

Google says humans could live for 500 YEARS - and is investing in firms hoping to extend our lives five-fold

- Google Ventures' Bill Maris said he thinks humans can live to 500 years old
- This will be due to medical breakthroughs and a rise in biomechanics
- Google's director of engineering Ray Kurzweil previously said we'd be uploading our brains to machines by 2045
- Google Ventures has invested in genetics firms and cancer startups
- Tech giant also set up Calico - anti-ageing research and development labs
- Mr Maris said: 'We have the tools to achieve anything that you have the audacity to envision. I just hope to live long enough not to die'
- But professor Sir Colin Blakemore believes there's a limit on human life
- Neurobiologist believes 120 years 'might be an absolute to human lifespan'
- This is because living for longer is 'so rarely exceeded' that even with medical advances, it is unlikely this threshold will be raised

By [VICTORIA WOOLLASTON FOR MAILONLINE](#)

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Google has invested in taxi firms, smart thermostats and even artificial intelligence but it is also setting its sights on immortality - or at least increasing our lives five-fold.

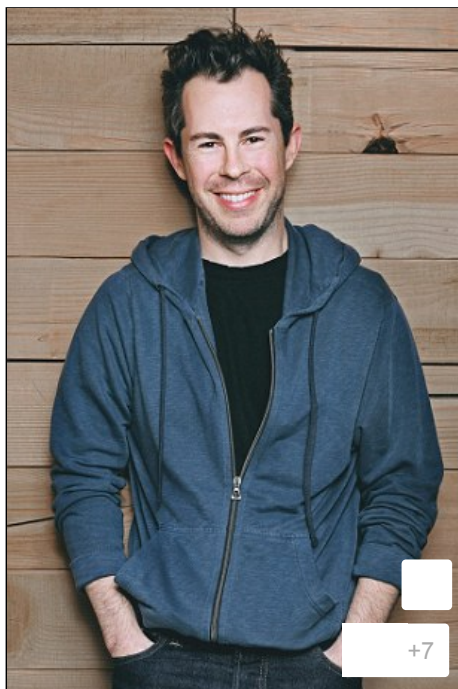
In an interview with [Bloomberg](#), Google Ventures' president Bill Maris said he thinks it's possible to live to 500 years old.

And this will be helped by medical breakthroughs as well as a rise in biomechanics.

He has already ploughed money into genetics firms and **cancer diagnostic startups** and said: 'We have the tools in the life sciences to achieve anything that you have the audacity to envision. I just hope to live long enough not to die.'

Mr Maris founded Google Ventures in 2009 and oversees all of the fund's global activities.

He studied neuroscience at Middlebury College and conducted neurobiology research at Duke University.



In an interview with Bloomberg, Google Ventures' president Bill Maris (pictured) said **he thinks it's possible for humans to live to 500 years old**

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Elsewhere he has advised Aurolab in the development of a hydrophobic acrylic lens for cataract blindness, and helped develop Google's Calico project.

Calico is a research and development company set up in 2013 by Google and Apple to tackle 'ageing and associated diseases.'

Google co-founder Larry Page said the project would focus on 'health, wellbeing and longevity' and last September Calico partnered with AbbVie to open a research centre into neurodegeneration and cancer.

Although these firms are focused on extending life naturally, there is also a group that believes machines will be the key to extending out lives beyond 120 - an age that has been quoted as the 'real absolute limit to human lifespan'.

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Google's director of engineering, and colleague of Mr Maris, Ray Kurzweil has previously said that in just over 30 years humans will be able to upload their entire minds to computers and become digitally immortal - an event called singularity.

At the Global Futures 2045 International Congress in New York last year, Mr Kurzweil claimed that the biological parts of our body will be replaced with mechanical parts and this could happen as early as 2100.

Calico

We're tackling aging, one of life's greatest mysteries.

Calico is a research and development company whose mission is to harness advanced technologies to increase our understanding of the biology that controls lifespan. We will use that knowledge to devise interventions that enable people to lead longer and healthier lives. Executing on this mission will require an unprecedented level of interdisciplinary effort and a long-term focus for which funding is already in place.

