



Nordic Council
of Ministers

The Covid-19 Pandemic and Food Consumption Patterns



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This publication is also available online in a web-accessible version at <https://pub.norden.org/temanord2021-540>.

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The Covid-19 pandemic and food consumption patterns

Due to the Covid-19 pandemic, consumer eating patterns and habits have changed. This is evident not only in supermarkets, where demand for certain products will suddenly rise, but also in global food supply chains.

Before the pandemic, most countries in the Nordic-Baltic region had been collecting food consumption data to monitor the region's health and food safety situation, but during these unusual times, no data on consumer behaviour exists and therefore there are fewer ways to predict possible risks regarding food safety, health, and global trends.

In some countries, consumers are encouraged to choose local foods in order to support local businesses, but this may be difficult for some population groups, for instance, those whose work involves cultural events and similar activities, whose financial situation might be affected by a sudden loss or lack of employment. As good nutrition is known to be an important factor in staying healthy, many countries have focused on school meals and supporting families in need, though to widely varying degrees. Families have been cooking more regularly at home, which can affect food waste, food safety, eating habits, and many other factors. The results of Latvia's School Fruit and Vegetable Scheme evaluation survey revealed a positive trend — families are eating regular meals together and this is having a positive effect on children's subsequent food choices. It's possible that changes like these will have a broader impact on overall food consumption patterns.

Each country or region has taken a different approach to the current situation — some focusing more on food safety issues, others on food availability. For example, the Danish Food Institute developed a questionnaire on how Covid-19 has changed the way Danes eat, emphasising food safety issues related to more food being cooked at home¹.

The International Food Information Council has looked at consumers' perception of food safety during the pandemic, including their worries about food being a possible vector of infection for Covid-19², and how this has affected consumers' behaviour.

In Asia, researchers have taken a deeper look not only at what changed during the pandemic, but also at changes in behaviour following the pandemic, such as online shopping and food delivery replacing the usual behaviour of eating out and shopping in supermarkets³.

It's important to examine changes in food consumption in the Nordic-Baltic region during the pandemic not only to understand the local situation and trends but also global trends and their effect on food supply chains, regional food availability, and food waste. Comparing regional data with those in Asia, the USA, and elsewhere offers the opportunity to see which practices are effective in each region and

1. <https://www.food.dtu.dk/english/news/nyhed?id=134e777a-853d-496c-80ad-520cd6ed4546>

2. <https://foodinsight.org/consumer-survey-covid-19s-impact-on-food-purchasing/>

3. <https://www.theasianbanker.com/news-on-covid19/nielsen:-eating-at-home-will-remain-the-new-reality-for-asian-consumers-post-covid-19>

provides more information to help predict trends in consumer behaviour during the post-pandemic recovery period.

The need for data

In 2020, a working group of experts and researchers from Latvia, Estonia, Lithuania, and Iceland analysed changes in food consumption and related issues in their countries. The situation created by the pandemic was unusual for everybody, and the need for data was clear, but options were limited both technically and in terms of time, as much research work had been put on hold. The working group decided to conduct a public survey to collect data on the current situation, which could be compared to previous data from national food consumption surveys. The questionnaire was originally developed in Latvia by BIOR, the Institute of Food Safety, Animal Health and Environment, but later translated and adapted in Estonia, Lithuania, and Iceland. There were many limitations at that point, as the situation in each country was different and changing quite quickly, so each country started the survey at a slightly different point in time and certain questions were omitted in some countries.

Country	Started	Finished
Latvia	04.05.2020.	26.06.2020
Estonia	05.06.2020.	19.07.2020.
Lithuania	22.06.2020.	07.07.2020.
Iceland	06.07.2020.	26.08.2020.

More detailed information on the survey process in each country is described in later sections.

Latvia

Eating patterns in Latvia

Food and eating patterns have always been topics of interest in Latvia. In the last few years, new concept restaurants, new cooking shows, and new foods have become a part of daily life. More recent food consumption data were obtained from 2018 to 2020 from a survey on "salt and iodine consumption in the Latvian population"⁴. It showed that half of those surveyed eat out at least once a week and 56% cook at home every day. More women than men said that cooking at home is primarily their responsibility, but in many families, partners share the job equally. Interestingly, when asked about food-associated risks, what people were most worried about was chemical contamination, followed by GMOs, and then potential food poisoning.

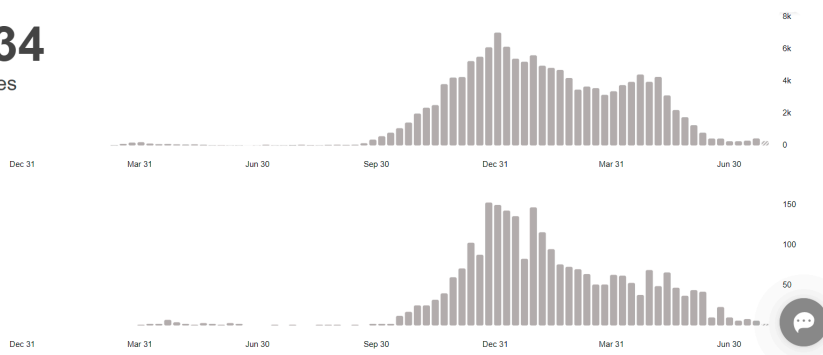
Food consumption patterns indicate that, according to national guidelines, Latvians do not eat enough vegetables or dairy products, while they consume quite a lot of meat. Food supplements are taken daily by 38% of women and 24% of men, and sweets and sugar as well as chocolate are eaten daily.

Information on people's shopping habits is usually analysed by retail companies at a more local and not national level⁵. Latvians have started making more online purchases⁶, but just 1% bought food online in 2019⁷.

