

HOPE BEYOND HYPE

Scottish
stem cell
stories

HOPE BEYOND HYPE: SCOTTISH STEM CELL STORIES IS © JAMIE HALL, BARBARA MELVILLE, EDWARD ROSS AND CATHY SOUTHWORTH, 2013.

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FOR MORE INFORMATION AND A DOWNLOADABLE VERSION OF THE COMIC VISIT:

[HTTP://WWW.EUROSTEMCELL.ORG/HOPE-BEYOND-HYPE-SCOTTISH-STEM-CELL-STORIES](http://www.eurostemcell.org/hope-beyond-hype-scottish-stem-cell-stories)

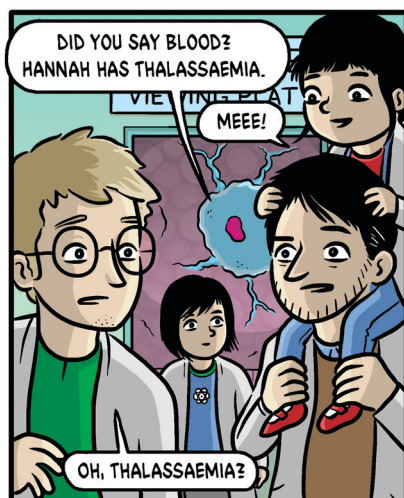
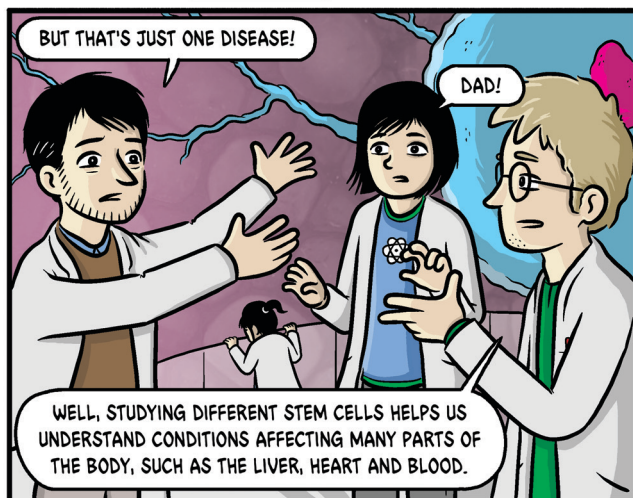
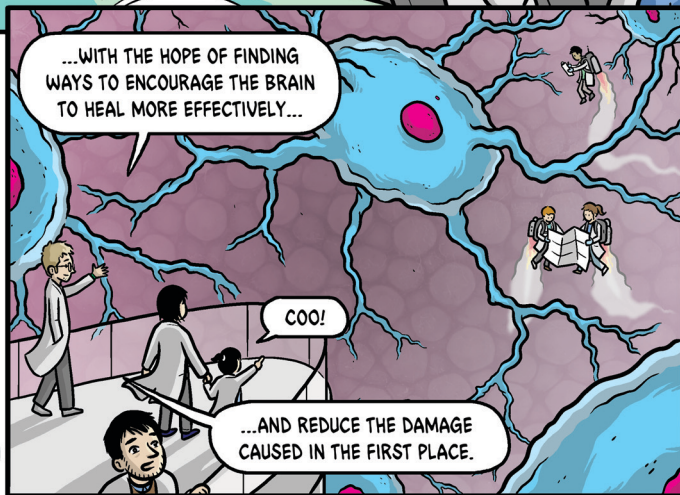
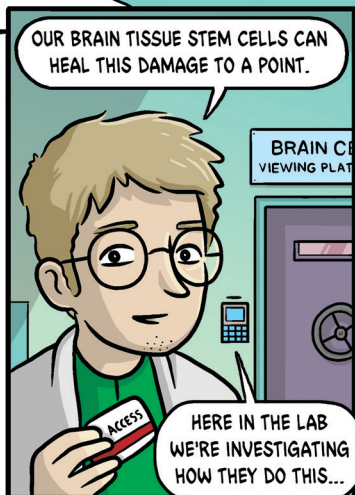
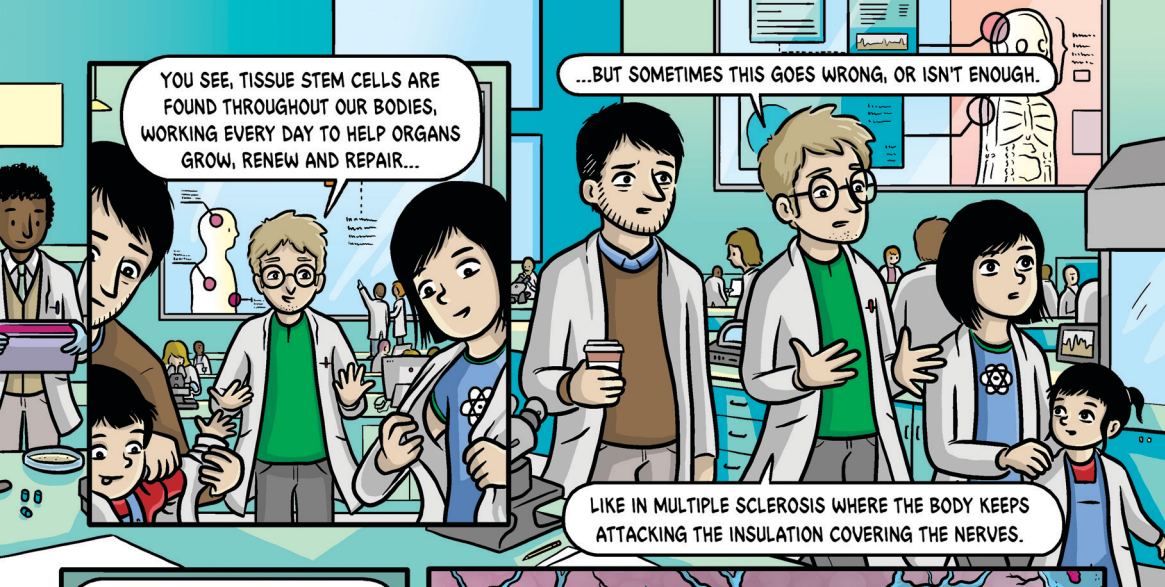


