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## Cause of death statistics 2022

# The impact of the COVID-19 pandemic on mortality and causes of death in Switzerland

During the COVID-19 pandemic, in 2020 to 2022, Switzerland saw several periods of excess mortality in the 65 and older age group. COVID-19 was first reported in 2020 as one of the leading causes of death, in third place after cardiovascular disease and cancer (FSO, 2022a). This publication presents the impact of the COVID-19 pandemic on the distribution of the most common causes of death in Switzerland for the years 2020 to 2022.

In 2020, the first year of the COVID-19 pandemic, and also in the following two years 2021 and 2022, for the first time more than 70 000 people from the Swiss resident population died per year. There were 76 195 deaths in 2020, 71 192 deaths in 2021, and 74 425 deaths in 2022. The mortality monitoring (FSO, 2022b) showed that based on the weeks with excess mortality, the expected number of deaths was exceeded by 12.8% for 2020 (68 441 deaths), 5.6% for 2021 (67 058 deaths), and 9.5% for 2022 (66 357 deaths). Over the whole three-year period, about 19 000 more people (including about 250 under 65) died than expected<sup>1</sup>.

## Causes of excess mortality during the pandemic

The first two periods of excess mortality in 2020 and 2021 can be explained by the number of reported deaths due to COVID-19 (G1). As the pandemic progressed, the number of COVID-19 deaths fell and starting from the third period of excess mortality at the end of 2021, excess mortality could already no longer be

fully explained by the number of reported COVID-19 deaths (G1). In 2022, the summer heat and flu cases at the end of the year are also possible causes for the increased mortality.

Heat-related deaths are only rarely reported specifically in the medical cause of death certificate, e.g. for heat stroke. The actual number of deaths due to heat is therefore unknown, as the underlying disease is usually reported as the cause of death. Vulnerable groups of people with pre-existing conditions are particularly affected by the impact of heat on health. For this reason, an increase in deaths during heat waves tends to be reflected in an increase in deaths due to underlying diseases such

#### Excess mortality and COVID-19 deaths from 2020 to 2022

Weekly number of deaths in the age group 65 and older

800 600 400 200 -200 2020 2021 2022 2023 Difference between the expected value and the upper or lower limit of the expected range

Difference in observed and expected deaths<sup>1</sup>

COVID-19 deaths<sup>2</sup>

<sup>1</sup> The number of all deaths for the calendar years from 2020 to 2022 was taken into account. <sup>2</sup> The number of COVID-19 deaths in the statistical years 2020 to 2022 was taken into account.

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G1

Data on death notifications for the calendar years 2020-2022: as on 3 October 2023

as cardiovascular disease and dementia. The effect of a flu epidemic is often an increase in deaths due to respiratory diseases. Also, vulnerable groups are affected the most.

## Mortality due to the most common causes of death

In the last ten years before the COVID-19 pandemic, it is true that deaths rose steadily due to population growth. However, the mortality risk, which is represented by a standardised mortality rate, decreased continuously (T1). This trend, which is accompanied by prolonged life expectancy, is primarily reflected in the cause-specific standardised mortality rates of the two most common causes of death, cardiovascular diseases and cancer. During the COVID-19 pandemic, the standardised mortality rate per 100 000 inhabitants for all causes of death in 2020 (men: 542.7, women: 364.5) did rise temporarily to its 2015 level (men: 547.2, women: 367.2), but the trend in cardiovascular disease and cancer deaths, which had been declining for several years, remained essentially intact in the following two years. For respiratory diseases, dementia and external causes (accidents and acts of violence), there were only slight fluctuations in the standardised mortality rates (T1) across all age groups in the last ten years before the pandemic.

#### Definitions

#### Age-specific mortality rate

The age-specific mortality rate refers to the number of deaths in a specific age group and is shown per 100 000 inhabitants.

#### Standardised mortality rate

The standardised mortality rate is calculated on the basis of the age distribution of the WHO European standard population of 1976 and is shown per 100 000 inhabitants.

