

Researchers in the UK have developed a TB blood test that provides results within 48 hours, and with 99% accuracy when used with the tuberculin skin test. The new blood test specifically recognizes the immune response produced by TB infection, and has been tested on 389 patients in the UK. Doctors hope that once this test is licensed, it can be used to diagnose and treat patients more quickly.

A study conducted at the **University of Western Australia** suggests that lower levels of testosterone in elderly men may make them more susceptible to depression. In the research, approximately 4000 men over the age of 70 gave blood samples and participated in other tests to identify depression. Though more studies have to be done for verification, the study suggests that depression in elderly men may be treated by increasing their testosterone levels.



A five year study conducted by the **University of Minnesota** has found that individuals who had breakfast in the morning weighed 5 pounds less than those who skipped breakfast. People who have breakfast are more active and alert throughout the day and

burn more calories. Though teenage girls were most likely to skip breakfast, in fear of gaining weight, this study supports the idea that people who eat breakfast are healthier than those who do not.

A team of researchers from the **United States National Institute of Health** suggests that they have discovered a possible reason to explain why the influenza virus is more prevalent in cold conditions. Essentially, the virus particles become surrounded in a lipid-like coat which solidifies, providing protection during transmission from host to host. Pathogenesis begins inside the respiratory tract where the warmer internal temperature melts the rubber-like coating.

Minute magnet particles produced by bacteria are found to have promising

clinical applications in cancer treatment. These particles can be guided towards sites of tumour growth magnetically, and the induction of an opposite magnetic field would subsequently cause the temperature of the nanomagnets to rise. It is suggested that the heat emitted from this process can eradicate cancerous cells.

A recent report from the **World Health Organization** insinuates that 5% of the 9 million global diagnoses of tuberculosis are characteristically multi-drug resistant. A more severe variety, known as

the extremely drug-resistant tuberculosis, is also becoming increasingly prevalent worldwide. This form has proven to be nearly incurable and shows no response to both first-line and secondary antibiotic treatments.



The medical ethics board of the United Kingdom has recently granted approval for full facial transplants to be performed. Although partial facial transplants have been successfully performed in France since 2005, the notion

the differences between personality traits in fraternal twins, compared to identical twins elucidated the magnitude of genetic influence on happiness.

An **ingredient in cigarette smoke**, polyaromatic hydrocarbon benzo(a)pyrene (BaP), has been shown to slow the healing process in bone fractures. BaP interferes with the expression of an important transcription factor, Y-box 9 (SOX-9), slowing the conversion of mesenchymal stem cells into cartilage and inhibiting collagen type II production, reducing the rate at which two sides of a fracture meet.

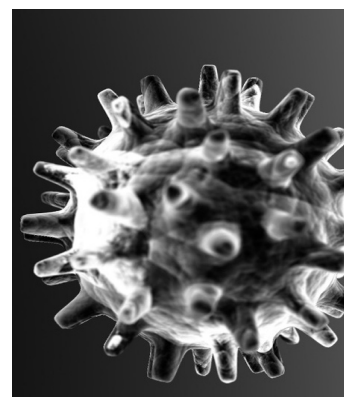
A large number of population studies have shown a **protective effect of light or moderate alcohol drinking** against the risk of death and

MED *wire*

of full transplants has always been intensely controversial because of its implications to adopting a key component of a deceased individual's identity. Long-term psychological or medical consequences of full facial transplants are currently unknown.

The latest study conducted by the **University of Edinburgh** has found that one's genes exhibit control over approximately half of one's personality traits, which account for happiness. External factors such as relationships and career success influence the remaining half. Measuring

the development of heart disease. However, recent findings from researchers at the Peter Munk Cardiac Centre of the Toronto General Hospital placed a new spin on the beneficial effects of red wine or alcohol. Blood vessels



appeared more “relaxed” or dilated after one drink of red wine or alcohol. But, after two drinks, the heart rate and action of the sympathetic nervous system all increased. The ability of the blood vessels to expand in response to an increase in blood flow was also compromised.

