



Covid: Genes hold clues to why some people get severely ill 新冠肺炎:為甚麼有些人症狀嚴重?基因可以為此提供線索

Why some people with coronavirus have no symptoms and others get extremely ill is one of the pandemic's biggest puzzles.

A study in Nature of more than 2,200 intensive care patients has identified specific genes that may hold the answer. They make some people more susceptible to severe Covid-19 symptoms. The findings shed light on where the immune system goes wrong, which could help identify new treatments. These will continue to be needed even though vaccines are being developed, says Dr. Kenneth Baillie, a consultant in medicine at the Royal Infirmary in Edinburgh, who led the Genomicc project.

'Angry' cells

Scientists looked at the DNA of patients in more than 200 ICUS in UK hospitals. They scanned each person's genes, which contain the instructions for every biological process - including how to fight a virus. Their genomes were then compared with the DNA of healthy people to pinpoint any genetic differences, and the first was found in a gene called TYK2. "It is part of the system that makes your immune cells angrier, and more inflammatory," explained Dr. Baillie. But if the gene is faulty, this immune response can go into overdrive, putting patients at risk of damaging lung inflammation.

Too little interferon

Genetic differences were also found in a gene called DPP9, which plays a role in inflammation, and in a gene called OAS, which helps to stop the virus from making copies of itself. Variations in a gene called IFNAR2 were also identified in the intensive care patients. IFNAR2 is linked to a potent anti-viral molecule called interferon, which helps to kick-start the immune system as soon as an infection is detected.

It's thought that producing too little interferon can give the virus an early advantage, allowing it to quickly replicate, leading to more severe disease.

在得到新冠肺炎的人中，有些人完全無症狀，有些人則病症嚴重，其原因仍是未解之謎。在《自然》期刊的一個研究中，2200名重症病患受試者被檢驗出擁有特別且可能暗藏解答的基因。這些基因使病人更容易出現新冠肺炎的症狀，實驗結果發現免疫系統出了甚麼問題，更有助於確定新的治療方法。愛丁堡皇家醫院醫學顧問，領導基因計畫的肯尼斯·貝利博士認為，儘管正在開發疫苗，我們也需要持續進行這些基因研究。

憤怒的細胞

科學家研究了超過200個英國醫院加護病房病人的DNA。他們掃描每個人的基因，這些基因具有生物過程的指令，包括如何對抗病毒。他們的基因組被拿去跟健康的DNA比對並找出遺傳上的差異，而第一個找到的差異就存在叫做酪胺酸激酶二的基因。貝利博士解釋道：「這是個會讓免疫細胞更憤怒，並且更容易發炎的系統。」但如果基因錯誤，免疫反應會過度運作，並讓病人處在破壞性肺炎的風險之中。

“干擾素太少”

基因差異也存在於一種名為 DPP9 的基因中，該基因在發炎症中發揮作用。而在一種名為 OAS 的基因中也發現了基因差異，該基因有助於阻止病毒複製自身。在重症監護患者中也發現了一種名為 IFNAR2 的基因變異。IFNAR2 與一種稱為干擾素的強效抗病毒分子有關，有助於在檢測到感染時立即啟動免疫系統。人們認為，產生太少的干擾素會給病毒早期的優勢，讓其快速複製，導致更嚴重的疾病。



When things go wrong'

“The findings from these genetic studies will help us identify particular molecular pathways that could be targeted for therapeutic intervention,” Dr. Vanessa Sancho-Shimizu said.

But the genome still holds some mysteries.

The Genomic study - and several others - has revealed a cluster of genes on chromosome 3 strongly linked to severe symptoms. However, the biology underpinning this is not yet understood. Dr. Baillie said: “We need everyone, but we're particularly keen to recruit people from minority ethnic groups who are over-represented in the critically ill population.”

“當研究發展不順”

Sancho-Shimizu博士表示：「這些基因研究的發現，將幫助我們辨別可以成為介入治療目標的特定分子途徑。」

但基因組仍存在一些謎團。基因及其他研究發現，第三號染色體的一組基因與嚴重症狀密切相關。但是，目前仍不清楚這個生物學的構成。貝利博士說：「我們需要每個人，但是我們特別渴望徵求少數民族，他們在重症人口裡所佔比例過高。」



Tributes have been paid to Black Panther actor Chadwick Boseman who has died aged 43.

