News

New cardiovascular screening programmes planned

As part of a larger focus on prevention of disease in the NHS, Prime Minister Gordon Brown has announced that new screening programmes for early signs of heart disease, stroke and kidney disease will be introduced in the UK.

Speaking to health professionals at King's College, London, the PM said that, over time, everyone in England will have access to the right preventative health check-up. He said the first priority was to offer men over 65 a simple ultrasound test to detect early abdominal aortic aneurysm, which should save more than 1,600 lives each year.

The government is also planning to introduce on the NHS a series of tests to identify vulnerability to heart and circulation problems. "So there will soon be check-ups on offer to monitor for heart disease, strokes, diabetes and kidney disease – conditions which affect the lives of 6.2 million people, cause 200,000 deaths each year and account for a fifth of all hospital admissions," the prime minister said, adding: "And we will extend the availability of diagnostic procedures in the GP surgery – making blood tests, ECGs and in some cases ultrasounds available and on offer, not only when you are acutely unwell or if you can pay, but when you want and need them, where you need them, at the local surgery."

Initially the tests will be available to the most vulnerable, and money has been set aside to pay for the procedures in the health budget for 2008–11, Mr Brown said. He said the extra screening should start to be rolled out in 2008–9, but details of who exactly should be screened and the funding to cover this initiative are not expected to be announced until February.

The NHS will also focus on preventative care in relation to so-called 'lifestyle' diseases, such as obesity and better management of long-term conditions, such as asthma and diabetes. With 60 % of the population projected to be clinically obese by 2050, the Prime Minister stressed new measures, such as an increase in activity-based prescriptions and the provision of at least five hours of sport a week for schoolchildren.

The medical community has had a mixed reaction to the news of new screening programmes. Dr Alan Maryon-Davies, president of the UK Faculty of Public Health, said: "If you identify people with high cholesterol or glucose levels, you have then got to have the proper services to help them. This will mean extra dietitians, exercise co-ordinators, practice nurses and public health specialists would be needed."

Dr Peter Weissberg, Medical Director of the British Heart Foundation, had a similar view. He said: "Screening has the potential to save many lives in the UK from heart disease, which is why doctors have been asking for this for some years. But screening will only save lives if appropriate treatment is funded and accessible for those identified by the programme as being at high risk – there is little point in identifying someone at risk without providing the resources to treat them.

"A national screening programme will cost a lot of money and cannot work unless it is underpinned with sound investment – and not at the expense of other health services. Public health screening programmes are notorious for not reaching the highest-risk groups, including people living in deprived areas and ethnic communities. If it is down to individuals to decide whether to take part in this screening programme, then the NHS will need to think of ways to encourage high-risk groups to attend."

Dr Richard Vautrey, deputy chairman of the GPs committee at the British Medical Association, said: "What I do find extraordinary is just two or three weeks ago the prime minister insisted that funding be taken away from the treatment of patients with heart failure, hardening of the arteries and kidney disease – the very conditions that he's now proposing to screen for".

Early trials suggest benefit with second CETP inhibitor

The first clinical trials with the new cholesteryl ester transfer protein (CETP) inhibitor, anacetrapib, have raised hopes that this agent may not be affected by the toxicity seen with the first drug in this class – torcetrapib.

Two phase I studies with anacetrapib (*Lancet* 2007;**370**:1907–14), show impressive effects on raising high-density lipoprotein cholesterol (HDL-C) and lowering low-density lipoprotein (LDL-C), with no signs of any increase in blood pressure.

The authors, from Merck, US, conclude: "Anacetrapib seems to exhibit HDL-C increases greater than those seen with other investigational drugs in this class and LDL-C-lowering effects similar to statins. Despite greater lipid-altering effects relative to other members of this class, anacetrapib seems not to increase blood pressure, suggesting that potent CETP inhibition by itself might not lead to increased blood pressure." But they add: "Only continued assessment of anacetrapib in larger clinical studies can confirm the apparent lack of blood-pressure finding seen in our study".

In an editorial accompanying the paper, Dr Patrick Duriez (INSERM, Lille, France) says, "The short-term safety of, anacetrapib … (which needs to be confirmed in the longer term) opens new perspectives in the study of the effect of CETP inhibition on atherogenesis and cardiovascular risk and may resuscitate the hope that CETP inhibitors could be an important new class of drugs that normalise lipidaemia".

