How stressed do you get? Research from the University of Birmingham and Amsterdam suggests those with negative personality characteristics may report higher feelings of stress but have lower blood pressure, heart rate, and hormone responses to stressful experiences.

Miami, FL-- An individual’s personality is often seen to be composed of varying levels of positive and negative characteristics; these can in turn influence numerous aspects including how we respond to mental stress. We recruited 352 middle aged Dutch men and women who were then exposed to three tasks designed to create mental stress; Stroop task (color-word conflict challenge), mirror tracing (a star had to be traced that could only be seen in mirror image), and a speech task (defending themselves against a shoplifting allegation). Heart rate, blood pressure, and cortisol (a hormone released during stress) were measured at rest and in response to the stressful experiences. Individuals then completed a questionnaire to assess their levels of five key personality traits: 1 negative trait-neuroticism (tendency to experience negative emotions), and 4 positive traits-agreeableness (willingness to be helpful and social towards others), openness to experience (tendency to be creative and imaginative), extraversion (inclination to be energetic and sociable), and conscientiousness (related to high determination and self-discipline).

Those scoring higher in neuroticism actually demonstrated lower heart rate, blood pressure, and cortisol stress responses, despite reporting greater perceptions of task stressfulness and difficulty, and lower feelings of control. Conversely, individuals who were more agreeable and open had greater heart rate and cortisol reactions, despite more open individuals reporting greater control and lower levels of stressfulness and difficulty.

These results suggest that the level of stress we may actually feel is not always reflected in our physical responses. Furthermore, it would appear that those with a negative set of personality traits, i.e. high neuroticism, and low agreeableness and openness, demonstrate lower bodily stress responses. A possible reason for this is because over time, if we consistently report greater stressfulness levels such as those individuals with high neuroticism, the body may actually adapt to respond less; a process known as allostatic load. Accordingly, this may protect the individual from the harmful consequences of exaggerated physical responses which have been linked to high blood pressure, heart disease, and their related deaths.

###
Research from the University of Manchester, UK, suggests that negative emotions and symptoms fluctuate together in CFS/ME, and that patients rest in response to symptoms.

**Miami, FL** – We studied 20 adult patients with chronic fatigue syndrome (known in the UK as CFS/ME). Each person was given a smartphone programmed to produce a beep at random times between the hours of 7.30 a.m. and 10.30 p.m. Each time the smartphone beeped, the patients were asked to respond to 64 questions or statements. These asked the patient about their feelings, what they were doing, who they were with, and what symptoms they were experiencing. Two example statements are “Right now, I feel tired” and “Before the beep went off, I was resting to control my symptoms”. The patient moved a slider on the phone’s screen to indicate how true these statements were for them at the time. There were 10 beeps each day, for a total of 6 days.

We transferred the smartphone data to a computer in an anonymous format, then analyzed them to look for patterns in the data. We found that having more negative emotions and having more symptoms went together. Patients rested more when they had more symptoms and for a short time afterwards. They also performed more activities when they were feeling well than when they felt more ill.

This is one of the first studies to look at how feelings, symptoms and activity levels relate to each other in CFS/ME. Our finding are important because they will help design programmes to help patients to manage their illness.

###
Research from University of Maryland Baltimore County and the National Institute on Aging (NIA) at the National Institutes of Health (NIH) suggests that having limited access to adequate food and nutrition due to financial constraints is associated with higher rates of hypertension.

Miami, FL– Food insecurity, the inability to afford nutritionally adequate and safe foods, can have detrimental effects on health among those who have limited financial resources. Due to a troubled economy, the number of Americans who live in food-insecure households is on the rise. We asked 2,802 urban-dwelling participants in the NIA’s Healthy Aging in Neighborhoods of Diversity Across the Life Span (HANDLS) study how often they had experienced food insecurity in the last 12 months. Responses indicated that approximately one in four participants experienced food insecurity in the last year. Severity ranged from only once or twice in the last year (mild), some months but not every month (moderate), and almost every month (severe).

We analyzed the association between food insecurity and hypertension separately for blacks and whites, adjusting for poverty status, age, sex, alcohol, tobacco and drug use, history of major diseases, body mass index, and symptoms of depression. For the black participants, we found that compared to those who had adequate access to food, those who experienced moderate or severe food insecurity had higher rates of hypertension. White participants who experienced severe food insecurity had higher rates of hypertension compared to their food-secure counterparts, but there was no association between moderate food insecurity and hypertension in whites.

These findings suggest a link between food insecurity and hypertension, a major risk factor for cardiovascular disease, which may be one of the ways having limited financial resources influences health. It is also important to note that the relationship between food insecurity and hypertension was stronger for blacks, including an association between moderate food insecurity and hypertension that was not seen in whites.

Further investigation into this relationship may be essential for developing policies and strategies that mitigate increases in cardiovascular disease risk among the growing number of Americans who experience food insecurity.

Co-authors on this research include Shari Waldstein and Jason Kisser also of the University of Maryland Baltimore County, Jessica McNeely of the University of Maryland Baltimore County and NIA, and Michele K Evans and Alan B Zonderman of NIA, NIH.

This research was supported in part by the Intramural Research Program of the National Institute on Aging.

For more information about this study please contact: Allyssa Allen at allyssa1@umbc.edu

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Research from University of Pittsburgh suggests that people who experience frequent or intense negative emotions during daily life may be at increased risk for cardiovascular disease.

**Miami, FL**—We asked our sample of 477 healthy adults (ages 30-55) to monitor their mood and activities every hour over a 4-day period using an electronic diary. Participants rated their current experience of negative emotions (lonely, sad, anxious, afraid, hostile, angry, upset) during each hourly interview. We also gathered data on the frequency of negative emotions using a standard questionnaire that was taken on a one-time basis.

We measured the thickness of the carotid artery wall (artery in the neck) in each person using ultrasound. This measure (intima medial thickness or IMT) is an indicator of plaque in the arteries and is related to risk for future heart attack and stroke.

We found that those who showed higher average ratings of negative emotion during daily life had thicker carotid artery walls, suggesting that they were at increased risk for cardiovascular disease in the future. This association was independent of other established cardiovascular risk factors such as cholesterol, glucose, body mass index, and blood pressure. The association was not apparent when we measured negative emotions using a standard questionnaire.

Those who experience frequent and intense negative emotions during daily life may be at increased risk for cardiovascular disease. Measuring emotional states as they occur may provide a more accurate assessment of this risk than measuring them with standard questionnaires.

###
Abstract #733/ Pathways From Childhood Trauma to Elevated C-Reactive Protein in Adulthood: The Roles of Anxiety, Health Behaviors and Disrupted Sleep.

Miami, FL—Childhood adversity has been linked to inflammation in adulthood in a number of studies. We used data from data from 672 individuals who participated in the Midlife in the United States (MIDUS) study to investigate how traumatic experiences in childhood might impact inflammation in adulthood, which has been linked to many poor health outcomes. We focused on sleep quality, health behaviors, and body mass index (BMI) as possible pathways through which experiencing abuse or neglect in childhood might impact adult health. We also looked at measures of psychological health, including several measures of stress, tension and anxiety. Additionally, we looked at a measure of anxiety, called Trait Anxiety, that tends to be more stable over time. C-Reactive Protein (CRP) a marker of inflammation, was measured from blood samples.

We found that childhood trauma strongly predicted levels of trait anxiety and general distress in adulthood, and that these, in turn, predicted poorer sleep, poorer health behaviors, and increased BMI. BMI was particularly affected by the tendency to use food to cope with stress. As we predicted, these behavioral factors all predicted higher levels of CRP in adulthood. This suggests that trauma in childhood impacts inflammation in adulthood through a variety of behavioral pathways, and that difficulty managing stress in adulthood is an especially important determinant of whether an individual is at increased risk.

It may be important for primary care physicians, clinicians and counselors to consider a wide range of issues, including health behaviors and stress management when treating patients with a history of abuse or neglect in childhood. This type of approach may result in better health outcomes.

###
Abstract #625/ INFLUENCE OF OXYTOCIN ON SYSTEMIC INFLAMMATION IN HUMAN AND MOUSE MACROPHAGES

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Miami, FL—The hormone oxytocin, traditionally associated with reproduction, plays an important role in regulating positive social behaviors. Previously, we demonstrated that oxytocin infusions reduced the extent of heart disease and decreased inflammation in two different genetic animal models of coronary heart disease. The present study examined the anti-inflammatory effects of oxytocin in human and mouse immune cells by measuring cytokine release (a marker of inflammation) and oxytocin receptor gene expression in response to a bacterial inflammatory response. Human cells and mice were treated with the bacterial inflammatory stimulus, or oxytocin with the inflammatory stimulus. It was found that inflammation stimulated cytokine expression and increased oxytocin receptor expression in human immune cells. The addition of oxytocin decreased cytokine secretion from cells suggesting an attenuation of inflammatory processes. For the mouse studies, there was an increase in cytokine gene expression in immune cells, fat, heart and aorta in mice given the bacterial compound. Oxytocin receptor gene expression was decreased in fat, heart, and aorta but was unaffected in immune cells. Mouse cytokine levels in blood were elevated by the bacterial inflammatory stimulus. Thus, treatment by the bacterial inflammatory stimulus caused an increase in oxytocin receptor gene expression in human immune cells but not in mouse tissues. This difference can be accounted for by species differences in the structure of the oxytocin receptor gene, such that the human gene responds to inflammatory stimuli whereas the mouse gene does not. These data provide a potential explanation how oxytocin may lessen inflammation in humans.

###
Research from The Ohio State University suggests that letting go of negative frustrations can lead to positive cardiovascular health outcomes.

Miami, FL—For years, researchers have explored the link between health and emotion, modeling their work on the foundation that emotional experiences can directly influence physical well-being. Findings suggest that individuals who hold on to negative emotions, and in turn maintain the associated frustration, also prolong the physiological experience of these emotions. Given the potentially harmful physical impact of this relationship, we can assume that letting go of these negative emotions may have the opposite effect: a positive impact on physiological health. Furthermore, research has shown that women are more likely to endorse negative emotions than men and the following investigation focused on the psychophysiological impact of forgiveness (a way of releasing these frustrations) in women.

Using electrocardiography, continuous cardiovascular measures were obtained from 54 participants during a baseline phase, a negative emotion induction, and a randomized recovery manipulation. During the emotion induction, participants were instructed to think about someone with whom they were currently frustrated and then randomized to one of three recovery manipulations: Forgiveness (imagine forgiving the person with whom you are frustrated), Rumination (continue thinking about the person with whom you are frustrated), and Distraction (read neutral stimuli). Previous research suggests that individuals who are able to let go of their negative emotions (forgive) should exhibit higher heart rate variability (HRV), an index of good cardiovascular health, whereas those who hold on to their frustrations will have lower HRV during the recovery manipulation phase.

Results revealed that participants in the forgiveness condition had higher HRV than those in the rumination condition. Interestingly, those in the distraction condition exhibited higher HRV than those in the forgiveness and rumination conditions. Overall, these results suggest that in the short term, distraction from negative emotions may prove useful to cardiovascular function and furthermore, results reveal an important link between forgiveness and overall health.

###
Research from the University of Birmingham and the University of Pittsburgh suggests grey matter volume differences depending on the type of cardiovascular stress response.

Miami, FL—We measured over 100 people’s cardiovascular (heart rate, blood pressure, cardiac output) responses to a mentally strenuous arithmetic task under time pressure. Individuals with extreme responses, 11 participants who had the biggest cardiovascular increases during the stress test (exaggerated) and 12 participants who had little or no cardiovascular reaction during stress (blunted) were invited back for a second visit.

The 23 extreme stress responders underwent a Magnetic Resonance Imaging (MRI) brain scan to determine the volume of grey matter in their brain.

Blunted stress responders had lower grey matter in areas of the brain associated with cardiovascular control (e.g. insula, thalamus, and periaqueductal gray). Exaggerated responders had reduced grey matter volume in an area of the brain associated with cognitive functioning.

This research shows a relationship between the way one peripherally responds to stress and brain volume. Individuals exhibiting high levels of cardiovascular responses to mental stress tend to be at an increased risk for cardiovascular morbidity. Given this, and the association between reduced cognitive ability and hypertension, further research needs to be conducted to see if reduced grey matter is a cause or consequence or extreme peripheral stress responses or if it is a sign of future risk of cardiovascular disease.

###
Recent research from Ruhr University Bochum and Brandeis University suggests that women suffering from eating disorders may not be able to reap the health benefits of social support.

Miami, FL– Eating disorders are frequently associated with chronic stress and low amounts of perceived social support from family and friends. However, we know that in healthy people, having social support available can help to protect against stress. Hence the question remains, to what extent do eating disorder patients also enjoy the stress-buffering effect of social support?

We asked a group of young women in Germany, 18 healthy and 19 women suffering from eating disorders (7 bulimic, 12 anorexic) to provide information about how stressed they feel and how much social support they feel they have. We also collected saliva samples to measure circadian cortisol rhythms, an index of chronic psychological stress and its effects on physiological systems in the body.

Overall, women with eating disorders said they felt significantly more stressed and less socially supported than the healthy women. Interestingly, when looking at these variables together, having high social support predicted lower levels of stress in healthy women whereas social support was unrelated to stress in eating disorder patients. Healthy women were also the only ones to show the expected relationship between perceived stress levels and changes in cortisol rhythms.

Our findings reveal a disconnect between social support and stress-related measures, both psychological and biological, for women with eating disorders, such that they seem unable to use the social support they do receive as protection against stress. These findings raise questions about how best to improve the social relationships of eating disorder patients in order for them to help protect against stress-related negative health outcomes.

###
Research from the University of Pittsburgh suggests that childhood trauma may affect women’s blood pressure recovery from acute psychological stress during adulthood.

Miami, FL - Exposure to traumatic events during childhood has been associated with increased risk for cardiovascular disease and cancer in adulthood, but the reasons for this are not entirely understood. In our study reported at the American Psychosomatic Society meeting, 151 healthy, premenopausal women completed a questionnaire indicating whether or not they had experienced physical or emotional abuse or neglect or sexual abuse prior to puberty. About half of our sample did report some childhood abuse or neglect, while the other half reported no exposure to these potentially traumatic conditions. Women then visited our laboratory and completed a stressful speech and mental arithmetic task, while their blood pressure and heart rate were monitored before, during, and for 75 minutes after the tasks. Overall, participants’ blood pressure and heart rate increased during stress and declined once the stress task ended, but women who had experienced childhood trauma displayed delayed blood pressure recovery. For women not exposed to these childhood traumas, blood pressure returned to baseline levels within 15 to 30 minutes after the stress ended, but women who had been abused or neglected continued to show elevated diastolic blood pressure for up to 60 minutes after completing the stressful tasks. This suggests that exposure to childhood abuse or neglect may have long-lasting effects on biological responses to stress, which may, over time, lead to wear and tear on bodily systems and increased disease risk. Further research is needed to confirm these findings, to determine the biological mechanisms involved, and to explore the possible benefits of interventions, such as stress management skills training.

###
Vets’ PTSD Affects Mental and Physical Health of Partners
Study first to suggest health risks for female partners of vets with PTSD

Miami, FL - A study from the University of Utah sheds new light on health risks faced by military veterans with posttraumatic stress disorder (PTSD), and their partners, suggesting relationship difficulties play a role in the increased risk for cardiovascular disease among veterans with PTSD. Results will be presented in March at the American Psychosomatic Society meeting.

The study compared emotional and physiological responses of two groups of military veterans deployed to Iraq or Afghanistan and their partners while they discussed an on-going problem in their relationship. The 32 veterans in one group had been diagnosed with PTSD, and the 33 veterans in the control group had not.

