

Health Insights

July 2020

Will Lockdown Loneliness Make Us Loners?

Over the past few months at least half of the world's population has been affected by some form of lockdown due to COVID-19, and many of us are experiencing the impact of social isolation. Loneliness affects both mental and physical health, but counterintuitively it can also result in a decreased desire for social interaction. To understand the mechanics of this paradox, UCL researchers based at the Wolfson Institute and the Sainsbury Wellcome Centre investigated social behavior in zebrafish. Their results are published in *eLife*.

Most zebrafish demonstrate pro-social behavior, but approximately 10% are 'loner' fish who are averse to social cues and demonstrate different brain activity than their pro-social siblings. However, even typically social zebrafish avoid social interaction after a period of isolation. PhD students Hande Tunbak and Mireya Vazquez-Prada, Postdoctoral Research Fellow Thomas Ryan, Dr. Adam Kampff, and Sir Henry Dale Wellcome Fellow Elena Dreosti set out to test whether the brain activity of isolated zebrafish mimics that of loner fish or whether other forces were at play.

To investigate the effects of isolation, the researchers isolated typically social zebrafish from other fish for a period of two days and then compared their brain activity to zebrafish who demonstrated aversion to social interaction without having been isolated.

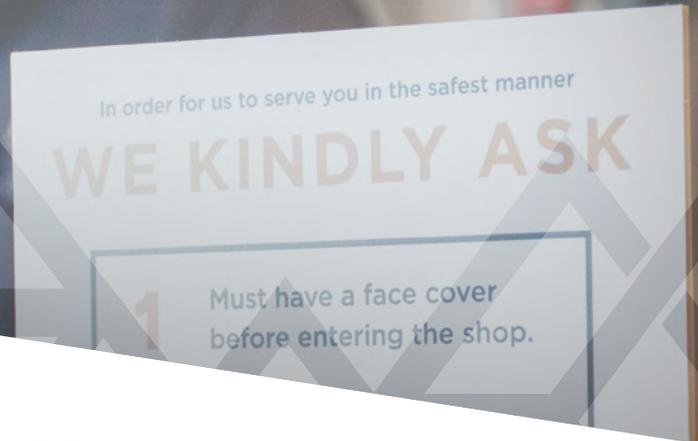
The differences between loner fish and their siblings were found mostly in the hypothalamus, the region of the brain responsible for social rewards. The loner fish hypothalamus did not demonstrate the same pattern of activation during social exposure as its typical counterparts, indicating that loner fish do not experience rewards in the same way as typical fish during social interactions.

By contrast, those that demonstrated typical social behavior and were isolated demonstrated hypersensitivity to stimuli and activation of brain regions associated with stress and anxiety. Lonely fish experienced actively negative outcomes from social interaction whereas loner fish simply did not experience reward.

"A detailed view of the zebrafish brain can provide important clues for all of us currently experiencing the effects of social isolation," says Dr. Elena Dreosti. Although human behavior is much more complex, understanding how this basic social drive arises – and how it is affected by isolation – is a necessary step towards understanding the impact of the social environment on human brains and behavior.

So while we won't all be loners after lockdown, we likely will be anxious upon returning to our normal social lives.

Sainsbury Wellcome Centre. "Will lockdown loneliness make us loners? Reduced social preference in isolated zebrafish is caused by stress and anxiety, not observed anti-social patterns." ScienceDaily.
www.sciencedaily.com/releases/2020/06/20200610112057.htm
(accessed June 19, 2020).



Face Masks Critical In Preventing Spread of COVID-19

The coronavirus disease 2019 (COVID-19) pandemic has now spread to over 150 countries, including the United States. As the number of confirmed cases increases daily, employers, employees, and their families are experiencing immense uncertainty.

A study by a team of researchers led by a Texas A&M University professor has found that not wearing a face mask dramatically increases a person's chances of being infected by the COVID-19 virus.