#### Proportionate mortality (in %)

Proportionate mortality (PM) is calculated as the number of deaths with a given main cause of death (d) divided by the number of all deaths (D) within a statistical year and multiplied by 100 to represent it as a percentage.

$$PM \% = \frac{d}{D} x \ 100$$

Although in 2020, the standardised mortality rate for COVID-19 deaths per 100 000 women (35.5) came third after cancer (96.2) and cardiovascular disease (87.3) and was about the same as the standardised mortality rate for dementia deaths (32.3), in 2021 (24.1) it had already fallen below the standardised mortality rate for dementia deaths (28.7) again.

For men, the standardised mortality rate for COVID-19 deaths per 100 000 in 2020 (64.8) also came third after cancer (138.1) and cardiovascular disease (131.0), but ahead of external causes (38.1), respiratory diseases (27.2) and dementia (26.6). It was not until 2022 that the standardised mortality rate for COVID-19 deaths (28.0) in men fell below that of external causes (38.3) and respiratory causes (30.5), while remaining higher than the standardised mortality rate for dementia deaths (24.3) (T 1).

#### Frequency of COVID-19 as cause of death

Up until 2019, cardiovascular diseases, cancer, respiratory diseases, dementia and external causes were also proportionally (proportionate mortality, PM) the most common causes of death in men and women, with different percentages in the various age groups. During the pandemic, COVID-19 was also one of the most common causes of death (T2). If COVID-19 is reported on the cause of death certificate, according to WHO guidelines, a death is coded with COVID-19 as the main cause of death even if there is an underlying disease (e.g. cancer) (WHO, 2020, FSO, 2022b). This ensures that the population-based burden of disease caused by COVID-19 is reflected in the cause of death statistics.

In 2020, COVID-19 was the third most frequent cause of death after cardiovascular disease in men (13%) and women (11.4%) (men: 25.4%, women: 28.4%) and cancer (men: 24.5%, women: 20%). In 2021, COVID-19 was still the third most common cause of death for men at 9.0% and the fourth most frequent cause of death for women at 7.8%, after dementia at 11.0%.