139,134
confirmed cases

2,558
deaths

Source: World Health Organization
Data may be incomplete for the current day or week.



The Covid pandemic in Latvia

*World Health Organization, <https://covid19.who.int/region/euro/country/lv>

4. "Pētījums par sāls un joda patēriņu Latvijas pieaugušo iedzīvotāju populācijā" īstenots ESF projekta „Kompleksi veselības veicināšanas un slimību profilakses pasākumi” (Identifikācijas Nr.9.2.4.1/16/I/001) ietvaros. Sikсна I., Lazda I., Goldmanis M. Veselības ministrija. ISBN 978-9934-8962-1-7 (PDF)
5. <http://www.horeca.lv/zinas/petijums-11-iedzivotaji-sakusi-iepirkties-veikalos-ar-zemakam-cenam>
6. <https://www.tvnet.lv/6505831/petijuma-noskaidrota-latvijas-iedzivotaju-galvena-motivacija-iepirkties-interneta>
7. <https://www.tvnet.lv/6798405/petijums-latvija-83-iedzivotaju-partikas-iegadei-sakusi-teret-vairak-neka-pern>

A state of emergency was announced in Latvia on the 12th of March 2020 that lasted until the 9th of June 2020. Most of the changes introduced related to minimising risks — people were encouraged to work remotely, and schools closed, continuing their work remotely as well. Shopping malls were temporarily closed on weekends, although no restrictions, aside from distancing, were placed on retail food stores. Inside these stores, selling unpackaged ready-to-eat foods, for example, bakery products — pastries, bread, etc. — wasn't and still isn't allowed; these continue to be packaged separately. Restaurants and cafés needed to ensure that no more than two people from one household were seated at each table and that a certain distance between tables was maintained. Some restaurants started to offer takeaway and delivery if they were unable to comply with the distancing rules.

When the state of emergency began, there were few options for buying food online — retail stores were unprepared to meet the rapid increase in demand for delivery. Volunteers and organisations, worried about vulnerable population groups, helped the elderly and those in quarantine with their food shopping.

Low-income households were given free food packages that included basics like grains, milk and dairy products, oils, eggs, and meat products. Additional support was provided to families with school-aged children. These children would have normally received lunch at school, but when schools were organised remotely, not all schools were able to provide delivered meals. In some municipalities, hot lunch boxes were delivered to children every school day.

Description of the current situation

Although the situation in Latvia over the summer was quite stable, with few active cases of Covid-19, more cases were expected when the school year began. Most restrictions were eased during the summer, and eating out, shopping in stores, and work at the office returned almost to normal. A few restrictions were still enforced, such as the number of people allowed at one table in restaurants and distancing in stores. Summer is usually vacation time in Latvia, and people spend more time in the countryside and out of town, as well as travelling. Compared to previous years, people travelled more within the country and to neighbouring countries, as the government closely monitored the situation in other countries and enforced rules for self-isolation. By the end of September, the number of active cases of Covid-19 increased. Once again, more regulations were implemented, and people were actively encouraged to follow social distancing rules and wear masks; however, compared to the spring, the rules were not as strict.

New regulations led to changes in school meals. To avoid crowds and different groups mixing together, the time and number of foods allocated for school meals were reduced, and at some schools for older children, students were encouraged to bring their own lunches. At school meals, only one course was provided; the first course, usually a soup, wasn't offered due to epidemiological restrictions. By the end of 2020, schools were mostly operating remotely, and in 2021 they still are. In some municipalities where free school meals are provided and for 1st–4th graders who normally receive free school meals, weekly food packages are prepared to support families with schoolchildren.

Estonia

Background information on eating habits/patterns in Estonia

The latest study on Estonian eating habits was carried out in 2018 with 2,525 respondents. Although comparison to a previous study indicates that dietary behaviours haven't remarkably changed, the number of respondents who had never altered their diet declined significantly over a 10-year period. 50% of respondents assessed their health as good or quite good, while 68% ate fewer fresh vegetables and 46% less fresh fruit than recommended by dietary guidelines (3). At the same time, a significant number of respondents stated that they had changed their eating habits in the last 12 months. Almost a fifth had reduced their consumption of fat or sugar or increased their consumption of vegetables.

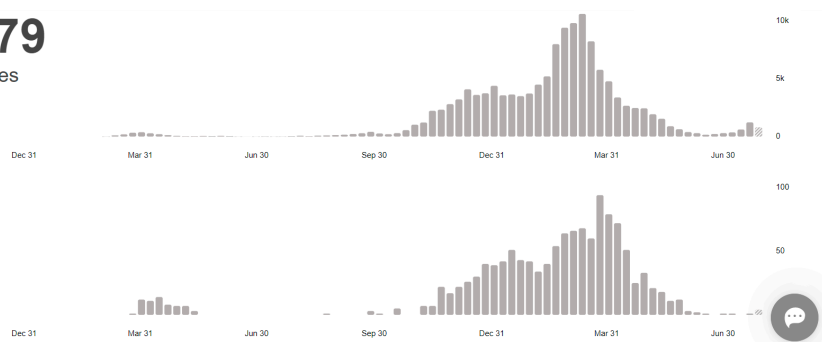
On the other hand, the comparison shows the same number of respondents with long-term health problems or restricted health-related daily activities. The proportion of respondents experiencing fatigue (43%) or depression (17%) decreased. There were no significant changes in medical care or use of medicines. However, 61% of men and 44% of women are either overweight or obese. Although these percentages hadn't changed significantly from 2008 to 2018, comparatively more overweight respondents stated that they had been advised by their doctor to lose weight or increase physical activity. No statistically significant changes were observed regarding frequency or amount of alcohol consumed, whereas the number of smokers and exposure to passive smoking declined considerably compared to the previous study in 2016.

