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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.

ANNALS OF

IMPROBABLE RESEARCH



Special Section: Delicious Foods?

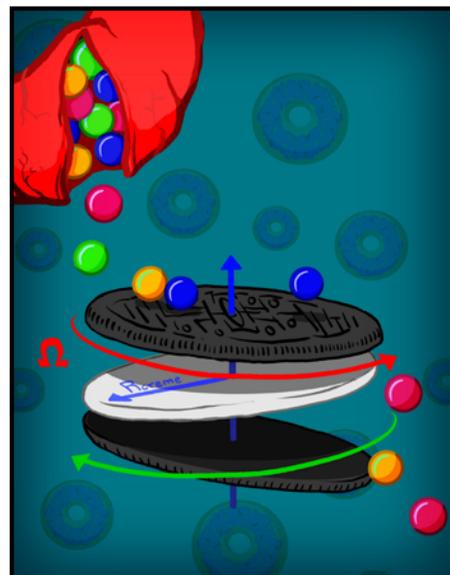
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On the Front Cover
Rotating the segments of an Oreo cookie is an exercise in fluid dynamics.
See page 25.

Some Coming Events

(See IMPROBABLE.COM for details of these and other events.)

January 17th, 2025

— Arisia,
Boston, Massachusetts, USA

February 2025

— AAAS Annual Meeting,
Boston, Massachusetts, USA

March/April 2025

— Ig Nobel EuroTour

May 23rd-26th, 2025

— Balticon,
Baltimore, Maryland, USA

May 28, 2025

— Washington, D.C., USA

September 2025

— The 35th First Annual
Ig Nobel Prize Ceremony



Where There's More

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

DANGERS OF DELICIOUS FOODS

Explorations of nutritious perils

compiled by Steve Hardy, Improbable Research staff

Kebab Deliciousness and Danger

"Kebab, a Delicious Food, But Contaminated with Harmful Compounds: A Literature Review," Seyyed Mostafa Nachvak, Davood Soleimani, Shahrbanoo Gholizadeh, and Zamzam Paknahad, *Journal of Isfahan Medical School*, vol. 39, no. 626, 2021, pp. 376-383. The authors, at Kermanshah University of Medical Sciences and at Isfahan University of Medical Sciences, Iran, report:

Grilling is one of the most traditional methods of cooking food, especially meat, which leads to the production of polycyclic aromatic hydrocarbons (PAHs) and heterocyclic aromatic amines (HAAs). International Agency for Research on Cancer has mentioned most of these compounds, particularly Benzo[a]pyrene and Phenyl imidazo pyridine, as carcinogenic to humans. The amount of the PAHs and HAAs in kebab completely depends on the grilling method....

Reducing of the PAHs and HAAs intake from kebab can be achieved through reducing grilling temperature and durations, using gas instead of charcoal and wood, increasing the distance of meat from the fire, using condiments, using low-fat meats, and removing the skin from chicken.

Abstruse Explanation About Candy and Death Thoughts

"Does a Candy a Day Keep the Death Thoughts Away? The Terror Management Function of Eating," Gilad Hirschberger and Tsachi Ein-Dor, *Basic and Applied Social Psychology*, vol. 27, no. 2, 2005, pp. 179-186. The authors, at Bar-Ilan University, Israel, explain:

To examine whether the soothing effect of food may be related to terror management processes, 149 Israeli college students were assigned to a mortality salience, fail salience, or neutral condition. Then, they were exposed to 1 of 3 tasting conditions ranging from pleasant to unpleasant or to a fourth condition with no tasting. Following this procedure all participants were asked to judge the severity of 10 social transgressions and recommend punishments....

In the pleasant food condition participants received a piece of butterscotch candy. In the unpleasant food condition participants received a similar sized piece of anise-flavored candy that was covered with Mara™—a bitter solution used for the prevention of nail biting. In the neutral food condition participants received a piece of a sodium-free nonfat cracker, and in the no-food condition participants received a piece of cardboard.

Kebab, A Delicious Food, but Contaminated with Harmful Compounds: A Literature Review

Seyyed Mostafa Nachvak¹, Davood Soleimani², Shahrbanoo Gholizadeh³, Zamzam Paknahad⁴

Review Article

Abstract

Background: Grilling is one of the most traditional methods of cooking food, especially meat, which leads to the production of polycyclic aromatic hydrocarbons (PAHs) and heterocyclic aromatic amines (HAAs). International Agency for Research on Cancer has mentioned most of these compound, particular Benzo[a]pyrene and Phenyl imidazo pyridine, as carcinogenic to humans. The amount of the PAHs and HAAs in Kebab completely depends on the grilling method. The current review aimed to provide evidence and interventions to reduce the production of the PAHs and HAAs during grilling.

