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**Mar 6, 2020**

by Lisa Charlotte Rost

[Thoughts & How To's \(/category/thoughts-how-to-s/\)](#)

# 17 (or so) responsible live visualizations about the coronavirus, for you to use

Total confirmed cases	Deaths	Recoveries
<b>1,201,591</b>	<b>63,824</b>	<b>228,924</b>
that's <b>0.0154%</b> of humanity	that's <b>0.0008%</b> of humanity	that's <b>0.0029%</b> of humanity
or one in <b>6,000</b> humans	or one in <b>122,000</b> humans	or one in <b>34,000</b> humans

*This chart gets updated multiple times each day with data by Johns Hopkins.*Source: [Johns Hopkins CSSE](#) • [Get the data](#) • Created with Datawrapper

To cover the coronavirus is a challenge. We're trying to help. Here are more than 20 charts, maps and tables that show the latest numbers about the coronavirus. Since we know that lots of you use this blog post to actually inform yourselves, here are the most important visualizations:

## Confirmed COVID-19 cases, deaths & recoveries by continent

The confirmed cases don't tell us anything about the number of infected people, just about the number of people who got tested positive.

	Current confirmed cases	Deaths	Recoveries
Africa	7,400	383	809
Asia	96,302	8,304	109,350
Europe	455,982	46,215	114,405
North America	322,921	8,050	721
Oceania	5,654	31	828
South America	20,495	828	2,192

*The chart gets updated multiple times each day with data by Johns Hopkins*Source: [Johns Hopkins CSSE](#) • [Get the data](#) • Created with Datawrapper

## Does the doubling rate go up or down?

### How about the number of confirmed cases?

This table compares doubling times of **confirmed cases** in the last five days (between 6 days ago and yesterday) with the doubling time in the five days before; as well as the number of confirmed cases in the last five days with the number of confirmed cases in the five days before that. The "change" column compares them to see if cases doubled **▲ faster**, **▼ slower** or at **~ about the same** speed; or if countries reported **▲ more**, **▼ less** or **~ about the same** number of cases. **European countries are highlighted.**

 Search in table

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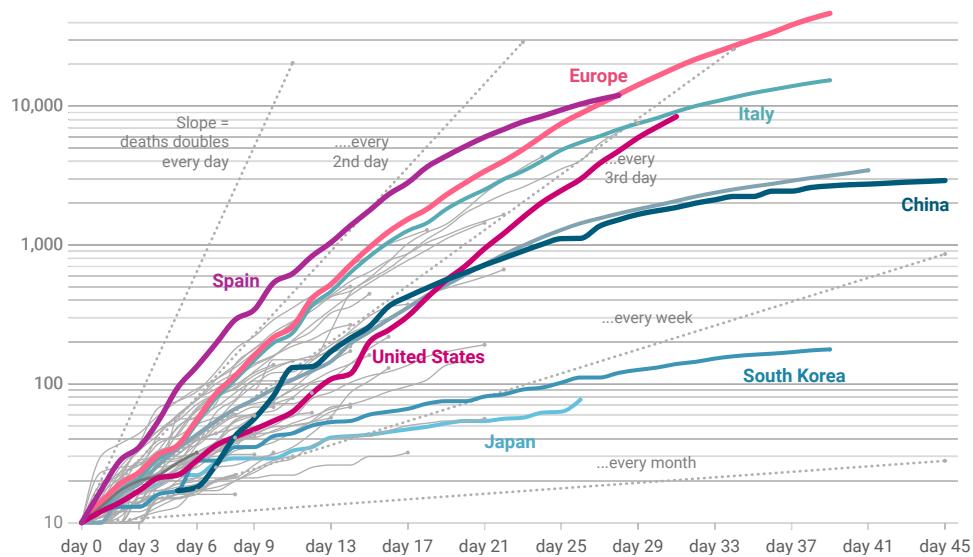
country	doubling time in the last five days	doubling time in the five days before that	change in doubling time ▲	new confirmed cases in the last five days	new confirmed cases in the five days before that	change in confirmed cases
● Albania	<b>8.6 days</b>	8.2 days	~	<b>110</b>	77	▲
● Pakistan	<b>7.0 days</b>	7.2 days	~	<b>1,101</b>	654	▲
● Serbia	<b>4.8 days</b>	4.8 days	~	<b>839</b>	401	▲▲
● Russia	<b>3.7 days</b>	3.4 days	~	<b>2,895</b>	1,178	▲▲
● Sweden	<b>7.4 days</b>	7.4 days	~	<b>2,415</b>	1,502	▲
● Singapore	<b>11.5 days</b>	10.5 days	~	<b>310</b>	248	▲
● Tunisia	<b>6.1 days</b>	5.9 days	~	<b>241</b>	139	▲
● United Arab Emirates	<b>3.8 days</b>	5.7 days	▲	<b>894</b>	278	▲▲
● Bahrain	<b>12.0 days</b>	16.8 days	▲	<b>173</b>	96	▲
● Brazil	<b>4.2 days</b>	5.9 days	▲	<b>5,781</b>	2,025	▲▲

The table gets updated once a day. Only countries in which more than 10 days passed since more than 100 confirmed cases were reported are included.

Table: Lisa Charlotte Rost, Datawrapper • Source: Johns Hopkins CSSE • [Get the data](#) • [Created with Datawrapper](#)

## In the US, confirmed coronavirus deaths double approx. every 3rd day. China, South Korea or Japan have already a flat curve.

Cumulative numbers of confirmed deaths due to the COVID-19 disease, in selected countries after the 10th death, last updated with the numbers from yesterday. **The helper slopes don't mark corridors.** For example, Europe has a doubling rate of less than three days now – the "...every 3rd day" slope is steeper than the Europe line.



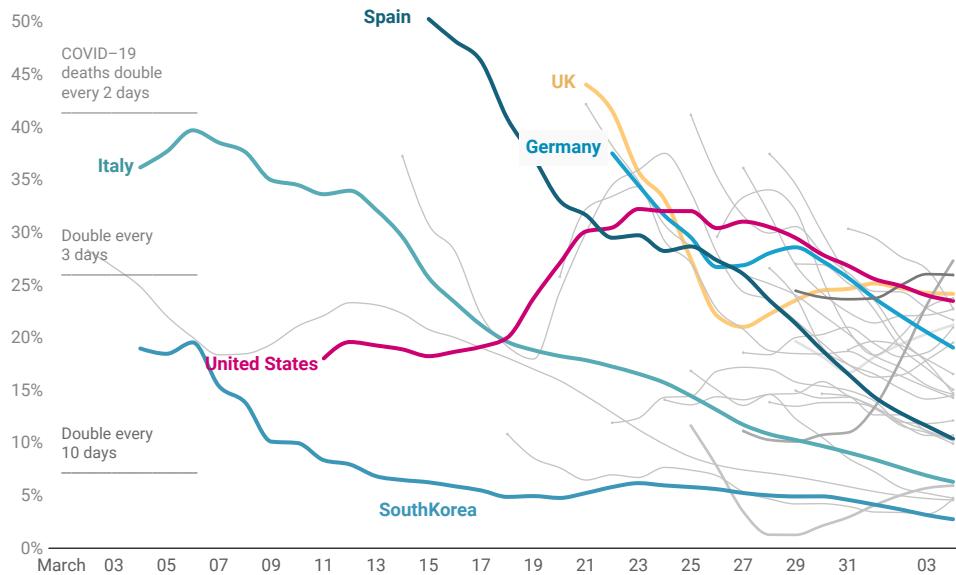
The chart stops at day 45, but more than 60 days have passed since China reported their 10th death. China reports a bit over 3,200 deaths to date. The 10th death in all countries is aligned and therefore approximated. The source didn't report values for China before March 22, so the numbers of days passed before that are estimated.

Chart: Lisa Charlotte Rost, Datawrapper. • Source: Johns Hopkins CSSE • Get the data • Created with Datawrapper

We don't show cases in this chart because they're not as reliably tracked as deaths. You can find a chart showing the doubling rate of confirmed **cases** here ([https://www.datawrapper.de/\\_w6x6z/](https://www.datawrapper.de/_w6x6z/)) and in our River ([https://river.datawrapper.de/\\_w6x6z](https://river.datawrapper.de/_w6x6z)). It gets updated every day, but we don't recommend using it.

## Growth rate of confirmed deaths in selected countries

Three-day rolling mean of the five-day growth rate of known COVID-19 deaths, in countries in which more than 10 days have passed since the reported their 10th death.



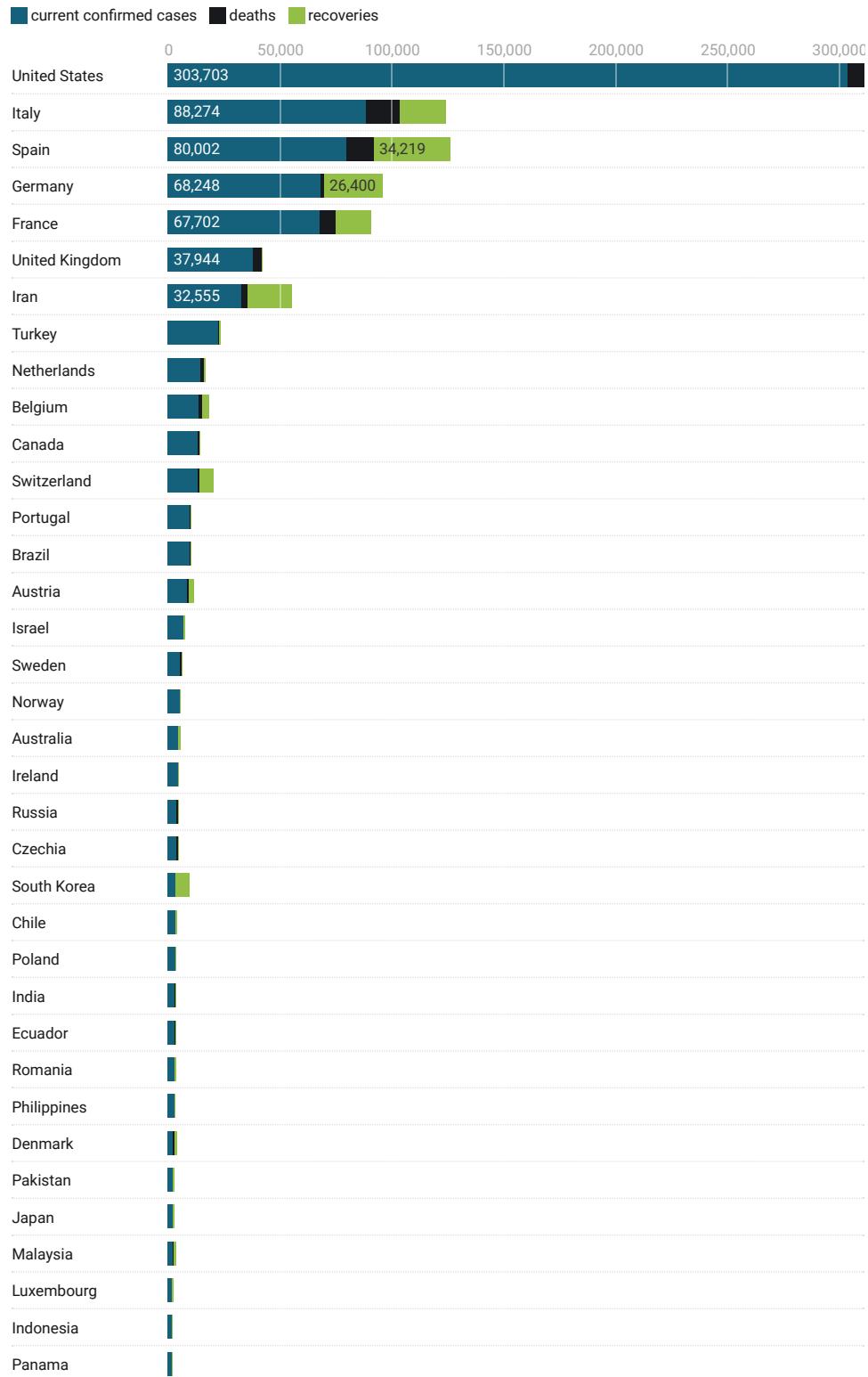
The chart gets updated once each day with data by Johns Hopkins.