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Mr Maris founded Google Ventures in 2009 and helped develop Google's Calico project - a research and development company set up in 2013 to tackle 'ageing and associated diseases' (website pictured). Google co-founder Larry Page said it would focus on 'health, wellbeing and longevity'

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The American Idol winner gave the world a look at her baby bump

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► Jennifer Lopez flaunts her sensational figure in a stylish ensemble as she enjoys romantic boat ride with boyfriend Alex Rodriguez in Italy

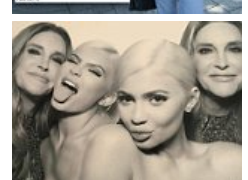
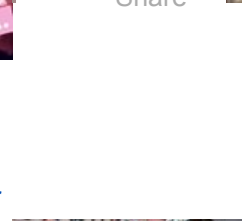
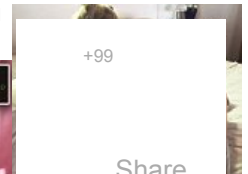
► Kylie Jenner reveals the large donation she's making to charity for her 21st... after showcasing lavish gifts
Is giving away proceeds from her makeup line

► Caitlyn Jenner sends daughter Kylie love after attending lavish 21st birthday party... despite being estranged from the Kardashian family
'So much fun last night'

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► Taylor Swift dazzles in sexy chain gown as she takes to the stage for Atlanta for latest Reputation tour stop
Keeps wowing crowds on her tour

Chris Pratt looks happier than ever as he enjoys a casual bike in





Google's director of engineering, Ray Kurzweil (pictured), previously said that in just over 30 years, humans will be able to **upload their entire minds** to computers and become digitally **immortal** - an event called **singularity**. He believes **biological parts of our body will be replaced with mechanical parts as early as 2100**.

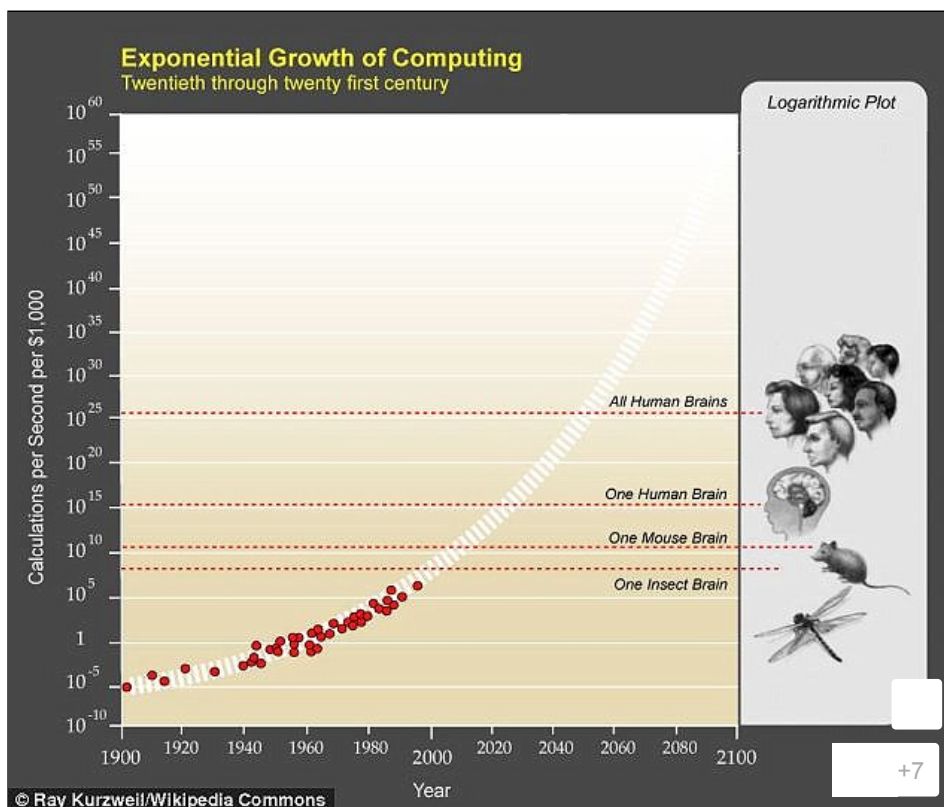
He referred to Moore's Law that states the power of computing doubles, on average, every two years quoting the developments from genetic sequencing and 3D printing.

