



NATIONAL WELLNESS INSTITUTE OF AUSTRALIA INC.



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May 2017 NWIA Members' Newsletter

Events

- 31 May World No Tobacco Day
- 17 June World Juggler's Day
- 17 June Eat Your Vegetables Day
- 17 June International Picnic Day
- 18 June International Picnic Day

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May Floral Emblem: Rose

PRESIDENT'S MESSAGE

Dia dhaoibh* Readers,

As you read this I will for most of this month be in Ireland on a self-drive holiday to see the sights of my Great Grandfather's and Great Grandmother's land of birth. This is a precursor to performing my NWI Board of Directors duty as International Wellness Liaison at the National Wellness Institute Conference (St Paul, Minnesota) in June.

But enough of the self indulgence and on to my topic of the month – the human act of hugging.

The article below (in part) is what caught my attention enough to choose hugging as the topic of my message this month:

“THE DAY HUGGING DIED: RULING SAYS IT’S TIME FOR A NEW OFFICE POLICY

by Christian Schappel

As human beings, we hoped this day would never come. But as HR pros, we all thought it would. And now it has arrived: the day when hugging in the workplace dies.

With a new ruling by the U.S. Court of Appeals for the Ninth Circuit, it appears we’ve reached the point in our history when employers must ban hugging from any and all work-related functions.

The court just allowed an employee’s sexual harassment lawsuit — in which hugging was the primary offense — proceed to trial. As a result, the employer, Yolo County in California, is staring squarely at an expensive court battle or settlement” (<http://www.hrmorning.com/ruling-time-to-ban-hugging-workplace/?pulg=1>)

What is a human hug?

Hug [hʌg]

VERB

hugging (present participle)

squeeze (someone) tightly in one's arms, typically to express affection:

"he hugged her close to him" -

synonyms: [embrace](#) · [cuddle](#) · [squeeze](#) · [clasp](#) · [clutch](#) · cling to ·

Neuroeconomist Paul Zak, recommends at least eight hugs a day to be happier and enjoy better relationships.

Psychotherapist Virginia Satir also famously said:

"We need 4 hugs a day for survival. We need 8 hugs a day for maintenance. We need 12 hugs a day for growth."

As wellness practitioners I am sure you all are aware that hugging has been shown to reduce stress hormones such as cortisol and increase oxytocin leading to a number of health benefits for both hugger and huggee.

With good reason, some are saying. According to a [recent editorial](#) by the *Wall Street Journal*, hugs offer a multitude of benefits you may not have considered.

Workplace hugging:

- Fosters teamwork;
- Promotes better business outcomes;
- Creates a [culture of trust](#) in the workplace

Unfortunately it has been reported in one study that one-third of people surveyed received no hugs on a daily basis and 75% stated they wanted more hugs.

If you are not sure how to hug and can accept what is published in ‘WikiHow to Hug’ (<http://www.wikihow.com/Hug>) there are 5 ways to hug. For many years at the National Wellness Institute (USA) annual Conference a group of attendees formed the official ‘Heart to Heart’ welcome committee. This involved greeting participants with a hug that ensured each person’s heart was directly opposite the other by positioning heads to the left side of each other in the hug creating a Heart to Heart contact.



This being different in most western societies to what normally happens (tradition? culture? history? nurture?) during off- centre hugs with right ear to right ear, or with front on hugs, cheek to cheek.



This of course while respecting the rule that you hug another only when the person you want to hug extends his or her arms to receive it. There are other rules which I have not got the space to go into here.

I distinctly remember at my first NWI Conference in Stevens Point Wisconsin over 13 years ago being a little late to the first session I was going to as many attendees on seeing the very distinctive yellow 'First Timer' badge on my chest, greeted me with handshakes and/or hugs (gratefully accepted) and welcoming words.

The article which I commenced this message with has spawned (understandably) a number of follow up ones, eg: Bosses have Begun Hugging Their Employees – What Could Go Wrong (<http://nymag.com/thecut/2017/04/bosses-hugging-employees.html>), For the Love of God, Stop Hugging Your Employees (<http://www.allure.com/story/bosses-hugging-coworkers-trend>), Office hugging trend not everyone's cup of tea, report finds (<https://www.hrgrapevine.com/content/article/news-2017-04-18-office-hugging-trend-not-everyones-cup-of-tea-report-finds>), and even a field guide to Corporate Hugging (<http://www.wsj.com/video/corporate-hugging-a-field-guide/B4CC04EE-EA46-4E50-9C26-8752410765B0.html>). But not all articles were in the negative corner eg The Australian published a story 'Office hugs: supporters say it breeds trust and better results' (17/4/2017).

The key to navigating this new, affectionate world may be how well it is communicated within the workplace

The conclusion seems to be that, as long as there are clear guidelines – and those who do not wish to participate are respected – the humble hug does in fact promote significant benefits for the workplace http://www.hrmonline.com.au/section/featured/companies-make-you-consider-workplace-hugging/?utm_source=HRM&utm_medium=e%2Dnews&utm_campaign=HRM+announcement – (April 26 2017)

So where do you sit with hugging in the office/workplace? Write in (admin@wellnessaustralia.org) and let our editor know.

For your wellness maintenance - keep hugging (appropriately),

[is fearr maidir le](#) ^

Bob Boyd
PRESIDENT NWIA

*Hello ^Best Regards (Irish)

International Wellness Connections

This is the 49th article of a series featuring information from International Wellness Practitioners about the state of Wellness in their country of residence. This and any previous International Wellness Connections monthly article has appeared in the National Wellness Institute (USA) monthly newsletter, at least 12 months previous to it appearing in this publication.

