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SCIENTISTS CLAIM BREAKTHROUGH IN GROWING HUMAN SPERM FROM STEM CELLS

SCIENTISTS CLAIM TO HAVE CREATED HUMAN SPERM FOR THE FIRST TIME, IN A BREAKTHROUGH THEY SAY COULD LEAD TO NEW TREATMENT FOR MALE INFERTILITY.

THE SPERM WAS GROWN IN A LABORATORY IN NEWCASTLE FROM EMBRYONIC STEM CELLS. LED BY PROFESSOR KARIM NAYERNIA, RESEARCHERS DEVELOPED A METHOD OF GROWING EARLY-STAGE SPERM FROM HUMAN EMBRYONIC STEM CELLS BY USING RETINOIC ACID, A VITAMIN A DERIVATIVE.

THEY FOUND THAT ABOUT 20% OF THE CELLS PRODUCED EARLY-STAGE SPERM CELLS OR SPERMATAGONIA AND, AFTER FURTHER CULTURE, THEY COULD SEE A NUMBER OF CELLS CONTINUE TO SPLIT AND DIVIDE.

THE BREAKTHROUGH CAME WHEN SOME CELLS CONTINUED TO GROW, ELONGATING AND GROWING A TAIL WHICH CAUSED THEM TO MOVE, AND FORMING RECOGNISABLE SPERM CELLS.

NAYERNIA, OF NEWCASTLE UNIVERSITY AND THE NORTH EAST ENGLAND STEM CELL INSTITUTE (NESCI), DESCRIBED THE CELLS AS "FULLY MATURE, FUNCTIONAL" SPERM, WHICH HE CALLED IN VITRO DERIVED (IVD) SPERM.

HE SAID: "THIS IS AN IMPORTANT DEVELOPMENT AS IT WILL ALLOW RESEARCHERS TO STUDY IN DETAIL HOW SPERM FORMS AND LEAD TO A BETTER UNDERSTANDING OF INFERTILITY IN MEN – WHY IT HAPPENS AND WHAT IS CAUSING IT.

"THIS UNDERSTANDING COULD HELP US DEVELOP NEW WAYS TO HELP COUPLES SUFFERING INFERTILITY SO THEY CAN HAVE A CHILD WHICH IS GENETICALLY THEIR OWN.

"IT WILL ALSO ALLOW SCIENTISTS TO STUDY HOW CELLS INVOLVED IN REPRODUCTION ARE AFFECTED BY TOXINS, FOR EXAMPLE WHY YOUNG BOYS WITH LEUKAEMIA WHO UNDERGO CHEMOTHERAPY CAN BECOME INFERTILE FOR LIFE – AND POSSIBLY LEAD US TO A SOLUTION."

THE SCIENTIST, WHO CREATED MICE SPERM SIX YEARS AGO USING SIMILAR TECHNIQUES, SAID THAT HE USED FOUR CRITERIA TO DETERMINE WHETHER THE CELLS HE PRODUCED WERE SPERM. THEY WERE: THE PRESENCE OF PROTEINS SPECIFIC TO SPERM, ONE OF WHICH IS LOCATED IN THE TAIL AND VERY IMPORTANT FOR ACTIVATING EGG DIVISION; CHROMOSOME ANALYSIS, WHICH SHOWED THAT THE SPERM PRODUCED CONTAINED 23 CHROMOSOMES OR HALF OF THE CHROMOSOME SET – THIS IS SPECIFIC TO SPERM CELLS; THE SHAPE OF THE SPERM, WHICH HAS A TAIL AND A HEAD; AND FINALLY THE MOVEMENT OF THE SPERM – "WE COULD CLEARLY SEE THE MOVEMENT OF THE SPERM USING THE TAIL".

BUT HIS FINDINGS, PUBLISHED IN THE ACADEMIC JOURNAL STEM CELLS AND DEVELOPMENT, WERE MET BY A BARRAGE OF CRITICISM BY OTHER SCIENTISTS, WHO SAID FURTHER RESEARCH WAS NEEDED TO DETERMINE THE AUTHENTICITY OF HIS CLAIMS.