Vitamin D deficiency ups risk of heart disease?

As well as causing musculoskeletal problems, vitamin D deficiency may also increase the risk of heart disease, a new study suggests.

The US authors conclude that their findings "may have potentially broad public-health implications, given the high prevalence of vitamin D deficiency in developed countries, the contribution of lifestyle and geography to vitamin D status, and the ease, safety and low cost of treating vitamin D deficiency".

In the study, published in *Circulation* (online January 7th 2008), 1,739 participants, free of cardiovascular disease at baseline, were followed for a median of 5.4 years and 120 individuals developed a first cardiovascular event. After adjustment for conventional cardiovascular risk factors, individuals with 25-OH D levels below 15 ng/mL had an increased risk for incident cardiovascular events compared with those with 25-OH D levels above 15 ng/mL (HR 1.62).

The higher risk associated with vitamin D deficiency was particularly evident among individuals with hypertension, in whom 25-OH D levels below 15 ng/mL were associated with a two-fold risk of cardiovascular events. But there was no correlation seen in participants without hypertension.

New computer simulation of the heart to aid cardiologist/surgeon training

Anatomy software developer, Primal Pictures, has been awarded government grants to develop two new computer simulations which should improve training procedures for cardiologists and keyhole surgeons.

The 'Virtual Heart', funded by London Innovation – London Development Agency, will be an anatomically accurate, beating and interactive three-dimensional model of the human heart, which will run on a standard desktop computer. It will be used to help trainee cardiologists and cardiac surgeons in developing skills in interventional and electrophysiology procedures, such as cardiac ablation and pacing. Doctors interested in being involved in the Virtual Heart project should contact Laurie Wiseman Primal on 020 7637 1010 or at laurie@primalpictures.com.

The other simulation will be the Virtual Anatomy Trainer for Minimal Access Surgey ('VATMAS'), funded by the Technology Strategy Board, which will be developed in conjunction with the Royal College of Surgeons of England (RCSE) and the Division of Imaging Sciences, King's College London.

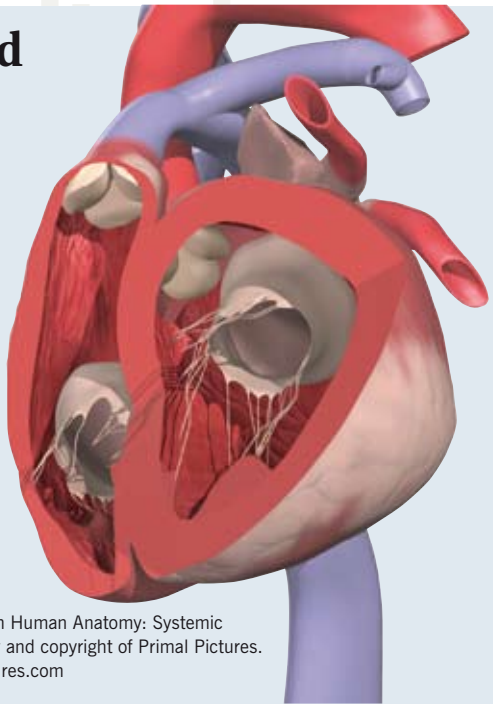

Image taken from Human Anatomy: Systemic edition. Courtesy and copyright of Primal Pictures. www.primalpictures.com

Another study shows increased CV risk with rosiglitazone

Another study has suggested increased risk of cardiovascular (CV) events with the diabetes drug, rosiglitazone. In the retrospective case-control study (*JAMA* 2007;**298**:2634–43), rosiglitazone was associated with an increased risk of congestive heart failure, myocardial infarction (MI) and mortality, when compared with other oral hypoglycaemic agent treatments in older patients with diabetes.

The authors, from the Institute for Clinical Evaluative Sciences, Toronto, Canada, note that most studies of CV outcomes associated with rosigllitzaone and rosiglitazone have been conducted in patients younger than 65 years. Diabetes is most common in older patients.

They analysed information on 159,026 diabetes patients (mean age 74.7 years) being treated with an oral hypoglycaemic agent from Ontario healthcare databases. The risks of congestive heart failure, MI, and death were compared between persons treated with rosiglitazone or pioglitazone and those given other oral hypoglycaemic agent combinations, after matching and adjustment for prognostic factors. Results showed that treatment with rosiglitazone but not pioglitazone was associated with a significantly increased risk of these events.