NWIA extends a sincere thank you to the authors for their contributions to the NWIA newsletter.

[How A Union Meeting in Nigeria Changed My Mind About Global Wellness](#)

Posted By *NWI*, Wednesday, May 4, 2016

By Lisa Beichl
CEO of Transparent Borders LLC

When we talk about wellness we often consider health risk assessments (HRAs) as a tool to screen for *individual* risks. Once an individual is apprised of the risks impacting his or her health status, the foundation is set for improvement. Healthy employees are productive employees.

When multinational *corporations* talk about wellness, there is also often a focus on improving employee health status through lifestyle changes that the company may support through events like a wellness day, health screenings or perhaps a walking challenge.

When *consultants* discuss global wellness, there is frequently an emphasis on establishing a core set of global programs like an HRA or an Employee Assistance Program (EAP) as a starting point. These are considered relatively inexpensive products that support employees.

While all of these concepts can be effective, how well do they translate in emerging economies?

I am reminded of a union meeting I attended in Lagos, Nigeria. The union representatives were to meet with the health insurers to discuss benefits. On my way to the meeting, we drove on unpaved and colourful roads without sidewalks, causing some unsettling near-misses of passersby. The heavy air pollution left a sting in my lungs, yet there were enticing aromas of the food being sold by working women along the way. There were about 25 representatives from the various parts of the union and four health insurers were represented. There was a dedicated arbitrator set to mitigate the potential arguments that might erupt – and erupt they did. About 30 minutes into the meeting, after the health insurers defended the benefits provided, the union leader stood up and began a long, articulate, and impassioned speech about his role in caring for union members and their families. The discussion lamented the insurance decision to only offer generic medications. He and his union members and their families believed that there were situations where non-generic drugs were indicated. The speech included examples of individuals who he believed had died as a result of this benefit decision. The pitch of the meeting was both aggressive and sombre.

When I translate this experience into how we think about health and wellness in emerging markets, it reinforced the importance of the local perspective. We may think we consider the local perspective when we make our wellness programs culturally sensitive and translate them into the local language. And we may feel justified in our lifestyle wellness program decisions like a walking program after we read that the incidence of non-communicable diseases is increasing globally.

However, I recall once listening to a vendor describe a walking program that it introduced in Nigeria. I wondered why anyone would do that considering the air pollution, danger walking on the streets, and other more relevant public health risks. Something didn't make sense. As I contemplated wellness programs in developed economies compared to the risks in emerging economies I realized that wellness initiatives in developed economies presume "all things are equal." The data tell us that that is an incorrect assumption. In many emerging economies supporting foundations, healthcare literacy, and the employee protections that we rely on in developed economies don't exist, and their absence impacts employee health and wellness.

Consider these three points:

1. Weak foundations in emerging economies do not provide the same support available in developed countries
2. Healthcare literacy levels may be low
3. Unenforced occupational health and labour laws impact employee physical and psychosocial health

1. Weak foundations do not provide the same support available in developed countries

Health and wellness programming generally presumes that the foundations that keep employees safe and protected are in place. For example, human rights are enforced, roads are well paved and lit, there is access to potable water and safe electricity, victims of domestic violence can find help, and health insurance coverage is largely preventive (not curative). Access to health and mental health care also contributes to the foundation of employee wellness. If there is an undersupply of medical providers, diagnostic equipment, or psychologists, there are important gaps.

Consider the following list of countries, suicide rates, and penetration of psychologists:

Country	Suicide rates (WHO 2012)	Psychologists working in mental health sector/ 100,000 (WHO 2014)
Australia	10.6	16.68
New Zealand	9.6	13.78 (2011)
United Kingdom (UK)	6.2	12.83
USA	12.1	29.62
India	21.1	.07
South Korea	28.9	1.12 (2011)
Russian Federation	19.5	2.61

There is a higher penetration of psychologists in Australia, New Zealand, the UK and the USA compared to the other countries. The suicide rates are also lower in those countries with higher psychologists working in the mental health sector. Though the suicide rates in Russia are lower than in India and South Korea, they are the highest in Europe. [i] Consider this statement on mental illness in Russia: “The Soviet practice of hiding people deemed disabled translates nowadays into the practice of relocating people with the most severe mental illnesses from mental health hospitals to social care institutions, outside the jurisdiction of the health sector and outside the scope of mental health reforms.” [ii]

Given this stigma, it’s not a surprise that some employees may not be ready to confront their depression through an EAP program or counseling. I once spoke with a Human Resources Manager in Russia who was asked to re-introduce an EAP program that she had previously cancelled. When asked about the program’s proposed re-introduction, she responded, “It is a great idea. It’s just not our culture. But we liked the punching bags; can we have more of them?” This was a sales office with a very young male demographic. I could picture young yet stressed salesmen taking their frustrations out on punching bags in the office. In spite of the request, the Russian sales office was required to re-purchase an EAP program. Based on this experience, when I read reports on the number of EAP programs in different countries as a barometer of wellness uptake globally, I remember the conversation with the Human Resources Manager in Russia. What does the number of EAP programs globally tell me? The stigma associated with mental health issues in some countries reinforces the importance of knowing how well employees understand the concept of health and wellness. That includes health care literacy. How healthcare literate are your employees globally?

