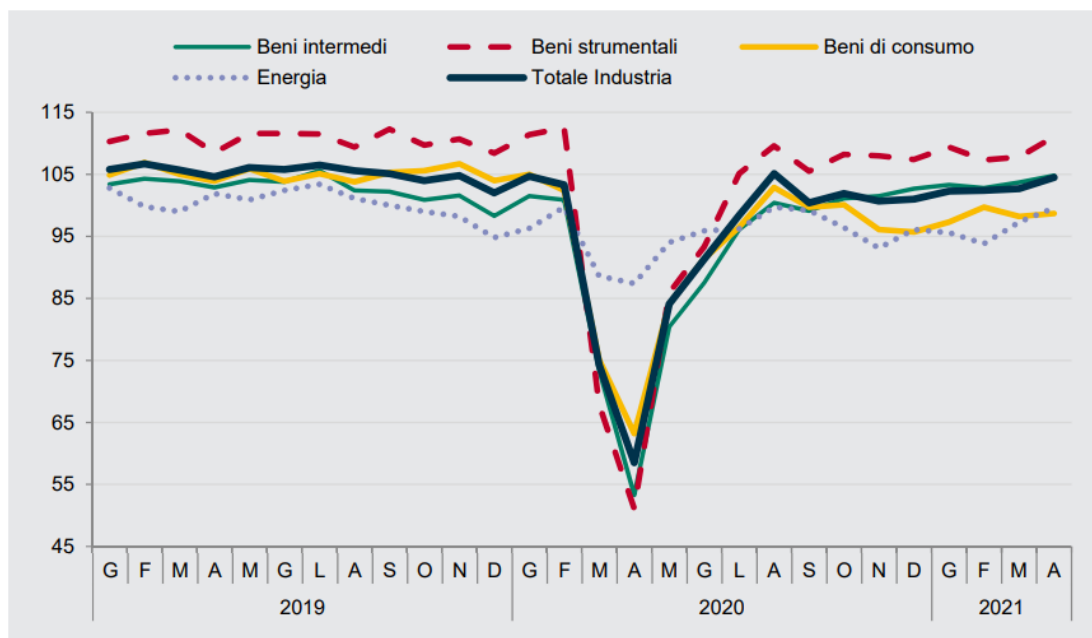
OCCUPATI

Gennaio 2016 – giugno 2021, valori assoluti in milioni, dati destagionalizzati



<https://www.istat.it/it/archivio/259994>

Produzione industriale e principali componenti (numeri indici 2015=100)



SOURCE: ISTAT ANNUAL REPORT 2021

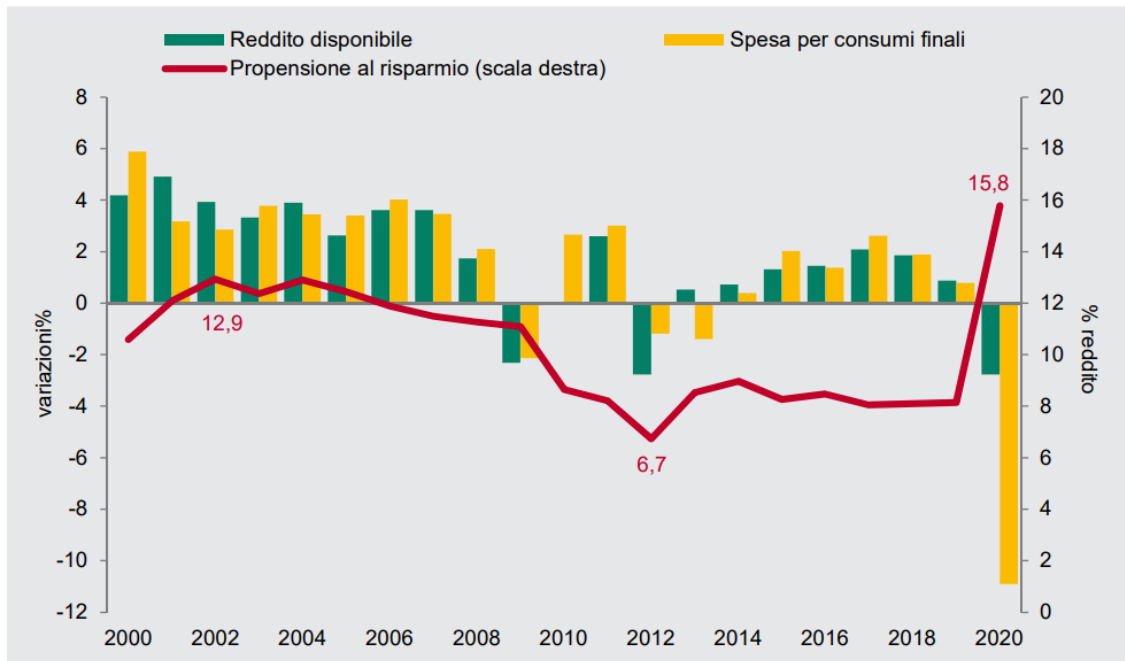
<https://www.istat.it/it/archivio/259060>







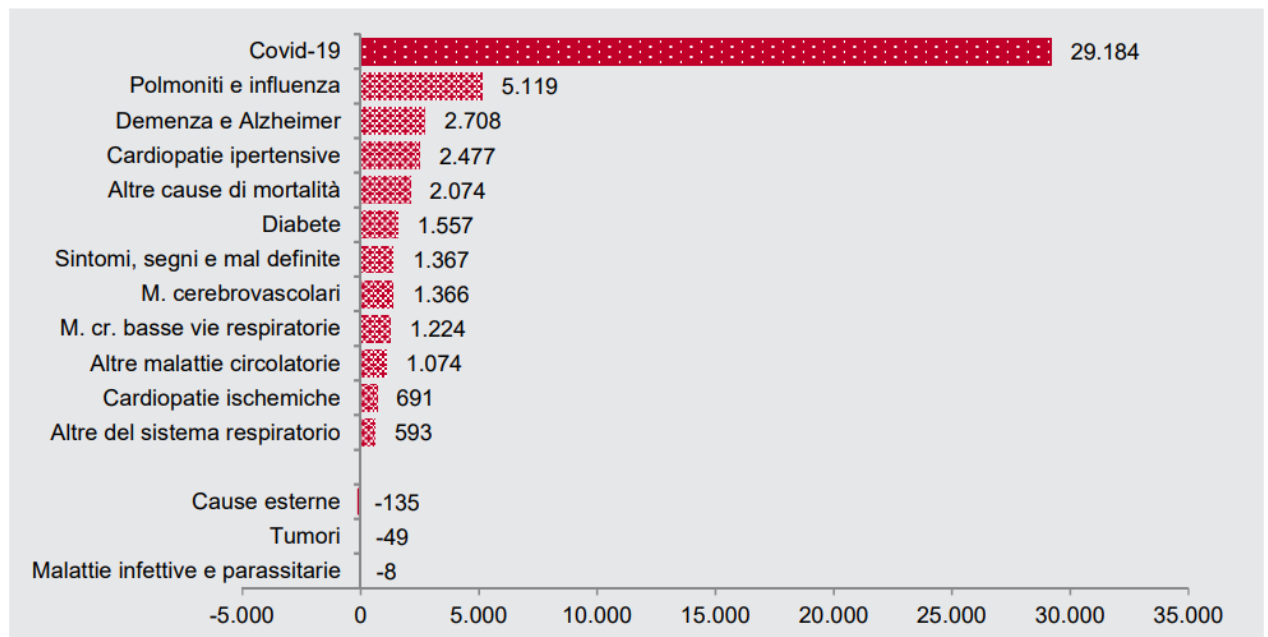
### Reddito disponibile, spese per consumi finali e propensione al risparmio delle famiglie. Anni 2000-2020 (variazioni e punti percentuali)



SOURCE: ISTAT ANNUAL REPORT 2021

<https://www.istat.it/it/archivio/259060>

### Eccesso di mortalità: contributo delle cause all'incremento di marzo-aprile 2020 rispetto alla media 2015-2019 (valori assoluti)



SOURCE: ISTAT ANNUAL REPORT 2021

<https://www.istat.it/it/archivio/259060>

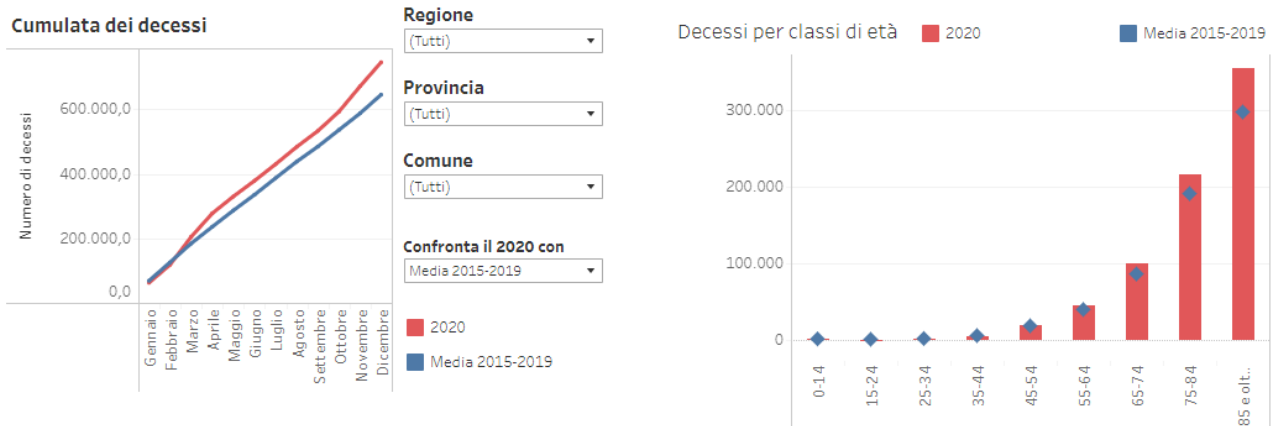




## ISTAT TREND IN DEATHS

in the period 1 January - 31 December for the years 2015-2020. For the year 2020 anticipatory data

Totale decessi al 31 dicembre 2020 **746.146,0**  
 Totale decessi al 31 dicembre Media 2015-2019 **645.619,6**  
 Differenza decessi (2020, Media 2015-2019) **100.526**  
 Variazione 2020 vs Media 2015-2019 **15,6 %**



<https://www.istat.it/it/archivio/240401>



## WHO Coronavirus (COVID-19) Dashboard

	Cases - cumulative total	Cases - newly reported in last 24 hours	Deaths - cumulative total	Deaths - newly reported in last 24 hours
<b>Global</b>	<b>202.296.216</b>	433.555	4.288.134	6.043
<b>09/08/2021</b>				
	Cases - cumulative total	Cases - newly reported in last 24 hours	Deaths - cumulative total	Deaths - newly reported in last 24 hours
Americas	78.718.104	103.004	2.032.256	2.239
Europe	61.210.889	134.231	1.230.328	1.198
South-East Asia	39.232.604	55.102	591.584	596
Eastern Mediterranean	13.095.299	58.323	242.206	821
Africa	5.137.017	23.322	122.025	520
Western Pacific	4.901.539	59.573	69.722	669

SOURCE: <https://covid19.who.int/table>







## EUROPEAN STATISTICAL RECOVERY DASHBOARD

Statistics and data published by Eurostat related to COVID-19. This can give you a baseline against which the impact of the crisis can be measured, provide the wider background or help you to see the evolution of the crisis. The information covers a range of topics related to the economy, society and work, population and health as well as agriculture, energy, transport and tourism.

