News and Views

Impact of the Color of the Serveware on Taste Perception

The color of the serving plate or bowl affects the perception of the taste of the food, suggests a study from the UK published in the journal *Food Quality and Preference*.[1]

Researchers from the Dept. of Psychology at University of Portsmouth in the UK enrolled 47 individuals to examine if color had any effect on food preferences. The study participants were assigned a questionnaire to measure Food Neophobia (FNS), which is the fear or reluctance of trying new food. Based on their responses they were categorized as picky or fussy eaters and non-picky eaters. They were asked to taste the same food item served in blue, red and white bowls.

Results showed that the color of the bowl affected the saltiness and desirability of the food in the picky eaters. The food served in the red and blue bowls was deemed saltier compared to the food in the white bowl. Food in red bowls rated the least on desirability. No such effects of the color of the bowls were observed among those who were not fussy eaters.

Sense of smell or olfaction and food texture is known to influence food choices or preferences. This study has attempted to decode fussy eating and shown for the first time the association between color of the bowl or plate in which food is served and perception of taste. It is often a struggle to get picky eaters to eat. The findings of this study possibly show a way out to deal with fussy eating.

Reference

1. Madison A, et al. How colour influences taste perception in adult picky eaters. Food Qual Prefer. 2023;105:104763.

Cervical Polyps: A Risk Factor for Spontaneous Preterm Labor?

The risk of spontaneous preterm labor is increased fourfold in pregnant women diagnosed with cervical polyp in the first trimester of pregnancy and which are not removed compared to women without polyps, suggests a recent study published in *The American Journal of Obstetrics and Gynecology*.[1]

In this study, researchers from the Osaka Women's and Children's Hospital in Osaka, Japan retrospectively analyzed medical records of 4,172 pregnant women at less than 12 weeks of gestation between January 2015 and December 2019. These participants had been detected to have cervical polyp on routine vaginal speculum examination, which was managed expectantly, except in cases where there was a suspicion of malignancy. None of the study subjects with cervical polyps had abnormal cervical smears during pregnancy. They sought to examine if cervical polyps had an impact on spontaneous preterm birth before 34 weeks of gestation. Women with fetal anomalies, multiple pregnancies, loss of pregnancy before 12 weeks of gestation were not included in the trial.

Out of the 4,172 selected participants, 92 (2.2%) were found to have a cervical polyp before 12 weeks of gestation. But polypectomy was not performed. Pregnant women who had cervical polyps were 4 times more likely to have spontaneous preterm births before 34 weeks of gestation compared to women who did not have cervical polyps; 5.4% vs. 0.7%, respectively with adjusted odds ratio (OR) of 4.09. After adjusting for confounding variables such as smoking, underweight prior to conceiving, the adjusted hazard ratio (aHR) for spontaneous preterm birth before 34 weeks of gestation among women with polyps compared to those without cervical polyps was 2.95.

Based on these findings, the authors suggest that unremoved cervical polyps diagnosed in early pregnancy are a risk factor for spontaneous preterm birth before 34 weeks of gestation. Clinicians should be aware of the association between cervical polyps and spontaneous preterm birth and encourage their patients to adopt healthy lifestyle habits.

Reference

1. Wakimoto T, et al. Relationship between unremoved cervical polyp in pregnancy and spontaneous preterm birth. Am J Obstet Gynecol. 2022;227(6):899.e1-899.e6.

Atopic Dermatitis and Risk of Fracture

Children with atopic dermatitis (AD) are at higher risk of suffering a fracture, suggests a recent study from South Korea published in the journal *Allergy*.[1] The risk increased proportionately with the severity of the disease.

To examine the association between AD and incidence of fractures, data of 1,778,588 children born between

2009 and 2015 was scrutinized. Information was sourced from the first National Health Screening Program for Infants and Children and evaluated for location of fracture and time of fracture. The follow-up period was an average of 7.52 years.

A total of 3,42,601 children (19.3%) examined were diagnosed with AD. Children with AD were 14% more likely to develop fractures (33.37 vs. 28.88 per 1,000 person-years, respectively). The risk of fracture increased as the severity of AD increased; children with moderate to severe AD were at the highest fracture risk (35.54 per 1,000 person-years) compared to children with mild AD (33.08 per 1,000 person-years) and children in the control group (28.88 per 1,000 person-years).