2. Healthcare literacy levels may be low

Providing programs geared towards health promotion is a great idea, but we want to be sure that employees understand the concept of health promotion. We can use healthcare literacy levels to measure this. In China, for example, healthcare literacy levels in 2013 were estimated to be 9.8%. [iii] A 2009 study in Turkey estimated they were about 58.6%. [iv]. If employees don’t understand the concept of health promotion, we can’t expect them to fully embrace it. But it isn’t just absent foundations and low health care literacy driving employee health and wellness. When occupational health and labour law enforcement are weak, these issues also impact employee health and wellness.

3. Unenforced occupational health and labour laws impact employee physical and psychosocial health

Occupational health risks in emerging economies are not always what we expect. In China they include: pneumoconiosis (due to silica dust exposure), occupational poisoning (represents an estimated 13-20% of occupational diseases), musculoskeletal disorders, work stress, allergies, occupational tumours and occupational ear, nose, throat and mouth injuries. [v] In addition to occupational safety, labor laws are not always enforced. Even companies who work diligently to ensure fair working conditions have difficulty. In China, an Apple supplier is reported to be breaking Chinese employment law in spite of strong pressure from Apple to comply. 71% of the pay stubs collected showed average work weeks that exceeded the self-imposed 60-hour limit. The factory’s average wages were \$1.82 per hour. [vi] Korea is also well known for long working hours, particularly in the manufacturing industry. Psychosocial risks and work-related stress have not been quantified in developing countries. [vii] There is a lack of research, but the gap is beginning to

close. A study demonstrated that extended working hours in the manufacturing industry was linked to a significant increase in trend for depression. [viii] Worksite stress takes many forms. Psychosocial stressors in a study in Egypt, Nigeria and Mexico, for example, were driven by companies treating lower ranked employees with less respect than their more educated counterparts. [ix] These examples suggest the priority should be on solutions to address *internal* management and labour issues rather than providing *external* employee support.

Understand global threats and the role the environment plays

According to the World Health Organization, non-communicable diseases (NCDs) kill 38 million people annually, and almost ¾'s of the deaths occur in low and middle income countries. Cardiovascular diseases account for most NCD deaths, followed by cancer, respiratory disease, and diabetes. [x] Lifestyle choices contribute to NCDs globally. For example, smoking rates among males in China are very high. But we must also consider the impact of the environment. For example, a study linked polluted air in China to 1.6 million deaths a year. Much of China's air pollution comes from the large-scale burning of coal. [xi]

Know “what matters”

Returning to the union meeting in Lagos, Nigeria, and the strong interest from the union for an improved drug formulary, what mattered was access to expanded health benefits. Looking at the young sales team in Russia, the stress was present, but the local team preferred a physical release through punching bags rather than a counselling session. If your ultimate goal is employee health and wellness, know “what matters” to your employees. And if “what matters” to employees is not aligned with “what matters” to employers, it's time to work on a strategy. Where do we start? Study the landscape. There is data available from the World Health Organization, the World Bank, and other respected institutions to frame the issues at a country level. For example:

Foundation: Evaluate which country factors impact employees. This includes the physical environment, social issues like gender, and the medical and mental health infrastructure.

Review the current health benefits available to employees and determine if there is a largely preventive or curative focus. It may surprise you to learn that some private health insurance policies in Russia are cancelled as soon as an individual is diagnosed as having a chronic disease. That certainly puts the value of a cancer screening program into a different light. Analyse access to medications, cervical cancer screenings, dental cleaning, and even access to spectacles. It may surprise you to know that in India only 7% of the population wore spectacles in mid 2000, where 65% of the population needed them. [xii]

Healthcare literacy: At a minimum seek to learn country healthcare literacy levels.

Occupational Health and Safety: Reach across the aisle to learn what occupational health and safety risks might impact employee health and wellness. At a factory in the Philippines, the number one occupational health issue turned out to be a combination of high productivity goals, inadequate access to potable water, and insufficient toilet breaks leading to the top diagnosis of Urinary Tract Infections.

Going forward

Fortunately there is sufficient public data available for us to paint a picture of what is the same and different across countries. This information helps us have meaningful conversations with our brokers, consultants and vendors. We can move the discussion from global programs adapted locally, to conversations about unique risks and the environment, particularly in emerging economies. Perhaps it is the right time to recognize that when it comes to global health and wellness, all things aren't equal. We are wise to consider medical and psychosocial risks in relation to the foundations supporting employees including the environments in which they work and live.



Lisa Beichl is the CEO of Transparent Borders LLC, based in the US. She leads the development of evidence-based tools and consulting for employers, governments and other organizations. Her professional experience in North America, Latin America, the Middle East, Southeast Asia, Western Asia, West and East Africa as well as Central, Western and Eastern Europe has helped to create a solid understanding of the complexities in managing health and wellness. Lisa is a former Aon Hewitt Vice President and consultant for

Milliman, USAID and several European Companies.