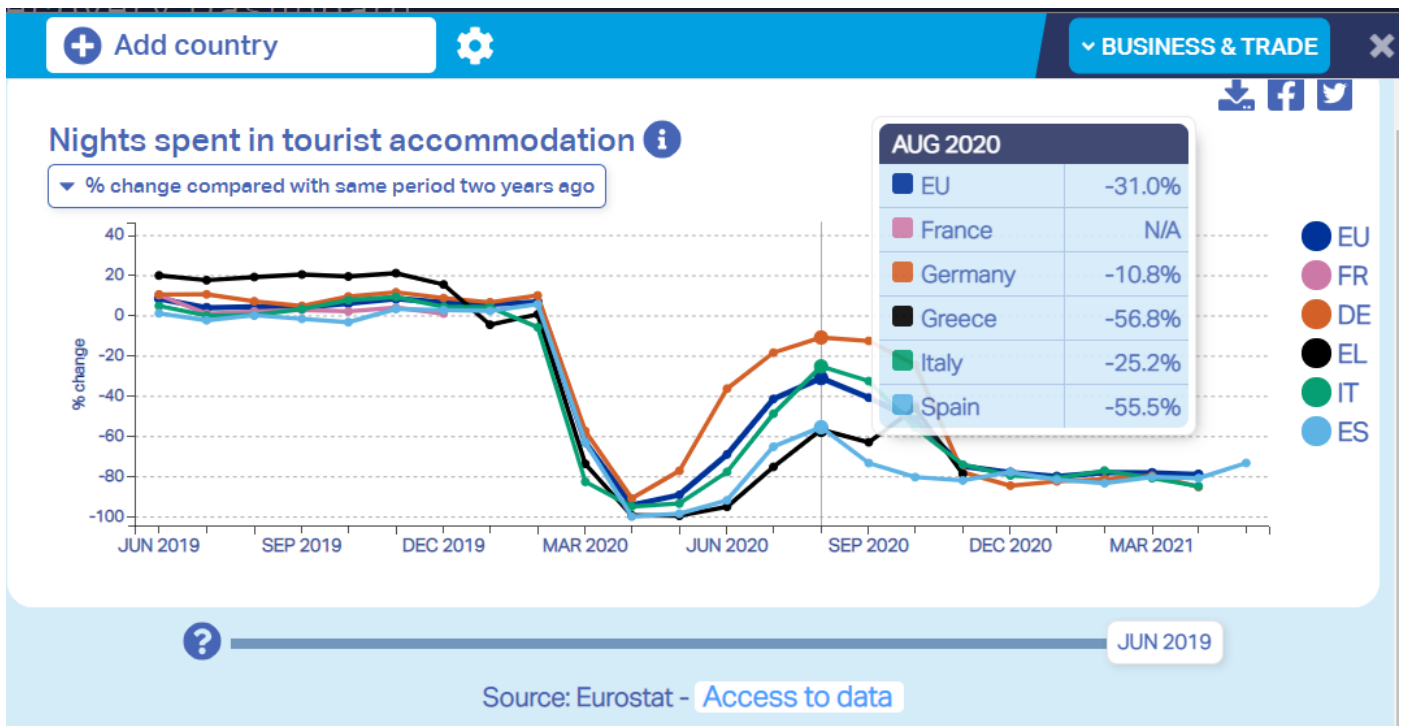
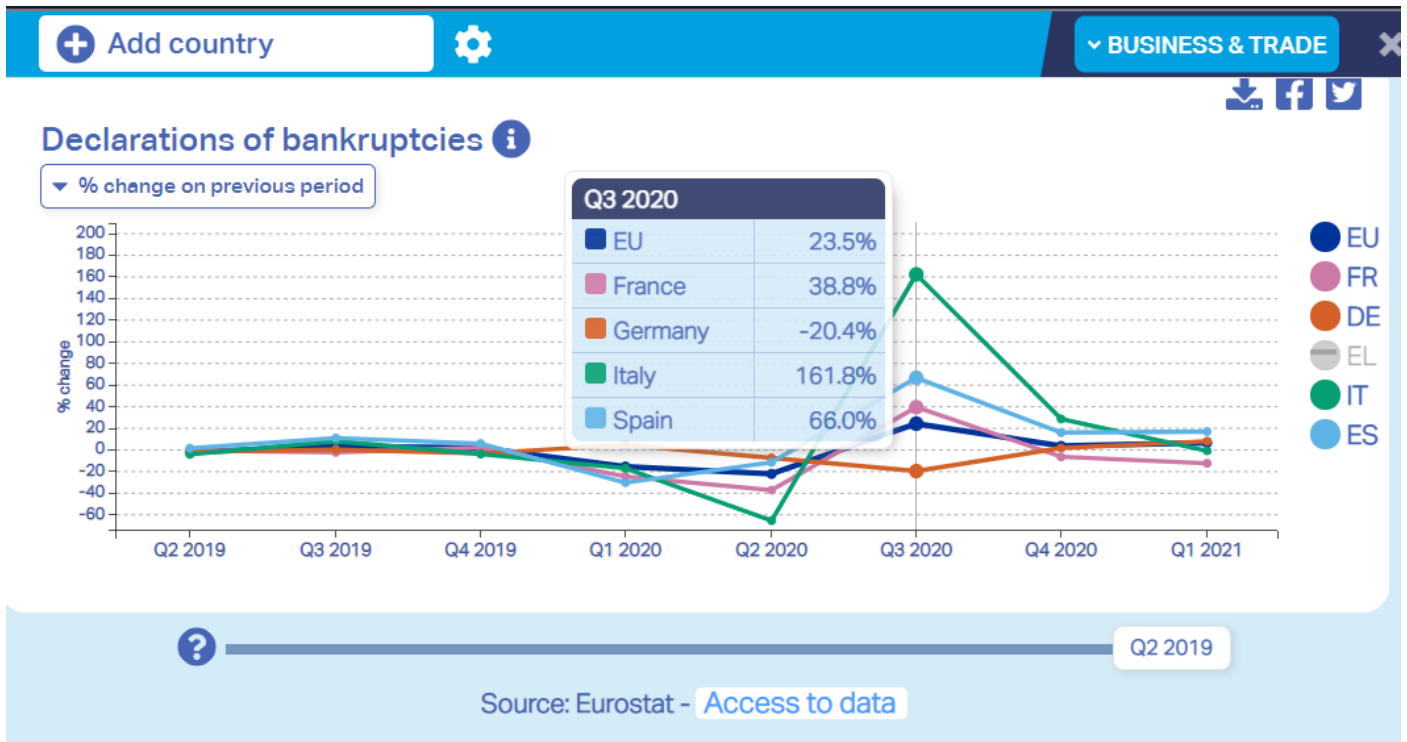


SOURCE: <https://ec.europa.eu/eurostat/cache/recovery-dashboard/>





## EUROPEAN STATISTICAL Recovery Dashboard (2021 august)

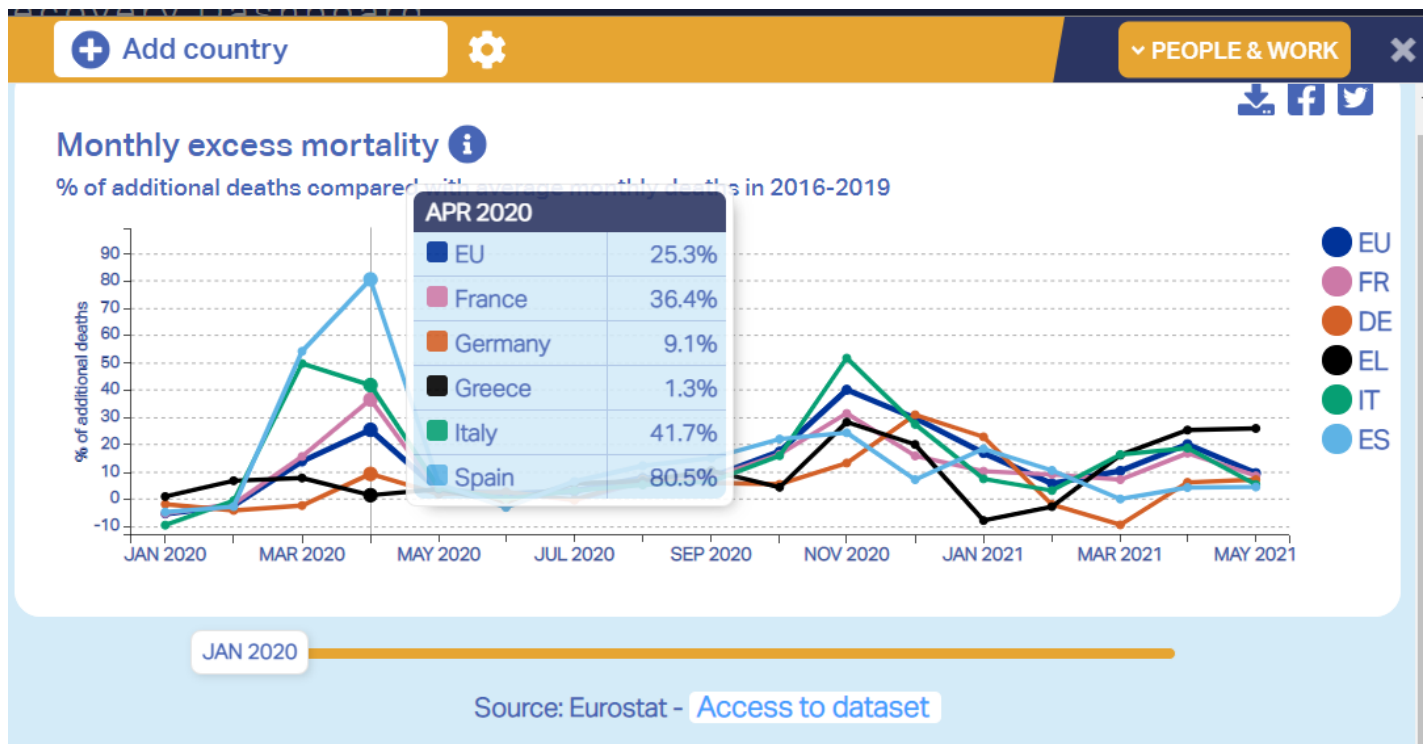
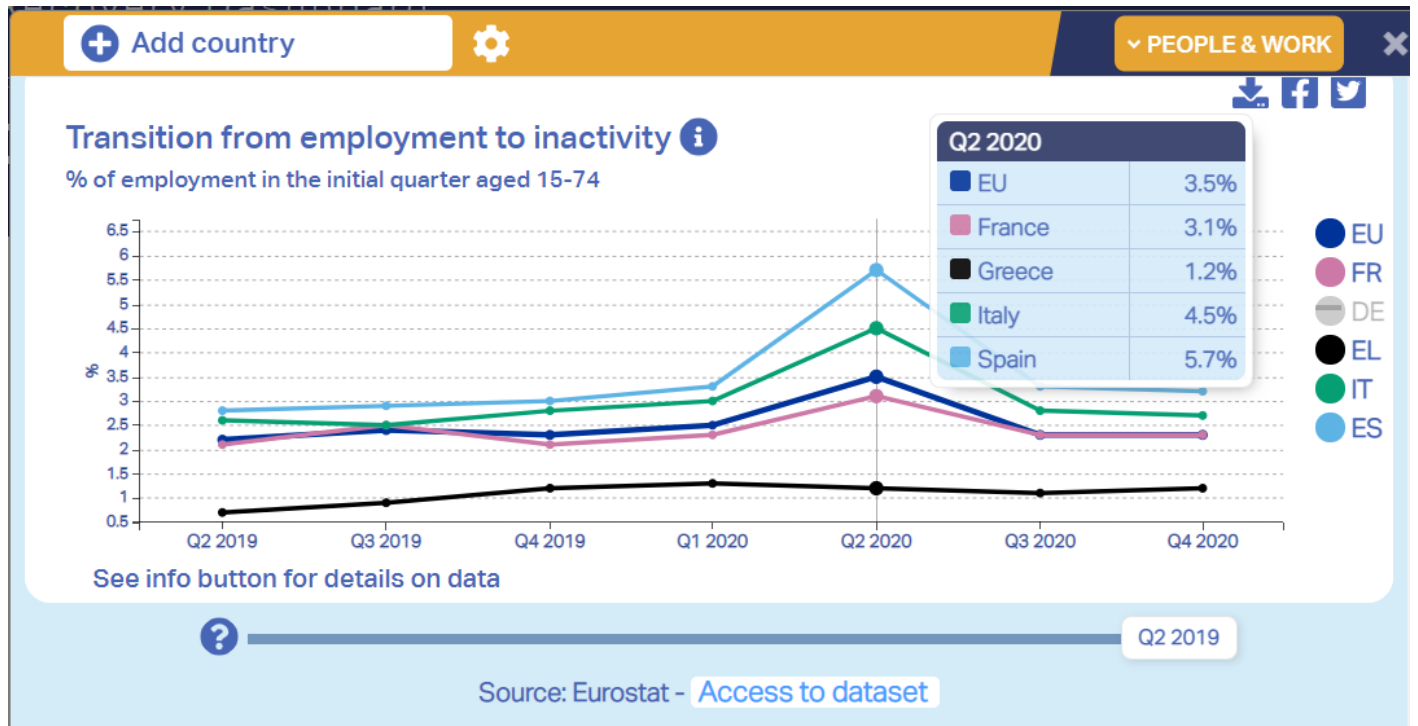