This is the first study to report physiological and anger responses to intimate relationship conflict for veterans with PTSD, as well as their partners. Both the veterans and the partners in PTSD couples displayed larger increases in blood pressure compared to controls. Most strikingly, partners of veterans with PTSD showed even greater increases in blood pressure during conflict than the veterans with PTSD themselves, suggesting that these partners may be at similar, if not greater, risk for health consequences from relationship conflict and PTSD as the veterans.

Confirming prior research, the couples with PTSD reported more relationship difficulties than those couples without PTSD, especially problems with frequent and intense conflict. Couples with PTSD also reported larger increases in anger during the conflict discussion, compared to control couples.

These findings continue to highlight the need to devote further research and resources to better serving military families.
Psychological well-being and physical functioning in patients with rheumatoid arthritis improved over the past two decades

Miami, FL - In patients with rheumatoid arthritis, the negative consequences for mood and functioning reduced significantly over the past two decades. This favorable trend can be partly ascribed to improved treatment. The research findings suggest that nowadays it is easier to live a valued life while having rheumatoid arthritis than 20 years ago.

Rheumatoid arthritis is a chronic disease characterized by joint inflammation, pain, and musculoskeletal problems. Only a few decades ago, the common recommendation given to patients with rheumatoid arthritis was to rest. At that time, physical disability due to disease was substantial and many patients ended up in a wheelchair. Nowadays, physical activity and other means to improve well-being and functioning are encouraged, and pharmacological treatment has improved tremendously.

Researchers from Utrecht, The Netherlands, collected unique data in cohorts of patients over two decades (1990-2011). Psychological well-being and physical functioning were assessed with questionnaires. Disease activity was monitored with blood values indicating the presence of inflammation and counts of swollen and painful joints. Assessments in 1151 patients were taken at the time of diagnosis and 4 years later.

Over the past two decades, mood improved and anxiety levels reduced, both at the time of diagnosis and after four years of treatment. Especially physical disability after treatment reduced a lot over the years. One explanation for the improvements was that disease activity declined over the decades. Analyses suggested that perhaps also the increased level of education contributed to the improvements. Overall, results support the impression that improved pharmacological and educational interventions have contributed to an improved quality of life in patients with rheumatoid arthritis.

###
Do the adverse health consequences of early life misfortunes persist over the life course?

Miami, FL - Children who experienced abuse and neglect are more likely to suffer from chronic illnesses in adulthood, such as cancer, heart disease, type 2 diabetes, and immune disorders. Chronic inflammation is one possible mechanism that links early life trauma to such illnesses. Under normal circumstances, inflammation is a protective mechanism that helps the body to fight off viral and bacterial infections; chronic inflammation, however, is a “secret” or “silent” killer because it often leads to many chronic diseases. Emerging studies report that victims of childhood trauma are more likely to suffer from chronic inflammation.

These studies raise two intriguing questions. First, why is chronic inflammation in adulthood more common about those who experienced trauma as children? Second, do these adverse health consequences of childhood trauma persist throughout the entire life course?

Using a nationally representative sample of 1,255 Americans (aged 34-84), this study finds that victims of childhood trauma are at greater risk of chronic inflammation than non-victims in early midlife (aged 34-54), but not in later life (aged 55-84). High body mass index (being overweight or obese) and low social support partially explain why younger adults who experienced childhood trauma are more likely to have chronic inflammation. Premature death for victims of childhood trauma, compared with non-victims, explains why the association disappears among older adults.

Therefore, in order to understand the long-term effects of early life trauma, it is important to monitor victims’ health throughout their lives. Interventions must begin at an early age to ensure reduced risks of developing chronic diseases.

###
FOR IMMEDIATE RELEASE:
March 15, 2013

Research from Chapman University shows low birth rate and preterm birth in U.S. linked to income inequality

Miami, FL - Chapman University researchers presented a study at the annual meeting of the American Psychosomatic Society showing an increased risk of low birth weight and preterm birth in the U.S. among women living in states with greater income disparities.

Associate professor Laura Glynn, Ph.D. and student Christine Brown conducted the research titled, Beyond Socioeconomic Status: Income Inequalities Predict Low Birth Weight and Preterm Birth in the U.S. The research adds a new perspective to the already well-documented correlation between low socioeconomic status and adverse birth outcome. Brown and Glynn hypothesized that income inequality – the extent to which resources are distributed in an egalitarian manner – has a direct impact on poor birth outcomes.

The study examined whether women who live in states with greater income disparities as indicated by the Gini Index (a measure of how equitably a resource is distributed) experience poorer birth outcomes (pre-term birth and low birth rate) than women who live in states with more income equity. Data for singleton births for the District of Columbia and all US states for the year 2009 were obtained from the Centers for Disease Control and Prevention databases. The Gini Index and mean state income data for the years 2008-2009 were obtained from the US Census Bureau.

The study revealed that higher income inequality was associated with increased risk of both preterm delivery and low birth rate. It is important to note that these income inequality effects were independent of the well-established negative relation between absolute income and poor health outcomes.

These findings are consistent with the hypothesis that pregnant women are more likely to experience adverse birth outcomes when living communities in which income inequality is higher, than those living in communities in which income is distributed more equitably. More broadly these results suggest that one pathway in which poverty “gets under the skin” is through the negative psychological impacts of the perception of income disparity.
Consistently ranked among the top universities in the West, Chapman University provides a uniquely personalized and interdisciplinary educational experience to highly qualified students. Our programs encourage innovation, creativity and collaboration, and focus on developing global citizen-leaders who are distinctively prepared to improve their community and their world.

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Research suggests that poor sleep quality may predispose older women to early diabetes risk.

**Miami, FL** - Researchers from the University of Pittsburgh, University of Bath, University of South Carolina, and Pennington Biomedical Research Center found that the level of satisfaction with one’s sleep—commonly termed sleep quality—is associated with insulin sensitivity, an early marker of diabetes risk.

We know from other studies that not getting enough sleep increases the risk of diabetes, but little is known about whether how well one sleeps affects diabetes risk. This study evaluated the link between sleep quality and a very early marker of diabetes risk. Insulin sensitivity refers to how well the body uses insulin, a hormone which breaks down sugar in the body. We found that poor sleep quality is associated with low insulin sensitivity. The results suggest that, in addition to not getting enough sleep, not being satisfied with your sleep may be an important factor that contributes to early diabetes risk.

Study participants were 356 postmenopausal women (ages 44-74 years) who were at increased future risk for diabetes due to being overweight or obese, sedentary and with high blood pressure. They completed a questionnaire that measured sleep quality over the past month. Researchers also measured the participants’ blood levels of glucose and insulin, which are needed to calculate insulin sensitivity.

Specific aspects of sleep quality that were associated with lower insulin sensitivity were:
- Taking a long time to fall asleep
- Frequently having restless sleep
- Frequently being drowsy during the day

These results suggest that poor sleep quality may be important to the early development of diabetes. Although additional research is needed to examine whether poor sleep quality actually causes poor insulin sensitivity, it is possible that treating sleep problems may reduce diabetes risk in populations that are already at risk.

###
Emotional Vitality May Protect Against Hypertension, According to New Research

Miami, FL - Individuals with greater emotional vitality were 6 percent less likely to develop unhealthy levels of blood pressure, according to new research from Harvard School of Public Health and Laval University. This is the first study to examine whether initially healthy individuals with greater psychological well-being have lower risk of developing unhealthy levels of blood pressure across more than 10 years.

The findings, presented at the annual meeting of the American Psychosomatic Society, suggest that psychological functioning may be a useful intervention target to protect against hypertension. Psychosocial interventions that promote a sense of vitality and emotion regulation may foster healthier blood pressure levels. For instance, recent clinical studies suggest that cognitive-behavioral therapy, yoga, and relaxation may be promising strategies to improve well-being.

Researchers investigated 4,472 initially healthy British adults to see if individuals with greater well-being at the start of the study had healthier blood pressure levels in subsequent years. The association was evident over and above the presence of traditional risk factors including age, gender, cigarette smoking, and physical activity.

Optimism was not related to the risk of hypertension, perhaps because only a limited measure of optimism was available. Past evidence generally suggests that individuals with a sense of well-being are in better health.

Support for this research was provided by the Robert Wood Johnson Foundation through a grant, “Exploring the Concept of Positive Health,” to the Positive Psychology Center of the University of Pennsylvania, Martin Seligman, project director. It was also supported by the Canadian Institutes of Health Research (Michael Smith Foreign Study Supplement).

###
Research from National Disaster Medical Center in Japan suggests that of the rescue workers, symptoms of posttraumatic stress disorder (PTSD symptoms) were higher in those whose emotional distress was high immediately after relief activities and in those who were watching television for prolonged periods one month after the disaster.

**Miami, FL** - In April 2011, we conducted an initial survey of 254 members of the disaster relief medical team (e.g., doctors, nurses, and clerical staff) dispatched to areas affected by the Great East Japan Earthquake. Previous research has shown that rescue workers, as well as disaster victims, are susceptible to PTSD after disasters. The survey was designed to reveal the kind of distress these workers experienced after engaging in relief activities. We then conducted a follow-up survey from July to August 2011 and examined the characteristics of people in the initial survey who exhibited marked PTSD symptoms in the follow-up survey.

Of the initial participants, 173 (68%) responded to the follow-up survey. We found that the intensity of distress experienced immediately after relief activities was predictive of PTSD symptoms at the time of follow-up, as was an average television viewing time of 4 hours or more per day. Among the survey items related to distress, the responses “I had the feeling I was about to lose control of my emotions” and “I felt ashamed of my emotional reactions” were the strongest predictors of PTSD.

These results will hopefully contribute to the early detection of rescue workers at high risk of post-disaster PTSD and to the creation of measures for preventing this disorder.

###
Research from the University of Pittsburgh Cancer Institute suggests that daily life stresses may increase DNA damage in healthy women.

**Miami, FL** - Various environmental exposures, such as exposure to radiation, have long been known to increase DNA damage. Although normally cellular processes quickly repair DNA damage, lingering damage can increase the risk of cancer. Emerging evidence suggests that psychological stress may also increase DNA damage. As part of a planned program of research to better understand the connection between stress-induced DNA damage and cancer risk, an interdisciplinary team of investigators at the University of Pittsburgh Cancer Institute has begun a project to examine relationships between psychological stress and measures of DNA damage in healthy female volunteers working full time jobs. Initial findings from this research were reported at the American Psychosomatic Society annual meeting. Exposure to both work-stress and to a standard laboratory stress task were found to be associated with increases in measures of DNA damage. The investigators emphasized that these are initial results of ongoing studies, and must be considered preliminary. The mechanisms and health implications of these effects are not yet known.

###
Comparing to others may improve motivation for self-care

Miami, FL - Comparing yourself to others may increase your motivation to take better care of yourself with regard to an illness, according to researchers Danielle Arigo (post-doctoral fellow, Drexel University), and Joshua Smyth (professor of biobehavioral health & medicine, Penn State).

"In illnesses such as type 2 diabetes, sustaining motivation for self-care behaviors is challenging, and the role of social influence on motivation and behavior is underappreciated," said Smyth. "This study sought to clarify the effect of evaluating oneself relative to another person on motivation for self-care."

The researchers asked 180 diabetes patients to choose to read one of four different stories about another patient: (1) a patient who is coping well with mild symptoms, (2) a patient who is coping well with severe symptoms, (3) a patient who is coping poorly with mild symptoms, and (4) a patient who is coping poorly with severe symptoms.

The team then asked the participants to rate how much they focused on similarities and differences between themselves and the patient they chose to read about, as they were reading. Finally, they asked the participants to rate their motivation for diabetes self-care behaviors, such as avoiding sugary foods and getting regular exercise.

The researchers found that patients’ motivation for self-care did not differ based on which patient they chose to read about. However, their motivation did differ depending on how much they focused on differences between themselves and the patient they chose. For patients who chose to read about someone who was doing well (with coping or symptoms), focusing on differences between themselves and that person led to low motivation. For patients who chose to read about someone who was doing poorly (with coping and symptoms), focusing on differences between themselves and that person led to high motivation.

###
Research from the University of Miami suggests that women who have recently had surgery for early stage breast cancer and receive lower levels of emotional social support, especially from family and health care providers, may also have greater expression of genes related to inflammation and metastasis than those with greater emotional support.

**Miami, FL** - We evaluated 80 women who had recently been diagnosed with early stage breast cancer. The women had undergone surgery for non-metastatic breast cancer within the past 2 to 10 weeks, but had not yet started chemotherapy or radiation treatment.

We asked each woman to rate how much emotional support she received from different sources, including her husband/partner, her friends, adult women in her family, her other family members, and her health care providers. For example, we asked how much the patient felt she could open up to the support source to discuss her worries related to breast cancer. We also collected a blood sample from each patient to conduct a microarray analysis to measure the expression of genes related to inflammation and metastasis in their leukocytes.

We found that women who reported receiving low emotional social support from all sources showed greater expression of leukocyte pro-inflammatory and pro-metastatic genes than those who reported receiving high emotional support from all sources. In particular, we found that women who reported receiving low emotional support from their health care providers and their families showed greater pro-inflammatory and pro-metastatic gene expression than those with high emotional support.

Since inflammation may promote progression of breast cancer, these findings suggest that patients who receive less emotional support, especially from their families and physicians, may be more vulnerable to poorer health outcomes. Women who have recently had surgery for early stage breast cancer may benefit psychologically and physiologically from interpersonal skills training to learn to strengthen existing relationships, build reliable sources of social support, and communicate their needs for emotional support during this stressful time.

###
Research from The Ohio State University suggests that individuals who experience implicit stereotype threat exhibit decreased cardiovascular functioning.

Miami, FL - Cardiovascular disease (CVD), surpassing cancer, is the number one cause for death in America. Health disparities exist in CVD such that ethnic minorities have an elevated risk for prevalence of and death from the disease. Research has shown that stressors that more commonly affect minorities, such as perceived discrimination and stereotype threat, may be key factors in the development of these health disparities. Stereotype threat (ST) occurs when negative thoughts about one’s own group are made salient. The current study examines the underlying mechanism that may be driving the disparities in health amongst minority groups. Specifically, we are interested in heart rate variability (HRV | a marker of cardiovascular and overall health) following a ST manipulation.

We collected continuous HRV data as 65 individuals (32 minorities) completed a baseline period, ST manipulation (implicit, explicit, or control), cognitive task, and recovery period. Results show that minorities that underwent the implicit ST manipulation show a decrease in HRV recovery in comparison to both the minority control group and majority implicit ST group. There were no differences in recovery HRV for minorities in the other conditions.

Implicit ST occurs when a subtle cue in the environment can create threat outside of conscious awareness. In other words, individuals do not have to be told the stereotype in a blatant manner; instead they may unconsciously make a negative association between the subject (e.g. intelligence) and their own ethnic group (e.g. African American). Our results suggest that these subtle cues (implicit ST) can be more harmful to cardiovascular function and health in minorities than blatant cues (explicit ST). Overall these results serve as an important advancement in understanding health disparities in CVD.

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Release from American Psychosomatic Society Meeting, Miami, FL

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Research from William S. Middleton Memorial Veterans Hospital in Madison, Wis., suggests that cognitive behavioral stress management therapy can diminish responses of the heart to mental stress in veterans with implanted defibrillators.

Miami, FL - We asked our sample of 77 veterans with defibrillators to undergo a 10-week program of either cognitive behavioral stress management or an educational program not involving stress management. We compared the degree of increase in heart rate and blood pressure following mental stress by mental arithmetic and recall of anger-provoking events before and up to six months after treatment to see if these responses, similar to responses which trigger heart rhythm disturbances, might be diminished. We also asked them to complete questionnaires to assess for differences in mood state, and checked defibrillators for heart rhythm abnormalities.

