

# Hospimedia<sup>®</sup>

I N T E R N A T I O N A L

## Imaging System Rapidly Diagnoses Strokes

A portable brain imaging system can rapidly detect many abnormal neurological conditions that have a vascular basis.

The Jan Medical brain sensing system consists of three primary components: a headset with sensors; a controlling digital signal processor connected to a personal

*Cont'd on page 4*

## Recommendations on Appropriate Use of CT in Emergency Medicine

A US radiation protection agency has issued a summary of a workshop on the appropriate use of computed tomography (CT) in emergency medicine, and a list of recommendations from participating organizations to help control the inappropriate use of CT in the emergency department.

The US National Council on Radiation Protection's (NCRP; Bethesda, MD, USA; [www.ncrp.org](http://www.ncrp.org)) summary was made available in the May 2011 issue of the *Journal of Radiology*. From an American view, the benefit-risk ratio favors CT scanning favor its use over

*Cont'd on page 6*

## New Imaging Agent for Heart, Breast Cancer

Scientists have developed a new process for producing large quantities of a much-needed new imaging agent for computed tomography (CT) scans in heart disease, breast cancer, and other diseases, and the first evidence is that the material is safe for clinical use. The imaging agent is a tantalum oxide

*Cont'd on page 5*

## Fluorescent Peptide Can Make Nerves Glow During Surgery

An injectable fluorescent peptide, developed by researchers at the University of California at San Diego, can cause hard-to-see peripheral nerves to glow during surgery, thus alerting surgeons to the nerves' location even before they are encountered.

*See article on page 6*



Image: Courtesy of the University of California, San Diego

## Days of Glucose Finger Prick Test Numbered

Consistent blood glucose monitoring based on painful finger pricking could soon be a thing of the past, thanks to a novel prototype sensor that will measure the amount of glucose in a tear drop.

Researchers at Arizona State University (ASU; Phoenix, USA; [www.asu.edu](http://www.asu.edu)) and the Mayo Clinic

*Cont'd on page 31*

## INSIDE

Research Highlights	8
Industry News	48
International Calendar	50

## Medical Imaging

News Update	12
Product News	12, 14, 16
Technical Literature	18

## Critical Care

News Update	22
Product News	22, 24
Technical Literature	28

## Surgical Techniques

News Update	32
Product News	32, 34, 36
Technical Literature	38

## Health IT

News Update	42
Product News	42, 44



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## Respiratory Care Tomograph Renders Ventilation Visible

An innovative monitor based on electrical impedance tomography (EIT) allows direct, continuous visualization of regional air distribution within the lungs during mechanical ventilation, facilitating the development of individualized therapy.

The PulmoVista 500 EIT is designed for use in the clinical routine to visualize – in real time

*Cont'd on page 4*



## Nanosystems May Hold Key to Surgical Recovery

Synthetic molecules that are capable of binding to heparin may eventually help patients recover from surgery without the danger of allergic reactions to drugs.

Researchers from the University of York (United Kingdom; [www.york.ac.uk](http://www.york.ac.uk)) developed the synthetic

*Cont'd on page 7*

## Surgical Welding System Effectively Seals Tissues

A reusable thermal ligating system uses "seal and divide" technology to enable surgeons to perform effectively and safely minimally invasive procedures.

The MiSeal system employs direct thermal energy and focused pressure to create a high-integrity

*Cont'd on page 7*



## SURGICAL LAMP ACEM

The Starled3 EVO Plus is completely digital, controlled by microprocessors, and offers a simple way of regulating light intensity. The compact, easy-to-handle lamp features 130,000 lux of light power, and 55 W power consumption, and is available in trolley, wall-, and ceiling-mounted configurations.

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## EMERGENCY STRETCHER Mespa

The Comfort 1100 is designed to ensure easy, comfortable, and efficient patient handling. Key features include stability and a 230 kg load-bearing capacity with functions of Trendelenberg/reverse Trendelenberg, and easy steering and locking castors with swivel modes.