In Kurzweil's book, **The Singularity Is Near**, he plots this development and journey towards singularity in a graph.

This singularity is also referred to as digital immortality because brains and a person's intelligence will be digitally stored forever, even after they die.

He also added that this will be possible through neural engineering and referenced the recent strides made towards modeling the brain and technologies which can replace biological functions.

Examples of such technology include the cochlear implant - an implant that is attached to the brain's cochlear nerve and electronically **stimulates** it to restore hearing to someone who is deaf.



Mr Kurzweil referred to Moore's Law that states the power of computing doubles, on average, every two years quoting developments from genetic sequencing to 3D printing. This puts us

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► Blac Chyna shares cheeky Instagram photos after looking significantly less curvy earlier in the day
Shared images of her re-plumped bottom



► Heidi Klum, 45, looks sensational in a cleavage-baring gown as she arrives at the UNICEF Gala in Sardinia with her toyboy boyfriend Tom, 28



► Jennifer Lopez stays in shape with on-deck workout while A-Rod high dives into the sea during couple's yacht retreat
Working out on vacation



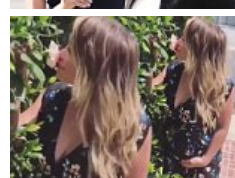
► Nicole Scherzinger smoulders as she flaunts her abs and toned legs in a sizzling ruby co-ord for UNICEF gala in Italy



► Meghan's wedding hotel in racism storm: Cliveden House unveils cast iron blackamoor slave statues... just weeks after Duchess and her mother stayed



► Hilary Duff stops to smell the roses while waxing poetic about pregnancy and the baby 'blooming in my belly'
Celebrated her pregnancy



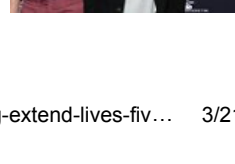
► Kate Hudson shows off her blossoming bump in a flowing yellow dress as she joins beau Danny Fujikawa for lunch in Santa Monica



► Chris Pine and Chris Hemsworth may not sign on for Star Trek 4 due to failed contract negotiations
Talks appear to not be moving forward



Emily Ratajowski makes a sultry display in sheer lace dress with



on course for singularity by 2045. In his book, *The Singularity Is Near*, he plots this development and journey towards singularity in a graph



Dr Pankaj Kapahi from the Buck Institute for Research On Ageing agrees that scientific breakthroughs could extend human lives dramatically. He made these claims after tweaking genetic pathways in a *Caenorhabditis elegans* worm (stock image), which successfully boosted the creature's lifespan by a factor of five

Other examples include technology that can restore motor skills after the nervous system is damaged.

And other experts are in agreement with both Mr Maris and Mr Kurzweil.

Dr Pankaj Kapahi from the Buck Institute for Research On Ageing believes that scientific breakthroughs could potential extend human lives dramatically, by four or five fold.

He made these claims after tweaking two genetic pathways in the lab worm *Caenorhabditis elegans*, which successfully boosted the creature's lifespan by a factor of five.

While it could take years of research to extend humans' lives in the same way, the study raises the prospect of anti-ageing treatments informed by genetic interactions, according to Dr Kapahi.

C. elegans, a type of worm, was the first animal to have its whole genome, or genetic code, mapped, and has been widely used in studies of ageing and lifespan.

The research, reported in the journal *Cell Reports*, involved blocking key molecules that affect the action of insulin and a nutrient signalling pathway called Target of Rapamycin (TOR).

Single mutations in the TOR pathway were known to extend the lifespan of *C. elegans* by 30 per cent, while insulin-signalling mutations could double the amount of time they lived.

IS 120-YEARS-OLD THE UPPER LIMIT OF HUMAN LIFESPAN?

Mr Maris' claims contradict those made recently at a gerontology conference by Professor Sir Colin Blakemore.

Sir Blakemore, a neurobiologist and former chief executive of the British Medical Research Council, said there is a ceiling on how long humans can live, and how much the body can age.

And he stated that that 120 years 'might be a real absolute limit to human lifespan.'