We found that the veterans who underwent the stress management program showed a small reduction in heart rate/blood pressure responses to math testing at three months follow-up, not shown in the group completing the education program or following anger testing. We also found lower levels of anxiety, anger, and total mood disturbance soon after completion of the stress management compared with the education program. We found no differences by six months of follow-up. Too few events occurred to show an effect on heart rhythm abnormalities.

This research suggests that cognitive behavioral stress management therapy can diminish mental stress-induced cardiac responses which might trigger heart rhythm abnormalities in people with defibrillators. A larger clinical trial is awaited to confirm this.

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Researcher conducted by Elizabeth Balbin and Gail Ironson at the University of Miami suggests that rates of past childhood abuse is quite high in people with HIV, and that past abuse is associated with a higher level of the stress hormone cortisol.

Miami, FL - Childhood abuse is an increasingly recognized problem. In our sample of 177 people with HIV we asked our research participants (who had enrolled in a study on stress and coping) about four types of abuse they may have experienced as children: sexual abuse, physical abuse, psychological abuse, and neglect. We also examined whether experiencing childhood abuse would have lasting physiological effects on two major stress hormones: cortisol and norepinephrine. These stress hormones are important in HIV because they have been associated with worse disease course.

We found alarmingly high rates of several types of childhood abuse, far beyond the national average: Surprisingly, men reported levels of childhood abuse almost as high as women: 34% of women and 31% of men reported some type of abuse. Although men and women reported similar rates of childhood sexual abuse (20% vs. 18%), physical abuse (14% vs. 15%), and neglect (6% vs. 3%), men reported higher rates of emotional abuse (16% vs. 2%). Our sample was roughly one-third African American, one-third non-Hispanic white, and a third Hispanic White. Roughly half were gay/bisexual and the other half heterosexual.

We also found that the experience of past abuse was associated with higher levels of the stress hormone cortisol, suggesting chronic stress activation which can adversely impact immune function. Since past research has found that higher cortisol predicts a worse disease course in people with HIV, techniques that reduce this stress hormone such as stress management and relaxation training might benefit people with a history of childhood abuse.

###
Physician barriers to end-of-life planning in chronic obstructive pulmonary disease: The role of fears of iatrogenic harm and ambiguity

Research from St. John's University identifies specific physician concerns that may delay communication about end-of-life issues with their patients who have chronic obstructive pulmonary disease.

Miami, FL - We asked our sample of 101 physicians in an urban health network to complete questionnaires assessing their communication about end-of-life issues with hypothetical and actual chronic obstructive pulmonary disease (COPD) patients. We examined predictors of communication including physician attitudes and beliefs about the circumstances and consequences of end-of-life communication. Specific issues assessed included 1) concerns that communicating with patients about end-of-life issues might cause iatrogenic harm (i.e., might cause them to lose hope or stop caring for themselves), 2) concerns about communicating in an ambiguous situation (i.e., where the prognosis was unclear and the patient was unaware of the terminal nature of the condition).

Physicians were asked to rate their communications with actual patients and in response to a series of hypothetical patients with COPD. The more likely physicians were to be concerned about causing harm or communicating in an ambiguous circumstance, the more likely they were to delay these conversations with their severely ill patients with COPD. These concerns did not predict their responses to hypothetical patients. Physician had knowledge about the importance of palliative care referrals and end-of-life communication, but had difficulty implementing these conversations when they were in ambiguous situation or were concerned about causing harm.

Our findings highlight the importance of incorporating interventions designed to improve the ability of providers to tolerate emotionally difficult conversations and evaluate patient’s needs in order to engage in communication about end-of-life issues. Effective end-of-life planning may result in improved patient care and reduced health care costs.

###
University of Louisville research shows breast cancer patients’ psychological response to diagnosis is linked with biomarkers of tumor growth

**Miami, FL** - A research group based at the University of Louisville has shown that breast cancer patients’ psychological response to diagnosis is linked with biomarkers of tumor growth. The group studied 57 women during the period between cancer diagnosis and surgery. Women who perceived their diagnosis as more stressful had disrupted circadian rhythms and higher blood levels of intercellular messengers related to aggressive tumor growth.

The study’s lead author, Elizabeth Cash, Ph.D., completed the work for a doctoral dissertation with her mentor, Sandra Sephton, Ph.D. Collaborators included Yale University breast surgeon, Anees Chagpar, M.D., and Dr.’s Firdaus Dhabhar and David Spiegel at Stanford University. Dr. Cash presented findings at the Annual Meeting of the American Psychosomatic Society in Miami. The research builds on previous work showing circadian rhythms are most disrupted in patients who report stress and tend to cope by avoiding thoughts about cancer. Circadian rhythms can be measured both in terms of activity disruptions, as well as changes in specific hormones.

“Recognizing if circadian rhythms are disrupted, and introducing appropriate behavioral techniques to reduce stress just after diagnosis may prove beneficial for cancer patients,” Cash said. “One of our goals is to determine when it’s best to introduce those behavioral techniques.” Currently, the researchers are introducing mindfulness meditation and yoga to cancer patients during the days just after diagnosis. They anticipate mindfulness training will reduce stress and might improve circadian rhythms as well. Cash says, “In future studies we also hope to understand if the growing tumor causes changes in the circadian rhythm, or vice versa.”

###
Passionate and companionate love interact to predict men's cortisol recovery—but not reactivity—in response to an acute stressor

Miami, FL - It is widely accepted that there are two primary varieties of love: the feelings of sexual desire, arousal, and intensity characteristic of early-stage romantic relationships (referred to as passionate love; e.g., “I possess a powerful attraction for my partner”), and the sense of friendship, trust, and respect typical of longer-term, stable relationships (referred to as companionate love; e.g., “My partner is one of the most likeable people I know”). The current study examined whether feelings of passionate and companionate love are tied to the ways in which men and women respond physiologically to a stressful situation.

Over 100 individuals involved in newly formed romantic relationships completed an online questionnaire during which they reported on their feelings of passionate and companionate love for their partners. Participants then attended a laboratory session during which they completed a stressful task in front of a panel of judges—specifically, they prepared and presented a five-minute speech about their “ideal job,” after which they completed a difficult mental arithmetic task. Throughout the course of their laboratory visit, participants provided a number of saliva samples so that we could assess how participants responded to and recovered from the laboratory stressor at a physiological level via assessment of salivary cortisol (a stress hormone).

Although love was unrelated to participants’ physiological reactivity, men who reported higher levels of passionate love recovered more quickly from the stressor to the extent that they also reported higher levels of companionate love (interestingly, the same pattern was not observed among women). In other words, feelings of closeness were tied to a more pronounced physiological recovery in response to acute stressors among men who were also more passionately in love. These findings lend further support to the notion that feelings of intimacy may protect individuals from the physiological consequences of non-relationship stressors.

###
Research funded by National Institutes of Health and conducted at Columbia University suggests that in recovery from a heart attack, patients living in more racially and ethnically diverse neighborhoods will be more physically active.

Miami, FL - We continuously monitored the physical activity in 107 patients discharged from the hospital after their heart attack event for approximately one month (up to 45 days). The patients were asked to wear wrist-mounted accelerometers, which measured their movements throughout the day. Using census racial-ethnic population estimates to calculate the racial heterogeneity of each patient’s neighborhood, we compared the average of the most active 6 minutes of the day as an estimate of peak daily physical activity among individuals housed across neighborhoods of varying levels of diversity. We found that patients who lived in neighborhoods in the upper quartile of racial diversity exhibited 42.1% higher peak physical activity than patients who lived in neighborhoods in the lower three quartiles of racial diversity. Even after considering other neighborhood factors (income, ethnic mix, household structure), individual demographic factors (age, sex, race, education, and insurance status), individual health factors (comorbidity, heart attack severity, and cardiac function), and time needed to recover from a hospitalization, the beneficial impact of living in a neighborhood with a racial and ethnic diversity remained significant. This suggests that racial diversity is an important neighborhood factor that is independently associated with higher physical activity. Overall, the reason living in diverse neighborhoods is associated with increased peak physical activity, is not well understood. It is possible that patients who live in racially diverse neighborhoods have differential access to facilities for physical activity, or that their exercise habits are positively influenced by exposure to the physical activity patterns of individuals of varying race and ethnicity.

Therefore, it may be important for practitioners to consider the neighborhoods that their patients live in as an impacting factor to physical activity treatment adherence and overall health outcome. Increased physical activity appears to be related to more than just individual factors. Surrounding community-level and social-contextual factors related to racial diversity may also benefit exercise.

###
Abstract #634/ Safety Value of Social Support Stimuli

Research from the University of California, Los Angeles suggests that social support figures may be natural safety signals—interfering with the ways in which people learn to be afraid and buffering against threat.

Miami, FL - We asked healthy participants to undergo a training during which they learned to associate the fear of shock with different images. The images used were either pictures of real social support figures from relationships in the participant’s daily life (images of mothers, significant others, siblings, roommates, etc.), pictures of strangers, or pictures of neutral objects.

After this training was complete, we measure whether or not participants had learned to associate the fear of shock with the images by evaluating their Galvanic Skin Response (GSR), a physiological index of stress, when viewing the image. Our findings showed that participants learned to associate fear both images of strangers and images of neutral objects, as demonstrated by a large stress response (heightened levels of GSR) when viewing the image after training. However, participants did not learn to fear images of their social support figures, as demonstrated by a small stress response (lower levels of GSR) when viewing the images after training, indicating that individuals do not learn to associate fear with their social support figures.

This study is the first to show that social support interferes with the natural ways in which people learn fear. Put simply, people do not learn to fear their social support figures, suggesting that social support may act as a natural safety signal—buffering against threatening life events, and positively impacting physical and emotional health.

###
Wayne State University study links conflict at home and parents’ stress with childhood asthma

Miami, FL - Family relationships have been theorized to impact physical health; however, very little is known about the specific types of family interactions that are associated with child health. Using a cutting-edge observation method called the Electronically Activated Recorder (EAR), we examined the influence of everyday interactions between parents and children and their potential impact on physical health among youth in Detroit, MI with asthma.

Seventy-four youths (aged 10-17) and their primary caregiver completed a set of questionnaires and interviews in our laboratory. They then wore the EAR for four days, completed a test of lung function, and provided releases for medical record data to assess frequency of emergency room visits.

We found that families with greater observable daily conflict and yelling picked up by the EAR had children who experienced more self-reported asthma symptoms and more observed asthma symptoms (i.e., wheezing) on the EAR. Further, greater daily conflict and yelling in the family was strongly related to increased emergency room visits. Also, stressful events experienced by parents impacted youth asthma, such that the number of recently experienced stressful events were strongly related to decreased lung function and increased child-reported asthma symptoms.

By objectively assessing how families actually behave in their daily lives, we gain a much clearer picture of how family environments lead to physical health problems in youth with asthma. Our findings suggest that it may be important for counselors, therapists, and physicians to focus interventions on everyday family interactions as a route to improving child health.

###
Research from Stony Brook University suggests that anxiety about physical symptoms is associated with severity of physical symptoms

Miami, FL - Much is not known about the contribution of psychosocial factors to physical symptoms commonly associated with many medical illnesses, such as back pain, stomach pain, constipation, diarrhea, nausea and headaches. The present study investigated the role of three main factors, including: a) negative outcomes related to sleep problems; b) day to day distressing events; and c) anxiety about gastrointestinal sensations and symptoms, as they relate to severity of bodily symptoms.

Ninety-one undergraduate students participated in this study by answering questionnaires about day to day distressing events, levels of sleepiness, alertness and tiredness, anxiety about gastrointestinal symptoms and sensations and physical symptoms at the beginning of their college semester. We found that negative outcomes related to sleep problems, day to day distressing events and anxiety about gastrointestinal sensations and symptoms predicted severity of physical symptoms, but only anxiety about gastrointestinal sensations uniquely predicted the variation in severity of physical symptoms.

These findings suggest that although minor day to day irritations, negative outcomes related to sleep impairment and anxiety about gastrointestinal sensations and symptoms all may contribute to the severity of physical symptoms, how anxious a patient is about their bodily sensations might play a pivotal role. It may be beneficial for healthcare providers working with patients with a high level of physical symptoms to evaluate factors such as sleep difficulties and minor distressing events, but it is likely of particular importance to assess patients’ anxiety related to physical sensations.

###
Volunteering during adolescence is good for your heart … literally.

Miami, FL - Giving back through volunteering is not only good for your community, it’s also good for your heart. A University of British Columbia study found that volunteering is linked to improved cardiovascular health among youth.

Researchers split 106 Grade 10 students from a large, urban, inner-city Vancouver high school into two groups – one group that volunteered regularly for 10 weeks and a group that was wait-listed for volunteer activities. The volunteers spent one hour per week helping out with after school programs for young elementary school children in the same neighborhoods in which the secondary schools were located. The researchers assessed the high school students on a range of measurements related to cardiovascular health – body mass index (BMI), inflammation and cholesterol levels before and after the study. They also assessed the high school students’ self-esteem, mental health and mood, and empathy.

Before the study, there were no significant differences between the cardiovascular health of the two groups. After the study, students who volunteered had lower levels of inflammation and cholesterol and lower BMIs than the students who were wait-listed. In addition, findings suggest that among the volunteers, those who reported the greatest increases in empathy, altruistic behavior and mental health were the ones who also saw the greatest improvements in their cardiovascular health.

Cardiovascular disease is a major health problem in the US and Canada; the first signs of the disease can appear during adolescence.

###
Abstract #386/ EMG startle response in acute compared to chronic and recovered Anorexia Nervosa patients confronted with food and body shape stimuli

**Miami, FL** - We have confronted twenty former, symptom-free and weight recovered female anorexia nervosa patients 20 years after therapy with pictures of food and female bodies. We investigated the effect of a loud noise (startle blink response) by measuring the muscle contraction of their eye blink with an electrode while they were confronted with pictures of high caloric food and slim female bodies obtained from women’s weekly magazines. The intensity of the startle response was compared in three groups: 20 actually ill anorexia nervosa patients, 20 chronic anorexia nervosa patients and 20 healthy controls. The study showed in these 20 former, now ”recovered” anorexia nervosa patients a strong affective response (startle response) when confronted with pictures of food as well as female bodies. Although these twenty former anorexia nervosa patients were symptom-free for more than five years and had no signs of a current eating disorder in the psycho diagnostic examination, they showed age adjusted stronger startle responses to food and body pictures than healthy women with no history of an eating disorder. Whether patients are able to fully recover from anorexia nervosa has been questioned. The study results suggest that the topics “food and body” are important for former anorexia nervosa patients over longer time, even though they do not show any symptoms of an eating disorder. Whether this reactivity is a risk factor for poor prognosis or a protective sign of successful coping with anorectic cues will be shown by future studies.

EMG startle response in Anorexia Nervosa - H. C. Deter, L. Erdur, M. Rudat, B. Kallenbach-Dermutz, Charité University Hospital Berlin, Germany)

###
Research from Wayne State University provides insight into how daily family life is associated with children’s stress hormone patterns

**Miami, FL -** Early everyday family life experiences, including parents’ behavior toward their children and conflict in the household are associated with physical health in adulthood. However, we know very little about the biological pathways through which early family experiences can impair or be protective of later health.

The purpose of this study was to investigate the associations between family behaviors observed in the household including conflict and positive parenting behaviors and children’s stress hormone patterns using a cutting-edge observational sampling methodology called the Electronically Activated Recorder (EAR). Thirty-nine children aged 10-17 with asthma wore the EAR for 4 days. During this time period, the EAR recorded 50 seconds of sound every 9 minutes. These recordings were then coded for the presence of conflict behaviors such as yelling or fighting and for expressions of positive parent behaviors such as actively listening to the child or positively evaluating the child.