Description of the Covid-19 state of emergency situation

134,479
confirmed cases

1,276
deaths

Source: World Health Organization
Data may be incomplete for the current day or week



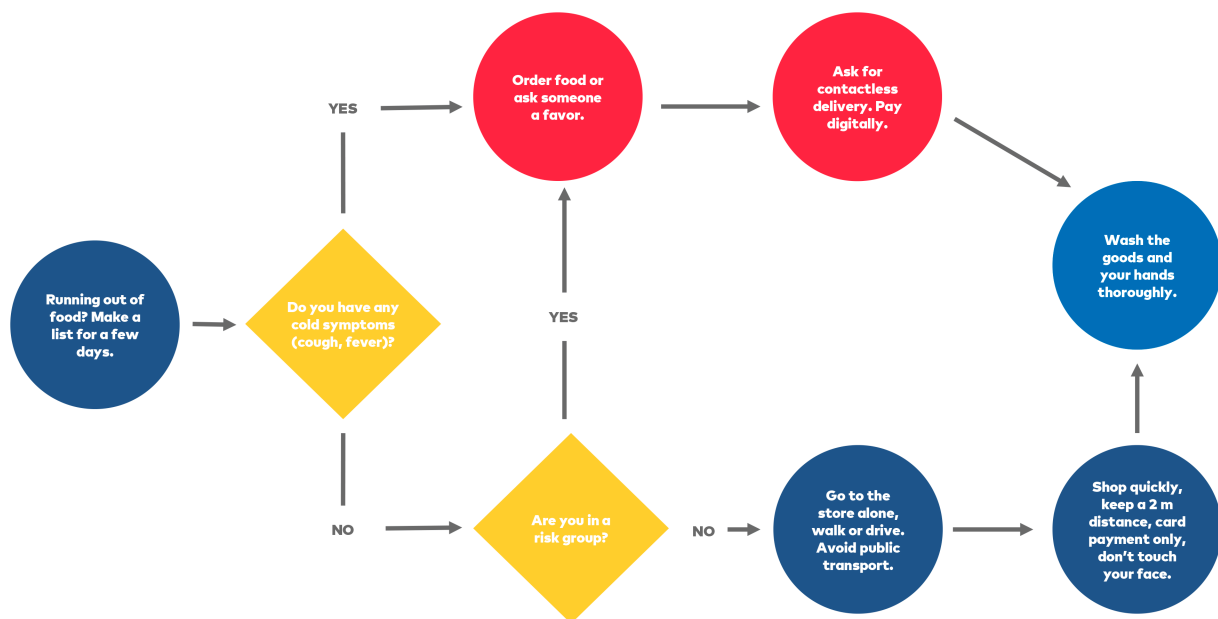
The Covid pandemic in Estonia

<https://covid19.who.int/region/euro/country/ee>

On 12 March 2020, the government convened a special committee tasked with resolving issues related to the spread of coronavirus, public health, and the economy. A state of emergency was declared in order to prevent the virus from spreading, which lasted until 17 May. The obligation to wear a mask or cover one's nose and mouth was introduced for public indoor spaces, including public transport and service points.

Most of the changes involved restrictions in schools and places of work. In some regions, cafés and other eateries were closed or only open for takeaway. Shopping malls and grocery stores remained open throughout the period of emergency. Home delivery was encouraged, but actual use was limited due to logistical capacity and the fact that home deliveries were only offered in major cities. Due to the state of emergency, retail and grocery stores have now made a major leap in developing home delivery options.

Official guidelines were published for food and grocery stores and their customers:



Most restaurants, cafés, bistros, etc. started to offer food for takeaway and delivery using home delivery services like Bolt and Wolt.

Volunteers and organisations, worried about vulnerable population groups, helped the elderly and those in quarantine with their food shopping. These services were voluntary and primarily coordinated by local communities.

In some municipalities, students who had to stay home for distance schooling were given weekly free food packages providing some basics to replace the daily school meals — grains, milk and dairy products, oils, eggs, meat products etc.

Description of the current situation

Although the situation in Estonia over the summer was quite stable, with few active cases of Covid-19, more cases were expected when the summer holidays ended and the school year began. Most restrictions were eased during the summer, and eating out, shopping in stores, and work at the office returned almost to normal. A few restrictions, such as the 2+2 rule — a 2m distance between people and a maximum of two people together in public places like stores, cafés, etc. — were advised at all times. Summer is the most common time for taking a vacation in Estonia. People spend more time in their summerhouses and out of town, as well as travelling. Internal tourism increased and travelling to neighbouring countries became more popular compared to previous years. The government monitored the situation closely in other countries and enforced rules for self-isolation if the cumulative number of infections exceeded 16 over a 14-day period.

Starting from October, the number of active cases of Covid-19 went up, and again more regulations were implemented. People were more actively encouraged to follow social distancing rules and wear masks, but the rules were not as strict as they were in the spring.

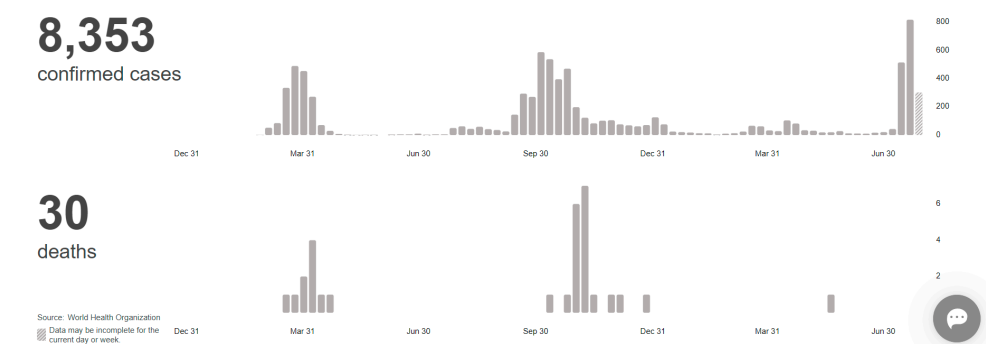
Due to new regulations, school schedules changed. Older students were distance schooled and encouraged to stay at home. 1st–6th graders continued with contact schooling as did graduating students in the 9th and 12th grades. Working from a home office when possible was and still is encouraged everywhere. Wearing masks indoors and following the 2+2 rule is also encouraged in the office and implemented in many.