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## COOLING VEST Shafer Enterprises

The Disposable Cool Vest is designed to improve infection control, and is compatible with other active cooling and warming systems. The vest is lightweight, offers freedom of movement, can be worn under lead aprons and air filtration suits, and reduces surgeon fatigue.

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## SURGICAL TABLES Sunnex

The SX800 series features a sturdy and low profile base, along with C-arm access, and self-diagnosis with instant error code display. Additional benefits include automatic leveling and locking mechanism, and an ergonomic design to help reduce surgeon fatigue during long procedures.

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## Orbital Device Minimizes Endarterectomy Procedure Time

A catheter-based system uses an orbital technology to treat peripheral arterial disease (PAD) by sanding away plaque buildup without damaging the soft arterial tissue.

The Stealth 360° Orbital PAD System is intended to treat calcified and fibrotic plaque in arterial vessels by endarterectomy throughout the leg, in only a few minutes of treatment time. The system is based on an orbital mechanism of action that protects healthy tissue, while removing even the most difficult to treat plaque. The electrical-powered handle features a power button and speed selection controls that are conveniently positioned for ease of use and greater physician control. The crown is designed for maximal plaque removal at lower speeds, and the flexible shaft is well suited for compromised run-off, vessel bends, or tortuous anatomy. The orbital system operates by centrifugal force, which causes the crown to orbit at the same time as it advances through the lesion.

As the crown rotation increases, centrifugal force presses the crown against the plaque and sands it into

tiny particles with each orbit. More than 99% of the particles are smaller than a red blood cell (RBC), and they are washed away with the patient's blood flow. The elastic, more compliant tissue flexes away from the crown and leaves the nondiseased tissue intact. By removing the hardened plaque and changing the compliance of the lesion first, low-pressure balloon angioplasty can be used to finish the procedure, which may reduce the potential for barotrauma to the vessel. The result of the procedure is a smooth, concentric, and open vessel that appears to be a normal size and allows robust blood flow. The Stealth 360° Orbital PAD System is a product of Cardiovascular Systems (CSI; St. Paul, MN, USA; [www.csi360.com](http://www.csi360.com)), and has been approved by the US Food and Drug Administration (FDA).

"The new Stealth 360° is as fast and easy to set up as a balloon or stent, but safer and more durable,"



said Jihad Mustapha, MD, an interventional cardiologist at Metro Health Hospital (Grand Rapids, MI, USA; [www.metrohealth.net](http://www.metrohealth.net)), who treated the first patient with the Stealth 360°.

Image: The Stealth 360-degree Orbital PAD system (Photo courtesy of Cardiovascular Systems).

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## Two Knee Replacements May Be Better Than One

Simultaneous total knee replacement (TKR) in both knees is associated with significantly fewer prosthetic joint infections as well as other revision knee operations within one year after surgery, according to a new study.

Researchers at the University of California (UCD; Davis, USA; [www.ucd.edu](http://www.ucd.edu)) followed 11,445 patients who underwent simultaneous bilateral TKR, and 23,715 patients who had both knees replaced in two stages several months apart. The patients' mean ages were 67.2 years in the group who underwent simultaneous surgery, and 67.7 years in the group who underwent two surgeries. The majority of patients in both groups were women: 53.9% in the simultaneous surgery group and 61.3% in those that underwent two procedures.

The results showed that the risk of developing a serious joint infection

requiring an additional knee revision surgery was twice as high in patients who had staged knee replacements (2.2%), compared to the patients who had simultaneous TKR (1.2%). On the other hand, simultaneous TKR was also associated with a moderately higher risk of adverse cardiovascular events such as myocardial infarct (MI), pulmonary embolism, or thrombosis, but there was no significant difference in overall mortality.

TKR is surgery to replace a damaged or diseased knee joint with an artificial joint, or prosthesis. The procedure is performed under general anesthesia (GA) or regional anesthesia, and involves the replacement of the articular surfaces of the femoral condyles, the tibial plateau, and the patella; the anterior cruciate ligament is also excised.