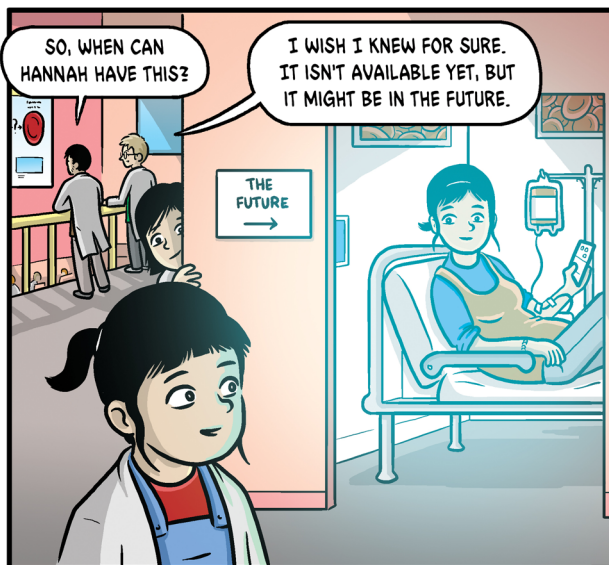
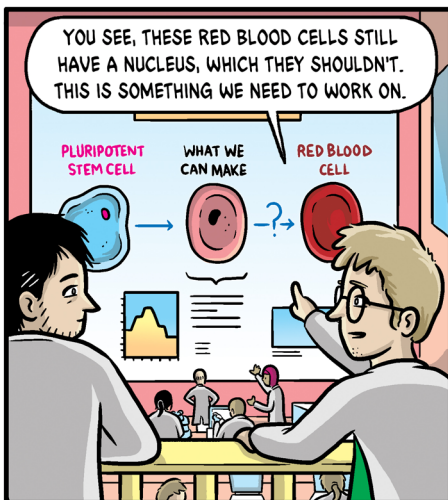
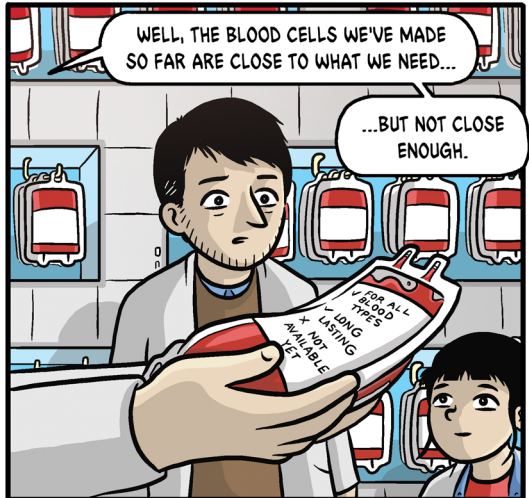
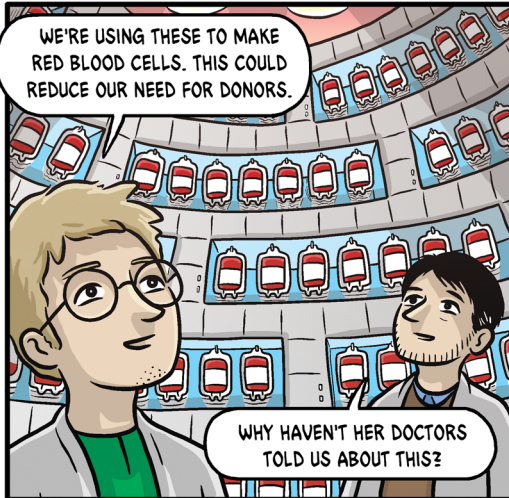
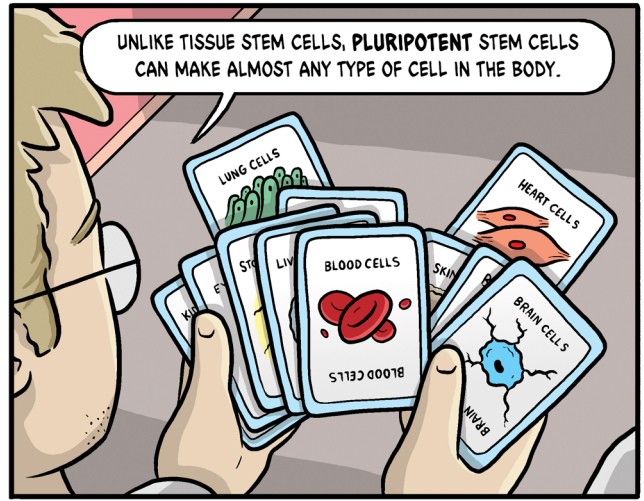
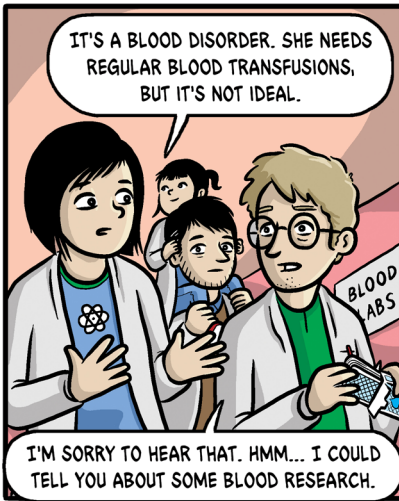