SOURCE: <https://ec.europa.eu/eurostat/cache/recovery-dashboard/>





## EUROPEAN STATISTICAL Recovery Dashboard (2021 august)

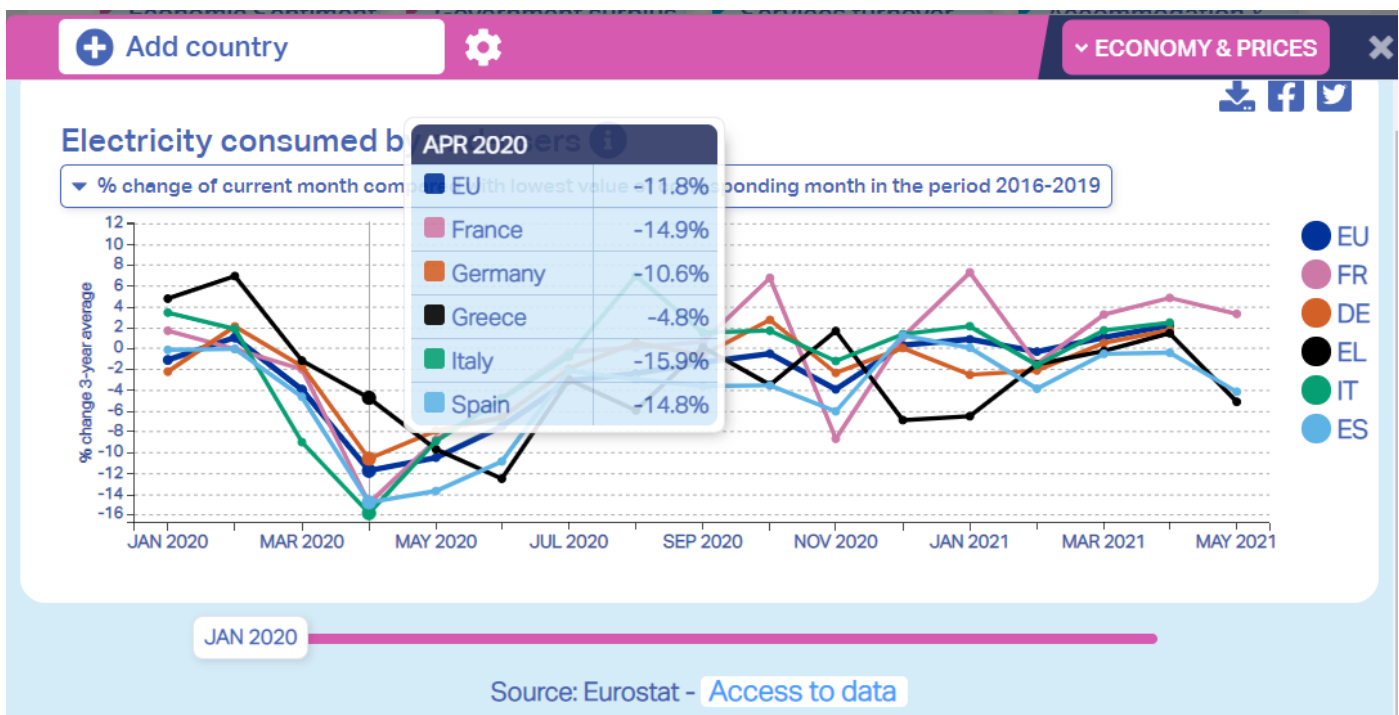
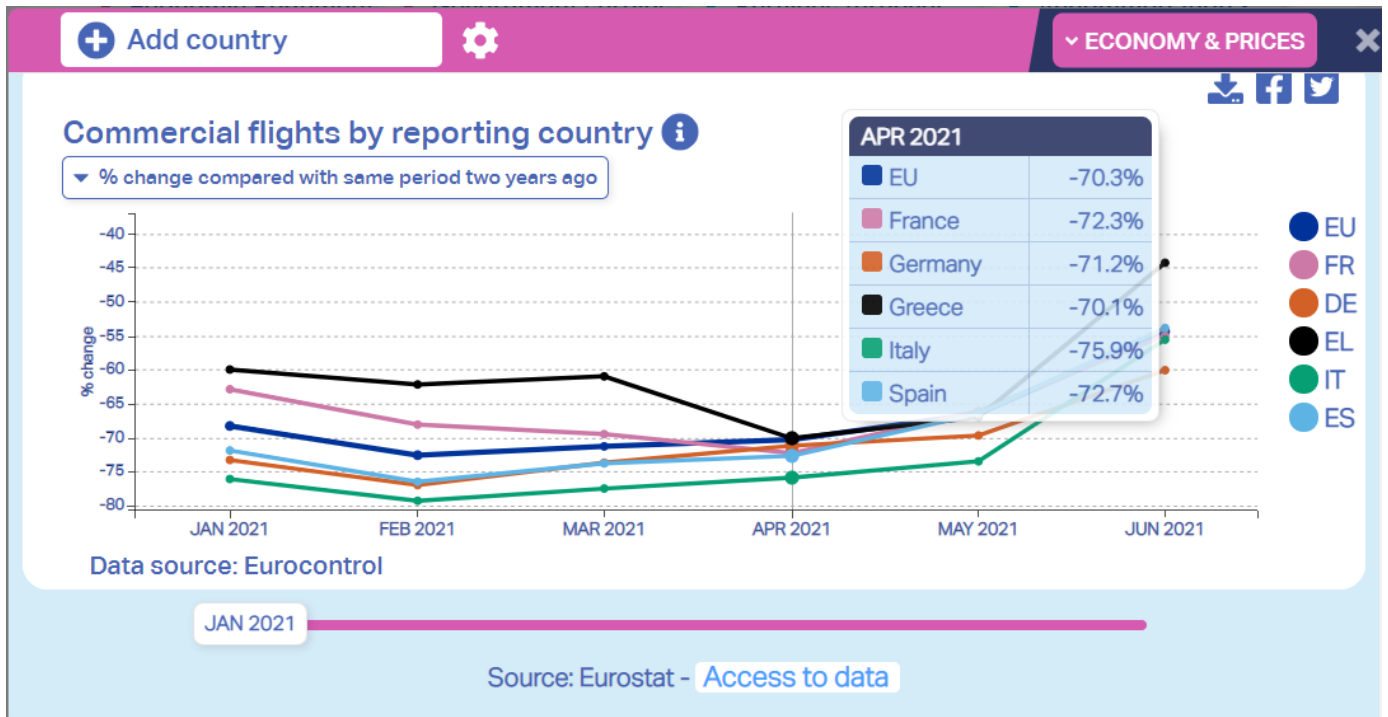


SOURCE: <https://ec.europa.eu/eurostat/cache/recovery-dashboard/>





## EUROPEAN STATISTICAL Recovery Dashboard (2021 august)

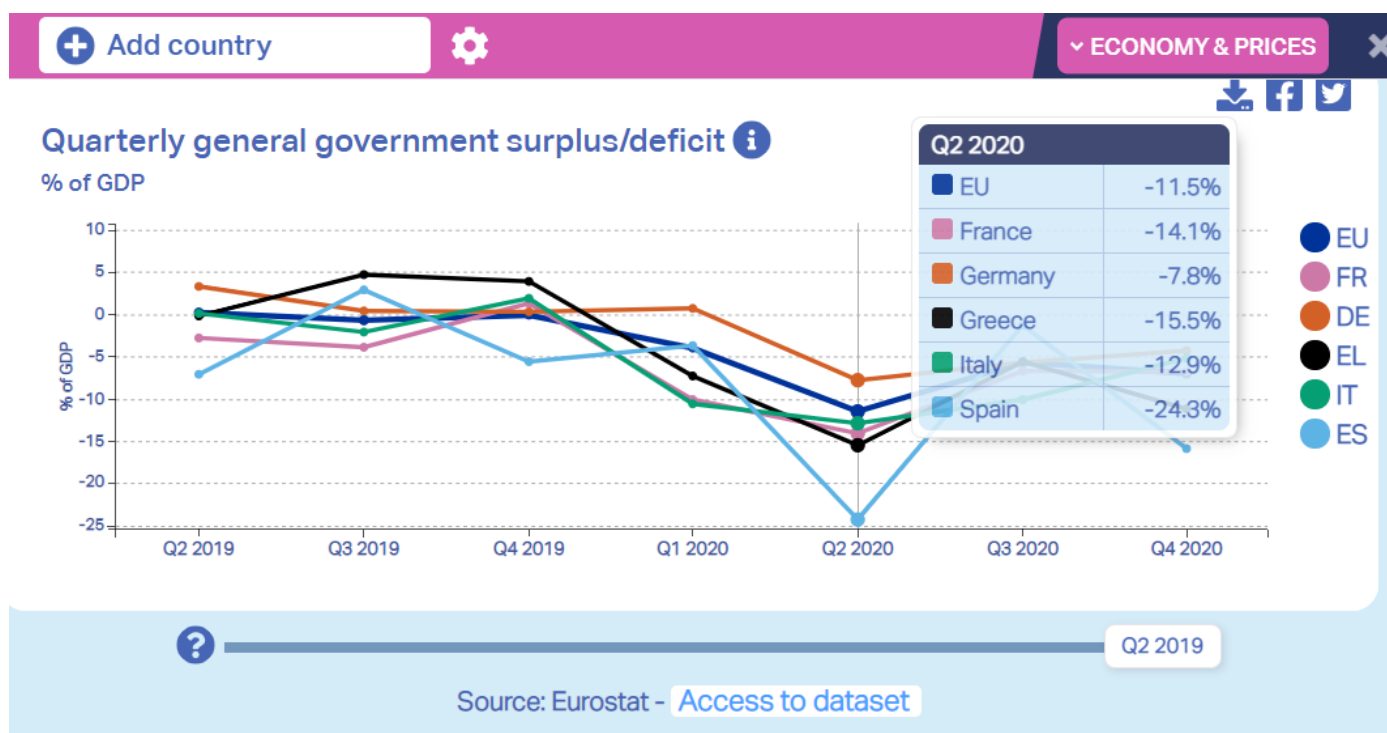
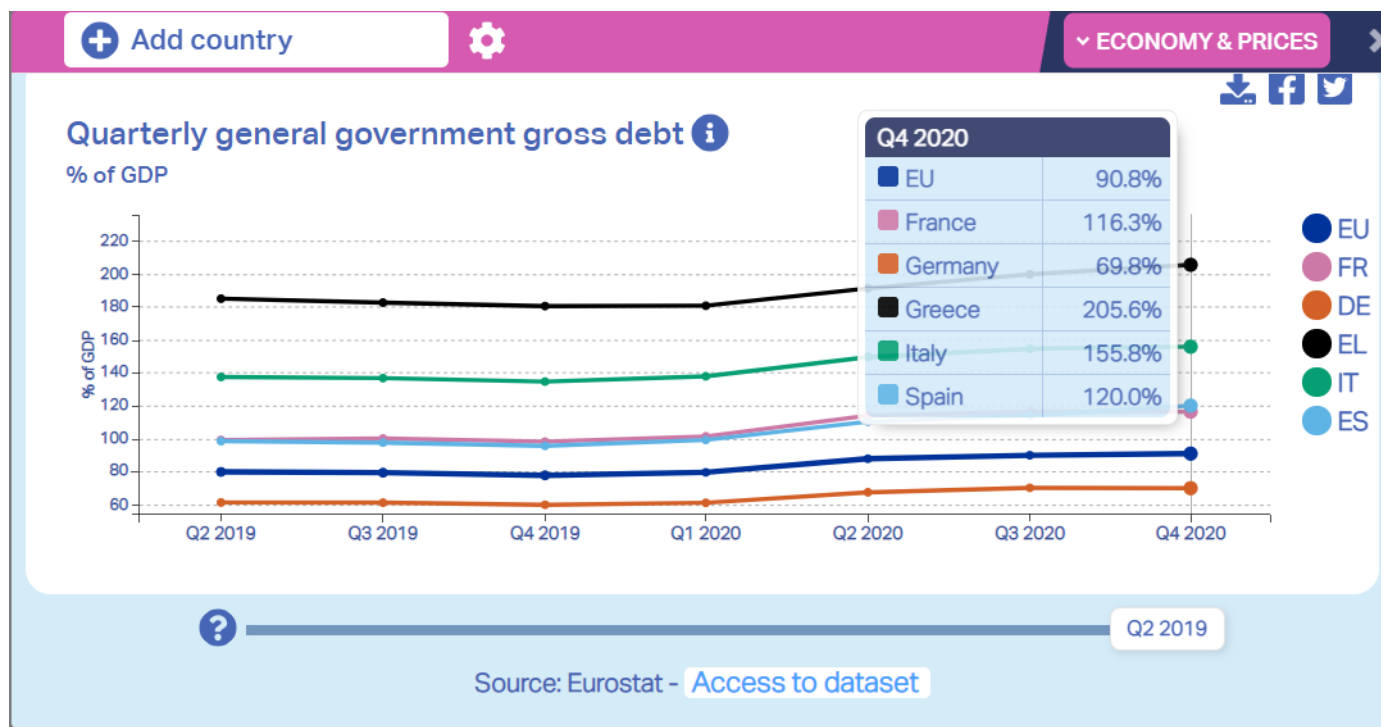


