

March 2017 NWIA Members' Newsletter

Events

- 22 Mar United Nations World Water Day
- 1 Apr April Fool's Day
- 2 Apr International Children's Day
- 7 Apr World Health Day
- 9 Apr Palm Sunday
- 14 Apr Good Friday
- 19 Apr Humorous Day
- 25 Apr World Penguin Day
- 26 Apr Hug a Friend Day

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March Floral Emblem: Daffodil



PRESIDENT'S MESSAGE

Greetings Fellow Wellness Seekers,

Coincidentally, following on from last month's message around intent and purpose is this month's review of a new

publication I received at the end of February titled “Leading for Purpose: How to Help Your People and Your Organization Benefit from the Pursuit of Purpose”(2017).

The book is in fact authored by two of NWIA’s honorary members, Judd Allen and Don Ardell and published by Human Resources Institute LLC, Burlington Vermont (info@helthyculture.com). The book brings together over seven chapters and 2 appendices some aspects – culture and purpose – of different but complimentary lifetime work of two well respected friends and long time professionals in the wellness field. Judd and Don (as well as Judd’s father) have been heavily involved with the National Wellness Institute (USA) since the early years. Their close working relationship and understanding of each other’s work is illustrated in Chapter 5 which describes a systematic approach that helps to manage the complexity of culture by “providing a roadmap for navigating a purpose-driven culture” (p63).

Two chapters, ‘Making the Case for Supporting Purpose’ (2) and ‘Creating the Right Social Climate for Purpose’ (6), highlight that the book is based on the premise “purpose is best achieved through a combination of individual initiative and environmental support” (p85) – this is a departure from the more typical approach of seeing purpose as exclusively a personal quest.

While the two authors’ common research and writing with workplace wellness is evident and underlies much of the content, (eg. Chapter 1 – ‘The Role of Leadership in Supporting Purpose’ and Chapter 2 - Making the Case for Supporting Purpose’) they advise that many of the purpose strategies that they share are also useful in “households, families, groups, civic organisations and communities...(one just needs to).... match the strategy to the need”

Appendix 1 provides advice on administering, scoring and interpreting the ‘Cultural Support Indicator’ (survey supplied in full) which can be used with individuals, groups or organisations to assess support for their purpose. The Social Climate Indicator (survey supplied in full in Appendix 2) can be used to determine the strength and opportunities of the 3 social climate factor keys to individual and organisational growth (a sense of community, a shared vision and a positive outlook), which exist in a group or organisation.

The text is supported by several pages of notes and references aligned with each chapter.

This work is a notable addition to Judd’s and Don’s resource offerings in their respective areas of wellness. Wellness practitioners working with individual clients or with employee groups will find messages throughout the book worthy of their notice.

The text is currently available from http://healthyculture.com/products_books.html for USD\$14.95 (approx AUD\$19.90) plus shipping and quantity purchasing is available for educational, business and community use.

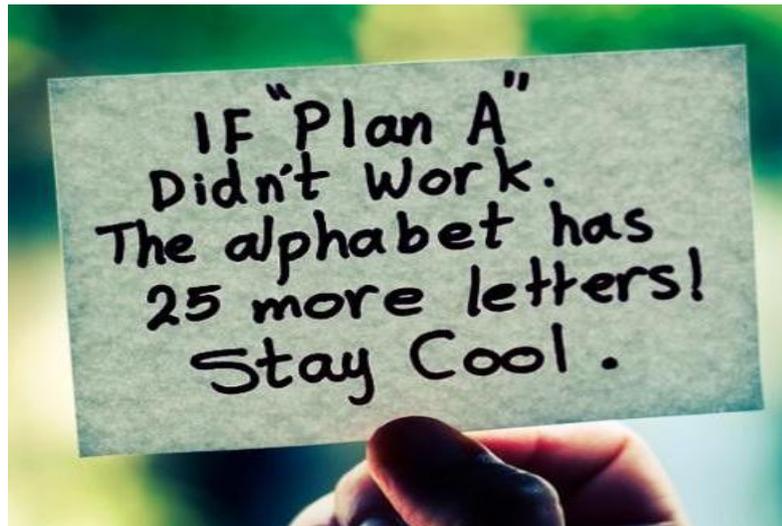
In order to reduce the cost of international shipping per item, NWIA has in the past ordered bulk quantities of publications from Don and Judd as well as others to make them available to members for purchase. Thus, if we receive enough firm requests from members for one or more of this publication we will again order a bulk shipping and on-sell for cost plus shipping – please make your interest known to Ina Koka Secretary NWIA (admin@wellnessaustralia.org).

Stay wellness focused this autumn.



Bob Boyd
NWIA President

Quote for the month



International Wellness Connections

This is the 47th 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

[Is Your Wellness Program a Wellness Program or a Non-Illness Program?](#)