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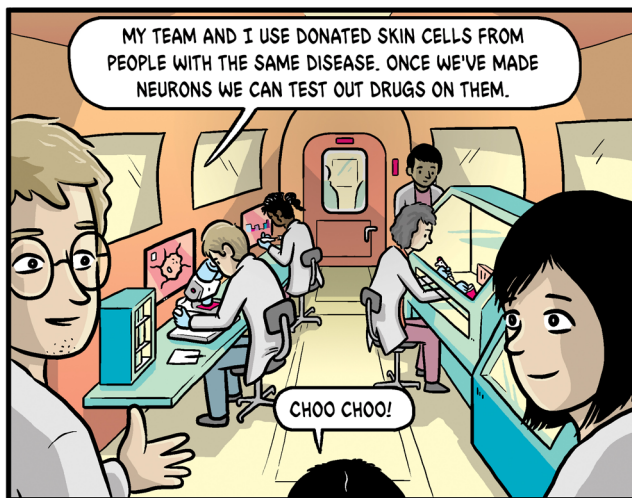
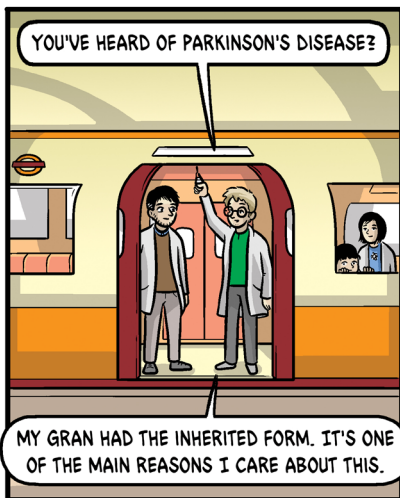
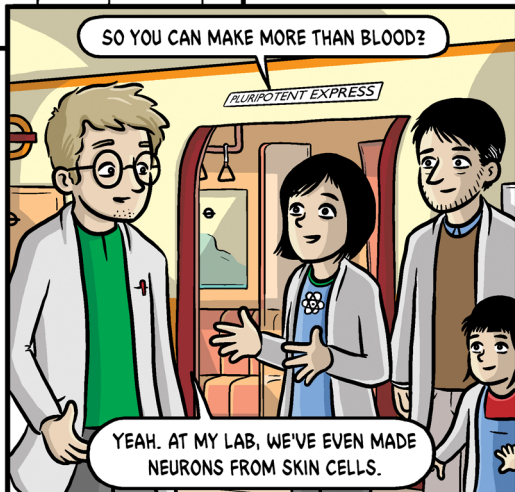
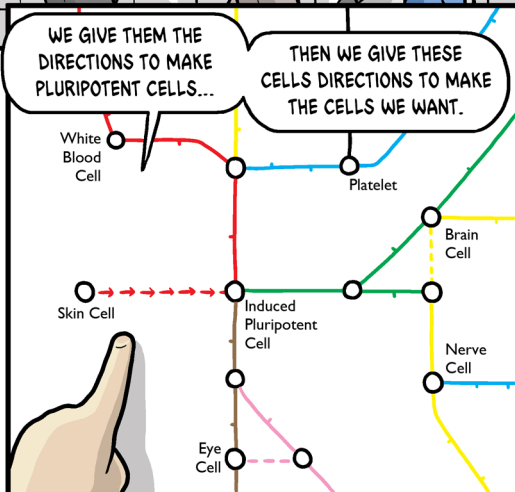
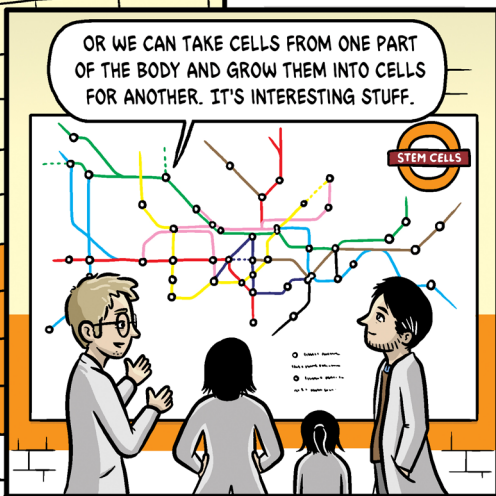
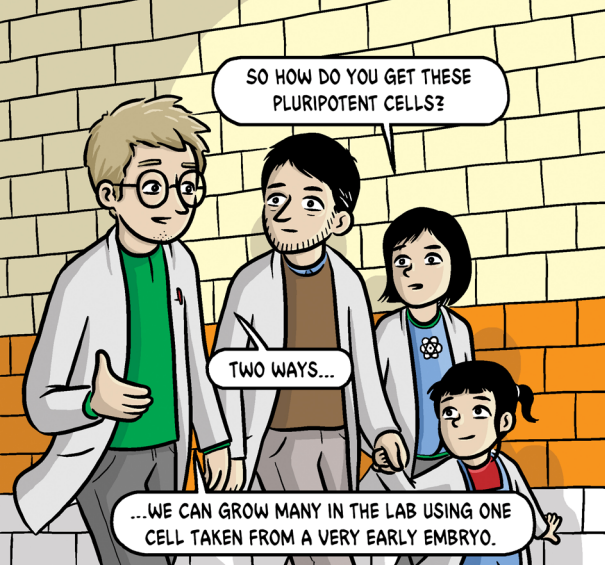