DR ALLAN PACEY, FROM THE UNIVERSITY OF SHEFFIELD, SAID: "AS A SPERM BIOLOGIST OF 20 YEARS' EXPERIENCE, I AM UNCONVINCED FROM THE DATA PRESENTED IN THIS PAPER THAT THE CELLS … PRODUCED BY PROFESSOR NAYERNIA'S GROUP CAN BE ACCURATELY CALLED 'SPERMATOZOA'." AFTER WATCHING A VIDEO CLIP OF THE CELLS, HE SAID THAT WHILE THEY POSSESSED "SOME OF THE DISTINCTIVE GENETIC FEATURES AND MOLECULAR MARKERS SEEN IN SPERM", THERE WERE OTHER CHARACTERISTICS OF HUMAN SPERM THAT WERE NOT DESCRIBED IN THE PAPER, WHILE THE FOOTAGE "DID NOT HAVE SUFFICIENT RESOLUTION" FOR HIM TO PROPERLY ASSESS HOW THE SPERM WAS MOVING, ANOTHER INDICATIVE FACTOR OF SPERM BEHAVIOUR.

PROFESSOR AZIM SURANI, A SPECIALIST IN PHYSIOLOGY AND REPRODUCTION AT THE UNIVERSITY OF CAMBRIDGE, SAID THE CELLS SHOULD BE TESTED TO FIND OUT HOW THEY DEVELOP INSIDE AN ANIMAL EGG AND ADDED: "THESE SPERM-LIKE CELLS MADE IN A DISH FROM EMBRYONIC STEM CELLS ARE A LONG WAY FROM BEING AUTHENTIC SPERM CELLS."

PROFESSOR ROBIN LOVELL BADGE, FROM THE MEDICAL RESEARCH COUNCIL INSTITUTE OF MEDICAL RESEARCH, ALSO QUESTIONED THE FINDINGS, SAYING THAT "THEY NEED MUCH BETTER EVIDENCE THAT SUCH IN-VITRO DERIVED SPERM ARE NORMAL" BUT ADDED THAT ANY PROGRESS BY THE TEAM "WILL BE VERY IMPORTANT FOR RESEARCH" AND "ULTIMATELY, ALTHOUGH DEFINITELY NOT YET, FERTILITY TREATMENTS".

NAYERNIA RESPONDED BY SAYING THAT HIS RESEARCH PAPER WAS CLEARLY LABELLED A "PROOF OF PRINCIPLE" WHICH CONCLUDES THAT IT IS IN ITS EARLY STAGES AND FURTHER RESEARCH IS NEEDED. HE SAID: "WE ARE NOT CLAIMING THIS RESEARCH IS COMPLETE BUT WE ARE SAYING THAT WE HAVE FOUND HUMAN SPERM."

NAYERNIA ADDED THAT HIS FINDINGS WOULD NOT LEAD TO HUMAN BEINGS BEING PRODUCED "IN A DISH", BUT WERE RATHER "A WAY OF INVESTIGATING WHY SOME PEOPLE ARE INFERTILE AND THE REASONS BEHIND IT.

"IF WE HAVE A BETTER UNDERSTANDING OF WHAT'S GOING ON IT COULD LEAD TO NEW WAYS OF TREATING INFERTILITY."

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THE SCIENCE SEGMENT

A THINKING CAP THAT CAN ENHANCE THE MIND'S ABILITY TO LEARN HAS MOVED A STEP CLOSER, SCIENTISTS CLAIM, AFTER TESTS SHOWED MAGNETS CAN BOOST BRAIN POWER.

RESEARCHERS DISCOVERED THAT THE ABILITY OF THE BRAIN TO LEARN A TASK AND REMEMBER IT WAS GREATLY ENHANCED WHEN A MAGNETIC PULSE WAS APPLIED TO THE PREMOTOR CORTEX – THE AREA OF THE BRAIN JUST BEHIND THE FOREHEAD.