SOURCE: <https://ec.europa.eu/eurostat/cache/recovery-dashboard/>





## EUROPEAN STATISTICAL Recovery Dashboard (2021 august)

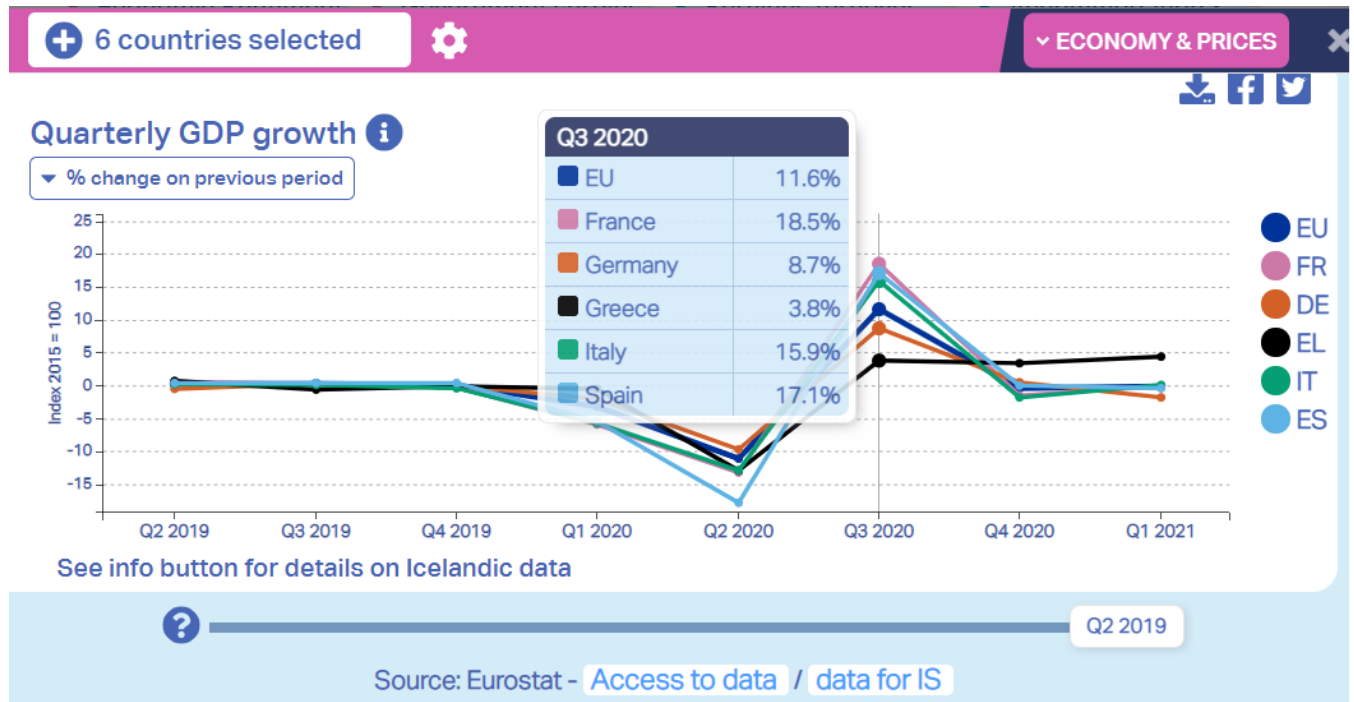


SOURCE: <https://ec.europa.eu/eurostat/cache/recovery-dashboard/>





## EUROPEAN STATISTICAL Recovery Dashboard (2021 august)



SOURCE: <https://ec.europa.eu/eurostat/cache/recovery-dashboard/>







## **FAQ VACCINES COVID-19**

*(AIFA Agenzia italiana del farmaco)*

**CLINICAL TRIAL SHORTENED TO HAVE THESE VACCINES AVAILABLE QUICKLY.** The studies that led to the development of COVID-19 vaccines did not skip any of the phases of verification of the efficacy and safety required for the development of a medicine; on the contrary, these studies saw the participation of a very large number of volunteers, about ten times higher than that of similar studies for the development of other vaccines. The rapid development and approval is due to new technologies, to the huge resources made available very quickly and to a new evaluation process by the regulatory agencies.

**DURATION OF PROTECTION BY VACCINES.** The duration of protection has not yet been defined with certainty, because so far the observation period has necessarily been a few months. However, data on other types of coronaviruses suggest that it should be at least 9-12 months.

**VACCINATED PEOPLE STILL TRANSMIT THE INFECTION TO OTHERS.** The aim of the registration studies was to assess the vaccines efficacy in protecting from the COVID-19 disease. Studies are ongoing to determine whether asymptomatically infected vaccinated people can infect others. Since it is possible that, despite protective immunity, in some cases the virus may persist in the nasal mucosa, vaccinated people and those who are in contact with them must continue to take protective measures against COVID-19.

**VARIANTS OF SARS-COV-2 VIRUS HAVE BEEN REPORTED: WILL VACCINES BE EFFECTIVE ALSO AGAINST SUCH VARIANTS?** SARS-CoV-2 virus is subject to frequent mutations. The vaccine-induced immune response protects against most of these variants although protection might be less effective against some of them.

**CAN ANYONE BE VACCINATED WHO HAS ALREADY HAD A COVID-19 INFECTION, CONFIRMED BY A MOLECULAR TEST?** In subjects who have had prior (symptomatic or asymptomatic) SARS-CoV-2 infection, the administration of a single dose of SARS-CoV-2/COVID-19 vaccine may be considered, provided that vaccination is carried out preferably within 6 months from the infection and no later than 12 months after its resolution. Subjects with immunodeficiency conditions (either primary or secondary following pharmacological treatments) who have had a previous SARS-COV-2 infection are recommended to follow the planned vaccination schedule.

**CAN WOMEN OF CHILDBEARING AGE BE VACCINATED WITH COVID-19 VACCINES?** Studies on animal models do not show any harmful effects on reproductive capacity associated with vaccination. Therefore, vaccination is also indicated in women of childbearing age.







### CAN CHILDREN AND ADOLESCENTS BE VACCINATED WITH COVID-19 VACCINES?

At date July 31st, there are no vaccines authorised for children aged under 12 years. Comirnaty was initially authorised for people aged 16 years and over. Subsequently, it was authorised also for adolescents aged 12-15 years. Similarly, Spikevax (Moderna) was initially authorised for people aged 18 years and over, and then it was authorised also for adolescents aged 12-17 years. The other available vaccines (Vaxzevria and Janssen) are not currently authorised for people aged under 18 years.

**CONTRAINDICATIONS TO VACCINATION.** Vaccination with Comirnaty and Spikevax is contraindicated in all people with hypersensitivity to the active substance or to any of the excipients contained in the medicinal product. The second dose of the vaccine should not be given to those people who have experienced anaphylaxis (serious allergic reaction) at the first dose of Comirnaty or Spikevax.

**MAXIMUM VACCINE PROTECTION ACHIEVED AFTER VACCINATION.** As with adults, for adolescents aged 12-15 years too it is necessary to wait until 7 days after the second dose of the vaccine.

### CAN MRNA VACCINES CAUSE COVID-19 OR OTHER GENETIC MODIFICATIONS?

These vaccines do not use active viruses, but only a genetic component. No whole or live viruses are involved, therefore vaccines cannot cause the disease. As for all mRNAs produced by cells, the mRNA from the vaccine does not stay in the body but is broken down naturally few days after vaccination.

**Source AIFA – 30/7/2021**

<https://www.aifa.gov.it/domande-e-risposte-su-vaccini-covid-19>





## TYPES OF SCIENTIFIC EVIDENCE

### *(Compound Interest)*

**ANECDOTAL & EXPERT OPINIONS.** Anecdotal evidence is a person's own personal experience or view, not necessarily representative of typical experiences. An expert's standalone opinion, or that given in a written news article, are both considered weak forms of evidence without scientific studies to back them up.

**ANIMAL & CELL STUDIES (experimental).** Animal research can be useful, and can predict effects also seen in humans. However, observed effects can also differ, so subsequent human trials are required before a particular effect can be said to be seen in humans. Tests on isolated cells can also produce different results to those in the body.

**CASE REPORTS & CASE SERIES (observational)** A case report is a written record on a particular subject. Though low on the hierarchy of evidence, they can aid detection of new diseases, or side effects of treatments. A case series is similar, but tracks multiple subjects. Both types of study cannot prove causation, only correlation.

**CASE-CONTROL STUDIES (observational)** Case-control studies are retrospective, involving two groups of subjects, one with a particular condition or symptom, and one without. They then track back to determine an attribute or exposure that could have caused this. Again, these studies show correlation, but it is hard to prove causation.

**COHORT STUDIES (observational)** A cohort study is similar to a case-control study. It involves selection of a group of people sharing a certain characteristic or treatment (e.g. exposure to a chemical), and compares them over time to a group of people who do not have this characteristic or treatment, noting any difference in outcome.

**RANDOMISED CONTROLLED TRIALS (experimental)** Subjects are randomly assigned to a test group, which receives the treatment, or a control group, which commonly receives a placebo. In 'blind' trials, participants do not know which group they are in; in 'double blind' trials, the experimenters do not know either. Blinding trials helps remove bias.

**SYSTEMATIC REVIEW.** Systematic reviews draw on multiple randomised controlled trials to draw their conclusions, and also take into consideration the quality of the studies included. Reviews can help mitigate bias in individual studies and give us a more complete picture, making them the best form of evidence.

**Source A Rough Guide to Types of Scientific Evidence**

<https://www.compoundchem.com/2015/04/09/scientific-evidence/>





## A ROUGH GUIDE TO SPOTTING BAD SCIENCE

### *(Compound Interest)*

**CORRELATION & CAUSATION.** Be wary of confusion of correlation and causation. A correlation between variables doesn't always mean one causes the other. Global warming has increased since the 1800s, and pirate numbers decreased, but lack of pirates doesn't cause global warming.

**UNSUPPORTED CONCLUSIONS.** Speculation can often help to drive science forward. However, studies should be clear on the facts their study proves, and which conclusions are as yet unsupported ones. A statement framed by speculative language may require further evidence to confirm.

**PROBLEMS WITH SAMPLE SIZE.** In trials, the smaller a sample size, the lower the confidence in the results from that sample. Conclusions drawn can still be valid, and in some cases small samples are unavoidable, but larger samples often give more representative results.

**UNREPRESENTATIVE SAMPLES USED.** In human trials, subjects are selected that are representative of a larger population. If the sample is different from the population as a whole, then the conclusions from the trial may be biased towards a particular outcome.

**NO CONTROL GROUP USED.** In clinical trials, results from test subjects should be compared to a 'control group' not given the substance being tested. Groups should also be allocated randomly. In general experiments, a control test should be used where all variables are controlled.

**NO BLIND TESTING USED.** To try and prevent any bias, subjects should not know if they are in the test or the control group. In 'double-blind' testing, even researchers don't know which group subjects are in until after testing. Note, blind testing isn't always feasible, or ethical.

**SENSATIONALISED HEADLINES.** Article headlines are commonly designed to entice viewers into clicking on and reading the article. At times, they can over-simplify the findings of scientific research. At worst, they sensationalise and misrepresent them.

**MISINTERPRETED RESULTS.** News articles can distort or misinterpret the findings of research for the sake of a good story, intentionally or otherwise. If possible, try to read the original research, rather than relying on the article based on it for information.

**CONFLICT OF INTERESTS.** Many companies employ scientists to carry out and publish research – whilst this doesn't necessarily invalidate research, it should be analysed with this in mind. Research can also be misrepresented for personal or financial gain.





**SELECTIVE REPORTING OF DATA.** Also known as 'cherry-picking', this involves selecting data from results which support the conclusion of the research, whilst ignoring those that do not. If a research paper draws conclusions from a selection of its results, not all, it may be guilty of this.

**UNREPLICABLE RESULTS.** Results should be replicable by independent research, and tested over a wide range of conditions (where possible) to ensure they are consistent. Extraordinary claims require extraordinary evidence – that is, much more than one independent study!

**NON-PEER REVIEWED MATERIAL.** Peer review is an important part of the scientific process. Other scientists appraise and critique studies, before publication in a journal. Research that has not gone through this process is not as reputable, and may be flawed.

**Source A Rough Guide to Spotting Bad Science 2015 COMPOUND INTEREST**

<https://www.compoundchem.com/2014/04/02/a-rough-guide-to-spotting-bad-science/>





## 46 MYTHS ON COVID-19 AND VACCINES (NEWSGUARD)

**MYTH: The mRNA vaccines being developed for COVID-19 will alter human DNA.**

### THE FACTS:

Several COVID-19 vaccine candidates rely on messenger ribonucleic acid (mRNA), which carries genetic information needed to make proteins, according to the [U.S. National Cancer Institute](#). These vaccines would instruct cells to produce a protein that resembles part of the COVID-19 virus, triggering the body's immune system to respond and produce antibodies.

mRNA vaccines are a new technology, but it is not possible for those vaccines to alter your DNA. "This cannot change your genetic makeup," Dr. Dan Culver, a pulmonologist at Cleveland Clinic, told [The Associated Press](#) in September 2020. "The time that this RNA survives in the cells is relatively brief in the span of hours. What you are really doing is sticking a recipe card into the cell making protein for a few hours."

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**MYTH: COVID-19 vaccines are not being tested against a placebo in clinical trials.**

### THE FACTS:

The final phase of clinical testing for COVID-19 vaccine candidates are [Phase 3 trials](#), in which the vaccine is given to tens of thousands of patients. Researchers then compare how many patients become infected with COVID-19 compared to a separate group of patients who received a placebo, to determine the vaccine's efficacy and safety. All 10 vaccine candidates that have begun Phase 3 trials as of Nov. 3, 2020, are being tested against a placebo, according to the [World Health Organization](#).