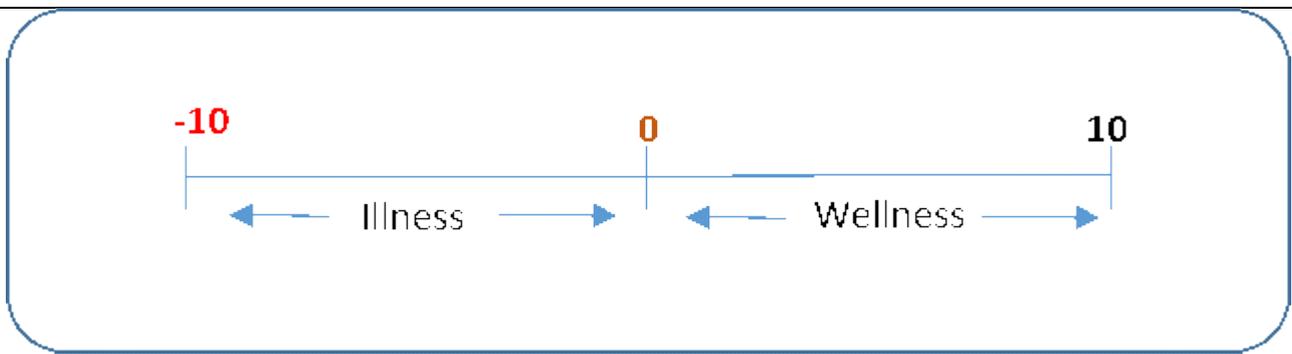
Posted By NWI, Monday, March 7, 2016

**By Jean Goodall, Dip Comp Prog (Hons), MCP, MCTS, CWWS, CWWPM
South Africa**

“What’s the difference?” you may ask. I can assure you that the difference is vast, as is the end result for your business.

Think about the simple question we ask people every day: “*How are you doing, John?*” The difference between the responses, “*No, complaints, thanks,*” and, “*I’m doing great!*” are worlds apart and really demonstrate the gap between having nothing obvious wrong with us and being well—or thriving.

You can also think of it in this way: that being without illness is no more the same as wellness as is a car in perfect working order but with no fuel in the tank—there’s nothing wrong with it but it’s not going to go anywhere. Along the lines of Jack Travis’s Illness-Wellness Continuum* conceptualized those many years ago, I see the relationship between lack of illness and wellness as a scale with illness being below zero and illness-free being zero. In this way of thinking, it means that eradicating illness, while important, can never move into the positive area. Even after you have eliminated every possible ailment or disease, your maximum score will always be zero.



Indeed, in any area of life, removing a negative does not equate to adding a positive. And, in this case, it will be in the positive range that you will really begin to see results in your employees and their attitudes and motivation; the space where energy is being added—fuel into the gas tank. Here you will see a reduction of one of the heaviest costs to companies—presenteeism.

In order to discern whether your company runs a Wellness or a “Non-Illness” Program you will need to clearly establish your motives for having it in the first place. If the program has been put in place purely for the cost saving benefit of having employees who do not run up large medical bills and don’t take excessive amounts of time off work then the chances are you are running a “Non-Illness” program.

So, does it really matter? After all the employee is benefiting as well from not being ill—even though the purpose is cost saving.

Well, the difference is subtle to begin with but the end result between the two are polar opposites. In a true Wellness Program, the focus really is on the wellbeing of the employee and it comes with an understanding that happy, healthy and supported employees will bring a massive ROI to the company over time. “Non-Illness” programs are aimed more at direct and immediate cost cutting and can often be to the detriment of the employee. They tend to be discriminatory and dictatorial and are sometimes nothing more than a new set of rules or company policies that are implemented. I have even heard of programs using tactics to shame or ostracize those that don’t fully participate in an attempt to coerce compliance. Over time this leads to unnecessary stress and resentment towards the program and the employer and it is seen more as “Big Brother” rather than a support system in place to assist employees to a place of wellbeing. The end of this road is potentially exactly the place that the program was designed to avoid—rising costs due to staff turnover and presenteeism brought about by unhappy, guilt-ridden and resentful employees.

I am of the opinion that wellness programs should never be paternalistically driven. Their place is not to prescribe but rather to educate, encourage and support their employees and families. This can only successfully be achieved when the motivation is employee-focussed and not short-term-bottom-line-focussed.

Here in South Africa we have a company called Mangwanani African Spa that, I believe, is a shining example of what a Wellness Program should be and more. In fact it is really more of a community upliftment program. If you want to be inspired you can read about their Wellness Program here: <https://www.mangwanani.co.za/about-us/family-empowerment/>

And, for those who think that being employee-focussed does not make good business sense, I end with the words of Sir Richard Branson:

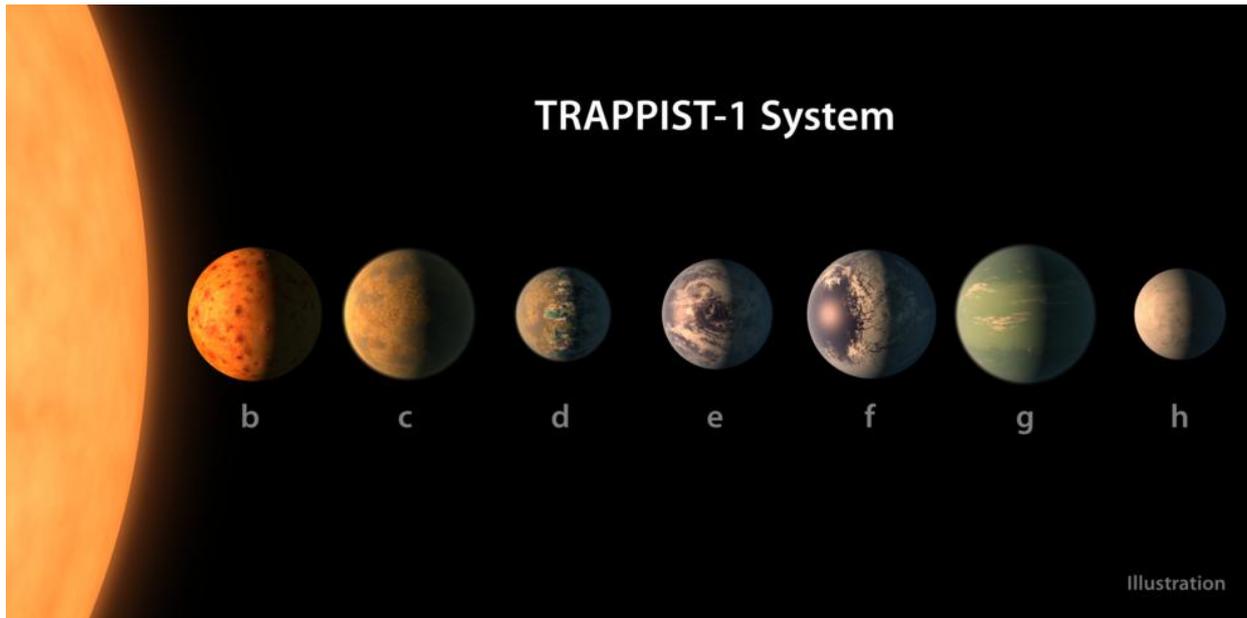
“Put your staff first, customers second, and shareholders third... then, in the end, the shareholders do well, customers do better, and your staff are happy. If you look after your staff, they’ll look after your customers. It’s that simple.”

