

Medical Halakha Update: 5768

לז"נ שושנה רייכמן

Beginning of Life: Genetics, Reproduction, Stem Cells

Scientists turn bone marrow into sperm

By Fiona Macrae Courier Mail Australia February 01, 2008 01:00am

SCIENTISTS are ready to turn female bone marrow into sperm, cutting men out of the process of creating life. The breakthrough paves the way for same gender couples to have children that are biologically their own.

Embryos created with DNA from 3 people

February 5, 2008 By MARIA CHENG, AP

British scientists say they have created human embryos containing DNA from two women and a man in a procedure that researchers hope might be used one day to produce embryos free of inherited diseases. Though the preliminary research has raised concerns about the possibility of genetically modified babies, the scientists say that the embryos are still only primarily the product of one man and one woman.

תלמוד בבלי מסכת נדה דף לא עמוד א

תנו רבנן: שלשה שותפין יש באדם, הקב"ה ואביו ואמו. אביו מזריע הלוּבן, שממנו עצמות וגידים וצפרנים, ומוח שבראשו, ולובן שבעין. אמו מזרעת אודם, שממנו עור ובשר ושערות, ושחור שבעין. והקב"ה נותן בו רוח ונשמה וקלסתר פנים, וראיית העין, ושמיעת האוזן, ודבור פה, והלוד רגלים, ובינה והשכל. וכיון שהגיע זמנו להפטר מן העולם - הקב"ה נוטל חלקו, וחלק אביו ואמו מניח לפניו.

Clinic to weed out embryos with a squint Telegraph By Roland Hancock 07/05/2007

Embryos are to be screened for a cosmetic defect for the first time in a British clinic.

Doctors have been given permission to create a baby free from a genetic disorder which would have caused the child to have a severe squint. He said: "We will increasingly see the use of embryo screening for severe cosmetic conditions." He added that he would seek to screen for any genetic factor at all that would cause a family severe distress. When asked if he would screen embryos for factors like hair color, he said: "If there is a cosmetic aspect to an individual case I would assess it on its merits. "[Hair colour] can be a cause of bullying which can lead to suicide. With the agreement of the HFEA, I would do it.

הרב שלמה דיכובסקי

ברירה טרום-עוברית ומעמדו של קדם-עובר*

Journal of Turkish Weekly Feb 25, 2008

Hadassah Breaks Chain of BRCA Mutation

A 38-year-old Jerusalemite whose cells carry defective BRCA2 genes is apparently the first woman in the world in an advanced state of pregnancy with fetuses that were screened for the mutation as three-day-old embryos and selected for implantation when shown to be healthy.

Medical Halakha Update: 5768

לז"נ שושנה רייכמן

Five-year-old's frozen eggs give fertility hope to child cancer victims July 2, 2007

The Guardian Fertility doctors have extracted eggs from girls as young as five and frozen them so they can be used later to start a family. The breakthrough raises hopes for thousands of girls who survive childhood cancer each year but are left infertile by chemotherapy. Until now, fertility specialists had thought it impossible to retrieve usable eggs from girls so young, but a team of Israeli doctors managed to extract early-stage eggs and mature them in a laboratory before storing them in deep freeze.

Male Birth Control Pill Stops Sperm in Brain Nov 14, 2007 Wall Street Journal

Researchers are working to crack the code on a male birth control pill. Researchers described early work in rats on a pill that one day could render men temporarily infertile. The key is something called a selective androgen receptor modulator. "These compounds suppress a brain hormone, and shut down sperm production in a reversible way." To achieve birth control, men would have to take such a pill for two to three months to deplete their sperm. It would take about the same amount of time for them to return to full reproductive capacity after stopping the medicine. Even if all goes well, any pill is still five to 10 years away.

By Emily Cook, 06/10/2007

A dad of 72 is to become a sperm donor for his own grandchild, doctors revealed yesterday. He was asked to step in by his son and daughter-in-law after they failed to conceive. If the attempt is successful, the baby will be the grandfather's genetic child and its father's half brother or sister. The case is thought to be one of the first of its kind in Britain. "The husband does not have a brother. That's why he chose his father to assist. The mother-in-law had no objections."

How old is too old to father a child? Psychology Today Magazine By Mark Teich 1/7/2008

Women have long understood that general fitness and age are critical to conceiving a healthy child. But their partners often feel absolved of such concerns; men tend to think they can drink, carouse, smoke like coal trains, and conceive whenever they want, with no impact on fertility or their future offspring. Would that it were so.