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**MYTH: The COVID-19 vaccine will use microchip surveillance technology created by Bill Gates-funded research.**

### THE FACTS:

There is no vaccine — for COVID-19 or otherwise — with a microchip or other surveillance feature. In December 2019, researchers at MIT, who had received funding from the Bill





and Melinda Gates Foundation, published a paper about technology that they developed that can keep a vaccination record on a patient's skin with an ink-like injection that could be read by smartphone. The technology does not have the capacity to track patients' movements, Kevin McHugh, a Rice University bioengineering professor who worked on the study while at MIT, told [FactCheck.org](https://factcheck.org). The Gates Foundation told FactCheck.org that the research is unrelated to COVID-19.

It is true that Gates has said that "digital certificates" could be used as part of a larger vaccination effort, but there is no evidence that he or his foundation has created technology to track recipients of a COVID vaccine. Digital certificates are used to send encrypted information online, and the Gates Foundation told [Reuters](https://reuters.com): "The reference to 'digital certificates' relates to efforts to create an open source digital platform with the goal of expanding access to safe, home-based testing."

Gates himself denied the claims during an [interview](https://cbsnews.com) on CBS News on July 22, 2020. "There's no connection between any of these vaccines and any tracking type thing at all. I don't know where that came from," he said.

## MYTH: Dr. Anthony Fauci will personally profit from a COVID-19 vaccine.

### THE FACTS:

There is no evidence that Fauci, director of the U.S. National Institute of Allergy and Infectious Diseases (NIAID), has personal investments in vaccines being developed for COVID-19. Fauci's agency is working with pharmaceutical company Moderna on a potential vaccine — one of 202 that are currently in development, according to the [World Health Organization](https://www.who.int) — but [PolitiFact](https://www.politifact.org) found no record of a business relationship between Fauci and Moderna in an April 2020 search of the U.S. Securities and Exchange Commission's database.

## MYTH: A new law in Colorado will force parents into a government-run re-education program if they refuse to give their children a COVID-19 vaccine.

### THE FACTS:

The School Entry Immunization Bill, signed into [law](https://leg.colorado.gov) by Colorado's governor in June 2020, does not make any reference to COVID-19 or a COVID-19 vaccine. The law did toughen the state's process for obtaining a religious or personal belief vaccine exemption, requiring parents requesting such an exemption to either submit a form signed by a health care provider, or complete what the law calls an "online education module" about vaccine science, produced by the Colorado Department of Public Health and Environment.







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**MYTH: The COVID-19 vaccine has been proven to cause infertility in 97 percent of its recipients.**

**THE FACTS:**

This claim appears to have originated with British YouTuber Zed Phoenix, who claimed that an unnamed source at pharmaceutical company GlaxoSmithKline told him that 61 of the 63 women tested with a COVID-19 vaccine became infertile and that a separate, male-specific vaccine “resulted in decreased testicular size, drop of testosterone levels, and marked atrophy of the prostate.”

Phoenix’s statements about the alleged effects of these vaccines appear to have been taken verbatim from an unrelated 1989 [study](#) from the National Institute of Immunology in New Delhi, India, according to [Reuters](#). This research examined the use of anti-fertility vaccines on baboons in discussing future treatment options for human cancer patients whose tumors are affected by fertility hormones. None of the COVID-19 vaccine candidates are gender-specific or are in any way related to fertility.

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**MYTH: COVID-19 vaccines will contain aborted human fetal tissue.**

**THE FACTS:**

Existing vaccines for diseases such as chickenpox and rubella are produced using cell lines descended from fetuses aborted decades ago. According to a June 2020 [article](#) published in Science magazine, at least five COVID-19 vaccine candidates are using fetal cell lines: one descended from a fetus aborted in 1972 and another from an abortion performed in 1985.

However, no additional fetal cells are required for the production of any of these vaccines, including those being developed for COVID-19, and no actual fetal tissue is present in these vaccines. The National Catholic Bioethics Center, which consults with the Vatican and Catholics on medical ethics issues and opposes abortion, has [stated](#), “The cells in these lines have gone through multiple divisions before they are used in vaccine manufacture. After manufacture, the vaccines are removed from the cell lines and purified. One cannot accurately say that the vaccines contain any of the cells from the original abortion.”

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**MYTH: The COVID-19 vaccine being developed by Oxford University and AstraZeneca will turn people into monkeys.**

## THE FACTS:

This false claim is based on the fact that Oxford and AstraZeneca's vaccine relies on a modified chimpanzee adenovirus intended to generate an immune response to the virus that causes COVID-19. According to [The Times of London](#), the claim is being promoted through memes and video clips as part of a disinformation campaign involving officials in Russian state agencies, specifically targeted at countries where Russia wants to sell its own COVID-19 vaccine.

**MYTH: Government food stamps will be denied to those who refuse COVID-19 vaccines.**

## THE FACTS:

The pseudoscience and conspiracy-oriented website Natural News first reported that President-elect Joe Biden's COVID-19 task force had announced such a policy. However, the article relied on outdated and inaccurate information. Dr. Luciana Borio, a member of the task force, helped write [a report](#) from the Johns Hopkins Center for Health Security in July 2020 that mentioned government food stamps in a larger discussion about COVID-19 vaccines. However, the report was not part of the task force, and it did not advocate the denial of food stamps to people who decline to take a COVID-19 vaccine. The report's lead authors said in [a statement to FactCheck.org](#) in November 2020 that they "do NOT advocate that such social supports ever be withheld in connection with an individual's vaccination status."

**MYTH: The U.K. Medicines and Healthcare products Regulatory Agency (MHRA) will use artificial intelligence to monitor the safety of COVID-19 vaccines because the agency knows that vaccines are extremely dangerous.**

## THE FACTS:

It is true that MHRA has [awarded a contract](#) to the company Genpact to create an artificial intelligence tool to monitor reports of adverse effects to COVID-19 vaccines. However, the agency states that this is not evidence of foreknowledge of dangers posed by vaccines. Moreover, an adverse event report [does not prove](#) that the event or reaction was caused by a vaccine.

In a November 2020 statement to NewsGuard, the MHRA said, "We have a range of resources and technology to support the safety monitoring of any COVID-19 vaccination





programme. The use of AI will be one element of that. We take every report of a suspected side effect seriously and we combine the review of these individual reports with statistical analysis of clinical records.”

The agency continued: “Based on the available published reports from the Phase One and Two clinical trials, we don’t currently anticipate any specific safety concerns with COVID-19 vaccines. We expect the general safety profile to be similar to other types of vaccines. A COVID-19 vaccine will only be deployed once it has been proven to be safe and effective through robust clinical trials and approved for use.”

**MYTH: A document on the FDA website shows that two participants died as a result of “serious adverse events” from an experimental COVID-19 vaccine.**

## THE FACTS:

There were two deaths among the 21,000 people in the trial who received Pfizer and BioNtech’s COVID-19 vaccine, but the U.S. Food and Drug Administration did not attribute those deaths to the vaccine.

According to a December 2020 FDA [document](#) describing the circumstances of the deaths, “one experienced a cardiac arrest 62 days after vaccination #2 and died 3 days later, and the other died from arteriosclerosis 3 days after vaccination #1.” The document also said in the case of the second death, the participant had “baseline obesity and pre-existing atherosclerosis,” or a narrowing of the arteries.

There were also four deaths reported among the 21,000 trial participants who received a placebo. The deaths “represent events that occur in the general population of the age groups where they occurred, at a similar rate,” according to the FDA document.

To determine the safety of the vaccine, the trial recorded what are called “serious adverse events,” defined by the U.S. National Library of Medicine as any medical event that results in death, hospitalization, or interferes substantially with normal life functions. The FDA document said among the serious events reported in the Pfizer/BioNTech trial, it considered only two as possibly related to the vaccine: a shoulder injury and swollen lymph nodes, a common and typically benign condition.

**MYTH: The virus mutates so fast that a vaccine will never work.**

## THE FACTS:

While all viruses mutate constantly, the World Health Organization [said](#) in December 2020 that, “SARS-CoV-2, the virus which causes COVID-19, tends to change more slowly than





others such as HIV or influenza viruses.” The more rapid changes in influenza viruses are one reason why the flu vaccine is updated annually.

Preliminary laboratory studies released in January 2021 on the first two COVID-19 vaccines authorized for use in the U.S.— one made by [Pfizer/BioNTech](#), the other made by [Moderna](#) — found that their vaccines are still effective against a mutation first identified in the U.K known as the B.1.1.7 strain. Although the studies did suggest vaccines being less effective against the B.1.351 mutation found in South Africa, there was no evidence that the mutations would negate the vaccines’ benefits entirely.

“You could diminish the vaccine-induced antibody efficacy by a few fold and still be well within the protective range of the vaccine,” Dr. Anthony Fauci, director of the U.S. National Institute of Allergy and Infectious Diseases, said in a White House briefing on Jan. 27, 2021.

**MYTH: The head of research at Pfizer said the company’s COVID-19 vaccine contains a protein called syncytin-1 that will result in female sterilization.**

## THE FACTS:

THE FACTS: This claim was based on a petition to the European Medicines Agency from a doctor named Michael Yeadon, apparently the aforementioned “head of Pfizer research.” In fact, Yeadon had left the company in 2011, according to a December 2020 article by [The Associated Press](#).

The petition speculated that the vaccine may create an immune response against a protein vital for the formation of the placenta during pregnancy. However, the vaccine does not contain syncytin-1 and there is no evidence connecting the COVID-19 vaccine to infertility.

Moreover, there is no evidence that the spike protein in the virus that causes COVID-19 and that is being targeted by the vaccine will create an immune response against syncytin-1, scientists say. “Any hint of similarity between syncytin-1 and the SARS-CoV-2 spike protein (which is used as part of the vaccine) is extremely remote,” Brent Stockwell, a biological sciences and chemistry professor at Columbia University, told [PolitiFact](#) in December 2020. “There are hardly any parts of the two proteins that are even vaguely similar, and they are far more distinct than would be needed for cross-reactivity of immune responses.”

In a December 2020 statement to The Associated Press, Pfizer spokesperson Jerica Pitts said the company’s COVID-19 vaccine had not been found to cause infertility. “It has been incorrectly suggested that COVID-19 vaccines will cause infertility because of a shared amino acid sequence in the spike protein of SARS-CoV-2 and a placental protein,” she said. “The sequence, however, is too short to plausibly give rise to autoimmunity.”





**MYTH: COVID-19 vaccine injections, shown during press events being delivered to health care workers, are fabricated, using syringes with “disappearing needles.”**

**THE FACTS:**

These claims were made in Twitter posts and YouTube clips, using real videos from press events where health care workers received COVID-19 vaccines. One tweet that promoted this claim, using BBC footage of a worker receiving a COVID-19 vaccine injection, attracted 394,000 views between Dec. 16 and 17, 2020.

According to the [BBC](#) and [Vice News](#), the injections of the COVID-19 vaccine shown in these videos were delivered using retractable syringes, not “disappearing needles,” where the needlepoint automatically retracted into the barrel of the syringe once the dose of medication was delivered. Retractable syringes are typically used to reduce needlepoint injuries, such as a nurse or a lab worker accidentally puncturing their skin with a used needle and potentially exposing themselves to infection.

Retractable syringes have been in use for years before the COVID-19 vaccine was introduced. A [patent](#) for a “retractable needle hypodermic syringe” was granted in the U.S. in 1992.

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**MYTH: A nurse in Alabama died hours after receiving the COVID-19 vaccine.**

**THE FACTS:**

According to fact-checking website [LeadStories.com](#), this claim first appeared in screenshots of a text message conversation shared on Facebook on Dec. 15, 2020, by a Facebook account using the name Danielle Tyler.

Facebook posts that shared the screenshots claimed that a 42-year-old nurse who received the COVID-19 vaccine was “found dead eight hours later.” The source for this claim, according to the Facebook posts, was “not an internet rumor, my FB friend’s friend’s aunt.”

In a Dec. 16, 2020, statement to LeadStories.com, the Alabama Department of Public Health said it “has reached out to all hospitals in the state which administered the COVID-19 vaccine and confirmed there have been no deaths of vaccine recipients. The posts are untrue. No person who received a COVID-19 vaccine in Alabama has died.”

The emergency use authorization for the first COVID-19 vaccine, developed by Pfizer and BioNTech, [requires](#) that serious adverse events following vaccination, including deaths, have to be reported to the Vaccine Adverse Event Reporting System (VAERS), which is co-operated by the U.S. Food and Drug Administration and the U.S. Centers for Disease Control and Prevention.





In an Dec. 16, 2020, email to [PolitiFact](#), CDC spokesperson Kristin Nordlund said, “I can confirm that as of 4 p.m. ET today that VAERS has received no reports of death after COVID-19 vaccines.”

**MYTH: The COVID-19 vaccines violate the Nuremberg Code, which bans medical experiments from being performed on humans without their consent.**

## THE FACTS:

The [Nuremberg Code](#) created a set of medical research ethics principles for what it calls “permissible medical experiments.” According to a June 2020 article by FactCheck.org, the code was created in response to Nazis performing medical experiments on concentration camp prisoners without their consent.