Tamoxifen, typically used to treat breast cancer, has shown promise in regulating the mania of those diagnosed with bipolar disorder. A clinical trial sample of patients diagnosed with bipolar disorder or displaying a state of mania were given a combination of tamoxifen and the sedative, lorazepam, to control their symptoms. As the study continued, those given tamoxifen vastly reduced their lorazepam requirements over 2.5 times more quickly than the placebo group.

Researchers from the **Harvard Medical School** have found that the uncontrolled division of cancerous cells can be attributed to the PKM2 form of pyruvate kinase. This enzyme facilitates the atypically high rate of glucose metabolism by tumour cells that accounts for their rapid growth. Attenuation of cellular division was observed when PKM2 expression was impeded.

Investigation at the **Ingestive Behavior Research Center at Purdue University** reveal that laboratory rats which consumed food with artificial sweeteners ate more calories than their counterparts whose food was sweetened with normal sugar. The researchers suggest that a sweet taste may cause animals to anticipate the calorie content of food. Eating artificial sweeteners with little or no calories undermines this connection and lead to an energy imbalance of increasing food intake or reducing energy expenditure.

proteins that accumulate at sites of attachment and come in contact with parts of the silenced genes. This proposes that DNA segments that encode for ‘nuclear addresses’ direct genes to associate with specific regions within the nucleus.



Researchers at the **University of Illinois** have uncovered a new treatment strategy for serious antibiotic-resistant *Staphylococcus aureus* infections. A compound (BPH-652) originally designed to lower cholesterol, blocks a key enzyme in the organism’s infection pathway and allows the body’s immune cells to prevail against the infection. Such findings are particularly promising because BPH-652 has already been used in humans clinically, reducing the cost and time for development.

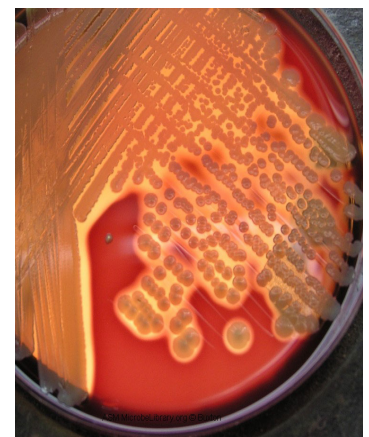
Seven French physicians have recently been on trial for allegedly infecting more than 100 patients with the Creutzfeldt-Jakob Disease, the human form of mad cow disease. The old practice of obtaining growth hormones from the pituitary glands of corpses was outlawed in the early 1980’s, yet the accused health care officials continued with this dangerous procedure without informing patients of its fatal risks.

A study conducted at the **King’s College in London** has found that a compound in black pepper, known as piperine, could be used to treat a skin disorder, known as vitiligo. Vitiligo occurs when patches of skin lose their pigment and become pale. The compound piperine is the secret to black pepper’s flavor, and according to researchers, piperine can also be used to invoke pigmentation. Combining piperine with the current UV radiation therapy resulted in pigmentation that developed faster and lasted longer.

Researchers of **Wageningen University in the Netherlands** have demonstrated the importance of unsaturated dietary fats in gene expression. The breakthrough may eventually allow for targeted pharmacological intervention using synthetic triglycerides, improving upon the ambiguity of earlier dietary therapies and setting a new benchmark for nutrigenomic studies. Preliminary research suggests that these mechanisms, regulated by the genes that respond vigorously to synthetic fatty acids, protect the liver cell from their unnecessary accumulation, while lowering plasma triglycerides and the incidence of blood clots.



Scientists from the **University of Chicago Medical Center** have shown that attachment of chromatin to the inner nuclear membrane can silence genes and prevent their transcription. This novel form of gene regulation likely involves nuclear membrane



Physicians at **Lucile Packard Children’s Hospital** turned to an unconventional diagnostic tool to alleviate a boy’s daily episodes of seizures. The only way to pinpoint the true cause was to monitor the child’s brain activity during an event. Many children who seem to be having epileptic seizures are actually having an involuntary physical reaction to psychological stress in their lives. The physicians believe that hypnosis may be an important tool that can speed up proper diagnosis and treatment for children suffering from seizure-like events.