Renyi Zhang, Texas A&M Distinguished Professor of Atmospheric Sciences and the Harold J. Haynes Chair in the College of Geosciences, and colleagues from the University of Texas, the University of California-San Diego and the California Institute of Technology have had their work published in the current issue of *Proceedings of the National Academy of Sciences*.

The team examined the chances of COVID-19 infection and how easily the virus is passed from person to person. From trends and mitigation procedures in China, Italy, and New York City, the researchers found that using a face mask reduced the number of infections by more than 78,000 in Italy from April 6-May 9 and by over 66,000 in New York City from April 17-May 9.

"Our results clearly show that airborne transmission via respiratory aerosols represents the dominant route for the spread of COVID-19," Zhang said. "By analyzing the pandemic trends without face-covering using the statistical method and by projecting the trend, we calculated that over 66,000 infections were prevented by using a face mask in little over a month in New York City. We conclude that wearing a face mask in public corresponds to the most effective means to prevent inter-human transmission.

"This inexpensive practice, in conjunction with social distancing and other procedures, is the most likely opportunity to stop the COVID-19 pandemic. Our work also highlights that sound science is essential in decision-making for the current and future public health pandemics." One of the paper's co-authors, Mario Molina, is a professor at the University of California-San Diego and a co-recipient of the 1995 Nobel Prize in Chemistry for his role in understanding the threat to the Earth's ozone layer of human-made halocarbon gases.

"Our study establishes very clearly that using a face mask is not only useful to prevent infected coughing droplets from reaching uninfected persons, but is also crucial for these uninfected persons to avoid breathing the minute atmospheric particles (aerosols) that infected people emit when talking and that can remain in the atmosphere tens of minutes and can travel tens of feet," Molina said.

Zhang said the results should send a clear message to people worldwide: Wearing a face mask is essential in fighting the virus.

"Our work suggests that the failure in containing the propagation of COVID-19 pandemic worldwide is largely attributed to the unrecognized importance of airborne virus transmission," he said. "Social-distancing and washing our hands must continue, but that's not sufficient enough protection. Wearing a face mask as well as practicing good hand hygiene and social distancing will greatly reduce the chances of anyone contracting the COVID-19 virus."



Source:
Texas A&M University. "Face masks critical in preventing spread of COVID-19: Study found that wearing a face mask stopped person-to-person spread of the virus." ScienceDaily. [www.https://www.sciencedaily.com/releases/2020/06/200612172200.htm](https://www.sciencedaily.com/releases/2020/06/200612172200.htm) (accessed June 19, 2020).



People Who Eat A Late Dinner May Gain Weight

Eating a late dinner may contribute to weight gain and high blood sugar, according to a small study published in the *Endocrine Society's Journal of Clinical Endocrinology & Metabolism*.

Over 2.1 billion adults are estimated to be overweight, which makes health complications like diabetes and high blood pressure more likely. Some studies suggest that consuming calories later in the day is associated with obesity and metabolic syndrome.

"This study sheds new light on how eating a late dinner worsens glucose tolerance and reduces the amount of fat burned. The effect of late eating varies greatly between people and depends on their usual bedtime," said the study's corresponding author Jonathan C. Jun, M.D., of the Johns Hopkins University School of Medicine in Baltimore, MD. "This shows that some people might be more vulnerable eating late than others. If the metabolic effects we observed with a single meal keep occurring chronically, then any late eating could lead to consequences such as diabetes or obesity."

The researchers studied 20 healthy volunteers (10 men and 10 women) to see how they metabolized dinner eaten at 10 p.m. compared to 6 p.m. The volunteers all went to bed at 11 p.m. The researchers found that blood sugar levels were higher and the amount of ingested fat burned was lower with the later dinner, even when the same meal was provided at the two different times.

"On average, the peak glucose level after late dinner was about 18% higher, and the amount of fat burned overnight decreased by about 10% compared to eating an earlier dinner. The effects we have seen in healthy volunteers might be more pronounced in people with obesity or diabetes, who already have a compromised metabolism," said the study's first author Chenjuan Gu, M.D., Ph.D., of Johns Hopkins University.