[i] Mental Health in Former Soviet Countries: From past legacies to modern practices” Ionela Petrea, PhD, MSc
http://www.publichealthreviews.eu/upload/pdf_files/12/00_Petrea.pdf

[ii] Ibid

[iii] “China’s literacy rate rises to 9.48%” National Health and Family Planning Commission December 2014
http://www.chinadaily.com.cn/m/chinahealth/2014-12/19/content_19128208.htm

[iv] Oxford Journals, Health Education Research, Volume 25. Issue 3
<http://her.oxfordjournals.org/content/25/3/464.short>

[v] “The current status of occupational health in China” Xueyan Zhang, Zhongxu Want, and Tao Li. Environmental Health and Preventive Medicine 2010

[vi] “Apple Supplier in China’s Poor Labor Practices Clash with US Tech Giant’s Promises to Life Supply Chain Standards” Cole Stanger, 02/23/16 International Business Times <http://www.ibtimes.com/apple-supplier-chinas-poor-labor-practices-clash-us-tech-giants-promises-lift-supply-2320357>

[vii] “Tackling Psychosocial Risks and Work-Related Stress in Developing Countries: The Need for a Multilevel Intervention Framework” Evelyn Kortum and Stavroula Leka, University of Nottingham. December 2013, American Psychological Association

[viii] “Long Working Hours and Emotional Well-Being in Korean Manufacturing Industry Employees” Kyoung=Hye Lee, at al. Annual Occupational Environmental Medicine 2013; 25: 38.
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3923334/>

[ix] “Tackling Psychosocial Risks and Work-Related Stress in Developing Countries: The Need for a Multilevel Intervention Framework” Evelyn Kortum and Stavroula Leka, University of Nottingham. December 2013, American Psychological Association

[x] World Health Organization (WHO) 2016 <http://www.who.int/mediacentre/factsheets/fs355/en/>

[xi] “Study Links Polluted Air in China to 1.6 Million Deaths a Year” by Dan Levin, August 13, 2015 New York Times
http://www.nytimes.com/2015/08/14/world/asia/study-links-polluted-air-in-china-to-1-6-million-deaths-a-year.html?_r=0

[xii] “Better Vision for the Poor” Aneel Karnani, Bernard Garrette, Jordan Kassalow, & Moses Lee, Spring 2011 Stanford Social Innovation Review. http://ssir.org/articles/entry/better_vision_for_the_poor

Quote for the month





Mind And Body Are More Deeply Intertwined Than You Might Think

“Heartache.” “A gut feeling.” “Butterflies in your stomach.”

Deride them as clichés, but the phrases illustrate a truth: the constant interaction between mind and body. By now plenty of research backs the mind-body connection, but a classic chicken-or-egg question continues to befuddle: Does mental illness cause physical illness, or vice versa?

A [recent PLOS ONE study](#) takes a stab at answering that very question. Its conclusion:

Based on data from nearly 6,500 teenagers in the United States, researchers at the University of Basel in Switzerland found distinct patterns in the sequence in which they experienced various ailments: Those who suffered from one had a higher likelihood of developing another. For instance, digestive disorders and arthritis often followed depression and other mood disorders. And teens who had already suffered from [heart disease](#) were more likely to develop anxiety disorders later. The findings suggest the medical community should rethink its tendency to treat mental and physical disorders separately, says study investigator Gunther Meinlschmidt.

Studies have already shown that certain mental and physical illnesses tend to occur together, but Meinlschmidt's team wanted to tease apart the details — namely, whether one precedes another — by examining data from large numbers of people. Consistently seeing one disorder precede another in a large number of people doesn't prove a causal relationship between them, but it does suggest one. Meinlschmidt and his team also wanted to know whether these associations start early in life, during childhood or adolescence.

So they analyzed data from the National Comorbidity Survey Adolescent Supplement, a survey of 6,438 U.S. teenagers ranging 13-18 years old. The teens completed diagnostic interviews to test for the presence of mental disorders. Their parents or guardians responded to questions about the teens' mental health, too. The teens also filled out a checklist of physical illness symptoms, and answered questions about diagnoses of physical illnesses they had received from their doctor.

Meinlschmidt's team ran the data through statistical software to search for trends in the timing of the onset and co-occurrence of various mental and physical illnesses. In some cases, mental disorders predicted physical disease. On average, teens who had [depression](#), bipolar disorder and other mood disorders were more likely to suffer from arthritis and digestive disorders later, and those with anxiety disorders were more likely to develop skin diseases later. Substance abuse tended to precede seasonal allergies. But physical diseases also predicted mental disorders. Having a heart disease was followed by a heightened risk of suffering from anxiety disorders. The researchers saw the same association between epilepsy and eating disorders.

The latter association “was really astonishing,” Meinlschmidt says. Only case studies have reported eating disorders following epilepsy; it's often thought that eating disorders cause nutrient imbalances that then lead to physical symptoms. Meinlschmidt's findings add to evidence that the opposite is true, suggesting the potential of anti-epileptic drugs to treat eating disorders. Of course, “this is really speculative,” he notes, but “might be worth looking at further.”

Dr. Emeran Mayer, a professor of medicine at the David Geffen School of Medicine at UCLA and author of the book [The Mind-Gut Connection](#), says the findings are consistent with earlier studies linking certain [gastrointestinal and behavioral disorders](#), as well as studies finding an increased risk of depression after heart attacks and bypass surgery.

To be sure, the study didn't analyze data tracking the participants over time, which could have provided a more complete picture of the mental-physical health associations, Mayer says, a limitation Meinschmidt's team acknowledges in their paper. Still, Mayer believes the large sample size is a major strength of the study and that overall, "it's an important study."

The researchers write that their findings support a more integrative approach to medicine. "Mental and physical health care are separate worlds," Meinschmidt says. "Either you see a psychologist or psychiatrist, or you see your general physician." But health care should reflect patients' experience, he notes. "For people in the real world, they're not separate."