Results revealed that both conflict and positive parenting behaviors predicted health-relevant daily stress hormone (cortisol) patterns. After taking into account child age and gender, conflict was associated with a flatter (less “healthy”) daily cortisol pattern and positive parenting behaviors were associated with a steeper (more “healthy”) daily cortisol pattern. This less healthy cortisol pattern has been associated with heart disease and mortality in adults.

These results are the first to our knowledge to demonstrate that *actual* behavior observed in the family environment is associated with an important health-relevant biological process in late-childhood and may help explain how early family environments can influence health in adulthood.

###
Research from the Center for Research in Epidemiology and Population Health, INSERM Unit 1018, France, suggests that individuals who perceived stress to have affected their health are at increased risk of coronary heart disease.

**Miami, FL** - At the study baseline, we asked our sample of 7,268 men and women who are participants of the British Whitehall II cohort study to respond to the following question “To what extent do you feel that the stress or pressure you have experienced in your life has affected your health?” Responses choices were: “not at all”, “slightly”, “moderately”, “a lot”, and “extremely”. We wanted by this question to assess individuals’ perception of stress on their health and to examine whether this perception is related to adverse clinical outcomes.

We therefore noted the occurrence and timing of coronary heart disease events over an 18-year period. A total of 352 coronary deaths or first non-fatal myocardial infarction and 668 first angina (chest pain or discomfort due to ischemia of the heart muscle) events were recorded. We then analyzed all coronary deaths or first non-fatal myocardial infarction events occurring over the follow-up period according to baseline individuals’ perception of stress impact on their health. The same analyses were also conducted for angina events.

After controlling for a wide range of variables including lifestyle, socio-demographic and biological parameters, we found that participants who perceived that stress had affected their health “quite a bit or extremely” had an increased risk of CHD events, including coronary death, incident myocardial infarction, and incident angina event. For the latter outcome, the risk was found to be markedly elevated within the first five years, with a quadrupling of the risk for participants reporting that stress has affected their health “quite a bit or extremely”.

These findings are important because a sizeable number of persons around the world report, to various degrees, that the stress they experienced had affected their health. In addition, stress, anxiety, and worry are thought to have increased significantly in recent years. Thus, clinical attention should be paid to those who complain that stress affects their health.

###
Better Living through Mindfulness

Study Connects Traits of Mindfulness to Emotional Well-Being

Miami, FL - A study from the University of Utah shows that individuals who describe themselves as more mindful—aware of the present moment—have more stable emotions and better control over mood and behavior during the day. They also describe less cognitive and physiological activation before bedtime, suggesting that greater emotional stability during the day might even translate into better sleep. Results will be presented in March at the American Psychosomatic Society meetings.

This study examines naturally-occurring traits of mindfulness rather than meditation or other interventions. Using a novel method for data collection, participants wore a monitor that measured cardiac functioning and were prompted periodically to rate emotional state and mental functioning. Examining these processes during everyday life builds on prior mindfulness research conducted in laboratory-controlled settings.

Community and undergraduate participants each completed a baseline assessment with standard questionnaires, resting physiological assessment, and cognitive testing.

For two days during the following week, participants wore a cardiac monitor and answered questions about emotional state approximately once an hour. At the end of each day, they completed questionnaires about their ability to regulate emotions and behaviors and were asked to rate their level of cognitive and physical arousal before falling asleep.

Researchers found that greater emotional stability, better self-rated control of emotions and behaviors and lower pre-sleep arousal were all significantly associated with higher trait mindfulness. Results suggest that mindfulness may be linked to self-regulation throughout the day, and that this may be an important contributor to better emotional and physical well-being.

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Mind Over Body: Brain Connections May Help People Deal With Stress-Related Health Issues

Miami, FL - A new study by researchers at the University of Pittsburgh may have uncovered brain regions that not only help people regulate their day-to-day emotions, but also reduce their chance of having health problems that are closely related to diabetes and heart disease.

Daily stressful experiences and negative emotions may contribute to several health problems, including obesity, high blood pressure, poor cholesterol levels, and high blood sugar. When people develop three or more of these particular health problems, they are considered to have a condition called the metabolic syndrome. Fortunately, it appears that if people can effectively manage their stress and emotion levels, then they may also reduce their chances of developing the metabolic syndrome. But how exactly does this happen? And what role does the brain play in stress and emotion management and physical health? These questions were addressed in this study.

We asked 139 middle-aged men and women to complete a questionnaire that measured the type of strategies they use to regulate their emotional experiences in every day life. One strategy measured is called cognitive reappraisal, which involves changing the way we think about something to feel differently. The other is called suppression, which involves bottling everything up so that no one can tell what we’re feeling. These participants then performed a stressful task called the Stroop test while their brain activity was measured in an MRI machine.

The results showed that people who use cognitive reappraisal more often in life were less likely to have the metabolic syndrome. Interestingly, these same people who were using reappraisal to manage their emotions in daily life showed a more effective pattern of communication between two regions of their brains during stress. These regions were the dorsolateral prefrontal cortex and anterior cingulate cortex, which are linked to good decision-making, flexible thinking, and impulse control. And most strikingly, this brain communication pattern explained the link between emotional management in everyday life and the metabolic syndrome. It may be that teaching people to effectively manage their emotions through mental strategies like reappraisal could improve physical health by altering the way the brain functions.

###
Release from American Psychosomatic Society Meeting, Miami, FL

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Preliminary research results from the Veterans Affairs San Diego Healthcare System, Naval Health Research Center and University of California San Diego suggest that more severe posttraumatic stress disorder in veterans who experienced concussions during combat in Iraq and Afghanistan is associated with abnormal brain activity while judging the facial features of others.

Miami, FL - We examined the idea that, among Iraq and Afghanistan veterans affected by mild traumatic brain injury, those with more severe posttraumatic stress disorder (PTSD) will have more abnormal brain activity, while performing a task important for normal social interactions. The task we focused on was judging the thoughts and feelings of another person, using only a picture of that person’s eyes. Abnormal brain activity during this task would likely contribute to problems during social interactions for veterans with PTSD after mild traumatic brain injury.

We found that, among all veterans who experienced concussion during combat, those who developed PTSD had greater brain activity while judging facial features than those without PTSD. Furthermore, the greater the hyperactivity, the more severe the veteran’s PTSD symptoms. We were able to identify the brain areas most responsible for this relationship between hyperactivity while judging facial features and PTSD severity. There areas included the precuneus and posterior cingulate cortex, areas responsible for detecting potential threats to one’s safety.

Our results show that veterans who develop more severe PTSD after mild traumatic brain injury have hyperactive brain activity while judging facial features – primarily in brain areas responsible for detecting potential threats to one’s safety. These results suggest that veterans with more severe PTSD after mild traumatic brain injury may perceive the expression of others as more threatening, which likely contributes to social problems in this population.

###
Research from the University of Marburg suggests that physical activity is effective in attenuating physical and mental fatigue. In their study that was funded by Volkswagen Foundation, the researchers also found out that this buffering effect of physical activity is especially true under stress.

Miami, FL - We asked 33 university students to answer several questions during a stressful examination week. We compared their responses to those in a normal, less stressful, control week. With the help of electronic diaries, the students provided information on their stress and fatigue levels at six times a day for five days.

Furthermore, students were equipped with a so-called accelerometer. This device measures physical activity and different body positions such as lying, sitting, or walking. We analyzed data from the electronic diaries to see if the students reported more stress and fatigue during the examination week. We looked at five different dimensions of fatigue: general fatigue (“How fatigued do you feel?”), reduced motivation (“How unmotivated do you feel?”), reduced activity (“How active do you feel?”), mental fatigue (“How well can you concentrate?”), and physical fatigue (“Do you feel only able to do a little?”). Physical activity data was then correlated with this data to look at a possible buffering effect of physical activity on students’ levels of stress and fatigue.

Overall, those students who were more physically active reported feeling more active, but also experiencing less physical and mental fatigue. This was especially true for the examination week, during which students reported higher levels of stress, more general fatigue, and reduced motivation. In our study, we were able to examine university students during two weeks (with different levels of stress) during the semester to uncover the benefits of physical activity on the effects of academic stress.

It may be beneficial for students to sustain a certain amount of physical activity, especially during periods of academic stress (e.g., during exams). Physical activity may not only result in less physical fatigue but also in a better ability to concentrate.

###
Research from the University of Arizona suggests that eating to regulate emotion contributes to higher BMI in women – especially when their partners do the same.

**Miami, FL** - We invited 43 committed couples to fill out a questionnaire asking if they tended to eat to feel better or less stressed. We also asked them to discuss their health habits with their partners and then transcribed and analyzed these discussions. We were interested to see if tendency to eat to regulate emotion would predict BMI, and if this connection would be stronger in couples in which both partners share this tendency. We also predicted that couples using “we-talk” (saying “we” as opposed to “you” and “I”) would have higher BMIs – because we-talk may indicate that they are sharing their emotion-eating habits as a couple.

Our predictions were supported for women but not for men. In couples where both partners ate to regulate emotion, women who used more we-talk had higher BMIs than those who did not use we-talk as frequently. Conversely, higher I-talk was associated with lower BMI among women and this connection was stronger in couples in which both partners tended to eat to regulate emotion.

In conclusion, we-talk in couples sharing emotion-eating habits was associated with higher BMIs for women, but not for men. This suggests that for women the impact of a health-detrimental habit may be compounded by partners engaging into this habit as a couple, which is reflected in high we-talk. Similarly, in such couples, higher levels of I-talk may serve a protective function for women who must resist sharing unhealthy habits with their partners.

###
Research from the University of Marburg, Germany, suggests that the integration of emotion regulation strategies in cognitive-behavioral treatment of medically unexplained physical complaints is very promising – an innovative therapeutic approach (ENCERT) is presented.

Miami, FL - Medically unexplained symptoms are associated with increased health care use and serious reductions of quality of life. Clinical studies on treatment of this condition are underrepresented compared to other mental and psychosomatic disorders. Cognitive-behavioral treatments (CBT) were found to have a significant effect, yet unsatisfactory in terms of symptom reduction. Since there is evidence that affected patients have problems with managing negative emotions, an established cognitive-behavioral manual was enriched by specific emotion regulation strategies (ENriching CBT with Emotion Regulation Techniques). ENCERT’s innovation is the synthesis between classical CBT strategies (e.g. psychoeducation, attention defocusing, stress management) and mindfulness strategies (e.g. acceptance, non-judgemental awareness, emotional self support).

We treated patients suffering from at least 3 medically unexplained somatic symptoms with 20 individual sessions of either conventional CBT (22 patients) or ENCERT (20). The evaluation took place before beginning and after completion of therapy.

Patients in each group showed significant improvement in their somatization severity and symptom count. Additionally they reported to feel less impaired by their physical complaints, less depressive and having a higher quality of life. Therapeutic effects were consistently higher for ENCERT regarding almost all outcome criteria.

To confirm and scrutinize these promising results, a large multicenter study with a randomized-controlled design will start late 2013. Practical implications for clinicians: Therapies should probably be enhanced with emotion regulation strategies, e.g. by teaching their patients to monitor their complaints non-judgementally.

###
Research from the University of Maryland, Baltimore County suggests that having high blood pressure and a prior mild brain injury may be related to less blood flow in certain areas of the brain.

Miami, FL - We asked our sample of 87 older adults to report if they had ever sustained a mild head injury (defined as an injury to the head resulting in less than 30 minutes of loss of consciousness). Multiple measures of blood pressures were obtained and an average systolic (maximum) and diastolic (minimum) blood pressure was computed for each participant. Single photon emission computed tomography (SPECT) brain imaging was performed on each participant to estimate resting blood flow in various regions of the brain. We then assessed whether history of a head injury impacted the relationship between blood pressure and blood flow in the brain.

We found that for men who had a history of head injury, higher systolic blood pressure was related to less blood flow in areas of the frontal and temporal lobes that are associated with various functions such as emotions and inhibition, higher level thinking, and memory. In men with a history of head injury higher diastolic blood pressure was also related to lower levels of blood flow in select areas of the frontal lobes. These associations were not found in men who did not have a history of head injury, or in women with or without a history of head injury.

Our findings suggest that, among older men, having a history of head injury may render the brain more vulnerable to the negative influences of high blood pressure. Blood pressure monitoring and control may be particularly important among men with a history of head injury in order to preserve brain function.

###
Research from the St. Louis VA and Washington University suggests opioid pain killers increase risk of heart attack in patients with depression

Miami, FL - We know depression is a risk factor for heart attack and recent reports indicate opioid analgesics may cause heart attacks in older patients. We asked whether patients with depression who also started an opioid pain killer were at increased risk of heart attack.

To study this question we used data from approximately 200,000 VA patient records covering the years between 1999 and 2007. None of the patients had heart disease at baseline and all were free of a recent opioid use at baseline. Patients with cancer or HIV related pain were excluded from the study. We then created 4 comparison groups. The first group was comprised of patients with depression who started an opioid pain killer, the second were patients with depression who did not take opioids, the third were patients without depression who took opioids and the control group were patients without depression and not exposed to opioids. We also controlled for the effect of cardiovascular risk factors like diabetes and hypertension and adjusted for painful conditions known to increase risk of heart disease like fibromyalgia.

Compared to the control group, we found patients with depression and opioid use were at a 64% increased risk for developing a heart attack, those with depression alone were at 43% increased risk and those with opioid use alone were at 29% increased risk.

The results tell us that opioid use by depressed patients may exacerbate the risk of heart disease above and beyond the risk already due to having depression. Cardiovascular disease monitoring may be warranted for depressed patients requiring opioid analgesic therapy.

###
Psychological stress is waking the sleeping microbe

**Miami, FL** - Stress has worse effects on the immune system in people of low socioeconomic backgrounds, according to research presented at the American Psychosomatic Society meeting in Miami, FL. This is the largest study to date to demonstrate that psychological factors, like anxiety and depression, can provoke the reactivation of cytomegalovirus, a life-long infection carried by up to 90% of the population, says a group of German and UK researchers.

Cytomegalovirus, or CMV, is able to indefinitely evade the immune system by going into a hibernation-like state. That is, until the immune system is temporarily distracted by stress; then CMV opportunistically reactivates, actively infecting other cells again.

“We found that, among infected factory workers, those that reported higher anxiety, depression, vital exhaustion, and lower subjective mental health had higher levels of CMV-specific antibodies,” said researcher Jerrald Rector, from the University of Birmingham, UK. “These antibodies indicate the compromised immune system has “lost control” of the infection”, he added.

This effect was more pronounced in people with lower education and job status. The explanation for this is not yet clear, but may be due to these individuals experiencing more severe stress, or having less access to coping resources, said Rector.

The effect of stress on CMV reactivation was partly explained by poor quality sleep. “People who reported more sleep disturbances were more likely to be immune suppressed”, explained the researchers.

“Although CMV is generally thought to be relatively harmless, its reactivation usurps valuable resources from an already vulnerable immune system to control the virus, and can have hefty immune and health consequences”, they said.

###
(3) What is best for your company’s bottom line? Your boss’s aptitude to provide an inspiring work place or your hours spent at the gym?

Miami, FL - Work place wellness programs promise return on invests on health promotion activities. The mantra states: the fitter your employees, the better your bottom-line. Indeed long-term studies show that physical activity prevents diabetes type 2 and other ailments including depression. However, does this help the bottom-line?

Recent research from a team of scientist from the Mannheim Institute of Public Health (MIPH), Medical Faculty Mannheim, Heidelberg University, Germany and from HealthVision Ltd., Heidelberg, Germany challenges this view. The researchers studied what matters most for productivity amongst more than 7000 employees from the German airplane, automotive and chemical industry.

