



Charlotte Church

My Arctic role



Julie Adenuga

and the coolest hold



From Martial to Van Dijk - all the transfer deadline day moves



g2

How to dress for autumn

sport

£1.80
Wednesday 02.09.15
Published in London and Manchester
theguardian.com

PRICE AND DATE

The Guardian costs £1.80p on weekdays and £2.70p on Saturdays. The price covers 60% of the cost of the newsprint. The rest comes from adverts.

the guardian

MASTHEAD

The masthead is a specially designed logo that shows the name of the newspaper.

GM embryos: time to decide, say scientists

'Genome editing' techniques raise the prospect of use to halt serious disease

Ian Sample
Science editor

Major research funders are calling for a...
BYLINE
Sometimes the writer's job title or where they are writing from is included. Staff writers are always credited.

Although UK law bans genetic modification of embryos for clinical uses, they are permitted in research labs under licence from the fertility regulator, the Human Fertilisation and Embryology Authority (HFEA), provided they are destroyed after 14 days.

In a position statement published today, five leading biomedical funders declare support for genome-editing research and certain therapies that might follow, such as infusions of modified immune cells that are tailor-made to attack patients' tumours.

But the funders add that altering the DNA of human sperm and eggs, known as "germ cells", and human embryos, should become the focus of a broad ethical debate that fully explores the potential benefits and pitfalls of the procedure.

The prospect of modifying human embryos is deeply controversial because the DNA changes, and any potentially unintended harmful effects, would be passed on from generation to generation.

The risks of altering the human germ line, as it is called, has troubled ethicists for decades. Without proper regulation, the procedure also raises the spectre of "designer babies", where embryos are genetically modified to enhance them in the eyes of their parents.

"We believe that genome-editing technologies may hold significant potential for clinical applications in the future, and we would be open to supporting the development of new therapeutic approaches should the evidence from research

advanced...
STANDFIRST
A standfirst is used to add detail that was not included in the headline.

It adds text used to add detail that was not included in the headline.

"This raises important ethical and regulatory questions which need to be anticipated and explored."

The statement is signed by the Wellcome Trust, the Medical Research Council, the Academy of Medical Sciences, the Association of Medical Research Councils and the Biotechnology and Biological Sciences Research Council.

In laboratory studies, scientists have used genome editing, known technically as Crispr-Cas9, to correct mutations that cause metabolic disorders, to create cells that attack tumours, and to make others that are resistant to HIV infection.

The most controversial study emerged in April when Chinese researchers took faulty IVF embryos that would otherwise have been discarded, and edited the DNA to fix an aberrant gene that causes a life-threatening blood disorder.

Shortly before the Chinese study was published, a group of US scientists led by Edward Lanphier, chair of the Alliance for Regenerative Medicine in Washington DC, called for a global moratorium on modifying human reproductive cells and embryos, even for basic research.

"Such research could be exploited for non-therapeutic modifications. We are concerned that a public outcry about such an ethical breach could hinder a promising area of therapeutic development," they wrote in the journal Nature.

Michael Werner, executive director of the Alliance for Regenerative Medicine, said the alliance agreed "to the need for a robust discussion about this important topic".

Similar concerns were voiced in the US journal, Science, by a group that included one of the inventors of Crispr-Cas9,

Continued on page 2 →

Blame game disagree over Europe's response to refugee crisis



HEADLINE

The biggest headline on the page is called the "main splash". This is a serious story so no jokes are made in the headline.

Protests erupted at Budapest station among people attempting to get to Germany Photograph: Attila Kisbenedek/AFP/Getty

Ian Traynor
Europe editor

Europe's fragmented attempts to get to grips with its worst-ever migration crisis degenerated into a slanging match yesterday between national capitals ahead of a likely clash between eastern and western Europe over a common response.

Berlin has won applause for seizing the moral high ground and opening its doors to Syrian refugees, but Austria and Hungary attacked it for stoking chaos at their railway stations and borders as thousands of people seek transit to Germany.

The German chancellor, Angela Merkel, rejected the criticism and stepped up a campaign to pressure reluctant partners to take part in a more equitable system of sharing refugees across the continent.

"We must push through uniform European asylum policies," she said. Germany is expecting to take more than four times as many refugees in 2014 - and more than the rest of the EU combined - Merkel insisted that there had to be a fairer distribution. "The criteria must be discussed," she said.

A spokesman for Merkel's CDU/CSU alli-

ance said Britain's refusal to take refugees could hurt David Cameron's plans to renegotiate the country's relationship with the EU.

Stephan Mayer said Britain must ease the "huge humanitarian catastrophe" or Cameron could lose support for his renegotiation plans.

In an interview with the Times, Mayer said: "If the British government is continuing to hold this position that Great Britain is out of the club in this big task in sharing the burden, certainly this could do some harm to the British-German relationship."

It is also to Cameron's ambition to be successful in the renegotiation. "I don't see how the Spanish prime minister can be successful in Berlin as long as he rejected the German system of EU-wide binding refugees," he said. "You can't take them!" Meanwhile, the European commission's spokeswoman on immigration, said: "It's not the time to be pointing fingers at each other."

But the difficulties of forging a consensus were apparent from the increasingly

CAPTION

Captions give a description of a photograph or graphic. Often they include the photographer's name.

over immigration rest with national governments, Hungary and the Czech Republic blamed the crisis squarely on "Europe", while they both also reject "European" policy proposals from Brussels.

Both countries are talking of deploying armed forces on their borders to keep out people fleeing war and persecution, many of them bona fide refugees.

"It is the policies of the past 10 years which have led to this situation: the left-right approach of the European commission, according to which anybody should be allowed into the territory of the EU," said Janos Lazar, aide to the Hungarian prime minister, Viktor Orban. "The EU has failed to manage the situation, and the problem is the EU itself which is incapable of protecting its own borders."

The Czech president, Milos Zeman, made similar

Continued on page 7 →

One third of women will live to 90, but will it affect pension age?

Patrick Collinson

One in three women in England will live to at least 90 years, according to new official figures assessing life expectancy, raising the prospect of the state pension age having to rise to 70.

A girl born between 2010 and 2012 can, on average, expect to live to 82.8, while a boy can expect to live to 80.6, while for

When the state pension age rises to 66, while for 67, while for 68, while for 69, while for 70, while for 71, while for 72, while for 73, while for 74, while for 75, while for 76, while for 77, while for 78, while for 79, while for 80, while for 81, while for 82, while for 83, while for 84, while for 85, while for 86, while for 87, while for 88, while for 89, while for 90, while for 91, while for 92, while for 93, while for 94, while for 95, while for 96, while for 97, while for 98, while for 99, while for 100.

three years for each decade. In 1910 life expectancy at birth for men was 51 and for women 55. Experts welcomed the improvements in longevity shown by the ONS but said the extra years would increase the pressure on the NHS and the UK's creaking pension system.

A state pension age of at least 70 by 2050 looked inevitable, said Malcolm McLean, of the pension consultancy Barnett Waddingham. The UK pension age is due already to rise to 67 from 2026 to 2028.

"The ONS figures do raise the possibility of many more people in this country living well into their 90s by the second half of this century. Using the formula now pro-

Continued on page 8 →

BODYTEXT

The main "body" of a news story. Often the only part written by the reporter. This text is the Guardian's standard body text. The font is eight point Guardian Egyptian.

TURN

Often front page stories continue elsewhere in paper.