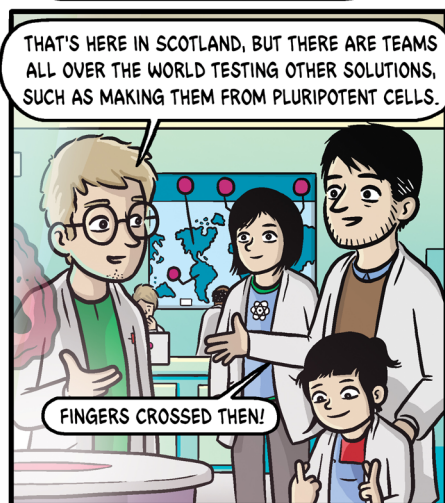
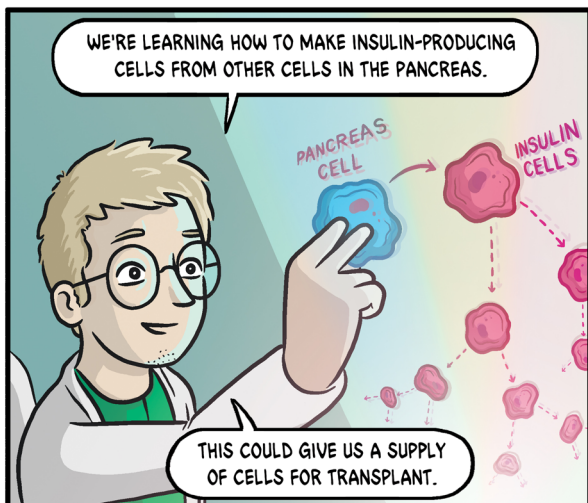
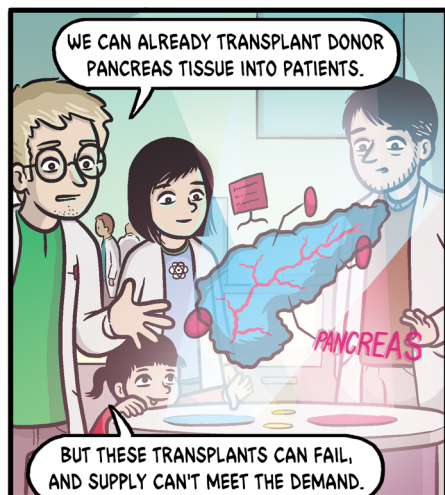
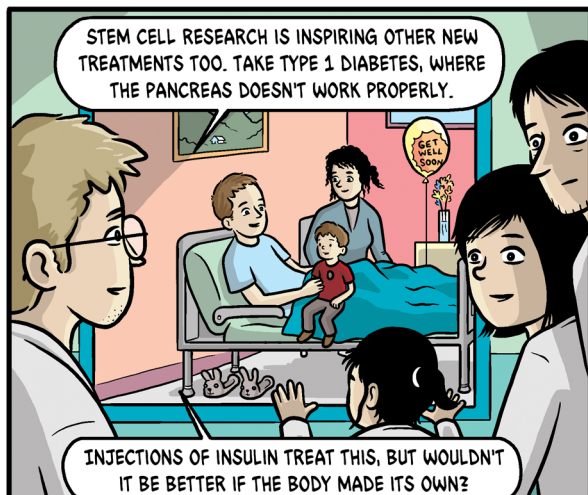
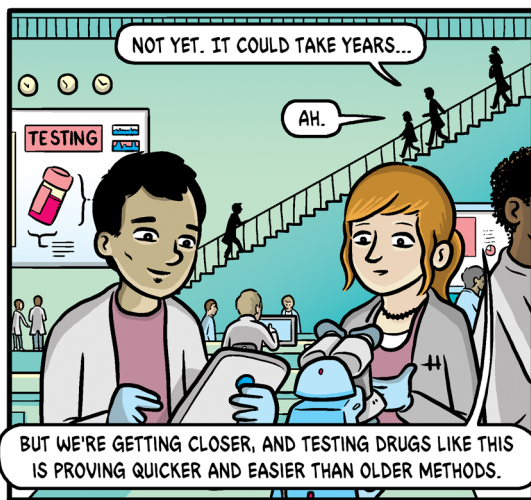
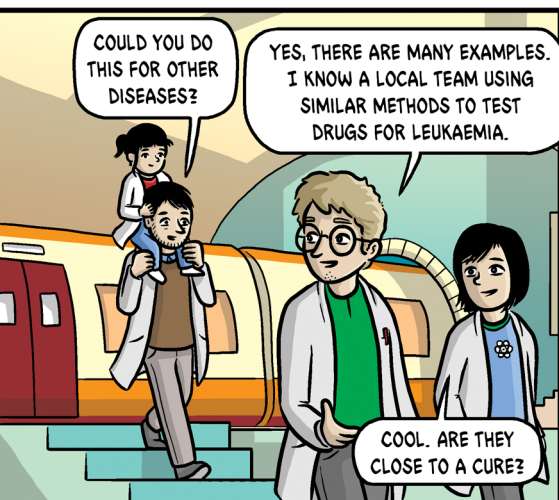