Does a Candy a Day Keep the Death Thoughts Away? The Terror Management Function of Eating

Gilad Hirschberger and Tsachi Ein-Dor

Department of Psychology
Bar-Ilan University

To examine whether the soothing effect of food may be related to terror management processes, 149 Israeli college students were assigned to a mortality salience, fail salience, or neutral condition. Then, they were exposed to 1 of 3 tasting conditions ranging from pleasant to unpleasant or to a fourth condition with no tasting. Following this procedure all participants were asked to judge the severity of 10 social transgressions and recommend punishments. The results showed that in the no-tasting condition mortality salience led to more severe judgments of social transgressions than in the 2 control conditions. However, this effect was attenuated in the tasting conditions, especially in the positive taste condition wherein death primes led to less severe

DANGERS OF DELICIOUS FOODS [CONT'D]

Belly Full of Candy after a Motocross Accident

"Blunt Abdominal Injury Resulting in a Belly Full of Candy after a Motocross Accident, A Case Report," Floris B. Poelmann and Frank FA IJpma, *BMC Surgery*, vol. 20, 2020, article 325. The authors, at the University of Groningen, The Netherlands, report:

A 15-year-old boy arrived at the emergency room with an acute abdomen after a motocross accident. A CT scan of the abdomen demonstrated free air and hyperdense round structures in the stomach, pelvic cavity and right paracolic gutter. During emergency laparotomy a traumatic gastric perforation was sutured, a splenic rupture was treated with a Vicryl mesh and multiple spherical food scraps were removed from the abdomen. After surgery, the boy clarified that he had eaten a whole bag of colorful and spherical shaped candy just before the accident....

The hyperdense spherical structures on the CT scan, of which the nature was preoperatively unknown, appeared to be candy that entered the abdominal cavity after traumatic gastric perforation.

In Pursuit of Bad Taste

"The Functional and Neurobiological Properties of Bad Taste," Lindsey A. Schier and Alan C. Spector, *Physiological Reviews*, vol. 99, no. 1, 2019, pp. 605-663. The authors, at the University of Southern California, Los Angeles, and at Florida State University, explain:

The gustatory system serves as a critical line of defense against ingesting harmful substances. Technological advances have fostered the characterization of peripheral receptors and have created opportunities for more selective manipulations of the nervous system, yet the neurobiological mechanisms underlying taste-based avoidance and aversion remain poorly understood.... [E]xperimental strategies that distinguish between the functional properties of various taste-guided behaviors and link them to specific neural circuits need to be applied. Given the close relationship between the gustatory and viscerosensory systems, a full reckoning of the neural architecture of bad taste requires an understanding of how these respective sensory signals are integrated in the brain.

CASE REPORT Open Access

Blunt abdominal injury resulting in a belly full of candy after a motocross accident, a case report

Floris B. Poelmann* and Frank FA IJpma

Abstract
Background: Blunt trauma to the abdomen may result in abdominal injury in a motocross accident. The diagnosis will lead to abdominal contusion in an adolescent who sustained blunt trauma to the abdomen. The diagnosis will lead to abdominal contusion in an adolescent who sustained blunt trauma to the abdomen. The diagnosis will lead to abdominal contusion in an adolescent who sustained blunt trauma to the abdomen.



Fig. 3 Intraoperative image of the spleen, demonstrating a splenic rupture of the organ



Fig. 4 Colorful and spherical shaped candy

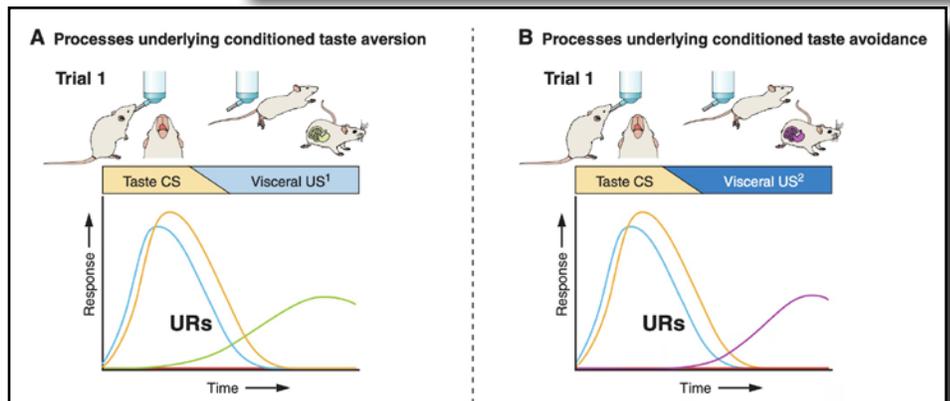
Detail from the study "Blunt Abdominal Injury Resulting in a Belly Full of Candy after a Motocross Accident, A Case Report."

THE FUNCTIONAL AND NEUROBIOLOGICAL PROPERTIES OF BAD TASTE

Lindsey A. Schier and Alan C. Spector

Department of Biological Sciences, University of Southern California, Los Angeles, California; and Department of Psychology and Program in Neuroscience, Florida State University, Tallahassee, Florida

Schier LA, Spector AC. The Functional and Neurobiological Properties of Bad Taste. *Physiol Rev* 99: 605-663, 2019. Published November 21, 2018; doi:10.1152/physrev.00044.2017.—The gustatory system serves as a critical line of defense against ingesting harmful substances. Technological advances have fostered the characterization of peripheral receptors and have created opportunities for more selective manipulations of the nervous system, yet the neurobiological mechanisms underlying taste-based avoidance and aversion remain poorly understood. One conceptual obstacle stems from a lack of



Detail from the study "The Functional and Neurobiological Properties of Bad Taste."