Nonetheless, a virtual tidal wave of recent research has made it irrefutable: Not only does male fertility decrease, especially after age 35, but aging sperm can be a significant and sometimes the only cause of severe health and developmental problems in offspring, including autism, schizophrenia and cancer. The older the father, the higher the risk.

קהלת פרק יא

בבקר זרע את זרעך ולערב אל תנח ידך כי אינך יודע אי זה יכשר הזה או זה ואם שניהם כאחד טובים:

תלמוד בבלי מסכת יבמות דף סב עמוד ב

דתניא, רבי יהושע אומר: נשא אדם אשה בילדותו - ישא אשה בזקנותו, היו לו בנים בילדותו - יהיו לו בנים בזקנותו, שנא: בבקר זרע את זרעך ולערב אל תנח ידך כי אינך יודע אי זה יכשר הזה או זה ואם שניהם כאחד טובים

The babies born just a minute apart who AREN'T twins Daily Mail January 18, 2008

They grew in the same womb and were born only a minute apart. Yet Thomas and Harriet Mullineux are not twins. They were conceived three weeks apart thanks to an extraordinary twist of nature. Their mother Charlotte had been pregnant with twins when at seven weeks she miscarried one of them. But two weeks later, she discovered she was carrying another foetus -

Medical Halakha Update: 5768

לז"נ שושנה רייכמן

conceived separately and still growing in her womb. The surviving twin and the new baby were born last May and, after a health scare, are now home and thriving. Brother and sister: Charlotte Mullineux with Harriet, left, and Thomas. They were conceived three weeks apart.

תלמוד בבלי מסכת נדה דף כז עמוד א

א"ר אבין בר רב אדא אמר רב מנחם איש כפר שערים, ואמרי לה בית שערים: מעשה ונשתהה וולד אחד אחר חברו ג' חדשים, והרי הם יושבים לפנינו בבית המדרש. ומאן נינהו? יהודה וחזקיה בני רבי חייא. והא אמר מר: אין אשה מתעברת וחוזרת ומתעברת! אמר אביי: טיפה אחת היתה ונתחלקה לשתיים, אחד נגמרה צורתו בתחלת ז', ואחד בסוף ט'.

שו"ת נודע ביהודה מהזורה תנינא - אה"ע סימן פא

תשובה להגאון מוהר"ר ישעיה ברלין:

על דבר האשה אשר ילדה תאומים לתשעה חדשים מלאים ובעלה בעל אותה ונסע ממנה ובכלות תשעה חדשים ילדה תאומים ולכן הבעל חושש שזינתה מחמת שמצא בספר דרוש שאי אפשר לתאומים להתעבר מביאה אחת. הכוונה לספר יערות דבש להגאון ר' יהונתן אייבשיץ חלק א' דרוש ט"ו שהביא כן בשם הטבעיים עיי"ש. + הנה הבעל הזה עונו ישא וחושד בכשרה ודברי הדרוש המה הבל הבלים נגד כמה מקומות בש"ס אין מספר כאשר הרגיש גם מעלתו +/ הגהות עין חנוך/ נ"ב, וגם נגד מקרא מלא בתמר והנה תאומים בבטנה, (בראשית ל"ה) והר' אלטר מברעזניק הערני מספר חסידים סימן תקט"ו שכתב דגם מטפה אחת יולדו תאומים עיי"ש + ואדרבה נהפוך הוא שאי אפשר לה להתעבר תאומים בשתי ביאות זו אחר זו שיהיו שניהם בני קיימא כי אם שיהיה אחד סנדל. ומה שהעיד בשם חכמי הטבע שקר העיד ואדרבה המה מסכימים בזה שיכולה להתעבר מביאה אחת ולדות הרבה.

Unknowing twins marry each other CNN January 11, 2008

LONDON, England (CNN) -- British twins who had been separated at birth learned they were related only after they had become husband and wife, a senior British lawmaker said. The marriage has been annulled. "They were never told that they were twins." They had been adopted by separate families and "met later in life and felt an inevitable attraction, and the judge had to deal with the consequences of the marriage that they entered into and all the issues of their separation."

