

# समाचार पत्रों से चयित अंश Newspapers Clippings

दैनिक सामयिक अभिज्ञता सेवा

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## Coast Guard women officers trained to sail hovercraft

By Dennis S. Jesudasan

In a first-of-its-kind initiative, the Coast Guard, which has already deployed women officers to operate its fixed-wing aircraft and helicopters, has now trained them for operations on board hovercraft - an amphibious craft that patrols in shallow water to check illegal activities in seas, especially near international maritime boundary lines. In the first batch, four women officers were trained in a 10-day first-phase training capsule at ICGS Mandapam in Ramanathapuram district. "The Coast Guard decided to train women officers in hovercraft. The training of the four concluded on Thursday and all have passed the aptitude test," Inspector-General Satya Prakash Sharma said. In the first batch, Assistant Commandants Sneha Khatayak, Anuradha Shukla, Shirin Chandran and Vasundhara Chouksey from Coast Guard stations in Paradip, Mumbai, Chilika and Chennai respectively, completed their training. "The 10-day training was in familiarising with the way sea patrol is undertaken. Other basics of operating the hovercraft and other procedures were part of the training. We are honoured to be in the first batch of women trained," said Ms. Khatayak. Ms. Chouksey was also part of a different team that underwent training under Commander Dilip Donde, the first Indian to circumnavigate the globe on board the sailing boat INSV Mhadei . Commandant S. Bhattacharjee of ICGS, Mandapam, said these officers, after completing their first phase of training at Mandapam would proceed to receive further training at various places. "This is the first time, women in the forces, would be posted in craft operating from sea," he said. Hovercraft or Air Cushion Vehicles are amphibious vehicles that can move in land and sail at sea at a maximum speed of 40 knots to intercept any boat or ship suspected to be involved in illegal activity. Presently, a total of 18 hovercraft serve in the Coast Guard, attached to units in Okha and Jakhua in Gujarat, Mumbai in Maharashtra, Mandapam in Tamil Nadu, and Haldia in West Bengal.

DESIDOC

# तटरक्षक बल के अभियानों में महिलाओं की भूमिका भी महत्वपूर्ण : पर्रीकर

जनसत्ता ब्यूरो

नई दिल्ली, 28 जनवरी। रक्षा मंत्री मनोहर पर्रीकर ने भारतीय तटरक्षक बल के अभियानों में महिलाओं के लिए बेहतर भूमिका की गुरुवार को वकालत करते हुए कहा कि इस दिशा में ध्यान देने की जरूरत है। उन्होंने दस महिलाओं के दस्ते को होवरक्रॉफ्ट के संचालन का प्रशिक्षण देने के लिए तटरक्षक बल की सराहना की। देश की सामुद्रिक सीमा की सुरक्षा करने वाले इस बल में महिलाओं की भागीदारी दस फीसद है।

रक्षा मंत्री ने कहा कि संगठन में महिलाओं को बेहतर भूमिका प्रदान करना उन क्षेत्रों में शामिल है, जिन पर ध्यान देने की जरूरत है। मुझे इस बात की जानकारी है कि भारतीय तटरक्षक बल की कुल क्षमता में महिलाओं की संख्या दस फीसद है। महिला अधिकारी तटरक्षक विमान के पायलट के तौर पर काम कर रही हैं। यह जान कर खुशी हुई कि तटरक्षक बल ने होवरक्रॉफ्ट के संचालन के लिए महिला अधिकारियों के पहले दस्ते को प्रशिक्षण देना शुरू किया है। यह महिलाओं के सशक्तीकरण की दिशा में एक उल्लेखनीय कदम है।

रक्षा मंत्री यहां आइसीजी के अलंकरण

समारोह में बोल रहे थे। पिछले वर्ष रक्षा मंत्रालय ने महिलाओं को भारतीय वायु सेना में फाइटर पायलटों के तौर पर शामिल करने की सहमति दी थी। तटरक्षक बल के कमांडेंट चंद्रशेखर जोशी को उन्होंने राष्ट्रपति के तटरक्षक वीरता पदक से सम्मानित किया। जोशी ने संदिग्ध पाकिस्तानी नाव को पकड़ा था, जिसे 31 दिसंबर, 2014 को उड़ा दिया गया था।