The researchers constructed a new measure “health related productivity loss” by asking study participants about: sick-leave from work, coming to work while being ill, and from estimating of their current work-ability in comparison to their best-ever performance.

The data reveal that on a 1:1 person basis, perceived stress, sleep quality and being a blue-collar worker predicted are much more important than age, gender, health behavior or sleep heart-rate variability. The latter indexes the recovery potential driven by the vegetative nervous system during sleep.

However, when researchers compared department averages, the single most important factor predicting productivity was perceived leadership behavior. Departments where a majority of participants agreed to “My direct manager can make me excited about my work” had an estimated 5% higher productivity than departments where only few employees agreed to the question.

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Research from Columbia University suggests that vitamin D deficiency contributes to the development of depression.

Miami, FL - Vitamin D deficiency is widespread in the United States and throughout the world. Depression has been linked to vitamin D deficiency in several studies, but the strength of that link is unknown. We reviewed all studies that included a measurement of vitamin D in initially non-depressed participants, and followed those participants for at least 1 time to determine which participants developed depression.

We reviewed electronic medical literature databases through May 2012, and found 3 prospective studies of the association of vitamin D deficiency with the development of depression. These 3 studies included 8,627 participants from 3 countries with an average age of 70 years. Participants were followed for 1 to 6 years for the development of depression. Our findings showed that participants with vitamin D deficiency had over 2 times the risk of developing depression during the follow-up period compared to participants without vitamin D deficiency.

Although our findings suggest that vitamin D deficiency is associated with nearly twice the risk of developing depression, additional studies are needed before deciding if providing people with vitamin D supplements could prevent depression.

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Research from the University of Pittsburgh suggests that alterations in the daily dynamics of the hormone cortisol may influence cardiovascular disease risk.

Miami, FL - We asked our sample of 488 men and women to provide 5 samples of cortisol from their saliva on each of 3 workdays and 1 non-work day. We used these samples to calculate three common measures of cortisol activity, 1) the rate at which levels naturally decline across the day (cortisol slope), 2) total output, and 3) the sharp increase that occurs in response to awakening (cortisol awakening response). In addition, we used a non-invasive ultrasound of each participant’s carotid artery to measure thickness of the two innermost layers of the artery (a method used to assess extent of plaque buildup, a major cardiovascular disease risk factor).

We found participants with cortisol levels that decreased the least (flatter cortisol slope) to have the greatest artery thickening. This relationship held after taking into account the influence of the participant’s age, sex, race, and other major cardiovascular risk factors. We did not find a relationship between cortisol slope and artery thickness on the non-working day. In addition, neither total output nor the awakening response were related to extent of thickening.

These findings indicate that alterations in dynamics of workday cortisol output may increase levels of plaque in the arteries, a major precursor of cardiovascular disease. Because this relationship was found on the averaged workdays only, it highlights the importance of considering the type of days from which we sample cortisol. In addition, we found cortisol slope to be a better indicator of the relationship between cortisol and cardiovascular disease risk than was total output or awakening response.

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Reflective Rumination Mediates the Relationship Between Heart Rate Variability and Perceived Ethnic Discrimination.

Miami, FL - Perceived ethnic discrimination (PED) is defined as the perception of threatening, invalidating information or behavior due to one's ethnic background. Research suggests that PED can negatively affect mental and heart functioning in ethnic minorities. Furthermore, PED has been related to rumination; defined as the method of coping with negative mood that involves self-focused attention. Studies have shown that individuals who engage in rumination and feel discriminated against tend to have more negative health outcomes. However, few studies have examined the possible relationship between healthy ruminative styles such as reflective rumination and PED in ethnic minorities. Reflective rumination involves critical thinking and problem solving and has been connected to overall well being. Since health disparities exist such that ethnic minorities are at a greater risk for certain chronic conditions such as cardiovascular disease, it is important to examine the possibility that reflective rumination can buffer some of the psychological and physiological effects of PED in minorities.

In our study, 63 undergraduate minority participants completed a baseline period, cognitive task, and recovery period while continuous heart rate variability (HRV) index of heart function) was collected with an electrocardiogram (EKG). Following the recovery period, participants answered questionnaires that measured PED and reflective rumination. Analyses revealed that minorities high in PED may achieve better resting heart function by using reflective rumination as a coping strategy. Overall, this study assists us to better understand the methods in which minority populations who are high in PED can cope in a healthy manner and in turn, achieve positive outcomes for cardiovascular health.

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Getting to the heart of the World Cup: Heart reactions to strong emotional situations during the World Soccer Cup 2010

Miami, FL - An international team of researchers found that goals scored in the World Cup soccer tournament affected the hearts of viewers differently if they were for versus against their preferred team. Goals scored by the preferred team were associated with a more healthy pattern of cardiac responses compared to the pattern associated with goals scored against their team.

The function of the heart is mainly controlled by the autonomic nervous system, which is part of the human nervous system and most important in emergency or stress situations (“fight” or “flight”) as well as regeneration periods (“rest” and “digest”).

With soccer being the most popular sport worldwide, the World Soccer Cup (WSC) 2010 provided the unique opportunity to investigate what happens to the heart and the autonomic nervous system of viewers to the real-life emotions of competition. A group of researchers from the Mannheim Institute of Public Health (MIPH), Medical Faculty Mannheim, Heidelberg University, Germany measured two biological indicators, heart rate and heart rate variability, simultaneously in more than one hundred persons experiencing up to nine public viewing matches. Measuring these markers over time provides valuable information about the nature of the responses of the heart and the autonomic nervous system under different conditions.

Participants were asked before each match, which team they favor. Goals for their favorite team were rated as positive events, goals against as negative events. In addition, each participant was asked to indicate on a scale from 1 to 10 how important the World Soccer Cup was for him or her.

The results revealed significant differences in the immediate heart rate and heart rate variability responses between positive and negative emotions. Interestingly, the researchers could show that this effect does not depend on sex, but on the relevance of the World Soccer Cup tournament to the individual.

“These are very important results, because usually emotional responses are studied in strictly controlled environments at university laboratories or during normal daily activities” said the Ohio Eminent Scholar Professor of Health Psychology Prof. Julian Thayer, a study co-author. “Here we could show for the first time emotional influences on the heart in real life competitive situations during the most important sporting event worldwide.”

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Engaging in unhealthy eating behaviors leads to worse mood

**Miami, FL** - Engaging in unhealthy eating behaviors may lead to worsening mood, particularly among women who already have concerns about their eating and body weight, according to researchers Kristin Heron, Stacey Scott, Martin Sliwinski, and Joshua Smyth at Penn State University.

“What we know about mood and eating behaviors comes primarily from studies with eating disorder patients or from laboratory studies,” said Heron. “We were interested in studying women in their everyday lives to see whether mood changed before or after they engaged in unhealthy eating and weight control behaviors.”

To do so, the researchers gave 131 college-age women palmtop computers, which prompted them to fill out a survey five times per day for one week. The women selected to take part in this study all had high levels of unhealthy eating habits and concerns about their body shape and weight, but did not have eating disorders. The surveys included measures of positive and negative mood and four eating-related behaviors: binge eating (eating large quantity of food in a short time), loss of control over eating (inability to stop eating), restricting food intake (intentionally limiting amount of food eaten) and skipping meals to control weight or shape (not eating a meal for weight control purposes).

The research team found minimal mood changes in the hours leading up to unhealthy eating behaviors, but negative mood was significantly higher when women reported recently having binge ate, lost control over eating, or restricted food intake, as compared to times when they had not engaged in these behaviors. Positive mood did not change before or after any of the eating behaviors studied.

“This study is unique because it evaluates moods and eating behaviors as they occur in people’s daily lives, which can provide a more accurate picture of the relationship between emotions and eating” said Smyth, “the results from this study can help us to better understand the role mood may play in the development and maintenance of unhealthy eating and weight control behaviors, which could be useful for creating more effective treatment programs for people with eating and weight concerns.”
Research from the University of Tulsa suggests that Division 1 college athletes who are suffering from poor sleep are more likely to be injured and take longer to recover from sport injuries.

**Miami, FL** - We examined sleep quality and quantity in a sample of 304 NCAA athletes. Many athletes reported clinically significant levels of sleep problems. Lisa Cromer, a PI on the Student Health Athletic Performance and Education (SHAPE) team that conducted this study run by The University of Tulsa Institute of Trauma Abuse and Neglect (TITAN) stated that “Athletes who were the poorest sleepers in our sample had more sleep problems and impairment in day-to-day activities than did studies using insomnia and depressed patients.”

Poor sleep also related to more injuries. Cromer stated, “We compared athletes’ sleep quality to their injury records. Poor sleep quality and more daytime dysfunction related to greater likelihood of injuries. Poor sleep also related to taking longer to recover, and spending more days in treatment.”

The SHAPE team collaborated with the University of Tulsa athletics department to conduct a sleep education intervention. Cromer explained, “We conducted focus groups to learn how to make sleep education appealing to athletes. We developed “The Power of Sleep’ workshop and did interactive programming with the athletes. They loved it!”

After the sleep workshops, TITAN’s team conducted a follow-up assessment with 134 athletes. Sleep education benefited them. Athletes’ daytime dysfunction decreased, meaning that fatigue interfered less with athletes’ ability to complete daily activities.

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Research from the Ohio State University suggests that loneliness enhances risk for pain, depression, and fatigue, and that immune dysregulation may contribute to this risk.

Miami, FL - Two hundred breast cancer survivors who were 2 months to 3 years post-treatment participated in the study. They completed a common loneliness questionnaire, which assessed how connected/disconnected people felt in their relationships, and pain, depression, and fatigue scales. Participants also provided a blood sample that was assayed for latent herpesvirus reactivation; cytomegalovirus is one common herpesvirus.

The pain, depression, and fatigue symptom cluster is an important health concern. Loneliness is a common risk factor for these symptoms. Little is known about the physiological mechanisms linking loneliness to the symptom cluster; immune dysregulation is a promising candidate. Latent herpesvirus reactivation provides a window into immune dysregulation.

Herpesviruses are ubiquitous; around 60% of adults are infected with cytomegalovirus. Herpesviruses create life-long, latent infections. When the cellular immune system is compromised, the virus may reactivate in infected cells, which is reflected by elevated herpesvirus antibody titers.

Lonelier participants experienced more pain, depression, and fatigue than those who felt more socially connected. Lonelier participants also had higher cytomegalovirus antibody titers which, in turn, were associated with higher pain, depression, and fatigue.

The pain, depression, and fatigue symptom cluster is a notable clinical problem, especially among cancer survivors. The current study demonstrates that loneliness enhances risk for immune dysregulation and the pain, depression, and fatigue symptom cluster, which suggests novel interventions for alleviating pain, depression, and fatigue.

###
Patients with heart disease who exercise are happier and live longer

Research from Tilburg University, The Netherlands and the National Institute of Public Health, Copenhagen, Denmark, suggests that exercise plays an important role in the relationship between positive emotions and survival.

Miami, FL - Negative emotions, such as depression and anxiety, are known to impact the well being, quality of life, and survival of patients with heart disease, while little is known about the impact of positive emotions. Positive emotions include feelings of joy, happiness, excitement, enthusiasm and contentment. We investigated whether positive emotions improved patients’ survival and the role of exercise in this relationship.

We asked 607 patients with heart disease from Denmark to fill out a questionnaire on mood and exercise. We collected data on patient survival from Danish National Registers.

We found that patients scoring higher on positive emotions were less likely to die five years later. These patients also exercised more often. When examining the relationship between positive emotions, exercise and survival more closely, the relationship between positive emotions and survival was explained by exercise.

Our results suggest that patients with heart disease who exercise may not only live longer but are also more happy. Although exercise in patients is encouraged and provides the mainstay of cardiac rehabilitation in order to improve functional status and survival, many patients do not achieve and maintain a desirable level of exercise. These patients may have a more negative view of life and be less optimistic, warranting that cardiac rehabilitation not only focuses on increasing exercise but also on enhancing patients’ positive emotions.

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Let your John Henryism go! ... To improve your body’s response to anger

**Miami, FL** - John Henry, a 20th Century laborer, was known as the best driver of steel when it came to clearing mountain walls for construction of new railways. He beat a hydraulic machine in a steel-driving contest but passed out and died of exhaustion a few hours later. John Henry is a lesson for today’s stressful world where striving may come at a physical price without key coping resources such as family support or education.

Researchers from the University of Wisconsin Milwaukee asked a sample of 75 healthy young adults to complete surveys including John Henryism active coping (a ‘go-getting’ personality) and parents’ education. Participants then completed a laboratory protocol involving an anger recall task (think and talk about an event that made one angry) while their vascular resistance (amount of pressure on walls of blood vessels) was collected. Higher resistance levels mean increased risk for future diseases. During the following rest period, participants were randomly assigned to one of two periods, a rumination period where they continued to reflect on the anger recall event or a distraction period involving a boring survey.

Among participants with low mother’s education (or low family resources), more striving predicted more vascular risk in the rumination group, while more striving did not negatively impact vascular risk in the distraction group. Thus, distracting yourself from a stressful event protects vascular risk if you are a go-getter with inadequate family resources while continuing to relive the anger after the event is over does not.

The importance of this study lies in the concept that a stress reducing intervention (like distracting oneself with other activities) could potentially lower cardiovascular disease risk by enhancing vascular recovery to stressful events and if widely used could favorably impact public health. Further studies using related stress reduction techniques are warranted.

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It’s too late to stop smoking when you know you’re pregnant: Children whose mothers smoked until the awareness of pregnancy have reduced physical fitness in preschool age

Miami, FL - A recent representative study in southern Germany with more than 1000 participating children shows that children’s physical fitness and physiological regulation capacity at preschool age is similarly reduced in offspring whose mothers smoked until they were aware of their pregnancy and whose mothers continued smoking during the whole pregnancy.

Generally, it is well-known that smoking during pregnancy is a major health risk for the unborn child. Maternal smoking for example dramatically increases the risk of miscarriages, low birth weight and overall perinatal mortality. Therefore, smoking cessation programs for pregnant women are important for improving child health. But is it early enough to stop smoking when mothers become aware of their pregnancy? An international team of scientists from the Mannheim Institute of Public Health (MIPH) at the Medical Faculty Mannheim of the Heidelberg University, Germany now presents results underlining that the answer to this question is a simple “No!”.

The results of their German study show that negative effects of maternal smoking on children’s later health seem to arise already in the very first weeks of pregnancy, when most women do not know yet that they are pregnant. Important embryonic development takes place from the 2nd until the 8th week of pregnancy, but on average, women only know about their pregnancy between the 4th and 10th week. This means that anticipatory guidance against smoking in pregnancy should be given before young women even make plans to get pregnant. “It is never too late to stop smoking, every day can affect the unborn child” said the pediatrician and research group leader ‘Child and Health’ Freia De Bock.

Who should thus give anticipatory guidance against smoking, and when? Both family doctors and obstetricians could use their regular consultations to counsel all young women against smoking and make public the risk that especially smoking in the first weeks of an unaware pregnancy bares.

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A Comparison of Health Behaviors by Blood Pressure Status

Research from the University of Miami suggests that adults with prehypertension and hypertension are more likely to be sedentary and to show evidence of poorer dietary habits than those with normal blood pressure.

Miami, FL - A sample of 3,872 adults completed a brief survey on lifestyle habits and had their blood pressure measured at an interactive exhibition on cardiovascular health at the Miami Science Museum. Specifically, participants answered questions about soda intake, servings of fruits and vegetables consumed daily, hours spent watching television or using a computer, and how often they felt stressed or nervous. Based on the blood pressure readings, participants were then grouped into 3 categories: those with normal blood pressure, prehypertension, and hypertension. We then compared the lifestyle habits of participants with prehypertension and hypertension to those with normal blood pressure.