Iceland

Background information on eating patterns

Iceland is a fishing nation; fish remains Iceland's main export and fisheries have a considerable influence on the economy. Fish, along with lamb, was traditionally a big part of the diet for most Icelanders. However, consumption of both lamb and fish has decreased in recent decades, and other foods, such as chicken, pork, pasta, and pizza, have become more popular. In recent years, the Icelandic market has seen a growth in the variety and popularity of ready-made meals, or meals that have been prepared to reduce cooking effort and time. The popularity of various lifestyle-related diets, such as the vegan diet or keto diet, has also increased. This is reflected in the greatly increased variety of products for these groups.

Description of the Covid-19 state of emergency situation



The Covid pandemic in Iceland

<https://covid19.who.int/region/euro/country/is>

Iceland declared a state of emergency from 6 March 2020 to 25 May 2020 due to the Covid-19 pandemic. The Icelandic government imposed strict measures on the Icelandic population, a massive testing campaign, and testing at the borders for tourists entering the country.

The first wave of infection by the Sars-Covid-19 virus started on the 6th of March 2020 with the first local transmission. This phase lasted until the 25th of May.

On 16 March 2020, the government adopted the first measures, limiting assembly to 100 persons and closing schools.

Iceland's status as an island nation has been an asset for controlling the pandemic. Visitors faced extremely strict entry requirements. Tourists had to get tested upon entry to Iceland. Later, in July 2020, a mandatory quarantine was imposed even for those with a negative test result due to the risk of a false negative.

In grocery stores, restaurants, and bakeries, single item packaging started to appear. Online shopping for food developed. When the first wave hit, only one grocery store was offering online shopping that included delivery. This put a strain on their system, and delivery times increased to days following order placement. Other shops started developing their own systems, but these took time to become established.

When the survey was launched, Iceland was Covid-free with a low 14-day incidence ranging from 0 to 1. Icelanders experienced a back-to-normal period until the period from the second wave at the end of July 2020 to the third wave at the beginning of September.

Today – February 2021 Covid-19 situation

At the time of writing this report in February 2021, Iceland is at the end of its third waves of Covid-19, with a very low infection rate and a 14-day incidence per 100,000 inhabitants of around 2.5. A state of emergency was declared on the 5th of October 2020. There is still a general assembly limit of twenty persons in most situations; however, stores, swimming pools, and gyms are open with restrictions. Wearing masks is compulsory when a 2-metre distance cannot be maintained.

Licensed establishments selling food and drink, such as cafés, bars and restaurants, are also open with restrictions but have to close at 22:00 each evening. Vaccinations have begun and are carried out in line with countries in the EU. The restrictions will be revised on the 3rd of March.

Impact of the restrictions on society

The restrictions on assembly are still affecting eating habits in Iceland. Only a certain number of people are allowed in a restaurant at one time. As a result, some establishments have developed alternative takeaway and Covid menus. Food delivery is also popular for groceries as well as one-off food delivery. In some workplaces, canteens remain closed, and many people are still working from home. Primary and secondary schools are open and functioning the same as before Covid-19, though mixing larger groups of students is avoided as much as possible. The restrictions have had a huge impact on society, especially on tourism, an important sector for the Icelandic economy. Unemployment is now at 6.2%, the highest since these figures were first recorded in Iceland (1991).

Lithuania

Description of the Covid-19 state of emergency and quarantine situation in Lithuania

On 26 February 2020, the Lithuanian government declared a state of emergency due to the threat of coronavirus. On 12 March, the government introduced a two-week ban on indoor and outdoor events and the use of educational, cultural, sports, and leisure facilities.

On 16 March at midnight, a quarantine was announced that lasted until 16 June 2020. After the quarantine ended, to prepare for the Covid-19-related emergency situation, food businesses were required to assess their establishments and apply stricter hygiene measures at all stages of food production, processing, storage, distribution, transport, and making available to the public. The following requirements were implemented for mass caterers: food was delivered to be taken away or conveyed to individuals and businesses by other means; and catering services were provided to employees at establishments or organisations where shift work is carried out. In order to prevent the spread of coronavirus (Covid-19), people were advised to shop online, and when this wasn't possible, to keep a distance from others in order to avoid crowding, perform hand hygiene, and observe sneezing and coughing etiquette. Business owners had to ensure that both their customers and employees were provided the opportunity to properly wash their hands. To avoid congestion, it was advised that customer flows in all stores and supermarkets be limited. Customers standing in lines had to maintain a distance of at least one metre from each other. All restaurants, cafés, canteens, and other catering establishments were advised to take active preventive measures in response to the rapidly changing coronavirus (Covid-19) situation in the world and Lithuania. It was recommended that particular attention be given to the proper hygiene of both hands and premises. Some establishments had already taken such preventive action and were placing customers at every second table. It was also suggested that establishments avoid close contact when providing their services, i.e., when food was ordered for takeaway or delivered to a home or workplace. It was also important that customers at restaurants, cafés, and other food establishments be provided the means to properly wash their hands, this being a key preventive measure.

The second wave of Covid-19 hit harder than expected in Lithuania, and the government decided to enforce another quarantine and series of restrictions from 7 November 2020 to 31 December 2020. More information about the situation can be found in the section on food.