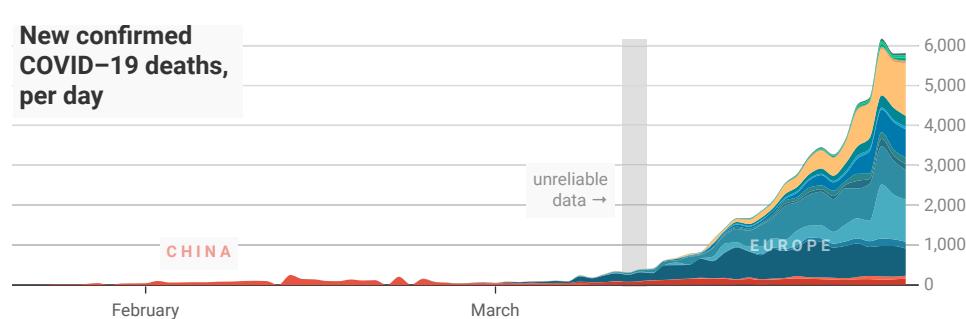
Chart: Gregor Aisch, Datawrapper • Source: Johns Hopkins CSSE • Get the data • Created with Datawrapper

You can find a chart showing the growth rate of confirmed **cases** here ([https://www.datawrapper.de/\\_VzuHp/](https://www.datawrapper.de/_VzuHp/)) and in our River ([https://river.datawrapper.de/\\_VzuHp](https://river.datawrapper.de/_VzuHp)). It gets updated every day, but we don't recommend using it.

## Confirmed COVID-19 cases, deaths & recoveries by country

Number of people who are confirmed to have or have had the COVID-19 in the past, and people who died and recovered from the virus, in countries with more than 1000 total cases. China is divided into the Hubei region and into the rest of China because of their stark differences.





You can find a chart showing the new confirmed **cases per day** here ([https://www.datawrapper.de/\\_NMZfH](https://www.datawrapper.de/_NMZfH)) and in our River ([https://river.datawrapper.de/\\_NMZfH](https://river.datawrapper.de/_NMZfH)). It gets updated every day, but we don't recommend using it.

## Some information beforehand

- Latest changes to this article
- How you can use these visualizations in your own articles

- What we considered while creating these visualizations
- What you should consider when using these visualizations
- What data sources we used

## Overviews & comparisons of countries

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- Current cases, recoveries and deaths worldwide, in relative terms [TABLE](#)
- Current cases, recoveries and deaths worldwide [TABLE](#)
- Current cases, recoveries and deaths in all countries [TABLE](#)
- New cases, recoveries and deaths worldwide, yesterday [TABLE](#)
- Current cases, recoveries and deaths in countries with more than 300 current cases [STACKED BARS](#)

## Cases over time

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- Confirmed cases & deaths, worldwide [LINE CHART](#)
- New confirmed cases & deaths per day, worldwide [COLUMN CHART](#)
- New confirmed cases & deaths per day, China [COLUMN CHART](#)
- New confirmed cases & deaths per day, United States [COLUMN CHART](#)
- New confirmed cases & deaths per day, Europe [COLUMN CHART](#)
- New confirmed cases & deaths per day, Italy [COLUMN CHART](#)
- New confirmed cases & deaths per day, Germany [COLUMN CHART](#)
- New confirmed cases & deaths per day, Spain [COLUMN CHART](#)

## Maps

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- Confirmed cases & deaths, worldwide [SYMBOL MAP](#)
- Confirmed cases in China [LINK \(HTTPS://WWW.DATARWAPPER.DE/\\_/5ASGE/\)](#)  [RIVER](#)  
[\(HTTPS://RIVER.DATARWAPPER.DE/\\_/5ASGE\)](#) [SYMBOL MAP](#)
- Confirmed cases & deaths in the United States **by state** [SYMBOL MAP](#)
- Confirmed cases & deaths in the United States **by county** [LINK](#)  
[\(HTTPS://WWW.DATARWAPPER.DE/\\_/WMR3P/\)](#)  [RIVER \(HTTPS://RIVER.DATARWAPPER.DE/\\_/WMR3P\)](#) [SYMBOL MAP](#)
- US **counties** by growth rate of confirmed cases [TABLE](#)
- Confirmed cases in Europe [SYMBOL MAP](#)
- Confirmed cases in Germany [SYMBOL MAP](#)
- Confirmed cases in German “Landkreise” [SYMBOL MAP](#)

## Latest changes to this article

In this GitHub README (<https://github.com/datawrapper/snippets/tree/master/2020-03-coronavirus-charts>), you can find our latest changes to the charts, maps, and tables in this blog. (We don't mention when we fix obvious bugs that appear because the data source changes e.g. how it formats data.)

## How you can use these visualizations in your own articles

All these charts, maps, and tables were created with Datawrapper

(<https://www.datawrapper.de/>). It's a simple, free tool used by small blogs and big organizations around the world like the New York Times, SPIEGEL and Süddeutsche. You can try it out here (<https://www.datawrapper.de/>), without signing up.

We'd be happy if you'd use and adapt the charts, maps and tables we show here! To do so, hover over them, then **click on the appearing "Edit this chart" in the top right corner**. This will open a new tab with the editing process for this visualization. Again, without the need to sign up.

Here you can change many things to your liking. For example:

- **change the wording or translate** the title, descriptions, notes, and annotations in step 3: Visualize → Annotate; or translate the map tooltips.
- **change the colors** in step 3: Visualize → Refine to make them fit to the rest of your article/organization.
- **choose the custom design theme of your organization** in step 3: Visualize → Design, (Don't have one yet? Learn more about it here (<https://www.datawrapper.de/faq/#what-does-custom-branding-entail-and-what-do-you-need-from-me>)).

Once you're happy with style and wording, go to step 4: Publish, hit "Publish" and **embed the visualization in your article, download it as PNG or share it on social media**.

Please note: The charts, maps and tables that state the **Johns Hopkins University** as their source (most of them, sadly) fall under its licensing (<https://github.com/CSSEGISandData/COVID-19>). You can only use these visualizations for educational and academic research purposes, not for commercial purposes.

## What we considered while creating these visualizations

As data visualization designers, we have a responsibility towards our audience – an audience that might not be aware that each data visualizations tells a story (<https://twitter.com/EvanMPeck/status/1235575689606311936>) instead of simply “showing the facts”. Our responsibility is to show the data truthfully. The story we want to tell with our coronavirus visualizations is not about panic, but about calm caution and putting things in perspective. So we considered the following while creating these charts, maps, and tables:

- **We show the current or confirmed cases in another color than red.** The coronavirus is not a death sentence. Most infected people will survive. If you’re infected, you want to find yourself on a map as a blue (or yellow, or beige, or purple...) dot, not as a “attention, danger, run!”-screaming red (<https://twitter.com/kennethfield/status/1232078322521108481>) dot. Related, we show deaths in black, not red – it feels more respectful.
- **We counter absolute numbers with relative ones.** We still show the absolute number of cases (that’s what we’re all interested in), but we set them in relation, e.g. in the tables. To do so, we use phrases like “that’s 3 in 1 million people” or “one in 200.000 people”.
- **We avoid showing cumulative cases.** When we look at coronavirus dashboards like this one (<https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>) by the Johns Hopkins University, we often get confronted with the “total confirmed cases”. But many of the people who got infected with COIVD-19 already recovered, or are close to full recovery. Instead of cumulative cases, we almost always show the current cases – which is way smaller.
- **We use symbol maps, not choropleth maps.** The whole state I live in is filled with a dangerous-looking color just because 500 out of 20 million people are infected? That seems out of proportion. Instead of choropleth maps, we use symbol maps to show infected people. Symbol maps are not the best solution either (because symbols need to be (too) big to be useful, and when used for countries it looks like all infected people gathered in one location), but at least they don’t suggest that the entire country you live in is a death zone.

Other people who have thought about how we should visualize the coronavirus are Andy Kirk (<https://www.visualisingdata.com/2020/03/communication-themes-from-coronavirus-outbreak/>), Kenneth Field (<https://www.esri.com/arcgis-blog/products/product/mapping/mapping-coronavirus-responsibly/>) and Evan Peck (<https://twitter.com/EvanMPeck/status/1235568532840120321>).

## What you should consider when using these visualizations

The charts, maps, and tables we offer here don't work on their own. They need to be put in context for your audience.

- **Build stories, not dashboards.** Your readers will have questions like "What do I need to do now?" and "Do I need to be afraid?", and our visualizations can't answer that. But you can, with words. Consider changing the wording of our chart titles to make them fit into your story nicely.
- **Use visualizations sparingly.** Don't show all these visualizations we offer here. Many of them show the same information anyway, just slightly differently presented. So ask yourself: Which of the visualizations will be most insightful for your readers, in the context of your story? Only select these.
- **Remind readers of the uncertainty of these numbers.** We can only count the coronavirus cases we're aware of. Evan Peck wrote a few great tweets about the uncertain situation we're in:

 **EvanMPeck** @EvanMPeck · Mar 5, 2020 

Replying to @EvanMPeck

Nearly all vis right now rely on confirmed positive tests of #COVID19 (left: CDC, right: NYTimes).

But as many experts have pointed out, these numbers dramatically underestimate reality.

I suspect that many interpret these maps as "number of people with the virus". That's bad




 **EvanMPeck** @EvanMPeck

The number of \*actual\* #COVID19 cases contains tremendous uncertainty (estimates in around Seattle alone are 10x larger than the positive tests), but we aren't visually representing ANY uncertainty because we know the number of \*positive tests\*.

17 7:16 AM - Mar 5, 2020 

 See EvanMPeck's other Tweets >

- **Be careful when showing maps together.** If you show two maps below each other (e.g. the China map and the Germany map), you'll confuse readers about the scope of the problem. The symbol size that communicates "20.000 cases" on the China map

only communicates “2000 cases” on the Germany map. Also, lots of maps take a long time to load (as you can experience in this very post!).

Also, here's a practical tip: To see the newest numbers in charts, maps, and tables you embed, **readers will need to reload your website/article**. Consider making that clear in the chart notes, at the end of the article or wherever it fits well.