שו"ת אגרות משה חלק אה"ע א סימן עא

בדין זריקת זרע למעי האשה שחדשו הרופאים ר"ח ניסן תשי"ט. מע"כ ידידי הרה"ג מוהר"ר יעקב האמניק שליט"א. אבל מכיון שהטעם מפורש שם שהוא מדין גזירה שמא ישא אחותו מאביו וכן הוא בב"ש סימן א' סק"ג, יש להתיר בזרע של נכרי שכיון שהולד יהיה ישראל כיון שאמו ישראלית אין לחוש לכלום דאין לו יחוס להאב הנכרי אף אם היה דרך ביאה וכ"ש כשאינו דרך ביאה אלא מאמבטי.

Stem Cell Therapy May Combat Type 1 Diabetes

TUESDAY, April 10 (HealthDay News) -- A pilot study of people newly diagnosed with type 1 diabetes found that stem cell therapy eliminated the need for insulin therapy for varying periods of time. This is the first trial to look at stem cell therapy in humans with this form of the disease. But experts stressed that the research is preliminary and urged caution when interpreting the results, which are published in the April 11 issue of the Journal of the American Medical Association. ... AHST involves removing a patient's own blood stem cells, treating them, and then returning them to the patient.

Harvesting Stem Cells Without Embryo Destruction

Human Embryonic Stem Cell Lines Created Without The Destruction Of Embryos

ScienceDaily (Jan. 12, 2008) — Advanced Cell Technology, Inc. announced the development of five human embryonic stem cell (hESC) lines without the destruction of embryos. These new results have the potential to end the ethical debate surrounding the use of embryos to derive stem cells. In fact, the NIH report to the President refers to this technology as one of the viable alternatives to the destruction of embryos.

The new method was published January 11 in the journal *Cell Stem Cells*. Single cells were removed from the embryos using a technique similar to preimplantation genetic diagnosis (PGD). The biopsied embryos continued to develop normally and were then frozen.

Embryonic-like Stem Cells From Non-Embryonic Sources

THE NEW ENGLAND JOURNAL OF MEDICINE

A New Dawn for Stem-Cell Therapy

Douglas R. Higgs, M.D., D.Sc.

N ENGL J MED 358:9 WWW.NEJM.ORG FEBRUARY 28, 2008

Recently, the potential use of stem cells for regenerative medicine and for the treatment of genetic disease has rarely been out of the news. Discussion has focused mainly on the use of human embryonic stem cells, which in culture have the capacity to generate all cell types. However, initial hopes for stem-cell therapy have been somewhat dampened by both technical and ethical problems. Recent studies have therefore created a great deal of excitement. They show that fully differentiated somatic cells (such as skin fibroblasts) can be reprogrammed to make cells similar to embryonic stem cells, called induced pluripotent stem cells.¹ Now, Hanna et al.² have taken the next important step and have shown, by correcting a mouse model of sickle cell disease, how induced pluripotent stem cells might eventually be used to cure a human disease.

Broader Clinical Applications for Adult Stem Cells

Clinical Applications of Blood-Derived and Marrow-Derived Stem Cells for Nonmalignant Diseases *JAMA*. 2008;299(8):925-936. **February 27, 2008**

Conclusions Stem cells harvested from blood or marrow, whether administered as purified HSCs or mesenchymal stem cells or as an unmanipulated or unpurified product can, under appropriate conditions in select patients, provide disease-ameliorating effects in some autoimmune diseases and cardiovascular disorders.

Team Creates Rat Heart Using Cells of Baby Rats NYT January 14, 2008

Medicine's dream of growing new human hearts and other organs to repair or replace damaged ones received a significant boost when University of Minnesota researchers reported success in creating a beating rat heart in a laboratory. The researchers removed all the cells from a dead rat heart, leaving the valves and outer structure as scaffolding for new heart cells injected from

newborn rats. Within two weeks, the cells formed a new beating heart that conducted electrical impulses and pumped a small amount of blood. With modifications, scientists should be able to grow a human heart by taking stem cells from a patient's bone marrow and placing them in a cadaver heart that has been prepared as a scaffold,

HYBRIDS AND CHIMERAS

From The Times April 2, 2008

We have created human-animal embryos already, say British team

The Newcastle cybrids lived for three days and the largest grew to contain 32 cells

Mark Henderson, Science Editor

Embryos containing human and animal material have been created in Britain for the first time, a month before the House of Commons votes on new laws to regulate the research.