If you suspect that any mental and physical illnesses you've experienced are related, that might very well be the case. For instance, don't be surprised if your panic attack-prone child also develops gastrointestinal problems, Mayer says. "It's not just by chance that [mental and physical illnesses] are co-occurring," Meinschmidt says. "There's a high probability they can trigger each other."

Melissa Pandika, OZY Author [Contact Melissa Pandika](#)

http://www.ozymag.com/acumen/the-link-between-mental-illness-and-physical-illness/76671?utm_source=pdb&utm_medium=email&utm_campaign=04112017&variable

Breathe Smarter Not Harder

www.AirmaxPowerBreather.com



New App To Help Improve Environments For People Living With Dementia



dementia.

Working in collaboration with construction experts Space Group, the team is creating the first app of its kind in the world to digitally assess how suitable a residence, care facility or other environment is for older people and those living with dementia.

The dementia database, called IRIDIS, will make a simple assessment of a person's home and recommend changes that can be made to the building.

The free homeowner app, available to download from autumn 2017, will address physical aspects of design which impact upon older people's quality of life and their ability to live more independently. This includes lighting, colour contrast and noise.

People living with dementia, family members, healthcare professionals, construction experts or designers using the app, will be asked questions about their surroundings, and asked to take photographs.

It will take around just 20 minutes to assess the suitability of a two-bedroom home for an older person.

Improvements the app may recommend will be as simple as changing a light bulb, to more complex improvements such as reconfiguring bathrooms.

The IRIDIS app is an updated, digital version of the DSDC's existing paperback Dementia Design Audit Toolkit, currently available at the Centre in Stirling.

Lesley Palmer, Chief Architect at DSDC, said: "This is a unique opportunity to revolutionise how we improve day-to-day life for older people and people living with dementia around the world. We are creating a simple way for anyone to assess how dementia-friendly their environment is, and find out how to improve their surroundings.

"With around 50 million people estimated to be living with dementia worldwide, there is an immediate need to invest in our aging population and provide improved services and facilities.

"This industry-leading, intelligent suite of software offers new methods of assessing our built environment. All of the guidance within the IRIDIS app will be underpinned by the research the University has carried out in this area.

"Typically, people living with dementia have greater demands on the health care services and providing guidance on how to adapt living conditions allows people to stay independent for longer and future proofs housing for autonomous living."

Dementia is one of the main causes of disability later in life, ahead of cancer, and bed-blocking costs NHS Scotland an estimated £114 million a year.

Stephen Brooks, Director at Space Architects, said: "We acknowledge that there are variations of 'apps' for guidance on dementia design principles and auditing the built environment, but none which have such a level of detail and have a direct and real-time results link to the construction and product industry.

"Previous dementia design application platforms have focussed entirely on the dissemination of information, as opposed to harnessing the opportunity to collect data and strike a two-way channels of communication between the researcher, designer and the end user."

Design modification data collected from the app will allow IRIDIS to continually update the app and improve results for future users.

The data within the IRIDIS app will also make recommendations on property design and refurbishment for construction professionals. It will be aligned to digital construction methodology, with links to the Building Information Modelling (BIM) provider bimstore. This allows designers to search and download BIM objects from construction product manufacturers that are specifically designed and kite-marked to meet dementia care design standards.

Stephen added: "Creating fully inclusive built environments is a considerable undertaking and highlights a new area under consideration for our ageing population. This software will offer designers and contractors new intelligence needed to facilitate and future-proof dementia care design. What we are offering is truly ground-breaking and the software within the IRIDIS app will be one of the greatest advances to date in dementia care design principles."

Dr Stephen Baker, Country Head of Japan at Scottish Development International, said: "Japan with its aging society has a keen interest in developing models of care for those with dementia. Recently Japan has been looking closely at the Scottish Government policy on dementia care and the research conducted into improving the lives of people who live with dementia conducted by DSDC. The IRIDIS app launch brings a wonderful new innovation to further enrich the lives of people living with dementia, I look forward to the day when it will be available in Japan."

The IRIDIS app will launch at the University of Stirling's International Dementia Design Masterclass on Thursday 1 June, where the DSDC and Space Architects teams will unveil the new service.

Later versions of IRIDIS will include a more detailed, paid-for service aimed at industry professionals in dementia care design and construction and healthcare professionals and providers. These apps will be able to assess illuminance and noise levels, including other more sophisticated features.

The app will be available to download from Thursday 21 September, on International Alzheimer's Day.
http://www.stir.ac.uk/s/search.html?collection=stirling&meta_T=news&sort=date&SF=cdHTU&form=news&fmo=true



We're On The Brink Of Mass Extinction -- But There's Still Time To Pull Back

Both ominous and hopeful, new report paints a picture of the value of biodiversity, the threats it faces and the window of opportunity we have to save species before it's too late.

Imagine being a scuba diver and leaving your oxygen tank behind you on a dive. Or a mountain climber and abandoning your ropes. Or a skydiver and shedding your parachute. That's essentially what humans are doing as we expand our footprint on the planet without paying adequate attention to impacts on other living things, according to researchers from the University of Minnesota and McGill University. Because we depend on plants and animals for food, shelter, clean air and water and more, anything we do that makes life harder for them eventually comes around to make life harder for us as well.