नाव का पता लगाने के लिए हवा से सतह तक अभियान का समन्वय करने वाले कमांडेंट अभय अंबेतकर को भी तटरक्षक वीरता पदक से सम्मानित किया गया। तटरक्षक बल में 1997 में शामिल होने वाले जोशी बल के जहाज राजरतन की कमान संभाले हुए थे और वे गुजरात के तट के पास अंतरराष्ट्रीय समुद्री सीमा पर तैनात थे। जहाज संदिग्ध नाव से करीब 170 समुद्री मील की दूरी पर था, लेकिन उसे पकड़ने के लिए वह अधिकतम गति से आगे की तरफ बढ़ा। बहरहाल, नौका में विस्फोट हो गया और डूबने से पहले उसमें आग लग गई। उस पर चार लोग सवार थे। पर्रीकर ने तब कहा था कि परिस्थितिजन्य साक्ष्य दर्शाते हैं कि पाकिस्तानी नाव का आतंकवाद से जुड़ा होने का संदेह है।

## Military secretary branch under scanner

### Officers Accused Of Graft, Link To Bribe For Promotion Scam

The defence ministry has sought a CBI inquiry against two serving Major Generals for allegedly amassing assets disproportionate to their known sources of income and for links to a 'bribe-for-promotion' scandal in the 1.18-million strong Army. Defence minister Manohar Parrikar on Thursday asked the CBI to probe charges against the two Major Generals (names being withheld since the CBI is yet to register an FIR in the case) and

**This is not the first time that the military secretary branch has come under the lens. A former Lt Gen who headed the military secretary branch was court-martialled along with another Lt Gen in the Sukna land scam case**

submit its report at the earliest. "As per the zero tolerance policy against corruption, action has been taken against the two based on several complaints. The minister has asked the CBI to investigate all movable and immovable assets of these officers," a defence ministry source said. While

one of the officers is from the Army Service Corps and posted under the Eastern Command in Kolkata, the other is from the Army Ordnance Corps and serving at the Army headquarters in Delhi. Both received the Ati Vishisht Seva Medal) for "distinguished services of an exceptional order" last year. One of the Major Generals had faced a CBI probe over corruption charges in a Border Roads Organization project, but the probe agency did not find enough evidence for criminal prosecution. Defence minister Manohar Parrikar's directive to CBI to probe two Major Generals for corruption has turned the scanner yet again on the military secretary (MS) branch which looks after postings and promotions of all officers. A 'bribe-for-promotion' scandal has been simmering since September last year, especially after minister of state for external affairs and former Army chief General V K Singh had asked Parrikar to crack down on the corruption in promotions in the force, as was then reported by TOI. Even half a mark can make or mar a promotion in the steeply pyramidal structure of the armed forces, where only three to four officers out of every 100 make it to the Maj Gen rank. The defence ministry has red-flagged the special promotion board, in which the two officers under the scanner had figured for the Lt General rank last year. The board, which considered 33 Major Generals for three Lieutenant General vacancies, is still to be declared or "declassified" due to the controversy swirling around the MS branch. There are allegations that money exchanged hands for "favourable consideration" in the board. "If required, the then MS Lt Gen Rajiv Bhalla (who retired on September 30) can also be questioned by CBI," said a source. This is not the first time that the crucial MS branch has come under the scanner. A former Lt Gen who headed the MS branch was even court-martialled, along with another Lt Gen, in the Sukna land scam case in 2009-2010. Gen V K Singh and current Army chief Gen Dalbir Singh Suhag, of course, also have a history of antipathy towards each other. Just before demitting the chief's office in May 2012 Gen V K Singh had placed a discipline and vigilance promotion ban on Gen Suhag who was then a Lt Gen, for "abdicating responsibility" in handling a botched operation by an intelligence and surveillance unit under him as the 3 Corps commander in Dimapur. The ban was lifted after Gen Bikram Singh took over as Army chief. It paved the way for Gen Suhag to succeed Gen Bikram Singh as the Army chief in 2014.

