



Executive Summary

# COVID-19 and Obesity: The 2021 Atlas

The cost of not addressing  
the global obesity crisis

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[www.worldobesity.org](http://www.worldobesity.org)



# Executive summary

Obesity is recognised as both a disease in its own right and a condition that increases the likelihood of developing a wide range of non-communicable diseases. Less well-known is the fact that obesity also increases the likelihood that infectious diseases will lead to serious consequences. This is most clearly apparent in the global spread of the SARS-CoV-2 virus and the resulting pandemic of COVID-19.

Through detailed analyses of the latest peer-reviewed data, we demonstrate how overweight is a highly significant predictor of developing complications from COVID-19, including the need for hospitalisation, for intensive care and for mechanical ventilation. Overweight is also a predictor of death from COVID-19.

This report shows that in countries where less than half the adult population is classified as overweight\*, the likelihood of death from COVID-19 is a small fraction – around one tenth – of the level seen in countries where more than half the population is classified as overweight. Of the 2.5 million COVID-19 deaths reported by the end of February 2021, 2.2 million were in countries where more than half the population is classified as overweight.

We recognise that these figures are by necessity incomplete, and that a clearer picture may emerge as the pandemic develops further. The figures are affected by the ability of a country to control its borders and by the speed with which the virus and its variants spread through populations and into more remote areas. Patterns of the disease will change as some countries vaccinate their populations more rapidly than others. Nonetheless, our findings have serious public health implications.

The figures are affected by the age structure of national populations and a country's relative wealth and reporting capacity, but our findings appear to be independent of these contributory

factors. Furthermore, other studies have found that overweight remains a highly significant predictor of the need for COVID-19 health care after accounting for these other influences.

The International Monetary Fund has calculated that COVID-19 will cause a total of at least \$10 trillion losses in global output over the period 2020-2021, and accumulating to \$22 trillion over the period 2020-2025. Based on the UK experience, where an estimated 36% of COVID-19 hospitalisations have been attributed to lack of physical activity and excess body weight (Hamer, Kivimati et al 2020), it can be suggested that up to a third of the costs – between \$6 trillion and \$7 trillion over the longer period – might be attributable to these predisposing risks.

COVID-19 is not the first respiratory viral infection exacerbated by overweight. Data from the last two decades on the impact of MERS, H1N1 influenza and other influenza-related infections show worse outcomes linked to excess bodyweight. An overweight population is an unhealthy population, and a pandemic waiting to happen.

In anticipation of the next novel infectious disease, we urge governments and health service providers to adopt the policies outlined in our ROOTS Call for Action described on page 7.

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\* The term 'overweight' is used here to mean adults with a body mass index (BMI) above 25 kg/m<sup>2</sup>, a widely recognised threshold indicating an increased risk of developing weight-related chronic diseases. 'Obesity' is classified as a BMI above 30 kg/m<sup>2</sup>. In some texts the term 'overweight' is used to mean a BMI between 25 and 30 kg/m<sup>2</sup> (i.e. 'overweight non-obese').

# Countries with lowest and highest rates of death from COVID-19 compared for their adult overweight prevalence.

Sources: COVID-19 reported deaths, Johns Hopkins Coronavirus Resource Center, (downloaded Feb 23 2021), and WHO Global Health Observatory adult overweight estimates.

## Low COVID death rates

All countries reporting **fewer than 10 deaths due to COVID-19 per 100,000 population**

For the large majority, under half of adults are living with excess weight.

Country	COVID-19 confirmed cases	COVID-19 deaths	COVID-19 deaths/100K pop	% adult population overweight
Burundi	2,031	3	0.03	22.20
Vietnam	2,383	35	0.04	18.30
Tanzania	509	21	0.04	27.70
Thailand	25,504	83	0.12	32.60
Papua New Guinea	970	10	0.12	52.90
Democratic Republic of the Congo	8,625	127	0.15	25.30
China	100,758	4,833	0.35	32.30
Singapore	59,869	29	0.51	31.80
New Zealand	2,357	26	0.53	65.60
Benin	5,434	70	0.61	29.50
Guinea	15,395	86	0.69	26.60
Burkina Faso	11,797	139	0.7	23.20
Brunei	185	3	0.7	41.20
Côte d'Ivoire	32,026	186	0.74	31.60
Niger	4,733	170	0.76	22.00
Uganda	40,213	333	0.78	22.40
Mauritius	603	10	0.79	32.30
Chad	3,849	134	0.87	23.10
Nigeria	152,074	1,839	0.94	28.90
Tajikistan	13,308	90	0.99	45.30
Sierra Leone	3,855	79	1.03	27.70