Children with mild AD were at 12% higher risk of fracture with aHR of 1.12, while the fracture risk increased by 23% among patients with moderate to severe AD (aHR 1.23).

Age at diagnosis was found to affect the risk of fracture. In children younger than 2 years, the aHR for fracture risk was 1.19, for children aged 2 to 4 years, the aHR was 1.08, while in children aged ≥5 years, the aHR was 1.03. The risk was maximum in the first year after the diagnosis of AD with aHR of 1.53, although the risk continued for up to 5 years (aHR 1.35). The effect was similar for the different fracture sites assessed: head (aHR 1.13), spine (aHR 1.33), upper limb (aHR 1.06), lower limb (aHR 1.13) and other sites (aHR 1.21). The enhanced risk of fractures is multifactorial, state the authors and may include dietary habits, intake of calcium and vitamin D, physical activity, sleep quality and effect of systemic corticosteroids.

This study shows that children with AD were at a higher risk of fracture. The risk was highest among children diagnosed at an early age. Most fractures occurred within the first year of diagnosis.

Reference

1. Lee SW, et al. Fracture incidence in children after developing atopic dermatitis: A Korean nationwide birth cohort study. Allergy. 2022 Nov 9. [Epub ahead of print]

Study Implicates Five Bacteria in Global Infection-related Mortality

Five pathogens – *Staphylococcus aureus*, *Escherichia coli*, *Streptococcus pneumoniae*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa* accounted for the majority of global deaths due to infectious diseases in 2019. In this first-time audit of deaths published in *The Lancet*, bacterial infections were found to be the second most important cause of death after ischemic heart disease.[1]

In this study, researchers assessed the infection-related deaths that occurred in 2019 in 204 countries in 11 infectious diseases caused by 33 clinically significant bacterial species. Data for this analysis was obtained from the Global Burden of Diseases, Injuries and Risk Factors Study (GBD) 2019 and the Global Burden of Antimicrobial Resistance 2019 study. *Mycobacterium tuberculosis* was not included in this analysis because there is already an End TB strategy in places globally with many countries having dedicated TB control programs. The researchers estimated the number of infection-related deaths, the infectious disease implicated in the deaths and the pathogens causing the infectious disease. Aided by these three modeling steps, number of deaths associated with each pathogen was estimated.

A total of 14 million infection-related deaths were recorded in 2019. Of these, nearly 8 million deaths were associated with the 33 species of bacteria examined. Amongst all the bacterial species evaluated, five bacteria namely *S. aureus, E. coli, S. pneumoniae, K. pneumoniae* and *P. aeruginosa* accounted for nearly 55% of deaths. *S. aureus* was associated with more than 1 million deaths globally in 2019, while more than 5,00,000 deaths each could be attributed to the remaining four pathogens.

Lower respiratory infections (4 million), bloodstream infections (2.91 million) and peritoneal and intra-abdominal infections (1.28 million) accounted for the majority of deaths in 2019. *S. aureus* was associated with 6,53,000 deaths due to lower respiratory tract infections (LRTIs) and 2,99,000 deaths due to bloodstream infections, while *E. coli* was linked to 2,90,000 deaths due to peritoneal and intra-abdominal infections. A regional difference was noted with highest mortality burden reported in sub-Saharan Africa (230 deaths per 1,00,000 population) vis-à-vis 52.2 deaths per 1,00,000 population in the high-income regions. The major pathogen responsible for deaths in persons aged ≥15 years was *S. aureus*, while among children ≤5 years, the major organism causing death was *S. pneumoniae*.

This study, which was conducted in the pre-COVID era, has identified 5 pathogens that were implicated in majority of deaths that occurred in 2019 due to infectious causes. As the "second leading cause" of death globally in 2019, an urgent action and intervention is necessary starting with increased and better surveillance. Prevention of infection, rational use of antibiotics, improved microbiological testing and vaccination are few approaches to tackle this high burden of bacterial infections and prevent mortality.

Reference

1. GBD 2019 Antimicrobial Resistance Collaborators. Global mortality associated with 33 bacterial pathogens in 2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet. 2022;400(10369):2221-48.