Vaccines that have gone through multiple rounds of testing in clinical trials and have then been approved for widespread use by regulators are not in violation of the Nuremberg Code’s principles. For example, the COVID-19 vaccine developed by Pfizer and BioNTech was authorized for emergency use by the UK Medicines and Healthcare Products Regulatory Agency and the U.S. Food and Drug Administration in 2020 only after it went through multiple clinical trials to demonstrate its safety and efficacy, with the final Phase 3 trial involving 43,000 patients.

“The Nuremberg Code is about doing human experiments, not vaccination,” Dr. Jonathan Moreno, professor of bioethics at the University of Pennsylvania, told [Agence France-Presse](#) in a May 2020 article. “The Nuremberg Code is perfectly compatible with vaccination.”

**MYTH: The COVID-19 vaccines will cause “pathogenic priming” or “disease enhancement,” meaning that vaccinated individuals will be more likely to develop severe cases of COVID-19 if they are infected with the COVID-19 virus.**

## THE FACTS:

COVID-19 vaccines went through multiple clinical trials to determine their safety and efficacy before being authorized for emergency use by regulators.

The final phase 3 trials for two COVID-19 vaccines authorized in the U.S. as of January 2021 — one developed by Moderna and another from Pfizer and BioNTech — involved a combined 36,000 people receiving one of the two vaccines.

Contrary to the claim that the vaccines cause more severe cases of COVID-19, out of the 36,000 people who received the vaccines, only one developed a severe case, according to







the results of the [Moderna](#) and [Pfizer/BioNTech](#) vaccines' clinical trials, which were both published in the New England Journal of Medicine in December 2020. The single instance of severe COVID-19 among vaccine recipients was observed in the Pfizer/BioNTech trial. Both vaccines were found to be approximately 95 percent effective in preventing COVID-19.

In a November 2020 article published on fact-checking website [Health Feedback](#), Walter Orenstein, a professor at the Emory University School of Medicine in Atlanta, stated that "thus far, there are no data supporting vaccination as a cause of vaccine-induced enhanced disease."

## **MYTH: The COVID-19 vaccine can cause people to develop COVID-19.**

### **THE FACTS:**

None of the vaccines authorized for widespread use in the U.S. or Europe as of January 2021 contain the live virus that causes COVID-19 virus. "This means that a COVID-19 vaccine cannot make you sick with COVID-19," the U.S. Centers for Disease Control and Prevention stated on its [website](#).

However, the CDC did note that the available vaccines require two doses, and it will take some time after vaccination for the body to build immunity against the COVID-19 virus. "That means it's possible a person could be infected with the virus that causes COVID-19 just before or just after vaccination and still get sick," the CDC stated. "This is because the vaccine has not had enough time to provide protection."

COVID-19 cases among fully vaccinated individuals are still possible, because none of the available vaccines have been found to be 100 percent effective in preventing symptomatic cases of COVID-19. Additionally, the vaccines might not prevent asymptomatic infection, meaning vaccine recipients might be able to get infected, show no symptoms, and unwittingly spread the virus, according to the [Children's Hospital of Philadelphia](#).

## **MYTH: The mRNA vaccines for COVID-19 do not fit the CDC and FDA's definitions of a vaccine, which state that vaccines have to both stimulate immunity and disrupt transmission of a virus.**

### **THE FACTS:**

This claim was promoted by David Martin, a financial analyst and self-help entrepreneur who operates a YouTube channel pushing COVID-19 conspiracy theories.





As of January 2021, research is ongoing to determine whether COVID-19 vaccines prevent transmission of the COVID-19 virus. However, contrary to Martin's claim, neither U.S. Centers for Disease Control and Prevention and the U.S. Food and Drug Administration stipulate that vaccines must both provide immunity and block transmission of a virus.

"There are many ways to define it, but CDC describes a vaccine as a product that stimulates a person's immune system to produce immunity to a specific disease, protecting the person from that disease," CDC spokesperson Kristen Nordlund told NewsGuard in a January 2021 email. Similarly, a [page](#) on the FDA's website explaining how vaccines work only mentions preventing disease, not transmission, stating, "Vaccination stimulates the body's immune system to build up defenses against the infectious bacteria or virus (organism) without causing the disease."

The two mRNA vaccines authorized for emergency use in the U.S. as of January 2021 would fit those definitions, as clinical trials found that both vaccines are approximately 95 percent effective in preventing COVID-19.

## MYTH: Hank Aaron's death is linked to the COVID-19 vaccine.

### THE FACTS:

Baseball Hall of Famer and Major League Baseball's one-time home run king Hank Aaron received the Moderna COVID-19 vaccine on Jan. 5, 2021, at the Morehouse School of Medicine. He told [The Associated Press](#) at the time that he hoped his willingness to be vaccinated would reduce vaccine hesitancy among Black Americans.

The 86-year-old Aaron died on Jan. 22, 2021. Before his cause of death was disclosed, anti-vaccine activists [Robert F. Kennedy Jr.](#) and [Del Bigtree](#), both of whom have repeatedly spread false claims about the safety of vaccines, suggested without evidence that Aaron's death was caused by the COVID-19 vaccine.

Morehouse College of Medicine spokesperson Nicole Linton denied these claims in an email to NewsGuard, stating, "His passing was not related to the vaccine, nor did he experience any side effects from the immunization. He passed away peacefully in his sleep."

Three days after his death, the Fulton County Medical Examiner's Office [reported](#) that Aaron died of natural causes. Additionally, [Fox 5 Atlanta](#) reported that officials at the medical examiner's office do not believe the COVID-19 vaccine had any adverse effect on Aaron's health and did not contribute to his death.







**MYTH: A Tennessee nurse named Tiffany Dover died after receiving the COVID-19 vaccine on live TV.**

## THE FACTS:

Dover, a nurse at Catholic Health Initiatives (CHI) Memorial Hospital in Chattanooga, Tennessee, received her COVID-19 vaccine during a live broadcast on WRCB-TV on Dec. 17, 2020. During a subsequent interview with the station, she fainted, which she [later explained](#) was a common occurrence. “I have a history of having an overactive vagal response and with that, if I have pain from anything, hangnail or if I stub my toe, I can just pass out,” she said.

CHI Memorial Hospital released a video on Dec. 21, 2020, showing Dover with other staff members and confirmed that she is alive and well in statements to [WRCB](#), [The Associated Press](#), and [Reuters](#).

[The Daily Beast](#) reported in a January 2021 article that multiple relatives of Dover have confirmed on social media that she is alive, in response to online harassment from anti-vaccine activists. Elisa Myzal, a spokesperson for the Chattanooga Police Department, told the Daily Beast, “The police department isn’t involved in this at all because there’s no crime, no death, no nothing.”

**MYTH: COVID-19 vaccines are not halal or kosher because they contain pork products.**

## THE FACTS:

Halal food refers to food that adheres to Islamic law on how food is raised, slaughtered, and prepared. Similarly, kosher food refers to foods that meet Jewish dietary standards. Both religions consider pork products to be forbidden.

Pork gelatin is contained in some vaccines licensed in the U.S., including the measles, mumps, and rubella vaccines. Gelatin is used to “protect vaccine viruses from adverse conditions such as freeze-drying or heat, particularly during transport and delivery,” [according](#) to the Children’s Hospital of Philadelphia.

However, the four COVID-19 vaccines that have been authorized for widespread emergency use in the U.S. and Europe — those produced by Pfizer, Moderna, AstraZeneca, and Johnson & Johnson — do not contain pork products, according to a February 2021 [article](#) in the Brussels Times.

In fact, Islamic and Jewish authorities, including the [British Islamic Medical Association](#), [Assembly of Muslim Jurists of America](#), the [Rabbinical Council of America](#), and [the Board of Deputies of British Jews](#), have encouraged their communities to get COVID-19 vaccines.





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**MYTH: The trials for COVID-19 vaccines were not designed to show the vaccines' effectiveness in preventing severe cases of the disease.**

**THE FACTS:**

In October 2020, the Food and Drug Administration [announced](#) that industry requests for emergency authorization of COVID-19 vaccines had to include data on “cases of severe COVID-19 disease among study subjects” in all phases of the vaccines' clinical trials. This contradicts the claim that the vaccines were only designed for mild cases.

Moreover, clinical trial results for each of the three COVID-19 vaccines authorized in the U.S. — made by [Pfizer/BioNTech](#), [Moderna](#), and [Johnson & Johnson](#) — as well as the [AstraZeneca](#) vaccine, which has been authorized in the U.K. and the European Union, included data showing that the vaccines were effective in preventing severe cases of COVID-19.

The claim that COVID-19 vaccine trials only demonstrated effectiveness against mild, symptomatic cases and not severe ones appears to be based on COVID-19 vaccine trials “primary endpoint,” which the U.S. National Cancer Institute [defines](#) as “The main result that is measured at the end of a study to see if a given treatment worked.” For the Pfizer/BioNTech and Moderna vaccine trials, the primary endpoint was based on preventing cases where a participant showed mild symptoms of COVID-19, such as fever, cough, and chills, and then tested positive for the disease.

However, as noted, the trials also measured the vaccines' efficacy on what are called “secondary endpoints,” [defined](#) by the FDA as outcomes in clinical trials “selected to demonstrate additional effects after success on the primary endpoint.” These secondary endpoints include severe COVID-19 cases, the definition of which included respiratory failure, admission to an intensive care unit, or death.

At an October 2020 meeting on the FDA's vaccine advisory committee, health experts on the committee said concerns that the trials' primary endpoints meant they could only prove that the vaccines were effective against mild COVID-19 were unfounded. “There simply does not exist an example in vaccinology of vaccines that are effective against mild disease that are not more effective in severe disease,” [said](#) Dr. Phillip Krause, deputy director of the FDA's Office of Vaccines Research and Review.

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**MYTH: American boxer Marvin Hagler's death is linked to the COVID-19 vaccine.**

**THE FACTS:**





This myth relies on an Instagram post made by boxer Thomas Hearn on March 13, 2021, in which Hearn stated that Hagler was “in ICU fighting the after effects of the vaccine.” Hagler died later that day, and vaccine misinformation sites have used Hearn’s statement to tie Hagler’s death to his COVID-19 vaccination.

There is no evidence that Hagler, who was 66 at the time of his death, died from anything related to a COVID-19 vaccine or vaccine side effects. A [statement](#) on the boxer’s official website said that he “died on March 13 of natural causes,” and Hagler’s wife Kay wrote in a [post](#) on his official Facebook fan page that Hagler had “passed away unexpectedly at his home here in New Hampshire.”

Kay Hagler wrote in another [post](#) on Hagler’s Facebook fan page that it “for sure wasn’t the vaccine that caused his death,” noting that “I was the only person close to him until the last minute, and I am the only person that know [sic] how things went ... now is not the time to talk nonsense.” Hearn himself later wrote on Instagram that “this is not an anti vaccine campaign ... It’s outrageous to have that in mind during the passing of a King, Legend, Father, Husband and so much more.”

The U.S. Centers for Disease Control and Prevention [states](#) on its website that COVID-19 vaccines approved for use in the U.S. “are safe and effective. Millions of people in the United States have received COVID-19 vaccines under the most intense safety monitoring in U.S. history.” The CDC also says that to date, its vaccine adverse event reporting system (VAERS) “has not detected patterns in cause of death that would indicate a safety problem with COVID-19 vaccines.”

**MYTH: Scientists at Memorial Sloan Kettering Cancer Center have discovered that mRNA inactivates tumor-suppressing proteins, meaning that mRNA vaccines used to protect against COVID-19 can cause cancer.**

## THE FACTS:

This false claim was [first](#) promoted by NaturalNews.com, a network of health misinformation sites that NewsGuard has found to have repeatedly published false content. The March 2021 NaturalNews.com article was based on a Memorial Sloan Kettering Cancer Center (MSKCC) [study](#) published in August 2018 in the journal Nature. Although that study did find that changes in mRNA can inactivate tumor-suppressing proteins, the research was not connected to mRNA vaccines like those used against COVID-19.

“This article circulating is categorically false, misrepresents the findings of our study and draws incorrect conclusions about vaccine risks,” Jeanne D’Agostino, spokesperson for Memorial Sloan Kettering, told [Agence France-Presse](#) in March 2021.

In fact, months before the NaturalNews.com story was published, the cancer center had updated its August 2018 [press release](#) about the study, to make it clear that the research did not involve mRNA vaccines. The updated text stated, “It’s important to note that





mRNAs are a normal component of all cells and the specific ones discussed here are not involved in mRNA-based vaccines, like the one developed against SARS-CoV-2,” the virus that causes COVID-19.

According to a March 2021 [article](#) on Memorial Sloan Kettering Cancer Center’s website, “It’s important to know that none of the COVID-19 vaccines interact with or alter your DNA in any way. They cannot cause cancer.”