*<http://www.thewellspring.com/wellspring/introduction-to-wellness/357/key-concept-1-the-illnesswellness-continuum.cfm>



Jean Goodall, Dip Comp Prog (Hons), MCP, MCTS, CWWS, CWWPM is the Development Director of a South African Software Development company specializing in corporate canteen solutions and data warehousing. Her passion for seeing people evolve and reach their potential has driven her to seek a new direction for enhancing Wellness in the Workplace using the technical proficiencies gained during her software development career.

Jean has completed numerous personal programs including Wilderness Vision Quests, Women's Leadership courses, Demartini seminars and More to Life workshops for which she has also been involved as a team facilitator.



NASA Reveals Largest Batch of Earth-Size, Habitable-Zone Planets Around Single Star

At about 40 light-years (235 trillion miles) from Earth, the system of planets is relatively close to us, in the constellation Aquarius. Because they are located outside of our solar system, these planets are scientifically known as exoplanets.

This exoplanet system is called TRAPPIST-1, named for The Transiting Planets and Planetesimals Small Telescope (TRAPPIST) in Chile. In [May 2016](#), researchers using TRAPPIST announced they had discovered three planets in the system. Assisted by several ground-based telescopes, including the European Southern Observatory's Very Large Telescope, Spitzer confirmed the existence of two of these planets and discovered five additional ones, increasing the number of known planets in the system to seven.

The new results were published Wednesday in the journal *Nature*, and announced at a news briefing at NASA Headquarters in Washington.

Using Spitzer data, the team precisely measured the sizes of the seven planets and developed first estimates of the masses of six of them, allowing their density to be estimated.

Based on their densities, all of the TRAPPIST-1 planets are likely to be rocky. Further observations will not only help determine whether they are rich in water, but also possibly reveal whether any could have liquid water on their surfaces. The mass of the seventh and farthest exoplanet has not yet been estimated – scientists believe it could be

an icy, "snowball-like" world, but further observations are needed.

"The seven wonders of TRAPPIST-1 are the first Earth-size planets that have been found orbiting this kind of star," said Michael Gillon, lead author of the paper and the principal investigator of the [TRAPPIST](#) exoplanet survey at the University of Liege, Belgium. "It is also the best target yet for studying the atmospheres of potentially habitable, Earth-size worlds."

In contrast to our sun, the TRAPPIST-1 star – classified as an ultra-cool dwarf – is so cool that liquid water could survive on planets orbiting very close to it, closer than is possible on planets in our solar system. All seven of the TRAPPIST-1 planetary orbits are closer to their host star than Mercury is to our sun. The planets also are very close to each other. If a person was standing on one of the planet's surface, they could gaze up and potentially see geological features or clouds of neighboring worlds, which would sometimes appear larger than the moon in Earth's sky.

The planets may also be tidally locked to their star, which means the same side of the planet is always facing the star, therefore each side is either perpetual day or night. This could mean they have weather patterns totally unlike those on Earth, such as strong winds blowing from the day side to the night side, and extreme temperature changes.

Spitzer, an infrared telescope that trails Earth as it orbits the sun, was well-suited for studying TRAPPIST-1 because the star glows brightest in infrared light, whose wavelengths are longer than the eye can see. In the fall of 2016, Spitzer observed TRAPPIST-1 nearly continuously for 500 hours. Spitzer is uniquely positioned in its orbit to observe enough crossing – transits – of the planets in front of the host star to reveal the complex architecture of the system. Engineers optimized Spitzer's ability to observe transiting planets during Spitzer's "warm mission," which began after the spacecraft's coolant ran out as planned after the first five years of operations.

"This is the most exciting result I have seen in the 14 years of Spitzer operations," said Sean Carey, manager of NASA's Spitzer Science Center at Caltech/IPAC in Pasadena, California. "Spitzer will follow up in the fall to further refine our understanding of these planets so that the James Webb Space Telescope can follow up. More observations of the system are sure to reveal more secrets."

Following up on the Spitzer discovery, NASA's Hubble Space Telescope has initiated the screening of four of the planets, including the three inside the habitable zone. These observations aim at assessing the presence of puffy, hydrogen-dominated atmospheres, typical for gaseous worlds like Neptune, around these planets.

In May 2016, the [Hubble team observed the two innermost planets](#), and found no evidence for such puffy atmospheres. This strengthened the case that the planets closest to the star are rocky in nature.