We found that adults with prehypertension were more likely to drink regular soda two or more times daily compared to adults with normal blood pressure. Those with hypertension were more likely to report feeling stressed or nervous often or most of the time, and were less likely to eat two or more servings of fruits daily compared to those with normal blood pressure. In addition, individuals with prehypertension and hypertension were more likely to spend three or more hours watching TV or using a computer at home compared to persons with normal blood pressure.

These findings reinforce the need for the dissemination of stress management techniques and suggest that effective ways of improving lifestyle behaviors are needed to reduce cardiovascular risk in those with prehypertension and hypertension.

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Research from Wayne State University and Rush University Medical Center shows that hiding anger can lead to negative health effects.

Miami, FL - Does suppressing anger affect our health? We studied this question by provoking real anger in our participants using a clever experimental design. We first asked our group of 197 participants with low back pain to complete a questionnaire about how much they tend to hide or suppress their thoughts and feelings. Next, they performed a 5-minute computer maze task working with a “partner”. However, this partner was actually an actor, whose job it was to anger the participants by making rude and critical comments to them during the task. Before the task, we divided the patients into two groups. We told one half of them to suppress their feelings during the task, and the other half to deal with their feelings as they normally do. We also asked the participants to give ratings of how angry and irritated they were before and after the task.

We found that those who said they normally tend to suppress their feelings were more likely to become angry during the task than participants who said they normally do not suppress their feelings. Second, the participants who we told to suppress their feelings showed a greater increase in blood pressure than those who we told to deal with their feelings normally. Finally, the participants who denied that they felt irritated during the task showed a greater increase in blood pressure than those who admitted they were irritated.

Attempts to suppress angry feelings actually increase blood pressure and may lead to an even stronger feeling of anger. It is possible that such anger suppression can increase the risk for heart problems and chronic pain. We need to develop and study safe and effective ways to reverse the suppression of anger.

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Research on pain coping strategies indicates that a distraction method better attenuates pain than a suppression technique.

Miami, FL - We asked 157 undergraduate students to engage in a short-term pain task. During the pain task, we asked participants to place one hand in a container of ice water until they could no longer tolerate the pain. While each participant’s hand was in the ice water, we asked them to perform one of four pain coping strategies: sensory focus (focus on their hand’s sensations), distraction (visualize their bedroom), suppression (avoid thinking about their hand’s sensations), or acceptance (accept but do not change their hand’s sensations). Before the pain task participants rested for five minutes, and after it they rested for ten minutes. We measured participants’ ratings of pain and distress at the end of the two resting periods and at the end of the pain task.

We found that after putting their hand in ice water, all participants experienced increased pain and distress, which then subsided during the final resting period. We also found that participants told to suppress their pain experienced greater pain intensity than participants instructed to perform a distraction strategy. The coping strategies elicited no other differences in pain intensity or distress. These findings indicate suppressing pain ironically increases it and that a distraction technique is a better alternative for reducing pain. Patients and physicians should consider such coping methods for pain. Of these methods, distraction appears to be a better coping method than suppression.

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Research from Tilburg University suggests that colorectal cancer survivors have problems with fatigue years after treatment.

Miami, FL - Colorectal cancer survivors often report feeling fatigued, which can last years after their cancer treatment has ended. But this issue has received little attention in research. We asked our sample of 3739 colorectal cancer survivors to rate how they usually feel about their fatigue. We also asked a group of healthy individuals, matched on age and gender to our sample, about their fatigue experience.

Our survivors have been diagnosed with colorectal cancer up to 10 years prior to the survey. We grouped them according to the time since their colorectal cancer diagnosis; short-term (<5 years since diagnosis) and long-term (≥5 years since diagnosis). We were also intrigued if having survived more than one cancer diagnosis was associated with feeling more fatigue. In our sample, 12% of survivors had another cancer diagnosis before colorectal cancer.

We found that our survivors, especially short-term survivors, have more problems with fatigue than the healthy individuals. Short-term survivors were more likely to get tired very quickly and having problems thinking clearly. The treatment our survivors received could explain this increase in fatigue as we found that the combination of surgery with chemotherapy and radiotherapy was associated with higher levels of fatigue. Survivors of only colorectal cancer were less fatigued than those survivors of more than one cancer. Not unusual, short-term cancer survivors with history of previous cancers were more likely to experience distress, reporting more symptoms of depression and anxiety. Also, colorectal cancer survivors reported feeling more distressed than healthy individuals and higher levels of distress was associated with more fatigue.

Colorectal cancer patients are increasingly being treated with chemotherapy and radiotherapy. It may be very important for the physician to inform patients that they may experience fatigue long after their cancer treatment has ended. More attention is also needed for patients’ psychological needs as patients who were distressed were also more likely to be fatigued. This is especially for those who have survived more than one cancer.
Research from the University of Miami shows that Stress Management Improves Mood and Alters Pro-Inflammatory Gene Expression in Women Being Actively Treated for Breast Cancer

Miami, FL - Since stress processes may negatively impact health in breast cancer patients, then teaching stress management techniques may improve outcomes by modulating disease-relevant processes such as inflammation. We tested whether a 10-wk group-based Cognitive-Behavioral Stress Management (CBSM) intervention (relaxation, cognitive behavioral therapy, interpersonal skills) can modulate adversity-related leukocyte gene expression in these patients as they move through treatment.

Seventy-nine women with primary breast cancer who had undergone surgery 2-10 weeks prior were randomized to a 10-week CBSM or active psychoeducational control condition, and completed psychosocial questionnaires and provided blood samples for genome-wide transcriptional profiling and bioinformatic analyses at baseline, 6 and 12 months.

Poorer psychological adaptation (greater negative and less positive affect) at baseline related to >50% greater expression of leukocyte pro-inflammatory and pro-metastatic genes, after controlling for sociodemographic and medical covariates. Women assigned to CBSM showed decreased negative affect and increased positive affect over a 12 month period whereas controls showed negligible changes. Also 62 transcripts showed greater than 50% down-regulation of genes associated with inflammation over time in CBSM-treated patients relative to controls. Promoter-based bioinformatic analyses implicated decreased activity of NF-kB/Rel and GATA family transcription factors and increased glucocorticoid receptor activity as potential mediators of CBSM-induced gene expression alterations—findings consistent with a reversal of stress-related pro-inflammatory signaling in circulating immune cells.

A 10-wk group-based CBSM intervention may improve psychological adaptation in parallel with altering leukocyte gene expression associated with pro-inflammatory and pro-metastatic signaling. Psychological interventions capable of modulating such pathways could facilitate better recovery from treatment for breast cancer and could influence longer-term outcomes, which are currently being investigated.

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Research from the University of Stirling suggests that inflammation arising from body fat could explain obesity-related depression

**Miami, FL** - A growing number of research studies have shown that obesity can lead to adverse mental health consequences, including depression. Yet, there has been little research examining the physiological basis of these neuropsychiatric effects. This study examined 3891 obese and non-obese older adults who took part in the English Longitudinal Study of Ageing (ELSA) [aged 65 years, 45% men]. Depressive symptoms in the past week (e.g. sadness, loneliness, feeling everything was an effort) were assessed initially and after 4 years of follow-up. Obese participants (26% of the sample) experienced more depressive symptoms than others at baseline and an increase in depression over the 4-year period of the study. At follow-up obese participants experienced 32% more depressive symptoms than non-obese participants, suggesting that obesity may have a clinically meaningful emotional impact.

A central feature of obesity is chronic or low-grade systemic inflammation, characterized by elevated circulating levels of pro-inflammatory cytokines and acute-phase proteins, most notably C-reactive protein (CRP). Inflammation can lead to depressive symptoms and previous studies have demonstrated close links between CRP and depression. Similarly, in the current study those with initial high levels of CRP showed a subsequent increase in depressive symptoms. Furthermore, elevated CRP levels in obese individuals explained approximately 20% of the obesity-related change in depression scores over time. This study suggests that chronic inflammation originating in adipose tissue may account, at least in part, for the depressogenic effect of obesity.

Please contact the author for further information or a copy of the paper:


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Research from Indiana University-Purdue University Indianapolis (IUPUI) suggests that the link between depressive symptoms and body fat shown in past studies was not observed in a community sample of African Americans. However, certain aspects of depression – especially greater interpersonal distress - may be a consequence of increased body fat in this population.

Miami, FL - We asked our sample of 559 African Americans from the St. Louis area to complete questionnaires measuring their depressive symptoms. We also measured participants’ body fat percent and body mass index (BMI). We repeated these assessments nine years later to see whether depressive symptoms predicted body fat or BMI over time and vice versa.

We also separated depression into its different components to see whether certain clusters of depressive symptoms were more strongly related to body fat or BMI than others. Specifically, we examined depressed mood (feeling sad), positive mood (feeling happy), bodily symptoms (fatigue and changes in sleep or appetite), and interpersonal distress (believing you are disliked by others). We analyzed the data to see whether certain clusters of depressive symptoms were more likely to be predictors or consequences of greater body fat and BMI over 9 years.

We found that none of the depressive symptom clusters at the start of the study predicted changes in body fat or BMI over nine years. These results suggest that depression is not a risk factor for obesity in African Americans, which conflicts with results from predominately Caucasian samples. However, we did find that participants’ with greater body fat and BMI at the start of the study experienced greater 9-year increases in interpersonal distress. These findings suggest that, over time, participants with excess weight may increasingly believe that they are disliked by others and that people are more unfriendly to them. This social distress may be due to the stigmatizing effects of obesity and its associated social discrimination, such as failure to obtain employment or intimate relationships.

It may be important for healthcare providers working with overweight or obese African Americans to screen for interpersonal distress and implement appropriate treatment strategies.

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RESEARCH SUGGESTS APPETITE HORMONES AFFECT CRAVINGS AND PREDICT SMOKING RELAPSE.

Study examining link between cessation and increase in appetite/weight

MIAMI, FL - Preliminary findings from studies conducted by scientists at the University of Minnesota Medical School link the effect appetite hormones have on patients’ cravings, withdrawal symptoms and mood changes during the initial phase of smoking cessation. The appetite hormones are also being seen as early predictors of smoking relapse by those in the study.

In the study, 36 smokers were asked to abstain from smoking for 24 hours and then attend a laboratory session where they were questioned about cravings, their mood and other withdrawal symptoms. Participants also attended four weekly follow-up sessions to assess their smoking status. Researchers evaluated appetite hormone levels and information reported by the smokers.

The study found that smokers with higher Peptide YY (PYY) appetite hormone had reduced cravings and overall withdrawal symptoms. These smokers were also able to abstain from smoking for longer periods of time. Patients with high ghrelin/low leptin hormone also had reduced cravings and withdrawal symptoms. Patients in the study with high ghrelin/high leptin hormone experienced increased withdrawal symptoms and overall negative effects and were more likely to relapse on their smoking in a shorter time period.

The study has helped researchers conclude that appetite hormone PYY, ghrelin and leptin are potentially important predictors of risk for smoking relapse. Research also indicates the importance of examining the links of these hormones with changes in appetite and weight after cessation.

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Research from the University of Pittsburgh suggests that harmonious marital interactions are associated with lower risk for atherosclerosis.

**Miami, FL** - Is marriage good for health? Perhaps it is when marital interactions are perceived as being pleasant and low in conflict.

Our sample of 275 healthy, middle-aged adults rated the quality of their most recent social interactions every hour over a period of 4 days. Specifically, they rated the extent to which each interaction fit each of the following descriptions: agreeable, pleasant, conflictual, and involved being treated poorly. Ratings were averaged across all interactions with their spouse or serious live-in partner. Participants also completed a one-time measure of the overall cohesiveness of their relationship. They were assessed on several traditional cardiovascular disease (CVD) risk factors, including body mass index, smoking, blood pressure, glucose level, and cholesterol level. The thickness of their carotid artery walls was also measured. This measure, called intima-media thickness (IMT), is an important indicator of risk for atherosclerosis. Thicker artery walls are also associated with risk for stroke and heart attack.

We found that adults who rated their daily partner interactions more positively had lower IMT (thinner artery walls), regardless of their age, gender, race, educational level, and status on CVD risk factors. We also found that those who rated their relationship as more cohesive had interactions that were more positive and that these positive interactions accounted for the relationship between cohesive relationships and low IMT.

Our research suggests that cohesive serious relationships involve interacting with partners in more positive ways, i.e., having pleasant exchanges that are low in conflict, and that these positive interactions have positive implications for health. Health professionals and policies should continue to promote positive marital interactions as part of a multi-pronged strategy to increase wellbeing and reduce CVD risk.

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The ChiBS study suggests that children’s stress influences their lifestyle and body.

Miami, FL - The highly abundant stress in today’s live is hypothesized to structure your lifestyle and body. As the foundations of lifestyle and body composition are established during childhood, the Ghent University tested their relation with stress in about 500 Belgian children between 5 and 10 years old. The children’s stress level was measured by questionnaires on negative events, emotions and behavior.

Children with high scores on one of the stress measurements had a less healthy lifestyle. They had an unhealthier diet especially due to more sweet food consumption, performed more emotional eating (eating in response to negative emotions), were less active and slept less. Two years later, these stressed children maintained the same unhealthy life style except that they were more physical active instead of less. Stressed children had also more overweight or a higher fat percentage two years later, but only when they had an unhealthier lifestyle (high sweet consumption, emotional eating and low activity).

These results confirm that stress can deteriorate lifestyle already in childhood and that these changes make them vulnerable to overweight. Consequently, obesity prevention should target both lifestyle and stress. Children can be trained on their stress coping skills such as problem solving thinking or asking help instead of seeking solace in food. Parents and children should be made aware that stress can influence emotional eating behaviour so they can anticipate to this behaviour. Also age-appropriate sleeping times and enough exercise may help.

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Research from Ryerson University in Toronto suggests that recreational use of the drug ketamine is associated with disturbed cognitive and perceptual processes, and may also support ketamine’s application as a possible antidepressant.

**Miami, FL** - Interest regarding the drug ketamine has grown considerably in recent years. Originally manufactured and currently used as a veterinary anaesthetic, ketamine is known to produce effects which mimic symptoms of schizophrenia, and the drug has also recently surfaced as a potential treatment for severe depression. Ketamine, however, is a potent drug of abuse, used recreationally for its dissociative and hallucinatory properties.

The relations between recreational ketamine use with cognitive abilities and mental health require further understanding. Thus, researchers at Ryerson University recruited volunteers from the local Toronto population, targeting rave and party goers. Because ketamine users also frequently consume cannabis, a group of predominantly cannabis users (with no ketamine use) as well as a drug-naïve group were recruited for comparison. Volunteers provided mental health and drug-use history, completed measures of cognition, and questionnaires exploring delusional ideation as well as sensory and perceptual anomalies.

As expected, ketamine users reported more dissociative experiences than the other groups. Interestingly, the ketamine group also endorsed significantly higher rates of delusional ideation and unusual perceptual experiences outside of any experiences under the direct influence of the drug, indicating that cognitive and perceptual distortions associated with ketamine use may extend beyond acute exposure effects. In addition, histories of mental illness were particularly high in the ketamine group (60%) compared to the cannabis (30%) and drug-naïve (5%) samples. Moreover, in most (92%) of these ketamine cases the form of mental illness was past depression.

The researchers warrant caution in interpreting these preliminary and observational findings, but they are intriguing in light of ketamine’s antidepressant potential.

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Research from the University Medical Center of Freiburg (Germany) shows that short inpatient treatment and additional telephone counseling over 12 months improves the prognosis of diabetes type 2

Miami, FL - The global disease burden of diabetes mellitus type 2 is high in terms of premature mortality, disability, and economic loss. We conducted a randomized, controlled trial to find out whether a short inpatient treatment with or without additional telephone counseling would improve glycemic control, physical exercise, and diabetes related problems, thus also reducing overall cardiovascular risk.