Country	COVID-19 confirmed cases	COVID-19 deaths	COVID-19 deaths/100K pop	% adult population overweight
Togo	6,319	81	1.03	28.10
Madagascar	19,831	297	1.13	23.90
Central African Republic	5,001	63	1.35	26.20
Somalia	6,017	202	1.35	28.40
Angola	20,519	499	1.62	27.50
Liberia	1,988	85	1.76	30.90
Mali	8,299	348	1.82	28.10
Uzbekistan	79,654	622	1.89	48.20
Ghana	80,253	577	1.94	32.00
Rwanda	18,053	249	2.02	25.10
Mozambique	55,643	595	2.02	26.40
Sri Lanka	79,999	445	2.05	23.30
Cameroon	33,749	523	2.07	33.60
Ethiopia	152,806	2,279	2.09	20.90
Yemen	2,165	619	2.17	48.80
Haiti	12,274	247	2.22	54.90
Guinea-Bissau	3,115	47	2.51	29.90
Cuba	44,523	296	2.61	58.50
Nicaragua	6,398	172	2.66	58.20
South Korea	87,324	1,562	3.03	30.30
Malaysia	283,569	1,056	3.35	42.50
Gabon	13,553	75	3.54	40.20
Kenya	104,201	1,823	3.55	25.50
Australia	28,930	909	3.64	64.50
Sudan	30,128	1,864	4.46	28.90
Venezuela	136,068	1,316	4.56	63.40
Senegal	32,927	808	5.1	28.40
Bangladesh	543,351	8,349	5.17	20.00
Saint Vincent and the Grenadines	1,503	6	5.44	55.00
Malawi	30,742	1,013	5.58	23.40
Zambia	74,503	1,020	5.88	27.80
Syria	15,179	998	5.9	61.40
Japan	424,988	7,485	5.92	27.20
Myanmar	141,750	3,196	5.95	24.80
Pakistan	572,334	12,617	5.95	28.40
Gambia	4,554	144	6.32	31.90

Country	COVID-19 confirmed cases	COVID-19 deaths	COVID-19 deaths/100K pop	% adult population overweight
Afghanistan	55,604	2,432	6.54	23.00
Djibouti	6,024	63	6.57	38.60
Equatorial Guinea	5,798	89	6.8	26.70
Algeria	111,917	2,961	7.01	62.00
Nepal	273,431	2,061	7.34	21.00
Iceland	6,045	29	8.2	59.10
Qatar	160,426	256	9.2	71.70
Mauritania	17,095	434	9.86	34.40

## High COVID death rates

All countries reporting more than **100 deaths due COVID-19 per 100,000 population** (i.e. more than one death per thousand population)

For every country, more than half of adults are living with excess weight.

Country	COVID-19 confirmed cases	COVID-19 deaths	COVID-19 deaths/100K pop	% adult population overweight
Bolivia	242,292	11,441	100.77	56.10
Romania	779,695	19,847	101.92	57.70
Luxembourg	53,782	622	102.35	58.70
Moldova	176,752	3,780	106.6	51.80
Chile	799,460	20,042	107.01	63.10
Armenia	170,402	3,164	107.19	54.40
Poland	1,638,767	42,171	111.04	58.30
Lithuania	194,051	3,171	113.67	59.60
Argentina	2,064,334	51,198	115.07	62.70
Switzerland	547,775	9,887	116.09	54.30
Brazil	10,168,174	246,504	117.68	56.50
Colombia	2,226,262	58,834	118.5	59.00
Slovakia	292,143	6,505	119.42	56.20
Sweden	631,166	12,649	124.21	56.40
France	3,597,540	83,546	124.72	59.50
Croatia	239,945	5,429	132.76	59.60
Panama	336,521	5,742	137.47	58.80
Andorra	10,699	107	138.95	63.70
Bulgaria	236,666	9,854	140.29	61.70
Peru	1,283,309	45,097	140.98	57.50
Mexico	2,041,380	180,107	142.73	64.90

Spain	3,133,122	67,101	143.61	61.60
Hungary	403,023	14,299	146.37	61.60
North Macedonia	99,285	3,063	147.05	58.10
Bosnia and Herzegovina	127,537	4,979	149.79	53.30
United States of America	28,133,699	498,883	152.49	67.90
Montenegro	71,995	950	152.65	59.40
Portugal	797,525	15,962	155.25	57.50
Italy	2,809,246	95,718	158.39	58.50
Czechia	1,153,159	19,214	180.83	62.30
United Kingdom	4,127,574	120,810	181.7	63.70
Slovenia	184,767	3,776	182.65	56.10
Belgium	754,473	21,903	191.76	59.50



# World Obesity Federation's ROOTS: A Call for Action

## Obesity and the response to COVID-19

### Building stronger economies by investing in health

The COVID-19 pandemic has shown that a societal, worldwide response to a disease is possible. COVID-19 has also exposed the imperative to address other global health challenges such as obesity. Evolving evidence on the close association between COVID-19 and underlying obesity provides a new urgency - and inspiration - for political and collective action.