Noting that the US Food and Drug Administration has recently decided that the available data are thus far inconclusive to warrant withdrawing rosiglitazone from the market, they say that this "well-designed population-based study provides more convincing evidence that rosiglitazone is associated with an increased risk of cardiac events and deaths among elderly patients with diabetes."

GlaxoSmithKline issued a statement saying it believes the retrospective analysis has significant limitations and generates misleading conclusions regarding MI and death. The company said: "These conclusions are inconsistent with a more robust body of evidence from large, long-term, prospective, well-designed clinical studies".

UK approves testing embryos for FH

The UK Human Fertilisation and Embryology Authority (HFEA) has granted permission for pre-implantation genetic diagnosis of familial hypercholesterolaemia (FH) to be performed for the first time. The licence has been awarded to Dr Paul Serhal (University College London), who will screen embryos for the homozygous form of FH.

FH is caused by a single gene defect on chromosome 19. Individuals with two copies of the defective gene have severely raised low-density lipoprotein (LDL) cholesterol levels from birth and are predisposed to early atherosclerosis. Many die in childhood, and most suffer at least one myocardial infarction by the end of their 20s. The milder, heterozygous form of FH is much more common and can be managed using a combination of diet and drugs.

The couple for whom the licence has been awarded discovered that they were both heterozygous for FH only after having their first child who is homozygous for FH. The pre-implantation diagnosis will involve taking a single cell from each of a number of embryos produced via *in vitro* fertilisation; any embryos homozygous for FH will be destroyed.

Better to be fat than unfit?

Being unfit is an independent predictor of all-cause mortality, even after adjustment for body fat, according to a new study (*JAMA* 2007; **298**:2507–16).

The study followed 2,603 adults aged 60 or over for a mean of 12 years. Results showed that obese subjects who were fit had a lower risk of dying than normal-weight subjects who were physically inactive. While fitness predicted mortality risk regardless of smoking, baseline health, body mass index, waist circumference or body-fat percentage, waist circumference was not associated with increased mortality after fitness was considered.

"Normal-weight individuals in our study had greater longevity only if they were physically fit; furthermore, obese individuals who were fit did not have increased mortality," the authors report. "It may be possible to reduce all-cause death rates among older adults, including those who are obese, by promoting regular physical activity, such as brisk walking for 30 minutes or more on most days of the week," they conclude.

New pacemaker may help more syncope patients

Cardiologists from St Mary's Hospital, London, have become the first in the world to implant a new generation of pacemaker that could help more people with syncope than current pacemakers.

In patients in whom the heart rate drops dramatically before the fainting episode, traditional pacemakers are well established as a good form of therapy. But most patients with recurrent syncope do not experience any clear fall in heart rate ahead of a fainting episode.

The new Biotronik Cylos 990 pacemaker, may help these patients by detecting early changes in the body's control systems ahead of a fainting episode and then working to prevent the fainting episode. The pacemaker also contains a chip enabling remote follow-up of the patient at home. "This way of supporting pacemaker patients in their everyday lives is the future of cardiac device care," said Professor Richard Sutton, who carried out the first implant with the new device.

New 'healing' stent looks promising

A new stent which may promote healing of the artery better than currently available drug-eluting stents has shown promising results in initial clinical trials. The Genous Bio-engineered R Stent™, being developed by OrbusNeich, is coated with an antibody to capture a patient's endothelial progenitor cells, which form a layer over the stent to provide protection against thrombus and minimise restenosis.

In the current study, the Genous™ stent was associated with significantly fewer major adverse cardiac events (MACE) than the Taxus™ or Cypher™ drug-eluting stents. The study, presented at the recent Italian Society of Invasive Cardiology by Dr Federico Piscione (Federico II University of Naples, Italy) involved 195 high-risk patients who received either a Genous™, Taxus™ or Cypher™ stent. Dual antiplatelet therapy was given for one month to the patients receiving a Genous™ stent and for nine months to those given one of the drug-eluting stents.

"Genous™ is a viable alternative to drug-eluting stents, which have raised many safety concerns among the interventional cardiology community," Dr Piscione concluded.