## Parrikar asks CBI to probe 2 Major Generals

### Officers Accused Of Graft, Link To Bribe For Promotion Scam

#### LENS ON GENS

- One Maj Gen is from Army Service Corps and posted under Eastern Command at Kolkata, the other is from Army Ordnance Corps and is serving at Army HQ, Delhi
- Both received Ati Vishisht Seva Medal last year
- Bribe-for-promotion scandal has been simmering since last Sept, especially after MoS VK Singh had asked Parrikar to crack down on graft in promotions in force

The defence ministry has sought a CBI inquiry against two serving Major Generals for allegedly amassing assets disproportionate to their known sources of income and for links to a 'bribe-for-promotion' scandal in the 1.18-million strong Army. Defence minister Manohar Parrikar on Thursday asked the CBI to probe charges against the two Major Generals (names being withheld since the CBI is yet to register an FIR in the case) and submit its report at the earliest. "As per the zero tolerance policy against corruption, action has been taken against the two based on several complaints. The minister has asked the CBI to investigate all movable and immovable assets of these officers," a defence ministry source said. While one of the officers is from the Army Service Corps and posted under the Eastern Command in Kolkata, the other is from the Army Ordnance Corps and serving at the Army headquarters in Delhi. Both received the Ati Vishisht Seva Medal for "distinguished services of an exceptional order" last year.

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## Bharati Defence in Talks with Foreign Cos for Warship JV

By Sachin Dave

An affiliate of Russia's United Shipbuilding Corporation (USC) and a UK company are in talks with Bharati Defence & Infrastructure, formerly Bharati Shipyard, for a strategic partnership, wherein they could build warships in India, people close to the development said. "Bharati Shipyard has a licence to build warships in India. The company is now looking to monetise that and is in talks with a couple of players," a person with a direct knowledge of the matter told ET. Without naming United Shipbuilding Corporation, he said the Russian company is the affiliate of a public sector company in that country. The UK company is a private company, the people said, but further details weren't available. The development, after reports of a pact between Reliance Defence and USC to build warships, is a reiteration of foreign defence contractors' interest in India, the largest importer of defence equipment with an annual budget of over \$40 billion and a shopping list that includes missiles and armoured vehicles to submarines and aircraft. It is estimated that the Indian Navy could spend around \$18 billion on warships in the coming years. Building at least some of these locally could offer a major push to the industry as well as Prime Minister Narendra Modi's Make in India programme. A second person said Bharati Defence could even carve out a subsidiary that would build the warships at two of the six shipbuilding yards owned by the company. The exact investment needed for the project and the likely share of partners are under negotiations. The Indian company, which is under the control of Edelweiss Asset Reconstruction Company, has not appointed any investment banker for the deal and is negotiating directly. An Edelweiss spokesperson refused to comment on the development, while USC and Bharati Defence Interim chief executive Sameer Kaji didn't respond to emails sent on Wednesday seeking comment. It is expected that the foreign partner could take 49% of a joint venture, which would have two of the ship building yards under it, separate from the civil shipbuilding yards of Bharati Defence, said the people.