Indicators for the main causes of death, 2010-2022

		Men					Women				
Cause of death	Year	Number	PM (%) <sup>1</sup>	Crude rate	Standardised rate	Average age at death (years)	Number	PM (%) <sup>1</sup>	Crude rate	Standardised rate	Average age at death (years)
All causes of death	2010	30 283	100.0	786.4	576.7	75.0	32 366	100.0	814.5	376.4	81.2
	2011	30 094	100.0	771.7	565.4	75.0	31 997	100.0	797.4	370.0	81.2
	2012	30 697	100.0	778.0	560.8	75.4	33 476	100.0	826.3	375.7	81.6
	2013	31 257	100.0	782.3	554.9	75.5	33 704	100.0	823.2	370.7	81.7
	2014	30 950	100.0	764.6	534.2	75.6	32 988	100.0	796.7	356.1	81.8
	2015	32 646	100.0	796.7	547.2	75.9	34 960	100.0	835.4	367.2	82.1
	2016	31 283	100.0	754.3	508.0	76.2	33 681	100.0	797.0	351.5	81.8
	2017	32 405	100.0	773.4	512.9	76.2	34 566	100.0	811.0	348.6	82.3
	2018	32 398	100.0	767.4	498.2	76.5	34 690	100.0	808.1	347.2	82.1
	2019	32 756	100.0	770.2	488.3	76.8	35 024	100.0	810.3	341.9	82.4
	2020	37 624	100.0	877.9	542.7	77.5	38 571	100.0	886.2	364.5	82.9
	2021	35 105	100.0	812.5	501.7	76.8	36 087	100.0	823.1	342.2	82.5
	2022	36 442	100.0	836			37 983	100.0	859.7		82.8
Cardiovascular	2010	9 924	32.8	257.7	181.2	79.2	12 035	37.2	302.9	115.9	86.0
diseases	2011	9 470	31.5	242.8	170.4	79.4	11 494	35.9	286.5	110.4	86.1
	2012	9 745	31.7	247.0	170.5	79.6	11 929	35.6	294.4	111.8	86.2
	2013	9 719	31.1	243.3	164.3	80.0	11 793	35.0	288.1	108.7	86.2
	2014	9 483	30.6	234.3	156.1	79.8	11 489	34.8	277.5	103.0	86.5
	2015	9 715	29.8	237.1	154.5		11 878	34.0	283.8	103.7	86.7
	2015	9 357	29.9	225.6	144.3	80.4	11 355	33.7	268.7	98.1	86.6
	2010	9 589	29.6	228.9	144.3	80.5	11 453	33.1	268.7	96.0	86.8
	2017	9 389 9 418	······	223.1	145.4	80.5	• • • • • • • • • • • • • • • • • • • •	••••••	260.4	90.0	
	2018	•••••••••••••••••••••••••••••••••••••••	29.1 27.8		• • • • • • • • • • • • • • • • • • • •	80.8	11 178 10 787	32.2			86.9 87.0
		9 114	······	214.3	128.1			30.8	249.6		
	2020	9 568	25.4	223.3	131.0	80.9	10 943	28.4	251.4	87.3	87.1
	2021	9 114	26.0	211.0	122.6	80.8	10 531	29.2	240.2	83.3	87.1
-	2022	9 512	26.1	218.2	123.2	81.4	10 951	28.8	247.9	84.1	87.4
Cancer	2010	9 054	29.9	235.1	176.3	72.7	7 223	22.3	181.8	110.8	72.9
	2011	9 202	30.6	236.0	176.3	72.8	7 258	22.7	180.9	109.3	73.2
	2012	9 024	29.4	228.7	168.3	73.0	7 466	22.3	184.3	109.8	73.5
	2013	9 200	29.4	230.3	166.8	73.1	7 475	22.2	182.6	107.1	73.8
	2014	9 297	30.0	229.7	163.8	73.2	7 468	22.6	180.4	105.3	73.8
	2015	9 571	29.3	233.6	163.7	73.5	7 690	22.0	183.8	106.4	73.9
	2016	9 371	30.0	225.9	155.6		7 830	23.2	185.3	105.8	74.0
	2017	9 523	29.4	227.3	154.2	74.0	7 772	22.5	182.4	101.9	74.5
	2018	9 545	29.5	226.1	150.8	74.0	7 815	22.5	182.1	101.8	74.3
	2019	9 322	28.5	219.2	142.8	74.5	7 870	22.5	182.1	99.5	74.8
	2020	9 224	24.5	215.2	138.1	74.6	7 706	20.0	177.1	96.2	74.8
	2021	9 265	26.4	214.4	136.3	74.5	7 615	21.1	173.7	92.9	75.0
	2022	9 310	25.5	213.6	133.2	74.7	7 910	20.8	179,0	94.8	75,0
Respiratory	2010	2 007	6.6	52.1	36.0	80.2	1 719	5.3	43.3	18.6	83.4
diseases	2011	1 969	6.5	50.5	34.8	80.0	1 764	5.5	44.0	18.9	83.4
	2012	2 057	6.7	52.1	35.4	80.6	1 849	5.5	45.6	19.5	83.4
	2013	2 167	6.9	54.2	36.4	79.9	1 949	5.8	47.6	20.4	83.3
	2014	1 965	6.3	48.5	32.2	80.0	1 869	5.7	45.1	19.1	83.4
	2015	2 315	7.1	56.5	36.7	80.4	2 299	6.6	54.9	22.6	84.0
	2016	2 183	7.0	52.6	33.4		1 925	5.7	45.6	18.9	83.6
	2017	2 328	7.2	55.6	34.5	80.7	2 321	6.7	54.5	22.3	83.8
	2018	2 395	7.4	56.7	34.3	80.8	2 228	6.4	51.9	21.3	83.3
	2010	2 366	7.1	55.6	33.0	80.5	2 195	6.3	50.8	20.8	83.2
	2019	1 983	5.3	46.3	27.2	80.2	1 774	4.6	40.8	16.5	83.2
	2020	1 937	5.5	44.8	25.8	80.5	1 675	4.6	38.2	15.9	82.4

<sup>1</sup> Proportional mortality

Source: FSO - Cause of Death Statistics (CoD)