**MYTH: COVID-19 vaccines have been proven to increase the risk of having a miscarriage.**

### THE FACTS:

A spokesperson for the U.S. Centers for Disease Control and Prevention told [Agence France-Presse](#) in February 2021, “To date, no evidence has indicated an increase in miscarriages after Covid-19 vaccines, and no concerning patterns of reporting have been observed.” A February 2021 [document](#) from the British Fertility Society and the U.K. Association of Reproductive and Clinical Scientists stated that COVID-19 vaccines “will not affect your risk of having a miscarriage.”

Sources claiming that a link exists between miscarriages and COVID-19 vaccines have frequently cited data from CDC’s Vaccine Adverse Event Reporting System ([VAERS](#)) and U.K. Medicines & Healthcare Products Regulatory Agency’s (MHRA) [Yellow Card](#) program. Both of these systems collect unverified reports of possible vaccine side effects that can be submitted by anyone, and do not prove that the vaccine caused the reported reaction.

A MHRA spokesperson told [Reuters](#) in March 2021, “There is no pattern to suggest an elevated risk of miscarriage related to exposure to the COVID-19 vaccines in pregnancy... Sadly, miscarriage is estimated to occur in about 1 in 4 pregnancies (equal to 25 in 100) in the UK (outside of the pandemic) and most occur in the first 12 weeks (first trimester) of pregnancy, so some miscarriages would be expected to occur following vaccination purely by chance.”

**MYTH: Vaccines are increasing the number of new variants of the COVID-19 virus and making vaccinated individuals more likely to infect others with new super-strains.**

### THE FACTS:





None of the COVID-19 vaccines authorized for emergency use in the U.S. and Europe contain a live COVID-19 virus, and thus cannot create a variant or allow vaccinated individuals to infect others.

Martin Hibberd, a professor of emerging infectious disease at the London School of Hygiene & Tropical Medicine, told NewsGuard in a March 2021 email that the approved vaccines “are not complete viruses and so cannot replicate a new variant that can infect others. Some types of vaccine use attenuated whole viruses and these can generate variants that could theoretically pass on to others, but the COVID-19 vaccines are not of that type and so cannot do that.”

Hibberd also explained that variants that show some resistance to vaccine-acquired immunity could be more easily spread, but this does not mean that the vaccine created those variants. So far, there is no evidence of “resistant strains arising directly as a result of vaccines,” according to Hibberd.

Professor Luke O’Neill, an immunologist at Trinity College Dublin, told [Euronews](#) in April 2021 that, “Vaccines bring out the human immune system to kill the virus, that stops it replicating and therefore the chance of variants emerging is decreased.”

**MYTH: PCR tests used to detect the virus that causes COVID-19 can also be used to secretly deliver the COVID-19 vaccine, according to research from Johns Hopkins University.**

## THE FACTS:

This myth misrepresents an animal study by Johns Hopkins researchers and published in the journal [Science Advances](#) in October 2020. The study tested devices called theragrippers, which are as small as a speck of dust and can deliver medicine to the gastrointestinal tract, with the [goal](#) of improving the efficacy of extended-release drugs.

Unlike the polymerase chain reaction, or PCR, tests used to detect the virus that causes COVID-19 — where a swab is inserted in the nose — the theragrippers in the Johns Hopkins study were administered via the rectum.

Johns Hopkins Medicine told NewsGuard in an April 2021 email, “This nanotechnology has shown promise in a laboratory setting. However, it is still in its infancy and has not been approved for use in humans. Theragrippers have been neither tested nor used for vaccine delivery.”

**MYTH: Life insurance companies won’t pay out benefits to anyone who dies after receiving a COVID-19 vaccine because the vaccines are considered experimental.**





**THE FACTS:**

Paul Graham, senior vice president of policy development at the American Council of Life Insurers, addressed this claim in a March 2021 statement on the council's [website](#). "The fact is that life insurers do not consider whether or not a policyholder has received a COVID vaccine when deciding whether to pay a claim," Graham said. "Life insurance policy contracts are very clear on how policies work, and what cause, if any, might lead to the denial of a benefit. A vaccine for COVID-19 is not one of them. Policyholders should rest assured that nothing has changed in the claims-paying process as a result of COVID-19 vaccinations."

The [Canadian Life and Health Insurance Association](#) and the [Association of British Insurers](#) each released similar statements in March 2021 explaining that COVID-19 vaccinations will have no impact on an individual life insurance coverage or benefits.

Contrary to the claim that the COVID-19 vaccines are considered "experimental," each of the vaccines authorized for emergency use in the U.S. and Europe had to undergo multiple phases of clinical trials to test their safety and efficacy, although some phases overlapped to shorten development time. That data was then reviewed by health regulators before the vaccines were authorized for emergency use.

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**MYTH: MRNA COVID-19 vaccines can cause an increase in rare neurodegenerative disorders called prion diseases.****THE FACTS:**

This claim was based on a January 2021 research [article](#) published in the journal Microbiology & Infectious Diseases. The article was written by Dr. J. Bart Classen, an immunologist in Maryland who has previously promoted the false claim that vaccines are linked to diabetes, according to a February 2021 [PolitiFact](#) article.

[According](#) to the U.S. Centers for Disease Control and Prevention, prion diseases are "a family of rare progressive neurodegenerative disorders that affect both humans and animals." One such disease is bovine spongiform encephalopathy, more widely known as mad cow disease. The disease is named for prions, which the CDC defines as "abnormal, pathogenic agents that are transmissible and are able to induce abnormal folding of specific normal cellular proteins called prion proteins that are found most abundantly in the brain."

Classen's article did assert that mRNA vaccines could cause prion diseases, as well as other neurological conditions such as Alzheimer's disease, but only cited as evidence of the claim a three-sentence summary of an unspecified analysis of the Pfizer/BioNTech COVID-19 vaccine.

Jacob Yount, an associate professor of microbial infection and immunity at Ohio State University, told [The Dispatch](#) in April 2021 that Classen's study "seems to be based on





gibberish presented in a seemingly scientific manner.” Yount said, “mRNA vaccines have a longer history of testing in humans that started several years before the COVID vaccines, and these past vaccines were found to be safe and have not resulted in prion disease. Further, the mRNAs themselves are degraded by our cells in a matter of days, so I do not find any reason to think that the mRNAs delivered to cells in our arm muscle would have a direct effect on proteins in the brain.”

**MYTH: Being in close proximity to someone who has received a COVID-19 vaccine can cause unvaccinated women to have a miscarriage or experience menstrual cycle changes.**

### THE FACTS:

According to an April 2021 [article](#) by The Associated Press, it is biologically impossible for unvaccinated women to experience reproductive problems just by being around individuals who have received a COVID-19 vaccine.

A spokesperson for the U.S. National Institutes of Health told [Reuters](#) in April 2021, “There is no evidence that individuals vaccinated for COVID-19 can transmit the vaccines to others or that vaccination of one person can have negative health effects on others.” Dr. Taraneh Shirazian, an NYU Langone gynecologist, told The Associated Press in April 2021: “You can’t pass it from one person to another if you stand next to someone.”

Centner Academy, a private school in Miami, Florida, [announced](#) in April 2021 that it would not employ vaccinated teachers, citing in a letter to parents anecdotal claims of women “reporting adverse reproductive issues from being in close proximity with those who have received any one of the COVID-19 injections.”

Dr. Aileen Marty, an infectious disease specialist with Florida International University, told [WFOR](#), a CBS-owned TV station in Miami, after reviewing the Centner Academy letter: “There are no scientific bases for any of the concerns that they raise and there’s no foundation whatsoever. It shows me that the author has a very primitive understanding of what a vaccine is and really no understanding of the scientific process.”

**MYTH: People vaccinated with COVID-19 vaccines can shed disease-causing particles to others.**

### THE FACTS:

In an April 2021 statement to [Reuters](#), an unnamed U.S. Centers for Disease Control and Prevention spokesperson said, “There is no way for a COVID-19 vaccinated person to ‘shed vaccine.’ COVID-19 vaccines give instructions to teach our cells how to make a







protein—or even just a piece of a protein—that triggers an immune response inside our bodies. After the protein piece is made, the cell breaks down the instructions and gets rid of them. The immune response, which produces antibodies, is what protects us from getting infected if the real virus enters our bodies.”

Only vaccines that contain a live virus can shed enough to potentially infect other people. USA Today reported in a May 2017 [article](#) that this occurred with the oral polio vaccine, which was distributed beginning in 1961, because children who received the vaccine shed the virus through their feces, and in rare cases, could be spread to others who didn’t wash their hands after using the bathroom.

The oral polio vaccine stopped being used in the U.S. by 2000, and Dr. Paul Offit, director of the Vaccine Education Center at the Children’s Hospital of Philadelphia, told USA Today that no other type of vaccine has ever been shown to shed in a manner that caused disease.

**MYTH: The increase in COVID-19 cases and deaths in India between February and May 2021 was caused by COVID-19 vaccinations.**

## THE FACTS:

While the COVID-19 surge in India did begin after the country started administering COVID-19 vaccines on Jan. 16, 2021, the two events are not associated. Only 9.8 percent of the country’s population had received one dose of a COVID-19 vaccine as of May 10, 2021 — and the rate of vaccination was even lower when COVID-19 cases had begun to increase in February 2021, according to a May 2021 fact-checking article from [Reuters](#).

According to [Johns Hopkins University](#), India’s seven-day average of new COVID-19 cases went from a low of 11,145 on Feb. 11, 2021, to a peak of 391,232 on May 8, 2021.

Sumit Chanda, director of the immunity and pathogens program at Sanford Burnham Prebys Medical Discovery Institute in San Diego, California, told [USA Today](#) in May 2021, “There’s actually an inverse correlation between those people who got the vaccine and those people are getting sick,” meaning that vaccinated individuals were less likely to get COVID-19.

**MYTH: Videos posted on social media show magnets sticking to people’s arms after they received COVID-19 vaccines, proving the vaccines contain magnetic ingredients.**

## THE FACTS:





Dr. Stephen Schrantz, an infectious diseases specialist at the University of Chicago, called the videos “a hoax” in a May 2021 [article](#) by Agence France-Presse. “There is absolutely no way that a vaccine can lead to the reaction shown in these videos posted to Instagram and/or YouTube,” he said. “It is better explained by 2 sided tape on the metal disk being applied to the skin rather than a magnetic reaction.”

None of the COVID-19 vaccines authorized for widespread use in the U.S. and Europe contain magnetic ingredients or microchips. Lisa Morici, an associate professor at the Tulane University School of Medicine who studies vaccines, told [FactCheck.org](#) in May 2021 that the ingredients in the Pfizer, Moderna, and Johnson & Johnson COVID-19 vaccines “are simply RNA/DNA, lipids, proteins, salts, and sugars.”

Dr. Edward Hutchinson, a lecturer at the Centre for Virus Research at the University of Glasgow, told Newsweek in a May 2021 [article](#) that “you would need to introduce a large lump of magnetic material beneath the skin to get the action through the skin that the videos claim to show — if you want to give this a go, try getting a fridge magnet to pick up anything, particularly tiny bits of metal, through the skin between your thumb and index finger.”

**MYTH: The American Red Cross will not accept blood donations from anyone who has received a COVID-19 vaccine because the vaccines wipe out the body’s natural antibodies.**

## THE FACTS:

The American Red Cross accepts blood donations from people who have received a COVID-19 vaccine, according to its [website](#). American Red Cross spokesperson Katie Wilkes told [The Associated Press](#) in May 2021, “In most cases, you can donate blood, platelets and plasma after a COVID-19 vaccine as long as you’re feeling healthy and well.”

Regarding the claim that the COVID-19 vaccines wipe out antibodies, Columbia University microbiology and immunology professor Vincent Racaniello told political site [The Dispatch](#) in May 2021, “Vaccines do just the opposite, they induce antibodies, not wipe them out. There are no data which would suggest that vaccines reduce antibody levels. Furthermore, if this were true, then there would be no blood supply as many people have received a variety of different vaccines.”

**MYTH: Pfizer’s COVID-19 shot caused more deaths than the AstraZeneca vaccine.**

## THE FACTS:





There is no evidence of a causal link between the Pfizer-BioNTech COVID-19 vaccine and deaths among its recipients. Claims that the Pfizer vaccine is deadlier than other vaccines often cite unverified reports of deaths following vaccination, with no proof that the deaths were caused by the vaccine.

[As of May 2021](#), the CDC said that it has not found any deaths directly related to the Pfizer COVID-19 vaccine. Multiple clinical trials and additional studies following emergency authorization have shown that the Pfizer vaccine is safe and effective at preventing symptomatic cases of COVID-19.

Several European news organizations, including French tech news site [Numerama](#) and German broadcaster [Deutsche Welle](#), reported in May 2021 that a Russian-linked advertising agency attempted to run an anti-Pfizer disinformation campaign on social media, using similar arguments. French and German YouTubers and influencers said that an advertising agency called Fazze offered them money to post social media videos and messages warning against the Pfizer vaccine and claiming that “the death rate among the vaccinated with Pfizer is almost 3x higher than the vaccinated by AstraZeneca,” Numerama reported.

