

Animators give up the gremlins to generate a medical marvel

► **Special effects experts simulate human heart**

► **Surgeons say that it will transform training**

Dalya Alberge Arts Correspondent

A team of British animators has created a computer-generated model of a human heart so realistic that it could transform surgical training, doctors say.

The animators, who made their names working in television commercials and the entertainment industry, turned their skills to medical science to produce a model that simulates a beating heart. Every vessel and valve has been reproduced with such accuracy that doctors believe it could become a vital tool in cardiac care.

Sir Magdi Yacoub, the eminent cardiac surgeon, is one of the specialists overwhelmed by the groundbreaking technology, which has just been patented.

He told *The Times*: "It is exciting, one of the very best things I have seen for some years. It shows the anatomy and function of the heart very accurately. When you put a probe down into the oesophagus to look at the heart, this shows you accurately what to expect to see."

"This will have a great impact on managing patients, both during operations and making the right diagnoses. This is just wonderful."

Surgeons, anatomists, cardiologists, ultrasonographers and radiologists say that the computerised imagery is the biggest step forward since Leonardo da Vinci transformed understanding of the heart 500 years ago.

The animators are following in the

footsteps of the Renaissance artist, whose depictions of the way the heart valves open and close, the muscles expand and contract, and blood flows in and out remain so precise that his drawings have influenced the way that operations are conducted by modern surgeons.

Philipp Bonhoeffer, chief of cardiology at Great Ormond Street Hospital for Children, said: "The pictures and graphics do so much more than words in the teaching of anatomy. Leonardo da Vinci was the first to draw images of the heart — he would have loved to see these. Absolutely stunning."

He added: "The geometry is of the working heart, which one could never see before. It is extremely exciting. The younger people who have to learn about anatomy and the 3-D structure of the heart will never understand how difficult it was for our generation not to have that tool."

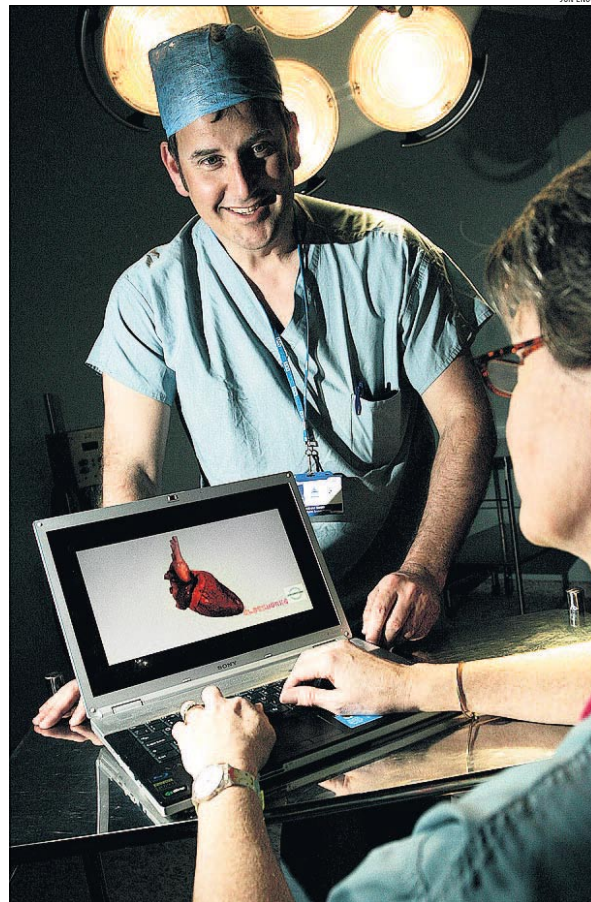
Bob Anderson, a cardiac anatomist, said: "The animation of the heart is truly amazing. It's like working with the real thing."

The model came from an idea by Sue Wright, a consultant cardiac anaesthetist from The Heart Hospital in London. Two years ago she approached Glassworks, a company that specialises in high-end special effects, including gremlins for a Sprite advertisement, a dancing mouth for Aero chocolate bars and a dragon to promote the Bank of Ireland.

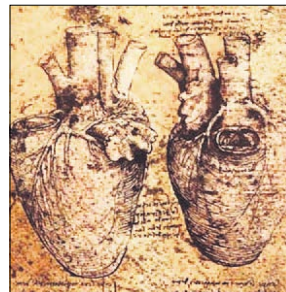
Three members of the team watched a live open-heart operation to get a true experience of what a beating heart looked like before working with scores of medical specialists.

Dr Wright said of their work: "We didn't envisage that the quality of the modelling would produce something as overwhelming as this."

The images are on a computer



A computer-generated model of a heart devised by Sue Wright and Andrew Smith, above, is the biggest advance since Leonardo's drawings, below left



screen. To make them even more life-like, a mannequin is being created so that the heart can be probed as it is in surgery. Dr Wright said that the technology's potential is huge as it can be used for other organs.

Glassworks has been shortlisted for the inaugural Escape Awards, which recognise computer graphics talent in Britain. The prize-giving ceremony takes place today at Tate Modern in London. The film-maker Lord Puttnam chaired the panel of judges.

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Cold remedies for children removed over safety fears

Fiona Hamilton

Cough and cold remedies will be removed from pharmacy shelves and placed behind the counter today after safety fears for toddlers.

The Government's medicine watchdog is issuing an alert this morning amid concerns that parents might be giving their children potentially fatal overdoses.

More than 100 products will be affected by the review. Some will be banned, in effect, for children under two, while parents will be told not to exceed recommended dosages for children under six.

The Medicine and Healthcare Products Regulatory Agency confirmed last night that a handful of remedies would be permanently removed from sale for toddlers. At least 100 others would be placed behind the counter until they can be given warning labels.

A spokesman for the agency said: "Over time, these medicines are not as effective. Parents tend to give their children more and there is potential for overdose. It's a precautionary measure — it's not an emergency."

The alert centres on 12 ingredients. At least five deaths of British children under two have been linked to cough medicines and more than 100 serious cases of suspected adverse reactions have been reported. A similar warning was introduced in the United States in January.

It was reported last night that six products aimed directly at children under two, including Boots Chesty Cough Syrup 1 Year Plus and Asda Children's Chesty Cough Syrup, will be removed from open sale but may still be supplied by pharmacists for older children. None of the remedies has been shown to be dangerous when used correctly.

The agency said that parents would be encouraged to give their children simple cough remedies, such as honey and lemon mixtures.

Manufacturers and pharmacists had been consulted about the new guidelines. Until items were repackaged, parents would be handed leaflets outlining appropriate dosage.



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