But, reporting with colleagues from around the world in this week's special biodiversity issue of the scientific journal *Nature*, the researchers also note that all is not lost, and offer specific strategies for turning that tide before it's too late.

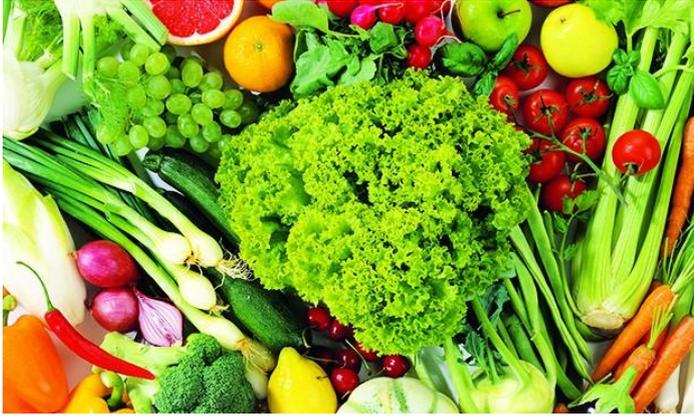
Forest Isbell, of University of Minnesota's College of Biological Sciences, McGill biologist Andrew Gonzalez and coauthors from eight countries on four continents provided an overview of what we know and still need to learn about the impacts of habitat destruction, overhunting, the introduction of nonnative species, and other human activities on biodiversity. In addition, they summarized previous research on how biodiversity loss affects nature and the benefits nature provides -- for example, a recent study showing that reduced diversity in tree species in forests is linked to reduced wood production. Synthesizing findings of other studies, they estimated that the value humans derive from biodiversity is 10 times what every country in the world put together spends on conservation today -- suggesting that additional investments in protecting species would not only reduce biodiversity loss but provide economic benefit, too.

"Human activities are driving the sixth mass extinction in the history of life on Earth, despite the fact that diversity of life enhances many benefits people reap from nature, such as wood from forests, livestock forage from grasslands, and fish from oceans and streams," said Isbell, who served as lead author the paper. "It would be wise to invest much more in conserving biodiversity."

"Biodiversity plays a big role in the UN Sustainable Development Goals that aim to ensure human wellbeing in the long-term" said Gonzalez. "Attaining the UN SDGs will require action to conserve and restore biodiversity from local to global scales".

Linking the influence and dependence of people on biodiversity across scales, doi: 10.1038/nature22899

McGill University: <http://www.mcgill.ca> The University of Minnesota College of Biological Sciences: <https://cbs.umn.edu/>



Cold Conversion Of Food Waste Into Renewable Energy And Fertilizer Has ‘Enormous Potential’

Researchers from Concordia’s [Department of Building, Civil and Environmental Engineering \(BCEE\)](#) in collaboration with Bio-Terre Systems Inc. are taking the fight against global warming to colder climes.

Their weapon of choice? Cold-loving bacteria.

In a study published in [Process Safety and Environmental Protection](#), authors Rajinikanth Rajagopal, David Bellavance and Mohammad Saifur Rahaman demonstrate the viability of using [anaerobic digestion](#) in a low-temperature (20°C) environment to convert solid food waste into renewable energy and organic fertilizer.

They employed psychrophilic bacteria — which thrive in relatively low temperatures — to break down food waste in a specially designed bioreactor. In doing so, they produced a specific methane yield comparable to that of more energy-intensive anaerobic digestion processes.

“There is enormous potential here to reduce the amount of fuel that we use for solid waste treatment,” Rahaman explains.

“Managing and treating food waste is a global challenge, particularly for cold countries like Canada where the temperature often falls below -20°C and energy demands related to heating are high.”

He adds that the most commonly used forms of anaerobic digestion require large amounts of energy to heat the bioreactors and maintain temperatures for the bacteria’s optimal performance.

“What we’ve learned is that we can now use adapted psychrophilic bacteria to produce a level of methane comparable to those more common forms, while using less energy.”

‘A promising new research direction’

Globally, more than 1.3 billion tonnes of municipal waste are created each year, and that number is expected to increase to 2.2 billion by 2025. Most of it ends up in landfills where it biodegrades over time, producing biogas, a powerful greenhouse gas largely composed of carbon dioxide, methane and hydrogen sulfide.

Left alone, this methane-rich biogas poses a significant climate threat, as methane carries a global warming potential that is 21 times greater than that of carbon dioxide.

But, according to the researchers, engineered anaerobic digestion techniques can also be adapted to capture such gases and transform them into renewable energy.

By employing devices such as biogas storage domes, biofilters or combined heat and power co-generation systems, for instance, methane can be collected, cleaned and converted into heat or electricity that can then be substituted for most fossil fuels.

At an agronomic level, the process also contributes leftover nitrogen- and phosphorus-rich digestate material that can be subsequently recovered and used as plant fertilizer.

The process for feeding the bioreactor is unique. It involves a semi-continuously fed constant volume overflow approach: the amount of food waste fed into the bottom opening necessitates the removal of an equal amount of treated effluent from the top.

The researchers performed various tests on the extracted material to determine its physicochemical characteristics as well as to monitor the biogas quality and quantity.

“There aren’t many studies that look into developing new applications for treating food waste,” Rajagopal says. “We hope that this study will mark the beginning of a promising new research direction.”