Food handling entities during a national emergency: When a quarantine for coronavirus (Covid-19) is introduced in Lithuania, food businesses are required to assess their establishments and apply more stringent hygiene measures at all stages of food production, processing, storage, distribution, transport, and making available to the public. Catering services, restaurants, cafés, bars, and nightclubs are not allowed to operate. The flow of shoppers and other visitors must be organised in a way that takes into account the area of the store, supermarket, or other point of sale, in order to avoid congestion and ensure that visitors line up at a safe distance of at least 2 metres.

Requirements for catering establishments: The operation of catering establishments, restaurants, cafés, bars, nightclubs, and other places of entertainment is prohibited, except when food is taken away or delivered to individuals or businesses by other means, or when catering services are provided in educational, social service, or health care establishments or elsewhere where it is necessary to ensure food services in order to comply with the specifics of the institution's activities.

Catering establishments, restaurants, cafés, bars, nightclubs, and other places of entertainment must ensure, in the case of takeaway or other means of catering, that self-catering meals are not provided to which food can be added by the customers. Sugar, salt, sauces, and other foodstuffs may not be made available in common containers or packaging, to be added by customers.

Requirements for organising meals in primary and secondary schools, places of higher education, vocational training, and informal adult education activities: Buffet meals are not allowed in primary and secondary schools. Catering is not allowed for persons participating in higher education, vocational training, or informal adult education activities. For shops, supermarkets, markets, and other outlets selling food, these establishments and the areas adjacent to them must provide 30 m² of retail space per visitor or serve no more than one person at a time. No more than 20 percent of all parking spaces may be occupied in parking lots adjacent to shops, supermarkets, markets, and other outlets.

The sale of non-prepacked foods: Food businesses should ensure the proper and safe selling of non-prepacked foods (those that won't be washed, cooked, peeled, shelled, etc. before consumption). More stringent measures continue to be recommended: use equipment/facilities that ensure non-prepacked foods are protected from possible contamination (e.g., those with side guards, roof, and/or door, if necessary), ensure sufficient tools or gloves, packaging materials, and the proper cleaning of equipment and tools (if necessary, disinfection), provide information (instructions) to the buyer on how to safely purchase ready-to-use bulk products (e.g., personal hygiene recommendations (hand hygiene, coughing and sneezing etiquette label), how to safely bag products, etc.), ensure food is transported (outbound food trade) in accordance with established requirements. If it is impossible to ensure that non-prepacked foods are adequately protected from contamination, products should be prepacked (e.g., pre-bagged, wrapped in cling film, etc.).

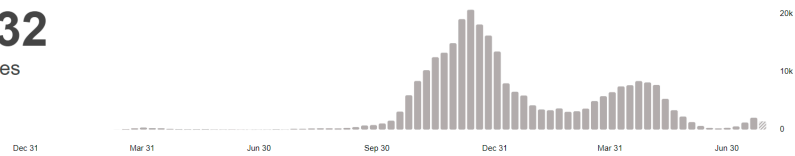
Recommendations for making food products available to the public: The following types of food markets operate in Lithuania: closed-type markets where the sale of food takes place indoors, open-type markets, with or without a roof, where food is sold outdoors, mixed-type markets where food is traded on the premises and in the square next to the market building. Kiosks and cars adapted for food trade may also be outdoor or indoor markets. Merchants in all types of markets must ensure the safety and quality of the food they sell, comply with mandatory food handling and other requirements, and apply stricter than usual hygiene measures at all stages of transport, distribution, marketing, and making available to the public.

Recommendations for merchants selling in markets: Ready-to-eat non-prepacked foods (products that won't be washed, cooked, peeled, shelled, etc. before consumption) should be marketed in such a way that the buyer has no opportunity to touch or otherwise contaminate these foods (e.g., using protective racks, films, or other means). Equipment, utensils, tools (countertops, pallets, scales, knives, etc.)

used at the point of sale must be cleaned, washed, and/or disinfected more frequently than usual, depending on the duration of the sales activity and flow of visitors.

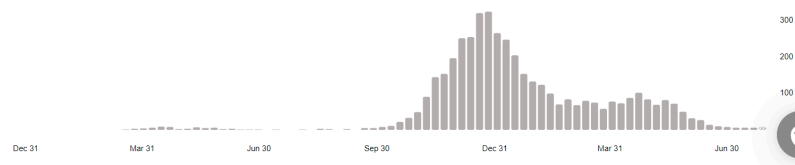
These are the final Covid-19 statistics for Lithuania:

284,432
confirmed cases



4,424
deaths

Source: World Health Organization
Data may be incomplete for the current day or week.



The Covid pandemic in Lithuania

<https://covid19.who.int/region/euro/country/lt>

Survey on changes in food consumption patterns

Development of a questionnaire on food consumption and eating habits began in mid-April. The literature was researched in order to become familiar with other countries' experiences and include subjects and questions that would generate data that could be compared with data from other countries. The main challenges were that the situation differed in all four countries, as did the periods during which the surveys were conducted. The questionnaire was first distributed in Latvia and the survey almost completed there when partners from other countries started theirs. In the process, small differences in the questionnaire were introduced, and this made data analysis somewhat more challenging.

Iceland

The survey began in Iceland on 6 July 2020 and closed on 26 August 2020. Most of the answers were received between the 6th and the 12th of July. The survey was released through Mátis' social media channel and its company website. SurveyMonkey (<https://www.surveymonkey.com/>) was used to collect the answers. A total of 550 people opened the survey, and of these, 80% completed it. There was an even age distribution among participants; however, a gender bias was observed, with 88% of respondents being women, in spite of the fact that this group wasn't targeted specifically.

Posts on social media reached a large number of people, with 13,394 impressions and 1,261 engagements over a short period of time (less than one month).