為年僅43歲病逝的黑豹演員查德威克鮑斯曼哀悼

Marvel studios said: "Our hearts are broken and our thoughts are with Chadwick Boseman's family. Your legacy will live on forever. Rest In Peace."

The actor played the character of Black Panther in several Marvel films including Avengers: Infinity War and Avengers: Endgame. Marvel co-star, Mark Ruffalo, who plays the Incredible Hulk, called Chadwick Boseman "one of the all time greats". "What a man, and what an immense talent," he said. "Brother, you were one of the all time greats and your greatness was only beginning."

Meanwhile Captain America actor Chris Evans tweeted: "I'm endlessly grateful for our friendship. Rest in power, King." "Chadwick was special. A true original," Evans said.

Brie Larson who plays Captain Marvel in the Avengers films said on her Instagram: "Chadwick was someone who radiated power and peace. Who stood for so much more than himself. Who took the time to really see how you were doing and gave words of encouragement when you felt unsure." "I'm honoured to have the memories I have. The conversations, the laughter. My heart is with you and your family. You will be missed and never forgotten. Rest in power and peace my friend," she said.

漫威工作室說：「我們和查德威克鮑斯曼的家人一樣痛心。他的作品將會一直流傳下去。願他安息。」這位演員在許多漫威電影，包含《復仇者聯盟：無限之戰》以及《終局之戰》中飾演黑豹的角色。

和他一起共事並演出綠巨人浩克的大明星馬克·盧法洛稱黑豹演員查德威克鮑斯曼為「時代中的佼佼者」。「真是個充滿才華的人啊。」他說：「兄弟，你是時代的佼佼者，而且你還沒發揮出你所有的能耐」。

同時，飾演美國隊長的演員克里斯·伊凡也推文：「我為我們友情的結束感到萬分的悲傷。安息吧！永遠的王者。」「查德威克鮑斯曼十分特別，他是個真正的原創者，」伊凡說道。

在復仇者電影中飾演驚奇隊長長的演員布麗·勞森也在IG上感嘆：「他是個能散發正能量，關心別人勝過於他自己，經常會在你不安的時候來關心你或是給予你鼓勵的人。」「我很榮幸能夠擁有與你共度的回憶、對話和歡笑，我的內心永遠與你和你的家人同在。許多人會惦記你，而且你絕不會被遺忘，安息吧！我的朋友。」她說。



In 2018 Chadwick Boseman became world famous for his role in the movie, Black Panther. In the film, Boseman starred as King TChalla, the ruler of Wakanda, a fictional African nation with the most advanced technology on Earth.

The film was seen as having huge cultural significance, having a mostly black cast and black director, Ryan Coogler. The movie made \$1.3 billion US dollars (£973m) at cinemas worldwide. Black Panther was also the first superhero film to get a nomination for best picture at the Oscars.

Following the sad news, the phrase "Wakanda Forever" from the movie has been trending on social media. Chadwick Boseman said last year that Black Panther had changed what it means to be "young, gifted and black" in the movie industry.

在2018年，查德威克鮑斯曼因為在電影裡飾演黑豹而紅遍全世界。在電影裡，鮑斯曼飾演瓦甘達的首領，瓦甘達在電影中是一個杜撰的非洲國家，一個擁有地球上最先進科技的地方。

這部卡司多數為黑人演員並由黑人導演瑞安·庫格勒執導的電影，對文化有重大的意義。這部電影在全球票房突破1.3億美元。黑豹也是第一個在奧斯卡獎獲得最佳影片提名的超級英雄電影。

在聽到這麼令人傷心的消息之後，「Wakanda Forever(永遠的瓦甘達)」這句電影裡的經典台詞也在媒體中迅速傳播開來。查德威克鮑斯曼去年表示，黑豹已經改變了電影界「年輕，有才華和黑人」的定義了。