"The TRAPPIST-1 system provides one of the best opportunities in the next decade to study the atmospheres around Earth-size planets," said Nikole Lewis, co-leader of the Hubble study and astronomer at the Space Telescope Science Institute in Baltimore, Maryland. NASA's planet-hunting Kepler space telescope also is studying the TRAPPIST-1 system, making measurements of the star's minuscule changes in brightness due to transiting planets. Operating as the K2 mission, the spacecraft's observations will allow astronomers to refine the properties of the known planets, as well as search for additional planets in the system. The K2 observations conclude in early March and will be made available [on the public archive](#).

Spitzer, Hubble, and Kepler will help astronomers plan for follow-up studies using NASA's upcoming James Webb Space Telescope, launching in 2018. With much greater sensitivity, Webb will be able to detect the chemical fingerprints of water, methane, oxygen, ozone, and other components of a planet's atmosphere. Webb also will analyze planets' temperatures and surface pressures – key factors in assessing their habitability.

NASA's Jet Propulsion Laboratory (JPL) in Pasadena, California, manages the Spitzer Space Telescope mission for NASA's Science Mission Directorate. Science operations are conducted at the Spitzer Science Center, at Caltech, in Pasadena, California. Spacecraft operations are based at Lockheed Martin Space Systems Company, Littleton, Colorado. Data are archived at the Infrared Science Archive housed at Caltech/IPAC. Caltech manages JPL for NASA.

For more information about Spitzer, visit: <https://www.nasa.gov/spitzer>

For more information on the TRAPPIST-1 system, visit: <https://exoplanets.nasa.gov/trappist1>

For more information on exoplanets, visit: <https://www.nasa.gov/exoplanets>

<https://www.nasa.gov/press-release/nasa-telescope-reveals-largest-batch-of-earth-size-habitable-zone-planets-around>



Values Gap In Workplace Can Lead Millennials To Look Elsewhere

Lack Of Corporate Responsibility Often A Deal-Breaker For Young Workers, University Of Missouri Study Finds

Much has been made in popular culture about millennials as they join the working world, including their tendency to job hop. Although this behavior often is explained as a loyalty issue, new research from the University of Missouri reveals one reason young workers choose to leave a firm is because they find a disconnect between their beliefs and the culture they observe in the workplace.

"We were interested in workers' values regarding sustainability and corporate sustainability practices and whether a gap existed," said Rachel LoMonaco-Benzing, a doctoral student in the MU College of Human Environmental Sciences. "Not only did we find a gap, but we also found that workers were much more likely to leave a job if they felt their values were not reflected in the workplace."

For the study, LoMonaco-Benzing and Jung Ha-Brookshire, an associate professor of textile and apparel management and associate dean of research and graduate studies in the MU College of Human Environmental Sciences, interviewed employees in the textile and apparel industry involved in corporate supply chains. They found that workers expressed the most frustration if their employers touted a commitment to environmental sustainability publicly but did not follow through substantively in areas such as:

- Materials selection, including the use of recycled materials
- Proper management of pollutants, including chemicals and dyes
- Working conditions in textile factories
- Product packaging, distribution and marketing to consumers

"Fewer people of this generation are just looking for a paycheck," Ha-Brookshire said. "They have been raised with a sense of pro-social, pro-environment values, and they are looking to be engaged. If they find that a company doesn't honor these values and contributions, many either will try to change the culture or find employment elsewhere."

To ensure a good fit with a potential employer, the researchers recommend that job seekers speak with current and former employees at various levels of the organization, asking questions about areas that are particularly important to them, such as sustainability, work-life balance policies or community partnerships.

Conversely, in order to attract and retain the best employees, the researchers encourage companies to understand that the new generation of workers have high ethical and social expectations. Being transparent with potential employees about corporate culture can head-off some frustration, they said. In addition, giving employees the opportunity to shape cultural decisions through membership on committees and outreach efforts will help to increase morale.

"I think this is another sign to the industry that business as usual is not going to work if you want to attract and retain these valuable workers," Ha-Brookshire said.

The study, Sustainability as Social Contract: Textile and Apparel Professionals' Value Conflicts within the Corporate Moral Responsibility Spectrum, was published in the journal *Sustainability*. <http://www.missouri.edu/>



Bored By Physical Therapy? Focus On Citizen Science Instead

Low-Cost Haptic Devices For Therapy While Helping Scientists Collect **Data**

Researchers at the NYU Tandon School of Engineering have devised a method by which patients requiring repetitive rehabilitative exercises, such as those prescribed by physical therapists, can voluntarily contribute to scientific projects in which massive data collection and analysis is needed.

Citizen science empowers people with little to no scientific training to participate in research led by professional scientists in different ways. The benefit of such an activity is often bidirectional, whereby professional scientists leverage the effort of a large number of volunteers in data collection or analysis, while the volunteers increase their knowledge on the topic of the scientific endeavor. Tandon researchers added the benefit of performing what can sometimes be boring or painful exercise regimes in a more appealing yet still therapeutic manner.

The citizen science activity they employed entailed the environmental mapping of a polluted body of water (in this case Brooklyn's Gowanus Canal) with a miniature instrumented boat, which was remotely controlled by the participants through their physical gestures, as tracked by a low-cost motion capture system that does not require the subject to don special equipment. The researchers demonstrated that the natural user interface offers an engaging and effective means for performing environmental monitoring tasks. At the same time, the citizen science activity increased the commitment of the participants, leading to a better motion performance, quantified through an array of objective indices.