A team at Newcastle University announced yesterday that it had successfully generated "admixed embryos" by adding human DNA to empty cow eggs in the first experiment of its kind in Britain.

The Commons is to debate the Human Fertilisation and Embryology Bill next month. MPs have been promised a free vote on clauses in the legislation that would permit admixed embryos. But their creation is already allowed, subject to the granting of a licence from the Human Fertilisation and Embryology Authority (HFEA).

BMJ 2007;335:530-531 (15 September)

Genome sequence of one individual is published for first time Susan Mayor London

The complete genome sequence of one person—one of the US biologists working on the project, J Craig Venter—was published for the first time this week. By enabling scientists to compare the contribution of each of the parental chromosomes, it showed that genetic variation among humans was much greater than previously estimated. The data indicate that variation from human to human is about 0.5% of the genome, not 0.1%, as previously thought.

The new genome, called HuRef (which stands for human reference), is the first time that the full or diploid genome, consisting of the DNA in both sets of chromosomes (one from each parent), has been published for one individual

US scientists close to creating artificial life: study Jan 24, 2008

US scientists have taken a major step toward creating the first ever artificial life form by synthetically reproducing the DNA of a bacteria, according to a study published Thursday. The move, which comes after five years of research, is seen as the penultimate stage in the endeavour to create an artificial life form based entirely on a man-made DNA genome -- something which has tantalised scientists and sci-fi writers for years.

It is one of the Holy Grails of science, but also one that stirs deep fears as foreseen in Aldous Huxley's 1932 novel "Brave New World" in which natural human reproduction is eschewed in favor of babies grown artificially in laboratories.

Middle of Life: Shidduchim and Surgery (not related)

A Solution to the Shidduch Crisis? Forget mistletoe - what about DNA?

A new dating service matches singles using major histocompatibility complex genes 14th December 2007

A new dating service that launched this week for Boston-area singles claims that it can get the chemistry right when fixing up potential mates -- literally. ScientificMatch.com uses DNA samples from customers to match them with others who have different alleles for major histocompatibility complex genes. MHC proteins sit on the surface of cells and detect pathogens, but they also appear to play a role in sexual attraction. In sniff tests of dirty t-shirts, people tend to be most attracted to the scent of the shirt whose owner has different MHC alleles from the sniffer. One explanation is that this phenomenon evolved to promote genetic diversity between mates. For \$1,995 and a cheek swab sent off for DNA analysis, customers can find the love of their lives.



בראשית רבה (וילנא) פרשה סח ד"ה ז רבי יהודה

אמר לה הקב"ה יושב ומזווג זיווגים בתו של פלוני לפלוני, אשתו של פלוני לפלוני, ממנו של פלוני לפלוני, אמרה לו ודא הוא אומנתיה אף אני יכולה לעשות כן כמה עבדים כמה שפחות יש לי לשעה קלה אני יכולה לזווג, אמר לה אם קלה היא בעיניך, קשה היא לפני הקב"ה כקריעת ים סוף, הלך לו ר' יוסי בר חלפתא מה עשתה נטלה אלף עבדים ואלף שפחות והעמידה אותן שורות שורות אמרה פלן יסב לפלונית ופלונית תיסב לפלוני, וזיווגה אותן בלילה אחת, למחר אתון לגבה דין מוחיה פציעא, דין עינו שמיטא, דין רגליה תבירא

Doctors carry out first "no-scar surgery" to remove gallbladder April 26, 2007 AFP

Doctors in eastern France said Thursday they had carried out the world's first "no-scar" surgery, using hi-tech instruments to remove the gallbladder of a 30-year-old patient via the female reproductive tract. The operation breaks new ground in minimally invasive surgery, a technique designed to boost post-operative recovery and avoid the emotional impact of scars, lead doctor Jacques Marescaux told AFP.

Surgeon removes gall bladder from mouth AP Jun 22, 2007

An Oregon surgeon has performed gall bladder surgery that removes the organ through the patient's mouth — the latest example of surgeries that avoid major incisions and rely on the body's own orifices instead. Instead of cutting into the abdomen, tiny instruments were sent down the woman's mouth into her stomach. Swanson then cut a small hole in the lining of the stomach to reach the gall bladder, remove it and pull it out through her mouth.

