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How 2 explo

Why Avatar's special effects guru is showing surgeons how to give you one Elle of a body: The man who creates a host of stunning bodies for the movies is taking cosmetic surgeons back to art school – so they can do the same for you

- Andrew Cawrse was part of the team behind the creatures in Avatar
- Now he teaches cosmetic surgeons about creating the perfect figure
- Medical professionals travel from all over the world to study under him

By BARNEY CALMAN FOR THE MAIL ON SUNDAY

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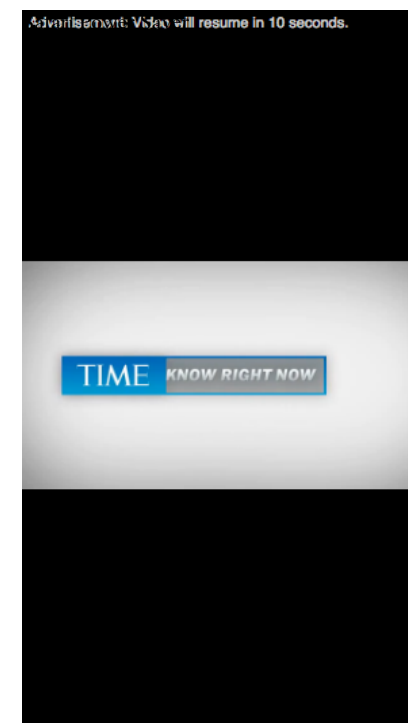
In a climate-controlled hangar in Las Vegas, a dozen or so cosmetic surgeons, nurses and doctors are attempting to perfect a female figure. Few would argue that their 'patient' Jessica – a petite size six professional model – is pretty close to ideal. But this is a tough crowd.

'Her breasts lack fullness,' is the withering verdict of one female doctor present. 'Can I give her bigger boobs?' asks a colleague.

Another works intently on her bottom. Jessica has a posterior I'd wager many women would kill for, but the surgeon has decided something more bombastic is called for, and sets about building it up to almost comic proportions.

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Body art: Andrew Cawrse runs a workshop where he teaches plastic surgery professionals about anatomy from an artist's perspective: the importance of natural proportion, and what makes a body look beautiful

Fortunately for Jessica, we are not in an operating theatre but a unique sculpture class, in which art meets medicine. The doctors' only tools are wooden spatulas, and although she is their model, the figure they are whittling away at is about 14in tall and made of clay.

In August, these medical professionals from all over the world, including the UK, paid thousands of pounds to study under artist and anatomist Andrew Cawrse, formerly a visual effects artist who helped create the astonishing blue creatures in Avatar.

Intriguingly, their hope (and that of the teachers) is that it will improve their patients' results.

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LACK OF TRAINING

The Mail on Sunday recently revealed the results of a new survey that highlighted concerns about a lack of training for cosmetic doctors. At present, there are no specialist requirements before a newly qualified doctor can start performing boob jobs and facelifts in Britain. The doctors who today perform more than 50,000 beautifying and corrective procedures a year have no formal training in aesthetics.

Could Cawrse be part of the answer? In the United States, he is filling classes with doctors hungry to learn anatomy from an artist's perspective: the importance of natural proportion, and what makes a body look beautiful.

And the medical establishment there is taking notice. Cawrse was recently invited to work with surgeons at the world renowned Mayo Clinic in Minnesota.



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Stunning work: Andrew Cawrse worked as a visual effects artist on 2009 global blockbuster success Avatar, helping create the Na'vi of Pandora

of Kate and William posing with a chubby-cheeked Prince George



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He has dated some of the world's most beautiful women, is best friends with Becks and Kate Moss, and Liv Tyler is having his baby... so who is Dave Gardner?