A large phase III trial of the Genous™ stent is now underway.

Table 1. Results at 10 months

	Genous™	Taxus™/Cypher™
MACE	**4%**	**22%**
Mortality	**2%**	**7.8%**
MI	**1%**	**7.8%**
Target vessel revascularisation	**1%**	**11.8%**
Stent thrombosis	**2%**	**5.8%**

Key: MACE= major adverse cardiac event; MI= myocardial infarction

New cholesterol-lowering product

Genzyme has launched its new non-absorbed cholesterol-lowering agent, colesevelam hydrochloride (Cholestagel™) in Europe for the treatment of adult patients with primary hypercholesterolaemia who cannot meet their target low-density lipoprotein (LDL) cholesterol levels with statin therapies plus diet alone.

The product is a polymer in tablet form that lowers LDL-cholesterol. It can be taken as adjunctive therapy to diet, in combination with other cholesterol-lowering medications, such as statins, or alone, when statins are inappropriate or not well-tolerated. When combined with statins, colesevelam hydrochloride has been shown to have an additive LDL-cholesterol lowering effect in the range of 8–16%.

Moderate alcohol consumption improves risk

A study, published in the *European Heart Journal* (7th January issue), has shown that people who drink moderate amounts of alcohol and are physically active have a lower risk of death from heart disease and other causes than people who don't drink at all.

In the study, those who neither drank alcohol nor exercised had a 30–49% higher risk of heart disease than those who either drink, exercise or both. The data come from the Copenhagen City Heart Study which followed 11,914 Danish men and women for approximately 20 years. The researchers conclude that: "Both moderate to high levels of physical activity and a moderate alcohol intake are important for lowering the risk of fatal heart disease and deaths from all causes".

ENHANCE study shows no benefit of ezetimibe

The first study to investigate the efficacy of the cholesterol absorption inhibitor, ezetimibe, has shown no benefit of the drug in an imaging study in patients with familial hypercholesterolaemia (FH).

The ENHANCE study compared two years of treatment with ezetimibe/simvastatin 10/80 mg versus simvastatin 80 mg alone in 720 FH patients. The primary end point was the mean change in the intima-media thickness (IMT) measured at three sites in the carotid arteries. This showed no statistically significant difference between treatment groups, with the change from baseline being 0.0111 mm for the ezetimibe/simvastatin group versus 0.0058 mm for the simvastatin alone group ($p=0.29$).

Key secondary imaging end points, cardiac events and adverse events were also not different between the two groups. Ezetimibe was, however, associated with a greater reduction in low-density lipoprotein cholesterol (58% in the combination arm versus 41% in the simvastatin alone arm).

The American College of Cardiology (ACC) issued a statement after the ENHANCE results were released emphasising that this is not an urgent situation and patients should never stop taking any prescribed medications without first discussing the issue with their health care professional.

The ACC recommends that major clinical decisions not be made on the basis of the ENHANCE study alone, and final conclusions should not be made until the ongoing clinical outcome trials are presented. It says ezetimibe remains a reasonable option for patients who are currently on a high-dose statin but have not reached their lipid goals and for patients who cannot tolerate statins or can only tolerate a low-dose statin.

State-of-the-art virtual simulators (see left) and a virtual in-house catheterisation laboratory to help physicians learn about the latest cardiac and vascular treatment techniques are just some of the educational facilities being offered by The Crossroads Institute for medical education, in Brussels, Belgium.

The Institute offers more than 70 courses on cardiac and vascular treatment and is able to gain CME accreditation for the majority of these. Since the Institute was founded, over 7,000 healthcare professionals have been familiarised with new cardiovascular and vascular therapy techniques, whilst over 13,000 have participated in the international and multilingual environment of the Crossroads Institute overall.

As cardiac and vascular disease management rapidly evolve, the Institute hopes to explore and respond to the most important unmet needs in medical education through the development of specialist courses. It is currently developing new educational programmes for healthcare professionals focused on improving the treatment of women with cardiovascular disease and the prevention of amputation.

The newly-formed committee of the Crossroads Educational Research Program notes that cardiovascular disease is the number one cause of mortality amongst women, killing more women annually than all types of cancers, HIV/AIDS malaria and tuberculosis combined.

The Crossroads Institute is supported by Abbott Vascular