## What data sources we used

By now (end of March), there are many data sources available collecting information on both COVID-19 cases and deaths. Here are a few:

- for the US: The COVID Tracking Project (<https://covidtracking.com/>), 1Point3Acres (<https://coronavirus.1point3acres.com/#map>).
- worldwide: the European CDC (<https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases>) (transformed to CSVs (<https://ourworldindata.org/coronavirus-source-data>) by Our World in Data), the WHO (<https://ourworldindata.org/coronavirus#why-we-stopped-relying-on-data-from-the-world-health-organization>) (although it has flaws (<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>)), Johns Hopkins University (Dashboard (<https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>) / Github repo with time series (<https://github.com/CSSEGISandData/COVID-19>)).

The data source for all our charts but some of the ones about Germany is Johns Hopkins University. We access it through the Github repo and via this API (<https://twitter.com/mathdroid/status/1234838261995950080>) by software developer Muhammad Mustadi (<https://mathdro.id/>), which gives us the same numbers as the dashboard, up-to-date.

For the state map of Germany, we use numbers from the **Robert Koch Institute** ([https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Fallzahlen.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Fallzahlen.html)). This source is official, but updated slowly in comparison to e.g. this map by ZEIT Online (<https://www.zeit.de/wissen/gesundheit/2020-03/coronavirus-deutschland-infektionen-faelle-verbreitung-epidemie-karte>).

To bring the data in the right format for our Datawrapper visualizations, we used R. You can find the (badly written) R script on Github (<https://github.com/datawrapper/snippets/blob/master/2020-03-coronavirus-charts/coronavirus.R>). **We update the charts, maps and tables every 20 minutes.**

If you know of other data sources we should consider, please let me know at [lisa@datawrapper.de](mailto:lisa@datawrapper.de) (<mailto:lisa@datawrapper.de>).

Here are all charts, maps, and tables you can use:

## Overviews & comparisons of countries

Total confirmed cases	Deaths	Recoveries
1,201,591	63,824	228,924

This chart gets updated multiple times each day with [data by Johns Hopkins](#).

Source: [Johns Hopkins CSSE](#) • [Get the data](#) • Created with Datawrapper

### Coronavirus COVID-19 cases in all countries

European countries are highlighted. Use the search field to look up countries or continents.

Search in table Page 1 of 19 >

Country	▼ Total confirmed cases	that's like ... out of a million inhabitants	or one in ... inhabitants	Deaths	Recoveries
🇺🇸 United States	311,301	941	1,000	7,598	0
🇪🇸 Spain	126,168	2,699	300	11,947	34,219
🇮🇹 Italy	124,632	2,061	400	15,362	20,996
🇩🇪 Germany	96,092	1,147	800	1,444	26,400
🇫🇷 France	90,848	1,392	700	7,574	15,572
🇨🇳 Hubei, China	67,803	1,159	800	3,207	63,762
🇮🇷 Iran	55,743	664	1,500	3,452	19,736
🇬🇧 United Kingdom	42,479	626	1,500	4,320	215
🇹🇷 Turkey	23,934	284	3,500	501	786
🇨🇭 Switzerland	20,505	2,369	400	666	6,415

Number of total confirmed COVID-19 cases, and number of people who died and recovered due to the virus. This table gets updated every 20min with [data by Johns Hopkins](#).

Table: Lisa Charlotte Rost, Datawrapper • Source: [Johns Hopkins CSSE](#) • [Get the data](#) • Created with Datawrapper

## In the US and in many European countries, confirmed COVID-19 cases double in less than 3 days.

This table compares the doubling times of **confirmed cases** in the last five days (between 6 days ago and yesterday) with the doubling time in the five days before that. The "change" column compares them to see if cases double **▲ faster**, **▼ slower** or at **~ about the same speed**. **European countries are highlighted**.

Search in table

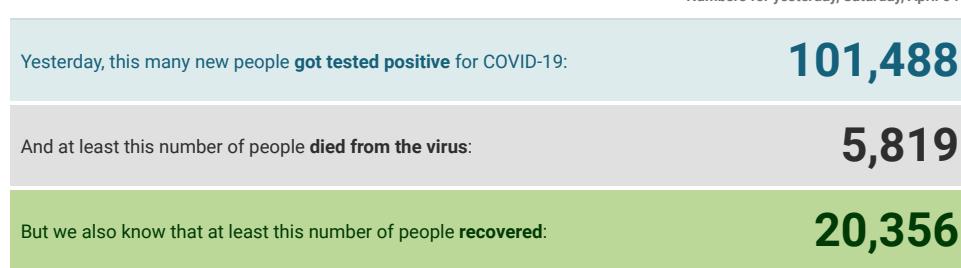
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country	doubling time in the last five days	doubling time in the five days before that	change	confirmed cases yesterday	confirmed cases 6 days ago
🇷🇺 Russia	<b>3.7 days</b>	3.4 days	~	4,731	1,836
🇲🇩 Moldova	<b>3.7 days</b>	5.0 days	▲	752	298
🇮🇳 India	<b>3.8 days</b>	5.4 days	▲	3,082	1,251
🇸🇦 United Arab Emirates	<b>3.8 days</b>	5.7 days	▲	1,505	611
🇧🇷 Brazil	<b>4.2 days</b>	5.9 days	▲	10,360	4,579
🇹🇷 Turkey	<b>4.4 days</b>	2.3 days	▼	23,934	10,827
🇩🇿 Algeria	<b>4.5 days</b>	5.3 days	▲	1,251	584
🇷🇸 Serbia	<b>4.8 days</b>	4.8 days	~	1,624	785
🇫🇷 France	<b>5.0 days</b>	6.1 days	▲	90,848	45,170
🇵🇭 Philippines	<b>5.0 days</b>	3.9 days	▼	3,094	1,546

The table gets updated once a day. Only countries in which more than 10 days passed since more than 100 confirmed cases were reported are included. The table was inspired by Süddeutsche Zeitung and the work of Our World in Data.

Table: Lisa Charlotte Rost, Datawrapper • Source: Johns Hopkins CSSE • Get the data • Created with Datawrapper

Numbers for yesterday, Saturday, April 04



This chart gets updated once a day with data by Johns Hopkins.

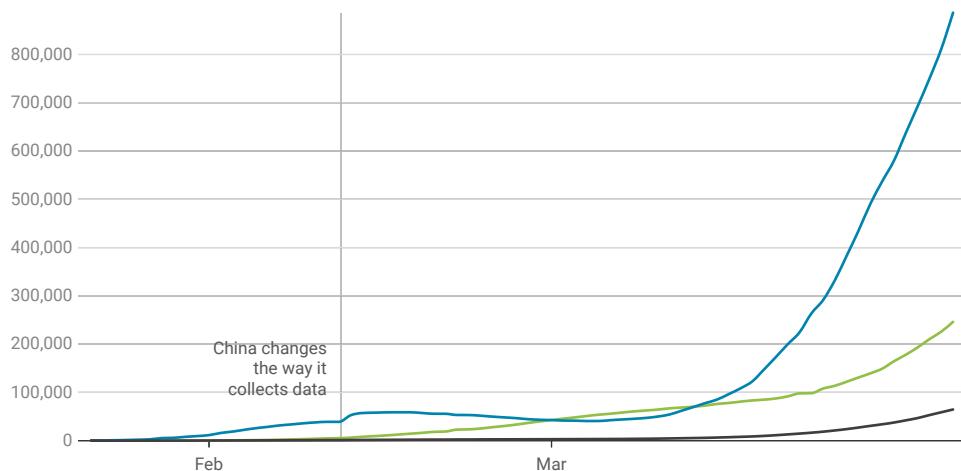
Source: Johns Hopkins CSSE • Get the data • Created with Datawrapper

## Cases over time

## Confirmed COVID-19 cases & deaths worldwide

Cumulative number of people confirmed to have or have had COVID-19 and people who died due to the coronavirus, worldwide. **Of the total confirmed cases, many already recovered.** For example, Hubei reported around 60k recovered people to date.

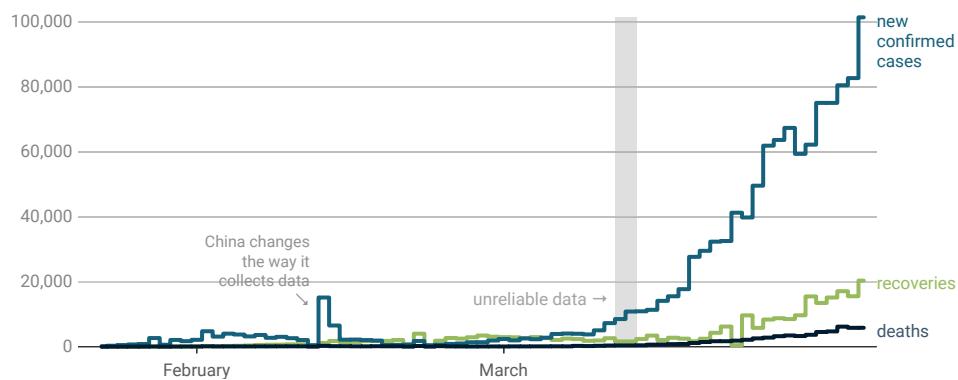
— current — deaths — recovered



The values for March 12 are interpolated because Johns Hopkins university doesn't provide reliable data for that day. This chart gets updated once a day with data by Johns Hopkins.

Source: [Johns Hopkins CSSE](#) • Get the data • Created with Datawrapper

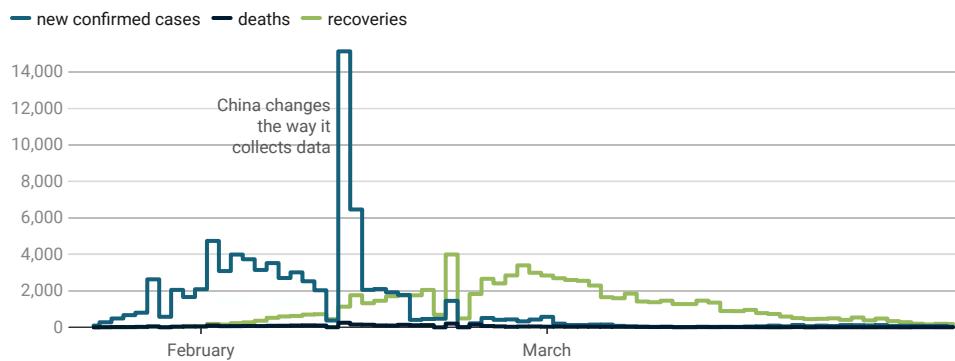
## New confirmed COVID-19 cases, deaths & recoveries worldwide, per day



Number of people confirmed to have COVID-19, compared with the number of people who died or recovered, per day (not including today). This chart gets updated once per day with data by Johns Hopkins. Johns Hopkins university doesn't provide reliable data for March 12 and March 13.