Τ1

Т1

### Indicators for the main causes of death, 2010–2022 (continued / end)

		Men					Women				
Cause of death	Year	Number	PM (%) <sup>1</sup>	Crude rate	Standardised rate	Average age at death (years)	Number	PM (%) <sup>1</sup>	Crude rate	Standardised rate	Avera age dea (yea
Dementia	2010	1 610	5.3	41.8	27.6	85.4	3 602	11.1	90.6	31.7	87
	2011	1 620	5.4	41.5	27.4	85.6	3 588	11.2	89.4	31.3	88
	2012	1 762	5.7	44.7	29.0	85.4	4 009	12.0	99.0	34.1	8
	2013	1 819	5.8	45.5	28.8	85.5	4 130	12.3	100.9	34.7	8
	2014	1 897	6.1	46.9	29.2	85.7	3 908	11.8	94.4	32.1	8
	2015	1 990	6.1	48.6	29.5	85.6	4 421	12.6	105.6	35.5	8
	2016	1 832	5.9	44.2	26.2	85.9	4 020	11.9	95.1	31.9	8
	2017	2 079	6.4	49.6	28.9	85.7	4 509	13.0	105.8	34.8	8
	2018	2 004	6.2	47.5	26.8	85.8	4 450	12.8	103.7	33.8	8
	2019	2 079	6.3	48.9	26.6	86.0	4 524	12.9	104.7	33.8	٤
	2020	2 135	5.7	49.8	26.6	86.1	4 389	11.4	100.8	32.3	٤
	2021	1 842	5.2	42.6	22.6	85.6	3 953	11.0	90.2	28.7	٤
	2022	2 047	5.6	47.0	24.3	85.6	4 499	11.8	101.8	32.2	٤
External causes	2010	2 112	7.0	54.8	45.6	60.4	1 454	4.5	36.6	20.4	7
	2011	2 141	7.1	54.9	45.3	. 61.3	1 499	4.7	37.4	20.6	7
	2012	2 151	7.0	54.5	44.7	61.6	1 499	4.5	37.0	20.4	7
	2013	2 177	7.0	54.5	. 44.0	62.4	1 642	4.9	40.1	21.0	7
	2014	2 122	6.9	52.4	41.3	63.7	1 574	4.8	38.0	20.1	7
	2015	2 299	7.0	56.1	44.3	63.2	1 528	4.4	36.5	19.1	7
	2016	2 173	6.9	52.4	40.6	64.3	1 542	4.6	36.5	18.6	7
	2017	2 189	6.8	52.2	40.6	63.5	1 545	4.5	36.3	18.7	7
	2018	2 233	6.9	52.9	40.3	64.5	1 687	4.9	39.3	20.5	7
	2019	2 158	6.6	50.7	38.3	64.9	1 619	4.6	37.5	18.3	7
	2020	2 178	5.8	50.8	38.1	64.6	1 647	4.3	37.8	18.9	7
	2021	2 277	6.5	52.7	39.3	64.6	1 644	4.6	37.5	18.6	7
	2022	2 320	6.4	53.2	38.3	66.8	1 812	4.8	41.0	20.0	7
COVID-19	2020	4 902	13.0	114.4	64.8	82.2	4 392	11.4	100.9	35.5	ξ
	2021	3 156	9.0	73.0	42.5	80.0	2 801	7.8	63.9	24.1	8
	2022	2 207	6.1	50.6	28.0	82.1	1 907	5.0	43.2	16.0	8

Source: FSO - Cause of Death Statistics (CoD)

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In 2022, COVID-19 was the fifth most common cause of death for both men (6.1%) and women (5.0%). In contrast, respiratory diseases came in third and fourth place in 2022, with a share of 6.5% for men and 5.7% for women (T2).

2020 Cause of death (%)	2021 Cause of death (%)	2022 Cause of death (%)		
Total				
CVD (26.9%)	CVD (27.6%)	CVD (27.5%)		
Cancer (22.2%)	Cancer (23.7%)	Cancer (23.1%)		
COVID-19 (12.2%)	COVID-19 (8.4%)	Dementia (8.8%)		
Dementia (8.6%)	Dementia (8.1%)	Resp. dis. (6.1%)		
External causes (5.0%)	External causes (5.5%)	COVID-19 (5.5%)		
Resp. dis. (4.9%)	Resp. dis. (5.1%)	External causes (5.6%)		
Men				
CVD (25.4%)	Cancer (26.4%)	CVD (26.1%)		
Cancer (24.5%)	CVD (26.0%)	Cancer (25.5%)		
COVID-19 (13.0%)	COVID-19 (9.0%)	Resp. dis. (6.5%)		
External causes (5.8%)	External causes (6.5%)	External causes (6.4%)		
Dementia (5.7%)	Resp. dis. (5.5%)	COVID-19 (6.1%)		
Resp. dis. (5.3%)	Dementia (5.2%)	Dementia (5.6%)		
Women				
CVD (28.4%)	CVD (29.2%)	CVD (28.8%)		
Cancer (20.0%)	Cancer (21.1%)	Cancer (20.8%)		
COVID-19 (11.4%)	Dementia (11.0%)	Dementia (11.8%)		
Dementia (11.4%)	COVID-19 (7.8%)	Resp. dis. (5.7%)		
Resp. dis. (4.6%)	Resp. dis. (4.6%)	COVID-19 (5.0%)		
External causes (4.3%)	External causes (4.6%)	External causes (4.8%)		