He added people living for longer than 120 years is 'so rarely exceeded' that, even with medical and technological advances, it is unlikely this upper threshold will be raised.

► **ruffled skirt at UNICEF gala**

She was jaw-dropping as ever



► **Mama June Shannon has trouble fitting in a size 18 dress in latest *From Hot To Not* sneak peek**

She lost 300 pounds last year



► **The Hills alum Whitney Port appears effortlessly stylish in leopard tee and ripped denim while fetching gift from a friend**



► **Beatrice and Eugenie lament having to juggle a job and their royal engagements WITHOUT a taxpayer-funded salary like Harry and William's**



► **Play time! Pink looks happy and healthy as she enjoys the park with her kids Jameson, one, and Willow, seven, after cancelling her Sydney concerts due to illness**



► **Mark Consuelos' lookalike son Michael, 21, set to play teen version of his *Riverdale* baddie Hiram Lodge**
Casting is filling out on the flashback episode



► **Alexandra Daddario flashes long legs as her gingham dress gets swept up by the wind during girls night out**
Endured a small wardrobe malfunction



► **Ashley Roberts 'looking for love on British TV show *Strictly Come Dancing* and is eager to be paired with a hunky single male'**



► **John Mayer's Beverly Hills home discovered 'ransacked' after thief made off with over \$100K of property**
Beverly-Hills area home was burglarized



► **Rita Ora experiences a near wardrobe malfunction as she flashes her underwear in risqué UNICEF gown**
She accidentally flashed a little too much



► **Rita Ora leads the glamor in multicolored silk gown as she joins Emily Ratajowski and Nicole Scherzinger on the red carpet at UNICEF Summer Gala in Italy**



Adding the two together might have been expected to extend longevity by 130 per cent, but the combined impact turned out to be much greater.

The research may explain why it has proved so difficult to identify single genes responsible for the long lives enjoyed by human centenarians.

'It's quite probable that interactions between genes are critical in those fortunate enough to live very long, healthy lives,' said Dr Kapahi.

Future research is expected to use mice to see if the same effects occur in mammals.

'The idea would be to use mice genetically engineered to have suppressed insulin signalling and then treat them with the drug rapamycin, which is well-known to suppress the TOR pathway,' Dr Kapahi said.

But these claims contradict those made more recently at a gerontology conference by Professor Sir Colin Blakemore.



But these claims contradict those made by Professor Sir Colin Blakemore. The neurobiologist (pictured) believes 120 years 'might be the limit to human lifespan' because living for longer is 'so rarely exceeded' that even with medical advances, it is unlikely this upper threshold will be raised

The comments were made at an event with a panel of gerontologists and scientists where they discussed the future of medicine, global health concerns and life expectancy.

It agreed that medicines will have a limited effect on extending human life, and it was more important to improve the health and quality of life for older people, rather than prolonging it.

The panel also stated it was key to improve the life expectancy in poorer regions, or areas where people typically die much younger than other areas.

► **Shanina Shaik's smitten husband DJ Ruckus can't tear his eyes away from the supermodel's cleavage as they attend UNICEF gala in Sardinia**

► **Jessica Alba keeps casual and cool for day of shopping with her three children in Beverly Hills**
Opted for a casual but comfortable look

► **Kylie Jenner's LAVISH birthday gifts revealed: Travis Scott cuddles Stormi while gifting 'wifey' an old fashion Rolls-Royce... and she gets a unicorn bike too**

► **Jennifer Lopez, 49, flaunts curves in a scanty emerald swimsuit and enjoys a workout with boyfriend Alex Rodriguez during Italian getaway**

► **Bethenny Frankel's on-off boyfriend Dennis Shields, 51, 'died of a heart attack in his Trump Tower apartment after overdosing on oxycodone'**

► **Iggy Azalea hints she split from NFL star DeAndre Hopkins as he wanted her to stop 'h**ing' around**
Little hint into what went wrong

► **Sean Young and her SON are caught on surveillance video loading items into an SUV as NYPD hunt for actress suspected of stealing laptops**