Man Resorts to Surgery to Adopt Child By GRANT SLATER The Associated Press

A man who weighed 558 pounds when a Missouri judge prevented him from adopting a child he and his wife had taken into their home underwent gastric bypass surgery Friday in a bid to win the child back. Gary Stocklaufer, a 34-year-old truck driver, and his wife claim a judge unfairly discriminated against them because of his weight in deciding to give 4-month-old Max to another couple for possible adoption. The infant from Arlington, who is related to the Stocklaufers, had lived with them since he was a week old. This is considered the first case where a couple seeking to adopt has resorted to surgery in the increasingly prevalent practice of denying parents adoptions because they are obese, several adoption experts said.

End of Life: Cardiac Death, Organ Donation and Coma

Brain Death or Cardiac Death Revisited Newsweek May 7, 2007

It has been thought that the patient couldn't be revived because the tissues of his brain and heart had suffered irreversible damage from lack of oxygen. This process was understood to begin after just four or five minutes. If the patient doesn't receive cardiopulmonary resuscitation within that time, and if his heart can't be restarted soon thereafter, he is unlikely to recover. That dogma went unquestioned until researchers actually looked at oxygen-starved heart cells under a microscope. What they saw amazed them, according to Dr. Lance Becker, an authority on emergency medicine at the University of Pennsylvania. "After one hour," he says, "we couldn't see evidence the cells had died. We thought we'd done something wrong." In fact, cells cut off from their blood supply died only hours later. But if the cells are still alive, why can't doctors revive someone who has been dead for an hour? **Because once the cells have been without oxygen for more than five minutes, they die when their oxygen supply is resumed.** With this realization came another: that standard emergency-room procedure has it exactly backward. When someone collapses on the street of cardiac arrest, if he's lucky he will receive immediate CPR, maintaining circulation until he can be revived in the hospital. But the rest will have gone 10 or 15 minutes or more without a heartbeat by the time they reach the emergency department. And then what happens? "We give them oxygen," Becker says. "We jolt the heart with the paddles, we pump in epinephrine to force it to beat, so it's taking up more oxygen." **Blood-starved heart muscle is suddenly flooded with oxygen, precisely the situation that leads to cell death.** Instead, Becker says, we should aim to reduce oxygen uptake, slow metabolism and adjust the blood chemistry for gradual and safe reperfusion.

Oklahoma City, OK - Man Declared Brain Dead Wakes Up After Hearing Doctors Say He Is Dead March 26, 2008

Oklahoma City, OK - Four months after he was declared brain dead and doctors were about to remove his organs for transplant, Zach Dunlap says he feels "pretty good." Dunlap was pronounced dead in Wichita Falls, Texas, after he was injured in an all-terrain vehicle accident. His family approved having his organs harvested. His father, Doug, said he saw the results of the brain scan. "There was no activity at all, no blood flow at all." But as family members were paying their last respects, suddenly he moved his foot and hand and reacted to a pocketknife scraped across his foot and to pressure applied under a fingernail. After 48 days in the hospital, he returned home. Yesterday he and his family were in New York, appearing on NBC's "Today." "I feel pretty good. but it's just hard ... just ain't got the patience," Dunlap told NBC. Dunlap, 21, of Frederick, said he has no recollection of the crash. But one thing he does remember is hearing the doctors pronounce him dead. "I'm glad I couldn't get up and do what I wanted to do," he said.

Scientist says cremation should meet a timely death Wed Apr 18, 2007

An Australian scientist called Wednesday for an end to the age-old tradition of cremation, saying the practice contributed to global warming. Professor Roger Short said people could instead choose to help the environment after death by being buried in a cardboard box under a tree. The decomposing bodies would provide the tree with nutrients, and the tree would convert carbon dioxide into life-giving oxygen for decades, he said.

Organ Donation

Bill to encourage organ gifts advances

February 15, 2008 **Star-Ledger**

New Jersey would become the first state to require anyone getting or renewing a driver's license to choose whether to register as an organ donor, under a bill a Senate committee approved yesterday. The measure, called the New Jersey Hero Act, also would make the state the first to require high schools' health classes to teach the importance of organ donation.

U.K. leader: Change organ donor process USA Today January 14, 2008

LONDON (AP) — Britain's prime minister called Sunday for overhauling the country's organ donation system, saying doctors should be able to remove body parts from deceased patients without prior needing consent. Switching to a Spanish-style "opt-out" system — in which consent is presumed — could save thousands of lives, he wrote in *The Sunday Telegraph* newspaper.