Visiting Researcher Eduardo Palermo (of Sapienza University of Rome), Post-doctoral Researcher Jeffrey Laut, Professor of Technology Management and Innovation [Oded Nov](#), late Research Professor [Paolo Cappa](#), and Professor of Mechanical and Aerospace Engineering [Maurizio Porfiri](#) provided subjects with a Microsoft Kinect sensor, a markerless human motion tracker capable of estimating three-dimensional coordinates of human joints that was initially designed for gaming but has since been widely repurposed as an input device for natural user interfaces. They asked participants to pilot the boat, controlling thruster speed and steering angle, by lifting one arm away from the trunk and using wrist motions, in effect, mimicking one widely adopted type of rehabilitative exercises based on repetitively performing simple movements with the affected arm. Their results suggest that an inexpensive, off-the-shelf device can offer an engaging means to contribute to important scientific tasks while delivering relevant and efficient physical exercises.

“The study constitutes a first and necessary step toward rehabilitative treatments of the upper limb through citizen science and low-cost markerless optical systems,” Porfiri explains. “Our methodology expands behavioral rehabilitation by providing an engaging and fun natural user interface, a tangible scientific contribution, and an attractive low-cost markerless technology for human motion capture.”

The paper, “A Natural User Interface to Integrate Citizen Science and Physical Exercise,” has been published by the Public Library of Science (PLoS) and is available at

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0172587>. Research was supported by the National Science Foundation.

About the New York University Tandon School of Engineering

The NYU Tandon School of Engineering dates to 1854, the founding date for both the New York University School of Civil Engineering and Architecture and the Brooklyn Collegiate and Polytechnic Institute (widely known as Brooklyn Poly). A January 2014 merger created a comprehensive school of education and research in engineering and applied sciences, rooted in a tradition of invention and entrepreneurship and dedicated to furthering technology in service to society. In addition to its main location in Brooklyn, NYU Tandon collaborates with other schools within NYU, the country's largest private research university, and is closely connected to engineering programs at NYU Abu Dhabi and NYU Shanghai. It operates Future Labs focused on start-up businesses in downtown Manhattan and Brooklyn and an award-winning online graduate program.

<http://engineering.nyu.edu/press-releases/2017/02/23/bored-physical-therapy-focus-citizen-science-instead>



Top Professional Performance Through Psychopathy

Study By The University Of Bonn: The Paradoxical Personality Also Has Its Good Sides Under Certain Conditions

The term "psychopath" is not flattering: such people are considered cold, manipulative, do not feel any remorse and seek thrills without any fear - and all that at other's expense. A study by psychologists at the University of Bonn is now shattering this image. They claim that a certain form of psychopathy can lead to top professional performance, without harming others or the company. The study has initially been published online. The print edition will be published in the journal *Personality and Individual Differences* in mid-April.

People with this paradoxical personality often progress particularly far up the career ladder as they are willing to take risks, are ruthless and charming at the same time. However, they are reputed to be harmful to companies: this ranges from risky decisions, ignored instructions, and damage to employees through to drug and alcohol consumption. However, according to the results of the current study, a more precise distinction should be made. Besides the dark side of psychopathy, the analysis also shows a light one.

The scientists invited employees from Germany to take part in the study by e-mail. The subjects performed a very wide range of jobs. As a first step, they were tested with regard to their personal factors, their level of education and their level of psychopathy. Next, two colleagues for each participant gave information about the work performance and social behavior of the study participants. A total of 161 of these employee-colleague relationships was investigated.

There is a toxic and a benign form of psychopathy

"The toxic form of psychopathy is characterized by antisocial impulsiveness," says Prof. Gerhard Blickle from the Department of Psychology. Such people cannot control themselves, they take what they like, act without thinking beforehand and pass the blame to others. "The potentially benign form of psychopathy is named fearless dominance," adds co-author Nora Schütte. "It can develop to be bad, but also to be very good." People with these characteristics do not know fear, have pronounced self-confidence, good social skills and are extremely resistant to stress.

Whether a person with fearless dominance can potentially become a top employee depends on an important factor according to the current study: education. While people with fearless dominance and low education display behaviors that can harm the company, such "psychopaths" with high education are assessed by their colleagues in the workplace as outstandingly capable and in no way antisocial.

Selfless heroes in everyday life

"These findings confirm the previously little-noted theory that, although psychopathy can often lead to antisocial behavior, it does not necessarily have to," says Prof. Blickle. People with high fearless dominance, above-average intelligence and a successful educational career could also become selfless heroes in everyday life, such as crisis managers or emergency doctors.

The significance of educational level as an indicator of the successful socialization of people with fearless dominance was the focus of the current study. In a publication from 2016, the psychologists at the University of Bonn already discovered that pronounced social skills make people with psychopathic traits helpful and cooperative colleagues.

Publication: Gerhard Blickle and Nora Schütte: Trait psychopathy, task performance, and counterproductive work behavior directed toward the organization, *Personality and Individual Differences*, DOI: 10.1016/j.paid.2017.01.006 <http://www.uni-bonn.de/>



Lack Of Training Contributes To Burnout, Survey Of Preschool Teachers Finds

Studies have shown that early childhood education programs can have a positive impact on a child's success later in life. However, the annual turnover rate nationally for teachers of preschool-age children is approximately 30 percent. Now, researchers at the University of Missouri School of Medicine have surveyed early childhood teachers and identified factors that may lead to stress and burnout.

"We know from previous research that early educational programs can benefit future school achievement, job performance and social behaviors," said Laine Young-Walker, M.D., associate professor of child and adolescent psychiatry at the MU School of Medicine and lead author of the study. "However, many early childhood educators are not formally trained, requiring them to learn on the job. Our study assessed teachers' perceptions of the challenges they face and their commitment to educating the very young."