The Times of India

28 January 2016

## 250 soldiers sent to Ramdev for yoga course, 750 more waiting for training

DEHRADUN: In a first-of-its-kind exercise, 250 soldiers of the Western Command of the Army have been sent for a two-week Yoga Teacher's Training Course being organised by Ramdev's Patanjali Yogpeeth, Haridwar. Army officials said the soldiers after their yoga stint will help impart this training to others in the Command. During the training, which began on January 10 and concluded on Tuesday, the jawans were given a 'comprehensive knowledge of yoga and meditation' by specialists of Patanjali Yogpeeth under Ramdev's guidance. Spokesperson of Army's Western Command confirmed that the yoga training for its men had indeed happened. "We have decided to train 1,000 soldiers who are deployed across the region in special yoga course, which would be conducted at the Roorkee-based centre of Patanjali Yogpeeth. The first batch has completed its training on Tuesday and now three more batches of 750 more soldiers would be trained," he told TOI on Wednesday. He added that they have set a deadline of six months for all these 1,000 soldiers to be given the training. "Thereafter these trained soldiers would further impart training to others troops in their units/formations." Yoga has been introduced in Army as an important means to address stress and lifestyle-related diseases. The overall aim is to train 1,000 army persons as "yoga instructors". The soldiers will thereafter become the "fulcrum" for spreading the knowledge at various Army units. Krishna Milan, coordinator at Patanjali Yogpeeth, told TOI, "Baba Ramdev himself took classes for the soldiers and taught them the 12 yoga asanas as well as special asanas for a number of ailments. He also guided them about the correct diet and fitness regime to follow. Thereafter, Acharya Balkrishnan took sessions on meditation and spirituality." This is a serious initiative taken by the Army to have trained yoga teachers and the group of 250 soldiers is the first batch to do so. The first-ever World Yoga Day, celebrated on June 21, had seen a huge participation by the Indian Army forces, with defence personnel seen practising yoga in Siachen glacier, naval ships and other armed formations. The defence establishment also threw its weight behind the yoga guru when it tied up last year with Patanjali Yogpeeth for manufacturing and marketing some of the herbal supplements and food products developed by DRDO. In August, an agreement to this effect was signed between DRDO's Defence Institute of High Altitude Research and Patanjali Yogpeeth in the presence of defence minister Manohar Parrikar, Army chief General Dalbir Singh Suhag, DRDO chief S Christopher and Ramdev in Leh.

## तैरने वाले परमाणु बिजली संयंत्र का निर्माण करने की योजना बना रहा है चीन

बीजिंग:चीन वर्ष 2020 तक अपनी परमाणु क्षमता को दोगुना करना चाहता है और लक्ष्य के तहत वह एक तैरने वाले परमाणु बिजली संयंत्र के निर्माण की योजना बना रहा है। 'चाइना एटॉमिक एनर्जी अथॉरिटी' के अध्यक्ष शु दाङ्गे ने आज बताया कि अधिकारी एक 'तैरने वाले समुद्री बिजली संयंत्र' की योजना बना रहे हैं जिसमें विशुद्ध और वैज्ञानिक प्रदर्शनों का इस्तेमाल होगा। उन्होंने एक संवाददाता सम्मेलन में कहा, "चीन खुद को एक समुद्री शक्ति के तौर पर स्थापित करने के लिए प्रतिबद्ध है और इसलिए समुद्री संसाधन का निश्चित रूप से पूरा इस्तेमाल किया जाएगा।" समुद्र में यूं तो परमाणु शक्ति का इस्तेमाल हो रहा है - विमान वाहक पोत और पनडुब्बियां प्रायः परमाणु शक्ति वाली होती हैं। लेकिन, असैन्य उद्देश्य के लिए इसका इस्तेमाल अभूतपूर्व प्रतीत होता है लेकिन ऐसी एक निर्माणाधीन रूसी परियोजना की भी सूचना मिली है। चीन की 'चाइना जनरल न्यूक्लियर पावर कॉर्पोरेशन' (सीजीएन) और 'चाइना नेशनल न्यूक्लियर कॉर्पोरेशन' (सीएनएनसी) ने इस महीने के शुरू में घोषणा की थी कि देश की 13वीं पंच वर्षीय योजना (2016-2020) के तहत दो मरीन परमाणु बिजली संयंत्रों का निर्माण चीन की क्रमशः दोनों कंपनियां सीजीएन और सीएनएनसी करेंगी।

## **US military defends use of Russian engines**

WASHINGTON: Senior Pentagon officials have sought to defend the use of Russian-made rocket engines to send US military satellites into space, telling exasperated lawmakers they are moving quickly to end the practice and rely on American-made rockets for the launches. But Air Force secretary Deborah James and Pentagon acquisition chief Frank Kendall failed to stem sharp criticism from several members of the Senate Armed Services Committee who view Russia as the chief geopolitical threat to the United States.