Source: FSO – Cause of Death Statistics (CoD)

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### Age-related mortality due to COVID-19

Excess mortality during the pandemic was observed almost exclusively in the 65 and older age group. The largest proportion of COVID-19 deaths is also found in this age group. While the age-specific annual mortality rate for COVID-19 was still at around 5 men and women per 100 000 in the 0–64 age group, it rose steeply in the age groups above and was most pronounced in the over-85 age group with around 3000 men and 2000 women per 100 000 in 2020 (G 2).

In 2020, the average age at death from COVID-19 was 82.2 years for men and 86.2 years for women. In the following two years, the age at death among men with COVID-19 as the main cause of death initially decreased slightly (2021: 80.0), to then rise again (2022: 82.1).



Rate pro 100 000 Einwohnerinnen und Einwohner

85+ Jahre 3 000 2 0 0 0 1 000 1 000 2 000 3 000 0 2022 2021 2020 80-84 Jahre 383.0 2022 196.8 2021 356.1 2020 75-79 Jahre 2022 201,3 103,1 2021 294.6 128.7 2020 480.1 231.9 70-74 Jahre 2022 91.2 48.5 2021 172,6 66,3 2020 101.4 2379 65-69 Jahre 51,8 23,3 2022 101,4 44,5 2021 2020 116.7 36.2 0-64 Jahre 2022 4,1 2,7 8,5 2021 4,4 6,3 2,5 2020 Männer Frauen

Quelle: BFS - Todesursachenstatistik (CoD)

© BFS 2023

G2

Among women with COVID-19 as the main cause of death, the age at death due to COVID-19 decreased somewhat in 2021 and 2022, and was around 85 years (2021: 84.7; 2022: 85.2) (T1).

Like the age-specific mortality rate, the percentage distribution of causes of death (proportional mortality) is also strongly linked to age. While cancer dominates overall in the 0-64 age group for both men and women, cardiovascular disease gains increasingly in importance, reaching first place in the over-80 age group. When COVID-19 first appeared in 2020, slight changes in the different age groups could be seen in the percentage proportions for specific causes of death.

For both sexes, in 2020, compared with the causes of death in previous years, there was a decline in the share of cancers among 65-79 year-olds (G4) and in the share of cardiovascular disease and dementia among the over 80 year-olds (G5). Among men and women aged 0–64, there was also a decline in the share of cancers in total mortality during the pandemic (G3).

### Concomitant diseases of COVID-19 deaths

In addition to the increase in COVID-19 deaths with age, in particular men and women with concomitant diseases died. With concomitant diseases, it is often not clear whether it is a pre-existing disease (such as dementia) or a secondary disease (such as pneumonia). For more than 95% of men and women who died from COVID-19. at least one concomitant disease was recorded on the cause of death certificate. In these cases, the most common concomitant diseases were cardiovascular disease (2020: 69.0%, 2021: 67.5%, 2022: 69.9%) and respiratory diseases (2020: 68.8%, 2021: 76.0%, 2022: 69.6%) (T3). The share of concomitant cardiovascular disease was similar among men and women during the pandemic while the share of concomitant respiratoriy diseases was slightly higher among men than women. The share of respiratory diseases as a concomitant disease was highest in 2021 at 83.0% among men and 68.1% among women compared with 2020 (men: 75.9%, women: 60.8% women and 2022 men 75.5%, women: 62.7%).