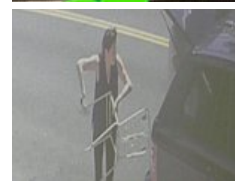
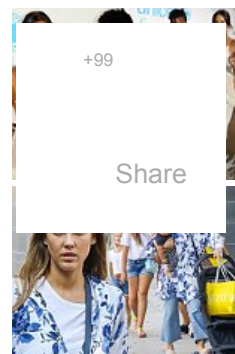
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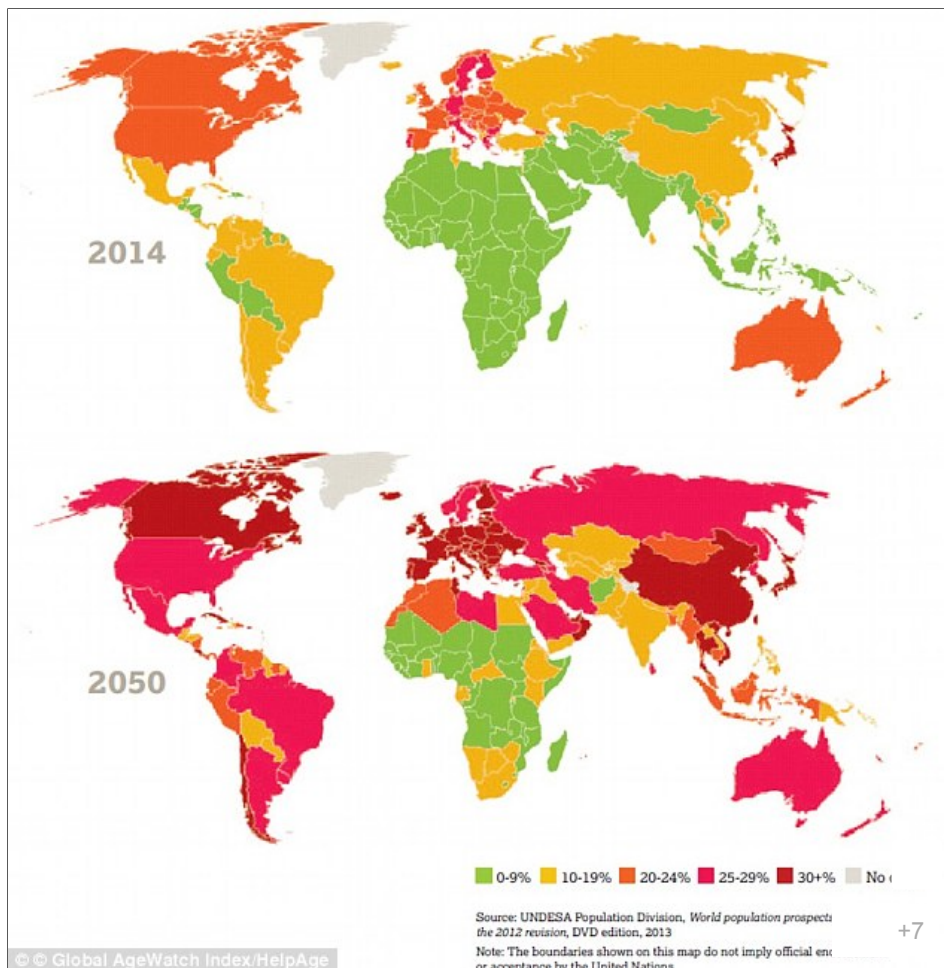
► **Blac Chyna and the riddle of the disappearing booty: Reality star's behind looks deflated sparking rumors she's had implants removed**

► **Ladies of leisure! Tiffany Trump and Marla Maples spend THREE HOURS shopping at NYC store Bergdorf Goodman accompanied by Secret Service**

► **Gabi Grecko, 29, and her millionaire husband Geoffrey Edelsten, 75, sport their trademark bold ensembles and pack on the PDA in New York**

Did Thomas Markle LIE to Harry? Meghan's dad told Prince in pre-wedding phone call that he had NEVER colluded





The 2014 Global AgeWatch Index recently stated that by 2050, the number of over 60s will be 21 per cent of the global population. This is almost double the current figure of 12 per cent. The proportion of over-80s is growing fastest, too projected to rise from two per cent now to four per cent of the global population by 2050

Sir Blakemore, a neurobiologist and former chief executive of the British Medical Research Council, said there is a ceiling on how long humans can live, and how much the body can age - and he stated that that 120 years 'might be a real absolute limit to human lifespan.'