THE TEAM AT THE UNIVERSITY OF BRITISH COLUMBIA IN VANCOUVER, CANADA, LED BY DR LARA BOYD, BELIEVE THAT THE TECHNIQUE COULD BE USED TO ENHANCE INTELLECTUAL CAPACITY AND HELP THOSE WITH LEARNING DIFFICULTIES.

YOUNG PEOPLE COULD BE SCREENED FOR ALZHEIMER'S RISK

DR BOYD TESTED THE ABILITY OF 30 VOLUNTEERS TO TRACK A TARGET ON A COMPUTER SCREEN WITH A RED DOT USING A JOYSTICK.

DURING THE TASK, THE TARGET WOULD MOVE RANDOMLY, THEN ENTER A PROGRAMMED PATTERN AND FINALLY RETURN TO MOVING RANDOMLY. THE PARTICIPANTS WERE NOT AWARE OF THE REPEATED SECTION, BELIEVING THAT MOVEMENTS WERE RANDOM THROUGHOUT.

SOME OF THE VOLUNTEERS HAD THEIR BRAIN STIMULATED BY MAGNETS WHILE OTHERS DID NOT.

THOSE PARTICIPANTS WHO HAD RECEIVED THE STIMULATION WERE SIGNIFICANTLY BETTER THAN THE OTHER GROUPS AT TRACKING THE TARGET DURING THE REPEATED SECTION OF THE TEST.

THEY SHOWED NO SIGNIFICANT DIFFERENCE IN IMPROVEMENT DURING THE RANDOM SECTIONS.

DR BOYD, WHO PUBLISHED HER FINDINGS IN THE JOURNAL BMC NEUROSCIENCE, SAID THEY SHOWED THAT MAGNETIC STIMULATION COULD BOOST LEARNING SKILLS AND EVENTUALLY LEAD TO A "THINKING CAP".

"WITH THIS TOOL WE HOPE TO BE ABLE TO PROMOTE LEARNING IN PATIENT POPULATIONS WHO OTHERWISE HAVE GREAT DIFFICULTY IN ACQUIRING NEW MOTOR SKILLS," SHE SAID.

"IN FACT WE ARE ACTIVELY INVESTIGATING THIS POSSIBILITY RIGHT NOW IN MY LAB."

MEANWHILE THERE IS NEW HOPE FOR PHOBIA SUFFERERS AFTER SCIENTISTS IDENTIFY THE PART OF THE BRAIN FROM WHICH FEAR ORIGINATES.

USING BRAIN IMAGING THE UNIVERSITY OF WASHINGTON RESEARCHERS HAVE PINPOINTED THE BASOLATERAL NUCLEUS IN THE REGION OF THE BRAIN CALLED THE OF AMYGDALA IN THE CENTRE OF THE BRAIN.

THE TEAM WHO PUBLISHED THEIR FINDINGS IN THE PUBLIC LIBRARY OF SCIENCE ONE JOURNAL SAID ONE DAY IT COULD LEAD TO "INCAPACITATING FEARS OR PHOBIAS THAT INTERFERES WITH NORMAL FUNCTIONS".

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RELIGION

TURIN SHROUD: MADE IN THE IMAGE OF THE CREATOR - LEONARDO DA VINCI

THE MYSTERIOUS TURIN SHROUD, FOR CENTURIES BELIEVED TO BE THE CRUCIFIED JESUS’ BURIAL CLOTH BEARING HIS FACE IMPRESSION AFTER HE WAS WRAPPED INTO IT, MAY HAVE BEEN CREATED BY LEONARDO DA VINCI USING HIS OWN FACE. A NEW STUDY BY LILLIAN SCHWARTZ OF THE SCHOOL OF VISUAL ARTS IN NEW YORK DEMONSTRATES WITH COMPUTER SCANS THAT THE FACE ON THE SHROUD HAS EXACTLY THE SAME DIMENSIONS AS THAT OF DA VINCI. THE RENAISSANCE ARTIST MAY HAVE CREATED THE ARTIFACT BY USING PIONEERING PHOTOGRAPHIC TECHNIQUES AND A SCULPTURE OF HIS OWN HEAD.