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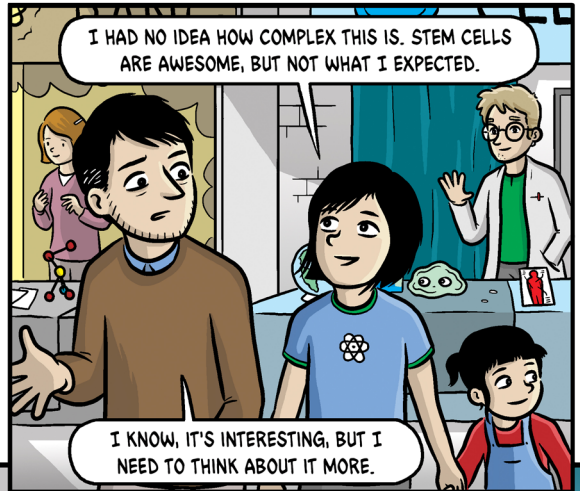
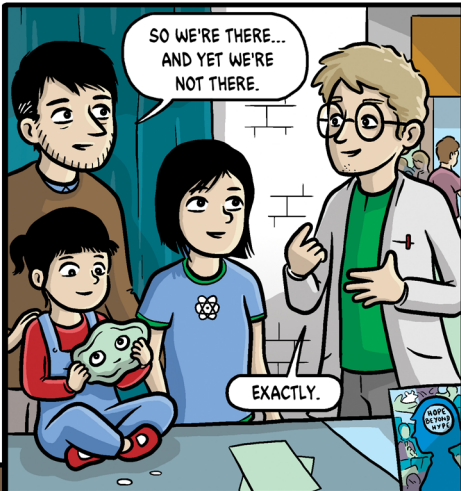
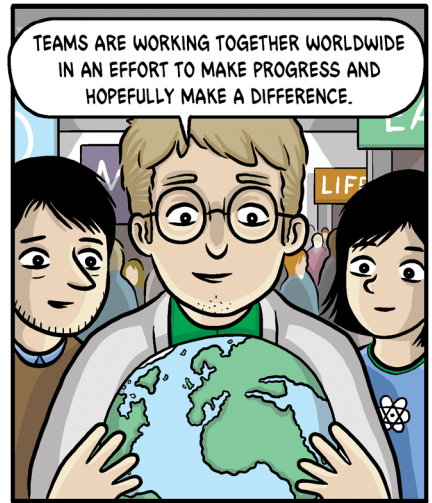
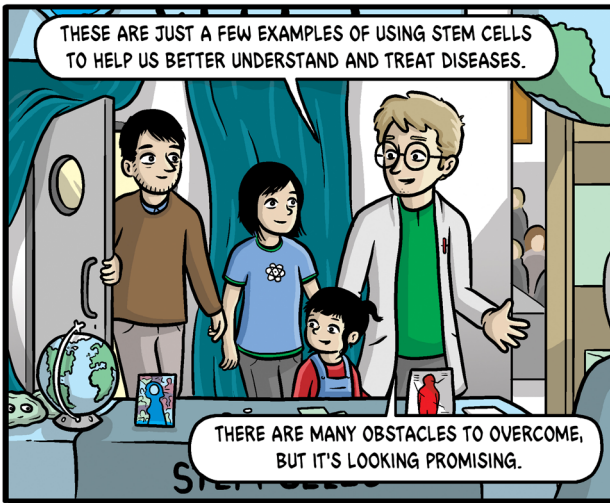