CLEAR Outcomes Clears the Way for Bempedoic Acid as the First Nonstatin Lipid-lowering Treatment Option

Top line results of the CLEAR Outcomes trial have been published and they bring great cheer for patients with statin intolerance at high risk for adverse cardiovascular (CV) events. The trial met the primary composite endpoint of CV death, nonfatal myocardial infarction (MI), nonfatal stroke and unstable angina requiring hospitalization by demonstrating a significant decrease in major cardiovascular events (MACE) in patients treated with bempedoic acid compared to placebo. This makes bempedoic acid the first nonstatin drug in the class of ATP-citrate lyase inhibitors, to demonstrate significant and "clinically meaningful" effects in the treatment of statin intolerant patients, according to a press release from the manufacturer Esperion.[1,2]

At this point of time, however, we do not have enough details about the results. Only the top line results have been released. The complete data is likely to be shared in the coming year.

About the CLEAR Outcomes trial

The **C**holesterol **L**owering via b**E**mpedoic **A**cid, an ACL-Inhibiting **R**egimen (CLEAR) Outcomes trial, conducted in 32 countries, examined the effects of 180 mg daily bempedoic acid in lowering the elevated lipid levels (low-density lipoprotein cholesterol [LDL-C] ≥100 mg/dL) and its ability to reduce the occurrence of MACE in at-risk patients in whom statins and other lipid-lowering drugs failed to reach the optimal lipid targets. The randomized, double-blind, placebo-controlled trial had enrolled nearly 15,000 patients with cardiovascular disease (CVD) or those who are at high risk for CVD and had exhibited intolerance to at least 2 statins.

Bempedoic acid was Food and Drug Administration (FDA) approved in February 2020 as an adjunct to diet and maximally tolerated statin therapy for the treatment of adults with heterozygous familial hypercholesterolemia or established atherosclerotic cardiovascular disease (ASCVD) who require additional lowering of LDL-C in the dose of 180 mg administered orally once daily.

However, the press release has cautioned about the simultaneous use of bempedoic acid with simvastatin or pravastatin due to the risk of risk for "simvastatin- or pravastatin-related myopathy."

References

1. https://www.esperion.com/news-releases/news-release-details/esperion-announces-clear-cardiovascular-outcomes-trial-nexletolr. December 7, 2022.
2. Bempedoic acid cuts CV risk in the statin-intolerant: CLEAR top-line results – Medscape. Dec 07, 2022.

Rheumatoid Arthritis Medicine Found Helpful in Reducing Risk of Heart Disease

A recent study published in the *Annals of Rheumatic Diseases* found that treatments often given to patients to lower joint inflammation may also reduce the risk of CVD in those with rheumatoid arthritis (RA), who are at an increased risk for the condition. Patients with moderate to severe RA are typically treated with methotrexate as their first-line of defense, although most RA patients eventually transition to tumor necrosis factor inhibitor (TNFi) or triple therapy (methotrexate plus sulfasalazine and hydroxychloroquine). In the current study, 115 persons with moderate to severe RA were given a TNFi, either adalimumab or etanercept, despite receiving methotrexate. The other option was triple therapy. Both groups experienced comparable declines in arterial inflammation, a risk factor for heart disease and RA disease activity after 6 months. Experts were overwhelmed to observe that these potent anti-inflammatory medications decreased the risk of heart disease in RA patients. They emphasized that the typical risk factors for heart disease, such as high cholesterol, high blood pressure and obesity, still need to be considered by doctors. But since inflammation—a crucial aspect of RA—increases the CV risk even more; treating arthritis offers a novel way to lower these people's risk of heart disease. (*Source: https://theprint.in/health/study-risk-of-heart-disease-can-be-reduced-by-rheumatoid-arthritis-medicine/1258774/*)

First Center of Excellence for 3D Bioprinting Inaugurated by IISc

The first 3D bioprinting Center of Excellence (CoE) in the nation was opened on 9th December, following an agreement reached in August between CELLINK, a pioneer in bioprinter development, and the Indian Institute of Science (IISc). It will concentrate on giving scientists the resources they need to enhance research in drug development, tissue engineering and regenerative medicine. According to a news release from IISc, the CoE, which will be based in the Institute's Centre for BioSystems Science and Engineering (BSSE), will give researchers access to 3D bioprinting equipment,

allowing them to move more quickly toward the ultimate objective of enhancing health outcomes.