Latvia

The survey began on the 4th of May, and the last responses were received on the 26th of June. The survey was made using Google Forms and disseminated through the social media accounts of the BIOR Institute as well as collaborating institutions — ministries and national institutions. One third of the participants had been invited to participate through the Institute's respondents database. Interest in participation was considered good, as a total of 915 responses were received, but no information was collected on unfinished questionnaires. Posts on social media reached over 2,500 people, but no information on audience responsiveness from other sources exists.

Estonia

The survey began on the 5th of June, and the last responses were received on the 20th of July. The survey was made on the Google Forms platform and disseminated through the social media accounts of TFTAK as well as collaborating institutions and relevant Facebook groups and news platforms. Interest in participating was considered satisfactory, as a total of 294 responses were received.

Lithuania

The survey in Lithuania was conducted using a survey platform. Over 5,000 potential respondents were reached, but the questionnaire was completed by only 1,030 people. The survey began on 22 June 2020 and closed on 7 July 2020.

Results

Survey population

In total, the questionnaire was completed by over 2,700 people. The largest sample size was from Lithuania and the smallest from Estonia. After data cleaning and combining, there were 2,667 valid answers: Iceland 20% (N=540); Estonia 11% (N=280); Latvia 34% (N=907); Lithuania 35% (N=940). The different sample sizes are taken into account when analysing the data in the next steps.

The pandemic also affected how the surveys were carried out, as no face-to-face interviews or other ways of recruiting participants were available or appropriate at the time. Because the surveys were primarily distributed through social media or survey platforms, it is not unusual that women were more likely to respond, as our data reflects. Looking at all four countries together, over 86% of participants were women, while the percentage in Lithuania was the highest at 98%.

Distribution of valid answers according to gender (%)

GENDER	ICELAND	ESTONIA	LATVIA	LITHUANIA	TOTAL
Women	88.3	87.0	86.9	98.7	91.6
Men	11.5	13.0	13.1	1.3	8.4
Other*	0.2	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0

* Only Iceland offered the option "Other"

When we look at distribution across age groups, we see that the data from Latvia and Estonia are similar, in Iceland distribution is relatively equal across all age groups, and in Lithuania more than half the participants were in the 18–25 age group. Seniors are underrepresented in this survey.

Distribution of valid answers according to age (%)

AGE	ICELAND	ESTONIA	LATVIA	LITHUANIA	TOTAL
18–25	11.3	8.8	11.5	57.1	28.0
26–35	19.6	33.5	36.7	29.8	30.4
36–45	21.7	29.7	28.1	9.0	19.9
46–55	20.0	16.5	16.1	2.7	12.0
56–65	19.3	9.3	6.9	1.1	7.5
66+	8.2	2.2	0.8	0.3	2.3
Total	100.0	100.0	100.0	100.0	100.0

Most survey participants were highly educated — 64% had a Bachelor's, Master's, or doctoral degree (ISCED-11 – 6–8), while 25% had secondary education. 70% of those surveyed were employed at the moment of completing the survey, and 17% were students. Differences exist between the countries — in the Lithuanian subsample, more students (35%) participated than in other countries (6.2–9.2%). For most participants (79%), the pandemic did not cause any changes in employment status, while 3.7% had been laid off, and 10.7% were in downtime. In some cases, participants reported finding a new job or working part time; others mentioned increased stress and workload, while some mentioned the opposite, a decreased workload.

Work from home

Distribution of valid answers (%)

WORKING FROM HOME	ICELAND	ESTONIA	LATVIA	LITHUANIA	TOTAL
Every working day	32.3	58.9	38.6	40.1	40.1
3–4 times a week	16.8	9.6	15.1	8.2	12.9
1–2 times a week	10.4	4.6	12.8	7.4	9.9
Less than once a week	3.2	1.8	8.2	4.3	5.4
Never	30.1	25.1	22.4	38.4	28.6
Other	7.2	0.0	2.9	1.6	3.1
N	375	219	756	511	1,861

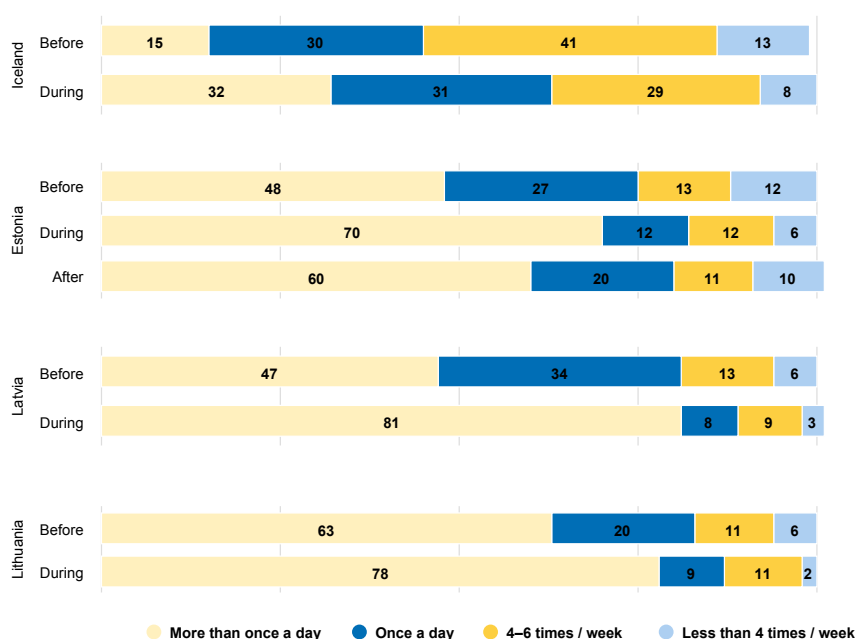
Note: Those not employed or on long-term leave have been excluded from the sample for this question

Cooking and eating out

Many people have experienced a definite change in routine due to the pandemic. Some of the habits often referred to in health surveys intended to determine if people's eating patterns are healthy or unhealthy include eating home cooked food, eating out, and ordering takeaways. Eating home cooked meals more frequently is sometimes associated with food choices that are nutritionally healthier.⁸ However, the unusual situation experienced during the pandemic could have caused stress, which is associated with less healthy eating habits.⁹

The time and frequency people spend cooking at home differ from country to country. This is the first time a comparison of this data between Baltic and Nordic countries has been made.