Source: [Johns Hopkins CSSE](#) • Get the data • Created with Datawrapper

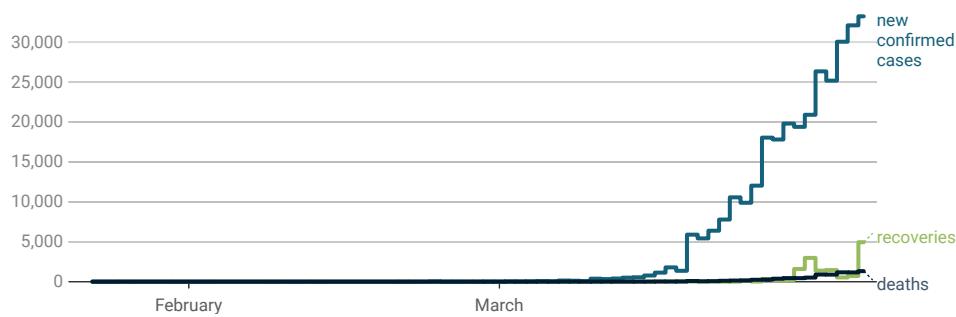
## New confirmed COVID-19 cases, deaths & recoveries in China, per day



Number of people confirmed to have COVID-19, compared with the number of people who die and recover, per day. This chart gets updated once per day with data by Johns Hopkins.

Source: [Johns Hopkins CSSE](#) • Get the data • Created with Datawrapper

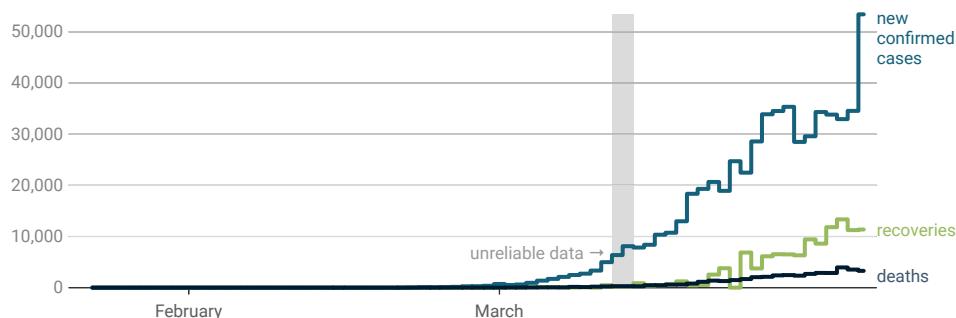
## New confirmed COVID-19 cases, deaths & recoveries in the United States, per day



Number of people confirmed to have COVID-19, compared with the number of people who die and recover, per day (not including today). This chart gets updated once per day with data by Johns Hopkins.

Source: [Johns Hopkins CSSE](#) • Get the data • Created with Datawrapper

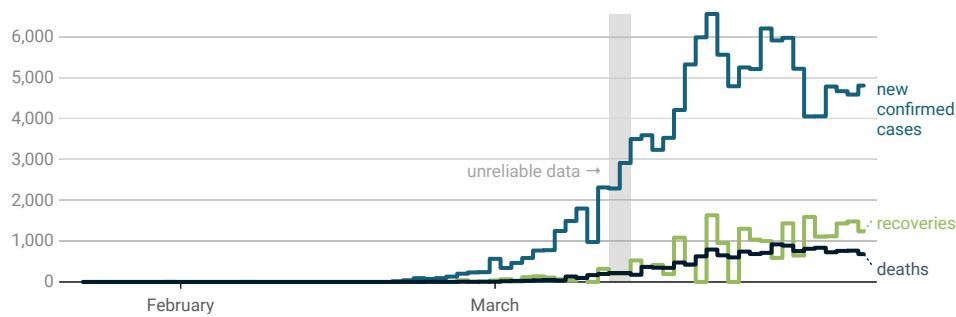
## New confirmed COVID-19 cases, deaths & recoveries in Europe, per day



Number of people confirmed to have COVID-19, compared with the number of people who die and recover, per day (not including today). This chart gets updated once per day with data by Johns Hopkins. Johns Hopkins university doesn't provide reliable data for March 12 and March 13.

Source: [Johns Hopkins CSSE](#) • Get the data • Created with Datawrapper

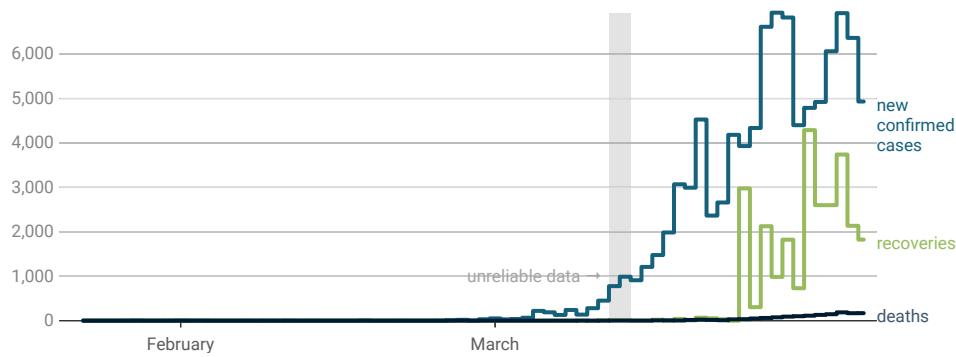
### New confirmed COVID-19 cases, deaths & recoveries in Italy, per day



*Number of people confirmed to have COVID-19, compared with the number of people who die and recover, per day (not including today). This chart gets updated once per day with data by Johns Hopkins. Johns Hopkins university doesn't provide reliable data for March 12 and March 13.*

*Source: Johns Hopkins CSSE • Get the data • Created with Datawrapper*

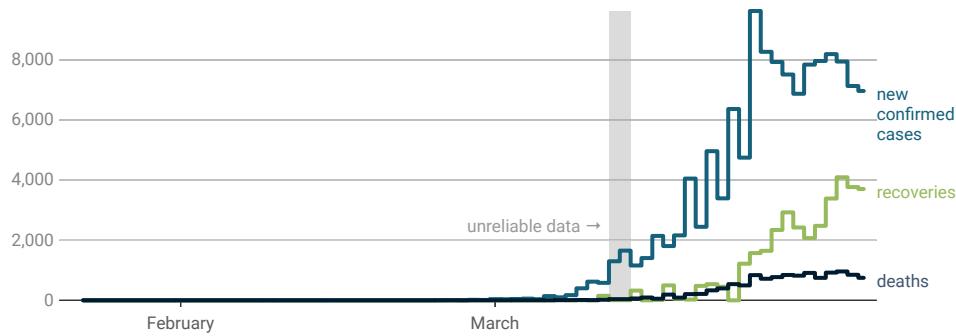
### New confirmed COVID-19 cases, deaths & recoveries in Germany, per day



*Number of people confirmed to have COVID-19, compared with the number of people who die and recover, per day (not including today). This chart gets updated once per day with data by Johns Hopkins. Johns Hopkins university doesn't provide reliable data for March 12 and March 13.*

*Source: Johns Hopkins CSSE • Get the data • Created with Datawrapper*

### New confirmed COVID-19 cases, deaths & recoveries in Spain, per day



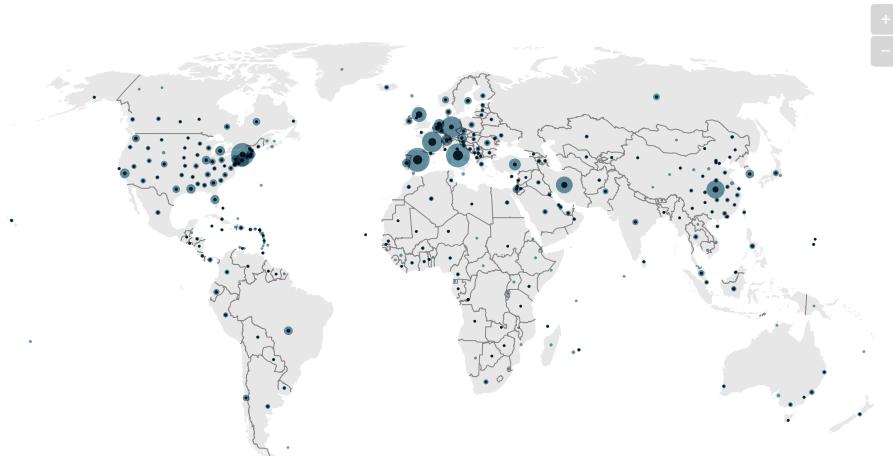
*Number of people confirmed to have COVID-19, compared with the number of people who die and recover, per day (not including today). This chart gets updated once per day with data by Johns Hopkins. Johns Hopkins university doesn't provide reliable data for March 12 and March 13.*

*Source: Johns Hopkins CSSE • Get the data • Created with Datawrapper*

## Maps

### Number of people confirmed to have or have had COVID-19, worldwide

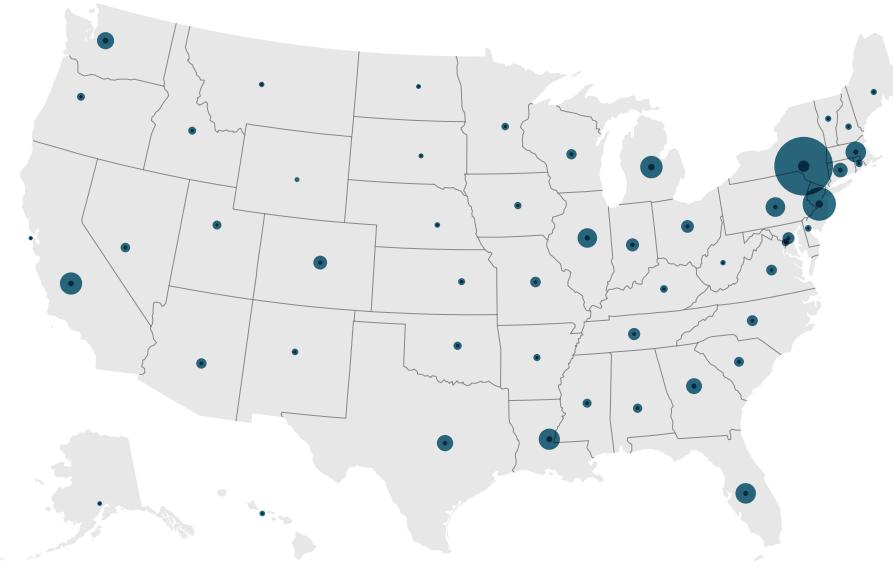
This map gets updated multiple times each day with [data by Johns Hopkins](#). To zoom, use the zoom buttons or hold CTRL while scrolling.



Source: [Johns Hopkins CSSE](#) • [Get the data](#) • Created with Datawrapper

### Number of confirmed COVID-19 cases in US states

This map gets updated multiple times each day with [data by Johns Hopkins](#). To zoom, use the zoom buttons or hold CTRL while scrolling.



Map: covid • Source: [Johns Hopkins CSSE](#) • [Get the data](#) • Created with Datawrapper

You can find a map showing confirmed COVID-19 cases & deaths in each **US counties** here ([https://www.datawrapper.de/\\_/WmR3P/](https://www.datawrapper.de/_/WmR3P/)) and in our River ([https://river.datawrapper.de/\\_/WmR3P](https://river.datawrapper.de/_/WmR3P)).