According to a May 2021 Wall Street Journal [report](#), French counterintelligence authorities were investigating whether the Russian government was behind the Fazze emails and the related disinformation campaign. A [2021 report](#) by the Alliance for Securing Democracy, an advocacy group that studies state disinformation, found that Russian state media outlets have repeatedly drawn unsubstantiated links between the Pfizer vaccine and deaths of vaccine recipients. Although it is not clear why Pfizer received such negative treatment by the Russians, the Alliance for Securing Democracy report notes that the Pfizer vaccine was the first Western vaccine to compete with the Russian state-backed Sputnik V vaccine.

**MYTH: SM-102, an ingredient in Moderna’s COVID-19 vaccine, is dangerous and has been listed as not being safe for human or veterinary use by a company that sells the ingredient.**

## THE FACTS:

SM-102 is a lipid, or a fatty molecule that is not soluble in water, which is used in Moderna’s COVID-19 vaccines to protect the messenger RNA that provides instructions to the body’s cells on creating antibodies against the COVID-19 virus, according to a May 2021 FactCheck.org [article](#).

The claim that the ingredient is dangerous relied on misrepresenting a [safety fact sheet](#) from Michigan-based Cayman Chemical, which sells a SM-102 product as a “solution in chloroform,” a potentially toxic chemical that is not an [ingredient](#) in the Moderna vaccine.





The Cayman Chemical fact sheet does state that its SM-102 product is “not for human or veterinary diagnostic or therapeutic use.” However, its health warnings are related to the chloroform solution that makes up 90 percent of the product, not SM-102 itself. The fact sheet listed chloroform under “dangerous components,” while SM-102 is listed under “other ingredients.”

In a May 2021 [press release](#), Cayman Chemical stated, “Neither the National Institute for Occupational Safety and Health (NIOSH), Registry of Toxic Effects of Chemical Substances (RTECS), or the European Chemicals Agency (ECHA) Classification and Labelling Inventory list any hazards associated with SM-102.”

**MYTH: Denmark national soccer team player Christian Eriksen received a COVID-19 vaccine days before he collapsed during a game against Finland.**

## THE FACTS:

Eriksen collapsed on the field during a June 12, 2021, match between Denmark and Finland, and went into cardiac arrest before being resuscitated. However, according to a June 2021 [article](#) from Reuters, Giuseppe Marotta, director of Eriksen’s club Inter Milan, told Italian sports TV channel Rai Sport, “He didn’t have COVID and wasn’t vaccinated either.”

PolitiFact reported in a June 2021 [article](#) that speculation that Eriksen’s collapse was connected to vaccines was fueled by Luboš Motl, a Czech physicist and blogger who has shared false claims about COVID-19 and vaccines. In a June 13, 2021, tweet, Motl claimed, “The chief medic and cardiologist of that Italian team confirmed on an Italian radio station that Eriksen has received the Pfizer vaccine on May 31.”

The official Twitter account for the Italian station, Radio Sportiva, denied that anyone from Inter Milan had confirmed Eriksen had been vaccinated on its station. In a June 13, 2021, [tweet](#), the station said, “We have never reported any opinion from the Inter medical staff regarding Christian Eriksen’s condition. Please remove the content from the tweet author, otherwise we will be forced to take action.”

**MYTH: Gibraltar saw a surge in deaths since its government began vaccinating the population with the Pfizer-BioNTech vaccine, with at least 53 deaths caused by or linked to the COVID-19 vaccine in Gibraltar.**

## THE FACTS:

According to a January 2021 [article](#) from British fact-checking organization Full Fact, the figure of 53 deaths matched the total number of COVID-19 deaths reported in Gibraltar as





of Jan. 20, 2021 — 10 days after COVID-19 vaccinations began in the British territory. However, there is no evidence linking those deaths to the COVID-19 vaccine.

In a Jan. 26, 2021, [tweet](#), Fabian Picardo, the Chief Minister of Gibraltar, wrote “Do not believe this nonsense... I can tell you that we have had no deaths registered as arising from the vaccine.”

The Gibraltar government released a [statement](#) on its official website in January 2021 explaining that six people appeared to have contracted COVID-19 before they were vaccinated and died of causes unrelated to the vaccine.

“The Gibraltar Health Authority can confirm that there is no evidence that any of those 11,073 who have been vaccinated in Gibraltar have died as a result of any reaction to the vaccine,” the government’s statement said. “Statements to the contrary on social media are entirely untrue.”

**MYTH: Four pilots who work for British Airways have died from the COVID-19 vaccine, and now the airline is in “crisis talks” with the British government about whether vaccinated pilots should be allowed to fly.**

## THE FACTS:

According to a June 2021 [article](#) from Reuters, British Airways confirmed that four pilots “had recently passed away.” However, the airline also told Reuters that there is no evidence the deaths were related to the COVID-19 vaccine. Additionally, the company said it was false that it was involved in any “crisis talks” with the British Government about its pilots.

The U.K. Medicines & Healthcare products Regulatory Agency, which operates the country’s Yellow Card Scheme to track adverse events following vaccinations, told Reuters in a statement, “We have not been made aware of deaths of BA pilots after receiving the Covid-19 vaccine and have not had discussions with BA or other airlines, about preventing pilots from flying after receiving the COVID-19 vaccine.”

**MYTH: Airlines, particularly in Spain and Russia, have advised people who have received the COVID-19 vaccine to avoid flying because of a risk of developing blood clots.**

## THE FACTS:

[According](#) to the U.S. Centers for Disease Control and Prevention, it is true that individuals with deep vein thrombosis (DVT) face a risk of blood clots from sitting for long periods of







time on long flights. However, those clots are a different type than the rare complication attributed to the [Johnson and Johnson](#) or [AstraZeneca](#) COVID-19 vaccines. Blood clots from DVT typically occur in the legs, according to the CDC. Blood clots arising from Vaccine-induced Thrombosis and Thrombocytopenia (VITT) occurred elsewhere, such as in the brain or abdomen, according to an April 2021 [study](#) published in the New England Journal of Medicine.

“VITT is an immune reaction to vaccine[s] and is not provoked by flying,” Dr. Sue Pavord, Consultant Haematologist at Oxford University Hospitals and co-chair of the British Society for Haematology’s Obstetric Haematology Group, said in an email to Reuters in a June 2021 [article](#). Moreover, Reuters reported that the International Air Transport Association (IATA), the trade association that represents 290 airlines worldwide, or 82 percent of the world’s total air traffic, said it was not aware of any airlines considering advising vaccinated individuals against flying.

**MYTH: Secret documents reveal that Moderna had developed a COVID-19 vaccine in December 2019, proving that the pandemic was planned.**

## THE FACTS:

This myth was based on misrepresenting a real December 2019 research transfer [agreement](#) between Moderna, the U.S. National Institute of Allergy and Infectious Diseases (NIAID), and the University of North Carolina.

The document does mention that UNC will receive research material on “mRNA coronavirus vaccine candidates developed and jointly-owned by NIAID and Moderna.” Six signatures on the document are dated between Dec. 12, 2019, and Dec. 17, 2019, prior to the Dec. 31, 2019, report from the Wuhan Municipal Health Commission in China on a cluster of pneumonia cases that was the first public message about what would later be called COVID-19.

However, in a June 2021 statement to [Agence France-Presse](#), [LeadStories.com](#), and [PolitiFact](#), a NIAID spokesperson said the agreement was related to a different strain of coronavirus, not the virus that causes COVID-19. “The materials transferred to UNC in December 2019 were vaccine candidates against Middle East Respiratory Syndrome coronavirus (MERS-CoV) and not SARS-CoV-2,” the spokesperson said.

Contradicting the claim that this research transfer agreement was “secret,” both [Axios](#) and [Public Citizen](#), a nonprofit consumer advocacy group, had published articles about the document in June 2020.







**MYTH: COVID-19 vaccines contain luciferase, a substance named after the fallen angel Lucifer.**

## THE FACTS:

Luciferase is an enzyme responsible for bioluminescence in some organisms, such as fireflies, and has been used in medical research for decades because of its ability to help scientists visually track changes to cells, according to a December 2019 [article](#) in Smithsonian Magazine.

The Associated Press reported in an April 2021 [article](#) that while the enzyme has been used in some COVID-19 research, luciferase is not an ingredient in any COVID-19 vaccine; it is not listed in the U.S. Food and Drug Administration's [ingredient lists](#) for the [three](#) COVID-19 vaccines authorized in the U.S. as of July 2021. The AP also reported that the only connection between luciferase and Lucifer — a figure in the Bible that Christians believe was a fallen angel who became Satan — is the Latin word lucifer, meaning light-bearing.

**MYTH: Spike proteins in mRNA COVID-19 vaccines are toxic to humans and can spread throughout the body, causing heart problems and neurological damage.**

## THE FACTS:

COVID-19 vaccines do not contain the spike protein, and the protein produced in vaccinated people is harmless.

The apparent original source for this claim was a May 2021 radio [interview](#) with Byram Bridle, an associate professor in viral immunology at the University of Guelph's Ontario Veterinary College, which ran on Canadian talk radio station CFPL. "We made a big mistake," Bridle said. "We never knew the spike protein itself was a toxin and was a pathogenic protein. So by vaccinating people, we are inadvertently inoculating them with a toxin. In some people, this gets into circulation, and when that happens in some people it can cause damage — especially in the cardiovascular system."

Bridle was referring to the Pfizer and Moderna mRNA COVID-19 vaccines. These vaccines work by delivering mRNA to the body's cells, instructing cells to make a piece of the COVID-19 virus called the spike protein. "Our immune systems recognize that the protein doesn't belong there and begin building an immune response and making antibodies, like what happens in natural infection against COVID-19," the U.S. Centers for Disease Control and Prevention states on its [website](#).

The vaccine itself does not contain the spike protein, and the protein produced in vaccinated people is harmless, vaccine experts said. "In terms of the spike protein itself being pathogenic in some way that's just simply not true," Dr. Dan Kaul, an infectious disease expert at the University of Michigan, told The Associated Press in a June 2021 fact-checking [article](#).





**MYTH: The Pfizer COVID-19 vaccine is 99 percent graphene oxide, according to a study published by the University of Almeria in Spain.**

### THE FACTS:

Graphene oxide is a material created by oxidizing graphene, which is a single layer of graphite, the soft, flaky substance used in pencil lead. Graphene oxide has potential applications in “electronics, optics, chemistry, energy storage, and biology,” according to a January 2019 [article](#) published in the journal *Frontiers in Physics*.

The Associated Press reported in a July 2021 [fact-check](#) that while there has been research on using graphene oxide in some vaccines — in amounts that would not be toxic to humans — the material is not listed as an ingredient in the Pfizer COVID-19 vaccine or any other COVID-19 vaccine. “It is not in the ingredient list and there is no way it could be present,” Allen Myerson, a professor of chemical engineering at the Massachusetts Institute of Technology, told The Associated Press. Pfizer spokesperson Jerica Pitts confirmed to [PolitiFact](#) in July 2021 that the company does not use graphene oxide in its COVID-19 vaccine.

According to a July 2021 [article](#) by fact-checking site LeadStories.com, the claim about graphene oxide originated with a June 2021 electron microscope analysis of Pfizer’s COVID-19 vaccine conducted by Pablo Campra, a chemical sciences professor at the University of Almeria in Spain. LeadStories.com reported that the study, which was not peer reviewed, had been commissioned by Richard Delgado, a self-described crusader against “this tyranny of COVID-19” who runs the Spanish language website LaQuintaColumna.net.

In a June 2, 2021 [tweet](#), The University of Almeria denied that it had endorsed or supported Campra’s findings, referring to the study as “an unofficial report by a University professor about an analysis of a sample of unknown origin.”

**MYTH: More people in the U.S. have died from COVID-19 vaccines than from the virus itself.**

### THE FACTS:

Johns Hopkins University [reported](#) that there have been 611,000 COVID-19 deaths in the U.S. as of July 28, 2021. The U.S. Centers for Disease Control and Prevention [states](#) on its website that all deaths that are known to have occurred following a COVID-19 vaccination are investigated, and that as of July 26, 2021, no deaths have been found to have been caused by COVID-19 vaccines.





“A review of available clinical information, including death certificates, autopsy, and medical records, has not established a causal link to COVID-19 vaccines,” the CDC said. “However, recent reports indicate a plausible causal relationship between the J&J/Janssen COVID-19 Vaccine and TTS, a rare and serious adverse event—blood clots with low platelets—which has caused deaths.”

While the U.S. Vaccine Adverse Events Reporting System has, as of July 26, 2021, received 6,340 reports of death among people who have received COVID-19 vaccines, reports to VAERS can be made by anyone and do not establish a cause-and-effect relationship with any vaccine. In fact, VAERS reports will include deaths that lack any plausible link to a vaccine, such as a person dying in a car accident on their way home from being vaccinated.

**Source** The Top COVID-19 Vaccine Myths Spreading Online by NewsGuard Technologies

<https://www.newsguardtech.com/special-report-top-covid-19-vaccine-myths/>

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