Other common comorbidities in COVID-19 deaths were dementia (2020: 22.5%, 2021: 15.9%, 2022: 17.5%), diabetes mellitus (2020: 13,5%, 2021: 13,3%, 2022: 10.5%) and cancers (2020:9.8%, 2021: 11.6%, 2022: 14.4%). The role of dementia as a concomitant disease in COVID-19 deaths showed a tendency to decline over the course of the pandemic, whereas it was only in 2022 that diabetes mellitus as a concomitant disease decreased by almost a third compared with 2020. In contrast, the share of cancer as a concomitant disease in COVID-19 deaths increased over the course of the pandemic for both sexes (T3).

There are a number of explanations for the changing proportions of concomitant diseases over the course of the pandemic. For instance, it cannot be ruled out that the reason for the higher percentage of respiratory diseases as a concomitant disease in COVID-19 deaths in 2021 compared with 2020 and 2022 is because in 2021 more COVID-19 tests were carried out, thus increasing the likelihood of COVID-19 being identified as the main cause of death. Furthermore, this change in testing behaviour could also explain the decline in the share of respiratory diseases as main cause of death in 2021.

The decrease in dementia as a concomitant disease in COVID-19 deaths may be linked to the fact that the risk of dying from COVID-19 was particularly high for dementia patients at the start of the pandemic due to their predominantly advanced age. Similarly, it may be that diabetes patients were proportionally less likely to die from diabetes because many of these patients had already died in the previous two years due to their increased risk of severe disease progression of COVID-19. For both dementia and diabetes, the fact that fewer COVID-19 tests were conducted overall in 2022 than in the previous year may also have played a role. However, it is possible that for certain groups of diagnoses, many COVID-19 tests continued to be carried out in 2022 for medical reasons. This could explain why the share of cancer observed as a concomitant disease of COVID-19 was higher in 2021 and 2022 than in 2020.

## Concomitant diseases of deaths with COVID-19 as the main cause of death

Т3

	2020		2021		2022	
	Number	%	Number	%	Number	%
Total						
Deaths with COVID-19 as the main cause of death	9 294	100.0	5 957	100.0	4 114	100.0
which had at least one concomitant disease	8 948	96.3	5 724	96.1	4 0 4 3	98.3
Concomitant diseases	1) 2)					
CVD	6 412	69.0	4 018	67.5	2 876	69.9
Respiratory diseases	6 393	68.8	4 526	76.0	2 863	69.6
Dementia	2 095	22.5	946	15.9	722	17.5
Diabetes mellitus	1 256	13.5	792	13.3	432	10.5
Malignant tumours	913	9.8	693	11.6	592	14.4
Men		-	-		•	
Deaths with COVID-19 as the main cause of death	4 902	100.0	3 156	100.0	2 207	100.0
which had at least one concomitant disease	4 721	96.3	3 042	96.4	2 167	98.2
Concomitant diseases	1) 2)					
CVD	3 433	70.0	2 092	66.3	1 497	67.8
Respiratory diseases	3 722	75.9	2 620	83.0	1 667	75.5
Dementia	851	17.4	391	12.4	327	14.8
Diabetes mellitus	738	15.1	465	14.7	245	11.1
Malignant tumours	601	12.3	456	14.4	367	16.6
Women			-		-	
Deaths with COVID-19 as the main cause of death	4 392	100.0	2 801	100.0	1 907	100.0
which had at least one concomitant disease	4 227	96.2	2 682	95.8	1 876	98.4
Concomitant diseases			-		-	
CVD	2 979	67.8	1 926	68.8	1 379	72.3
Respiratory diseases	2 671	60.8	1 906	68.1	1 196	62.7
Dementia	1 244	28.3	555	19.8	395	20.7
Diabetes mellitus	518	11.8	327	11.7	187	9.8
Malignant tumours	312	7.1	237	8.5	225	11.8
CVD = Cardiovascular diseas	e					