We recruited patients from the Disease Management Program for diabetes type 2 of a large health insurance with predominately low income insurants. Eligible patients were randomized either to a three week multidisciplinary assessment and treatment in a clinic specializing in diabetes care (= treatment A) or else to usual care. Patients in the intervention group were then randomized once more to either telephone counseling (= treatment B) or else usual care for the next 12 months. The telephone intervention included monthly calls by a health specialist, and targeted health related behaviors (e.g. physical exercise, nutrition, medication adherence).

Patients were followed up for 12 to 22 months. We found a small but statistically significant effect of the inpatient treatment on overall cardiovascular risk. Additional telephone counseling over one year boosted the effects. Furthermore, patients in the telephone group had better glycemic control, they exercised more often, they were less depressed, and they reported fewer diabetes related problems.

Both of our interventions proved effective. Telephone interventions in particular can be an effective and cost-saving way to reduce the risk of late complications in diabetes type 2, and to help patients improve their psychological well-being.

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Positive affect and inflammation in breast cancer survivors

Miami, FL - Research from UCLA indicates that positive affect is associated with lower markers of inflammation in women recently treated for breast cancer.

Although inflammation is an adaptive and necessary response to infection or injury, chronic low-grade inflammation is maladaptive and is associated with a variety of negative health outcomes in cancer populations, including cancer progression and cancer-related behavioral symptoms.

There is growing evidence that positive affect predicts improvements in physical health, including reduced incidence of disease and mortality, and is also associated with lower levels of inflammation. However, there has been very limited examination of links between positive affect and inflammation in cancer patients and survivors.

Our study examined the association between positive affect and circulating markers of inflammation in a sample of 166 women who had completed treatment for early-stage breast cancer within the past three months. Women were asked to report how much they had experienced a variety of positive (and negative) feelings in the past four weeks, including enthusiasm, pride, and determination.

Independent of negative affect, age, body mass index, and chemotherapy and radiation treatment, positive affect during the past month was associated with significantly lower levels of a key inflammatory marker, the soluble tumor necrosis factor receptor type 2. This marker is elevated in women who receive chemotherapy and may contribute to cancer-related behavioral symptoms such as cognitive disturbances and fatigue. The relationships between positive affect and the other markers of inflammation (C reactive protein, interleukin-6, and interleukin-1 receptor antagonist) were in the same direction, but did not reach statistical significance.

Results suggest that positive affect is associated with lower inflammation in the cancer context, which may have implications for cancer-related symptoms and cancer progression as well as provide a target for intervention. In an effort to better understand the relationship between positive affect and inflammation over time, our next study will examine the potential effects of positive affect on trajectories of inflammation 6 and 12 months after study entry.

The study was supported by the National Cancer Institute (R01 CA 109650) and the Breast Cancer Research Foundation.
People who have diabetes, all around the globe, are more likely to experience depressive symptoms compared to people without diabetes.

Miami, FL - A collaboration between scientists from the Netherlands, Germany and England showed that having diabetes is related to a *global* increased odds of having an episode of depressive symptoms, which was observed in Asia, South-America and Europe, but not in Africa.

People who have diabetes are more likely to experience depressive symptoms, which in turn may contribute to poor adherence to medication or a less healthy lifestyle (less physical activity, unhealthy diet). However, most studies investigating diabetes and depression have been conducted in Western European or North American countries. It was unknown whether diabetes and depressive symptoms show the same association in South American, Asian and African countries, which are facing the largest increase in diabetes in the following decades.

The scientists examined data from the 2002 WHO World Health Survey, which included 231,797 adults from 47 countries, including many low- and middle-income countries. They also showed that the main findings were not affected by differences in age, sex, years of education, body mass index, smoking or physical activity between the countries. The absence of an association in Africa remains unexplained, but may reflect large differences in findings between countries, under-diagnosis of diabetes or cross-cultural differences in characteristics of depressive symptoms and translation.
The scientists concluded that, given the global rise in diabetes in the following decades, and the increased health risk of depression in diabetes, studies examining mechanisms and interventions are necessary.
Research from Ohio University suggests that thinking about stress may impact your immune system

**Miami, FL -** We recruited 34 healthy young women to take part in our study. All participants came into the research office and completed an impromptu speech in front of two evaluative audience members. Soon after the stressor ended, we told participants to either ruminate on it (replay the speech in their minds) or we distracted them from thinking about it by having them focus on unrelated topics (for example, imagine a sailing ship). We measured the women’s inflammatory responses to the tasks by comparing concentrations of C-reactive protein in their blood before and after the procedures. C-reactive protein is a marker of inflammation that rises in response to injury, infection, and stress. Our study results showed that, on average, C-reactive protein levels increased in response to the speech stressor. For women who ruminated after it ended, levels of this inflammatory marker continued to rise for at least one hour after the stressor started. In contrast, for women who were distracted, C-reactive protein levels returned back to starting levels by the end of the visit. These preliminary findings suggest that ruminating on stressful events after they are over may make inflammatory responses last longer, whereas distraction may reduce them. Other research shows that patients with high levels of C-reactive protein are at increased risk for a number of health conditions, such as cardiovascular disease, depression, and diabetes. It may be possible, then, that people who have a tendency to ruminate on stressful events could be vulnerable to inflammation-related disorders.

###
Research from Rhodes College suggests that eating comfort food following stress may not in fact be stress-relieving for women with binge eating disorder

Miami, FL - Stress is a major contributor to the onset and maintenance of binge eating disorder (BED). Given prior support for the importance of reward on stress-induced eating, as well as studies showing brain reward center activation in response to visual food cues, but not in response to food intake in bulimia nervosa, we sought to determine the distinct effects of food cues versus food intake on stress recovery in obese women with BED, as well as in obese and normal weight non-BED women.

We continuously assessed the cardiovascular factors of heart rate and blood pressure during baseline rest, a mental stress test, and a stress recovery period. Immediately following the stress test, participants chose a pictured snack food to be provided later in the study. We then provided participants with their chosen snack food following 45 minutes of stress recovery and continued monitoring their cardiovascular response until minute 60 when the study concluded.

While women with BED did not differ from non-BED women on cardiovascular factors at baseline rest and during stress, women with BED did not appropriately recover from stress, particularly during food intake. The mental stress caused women with BED to consume more food than non-BED women, but this did not account for their lack of cardiovascular recovery. Thus, food anticipation in response to cues lead to cardiovascular recovery following stress in all women, while food intake during stress recovery lead to increased cardiovascular activity only for women with BED. Our study suggests that comfort food cues may normalize the otherwise impaired cardiovascular recovery following mental stress in women with BED, but that food intake may not, in fact, serve as a stress-relieving reward for this population.

###
Research from the University of Arizona suggests that romantic couples of different weight statuses exhibit different emotional patterns, with mixed-weight couples in which the woman is heavier than the man exhibiting the most volatile interpersonal emotions.

*Miami, FL* - We asked our sample of 44 heterosexual couples to have a conversation with each other about the importance of a healthy lifestyle, and the positive and negative impact they have on each other’s health behaviors. Then, we asked couples to re-watch their conversation and rate how they felt, second-by-second, during the conversation. Partners’ height and weight were measured and used to calculate body mass index (BMI). We examined how couples’ joint weight statuses influenced the volatile or calming emotional patterns experienced during the conversation.

We found that mixed-weight couples in which the woman was heavier than the man exhibited a volatile, amplified emotional pattern during the conversation. Conversely, mixed-weight couples in which the man was heavier than the woman exhibited a calming, well-regulated, emotional pattern.

This suggests that mixed-weight couples, particularly when the woman is heavier than the man, may experience more emotional difficulties, such as arguing and conflict, surrounding health and well-being. Conversely, mixed-weight couples in which the man is heavier than the woman may experience more constructive interpersonal interactions and be able to coordinate their emotions in a calming manner.

These findings suggest that it may be very important for counselors working with people trying to lose weight to address the relative weight statuses of romantic partners as well as emotion dynamics within the relationship to help them attain a healthy lifestyle. Partners who have compatible emotional responses to lifestyle issues may have an easier time achieving coordinated, health-related goals, and may also reap relationship benefits as well.

###
EMBARGOED FOR RELEASE UNTIL MARCH 14, 2013

Long-term Financial Strain linked to Atherosclerosis in Women

Miami, FL - Women who experience long-term financial strain are more likely to develop plaque in their arteries than women who report higher socioeconomic statuses or women who struggle financially over a short period of time, according to research presented today at the American Psychosomatic Society’s annual meeting in Miami.

The study assessed the presence of plaque in the carotid artery of women who took part in the Study of Women’s Health Across the Nation (SWAN), a prospective 12-year study of women between the ages of 42 and 52. In the 12th year of the study, patients underwent an ultrasound on their carotid artery.

“Socioeconomics and their health effects have been of interest for some time,” said Rebecca C. Thurston, Ph.D., Assistant Professor of Psychiatry, Epidemiology, Psychology, and Clinical and Translational Science. “This study showed that even when we control for cardiovascular factors like tobacco use, blood pressure and diabetes, a persistent relation between chronically low socioeconomic status and women’s heart health exists. Chronic financial strain without relief may negatively impact women’s health, regardless of their race.”

The SWAN study followed 1403 women from diverse backgrounds over the course of their transition through menopause. A multi-site, epidemiologic study designed to examine the health of women in their middle years, the study examines the physical, biological, psychological and social changes women undergo throughout this time. The study’s goal is to help scientists, health care providers and women learn how mid-life experiences affect health and quality of life during aging.

“This study’s use of subclinical cardiovascular disease measures has allowed us to investigate questions surrounding socioeconomic status and women’s heart health before frank heart disease manifests” said Dr. Thurston. “Only by understanding factors associated with the development of disease can we prevent future clinical events in older ages.”

###

http://www.upmc.com/media
Release from American Psychosomatic Society Meeting, Miami, FL

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Research from Washington University in St. Louis and the University of Pittsburgh suggests childhood depression significantly increases risk factors for cardiovascular disease.

Miami, FL - It’s been known for many years that depression is an independent risk factor for heart disease, but it is also associated with other cardiovascular risk factors in adults.

In an attempt to identify the point in life at which the association between depression and other cardiovascular risk factors begins, researchers at the University of Pittsburgh and Washington University in St. Louis analyzed data on more than 200 adolescents who had been diagnosed with depression when they were children at an average age of 9 years. They were surveyed seven years later to determine whether they were still depressed, and also whether they smoked cigarettes, were overweight, and whether they exercised regularly.

These adolescents were compared to their siblings who never had been depressed, and to a control group of unrelated, nondepressed adolescents of about the same age.

Only 15 percent of the individuals who were depressed in childhood reported that they were depressed when re-interviewed seven years later, at an average age of 16. However, the individuals who had been depressed as children had more cardiovascular risk factors than their nondepressed siblings and substantially more than the members of the control group of unrelated, nondepressed adolescents.

About a third of those who had been depressed in childhood were smokers in adolescence, compared to 13% of their siblings and only 2.5 percent of the controls. About 22% of the childhood depression group had become obese by age 16, compared to 17% of their siblings and 11% of the controls. Physical activity levels were also very low in the adolescents who had been depressed as children. Their siblings were a bit more active, and those in the control group were the most physically active.

The findings show that a diagnosis of depression in childhood predicts a worse cardiovascular risk profile in adolescence. Recognizing and treating depression in children may help to prevent cardiovascular risk factors from emerging in adolescence, and heart disease from occurring in adulthood.

###
Research from McGill University clarifies relations among anxiety, pain, and dizziness during blood donation.

Miami, FL - Feelings of dizziness, lightheadedness and faintness are relatively common among blood donors, especially newer donors. These symptoms are called vasovagal reactions (VVRs). Although not unusual, experiencing these negative symptoms greatly reduces the likelihood that an individual will donate blood again in the future. Therefore, it is important to understand what leads some individuals to experience these types of symptoms.

Many factors have been associated with VVRs in blood donors and other medical patients such as anxiety and pain. However, little is known about how they interact and predict feelings of dizziness and fainting. The goal of the current study was to understand the interplay between these different factors and their ability to predict these negative symptoms.

We recruited 274 young donors from different blood donation clinics in universities in Montreal, QC. They completed several questionnaires concerning medically-related fears, the amount of pain they experienced during donation, and their anxiety before and during donation. When donors feel dizzy or unwell, the nurse on site elevates their feet and puts a cold compress on their forehead. Therefore, requiring this intervention was used as an objective measure of a donor’s VVR.

We found that donors who were more anxious before their donation and those who are more afraid of needles experienced more pain during the procedure. However, the most important predictor of experiencing VVR (requiring treatment) was anxiety and not the degree of pain.

Overall, although pain and anxiety are inter-related, they play different roles in the overall picture of unpleasant symptoms. These findings have important practical implications in terms of reducing donor symptoms and possibly improving donor retention.

###
Research from Concordia University, Montreal, suggests that self-esteem may protect older adults’ physical health by facilitating adaptive cortisol regulation in the context of stressful life circumstances.

Miami, FL - Older adulthood can be accompanied by psychological challenges, which can trigger biological disturbances, and physical health problems. We examined whether the maintenance of self-esteem can protect a health-relevant biological process (i.e., cortisol) among older adults who confront psychological challenges.

We followed a sample of 147 older adults over a period of four years who participated in a long term study, known as the “Montreal Aging and Health Study” (MAHS). Every two years we asked the participants to complete questionnaires that measured their levels of depressive mood, stress perceptions, and self-esteem. In addition, in each assessment participants collected four daily saliva samples over three typical days. Their saliva was analyzed to measure cortisol, which is a health-relevant hormone that can become enhanced through the experience of stress and depressive mood.

We found that the older adults, whose self-esteem declined over the first two years, secreted particularly high levels of cortisol after four years of study. Furthermore, this effect was especially pronounced among those participants who experienced high levels of stress or depressive mood at study entry.

These findings identify self-esteem as an important contributor to successful aging. The maintenance of self-esteem may protect adaptive cortisol function if older adults confront psychological challenges. Given the adverse health-related consequences of cortisol dysregulation, older adults’ self-esteem could be targeted in interventions to promote quality of life and reduce costs for public health services.

###
Common Ethnic Minority Groups Suffer Greater Psychological Distress, but Gain Less Access to Mental Health Services

**Miami, FL -** In one of the most comprehensive studies of the mental health of Ontarians, researchers found that some of the most common ethnic groups in the province have greater depression, anxiety and more stressful life events than the majority population, but less use of mental health services.

The data for the study was collected as part of the Ontario Health Study (www.ontariohealthstudy.ca) pilot or pre-study, where Ontario residents from northern, rural and urban centers were invited to an assessment center to meet with a nurse and complete surveys. Over 8,000 residents participated. Almost a quarter of these participants reported their ethnic background as non-white: South Asian (e.g., India, Bangladesh), East Asian (e.g., China, Japan), Southeast Asian (e.g., Malaysia, Indonesia), Black, and Latin American/Hispanic.

Results showed respondents of West Asian (e.g., Iran, Afghanistan) and Aboriginal backgrounds had significantly greater depressive symptoms than almost all other groups. With regard to anxiety, participants reporting South Asian, Arab, West Asian, Aboriginal and Latin/Hispanic backgrounds had significantly greater anxiety than “white” (e.g., European) respondents. Stressful life events were significantly higher among participants reporting Arab and Aboriginal backgrounds. Filipino participants reported significantly higher social support than their white counterparts, yet East Asian, Southeast Asian and Latin /Hispanic participants reported significantly less.