Young-Walker's team surveyed 100 educators and care providers from 13 early childhood programs in Boone County, Missouri. Participants were selected by invitation from facilities enrolled in the Early Childhood Positive Behavior Support program, a countywide initiative that assists early learning centers in establishing and maintaining effective learning environments. The survey included questions relating to job commitment, stress and support.

"It is clear that these educators are devoted to their profession," Young-Walker said. "Ninety-two percent agreed that they were committed to their work. However, the survey also provided insight into the challenges they experience."

More than 75 percent of those surveyed wanted more training opportunities. The majority of teachers surveyed felt that the training they received covered information they already knew. More than one-third of the teachers agreed that students' negative behaviors interfered with their work and resulted in significant stress. Seventeen percent frequently felt like leaving their jobs, and 15 percent already planned to do so.

"A follow-up analysis indicated that 38 percent of the early childhood teachers surveyed were at risk of burning out," Young-Walker said. "Our analysis points to a combination of their high commitment to the children they care for, and a perception that they do not have the educational support they need to address challenging behaviors in the classroom."

The research team believes the data may be used to help address teacher needs and improve retention.

"Teachers of young children play a central role in the prevention of behavioral problems in schools, yet they often are the least prepared to do so," Young-Walker said. "High levels of challenging behavior in the classroom contribute to teacher stress and burnout. Without additional training specific to early education, these teachers will not have the necessary tools to help themselves or their students."

The study, "Supporting Professional Development Needs for Early Childhood Teachers: An Exploratory Analysis of Teacher Perceptions of Stress and Challenging Behavior," recently was published in the *International Journal on Disability and Human Development*. Research reported in this publication was supported by the MU School of Medicine's Department of Psychiatry. The researchers have no conflicts of interest to declare related to this study.

About the MU School of Medicine

The MU School of Medicine has improved health, education and research in Missouri and beyond for more than 165 years. MU physicians treat patients from every county in the state, and more Missouri physicians received their medical degrees from MU than from any other university. For more information, visit <http://medicine.missouri.edu/>. For more news, visit: <http://medicine.missouri.edu/news/>



Melting Polar Ice, Rising Sea Levels Not Only Climate Change Dangers

AgriLife Researcher Points To More Amazon Rainforest Droughts

Climate change from political and ecological standpoints is a constant in the media and with good reason, said a Texas A&M AgriLife Research scientist, but proof of its impact is sometimes found in unlikely places.

"Discussions of climate change usually are focused on changes occurring in polar and temperate zones, but tropical regions also are expected to experience changes in regional precipitation," said Dr. Kirk Winemiller, AgriLife Research fisheries scientist and Regents Professor in the department of wildlife and fisheries sciences at College Station.

Winemiller and his Brazilian colleagues analyzed a long-term database, 1999-2014, of fish survey statistics and hydrology in the central Amazon and discovered a direct correlation between water quantity and quality with the types and number of fish species found.

"The change occurred following the severe drought in that region in 2005, and the hydrologic regime and fish assemblage have not returned to their previous states since," Winemiller said. The research report, "Simultaneous abrupt shifts in hydrology and fish assemblage structure in a floodplain lake in the central Amazon," was published recently in *Scientific Reports*, the online publication of Nature.

To view the paper in its entirety and the collaborating author list, go to <http://www.nature.com/articles/srep40170>

"The Amazon region is showing evidence of altered rainfall patterns," Winemiller said. "Until this study, with few exceptions, studies of potential effects of climate change in the Amazon have focused on forests and other organisms on land.

"Since the drought, many fish species are less abundant within the study area, while others have increased. Smaller species with high reproductive rates have increased, while large species, including those with the highest consumer market value, have become less prevalent."

As an example, Winemiller cited the relative abundance of the tambaqui, *Colossoma macropomum*, one of the

region's most valuable species in Amazon fish markets, declined in relative abundance within the study area after the 2005 drought and has not increased its numbers since. He said the species feeds on fruits and seeds in flooded forests and is sensitive to changes in the annual flood regime hydrology.

Winemiller said the changes within the fish species appeared to be associated with how the fish species respond differently to changes in habitat quality and the connectivity of the river channel with aquatic habitats in the floodplain at various water levels and times of the year.

"The study reveals that climate change is impacting tropical regions with consequences not only for terrestrial ecosystems, but for aquatic ecosystem dynamics, biodiversity and fisheries as well," he said. "It shows that future fisheries management in tropical regions will need to account for how changes in precipitation and hydrology influence ecological factors affecting fish stocks." <http://today.agrilife.org/>



Eight A Day Is Clearly Best For The Heart

Eight on a plate: The more fruits and vegetables a person eats, the lower his or her risk of heart disease, stroke and premature death.

You've heard it a thousand times, that little catchphrase with the magic number encouraging you to eat "five a day" of fruits and vegetables for better health. But it turns out that the real magic number is eight, according to a new comprehensive study just published in the *International Journal of Epidemiology*.

The study, spearheaded by Dagfinn Aune, from the Norwegian University of Science and Technology (NTNU) and Imperial College London, shows that 7.8 million deaths worldwide could be prevented each year if people ate more fruits and vegetables. Aune says the more you eat, the lower the overall risk of heart disease, stroke, cancer and premature death.

"The results support recommendations to increase the amount of fruits and vegetables people eat," said Aune.

The study shows that the risk of dying prematurely from all causes was reduced by almost a third, and the risk of cardiovascular disease by about a quarter in people who ate 800 grams of fruit and vegetables every day, compared with those who ate very little or no fruits and vegetables.