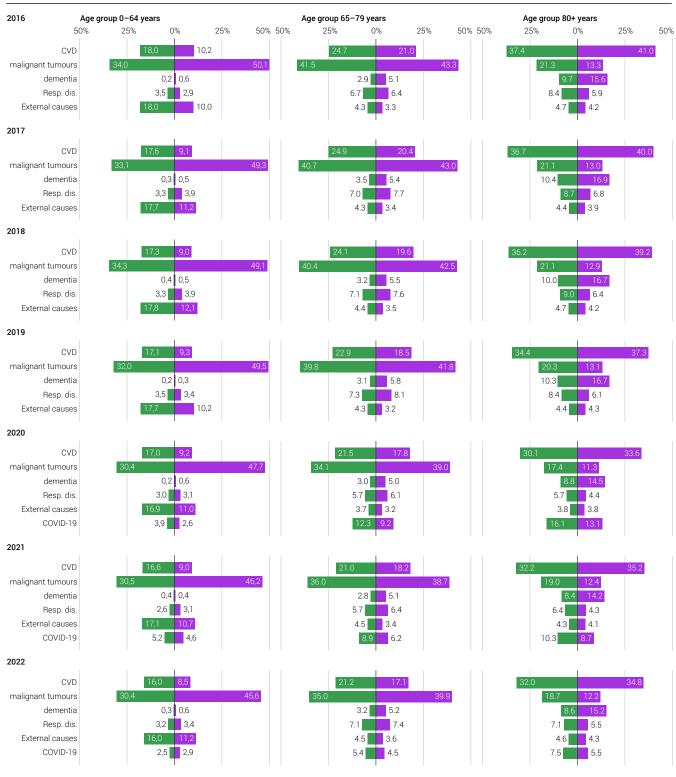
as the main cause of death

A COVID-19 case may have one or more concomitant diseases. Concomitant diseases can be both pre-existing diseases and secondary diseases. Percentage share of concomitant diseases is calculated based on all deaths with COVID-19

Source: ESO - Cause of Death Statistics (CoD)

#### Distribution of the most frequent causes of death 2016–2022

Proportionate mortality (PM)



PM (men) PM (women)

CVD: Cardiovascular diseases; Resp. dis.: Respiratory diseases

Source: FSO - Cause of Death Statistics (CoD)

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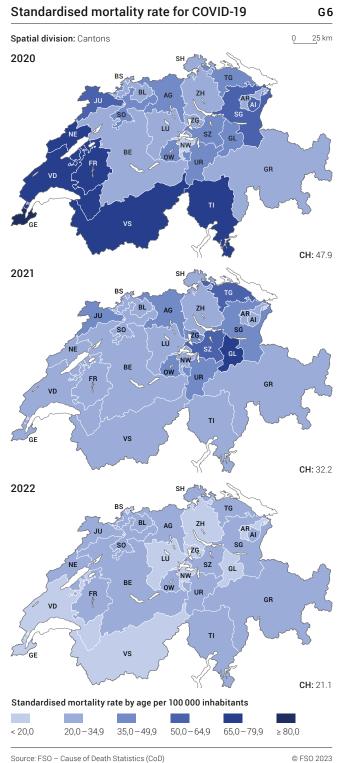
#### COVID-19 deaths in the cantons

The course of the COVID-19 pandemic was not the same in all cantons. At the very beginning of the pandemic in 2020, the cantons of Geneva, Vaud, Neuchâtel, Fribourg and Valais, as well as Ticino, experienced the highest number of COVID-19 deaths, with a standardised mortality rate of 65 or more cases per 100 000 inhabitants. In the second year of the pandemic, the standardised mortality rate had already fallen to below 50 cases per 100 000 inhabitants in most cantons. In the cantons of Glarus (73.1), Schwyz (53.1) and Thurgaus (52.1), however, higher rates were observed. In 2022, the standardised mortality rate in all cantons was below 35 cases per 100 000 inhabitants.

#### **Summary**

The course of the COVID-19 pandemic differed from region to region over the 2020-2022 period. Particularly in 2020 and 2021, there were periods of marked excess mortality due to COVID-19. On the basis of the data available, it is not possible to assess the extent to which the protective measures and the vaccination campaigns implemented during this period influenced the course of the pandemic in Switzerland.

Due to the varying availability and use of COVID-19 tests over time, there is likely to have been under-reporting of COVID-19 as a cause of death, particularly at the beginning and end of the 2020 to 2022 reporting period. Deaths were more frequent among older persons, in men and in persons with concomitant diseases such as cardiovascular disease, respiratory diseases, dementia, diabetes and cancer.





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