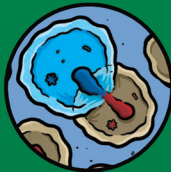


SOME WORDS AND PHRASES YOU MIGHT LIKE TO KNOW:



CELLS ARE THE MICROSCOPIC UNITS THAT MAKE UP ALL LIVING THINGS. OUR BODIES ARE COMPOSED OF TRILLIONS OF CELLS, EACH PERFORMING JOBS TO KEEP US FUNCTIONING AND WELL.

NUCLEI (SINGULAR: NUCLEUS) ARE STRUCTURES FOUND IN MOST CELLS, SAFELY HOUSING OUR DNA. THE RED BLOOD CELLS IN OUR BLOOD STREAM DON'T HAVE NUCLEI, AS THIS WOULD HINDER THEIR ABILITY TO CARRY OXYGEN AROUND OUR BODIES.



STEM CELLS CAN DIVIDE TO MAKE COPIES OF THEMSELVES (SELF-RENEW) AND DIVIDE TO MAKE OTHER TYPES OF CELL. BEING ABLE TO DO BOTH OF THESE THINGS SETS THEM APART FROM OTHER CELLS.

TISSUE STEM CELLS MAKE THE CELLS NEEDED FOR A SPECIFIC TISSUE. FOR EXAMPLE, PANCREAS STEM CELLS CAN MAKE THE CELLS NEEDED IN THE PANCREAS, SUCH AS THE ISLET CELLS WHICH PRODUCE INSULIN. TISSUE STEM CELLS ARE SOMETIMES CALLED ADULT STEM CELLS, BUT THIS IS A MISNOMER AS THESE CELLS ARE ALSO FOUND IN CHILDREN AND FOETUSES.



EMBRYONIC STEM CELLS ARE *PLURIPOTENT*, MEANING THEY CAN MAKE ALMOST ANY TYPE OF CELL IN THE BODY. SCIENTISTS GROW MANY EMBRYONIC STEM CELLS IN THE LAB FROM ONE CELL TAKEN FROM A VERY EARLY EMBRYO CALLED A *BLASTOCYST*. HUMAN BLASTOCYSTS COME FROM IVF FACILITIES, WITH THE CONSENT OF THOSE PARTICIPATING IN THE IVF TREATMENT. THESE BLASTOCYSTS WOULD NOT BE OTHERWISE USED.