## U.S. counties by growth rate of confirmed COVID-19 cases

 Search in table

Page 1 of 11 >

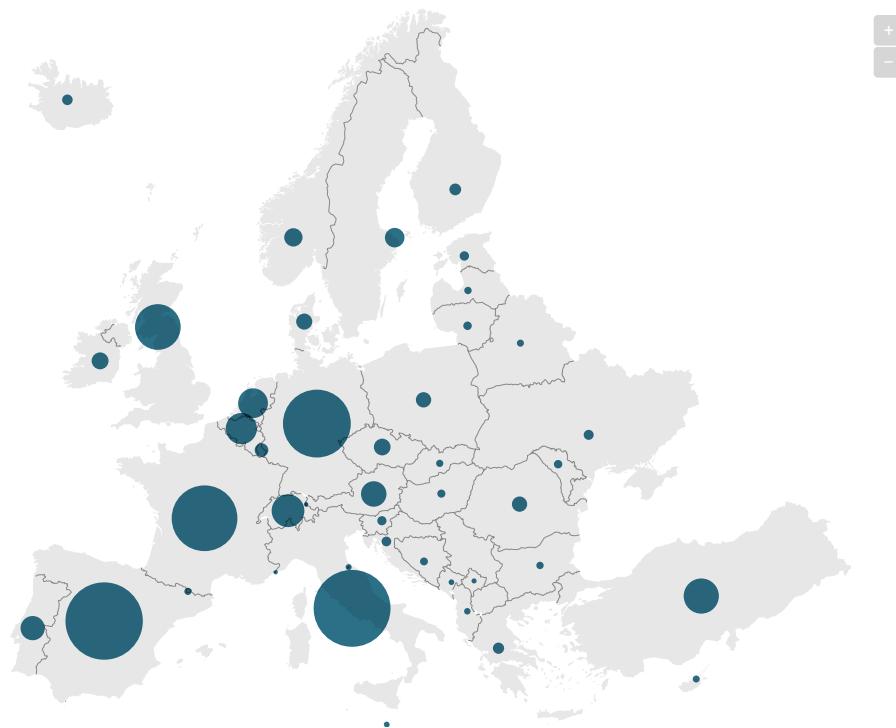
County	Confirmed cases	Confirmed deaths	Daily growth	Doubling time
Lehigh, Pa.	584	5	<div style="width: 31%;">31%</div>	2.6 days
Northampton, Pa.	466	10	<div style="width: 30%;">30%</div>	2.6 days
Blaine, Idaho	405	2	<div style="width: 29%;">29%</div>	2.8 days
Genesee, Mich.	422	11	<div style="width: 27%;">27%</div>	2.9 days
Hampden, Mass.	661	28	<div style="width: 27%;">27%</div>	2.9 days
Jefferson, La.	2,495	85	<div style="width: 27%;">27%</div>	2.9 days
Riverside, Calif.	638	15	<div style="width: 27%;">27%</div>	2.9 days
New Haven, Conn.	891	18	<div style="width: 26%;">26%</div>	3.0 days
San Bernardino, Calif.	353	13	<div style="width: 26%;">26%</div>	3.0 days
St. Tammany, La.	435	10	<div style="width: 26%;">26%</div>	3.0 days
Ada, Idaho	351	3	<div style="width: 25%;">25%</div>	3.1 days
Monroe, Pa.	397	10	<div style="width: 24%;">24%</div>	3.2 days
Hudson, N.J.	2,835	59	<div style="width: 24%;">24%</div>	3.2 days
Providence, R.I.	418	7	<div style="width: 23%;">23%</div>	3.3 days
Union, N.J.	2,487	45	<div style="width: 23%;">23%</div>	3.4 days

The daily growth rate and doubling time are computed based on past 5-days. Counties with fewer than 100 confirmed cases are excluded. Note that these numbers don't tell us anything about the number of infected people, just about the number of people who got tested positive. The table gets updated once a day.

Table: Gregor Aisch (Datawrapper) • Source: [The New York Times](#) • Get the data • Created with Datawrapper

## Number of confirmed COVID-19 cases in Europe

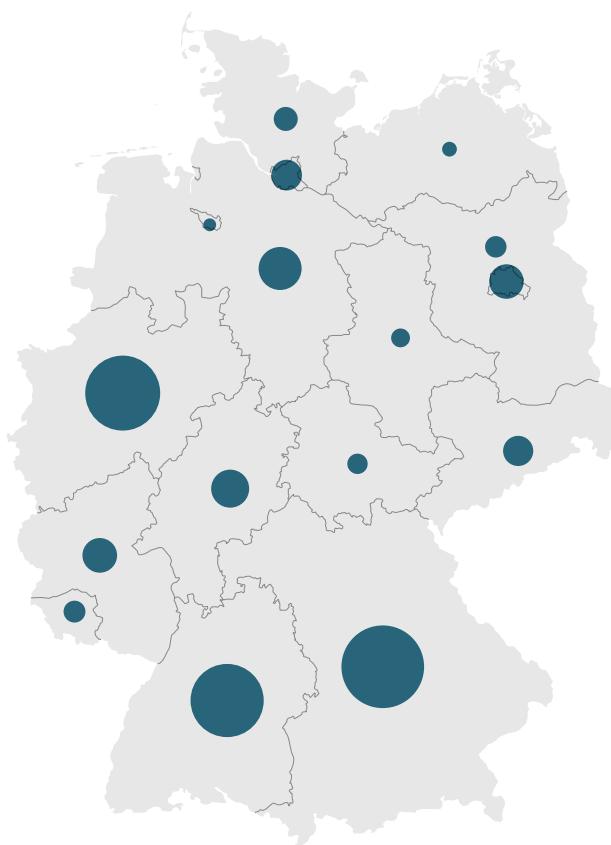
This chart gets updated multiple times each day with [data by Johns Hopkins](#). To zoom, use the zoom buttons or hold CTRL while scrolling.



Source: [Johns Hopkins CSSE](#) • [Get the data](#) • Created with Datawrapper

## Number of people confirmed to have or have had COVID-19, in Germany

This map gets updated multiple times each day with [data by the Robert Koch Institute](#).

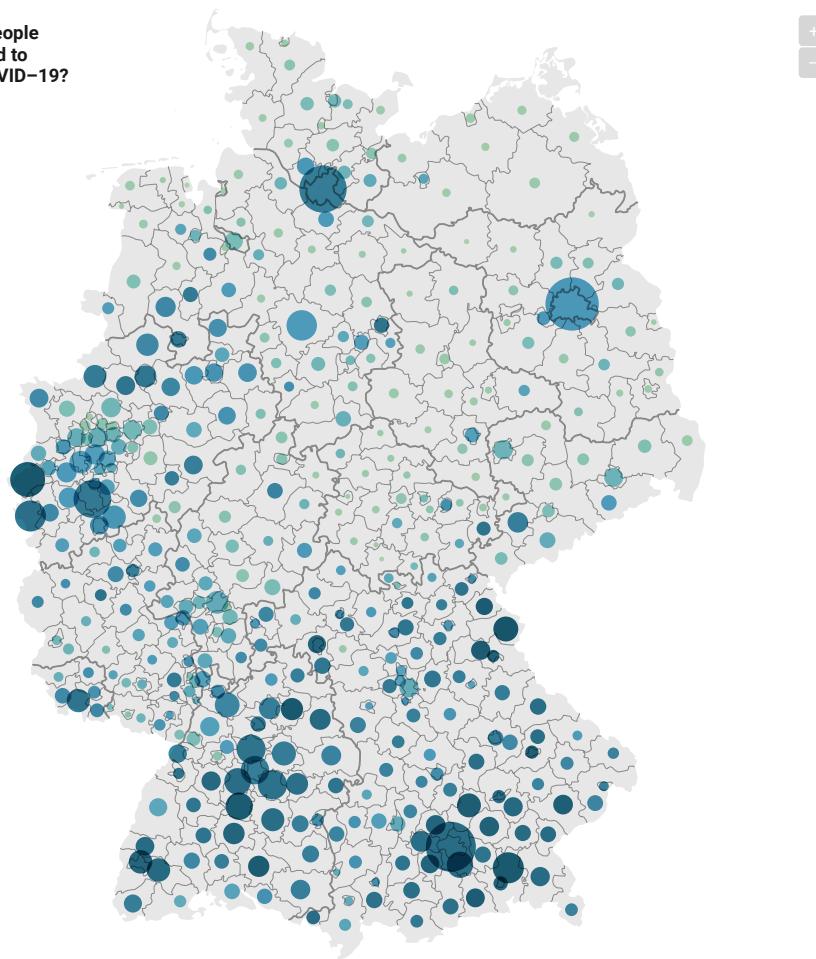


Source: [Robert Koch Institute](#) • [Get the data](#) • Created with Datawrapper

## Number of confirmed COVID-19 cases in German "Landkreise"

How many people  
are confirmed to  
have/had COVID-19?

- 1 in 200
- 1 in 1000
- 1 in 2000
- 1 in 5000



Source: [Robert Koch Institute via Dr. Jan-Philip Gehrcke](#) • Map data: © GeoBasis-DE / [BKG](#) 2017 • [Get the data](#) • Created with Datawrapper

As always, let us know if you have any questions, feedback or hints. If they're any charts you're missing, also let us know. We're available at [support@datawrapper.de](mailto:support@datawrapper.de) (<mailto:support@datawrapper.de>). You can also write directly to me at [lisa@datawrapper.de](mailto:lisa@datawrapper.de) (<mailto:lisa@datawrapper.de>) or find me on Twitter (@lisacrost (<https://twitter.com/lisacrost>)).

### Datawrapper Blog Update

Sign up if you'd like to get notified about everything new on our blog apart from the Weekly Chart. We send out this newsletter on average once every two weeks.

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**Lisa Charlotte Rost** (@lisacrost) (<https://twitter.com/lisacrost>) is responsible for the design and the blog at [Data Vis](https://lisacharlotterost.github.io/) (<https://lisacharlotterost.github.io/>) for a few years now. Based in Berlin, she organizes the Data Vis meetup there.

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[Facebook](#) (<https://www.facebook.com/sharer/sharer.php?u=https%3A%2F%2Fblog.datawrapper.de%2Fcoronavirus-charts/>)

## Comments

To post a comment you need to sign in via

Twitter or GitHub or Mastodon

**stefan123t** (<https://github.com/stefan123t>) commented on April 01, 2020 - 5:53 pm

Dear Lisa, I have been able to compose a map from BKG and City of Berlin which matches the data released everyday by RKI through ARCGIS. Those maps are now on the Datawrapper River, but I wonder if you could update the CSV source daily as you do it with the other maps on this page ? Kind regards, Stefan

cases and cases per 100k <https://river.datawrapper.de/#popup/ASPDn>  
(<https://river.datawrapper.de/#popup/ASPDn>)  
<https://river.datawrapper.de/#popup/0AEpL>  
(<https://river.datawrapper.de/#popup/0AEpL>)

deaths and death rate <https://river.datawrapper.de/#popup/YeEOY>  
(<https://river.datawrapper.de/#popup/YeEOY>)  
<https://river.datawrapper.de/#popup/lytZ4>  
(<https://river.datawrapper.de/#popup/lytZ4>)

**stefan123t** (<https://github.com/stefan123t>) commented on April 01, 2020 - 10:09 pm

I found it, they update now automatically with the data from RKI/ARCGIS.

Thanks for the nice tool Datawrapper offers for providing interactive maps and charts.