He added that people living for longer than 120 years is 'so rarely exceeded' that, even with medical and technological advances, it is unlikely this upper threshold will be raised.

The comments were made at an event with a panel of gerontologists and scientists where they discussed the future of medicine, global health concerns and life expectancy.

It agreed that medicines will have a limited effect on extending human life, and it was more important to improve the health and quality of life for older people, rather than prolonging it.

The panel also stated it was key to improve the life expectancy in poorer regions, or areas where people typically die much younger than other areas.

The 2014 Global AgeWatch Index, which ranks 96 nations on the quality of life for

THE RISE OF CENTENARIANS

The number of people living to 100 in the UK has increased by 71 per cent in the last ten years, and has shot up more than five-fold since the Eighties.

There are now more than half a million people aged 90 and above living in this country, with nearly 14,000 of them aged more than 100, compared to just 2,500 in 1980.

There are also 710 people who have lived beyond their 105th birthday, up from 340 ten years ago.

Data released by the Office for National Statistics also showed life expectancy has increased again, with the gap between the sexes continuing to close.

Men born this year can expect to live to 78, while women will reach 82 on average. That is compared to just 70 for

with paparazzi, says royal photographer



Ben Affleck and Jennifer Garner's divorce may be dismissed by court as they 'drag their feet' three years after their shock breakup

Heidi Klum, 45, showcases her supermodel figure in black maxi dress as she packs on PDA with new beau Tom Kaulitz, 28, on sunset boat trip in Italy



Joe Jonas puts 5,600 square foot Sherman Oaks mansion on the market for \$4.25 million. He snagged the Sherman Oaks home in 2016 for \$3.7 million



Kate Hudson appears in zen-mode while proudly displaying her baby bump in a sports bra and leggings. She's happy to show off her baby bump



Lil Kim says she's 'over' her feud with Nicki Minaj and wishes her the 'best' after eight year rivalry. Embroiled in a war of words



LuAnn de Lesseps looks happy and healthy in plunging sky blue dress following stint in rehab. She's battled alcohol addiction for some time



Khloe Kardashian tells Kourtney to 'f*ck off' during group therapy discussion as the sisterly feud explodes on Keeping Up With The Kardashians



Ciara twerks in a loin cloth as she dances in the desert for seductive new Freak Me music video. The 32-year-old singer shared tantalizing clips



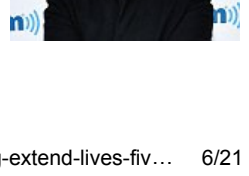
REVEALED: Instagram model and Kardashian pal is identified as blonde who was carried out of Kylie Jenner's 21st birthday party FACE DOWN on a stretcher



Marilyn Manson not charged by Los Angeles County District Attorney after rape allegation surfaces. Decided not to pursue rape charges



Nicki Minaj playfully disses Drake, Meek Mill, DJ Khaled, and more on



the elderly, recently stated that by 2050, the number of over 60s will be 21 per cent of the global population.

men born between 1980 and 1982, and 76 for women.

This is almost double the current figure of 12 per cent.

The proportion of over-80s is growing fastest, too – projected to rise from two per cent now to four per cent of the global population by 2050.

Centenarian Jack does ice bucket challenge in his boxer shorts

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Shane Warne Ice Bucket Challenge



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Michelle Rodriguez, 40, displays her killer abs in sizzling ivory bikini as she soaks up the sun on a yacht in Sardinia
Fast And Furious actress turned 40 last month



Glenn Close, 71, looks chic in a sleek black trouser suit as she steps out in London for an exclusive screening of her new film The Wife
Shelooked sensational



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Josh Brolin, 50, gets pulses racing as he flaunts his muscular frame during a paddle board jaunt off Malibu beach
Wife Kathryn is pregnant



Pregnant Pippa Middleton displays her growing baby bump as she checks in at a gym - after revealing she's keeping up her fitness regime



Beyonce's make-up artist reveals the incredibly simple secret behind the singer's beautiful glowing complexion in her Vogue cover shoot