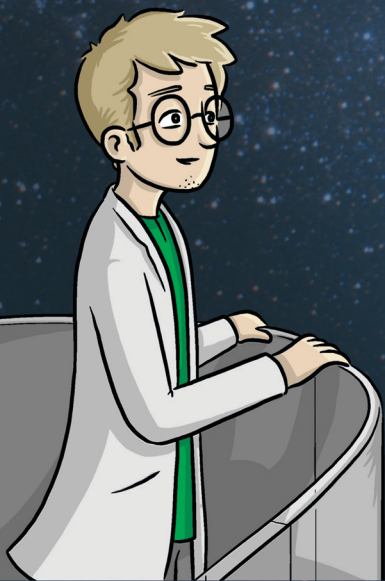
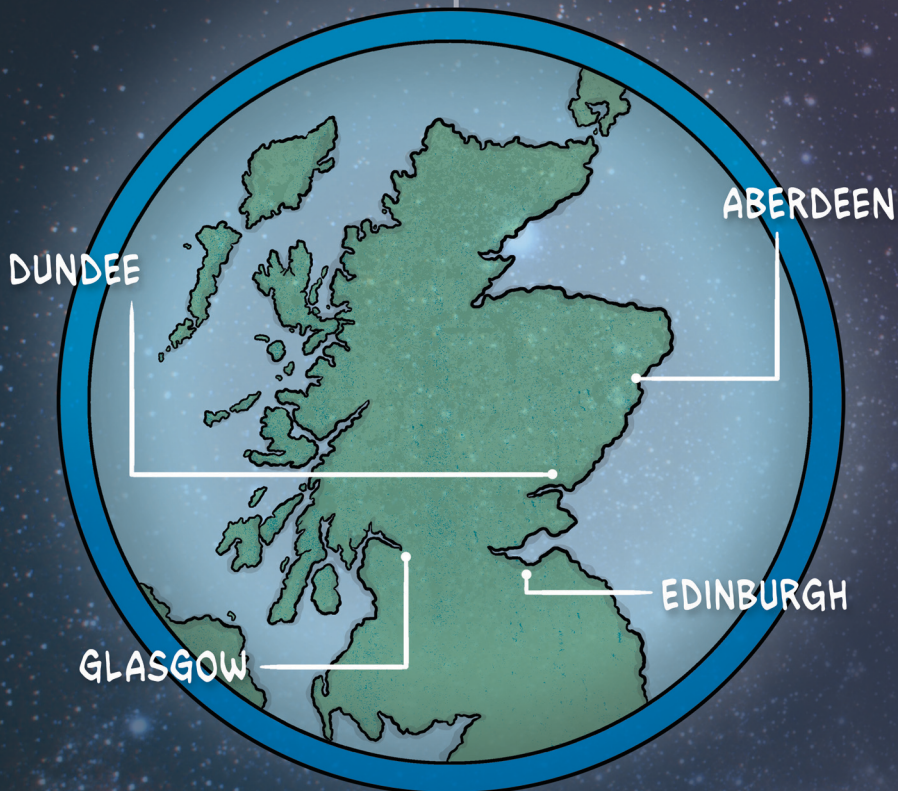
INDUCED PLURIPOTENT STEM CELLS ARE PLURIPOTENT STEM CELLS GROWN FROM OTHER CELLS. FOR EXAMPLE, SCIENTISTS CAN TAKE SKIN CELLS AND GIVE THEM GENETIC INSTRUCTIONS TO GROW INTO PLURIPOTENT CELLS. THESE INDUCED PLURIPOTENT STEM CELLS CAN THEN BE USED TO GROW OTHER TYPES OF CELLS, SUCH AS NEURONS (NERVE CELLS).



FIND OUT MORE ABOUT STEM CELL SCIENCE AT:
WWW.EUROSTEMCELL.ORG

TO FIND OUT MORE ABOUT THE CONDITIONS MENTIONED IN THE COMIC AND HOW STEM CELL SCIENCE MAY HELP VISIT:
[HTTP://WWW.EUROSTEMCELL.ORG/STEM-CELL-FACTSHEETS](http://WWW.EUROSTEMCELL.ORG/STEM-CELL-FACTSHEETS)

WE'VE HEARD FROM SOME
OF SCOTLAND'S STEM CELL
SCIENTISTS WORKING IN



WORKING WITH EACH OTHER,
WITH ENGLAND, WITH ITALY,
WITH SPAIN, WITH GERMANY,
WITH HOLLAND, WITH SWITZERLAND,
WITH FRANCE, WITH SWEDEN,
WITH JAPAN, WITH ISRAEL,
WITH AUSTRALIA, WITH CANADA,
WITH THE USA; TO NAME A FEW