<https://datawrapper.dwcdn.net/ASPDn> (<https://datawrapper.dwcdn.net/ASPDn>)  
<https://datawrapper.dwcdn.net/0AEpL> (<https://datawrapper.dwcdn.net/0AEpL>)  
<https://datawrapper.dwcdn.net/YeEOY> (<https://datawrapper.dwcdn.net/YeEOY>)  
<https://datawrapper.dwcdn.net/lytZ4> (<https://datawrapper.dwcdn.net/lytZ4>)

**Allen Sullivan** (<https://twitter.com/allensullivan>) commented on March 30, 2020 - 1:02 am

Very glad I found Datawrapper today. Will you let me know if you count Central American countries in North America or South America?

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 30, 2020 - 11:27 am

Hi Allen, sure! I count countries like Panama, Saint Lucia and Cuba to **North America**. You can see the list of all countries and which continent they belong to in our numbers here: [github.com/datawrapper/datawrapper/wiki/Country-flag-icons](https://github.com/datawrapper/datawrapper/wiki/Country-flag-icons) (<https://github.com/datawrapper/datawrapper/wiki/Country-flag-icons>).

**Arild Haugen (<https://twitter.com/arildhaugen>)** commented on March 28, 2020 - 7:18 am

Hi Lisa! I am looking for data on Hospitalizations in various countries. Have you seen anything like this in your data?

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 28, 2020 - 8:51 pm

Hi Arild! Unfortunately, I have not. Let me know if you stumble across such data! I imagine the great people at Our World in Data (<https://ourworldindata.org/coronavirus>) will have it first.

**stefan123t (<https://github.com/stefan123t>)** commented on April 01, 2020 - 5:48 pm

Dear Arild, please check the following link to the NPGEO Corona Hub with a dashboard for the Netherlands, they seem to track the numbers of people hospitalized too for their counties. I am not aware of such numbers for other countries. Kind regards, Stefan  
<https://www.arcgis.com/apps/opsdashboard/index.html#/cfc2084c995c40e7ae72254029bf6251>  
(<https://www.arcgis.com/apps/opsdashboard/index.html#/cfc2084c995c40e7ae72254029bf6251>)

**mikepetersen3 (<https://github.com/mikepetersen3>)** commented on March 27, 2020 - 1:14 pm

Hi Lisa, this site is great!!! Thanks for all your hard work.

I find the chart "Growth rate of confirmed cases in selected countries." very useful. I live in the US and have been calculating state growth rates in a similar way, albeit in a tedious way.

Is it possible to build the same chart for the 50 states of the US? I have been pouring through GitHub for the data, but cannot find it a consistent location. Im a programming Neanderthal, so forgive me if I'm overlooking the basics.

By the way, I have scoured the Internet for this information and I cannot seem to locate it anymore. I think there are a lot of people who would find value in this growth data comparing the different US states.

Thanks again for the solid work!

**Lisa Charlotte Rost** (<https://twitter.com/lisacrost>) commented on March 30, 2020 - 12:03 pm

Hi Mike, thanks for your kind words! Regarding US states: I don't think I'll add subnational data for any country for the growth rates chart, because there are great news outlet that already do exactly that, e.g. the New York Times here (<https://www.nytimes.com/interactive/2020/03/21/upshot/coronavirus-deaths-by-country.html>), or the Financial Times here (<https://www.ft.com/coronavirus-latest>). Hope that helps!

**kameamea** (<https://github.com/kameamea>) commented on March 27, 2020 - 6:01 am

Hi Lisa, this is the best collection of charts I found so far. Good work!. The chart "Growth rate of ..." shows how effective the efforts of the different countries are. How about making the same chart additionally for the growth rate of the daily new infections? Those grow exponentially as well but once contacts are reduced they show faster whats going on.

**Lisa Charlotte Rost** (<https://twitter.com/lisacrost>) commented on March 28, 2020 - 8:55 pm

Hi, thanks for your nice words!

I'm not 100% clear what benefit such a chart would bring over showing the growth rate of confirmed cases. If the number of **new** confirmed cases will go down, so will the growth rate of **confirmed** cases, at the same speed (we would average the new confirmed cases anyway).

Or am I confusing something here? Let me know. Thank you!

**Suny Kim** (<https://twitter.com/sukitwi>) commented on March 26, 2020 - 10:51 am

Hi, I'm an addict of your blog, especially of this chart. One thought I had when reading your clarification "The helper slopes don't mark corridors": The helper slope is simply a slope, correct? Maybe that would be clearer if it wasn't shown as one line starting at 0, but if the line was repeated regularly over the plot (like the horizontal helper lines that everyone is used to).

**Lisa Charlotte Rost** (<https://twitter.com/lisacrost>) commented on March 28, 2020 - 8:58 pm

Hi Suny, great to hear you like our blog! You're right, the helper line *is* a slope. I'm afraid repeating it again and again will make the entire chart too crammed.

The New York Times has a great solution for the "slope dilemma" here (<https://www.nytimes.com/interactive/2020/03/21/upshot/coronavirus-deaths-by-country.html>).

**M. Ahmad Alauddin** ([https://twitter.com/ahmadalauddin\\_](https://twitter.com/ahmadalauddin_)) commented on March 26, 2020 - 9:12 am

Hey Lisa, amazing work on all the charts and graphs, much appreciated. One request however, can you please add all 3 types i.e. Confirmed, Recovered & Deaths in the maps? Currently only two types are showing. Thanks!

Keep up the good work!!

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 26, 2020 - 9:33 am

Hi there, unfortunately, Johns Hopkins doesn't provide the number of recovered cases anymore, and we know of no data source that (reliably) does. I'll update the maps accordingly.

**Duarte (<https://twitter.com/Duarteosrm>)** commented on March 27, 2020 - 10:20 am

Hi Lisa, great collection of data viz here. Have you looked at worldometers.info? They track confirmed cases, although I cannot vouch for the accuracy of the date.

**eberhardf (<https://github.com/eberhardf>)** commented on March 25, 2020 - 11:15 pm

One of the few "dashboards" on corona that provide well thought through numbers. I think the doubling in x days stats is especially meaningful. Thank you for providing these visualizations. Much appreciated!

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 26, 2020 - 9:34 am

Thanks for the kind words! I'm happy to hear that the visualizations are helpful.

**Deirdre Reardon (<https://twitter.com/reardoda>)** commented on March 25, 2020 - 12:59 am

I will second Paul's request. I also found this a useful/ meaningful metric (1 in x people confirmed to have the virus).

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 26, 2020 - 9:34 am

Hi Deirdre, I added the "that's like 1 in ... inhabitants" column back again yesterday.

**Paul Boos ([https://twitter.com/paul\\_boos](https://twitter.com/paul_boos))** commented on March 24, 2020 - 7:28 pm

Greetings Lisa, I miss the column in the table that would state "That's like 1 in some number of people. Could that be added back anywhere? I found that a useful number to communicate to others.

Cheers and thanks for this site - lots of great stuff here. (Wish it were a happier topic though....)

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 25, 2020 - 8:29 am

Hi Paul, thanks for the nice words – and thanks for the request! I'll add the column again today.

**asmaier** (<https://github.com/asmaier>) commented on March 23, 2020 - 10:34 am

Wouldn't it be more responsible to only show the relative number of cases instead of absolut numbers? For example at <https://datagraver.com/case/tracking-the-worldwide-covid-19-pandemic> (<https://datagraver.com/case/tracking-the-worldwide-covid-19-pandemic>) we only see the cases per 100000 inhabitants in all graphs.

**John Anastasiou** (<https://twitter.com/johnanast>) commented on March 20, 2020 - 8:14 am

Nice work. Is there a way to show data from Greece as it shown for Italy or Germany?

**Lisa Charlotte Rost** (<https://twitter.com/lisacrost>) commented on March 30, 2020 - 12:05 pm

Hi John, thanks! You mean you'd like to see Greece with a column chart as well? I won't add the numbers for every single country, since that's a lot of work on my side – but feel free to create such a chart yourself!

You can start by clicking on "Edit this chart" in the top right of the column chart for e.g. Germany, and then change the data in step 1.

Hope that helps!

**stefan123t** (<https://github.com/stefan123t>) commented on March 19, 2020 - 9:54 pm

Dear Lisa, I found the following dashboards from ESRI quite informative in the past few days:

NPGEO Corona Hub 2020 <https://npgeo-corona-npgeo-de.hub.arcgis.com/> (<https://npgeo-corona-npgeo-de.hub.arcgis.com/>)

They have data for Italy, France and Netherlands on county/district level as well as a map for Germany on district level: COVID-19 Dashboard Landkreise  
[https://experience.arcgis.com/experience/478220a4c454480e823b17327b2bf1d4/page/page\\_1/](https://experience.arcgis.com/experience/478220a4c454480e823b17327b2bf1d4/page/page_1/) ([https://experience.arcgis.com/experience/478220a4c454480e823b17327b2bf1d4/page/page\\_1/](https://experience.arcgis.com/experience/478220a4c454480e823b17327b2bf1d4/page/page_1/))

Maybe there is an option to use the data on a fine-grained level from there on a European map to show our neighbouring countries, also it seems to include the German RKI data including the Incidence I asked about earlier last week.

**Lisa Charlotte Rost** (<https://twitter.com/lisacrost>) commented on March 20, 2020 - 8:41 am

Hey Stefan, that's great; thanks for the links! I don't have any experience with getting data from a ArcGIS feature layer, but I'll take some time to research that.

**stefan123t (<https://github.com/stefan123t>)** commented on March 25, 2020 - 8:14 am

Hi Lisa, you can get the RKI\_Landkreise Feature layer with the following GET request. It contains a description of the Attributes queried plus the data in a JSON document:

```
https://services7.arcgis.com/mOBPykOjAyBO2ZKk/arcgis/rest/services/RKI_Lan  
dkreisdaten/FeatureServer/0/query?  
f=json&where=1%3D1&returnGeometry=false&spatialRel=esriSpatialRelIntersects  
&outFields=*&orderByFields=cases%20desc&outSR=102100&resultOffset=0&resu  
ltRecordCount=1000&cacheHint=true  
(https://services7.arcgis.com/mOBPykOjAyBO2ZKk/arcgis/rest/services/RKI_Lan  
dkreisdaten/FeatureServer/0/query?  
f=json&where=1%3D1&returnGeometry=false&spatialRel=esriSpatialRelIntersects  
&outFields=*&orderByFields=cases%20desc&outSR=102100&resultOffset=0&resu  
ltRecordCount=1000&cacheHint=true)
```

I do not know how often they update the data or how frequently you will be allowed to query their server for this information, nor how they get the data from RKI anyway. Maybe you could also inquire with RKI directly to get the data somewhere.

Kind regards, Stefan

**Jan-Philip Gehrcke (<https://twitter.com/kehrcke>)** commented on March 19, 2020 - 7:47 pm

René Engmann does not collect the individual cases in this Github repo anymore, so the following maps shows the state on March 11th.

I just noticed that statement in your article. Maybe you can revive some of these maps with the help of the CSV or HTTP API data provided by  
<https://github.com/jgehrcke/covid-19-germany-gae>  
(<https://github.com/jgehrcke/covid-19-germany-gae>)?