Frequency of home-cooked meals (%)



8. Mills S, Brown H, Wrieden W, White M, Adams J. Frequency of eating home cooked meals and potential benefits for diet and health: cross-sectional analysis of a population-based cohort study. *Int J Behav Nutr Phys Act.* 2017;14(1):109. Published 2017 Aug 17. doi:10.1186/s12966-017-0567-y
9. Konttinen H. Emotional eating and obesity in adults: the role of depression, sleep and genes. *Proc Nutr Soc.* 2020 Aug;79(3):283-289. doi: 10.1017/S0029665120000166. Epub 2020 Mar 26. PMID: 32213213.

Before the pandemic and state of emergency, Lithuanians cooked at home more often than those in other countries, followed by Latvians and Estonians. In Iceland, respondents were more likely to cook at home 4–6 times a week, almost cooking at home every day. Changes in home cooking during the pandemic were seen in all countries. Although the situation and duration of the state of emergency differed in each country, the proportion of people cooking at home more than once a day increased significantly. In Estonia, an additional question was asked in the section on the post-state-of-emergency situation — here we can see that the number of people cooking at home decreased but not to pre-pandemic figures. This data should be analysed carefully as other factors may be influencing it.

The data on eating out are to an extent more similar in all the countries studied. The percentage of survey participants who did not eat out before the pandemic was 11%, while during the state of emergency, the percentage was 51%. The number of respondents who continued to frequent restaurants also decreased in all countries.

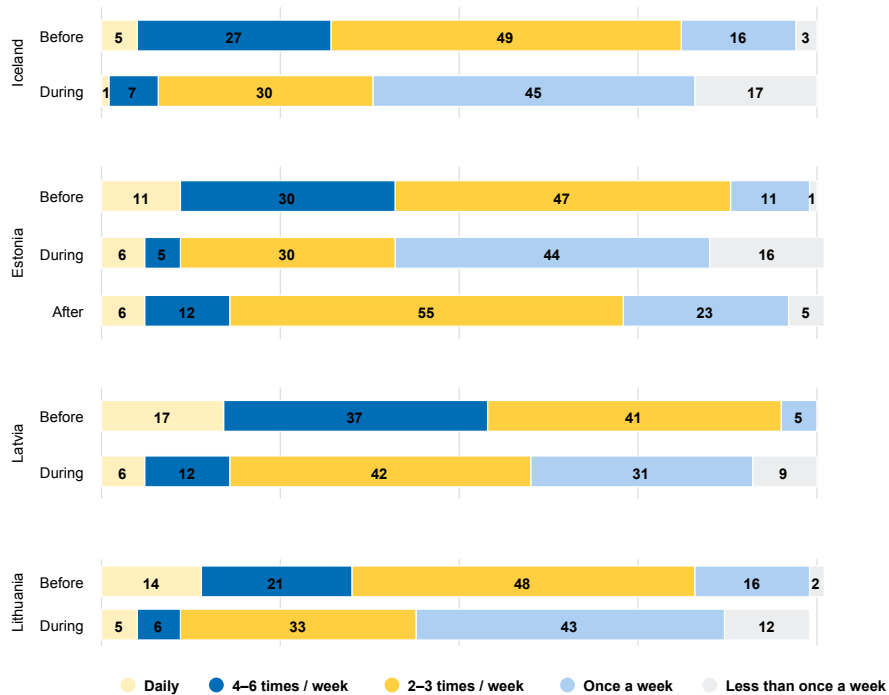
The data on takeaway and delivery meals is interesting. During the state of emergency, the number of those ordering food at least once a week increased slightly, but the number of people who didn't have or order takeaway or delivery meals also increased.

Frequency of takeaway/delivery meals: before and during state of emergency (%)

	ICELAND		ESTONIA		LATVIA		LITHUANIA		TOTAL	
	BEFORE	DURING	BEFORE	DURING	BEFORE	DURING	BEFORE	DURING	BEFORE	DURING
AT LEAST ONCE A WEEK	9.9	15.4	12.2	23.4	11.1	12.7	16.1	19.3	12.7	16.7
LESS THAN ONCE A WEEK	51.7	30.0	42.1	23.4	47.6	35.7	53.7	41.5	50.0	35.4
NEVER	38.5	54.6	45.7	53.2	41.4	51.5	30.2	39.3	37.3	47.9

In-store grocery shopping was subject to many new safety regulations, which meant that, in adapting to the new situation, people formed new habits. Before the state of emergency, around 45% of those surveyed shopped for food at least 2–3 times a week, and online grocery shopping wasn't popular — 77% never shopped online for groceries before the state of emergency. During the state of emergency, the percentage of those shopping daily decreased, and the most common frequencies were once a week and 2–3 times a week. Before the pandemic, just 5% of survey participants in Iceland went shopping daily, while respondents in the Baltics shopped daily more often.

Frequency of in-store grocery shopping (%)



Food safety and storage gained in importance during the state of emergency. As previously mentioned, in-store shopping decreased and people tended to buy food for a longer period, and so proper handling and planning measures were implemented. One of the factors affecting food safety and shelf-life is adequate refrigeration, something people often pay little attention to. The temperature should especially be checked if the fridge is fuller than usual, as the temperature might need to be decreased. Just 5% of survey participants had made any changes to their refrigerator's temperature, and of those who did, more often the temperature was decreased.