[Read the cited study](#)

<http://www.concordia.ca/cunews/main/releases/2017/05/31/new-research--cold-conversion-of-food-waste-into-renewable-energ.html?c=news/media-relations>



Scientists ID 100 Memory Genes, Open New Avenues Of Brain Study

Scientists have identified more than 100 genes linked to memory, opening new avenues of research to better understand memory processing in the human brain.

A study at the [Peter O'Donnell Jr. Brain Institute](#) includes the results of a new strategy to identify genes that underlie specific brain processes. This strategy may eventually help scientists develop treatments for patients with memory impairments.

“Our results have provided a lot of new entry points into understanding human memory,” said [Dr. Genevieve Konopka](#), Assistant Professor of Neuroscience with the O'Donnell Brain Institute at UT Southwestern Medical Center. “Many of these genes were not previously linked to memory, but now any number of labs could study them and understand their basic function in the brain. Are they important for brain development; are they more important for aspects of behavior in adults?”

The study published in [Cerebral Cortex](#) stems from previous research by Dr. Konopka that linked specific genes to resting-state brain behavior. She wanted to use that same assessment to evaluate brain activity during active information processing.

To do so, she collaborated with [Dr. Bradley Lega](#), a neurosurgeon with the O'Donnell Brain Institute conducting memory research on epilepsy patients while helping to locate the source of their seizures. Dr. Lega maps the brain waves of these patients to understand what patterns are critical for successful memory formation.

Combining their techniques, the doctors found that a different group of genes is used in memory processing than the genes involved when the brain is in a resting state. A number of them had not previously been linked to any brain process, Dr. Konopka said.

Dr. Lega is hopeful the findings can help scientists better understand and treat a range of conditions involving memory impairment, from epilepsy to Alzheimer's disease.

He also hopes the study's success in combining genetics and cognitive neuroscience will encourage more scientists to reach beyond their areas of expertise to elevate their research.

“This kind of collaboration is not possible unless high-quality neuroscience research and academically minded clinicians are in close physical and intellectual proximity. I don't think either of us working or thinking independently would've come up with this type of analysis. Ideally, the O'Donnell Brain Institute will be a natural incubator for these sorts of collaborations for a number of neuroscience fields,” said Dr. Lega, Assistant Professor of Neurological Surgery, Neurology and Neurotherapeutics, and Psychiatry.

The study was supported by UT Southwestern Jon Heighten Scholar in Autism Research, the National Institutes of Health, the James S. McDonnell Foundation 21st Century Science Initiative in Understanding Human Cognition Scholar Award, Friends of the Alzheimer's Disease Center at UT Southwestern, the David M. Crowley Foundation, and a UT BRAIN Initiative Seed Grant.

<http://www.utsouthwestern.edu/newsroom/news-releases/year-2017/may/memory-genes-konopka.html>



Tourists Risk Animal Bites By Misreading Wild Monkey Facial Expressions As 'Kisses'

Wildlife tourists frequently fail to identify aggressive and distressed emotional states in wild monkeys - mistaking animals' warnings of aggression for 'smiles' and 'kisses' - and this can lead to welfare problems for primates and risk of injury for people, according to new research published today.

A new study by a team of behavioural ecologists and psychologists examined whether educational tools intended to help tourists recognise different facial expressions in monkeys - such as 2D images and information signs like those found in zoos or animal parks - were effective in reducing harm to humans and distress to primates in destinations where wild macaques freely interact with humans.

The researchers found that tourists made significant mistakes in interpreting macaques' emotions - such as believing a monkey was 'smiling' or 'blowing them kisses' when they were in fact displaying aggression - despite exposure to pictures designed to demonstrate what the animals' facial expressions mean.

This level of misunderstanding could lead to increased risk of injury to humans and have a negative impact on the welfare on the animals, particularly in places where wild macaques interact with people, the study concluded.

The research, led by researchers from the University of Lincoln, UK, suggests videos or supervised visits led by expert guides would be better placed to educate tourists about how best to read emotions in animals in zoos and wildlife parks, along with advice on maintaining safe distance from the animals.

Dr Laëtitia Maréchal, from the School of Psychology at the University of Lincoln said: "There is a growing interest in wildlife tourism, and in particular primate tourism. People travel to encounter wild animals, many of them attempting to closely interact with monkeys, even though this is often prohibited.

"However, serious concerns have been raised related to the safety of the tourists interacting with wild animals. Indeed, recent reports estimate that monkey bites are the second cause of injury by animals after dogs in South East Asia, and bites are one of the main vectors of disease transmission between humans and animals.

"Our findings indicate that people who are inexperienced in macaque behaviour have difficulties in recognising monkey's emotions, which can lead to dangerous situations where they think the monkeys are happy but instead they are threatening them.

"Education, guided visits, and keeping a safe distance with animals could be implemented as measures to reduce such issues, improving both animal welfare and tourist experience. Video might be a particularly effective tool to help people recognise animal emotion based on their facial expressions, behaviour or vocalisations, reducing any misunderstanding."

Researchers quizzed three groups of participants - those with little to no experience of Barbary macaques, those with exposure to 2D images of different monkey faces, and those who had worked with primates for at least two months - on what emotions were being portrayed in a series of images showing aggressive, distressed, friendly and neutral faces.

Macaques present aggressive or threatening stances through raised eyebrows, staring, and opening the mouth to show the teeth, or having the lips protrude to form a round mouth. When the mouth is widely open and the animal is yawning, or the corners of the lips are fully retracted revealing the upper and lower teeth, it signals that they are distressed or submissive.

