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The features marked with a star (*) are based entirely on material taken straight from standard research (and other Official and Therefore Always Correct) literature. Many of the other articles are genuine, too, but we don’t know which ones.

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### Where There’s More

There’s always new improbable — it’s not what you expect! — stuff on the Improbable Research blog at IMPROBABLE.COM

### Listen to the Improbable Research podcast!

https://www.improbable.com/category/the-weekly-improbable-research-podcast/

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### On the Front Cover

**CENTER:** A dead seagull entangled with a discarded pandemic-time face mask, both collected from a road in Rotterdam, The Netherlands. Photo: Erwin Kompanje.

**TOP AND BOTTOM:** Air exhaust patterns from the mouth of an opera singer. See page 28.

### On the Back Cover


### Some Coming Events

The Covid-19 pandemic has introduced excitingly boundless uncertainty as to whether, when, and where public activities will happen in the near future. In 2022 some will happen teledistantly.

See IMPROBABLE.COM for details of these and other events:

**NOTE:** The 2022 Ig Nobel Euro (and Brexitannia) Tour was, like the 2020 and 2021 tours, canceled because of the pandemic.

**Improbable Conversations with Researchers**—

See schedule on the web site.

**April 9, 2022**—

TEDx IIITA, Allahabad, India

**September, 2022**—

The 32nd First Annual Ig Nobel Prize Ceremony
Effects of the Covid-19 Pandemic on Consumption of Gelato

"The Effects of the Covid-19 Pandemic on the Behavioral Consumption of Ice-Cream," Caterina Boaro, thesis for Master’s Degree Programme in Management, Università Ca’Foscari Venezia, 2021. The author reports:

As at the time the research was carried out scientific data on the matter was insufficient, the administration of the questionnaire Consumption of Gelato and the Effects of the Covid-19 Pandemic helped [only] in gathering information on changes in consumption trends….

[Nonetheless, the] take-away results of this analysis for payers in the industry are that Covid-19 has not stopped Italians’ willingness to consume gelato.

PANDEMIC DINING: GELATO, CANDY, LETTUCE, FROZEN MEAT [continued]

Washed and Unwashed Coughed-On Halloween Candy and Covid-19

"Handwashing and Detergent Treatment Greatly Reduce SARS-CoV-2 Viral Load on Halloween Candy Handled by COVID-19 Patients," Rodolfo A. Salido, Sydney C. Morgan, Maria I. Rojas, Celestine G. Magallanes, Clarisse Marotz, Peter DeHoff, Pedro Belda-Ferre, et al., Msystems, vol. 5, no. 6, 2020, e01074-20. The authors, at the University of California, San Diego, report:

During Halloween, a major event for children in numerous countries, SARS-CoV-2 transmission risk via candy fomites worries many parents. To address this concern, we enrolled 10 recently diagnosed asymptomatic or mildly/moderately symptomatic COVID-19 patients to handle typical Halloween candy (pieces individually wrapped) under three conditions: normal handling with unwashed hands, deliberate coughing and extensive touching, and normal handling following handwashing….

From the candies not washed post-handling, we detected SARS-CoV-2 on 60% of candies that were deliberately coughed on, 60% of candies normally handled with unwashed hands, but only 10% of candies handled after hand washing. We found that treating candy with dishwashing detergent reduced SARS-CoV-2 load by 62.1% in comparison to untreated candy.

Cabbage, Cucumber, Lettuce, and Covid

"Association Between Consumption of Vegetables and COVID-19 Mortality at a Country Level in Europe," Susana C Fonseca, Ioar Rivas, Dora Romaguera, Marcos Quijal-Zamarano, Wienczysława Czarlewska, Alain Vidal, Joao A Fonseca, Joan Ballester, Josep M Anto, Xavier Basagana, Luis M Cunha, and Jean Bousquet, MedRxiv, 2020. The authors at the University of Porto and other institutions in Portugal, Spain, France, and Germany, report:

[O]nly head cabbage and cucumber reached statistical significance with the COVID-19 death rate per country. For each grams/day increase in the average national consumption of some of the vegetables (head cabbage and cucumber), the mortality risk for COVID-19 decreased by a factor of 11, down to 13.6 %. Lettuce consumption increased COVID-19 mortality.

Detail from the study "Handwashing and Detergent Treatment Greatly Reduce SARS-CoV-2 Viral Load on Halloween Candy Handled by COVID-19 Patients."
Frozen Meat Against COVID-19 Misinformation


The authors, at North Carolina State University and Arizona State University, explain:

COVID-19 has forced many businesses to adjust their communication strategies to fit a new reality. One surprising example of this strategy adjustment came from the company Steak-umm, maker of frozen sliced beef. Instead of finding new ways to promote its products, the company shifted its focus to the public’s urgent needs, breaking down possible approaches to navigating information flow during the pandemic. This resulted in overwhelming praise on social and news media, including almost 60,000 new Twitter followers within a week. Drawing on expectancy violation theory, this case study examines Steak-umm’s strategy, the content of social media responses, and why the approach was successful.