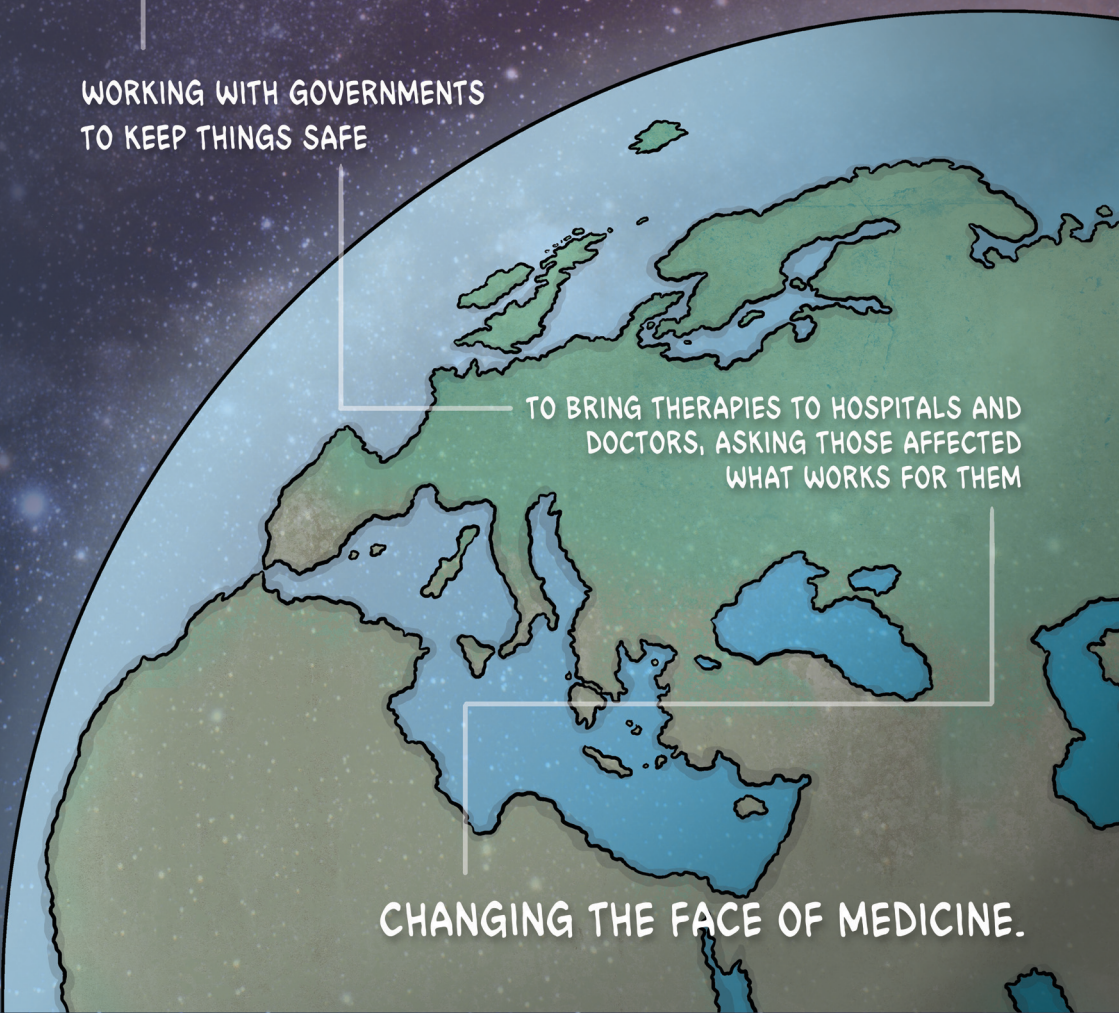
IN AWE OF THE BODY:
HOW IT GROWS, REPAIRS,
RENEWS, KNOWING ANSWERS
COULD HELP WITH HUMAN HEALTH

FINDING ANSWERS WITH CHEMISTS, ENGINEERS,
BIOINFORMATICIANS, MATHEMATICIANS AND INDUSTRY

WORKING WITH GOVERNMENTS
TO KEEP THINGS SAFE

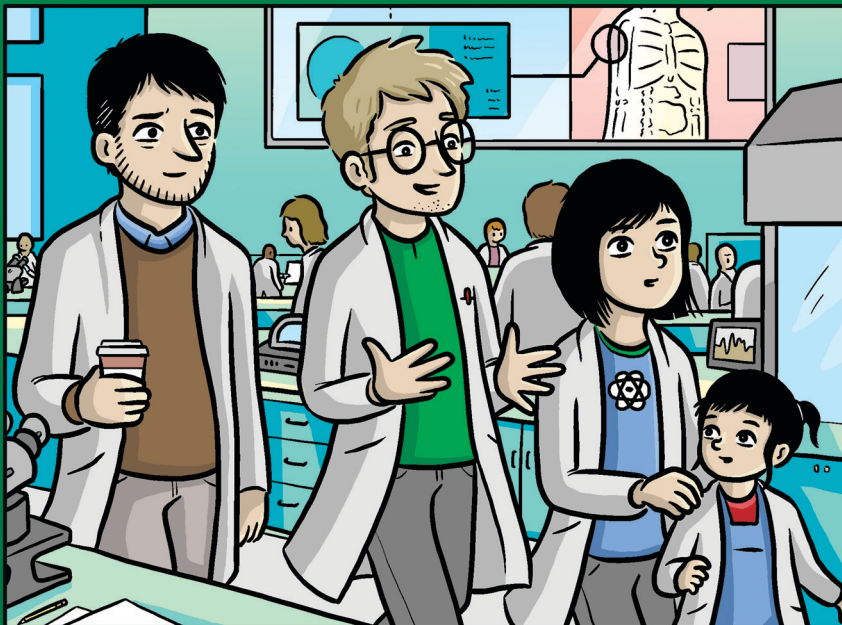
TO BRING THERAPIES TO HOSPITALS AND
DOCTORS, ASKING THOSE AFFECTED
WHAT WORKS FOR THEM

CHANGING THE FACE OF MEDICINE.



SOME WEE TALES OF SCOTTISH STEM CELL SCIENCE

Stem cells play an important role in our lives. They are found in our bodies, replenishing our cells and acting as repair kits when we're sick or injured. They are also grown in the lab, where scientists study them to learn more about disease and explore their potential for treating conditions such as multiple sclerosis and type 1 diabetes.



A comic written by Barbara Melville with Jamie Hall, Edward Ross and Cathy Southworth.
Illustrated and designed by Edward Ross.