Obesity is a disease that does not receive prioritisation commensurate with its prevalence and impact, which is rising fastest in emerging economies. It is a gateway to many other non-communicable diseases and mental-health illness

and is now a major factor in COVID-19 complications and mortality. There is a window of opportunity to advocate for, fund and implement these actions in all countries to ensure better, more resilient and sustainable health for all, now and in our post-COVID-19 future.

This Declaration is inspired by calls from the World Health Organization, the United Nations and the OECD to 'build back better' from COVID-19, to improve the health of people and the planet. It reflects a consensus reached at the 2020 Global Obesity Forum.





## A ROOTS approach

On World Obesity Day 2020, the global obesity community came together to acknowledge the complexity of obesity and to develop the ROOTS framework, which sets out an integrated, equitable, comprehensive and person-centred approach to addressing obesity. Building on the ROOTS framework, this Declaration sets out recommendations for immediate action across the obesity spectrum from prevention to treatment, within the context of COVID-19:

### R

**Recognise that obesity is a disease in its own right** as well as a risk factor for other conditions, including significantly worsening the outcomes of COVID-19 infection. We call for:

- people living with obesity to be included among the groups prioritised for testing and vaccination;
- spaces in which people living with obesity receive COVID-19 care to be appropriately equipped, with trained health workers free from weight bias, who have knowledge on the complexity of obesity and obesity care needs;
- the recognition that, in many contexts, COVID-19 and obesity are linked through inequity/health disparities, and strategies to address both diseases should adopt a social determinants of health approach.

### O

**Obesity monitoring and surveillance** must be enhanced to strengthen effective strategies for preventing and treating obesity. We call for:

- population-wide monitoring to assess how COVID-19 has affected the risk factors for and prevalence of obesity;
- monitoring of availability and accessibility to nutritionally adequate food supplies, especially among populations vulnerable to COVID-19 including those with obesity;
- monitoring the impact of policies and restrictions to limit the spread of COVID-19 for their impact on people with obesity;
- monitoring of compliance with the international code and resolutions on marketing of breastmilk substitutes, as there is evidence of violations occurring.



## O

**Obesity prevention strategies** must be developed, tested and implemented across the life course, from pre-conception, through childhood, and into older age. We call for:

- primary and secondary obesity prevention efforts to be continued and enhanced for all without discrimination, as a critical means to increase population resilience to pandemics;
- co-creation and implementation of policies to reduce childhood obesity, working with young people and acknowledging that, for many children, COVID-19 control measures have increased risk;
- equity-based obesity prevention strategies focusing on populations most affected by the syndemic interactions between COVID-19, poverty and race.

## T

**Treatment of obesity** – including behavioural, pharmacological, digital, nutritional, physical-activity based and surgical interventions – should be accessible to all people with obesity. We call for:

- routine obesity treatment and management services not to be restricted during COVID-19, but instead invested in and prioritised to enhance equitable access;
- development of novel treatment strategies (for example, tele-medicine) to include solutions co-created with the participation of people living with obesity, including those with 'long' COVID.

## S

**Systems-based approaches** should be applied to the treatment and prevention of obesity. In the recovery from COVID-19 we call for action across the following systems:

- **Health:** Cost-effective community-based prevention, including monitoring and screening should be integrated with clinical pathways for secondary prevention, obesity management and treatment.
- **Food:** National and local government-led action and incentives to pivot food systems towards sustainable growth models, focusing on 'triple win' policy solutions to address the Global Syndemic of over- and undernutrition and climate change.
- **Transport:** Investment in active transport systems to promote physical and mental health, while reducing COVID-19 transmission risk and mitigating climate change.
- **Water and sanitation:** Universal access to clean water, especially in countries where sugar-sweetened beverages may be more widely available than safe drinking water.
- **Education:** Provision of nutritious school meals, particularly for socioeconomically disadvantaged children, and the replacement of such meals when schools are closed; increased physical education.
- **Economic:** Novel investment from global health donors and multilateral institutions to address the rising cost of obesity in lower income countries.



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