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**The Statesman**

**29 January 2016**

## **'N Korea preparing missile launch'**

North Korea may be preparing a long-range ballistic missile launch, Japanese media said Tuesday, following a nuclear test this month that raised international alarm and sparked a diplomatic clash between Washington and Beijing. Imagery collected over the past several days suggested the launch from the western Dongchang-ri site could come in about a week, Kyodo News said, citing a Japanese government source it did not identify. Increased movements of people and vehicles were seen around the launch site, which has now apparently been covered over, national broadcaster NHK said, citing a source familiar with Japan-South Korea relations. The United States regularly monitors North Korea from space while Japan itself began its own satellite monitoring of the country in 2003. North Korea is banned under UN Security Council resolutions from carrying out any launch using ballistic missile technology, although repeated small-range missile tests have gone unpunished. The development parallels events in December 2012, when Pyongyang put a satellite into orbit with its Unha-3 carrier. Eight days before the 2012 launch, the North also put up a covering over the facility to hide the work from the view of satellites, NHK said. The international community condemned the 2012 launch as a disguised ballistic missile test, resulting in a tightening of UN sanctions, despite Pyongyang's claim that it was a scientific mission.

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**The Asian Age**

**29 January 2016**

## **CERT-In signs pacts with three countries**

The Indian Computer Emergency Response Team (CERT-In) has signed cooperation pacts with its counterparts in Malaysia, Singapore and Japan for cyber security. CERT-In is the nodal agency responsible for dealing with cyber security threats. The Memoranda of Understanding (MoUs) will promote closer cooperation for exchange of knowledge and experience in detection, resolution and prevention of security-related incidents between India and the three countries, according to an official statement. The Cabinet, chaired by Prime Minister Narendra Modi, was on Wednesday apprised of the three MoUs which were signed last November and December. An agreement between CERT-In and CyberSecurity, Malaysia, was signed on November 23, 2015, in Kuala Lumpur during Mr. Modi's visit to Malaysia, while the MoU with Singapore Computer Emergency Response Team (SingCERT), Cyber Security Agency (CSA) of the Republic of Singapore was signed on November 24, 2015 during the Prime Minister's visit to Singapore. The agreement between CERT-In and Japan Computer Emergency Response Team Coordination Center (JPCERT/CC) was signed on December 7, 2015 through diplomatic exchange. The exchange of the signed MoU between the two parties was completed by December 22, 2015.

## Spread of Zika alarming, 4m cases a possibility: WHO

### UN Meet To Decide On Declaring Int'l Emergency

Declaring that the Zika virus is "spreading explosively", the World Health Organisation announced it will hold an emergency meeting of independent experts on Monday to decide if the outbreak should be declared an international health emergency. At a special meeting on Thursday in Geneva, WHO director-general Dr Margaret Chan said the virus -which has been linked to birth defects and neurological problems -was becoming much more of a threat. One WHO scientist said the Americas could see up to 4 million cases of Zika in the next year. Chan said although there was no definitive proof that the Zika virus was responsible for a spike in the number of babies being born with abnormally small heads in Brazil, "the level of alarm is extremely high". She also noted a possible relationship between Zika infections and GuillainBarre syndrome, which can cause temporary paralysis. "The possible links, only recently suspected, have rapidly changed the risk profile of Zika from a mild threat to one of alarming proportions. The increased incidence of microcephaly is particularly alarming, as it places a heart-breaking burden on families and communities," Chan said. The Zika virus was first detected in 1947 and for decades only caused mild disease, but Chan noted that "the situation today is dramatically different". According to the US Centers for Disease Control, the Zika virus is now in more than 20 countries, mostly in Central and South America. It is spread by the same mosquito that spreads dengue and yellow fever. Sylvain Aldighieri, head of WHO's epidemic response team in the Americas, estimated there could be 3 to 4 million Zika infections in the region over the next year. He said the agency expects "huge numbers" of infections because of the widespread presence of the Aedes mosquitoes that spread Zika and because people in the region have no natural immunity. WHO warned China and all other countries that have dengue fever to be on the lookout for Zika. The agency said it could be many years before a vaccine is available and it might take six to nine months before there's any data showing a causal relationship between Zika and the babies born with malformed heads. Chan cited four main reasons why WHO was "deeply concerned" about Zika: The possible link to birth defects and brain syndromes, the prospect of further spread, a lack of immunity among people living in the newly affected areas and the absence of vaccines, treatments or quick diagnostic tests for the virus. The illness has sown fear among many would-be mothers, who have responded by covering themselves head-to-toe in clothing in Brazil or putting on many coats of insect repellent. Argentina has confirmed its first case of Zika after a Colombian woman living in Buenos Aires tested positive, health ministry sources said on Thursday.