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 20, 2020 - 8:11 am

Hi Jan-Philip! Thanks for the link. As far as I can see, it gives back confirmed cases per state?

What René provided was **coordinates** for confirmed cases instead of an aggregation on a states level. For the states level, the official RKI numbers might be lagging behind, but they are, well, official – so I think I'll stick with them for now.

**stefan123t (<https://github.com/stefan123t>)** commented on March 27, 2020 - 10:53 pm

Jan-Philip had the following link to a daily CSV table on his repo. I will try and use a daily cronjob to store the data for all Landkreise published via RKI after 15:00.  
/usr/bin/wget  
[https://opendata.arcgis.com/datasets/917fc37a709542548cc3be077a786c17\\_0.csv](https://opendata.arcgis.com/datasets/917fc37a709542548cc3be077a786c17_0.csv)  
([https://opendata.arcgis.com/datasets/917fc37a709542548cc3be077a786c17\\_0.csv](https://opendata.arcgis.com/datasets/917fc37a709542548cc3be077a786c17_0.csv)) -o \$(/bin/date +%F).csv

The above works for me.

You can probably use only the columns for ID, BL (Bundesland), BL\_ID (Bundesland ID), RS (Regionalschlüssel), county, GEN (Gemeinde Name), BEZ (Bezeichnung), cases, cases\_per\_100k, cases\_per\_population, death, death\_rate, EWZ (Einwohnerzahl), KFL (Kreisfläche) or maybe better Shape\_Area and last\_update as you see fit for reviving the German map provided earlier with data from Rene Engmann.

Kind regards, Stefan

**Giu Vicente** (<https://twitter.com/GiuVicente>) commented on March 19, 2020 - 9:52 am

Great usage of data visualization. Data for good!

Thanks!

**Lisa Charlotte Rost** (<https://twitter.com/lisacrost>) commented on March 19, 2020 - 11:51 am

Thanks, Giu! I'm glad you found them helpful.

**Ibattag** (<https://github.com/Ibattag>) commented on March 19, 2020 - 8:10 am

Dear Lisa, thanks for this very useful blog. I was checking tablet about "Doubling time" in Europe, but I think that data about Italy are wrong. The trend for Italy seems to be negative but should be positive. I Aldo noticed that data Yesterday evening was the opposite. Could you check please?

KT

**Lisa Charlotte Rost** (<https://twitter.com/lisacrost>) commented on March 19, 2020 - 11:52 am

Hi Ibattag, you're right, there was a mistake in the data that I oversaw. It's fixed now.

**Ibattag** (<https://github.com/Ibattag>) commented on March 19, 2020 - 2:32 pm

Thanks for replay. Really appreciated.

KR

**Oliver Betz** (<https://github.com/obetz>) commented on March 19, 2020 - 7:53 am

The "doubling times of confirmed cases in the last five days - doubling time in the five days before" table is very interesting, but at least today, the daily uncertainty renders it useless. I guess there is no increase from 3.6d to 1.9d in Germany but a constant 2.8d. Maybe caused by the March 12/13 issue?

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 19, 2020 - 9:30 am

Thanks, Oliver! You're right, there seems to be a misktake. I'll fix it and take the table down for that time.

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 19, 2020 - 11:52 am

It's fixed now – yep, the March 12 issue was the problem. Thanks again for letting me know about it!

**Oliver Betz (<https://github.com/obetz>)** commented on March 20, 2020 - 7:23 am

Thanks for providing these great visualizations!

**Jan-Philip Gehrcke (<https://twitter.com/gehrcke>)** commented on March 19, 2020 - 4:19 am

Hello! Lovely visualization material that you are offering here! I was a bit frustrated that nowhere I could find a data source for the time evolution of the case count in individual German states. I asked around, and tried to understand the while data flow situation from Gesundheitsämter over Landesministerien over RKI to WHO. I then understood that nobody had built the data source I wanted. So I tried to do that. If you'd like to have a look, here I announce an HTTP API that provides time series data for individual German states: <https://gehrcke.de/2020/03/covid-19-http-api-german-states-timeseries/> (<https://gehrcke.de/2020/03/covid-19-http-api-german-states-timeseries/>) -- feedback welcome!

**Snarf (<https://twitter.com/snarf>)** commented on March 18, 2020 - 1:22 pm

The first graphic has another number of deaths (8,205) than what the Johns Hopkins source is showing (8,241) ? Is that a mistake or is there a reason for that?

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 18, 2020 - 1:26 pm

Hi Snarf, thanks for the question! The reason is that we pull the data from Johns Hopkins not more often than every 20min, so our visualizations might lag a bit behind – we think this is forgivable when considering the scope of these numbers. Refresh the page again and it will show 8,241.

**Snarf (<https://twitter.com/snarf>)** commented on March 18, 2020 - 1:30 pm

Allright, that's fair enough

**ikong f** (<https://twitter.com/ikongsgf>) commented on March 17, 2020 - 10:53 pm

Can someone tell us more clearly what the totals are? E.g., if it says 100k confirmed cases, 80k recovered --- is the 80k OUT of 100k or is the total 180k + the number of deaths?

**Lisa Charlotte Rost** (<https://twitter.com/lisacrost>) commented on March 18, 2020 - 7:51 am

Hi Ikong, If it says 100k current confirmed cases, 80k recovered and 5k died, then there are 185k cumulative confirmed cases (= people who ever got tested positive). Hope that helps!

**ikong f** (<https://twitter.com/ikongsgf>) commented on March 18, 2020 - 5:29 pm

Ok thanks a lot! So if I follow correctly, the line charts are not "stacked", but the area charts are stacked (different colors add up to the total). It would be nice if the column charts were also stacked (to make it easy to see the total) rather than overlapping the colors of the bars (the intersections don't seem to provide any info, but stacking them would provide more info (part to whole) while still showing part to part). So they would be more like area charts.

**JP Maestre**  (<https://twitter.com/yeipijotape>) commented on March 17, 2020 - 4:29 pm

Please include data from Spain if you can. Thanks so much for this amazing tools.

**Snarf** (<https://twitter.com/snarf>) commented on March 17, 2020 - 12:12 pm

The numbers for confirmed cases in the first graphic are wrong?

It says 96,521 cases but the Johns Hopkins dashboard it links to says :183,425

**Lisa Charlotte Rost** (<https://twitter.com/lisacrost>) commented on March 17, 2020 - 12:16 pm

Hi Snarf, the charts, maps & tables on this page show current confirmed cases, not cumulative confirmed cases. I subtracted the cases that died or recovered.

**Snarf** (<https://twitter.com/snarf>) commented on March 17, 2020 - 12:36 pm

Okay, thanks for the clarification :) Great work.

**asmaier** (<https://github.com/asmaier>) commented on March 16, 2020 - 11:51 am

Do you have information about how many tests on COVID-19 are done per day in each country? I think without that information the numbers of cases between countries are not really comparable.

**Lisa Charlotte Rost** (<https://twitter.com/lisacrost>) commented on March 16, 2020 - 12:51 pm

Hi asmaier, yep, that's a great point. The sources we use don't include numbers on tests. Data on how many tests are done does seem to exist (<https://www.worldometers.info/coronavirus/covid-19-testing/>), but not for all countries, and not up-to-date enough to compare it with current numbers. If you find a good source, please let us know!

**stefan123t** (<https://github.com/stefan123t>) commented on March 16, 2020 - 9:39 am

Hi Lisa, I do not check all states in Germany yet, but the two southern States BW and BY have their numbers per district/county online on their sites since last week. These are basically the same ministries / sites that Rene Engmann referenced for the cases on his expired github data set. I guess these numbers are a bit earlier available than the RKI summary every day 15:00 o'clock. Unfortunately RKI does not re-publish the detailed numbers in CSV/JSON or something machine readable. Kind regards, Stefan

BW: Link to XLSX below the map <https://sozialministerium.baden-wuerttemberg.de/de/gesundheit-pflege/gesundheitsschutz/infektionsschutz-hygiene/informationen-zu-coronavirus/> (<https://sozialministerium.baden-wuerttemberg.de/de/gesundheit-pflege/gesundheitsschutz/infektionsschutz-hygiene/informationen-zu-coronavirus/>)

BY: numbers in html table

[https://www.lgl.bayern.de/gesundheit/infektionsschutz/infektionskrankheiten\\_a\\_z/coronavirus/karte\\_coronavirus/index.htm](https://www.lgl.bayern.de/gesundheit/infektionsschutz/infektionskrankheiten_a_z/coronavirus/karte_coronavirus/index.htm) ([https://www.lgl.bayern.de/gesundheit/infektionsschutz/infektionskrankheiten\\_a\\_z/coronavirus/karte\\_coronavirus/index.htm](https://www.lgl.bayern.de/gesundheit/infektionsschutz/infektionskrankheiten_a_z/coronavirus/karte_coronavirus/index.htm))

NRW: <https://www.mags.nrw/coronavirus-fallzahlen-nrw>

(<https://www.mags.nrw/coronavirus-fallzahlen-nrw>)

**MissTinger** (<https://github.com/MissTinger>) commented on March 15, 2020 - 12:48 pm

Great work! One small mistake though, in the map of Germany: "Number of people currently confirmed to have COVID-19, in Germany", the data of the Robert Koch Institute uses the German convention where the dot separates the thousands: 1.000,00 means "one thousand". In the graph, it seems to be interpreted as a decimal separator. The region with the smallest circle is NRW, which has the most cases: 1054 as I am writing.

**Lisa Charlotte Rost** (<https://twitter.com/lisacrost>) commented on March 15, 2020 - 4:35 pm

Hi MissTinger, you're right! I just fixed it – all dots will now be removed from our script and the map displays properly again. Thanks for letting us know about it!

**stefan123t (<https://github.com/stefan123t>)** commented on March 15, 2020 - 3:19 am

Hi Lisa, You may be interested in the following OpenData source by the German BKG which provides the german district boundaries including inhabitants per 31.12.2019. This might be used to put the incidents in perspective with the district inhabitants as provided on the daily map of RKI, which shows the number of recorded cases and a coloring for the incidence ratio between 1,5,10,50,100,250 cases per 100.000 inhabitants in their "Aktueller Situationsberichte des Robert Koch-Instituts zu COVID-19". Kind regards, Stefan

[\(https://gdz.bkg.bund.de/index.php/default/open-data/verwaltungsgebiete-1-1-000-000-mit-einwohnerzahlen-kompakt-stand-31-12-vg1000-ew-kompakt-31-12.html\)](https://gdz.bkg.bund.de/index.php/default/open-data/verwaltungsgebiete-1-1-000-000-mit-einwohnerzahlen-kompakt-stand-31-12-vg1000-ew-kompakt-31-12.html)

[\(https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Situationsberichte/Gesamt.html\)](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Situationsberichte/Gesamt.html)

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 15, 2020 - 4:38 pm

Hi Stefan, thanks for the sources! I couldn't find a computer-readable data file of the numbers presented in the district map of RKI (e.g. a CSV, or Excel file). If you're aware of one, please let me know and I'll try to provide such a map.

**stefan123t (<https://github.com/stefan123t>)** commented on March 28, 2020 - 8:21 am

I just see that e.g. Hamburg got mixed up with Hannover and Harburg on the map, as I correlated the GEOJSON and CSV data along the OBJECTID which is a running number. Can you correct it to use the RS ?