Macaques will have their mouths half open and the lips slightly protruding with a chewing movement and clicking or smacking of the tongue and lips to indicate they are friendly; and neutral faces feature a closed mouth and relaxed face.

They found that all participants, regardless of their levels of experience, made some mistakes confusing aggressive faces with non-threatening faces such as neutral or friendly faces. Experts made just under seven per cent of mistakes, participants who were exposed to 2D images of monkey faces made just over 20 per cent of mistakes, and participants who had never or rarely encountered live monkeys made nearly 40 per cent of mistakes.

Dr Maréchal added: "When on site in Morocco, I often heard tourists in saying that the monkey seemed to blow them a kiss when they actually displayed a threatening face.

"The tourists often responded by imitating the monkey's facial expression, which generally ended by either aggression by the monkey towards the tourists or the monkey leaving the interaction.

"If we can educate people, and prevent monkey bites, we can not only reduce the risk of disease infection, we can improve on the tourism experience. These findings are highly relevant to the general public and any professional in wildlife tourism, where wild animals can interact with the general public."

The study is published in the journal *PeerJ* today (1st June 2017). <http://www.lincoln.ac.uk/home/>



Identifying Species From A Single Caviar Egg

A new tool enables identification of high-end caviar from Beluga sturgeons by analyzing DNA from a single caviar, a development that helps ensure the fair international trade of caviar and contributes to conservation of the species in the wild.

The fish species Beluga sturgeon is known to produce the best caviar, large eggs with a delicious taste, and are therefore traded at high prices. The number of Beluga sturgeons plunged over the past century due to overfishing and deterioration of their natural habitat. They are listed as critically endangered species and international trade is strictly controlled under the Washington Convention (Convention on International Trade in Endangered Species of Wild Fauna and Flora).

The decline in the natural population of Beluga has led to the development of various sturgeon cultures across the world. In particular, Bester (a hybrid between a Beluga and a Sterlet) is considered suitable for culturing to produce caviar. It is, however, virtually impossible to identify the species of eggs by merely looking at their appearance.

Hokkaido University researchers, in collaboration with the Czech Republic's University of South Bohemia, have now identified DNA sequences that distinguish Beluga and Sterlet from eight other sturgeon species. Using the modern method of molecular genetics, the team identified species-specific variants in the genome of Beluga and Sterlet sturgeons. Taking advantage of these variants, they have developed a simple method using polymerase chain reaction (PCR) which detects targeted variants, enabling Beluga caviar to be identified and distinguished from

Bester and other species.

“The new tool developed in our research can accurately and swiftly identify Beluga caviar at a low cost, which will help international trade of this gourmet food to be conducted fairly. It should also help manage sturgeons as a resource, thereby protecting the diversity of the species,” says Miloš Havelka at Hokkaido University.

Havelka M., Fujimoto T., et al., [Nuclear DNA markers for identification of Beluga and Sterlet sturgeons and their interspecific Bester hybrid](#), *Scientific Reports*, May 10, 2017.

DOI: 10.1038/s41598-017-01768-3 <https://www.global.hokudai.ac.jp/blog/identifying-species-from-a-single-caviar-egg/>



Recipe of the Month: Caviar

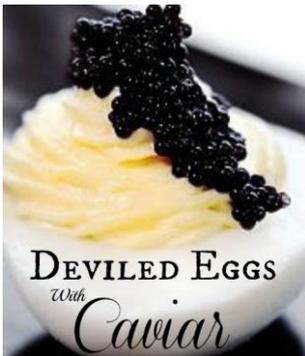
Caviar. The very word conjures up visions of elegant parties and luxury lifestyles. While that is certainly applicable, caviar is a delicious way to elevate your next party or get-together, and it is very easy to incorporate into your appetizer menu. With a season of holiday parties ahead of us, I thought I would round up some easy and delicious caviar appetizer recipes.

Just like the only real Champagne is from the Champagne wine region in France and everything else is a sparkling wine, true gourmet caviar comes from sturgeon only – primarily Beluga, Sterlet, Ossetra, and Sevruga sturgeons.

Every species of sturgeon, however, is on the endangered species list, so there are other fish that produce caviar. Caviar from any other source than sturgeon must be designated by the fish it comes from, such as ‘salmon caviar’ or ‘paddlefish caviar.’ If it just says ‘caviar’ on the container, it’s from sturgeon. (Or it should be.) [Here is a great article on the different types of caviar, and what to look for.](#)

One of the most popular ways to serve caviar is with blini. Blini comes in a variety of shapes and sizes, but is really a thin little pancake, or crepe. They are delicious and a great bite-sized starter to any party.

These caviar and smoked salmon canapés look impressive and taste even better if the salmon, caviar and crème fraiche are all very cold before adding them to the warm blinis. [Get the full recipe from Amazing Appetizer Recipes.](#)



Deviled eggs are always a favorite and these caviar topped eggs are a wonderful way to serve caviar to people who have never tried it before. [Get the recipe at What's Cooking America.](#)



Want to go super simple? How about kettle cooked potato chips with a little creme fraiche or sour cream and a dollop of your favorite caviar? Irreverently delicious!

A twist on a traditional blini, using potato. Topped with herbed sour cream and a dollop of caviar, it is simple and delicious. [Get the recipe from Sandra Lee.](#)

<http://cindyambuehl.luxury/caviar-101-and-easy-caviar-appetizers/>