Mental health service use was significantly higher among participants reporting White, West Asian, Aboriginal and Jewish backgrounds when compared to many of the other ethnic groups. “We need to do a better job at ensuring people get access to mental health treatments based on need, without this ethnic variation we are seeing” said Dr. Grace. “There are appears to be excellent informal supports and resilience in the Filipino community. But we must do more to ensure there is formal mental health treatment provided to those who need it, in a culturally-appropriate way.”

**Institutional Affiliations:** York University and University Health Network

###
Impact of Youth's Perception of their Social Status on Health

**Miami, FL** - Children and adolescents from poorer families tend to have worse health. Pathways to poor health may include access to health care, worse health behaviors, and stress. In addition to measuring traditional markers like education, occupation, and income, researchers have also begun to look at children and adolescents’ perception of their social status and its impact on their health. Low perceived social status may be stressful and affect health through the stress response system.

In our study, we examined the relationship between perceived social status and stress response in a sample of healthy children and adolescents. We asked them to rate where they stood relative to others in their school and in society. Children and adolescents provided saliva samples to measure the stress hormone cortisol, which marks how their stress response system is functioning. They also wore a heart monitor to measure how their heart responded to events throughout the day.

We found that children and adolescents who think their social status is lower do not respond flexibly to events during the day, in terms of their heart beat patterns. In children only, those who have lower perceived status also have lower levels of the stress hormone. This suggests that children and adolescents’ perception of their social status may have a significant impact on the way their body responds to stress.

Parents, pediatricians, and child educators should consider how children and adolescents perceive their social status as this can affect their health. Programs may target at-risk children and adolescents by improving the way youth cope with stress and limiting its effects on their eventual health outcomes.

###
Release from American Psychosomatic Society Meeting, Miami, FL

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DEPRESSION: AN INDEPENDENT PREDICTOR OF WORSENING HEART FAILURE

Miami, FL - Researchers from the University of Maryland School of Medicine in Baltimore and Tilburg University in the Netherlands have found an association between depression and a poorer heart failure prognosis, independent of other variables that affect heart failure. Higher depression scores are related to a shorter time until hospitalization or death.

The findings add to previous heart failure research, which linked depression to a more than two-fold risk for death and hospitalization, increased health care costs and functional decline. The study will be presented at the American Psychosomatic Society’s scientific meeting on March 13, 2013.

The researchers studied 116 patients who completed a commonly used questionnaire to evaluate symptoms of depression. The patients were followed for an average of 18 months or until either hospital admission or death. Age, gender, race, physical ability, and quality of life—known predictors of worsening heart failure—were also recorded.

There were 34 hospitalizations and 12 deaths during follow-up. While the researchers found strong associations between physical ability, quality of life and depression, the effect of depression persisted even after the researchers statistically controlled for these other factors.

“In the future, depression may be an important indicator of increased risk for worsening heart failure,” says Stephen Synowski, Ph.D., a University of Maryland researcher. “The findings suggest there may be opportunities for behavioral interventions to slow heart failure progression in individuals with symptoms of depression.” Synowski adds that additional research may further clarify the interactions between depression, physical ability, quality of life and heart failure prognosis.

###
Release from American Psychosomatic Society Meeting, Miami, FL

Contact: Steven Hauf
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Research from the University of North Texas suggests that experiencing harassment, rejection, discrimination and related anxiety as a gay or bisexual male is associated with impaired sexual function and satisfaction.

Miami, FL - In a study conducted by The Center for Psychosocial Health Research, 60 gay and bisexual men provided information on their experiences with harassment, rejection and discrimination. Additionally, they shared information on state anxiety (an immediate and temporary form of anxiety brought on by a stressful event) as well as their abilities to perform and satisfaction with sexual performance. The relationships between harassment, rejection and discrimination, anxiety and sexual health were explored.

Researchers found that both heterosexist events (harassment, rejection and discrimination) and state anxiety were negatively associated with sexual health. Gay and bisexual men who were past victims of heterosexist events and had experienced state anxiety also reported inhibited sexual function and/or satisfaction.

Counselors working with gay and bisexual men should be mindful of the role heterosexist events and anxiety plays on the sexual well-being of their clients. Counselors and other health-care workers should work to identify events and experiences associated with poor sexual functioning and satisfaction in gay and bisexual men and begin developing interventions to improve sexual health and sexual satisfaction. Sexual health plays an important role in well-being for heterosexuals; however this research extends the sexual health research to include gay and bisexual men.

###
Anger, depression, discrimination linked to early risk marker for coronary heart disease

Miami, FL - Emotional factors may play a significant role in increased visceral fat among women, according to new findings from the Study of Women’s Health Across the Nation (SWAN) Heart Study. The results will be presented at this year’s American Psychosomatic Society Meeting in Miami, Florida.

Visceral fat is the type of fat surrounding internal organs. It has been associated with early risk markers of coronary heart disease.

Researchers from the University of Minnesota, Rush University Medical Center and the University of Pittsburgh examined data from the SWAN Heart Study to determine if psychosocial stressors, specifically emotional factors and perceived discrimination, were related to increases in visceral fat over two years.

Researchers analyzed data from 338 women from the SWAN Heart Study, with study sites in Chicago and Pittsburgh. Within that group, 37 percent were black and 63 percent were white.

“Our analyses showed women reporting greater perceived discrimination, more depressive symptoms, or higher levels of trait anger had significantly greater increases in visceral fat during the follow-up compared with peers,” said project leader Susan Everson-Rose, Ph.D., M.P.H., associate director of the Program in Health Disparities Research at the University of Minnesota.

The findings suggest emotional factors, such as depression and anger, affect visceral fat through known cardiovascular pathways. However, perceived discrimination and presumably the stress accompanying those experiences appear to have an independent effect on fat accumulation.

The results did not differ by race.

This study was funded by the National Institutes of Health.

###
Research from Utrecht University suggests that patients with a somatoform disorder have experienced more infections in their past

Miami, FL - Patients with somatoform disorder suffer from chronic medically unexplained somatic symptoms. Animal research suggests that repeated activation of the immune system can lead to a more prolonged experience of somatic complaints by sensitization of immune-brain communication. We sought to find out whether patients with somatoform disorder had experienced repeated activation of their immune system as a possible explanation for their experience of somatic complaints.

In a study performed at Utrecht University, the Netherlands, a psychiatric and a general practitioners register were coupled to identify and compare patients with a somatoform disorder with a matching control group. As a measure of number of immune activations, all registrations of infections and other inflammatory events (e.g. related to auto-immune disease) were counted in the years before the diagnosis of somatoform disorder.

Patients with a somatoform disorder had more registrations of infections and inflammatory events in their past as compared to controls. The same was found when only the registrations were counted that were accompanied by a relevant medication prescription. Further inspection showed that the difference between patients and controls was mainly found for acute local infections that are commonly accompanied with fever.

This study shows that patients with somatoform disorder indeed have experienced more events of immune-activation in their past than other persons. Possibly, this points to a role for immune-brain communication in the onset and maintenance of the somatic symptoms in patients with somatoform disorder. Better understanding of all factors involved in the development of somatoform disorder might eventually lead to improved treatment options.

###
Research from Indiana University-Purdue University Indianapolis (IUPUI) and the University of Pittsburgh suggests that the physical symptoms, but not the cognitive-emotional symptoms, of depression are associated with increases over time in a measure of insulin resistance, which is a precursor to type 2 diabetes. In contrast, insulin resistance was not linked with later increases in depressive symptoms.

Miami, FL - Few studies have examined the influence of depression and early markers of diabetes on one another over time. Therefore, we evaluated both directions of the association between depressive symptoms and insulin resistance over a 6-year period. Within this association, we also examined both the physical symptoms of depression, such as fatigue and sleep disturbance, and the cognitive-emotional symptoms, such as sadness and pessimism.

Participants were 269 healthy men and women aged 50-70 years at the start of the study. At two points six years apart, these individuals completed a questionnaire measuring depressive symptoms and provided a blood sample, which was used to measure fasting glucose and insulin levels. From these values, we calculated an established measure of insulin resistance.

We found that the physical symptoms, but not the cognitive-emotional symptoms, of depression predicted increases in the measure of insulin resistance over six years. In contrast, insulin resistance did not predict increases in either the physical or the cognitive-emotional symptoms of depression over six years. The longitudinal association between the physical symptoms of depression and insulin resistance remained when body mass was taken into account. Our findings suggest that older adults experiencing the physical symptoms of depression may be at an increased risk of insulin resistance and later type 2 diabetes.

###
Deadly Depression: Research from the University of Pittsburgh suggests that in patients with congestive heart failure a positive response to a simple two-item depression screening questionnaire is associated with increased risk of mortality for up to two years following hospitalization.

Miami, FL - Heart failure affects almost 6 million Americans, with 670,000 new cases, more than 280,000 deaths and $34 billion dollars in direct and indirect costs each year. Despite recent therapeutic advances, the mortality rate associated with heart failure has remained essentially unchanged over the past decade. Approximately one-third of heart failure patients experience depressive symptoms and depressed patients tend to experience poorer quality of life, higher healthcare costs and increased risk of hospitalization and death compared to patients who are not depressed.

We screened 471 hospitalized patients with heart failure for depressive symptoms using the Patient Health Questionnaire-2 (PHQ-2), an ultra-brief two-item depression screening questionnaire that assessed them for presence of the two cardinal symptoms of depression within the preceding two-weeks (little interest or pleasure in doing things; feeling down, depressed or hopeless), and then followed patients for up to 4 years following discharge to determine mortality.

We found that a positive PHQ-2 depression screen was associated with a significantly greater risk of death for up to two years following hospital discharge, a finding that has not previously been demonstrated in hospitalized heart failure patients (PHQ-2 (positive) vs. (negative) mortality rate 1-year: 20% vs. 8%; 2-year: 30% vs. 16%) The elevated risk associated with a positive depression screen remained even after adjustment for age, heart function, gender, diabetes, blood pressure, and several other factors known to be associated with heart failure mortality.

“Our findings highlight the negative impact of depression on patients with heart disease, and the PHQ-2 screening tool is so simple to administer that it can be easily incorporated into routine clinical practice,” said study lead author Tatiana Deveney, Doris Duke/NIMH Clinical Research Fellow at the University of Pittsburgh. “A positive screen can rapidly identify patients at greater risk of dying, allowing clinicians to follow-up with a more comprehensive assessment of their mood symptoms and offer appropriate treatment if needed.”
Giving support to others can reduce our response to stress!

Miami, FL - During times of stress, we often look to others to help us manage our stress and feel better. However, in addition to receiving support from others, a less intuitive way to reduce stress may be to actually give support to someone else.

In a follow up to our other findings showing that giving to others activates reward-related neural regions, we asked people to give support to a close friend or loved one by writing a brief supportive note to that person or to write about their route to school/work each day. Then, each person went through a stressful experience (gave a speech and performed mental arithmetic in front of a panel of judges) and we measured his or her heart rate and blood pressure throughout the experiment.

We found that while people who gave support did not report feeling less stressed than those who did not give support, those who gave support did show significant reductions in heart rate and blood pressure to the stressor. In other words, simply writing a few supportive words to someone that we care about was enough to reduce the body’s stress response.

These results suggest that an unintended benefit of giving may be reducing the giver’s stress. The next time you are feeling stressed it may be worth helping yourself by helping someone else.

###
Release from American Psychosomatic Society Meeting, Miami, FL
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Research from the University of Giessen, Germany shows immune responses and mood during menstrual cycle to be related.

Miami, FL - There is increasing evidence for not only psychoimmunological interactions but also immunopsychological relationships. This evidence indicates strong immune responses to induce psychological alterations known as sickness behavior, including more depressive and passive mood.

Women naturally cycling experience profound immune alterations with every ovulatory cycle. We thus wondered whether these alterations might be associated with altered mood. Forty-five young naturally cycling women were investigated five times throughout the menstrual cycle (immediately after menstruation, around ovulation and three times in the second cycle phase, i.e. before the next menstruation). For the analysis of different inflammatory markers, i.e. cytokines we took blood samples and collected cervix secretions as a measure of uterine inflammation. We also asked our study participants to indicate their mood states (depression/anxiety, fatigue, vigor and hostility) and the degree of stress they experienced.

We found concentrations of pro-inflammatory immune parameters (i.e. the interleukins-1β, 6 and 8) measured in the cervical secretions to show a decrease towards ovulation and an increase towards menstruation. No comparable alterations were found for the same parameters measured in the blood. Women experiencing enduring stress had higher concentrations of these pro-inflammatory cytokines. Increases of pro-inflammatory cytokines towards menstruation go ahead with decreases of vigor and increases of fatigue.

Up to our knowledge this is the first study to analyze alterations of cervical immune parameters throughout the menstrual cycle and to relate them to mood changes towards menstruation.

###
Researchers from the University of Wisconsin-Madison use data from a national sample of adults to document that choosing food as a coping response to stress is associated with higher risk for pre-diabetes and diabetes.

Miami, FL - Participants were 1138 adults (937 without diabetes) in the Midlife in the U.S. study (MIDUS II). They were asked to indicate how they “usually experience a stressful event,” two responses of which were “I eat more of my favorite foods to make myself feel better” and “I eat more than I usually do.” These two items were combined to create a measure of stress eating (higher scores indicated greater use of food in response to stress). Also obtained on the respondents during their overnight stay at a General Clinical Research Center were measures of glucoregulation (fasting glucose, insulin, glycosylated hemoglobin A1c). Using these measures and criteria from the American Diabetes Association, we established which participants met clinical criteria for pre-diabetes and diabetes.

When we linked stress eating with the measures of glucoregulation, we found that those who were more likely to eat in response to stress also showed higher levels on all measures of glucoregulation, as well as higher risk of pre-diabetes or diabetes. Further, we found that waist circumference explained the relationship between stress eating and worse glucoregulation. That is, part of how stress eating contributes to poor glucoregulation is through the impact such eating has on central adiposity.

The findings have important implications for interventive targets related to obesity and chronic disease, namely, the need to develop strategies to reduce the tendency to use food as a coping response to stress.

###
National research from the Hispanic Community Health Study/Study of Latinos (HCHS/SOL) suggests that among diverse Hispanics/Latinos living in the U.S., different aspects of acculturation are differentially associated with obesity.

Miami, FL - The Hispanic Community Health Study/Study of Latinos (HCHS/SOL) - the largest epidemiologic study to date of health and disease in U.S. Hispanic/Latino populations - included information from over 15,800 participants. As part of that study, different aspects of acculturation were examined in relation to waist circumference, a measure of obesity associated with increased risk for diseases including diabetes and heart disease.

Rather than treating acculturation as a single dimension with the adoption of American culture versus the retention of Hispanic/Latino culture as opposite ends of one continuum, acculturation versus cultural retention were treated as two separate dimensions. This allowed the possibility that some U.S. Hispanics/Latinos may be highly acculturated to American practices while also retaining a high level of their traditional culture.

To separate American from Hispanic/Latino cultural orientations, we recoded the responses to questions on a commonly used measure of acculturation into the following four domains: English language use, Spanish language use, non-Hispanic/Latino social affiliations, and Hispanic/Latino social affiliations. We found that individually, higher English language use was associated with having a larger waist circumference whereas higher Spanish language use was associated with having a smaller waist circumference. Neither non-Hispanic/Latino nor Hispanic/Latino social affiliations were individually associated with waist circumference. Interestingly, when examining these domains together, we found that English language use remained significantly associated with larger waist circumference whereas non-Hispanic/Latino social affiliation, a different domain of U.S. acculturation, was significantly associated with lower waist circumference.

Our findings suggest that among Hispanics/Latinos living in the U.S., different domains of the acculturation process may relate differently to health outcomes such as obesity. Failure to account for such differences in research may mask important findings that could inform clinical and public health interventions, practices, and future investigations regarding the health of Hispanics/Latinos living in the U.S.

###