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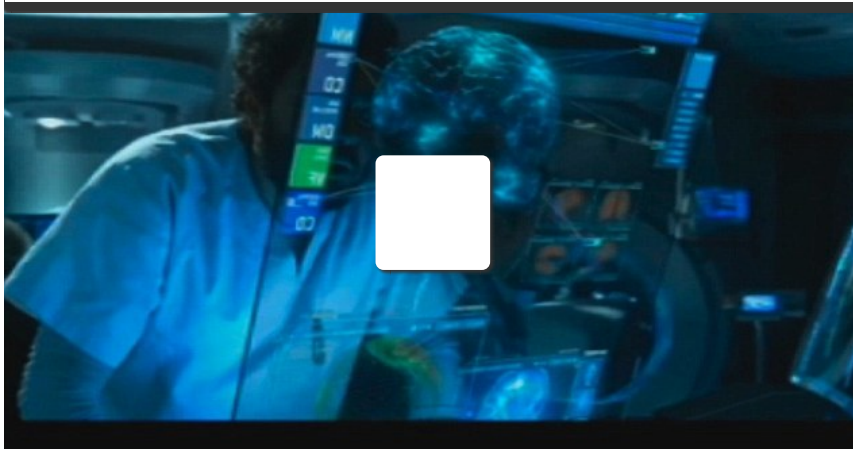


'It's the lowest I've ever known her to be': Gemma Collins' brother Russell says jungle exit could be the final straw for the star
Difficult time for star



'All you've got is a girl with high cheekbones': Joni Mitchell 'squelches' Taylor Swift's chance to star in film biopic of folk singer's life

Official: James Cameron's AVATAR - Movie Trailer



As the first journalist to be invited to the course – Aesthetic Anatomy Training: Sculpture For Surgeons – I saw how respected doctors struggled with the rigorous, mathematical approach needed to faithfully replicate the human figure in art.

But under the watchful eye of Cawrse and co-instructor Dr Peter Schmid, a highly respected cosmetic and reconstructive surgeon (and accomplished professional figurative sculpture in his spare time), the students' ham-fisted first attempts are eventually honed into accomplished final works. They launched the class after Cawrse noticed a number of doctors attending his regular sculpture class, and he has now created a course tailored to their needs.

Each day anatomical drawing and medical discussion are combined with the study of life models and working on mini-sculptures. Different body parts are examined, drawn, and then made in clay.

'We tell the doctors to leave their artistic ambitions at the door,' explains Dr Schmid. 'The point isn't to go home with a great sculpture. The clay is a tactile medium, a tool we use to teach the principles of anatomy.'

A little more material is applied to Jessica's hips, and little scraped away from her waist, and slowly but surely a body is formed. Unlike in the operating theatre, any mistakes made – and there are many – are easily corrected. But at the end of the week, doctors will return home and operate on real patients.

FOLLOWING DA VINCI'S CODE

HALF a century ago, sci-fi films and special effects were in their infancy. Audiences recoiled as rubber monsters attacked damsels in distress. Today, cinema-goers are more discerning, and directors, working with computer graphic wizards like Cawrse, are able to create virtual worlds and even people.

Yet he half-jokingly claims that cosmetic surgery is still in its infancy, or 'rubber monster phase'. The tools may be there, yet the mastery of them still has a way to go.

The result is that it's obvious when someone has had cosmetic surgery because they just don't look real.

'Babies can differentiate facial expressions – we are all experts in recognising when something is wrong [with the way someone looks],' says Cawrse.

Life drawing and sculpture methods, defined more than 500 years ago during the Renaissance period by artists including Leonardo da Vinci and Michelangelo, require the artist to make hundreds of accurate measurements in order to faithfully replicate the human form from the inside out. But more than that, they understand the lines, proportions and curves that go to create an aesthetically pleasing figure.

Dr Schmid, from Colorado, explains: 'Medical training is technical – for instance, how to open up the body to safely access organs – but it doesn't involve study of beauty.'

One attendee, Dr Hassan Nurein, who has clinics in London's Harley Street and in Sheffield, adds: 'This kind of study should be part of the curriculum for cosmetic surgeons.'

DRAWING ON EXPERIENCE

Today cosmetic medicine is undergoing its own Renaissance period. A new technique known as high-definition liposculpture allows surgeons to reshape the body in ways that were once thought unimaginable.