Spanish hospital transplants right hand to left arm June 4, 2007

A hospital in Spain has successfully transplanted a man's right hand onto his left arm, changing the location of the thumb in the process, a spokesman said on Monday. The unidentified 63-year-old man had lost his left hand in an accident four decades ago and three years ago he suffered a stroke which paralyzed the right side of his body.

Undertakers offer cash incentive for organ donation

Tony Sheldon Utrecht

One of the largest firms of undertakers in the Netherlands is offering a reduction in the cost of funerals to the relatives of dead people who have had an organ removed for donation. The initiative follows a call from the Dutch Kidney Foundation for new ideas to boost donation.

Kidney racket scandal shocks country Mon Jan 28, 2008

By Alistair Scrutton

NEW DELHI (Reuters) - The uncovering of an illegal kidney transplant racket in a booming IT city has gripped India, with reports hundreds of poor laborers may have been duped or forced into donating organs to wealthy clients, including foreigners. Hundreds of people from across northern India had their kidneys removed at a private house, which had a state-of-the-art operating theatre hidden inside, after being lured to Gurgaon, a city of hi-tech companies just outside New Delhi. "We suspect around 400 or 500 kidney transplants were done by these doctors over the last nine years."

EUTHANASIA

WINNIPEG, Manitoba, February 13, 2008 (LifeSiteNews.com) - The injunction preventing Winnipeg's Grace General Hospital from removing Life-Sustaining Care from Samuel

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"Come on Sid, you're carrying a donor card, how about donating something to the pot?"

Golubchuk has been upheld by Justice Perry Schulman of the Manitoba Court of Queen's Bench. The 84-year-old cognitively disabled patient's family has been battling hospital doctors who are determined to starve and dehydrate him to death regardless of the family's wishes.

AWAKENING FROM COMA June 3, 2007

WARSAW, Poland (Reuters) -- A 65-year-old railwayman who fell into a coma following an accident in communist Poland regained consciousness 19 years later to find democracy and a market economy, Polish media reported on Saturday. Wheelchair-bound Jan Grzebski, whom doctors had given only two or three years to live following his 1988 accident, credited his caring wife Gertruda with his revival. "When I went into a coma there was only tea and vinegar in the shops, meat was rationed and huge petrol lines were everywhere," Grzebski said. "Now I see people on the streets with cell phones and there are so many goods in the shops it makes my head spin." Grzebski awoke to find his four children had all married and produced 11 grandchildren during his years in hospital.

Scan sees brain activity in 2nd vegetative patient

Mon Aug 13, 2007 4:00PM EDT By Maggie Fox, WASHINGTON, Aug 13 (Reuters) - Scans have shown near-normal brain activity in a second patient who is in a vegetative state, British researchers reported on Monday in a study that may show a way to predict who is likely to recover from the usually hopeless condition. And they said a woman who made headlines last year by playing a game of tennis in her mind has recovered somewhat from her vegetative state -- suggesting the theory may be correct. Owen said his team has tried the scan on 10 other patients, but got a response only from one, a man in his 30s in a vegetative state after a severe beating. "We put him in the scanner and we had exactly the same responses,"

Man Regains Speech After Brain Stimulation August 2, 2007 By BENEDICT CAREY

A 38-year-old man who spent more than five years in a mute, barely conscious state as a result of a severe head injury is now communicating regularly with family members and recovering his ability to move after having his brain stimulated with pulses of electric current, neuroscientists are reporting. The new report, which appears in the journal Nature, provides the first rigorous evidence that any procedure can initiate and sustain recovery in such a severely disabled person, years after the injury occurred. An estimated 100,000 to 300,000 Americans subsist in states of partial consciousness, and most are written off as beyond help.

Scientists find drug to banish bad memories

By Richard Gray, Science Correspondent July 1, 2007

Scientists have now developed a way to block and even delete unwanted memories from people's brains. Researchers have found they can use drugs to wipe away single, specific memories while leaving other memories intact. By injecting an amnesia drug at the right time, when a subject was recalling a particular thought, neuro-scientists discovered they could disrupt the way the memory is stored and even make it disappear. **The US scientists behind the research insist that amnesia drugs could be invaluable in treating patients with psychiatric disorders such as post-traumatic stress.**