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Deccan Herald

29 January 2016

## How vitamin A can reduce scarring in blood vessels

New York: A team of US researchers has developed a new biodegradable material with built-in vitamin A which has been shown to reduce scarring in blood vessels. While scarring is a natural part of any healing process, scar formation within our blood vessels can be deadly. "When injury occurs, cells proliferate and migrate into the blood vessel, creating scar-like tissue. It can create blockages that impair blood flow," said lead researcher Guillermo Ameer from the Northwestern University. The soft elastic material can be used to treat injured vessels or be used to make medical devices such as stents and prosthetic vascular grafts. Early tests have shown that the material can reduce cell migration - a major contributor to the scarring process - by 57 percent. "In his new work, vitamin A is integrated into the material, harnessing the beneficial properties of vitamin A and allowing for its broader application in medical devices," the authors noted in a paper published in the journal ACS Biomaterials Science and Engineering. This new advanced material brings together two major advantages. Its antioxidant component can reduce the oxidative stress that leads to chronic inflammation. Vitamin A, which is released as the material degrades, can prevent or reduce scarring. It can potentially also be used outside the body such as for wound-healing bandages for diabetic patients. Because the new material releases vitamin A as it degrades, the potential for toxic build up is much lower. Ameer's team can also control how quickly the material degrades - and thus releases the vitamin A - depending on how the material is produced in the laboratory. The team now plans to explore the material's potential for additional applications. Vitamin A is already widely known for its anti-ageing properties and topical antioxidants can be used to combat cell damage or improve wound healing.

## Schizophrenia may be linked to gene flaw

By Benedict Carey

Scientists reported that they have taken a significant step toward understanding the cause of schizophrenia, in a landmark study that provides the first rigorously tested insight into the biology behind any common psychiatric disorder. More than two million Americans suffer from schizophrenia, which is characterized by delusional thinking and hallucinations. The drugs available to treat it blunt some of its symptoms but do not touch the underlying cause. The finding will not lead to new treatments soon, but the results provide researchers with their first biological handle on an ancient disorder whose cause has confounded modern science for generations. The finding also helps explain some other mysteries, including why the disorder often begins in adolescence or young adulthood. The researchers pieced together the steps by which genes can increase a person's risk of developing schizophrenia. That risk, they found, is tied to a natural process called synaptic pruning, in which the brain sheds weak or redundant connections between neurons as it matures. During adolescence and early adulthood, this activity takes place primarily in the section of the brain where thinking and planning skills are centered, known as the prefrontal cortex. People who carry genes that accelerate or intensify that pruning are at higher risk of developing schizophrenia than those who do not, the new study suggests. Some researchers had suspected that the pruning must somehow go awry in people with schizophrenia, because previous studies showed that their prefrontal areas tended to have a diminished number of neural connections. The new paper not only strongly supports that this is the case, but also explains it and identifies the genes responsible: People with schizophrenia have a gene variant that apparently facilitates aggressive "tagging" of connections for pruning, in effect accelerating the process.

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### Lack of gene copy may impact IQ