"We see a gradual reduction in risk with increasing consumption, so a low or moderate intake is better than not eating fruits and vegetables at all," he said.

Eight a day

It should be no surprise to anyone that eating fruits and vegetables is linked to better health, but none of the previous analyses that have established this link have examined how much you should eat to increase health benefits.

The meta-analysis undertaken by Aune and his colleagues is by far the largest on this topic to date. The researchers looked at a total of 142 publications from 95 different population studies that studied the relationship between consumption of fruits and vegetables and the subsequent risk of chronic diseases. Each analysis included information on several hundred thousand people.

"The risk of heart disease, strokes and premature death decreased by 10.8 per cent for each 200 gram increase in consumption of fruit or vegetables--up to an intake of 800 grams," Aune said.

He stressed that the greatest impact from increasing a person's daily intake of fruit and vegetables appears to be in

people do not eat fruit and vegetables at all, or who eat very little of them. But there were also benefits from additional increases in fruit and vegetable consumption for people whose diets already include some fruit and vegetables.

Many national health authorities recommend that people eat at least "five a day," which corresponds to approximately 500 grams of fruit and vegetables. In other words, the new analysis suggests that the risk of disease and premature death can be reduced even more by eating more fruits and vegetables than recommended.

Do fruit and vegetables really have a protective effect?

People who eat lots of fruits and vegetables are more likely to be healthy in other ways.

For example, they are generally more physically active, smoke less, and are more likely to avoid large amounts of alcohol and red or processed meat compared to people who eat less fruit and vegetables.

Perhaps that means there are factors other than fruit and vegetables that are behind the reduced risk of cardiovascular disease, cancer and premature death that the researchers found?

"Many, but not all of the studies in our analysis adjusted for these factors. We saw pretty much no significant difference in the results of studies with and without this kind of adjustment. Nevertheless, we cannot completely exclude that the results are due to factors we have not been able to take into account," says Aune.

Reductions in premature deaths

The researchers also calculated how many premature deaths that could be prevented each year worldwide if everyone ate 800 grams of fruit and vegetables every day. The figure they arrived at was 7.8 million deaths each year. If everyone ate 500 grams of fruits and vegetables a day, that figure would be 5.4 million deaths.

Two to four million deaths related to cardiovascular disease could be prevented a year if everyone ate the optimal amount of fruits and vegetables, the researchers said, while for cancer that number was approximately 660,000 deaths.

"Part of what is most fascinating about this study is that the association between fruit and vegetables and mortality is greater than one would expect only on the basis of the relationships we find with cardiovascular disease and cancer, so it is conceivable that fruit and vegetables are beneficial in preventing other diseases and causes of death as well," Aune said. "But since we had very limited data, we could not do analyses for other causes of death. This is something we want to pursue."

Which fruits and vegetables protect most, and why?

The meta-analysis is also the first to examine subcategories and individual varieties of fruits and vegetables that can be connected to a reduced risk of various diseases and premature death.

Apples and pears, citrus fruit, fruit juice, green leafy vegetables and fruits and vegetables rich in vitamin C were among the types of fruit and vegetables that were linked to a reduced risk of cardiovascular disease and premature death.

Canned fruits, however, were linked to increased risk of cardiovascular disease and premature death.

"However, we need more studies on specific types of fruit and vegetables because relatively few of the studies in our analysis had looked at this issue," said Aune.

Fruits and vegetables contain fiber, vitamin C, antioxidants, potassium and flavonoids, all of which have been directly linked to good health. A high intake of fiber can help lower cholesterol, blood pressure and inflammation in the body, improve blood vessel function and prevent people from becoming overweight and obese.

Antioxidants can prevent free radicals and other reactive oxygen species from damaging the body's genetic material. Fruits and vegetables can also have a positive effect on bacteria in the intestines.

"Supplementing with antioxidants and vitamins does not have the same beneficial effects, so probably it's the whole package of beneficial substances that you get from eating fruits and vegetables that acts synergistically," said Aune, who was recently awarded his doctorate from NTNU. He is now an associate professor at Bjørknes University College in Oslo.

Reference: Fruit and vegetable intake and the risk of cardiovascular disease, total cancer and all-cause mortality-a systematic review and dose-response meta-analysis of prospective studies. Dagfinn Aune et al. *International Journal of Epidemiology*, advance access, published online 22 February 2017.

<https://academic.oup.com/ije/article/doi/10.1093/ije/dyw319/3039477/Fruit-and-vegetable-intake-and-the-risk-of>



Gambling Adverts On TV 'Mislead' Football Fans

Football fans are being 'misled' by complex gambling adverts on television, a University of Stirling study has found.

Behavioural scientist Dr Philip Newall analysed live-odds gambling adverts displayed during two months of televised English Premier League matches and found they were biased towards complex and highly specific bets.

The research, published in [Addiction Research and Theory](#), found almost 60% of televised bets involved a specific player scoring, while odds for a team to win with an exact score line were also popular. Gambles like this are particularly difficult for punters to accurately predict due to the many potential goal scorers or score lines.

Complicated gambles

Dr Newall, of Stirling Management School, said: "Live-odds TV gambling adverts that promote betting on specific, complex gambles during sporting events are becoming increasingly prominent in the UK. These types of bets are attractive to gamblers due to the high potential win: however, due to the vast number of potential outcomes, they are very difficult to rationally quantify and forecast and result in significant average losses."

Complex gambles were advertised most often and had the highest bookmaker profit margins. The study found that as the complexity of the bet increased, football fans' optimism about their chances also grew, yet the odds became less fair.