Tomoko Bylund, head of sales at CELLINK, said that the center offers cutting-edge, market-leading 3D bioprinting technology. These technologies will make substantial advances in research and the development of the future of health care. Researchers will have access to CELLINK instruments located at the center, such as the "BIO X, BIO X6 and the BIONOVA X". (*Source: https://health.economictimes.indiatimes.com/news/industry/iisc-inaugurates-first-centre-of-excellence-for-3d-bioprinting/96128840*)

Study Reveals Gene behind Our Smoking and Drinking Behaviors

A recent study suggests that smoking and drinking habits may also be influenced by our genes, even though these behaviors are primarily controlled by many environmental and social factors. More than 3,500 genetic variants have been linked in studies to potential effects on this behavior. Given that these behaviors can put health at danger from psychiatric and CV problems and those hereditary factors might affect these behaviors, there is now much that can be done to try to change these behaviors. The study has concentrated chiefly on people in Europe. The scientists created a model for the study using the genetic information of 3,383,199 individuals, 21% of whom were of non-European origin. There are currently 3,823 genetic variations known to affect drinking or smoking habits. A total of 243 genes are associated to how many cigarettes a person will smoke in a day, and 849 genetic variants are linked to how many alcoholic beverages a person will consume each week. Thirty-nine genes are linked to the age at which someone will start smoking. Researchers found that most genetic correlations between smoking and drinking had similar consequences. They further stated that the environmental and epigenetic variables play critical role in turning the genes on and off, hence differences are less. (*Source: https://www.livemint.com/science/health/gene-determines-our-smoking-and-drinking-habits-here-s-what-study-shows-11670601360514.html*)

Strong Association Found Between High Levels of Arsenic Contamination in Water and Antibiotic Resistance Carriage among Children

A recent study published in *PLOS Pathogens* found that rural Bangladesh, which has high levels of arsenic poisoning in drinking water, had a greater prevalence of antibiotic-resistant *E coli* in both water and child stool samples. Antibiotic resistance is one of the primary causes of hospital admissions and fatalities worldwide. Researchers in the current study analyzed water and stool samples from 100 families in two rural Bangladeshi subdistricts, including mothers and young children. Overall, *E. coli* was detected in 84% of water and stool samples from the Hajiganj and Matlab locations. Antibiotic-resistant was substantially more prevalent among children in Hajiganj (94%) than in Matlab (76%), and in water in Hajiganj (48%) compared to water in Matlab (22%, $p < 0.05$), but not among mothers. Additionally, a larger percentage of *E. coli* infections from Hajiganj were not effectively treated due to resistance to multiple antibiotics such as penicillin, cephalosporin and chloramphenicol. Experts further stated that heavy metals like arsenic that result in antibiotic resistance in children are a significant public health problem and need immediate measures to decrease arsenic exposure. (*Source: https://www.news-medical.net/news/20221208/High-levels-of-arsenic-contamination-in-water-linked-to-antibiotic-resistance-carriage-among-children.aspx*)

Vaginal Estrogen and Use of Pessaries

Vaginal pessaries are a noninvasive therapeutic option in the management of pelvic organ prolapse. Vaginal pessaries are, however, a stopgap measure, until surgery is performed. While they provide symptomatic relief, their use is often associated with adverse effects such as increased vaginal discharge. A systematic review and meta-analysis of 5 RCTs and cohort studies published in the journal *Climacteric* has examined the effect of using local estrogen along with a vaginal pessary on adverse effects in postmenopausal women with pelvic organ prolapse.[1] Analysis revealed that women who used estrogen together with vaginal pessary showed a marked lower incidence of bacterial vaginosis compared to controls with OR of 0.29. The OR for vaginal ulceration was 0.98, for vaginal bleeding it was 0.80 and for vaginal discharge it was 0.74. This study has demonstrated the beneficial effect of the use of local estrogen together with a vaginal pessary in reducing the rate of bacterial vaginosis among postmenopausal women with pelvic organ prolapse. At the same time, the authors note the lack of consensus regarding the concurrent use of estrogen for lessening the other complications of pessaries and advocate larger studies to analyze the effect of estrogen use on reducing pessary-related complications.

Reference

1. Ai F, et al. Effect of estrogen on vaginal complications of pessary use: a systematic review and meta-analysis. Climacteric. 2022;25(6):533-42.

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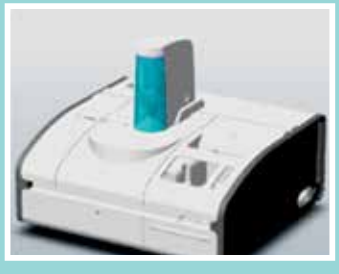
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