ALREADY IN 1988, CARBON DATING HAS PROVEN THAT THE SHROUD IS FAR TOO YOUNG TO BE AUTHENTIC. IT COULD ORIGINATE, HOWEVER, FROM THE DA VINCI ERA. LEONARDO HAD LONG BEEN SUSPECTED TO BE ITS CREATOR. BUT NOW THERE SEEMS TO BE PROOF.

IN THEIR BOOK TURIN SHROUD: HOW LEONARDO DA VINCI FOOLED HISTORY, OLIVER PRINCE AND LYNN PICKNET PROPOSED ALREADY IN 1994 THAT THE FAMOUS FACE IMPRESSION WAS CREATED BY USING AN ADVANCED PHOTOGRAPHIC TECHNIQUE. DA VINCI WAS FAMILIAR WITH THE PRINCIPLES OF PHOTOGRAPHY (WHICH WERE KNOWN LONG BEFORE THE FIRST PHOTOGRAPHS WERE MADE IN THE 1820S) AND HE USED TO MAKE EXPERIMENTS WITH A CAMERA OBSCURA. THE IMAGE ON THE SHROUD SEEMS TO BE CREATED BY COATING A CLOTH WITH LIGHT SENSITIVE CHEMICALS USING IT AS A FILM TO PROJECT THE FACE AS A PHOTO NEGATIVE. EXPERIMENTS WITH THIS TECHNIQUE PRODUCED FACE IMPRESSIONS VERY SIMILAR TO THE RELIC. NOW THE COMPUTER SCAN PROVIDES THE MISSING LINK TO LEONARDO. THE SHROUD COULD BE ANOTHER “DA VINCI CODE”, CREATED TO IMMORTALIZE THE PAINTERS OWN FACE.

THERE HAS BEEN ANOTHER LINK FOUND ALSO. STUDIES BY OLIVER PRINCE ESTABLISH THAT THE SHROUD FACE MATCHES THE PROPORTIONS OF DA VINCI’S JESUS-PAINTING CREATOR MUNDI. THERE IS NO CONTRADICTION IN BOTH THE THEORIES AS CREATOR MUNDI HAS OBVIOUSLY BEEN PAINTED USING THE FORMULA OF DA VINCI’S OWN FACE PROPORTIONS. THE SAME APPLIES TO THE FAMOUS MONA LISA, AS LILLIAN SCHWARTZ SHOWED ALREADY IN THE 1980S.

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FAMOUS QUOTES

JOHN STUART MILL (1806-1873) 66 YEARS.

PHILOSOPHER, POLITICAL THEORIST, POLITICAL ECONOMIST, CIVIL SERVANT AND MEMBER OF PARLIAMENT, WAS AN INFLUENTIAL LIBERAL THINKER OF THE 19TH CENTURY WHOSE WORKS ON LIBERTY JUSTIFIED FREEDOM OF THE INDIVIDUAL IN OPPOSITION TO UNLIMITED STATE CONTROL. HE WAS AN EXPONENT OF UTILITARIANISM, AN ETHICAL THEORY DEVELOPED BY JEREMY BENTHAM, ALTHOUGH HIS CONCEPTION OF IT WAS VERY DIFFERENT FROM BENTHAM'S.

"IF THERE ARE ANY MARKS AT ALL OF SPECIAL DESIGN IN CREATION, ONE OF THE THINGS MOST EVIDENTLY DESIGNED IS THAT A LARGE PROPORTION OF ALL ANIMALS SHOULD PASS THEIR EXISTENCE IN TORMENTING AND DEVOURING OTHER ANIMALS."

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DOWNLOAD THE PODCAST AND LISTEN TO THE DEBATE WITH THE CALLER FROM THE U.K. WHO, IS A SKEPTIC, BUT DOESN'T LIKE RICHARD DAWKINS.