During the two-month window, only a minority of adverts were based on simpler events, such as "Manchester City to win", that participants are more likely to correctly identify.

Dr Newall added: "It seems football fans are rarely able to rationalise the likelihood of a win for the complex events that now dominate gambling advertising in the UK. Everyone, from die-hard football fans to novice gamblers, struggled to estimate the outcome of live-odd bets and may be underestimating the cost of these gambles."

The gambling industry has spent £500 million on advertising since 2012 and takes in more than £13.6 billion a year from the public.

Dr Newall said: "Bookmaker profit margins on advertised bets are much higher than the average losses on the likes of fixed-odds betting terminals. At a minimum, an industry committed to promoting responsible gambling should disclose the average profit margin with all advertised football bets. Providing people with this information could help them become more sensitive to the risks of costly complex gambles."

Adrian Parkinson from Campaign for Fairer Gambling, said: "The betting industry has, for some time, been developing these bet types with a particular focus on attracting the young, football supporting demographic. They are creating the illusion of an easy big win, based on something the consumer feels knowledgeable about, but the reality that is tied up in these complex bet structures means you're odds of winning are negligible. It's manipulation of consumers and it's time bookmakers came clean on the real value of these bets." This research was funded by the Scottish Institute for Research in Economics and supported by the Campaign for Fairer Gambling. <http://www.stir.ac.uk/news/homepagenews/>



Who Sweats More: Men Or Women?

Sex differences in heat loss responses are dependent on body size and not sex, meaning that larger individuals sweat more than smaller ones during cycle exercise in warm and tolerable conditions. That's what research published today in *Experimental Physiology* shows.

The body cools itself down in two main ways: sweating and increasing circulation to the skin's surface. Body shape and size dictates which of these two is relied upon for heat loss. The study found that smaller males and females with more surface area per kilogram of body mass are more dependent on heat loss through increasing circulation and less dependent upon sweating.

These findings by scientists from the University of Wollongong in Australia and Mie Prefectural College of Nursing in Japan call into question the conventional belief that women and men always respond differently to heat stress.

The scientists looked at skin blood flow and sweating responses in 36 men and 24 women. They performed two trials (one of light exercise and the other of moderate) at 28 degrees Celsius and 36% humidity. These are conditions where the body is able to mitigate the additional heat produced during exercise and prevent further rises in body temperature by increasing sweating and blood flow to the skin. The same body temperature changes were observed in all participants within each trial regardless of sex.

Lead author Sean Notley said:

'Gender has long been thought to influence sweating and skin blood flow during heat stress. We found that these heat loss responses are, in fact, gender independent during exercise in conditions where the body can successfully regulate its temperature.'

Notes for Editors

1. Full paper title: Variations in body morphology explain gender differences in thermoeffector function during compensable heat stress. DOI: 10.1113/EP086112

Link to paper <http://onlinelibrary.wiley.com/doi/10.1113/EP086112/full> (link will only work after the embargo date. Before then please email the press office for a copy of the paper)

2. *Experimental Physiology* publishes translation and integration of research, specifically manuscripts that deal with both physiological and pathophysiological questions that investigate gene/protein function using molecular, cellular and whole animal approaches. <http://ep.physoc.org>

3. The Physiological Society brings together over 3,500 scientists from over 60 countries. The Society promotes physiology with the public and parliament alike. It supports physiologists by organising world-class conferences and offering grants for research and also publishes the latest developments in the field in its three leading scientific journals, The Journal of Physiology, *Experimental Physiology* and *Physiological Reports*. <http://www.physoc.org>

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Recipe of the Month: Banana Oatmeal Pancakes

Dietitian's tip:

For a nuttier flavor, replace 1/4 cup whole-wheat flour with ground flaxseeds or ground pumpkin seeds.

Serves 4

Ingredients

- 1/2 cup old-fashioned rolled oats
- 1 cup hot water or boiling water
- 2 tablespoons canola oil
- 2 tablespoons brown sugar
- 1/2 cup whole-wheat flour
- 1/2 cup all-purpose flour
- 1 1/2 teaspoons baking powder
- 1/4 teaspoon baking soda
- 1/4 teaspoon salt
- 1/4 teaspoon ground cinnamon
- 1/2 cup skim milk
- 1/4 cup fat-free plain yogurt
- 1 mashed banana
- 1 egg

Directions

In a large bowl, combine the oats and hot water. Let sit for 1 to 2 minutes until the oats are creamy and tender. Stir in oil and sugar; set aside to cool slightly. In a medium bowl, combine the flours, baking powder, baking soda, salt and ground cinnamon; whisk to blend.

Add the milk, yogurt and banana to the oats and stir until well-blended. Beat in the egg. Add the flour mixture to the oat mixture and stir until just moistened. Place a nonstick frying pan or griddle over medium heat. Once hot, spoon 1/4 cup pancake batter into the pan. Cook for about 2 minutes, until the top surface of the pancake is covered with bubbles and the edges are lightly browned. Flip the pancake and cook for another 2 to 3 minutes. Repeat with remaining pancake batter.

Nutritional analysis per serving

Serving size : 3 pancakes

Calories 288

Total fat 9 g
Saturated fat 0 g
Trans fat 0 g
Monounsaturated fat 6 g
Cholesterol 48 mg

Sodium 453 mg
Total carbohydrate 45 g
Dietary fiber 3 g
Total sugars 12 g
Protein 9 g

Created by the executive wellness chef and registered dietitians at the Mayo Clinic Healthy Living Program.
<http://www.mayoclinic.org/healthy-lifestyle/recipes/banana-oatmeal-pancakes/rp-20197673>