A refined form of liposuction, it uses millimetre-thick tubes to suck out fat that has been liquidised by laser or ultrasound energy with pinpoint accuracy, and inject it back in with the same precision.

Thus a better body than the one nature intended can be sculpted – the abdomen, buttocks, cheeks, chin, hips, knees, neck, thighs and upper arms – much as a sculptor might chisel a figure from a block of stone.

Dr John Millard, who pioneered the method ten years ago and trains doctors in it today, is taken by this analogy: 'Michelangelo said about his sculpture David, "I saw the angel in the marble and carved until I set him free." We do the same thing, basically.'

And yet the early results often looked unnatural. In an exercise, Cawrse asks the class to draw an arm from memory.

Without exception, we all draw something that he calls 'a Popeye arm', with a series of balloon-like, almost symmetrical bulges. The reality, of course, is much more subtle. 'There are no straight lines in

She's not convinced



Pictured: Angelina Jolie smokes a cigarette as she and Brad Pitt appear to engage in a heated exchange on their hotel balcony
They're a normal couple



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So that's how she does it! Josie Gibson shows off her refined figure as she leads a high-intensity exercise class
Wants to keep the weight off for good



'It's not been easy': Lewis Hamilton admits maintaining his transatlantic romance with Nicole Scherzinger has been 'tough'
They've split a few times



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Helen Flanagan shows off her ample cleavage in plunging black lace dress as she parties the night away in Dubai
That demure period didn't last long...



the natural human body,' he says.

Later, Dr Schmid shows us pictures of natural 'six-pack' abdominals on athletes – in all cases they are asymmetrical. And then there are the early 'high-def' patients, obvious because their stomachs look perfectly crosshatched on the surface. 'With straight lines and exact repetition, the eye reads this as unnatural or deformity,' explains Cawrse.

THE MAGIC NUMBER

IT'S been scientifically proven that model Elle Macpherson has the perfect body. Her hip-to-waist ratio of 0.7 – her waist measurement is exactly 70 per cent of her hip circumference – makes her hour-glass shape sexually irresistible.

In one study, volunteers were shown pictures of a woman in which her bust, waist and hips had been digitally altered and asked to rate the image for attractiveness.

Cameras tracked their eyes as they looked at the photos. The 0.7 ratio images were winners every time. The researcher said: 'It is likely that perfect 0.7 ratio sends a biological signal to men that that woman is most fertile and most likely to produce a healthy child.'

Others who achieve the magic number are Kate Moss and Marilyn Monroe – women who are quite differently shaped.

The key, says Dr Schmid, is proportion. The goal of surgery shouldn't necessarily be to create the skinniest body possible, but the most proportionally pleasing. Altering the slimmest point of the waist by a few centimetres might be enough to create that beautiful, feminine curve. It's not always about removing fat but also what you leave behind.'

MASTERING THEIR ART

SO, with a skilful surgeon, could anyone have an Elle of a body? The answer is, not quite. Yet.

On the final day of the course, one doctor takes me aside. 'Typically, I'll have a middle-aged woman who is overweight, with skin laxity. We won't make her look like Jessica, and it's important they understand that. But there is a lot we can do to improve things.'

Dr Schmid admits: 'The best we can do as surgeons is improvement. We cannot fix all problems.'

Yet Dr Millard, who was a student on our course, believes the procedure he offers, combined with better mastery of the tools, will shape the future of cosmetic surgery. 'High-def has replaced the need for some traditional scalpel procedures – the bingo-wings and even facelifts,' he says.

He sees it ultimately not as a rejuvenating operation. 'The generation in their 50s now may live well past 100 thanks to good nutrition and advances in medicine that keep the heart and brain healthy. We're able to cheat our hearts wearing out, eat badly and have the parts replaced. And people want to have new, younger bodies and faces too.'

'A firm, athletic body equals youth – this operation gives people that.'

The abs of an athlete - without the hard work

Assisted high-definition liposculpture can help redefine everything from chubby tummies and wobbly bottoms to chins, cheeks and bingo-wings.