Toronto: Lack of a vital gene copy of Chromosome 16 may cause a 25-point drop in your IQ, a new study has claimed. Several disorders are associated with Chromosome 16 abnormalities in the human body like a missing copy of region in this chromosome can lead to a 25-point intelligence quotient (IQ)-drop in humans, according to researchers. Also, an addition of a copy in the same genomic region on chromosome 16 - known to predispose to autistic spectrum disorders - results in an approximate 16-point drop in IQ. "We have just discovered, for example, that a missing copy of a region in chromosome 16 results in a 25-point intelligence quotient drop in carriers," said Sebastien Jacquemont, a clinical researcher at CHU Sainte-Justine, the mother-child hospital affiliated to University of Montreal. "Strangely enough, even if carriers show much differentiated sets of symptoms -- and sometimes no symptoms at all -- the specific effect of these two mutations seems to remain the same," said Jacquemont. According to him, to understand mental disorders, we must quantify the specific effect of each contributing gene mutation. No autism is alike. This is also true of most mental disorders. "We now understand that each gene mutation has a specific effect, which adds to other effects to draw a unique picture of the disease in each patient," he wrote in an article published in the renowned scientific journal JAMA Psychiatry. To reach these conclusions, the researchers measured the intelligence of 700 family members who had at least one relative carrying the same genetic mutation on chromosome 16. Even in participants whose IQ was considered to be normal, the researchers found a substantial 25 points IQ drop induced by 16p11.2 gene deletions. "Indeed, it is quite common for mutation carriers to show no mental health problems," says the study. "Intellectual faculties are the sum of many factors, the majority of which are genetic and inherited from parents. Each first-degree relative -- parents and offspring, siblings -- has 50 per cent of their genetic code in common and therefore 50 per cent of the genetic factors that partially determine cognition," said Jacquemont. Studying families thus enabled the researchers to measure the factors that combine with the mutations which effects they wanted to quantify. "For example, depending on the additional factors involved, a 25-point IQ drop can determine whether or not a person has crossed the threshold of 'intellectual disability.'" Further studies are needed to quantify the effect of all mutations associated with autism and characterize the additive effects that lead to this psychiatric disorder. "No single mutation can cause the whole set of clinical signs shown by these patients," concludes the scientist.

## Wearable sensors to monitor sweat in real time

Scientists have developed a wearable sensor system that can non-invasively monitor multiple biochemicals in sweat, measure skin temperature and sync the results to a smartphone in real time. The advance opens doors to wearable devices that alert users to health problems such as fatigue, dehydration and dangerously high body temperatures. "Human sweat contains physiologically rich information, thus making it an attractive body fluid for non-invasive wearable sensors," said principal investigator Ali Javey, professor at University of California, Berkeley (UC Berkeley). "However, sweat is complex and it is necessary to measure multiple targets to extract meaningful information about your state of health," Javey said. "When studying the effects of exercise on human physiology, we typically take blood samples," said George Brooks, a UC Berkeley professor. "With this non-invasive technology, someday it may be possible to know what's going on physiologically without needle sticks or attaching little, disposable cups on you," said Brooks. The prototype packs five sensors onto a flexible circuit board. The sensors measure the metabolites glucose and lactate, the electrolytes sodium and potassium, and skin temperature. "The integrated system allows us to use the measured skin temperature to calibrate and adjust the readings of other sensors in real time," said Wei Gao, a postdoctoral fellow in his Javey's lab. "This is important because the response of glucose and lactate sensors can be greatly influenced by temperature," Gao said. Adjacent to the sensor array is the wireless printed circuit board with off-the-shelf silicon components.

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## AI defeats humans at 2,500-year-old board game

For the first time, a Google computer programme has beaten a human champion of the 2,500-year-old complex Chinese game of Go, in an event seen as a milestone for artificial intelligence. Google DeepMind's AlphaGo beat the reigning three-time European Go champion Fan Hui, who has devoted his life to the game since the age of 12, five games to nil in October last year. The first game mastered by a computer was noughts and crosses in 1952. In 1997, IBM's Deep Blue computer famously beat Google DeepMind's AlphaGo beat the reigning three-time European Go champion Fan Hui, who has devoted his life to the game since the age of 12, five games to nil Garry Kasparov at chess. But to date, Go has thwarted artificial intelligence (AI) researchers; computers still only play Go as well as amateurs. Go involves players taking turns to place black or white stones on a board, trying to capture the opponent's stones or surround empty space to make points of territory. However, as simple as the rules are, Go is a game of profound complexity. The number of possible positions in the game are more than the number of atoms in the universe. Traditional AI methods -which construct a search tree over all possible positions -do not have a chance in Go. "We built a system, AlphaGo, that combines an advanced tree search with deep neural networks," Demis Hassabis, the chief executive of Google DeepMind, said. These neural networks take a description of the Go board as an input and process it through 12 different network layers containing millions of neuron-like connections.