This is not the first study to show the effects of late eating, but it is one of the most detailed. Participants wore activity trackers, had blood sampling every hour while staying in a lab, underwent sleep studies and body fat scans, and ate food that contained non-radioactive labels so that the rate of fat burning (oxidation) could be determined.

"We still need to do more experiments to see if these effects continue over time, and if they are caused more by behavior (such as sleeping soon after a meal) or by the body's circadian rhythms," Jun said.

The Endocrine Society. "People who eat a late dinner may gain weight." ScienceDaily. www.sciencedaily.com/releases/2020/06/200611094138.htm (accessed June 19, 2020).





Become A Physically Active Family

Children need at least 60 minutes of physical activity every day. Studies show that kids who are supported by friends and family or surrounded by active people are more likely to be active. Engaging in physical activity as a family can be a fun way to get everyone moving.

Physical activity is an essential part of a healthy lifestyle. It can help prevent chronic diseases, control weight, build muscle, and decrease the risk of obesity.

Being active as a family increases opportunities for kids and families to be physically active. Here are some activities you and your family can consider to get started on a path to a healthier lifestyle.

- Give children toys that encourage physical activity, such as balls, kites, and jump ropes.
- Encourage children to join a sports team or try a new physical activity.
- Facilitate a safe walk to and from school several times a week.
- Walk around the block after a meal.
- Do a fun activity, like family bike day or swim day.
- Make a new house rule: No sitting still during television commercials.
- Issue a family challenge to commit to physical activity five days a week for six weeks.
- Limit TV time and keep the television out of your child's bedroom.
- Ask your children's principal or write to your district superintendent to incorporate more physical education in schools.
- Encourage schools to hold recess before lunch to increase physical activity before mealtime.

"Active Families," accessed July 9, 2020, <https://letsmove.obamawhitehouse.archives.gov/active-families>



Easy Margherita Pizza

Ingredients

- 1 C all purpose or white whole wheat flour (5 oz) plus more for dusting
- 1 ½ tsp baking powder
- ½ tsp kosher salt
- 1 C Greek yogurt, not regular, drained if there's any liquid
- 1 small garlic clove, minced
- ¼ tsp kosher salt
- Pinch dried oregano
- Fresh black pepper to taste
- 4 oz fresh mozzarella cheese, sliced thin and torn by hand
- Fresh basil, torn for topping

Sauce

- ½ C canned san marzano tomatoes, crushed by hand
- Extra virgin olive oil, optional for drizzling

In a medium bowl combine the flour, baking powder, and salt and whisk well. Add the yogurt and mix with a fork or spatula until well combined, it will look like small crumbles. Lightly dust flour on a work surface and remove dough from the bowl, knead the dough a few times until dough is tacky, but not sticky, about 20 turns (it should not leave dough on your hand when you pull away).

Preheat oven to 450° F. If using a pizza stone, preheat the stone in the oven as well. If using a round pizza pan or sheet pan, spray with oil.

Sprinkle a work surface and rolling pin with a little flour and roll the dough out into a large thin round or oval (or you can make 2 smaller pies). Lay the dough out onto the oiled nonstick pizza dish or sheet pan. Spread the sauce over the crust. Top with cheese and place the pan on the pizza stone, bake 10 to 12 minutes or until the cheese is bubbly and the crust is cooked through. Transfer to a cutting board, top with basil and drizzle with olive oil if desired. Slice the pie into 8 slices.

Nutrition Facts

Serving: 2 slices, Calories: 236kcal, Carbohydrates: 27g, Protein: 15g, Fat: 6.5g, Saturated Fat: 3.5g, Cholesterol: 23.5mg, Sodium: 636mg, Fiber: 1g, Sugar: 3.5g

Gina Homolka. "Easy Margherita Pizza Recipe (No-Yeast)." *Skinnytaste*. June 08, 2020. Accessed June 19, 2020. <https://www.skinnytaste.com/margherita-pizza/>.