**stefan123t (<https://github.com/stefan123t>)** commented on March 28, 2020 - 8:18 am

Dear Lisa, I have been able to retrieve a map of the counties of Germany using the QGIS application and adding a WFS Layer with the following URL from sg.geodatenzentrum.de:

[http://sg.geodatenzentrum.de/wfs\\_vg2500?REQUEST=GetCapabilities&SERVICE=WFS](http://sg.geodatenzentrum.de/wfs_vg2500?REQUEST=GetCapabilities&SERVICE=WFS)  
[\(http://sg.geodatenzentrum.de/wfs\\_vg2500?REQUEST=GetCapabilities&SERVICE=WFS\)](http://sg.geodatenzentrum.de/wfs_vg2500?REQUEST=GetCapabilities&SERVICE=WFS)

I was able to export that Layer as a GEOJSON File with roughly 2MB size by limiting the export to 8 digits behind the dot. Following your Datawrapper Academy course to upload your own map I have utilized mapshaper.org to import the GEOJSON, simplify it to 20% and export it to a neat TopoJSON file of 200kB.

Adding a Chloropleth map with Datawrapper showed the shapes of German counties, but mapping the CSV data from opendata.arcgis.com as given by Jan-Philip did somehow not work out. The GEOJSON still contains the RS key I need for mapping the CSV data to the counties. So I exported it as GEOJSON from mapshaper.org with 500kB.

You can find the results under the following URL:

<https://datawrapper.dwcdn.net/ASPDN/2/>  
[\(https://datawrapper.dwcdn.net/ASPDN/2/\)](https://datawrapper.dwcdn.net/ASPDN/2/)

There is a problem with the map, that I do not have the districts (Kiez) of Berlin in my GEOJSON and hence can not show the numbers reported for those in the CSV from RKI/Opendata ARCGIS.

Maybe you can help and add your shape of Berlin districts to the GEOJSON map ?

Kind regards, Stefan

**Glenn Wiebe (<https://github.com/ggwiebe>)** commented on March 13, 2020 - 10:48 pm

This is a wonderful resource.

Am I missing something in there being no "real" data for California, US other than the Princess cruise ship (off the coast of San Francisco)? I see no other California numbers.

Thanks!

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 14, 2020 - 9:48 am

Hi Glenn, thanks for the nice words! Do you mean the numbers on the symbol map? I can currently see a number for California – but Johns Hopkins university, our data source, experiences some technical hick-ups. It's possible the number was missing when you had a look at it.

**Raul Dominguez (<https://twitter.com/RDom1nguez>)** commented on March 12, 2020 - 9:50 pm

Thank you @lisacroft for the great visualizations.

I think one important feature that is missing in this visualizations and that would make more visible the situation is the estimated number of carriers of the virus, not detected. The lower boundary of this information can be estimated by going back from one day integrating the new cases in the period that the virus is incubating but been transmitted.

With an example, in the graph of Germany "Coronavirus COVID-19: new cases, recoveries and deaths per day in Germany". If we take an incubating period of 5 days, then on the 7th of March, when 129 cases were announced, there were at least (451+281+136+141 = 1009 incubating cases).

This values can be projected to give an estimation of what is coming next, unless measures are taken.

**Lisa Charlotte Rost** (<https://twitter.com/lisacroft>) commented on March 14, 2020 - 9:40 am

Hi Raul, thank you for your suggestion! We are no experts in how viruses spread, so we try to keep away from making predictions and calculating the actual number of virus carriers. However, I'd be definitely interested to see your own visualizations on the topic!

**Amy** (<https://twitter.com/amykathleen2005>) commented on March 11, 2020 - 2:22 pm

There are great! However the US one I think the data is wrong for 3/10/20. It is showing a total of over 1,000 new cases on that day. But there are only that many in total for a the whole time period.

**Lisa Charlotte Rost** (<https://twitter.com/lisacroft>) commented on March 12, 2020 - 9:44 am

Hi Amy, thanks for letting me know! Johns Hopkins changed the way they recorded the US data, hence the mistake. I fixed it.

**Karyn Ellis** (<https://twitter.com/KarynEllisHere>) commented on March 10, 2020 - 9:46 pm

Hi there! Thank you for all your efforts in creating this data-driven overview of how things situation is unfolding. It is helpful in the face of misinformation that is fanning fear to have the facts laid out like this. I have one concern though about your decision to highlight current cases rather than total cases. While I understand the thinking was to lessen fear, it has the effect of making the number of deaths appear to occupy a significantly higher percentage of those infected by the virus. Perhaps total number of cases to date could also be included, and the number of deaths tethered to that statistic. In any regards, thanks again for all your work on this important project. Best, Karyn

**Pagini Romanesti** (<https://twitter.com/paginiromanesti>) commented on March 10, 2020 - 7:53 pm

Hi, the info are not updating, at least for Italy.

**Lisa Charlotte Rost** (<https://twitter.com/lisacrost>) commented on March 12, 2020 - 9:46 am

Hi Pagini, thanks for the update! The column chart with the Italian cases is updating once a day, so it only shows cases all the days before today. The Italian numbers in the stacked bars and in the table also seems up to date. Could you please let me know where exactly the numbers are not updating? Thank you!

**Corinna Zander** (<https://twitter.com/cobralina>) commented on March 09, 2020 - 1:27 pm

Hallo Lisa, danke für die automatisierten Karten - sehr hilfreich und schnell anzupassen. Das spart mir eine Menge Zeit... super!

**stefan123t** (<https://github.com/stefan123t>) commented on March 09, 2020 - 1:15 pm

Dear Lisa, I like your "one in every ... people is confirmed to have the virus" metric. Wouldn't it be quite interesting to use this as the subject for coloring your dots, i.e. having 1 in 1000 people is quite risky, given the current suggestion of our policy-makers across Europe to consider calling-off public venues with more than 1000 people. If you consider such a risk level of 1/per-mille with a red-color you can use a common red-yellow-green coloring to make your international maps more comparable. Maybe you could even use it as the common basis for the size of your dots. Kind regards, Stefan

**stefan123t** (<https://github.com/stefan123t>) commented on March 09, 2020 - 12:49 pm

Dear Lisa, according to the site [www.coronavirus.jetzt](http://www.coronavirus.jetzt) (<http://www.coronavirus.jetzt>) which is linked as a mail-address to the github account of iceweasel1 the real name of René is referred to as V.i.S.d.P. in the Impress of the website. I especially like his comparison of cases within mainland China, which I could not see detailed in the data presented by John Hopkins University or your site. Maybe you could work together to improve your either sites, as I have spotted some more detail in your German maps (counties / Landkreise) which is a detail unfortunately not visible in René's Maps. Kind regards, Stefan

**Greg** (<https://twitter.com/MtnBiker>) commented on March 08, 2020 - 4:40 pm

Disclosure: I'm not a journalist.

Two others that I'd like to see:

1. Risks with age which I guess would include chance of getting and outcomes (death).
2. Comparisons to normal flu seasons. How many more will die? How many will get the flu. Of course if say an equal number are going to die, then the overall flu death rate is doubled.

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 09, 2020 - 11:23 am

Hi Greg, thanks for your comment! As somebody who's not a scientist, I'm afraid I can't really answer these questions.

But you can find numbers about the death rate per age group, for example in the second-to-last table in this report (<http://weekly.chinacdc.cn/en/article/id/e53946e2-c6c4-41e9-9a9bfea8db1a8f51>) (only Chinese cases, data is from Feb 11).

The New York Times also did a good comparison between the regular flu and the coronavirus (<https://www.nytimes.com/2020/02/29/health/coronavirus-flu.html>).

**marchbuettner (<https://github.com/marchbuettner>)** commented on March 08, 2020 - 1:20 pm

Sehr guter Artikel, vielen Dank! Besteht die Möglichkeit, die Texte innerhalb der Zellen zu übersetzen, ohne das bei einem Update der Daten wieder überschrieben werden?

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 09, 2020 - 11:29 am

Hi Marc, danke für die netten Worte! Du kannst alle Zellen übersetzen in Schritt 2 – allerdings werden deine Übersetzungen dann immer die neuen Daten überschreiben.

Das ist kein Problem für die Kopfzeile (z.B. "Deaths" in "Todesfälle" zu übersetzen), aber ein Problem für Zeilen wie "that's 0.00005% of humanity" – **diese Zahl würde sich nicht mehr aktualisieren, sobald du sie in Schritt 2 überschreibst.**

**marchbuettner (<https://github.com/marchbuettner>)** commented on March 09, 2020 - 11:51 am

Habt Ihr die Möglichkeit, eine lokalisierte Variante bereitzustellen?

**Steve Attila Kopias ([https://twitter.com/ka\\_steve](https://twitter.com/ka_steve))** commented on March 08, 2020 - 8:16 am

Doesnt the John Hopkins dataset have a strict "no commercial use, only for research and education" copyright policy? I only ask because I wanted to create something like this page, but after seeing the copyright I had to recreate the whole dataset from the original sources. (I plan to publish it under a CC-BY licence allowing commercial uses.)

**Lisa Charlotte Rost (<https://twitter.com/lisacrost>)** commented on March 09, 2020 - 11:32 am

Hi Steve, thanks for pointing me to this license! I added a callout box with this information in the article. (Also, I'd be very interested in this new CC-BY dataset....)

**Mike Walker (<https://twitter.com/jellymochy>)** commented on March 07, 2020 - 4:38 am

Hey, nice charts!

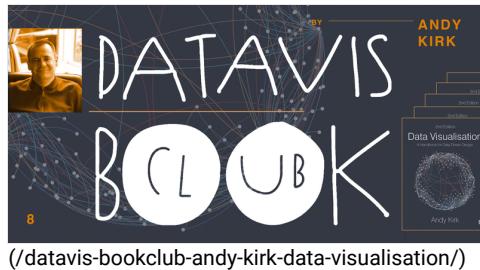
You made it clear that China changed the way it collects data from 13 Feb (new cases 15000+).

But you are not mentioning that China changed back the way it collects data from 19Feb (300+ new cases on 19Feb, down from 1700+ on 18Feb). Any good reason?

Lisa Charlotte Rost (<https://twitter.com/lisacrost>) commented on March 09, 2020 - 11:38 am

Hi Mike, thanks for the nice words! I wasn't aware that China changed back the way it collects data – that's the reason. Apparently, "China's National Health Commission has now revised national guidelines on responding to the COVID-19 outbreak at least six times since Jan. 22," according to CNBC on Feb 26 (<https://www.cnbc.com/2020/02/26/confusion-breeds-distrust-china-keeps-changing-how-it-counts-coronavirus-cases.html>). Thanks for letting me know about this! I'll add this to the notes section of the charts.

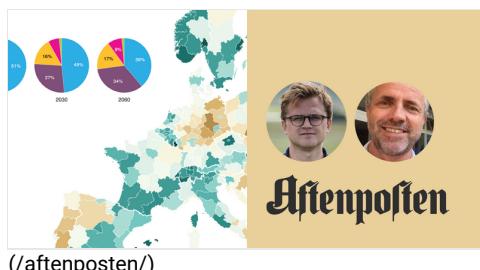
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