The Latvian and Icelandic surveys included additional questions about shopping and stress. 60% of Latvians and 64% of Icelanders reported that shopping had become more stressful — mostly, people felt anxious being in the store, but the need for alternative ways to purchase food and buying reserves was also frequently mentioned. 10% of Latvians and 4% of Icelanders mentioned stress about saving money during the pandemic. Some individual answers related to concerns about food hygiene and product packaging, safety measures at the store, food availability (mentioned more often in the Latvian survey than in the Icelandic) and also delivery times and availability when shopping online. Almost half of those surveyed mentioned changing food preparation or consumption habits. Lithuania and Estonia reported changes more than Iceland and Latvia. It was often mentioned that consuming home cooked meals and meal planning had become more important.

Some food groups were purchased more often during the state of emergency. Fruits and vegetables (fresh, frozen, canned, etc) were mentioned, as well as products with

a longer shelf-life — UHT milk and dairy products, canned foods, and "dry foods" (mostly grains and cereals). Certain so-called comfort foods and drinks were also mentioned, such as sweets, salty and savoury snacks, and alcoholic beverages. Looking at each country individually, the popular products are slightly different. In Latvia, vegetables, fruit, meat, and specifically buckwheat from the grains group were mentioned most often; in Lithuania, it was groats, pasta, canned foods, and fruits. Estonians have been buying more vegetables, canned foods, fruits, and grains, while Icelanders have been buying more canned, dry and frozen foods, as well as pasta and sweets.

In the media and on social media platforms, various precautionary measures and procedures were discussed. Information was abundant, and some of it was not reliable or scientifically validated. One third of survey participants adopted some precautionary measures, such as disinfecting and washing food packaging, leaving food untouched for some time after bringing it home from the store, immediately throwing away food packaging, disinfecting shoes when coming home, and using gloves when shopping. Some participants reported that they started washing fruits and vegetables with vinegar or using a disinfection lamp.

During the pandemic, maintaining and improving health and wellbeing became even more important than before. Taking food supplements is one of many approaches employed to accomplish this; therefore, data on their use could provide some insight into people's behaviour related to achieving good health.

Use of Food Supplements (*Have you started using food supplements after state of emergency?*) (%)

	ICELAND	ESTONIA	LATVIA	LITHUANIA	TOTAL
Started taking supplements	12.8	75.9	43.7	24.4	28.4

Use of food supplements could be related to worries about health in the pandemic. More Estonians started to use food supplements, followed by Latvians. When analysing the data, it was understood that interpretation of particular question has been slightly different from country to country so it is possible that the Icelandic results are referring to a new habit and not specifically the use of supplements as such while in Latvia many respondents answered about overall supplement consumption during specific period. Vitamin C was most often mentioned (42% of those taking supplements) as a supplement started during the state of emergency; Vitamin D, multivitamins, and fish oil were also mentioned often. In some cases, foodstuffs such as lemons, ginger, and honey were mentioned as a way to prevent disease. Some very specific supplements were also reported; for example, a powder containing birch bark extract and chicory root, chaga mushroom powder, a beaver castoreum supplement, and medication for erectile dysfunction. There are no significant differences regarding type of supplement among the four countries.

Food waste is currently a hot topic of discussion. As meal planning became more

important during the state of emergency, so did the issue of food waste, and for some, the fact that it can be difficult to adapt to changes like eating all meals at home. Estonians, more than those surveyed in other countries, reported an increase in food waste. Fewer people in Iceland kept track of changes in food waste compared to the other nationalities, and most people reported the amount of food waste being the same as before the pandemic.

Change in food waste amount (%)

	ICELAND	ESTONIA	LATVIA	LITHUANIA	TOTAL
Increased	8.60	21.50	8.60	4.10	8.40
Decreased	17.40	11.50	24.10	29.90	23.60
Remained unchanged	52.50	56.60	58.50	57.80	57.00
I did not keep track	21.50	10.40	4.70	7.90	9.60

Changes in physical activity due to being at home more and following a different routine could also have led to changes in weight. 30% of participants reported some weight gain and 16% some weight loss. This question was not included in all the countries. The following are answers from Iceland and Estonia.

Did you notice any changes in your weight during the state of emergency? (%)

		ICELAND	ESTONIA	TOTAL
Did you notice any changes in your weight during the state of emergency?	I lost some weight	14.7	18.3	16.1
	No change	38.3	57.0	45.5
	I gained some weight	33.6	24.7	30.2
	I didn't monitor my weight	12.7		7.8
	I don't want to answer	0.7		0.4
Total		100.0	100.0	100.0

* Country Crosstabulation

Participants were also interested in making recommendations for retailers, which gives us some information about the most common problems in the food sector during the state of emergency. Some suggestions focused on food packaging — less wrapping, smaller packaging, particular products offered. Others included offering a larger variety of fruits, more local foods, and a greater number of healthy and vegan food options.

Discussion

It is clear that Covid-19 has affected food consumption in various ways. New habits have formed, some of which are here to stay — online shopping, more attention given to the amount of food packaging, choosing healthier foods —, but at the same time, basic food consumption patterns remain unchanged. How certain products are consumed may have evolved, but at the food group level, differences are insignificant. The use and interest in various and unusual food supplements and novel foods indicates that people are concerned about their health, but that they sometimes lack the motivation to exert much effort to stay healthy. Cooking at home and grocery shopping might be time consuming, but these food-related choices can have positive effects on the entire family's eating habits. In the near future, we may see evidence of Covid-19's long-term effects on patterns of food consumption.

About this publication

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