The term 'assisted' refers to the use of energy, either an ultrasound – known as Vaser – or laser heat probe. During the operation it helps turn the fat into a more liquid form, making it possible to suck it up with fine tubes.

In traditional liposuction, fat is broken up using thick, hollow needles – a much more aggressive, and less precise method. Additionally, the energy helps to tighten the skin. The latest methods further enhance certain areas by reinjecting the removed fat in a process known as grafting.



© Newsplix / Rex Features. Perfection: Elle Macpherson has been found to have the perfect hip-to-waist ratio

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They love body art



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Very prim and proper



She's a busy angel: Victoria's Secret star Lily Aldridge sparkles in Christmas fashion campaign ahead of London lingerie show
What a stunner!



Her little angel! Beyonce gets into the Christmas spirit early with heartwarming snap of Blue Ivy gazing at decorated tree
One month to go

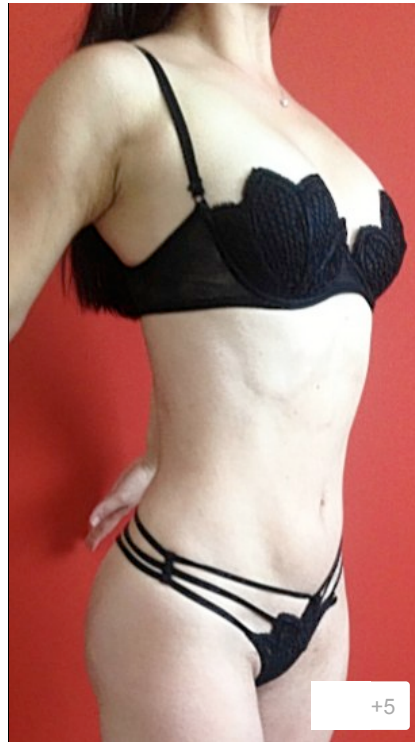


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In Brave Miss World





'Give me a waist': Dr Grant Hamlet's patient before and after undergoing assisted high-definition liposculpture

Dr Grant Hamlet, one of Britain's leading 'high-def' practitioners, explains that the procedure isn't suitable for every patient. 'The ideal candidate will be in shape to begin with, but looking for that extra bit of help.'

Dr Hamlet claims that nine times out of ten, patients arrive clutching airbrushed photographs to illustrate their ideals. 'I have to explain that in reality, even models don't look like they do in the magazines. It's important to have realistic expectations.'

Size is not as important as shape. 'We can work with someone who is a size eight or a size 16,' he says. 'It's about creating the right curves and ratios.'

High-def should be carried out in a hospital under general anaesthetic. 'We are working very close to the muscle, so a local anaesthetic or sedation won't be enough,' adds Dr Hamlet.

'The patient will be marked up in a very dynamic way beforehand, so we have clear maps of how their muscles move before we start to operate.'

Typically, the procedure will last at least two hours. First, fluid containing anaesthetic and adrenaline, to stop bleeding, is injected into the fat layer to lift the skin away and allow the surgeon space to work. Then the energy is delivered. Dr Hamlet's preferred method is Vaser. 'The probe is inserted through tiny incisions and vibrates 36,000 times a second. The ultrasonic waves cause the fat cells to break apart so they can be sucked out.'

Some incisions are stitched while others are left open, allowing fluid to drain out. The patient is put into a special compression garment, like a padded body stocking, which they will then have to wear for four weeks, only taking it off to shower.

'This is very important as it keeps swelling down, reduces pain, and helps the skin to re-adhere,' he says. 'Most patients need prescription painkillers for a few days afterwards.'

The patient, right, was treated by Dr Hamlet. 'She is in her 30s, an office worker with no children, but she has a busy life. She goes to the gym a few times a week but her diet wasn't ideal,' he says.

'She just asked if I could give her back her waist. We worked on her abdomen, arms and chin, and added fat to her bottom. She was delighted with the results.'

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