

Chapter 1 : Medical Innovation News from Medical News Today

Take a look at the top 10 medical innovations from Cleveland Clinic's Medical Innovation Summit. Advertising Policy Cleveland Clinic is a non-profit academic medical center.

Scientific American, November 1, Advertisement A competition sponsored in by Scientific American asked for essays on the 10 greatest inventions. Inventions are most salient when we can see the historical changes they cause. In we might not appreciate the work of Nikola Tesla or Thomas Edison on a daily basis, as we are accustomed to electricity in all its forms, but we are very impressed by the societal changes caused by the Internet and the World Wide Web both of which run on alternating-current electricity, by the way. A century from now they might be curious as to what all the fuss was about. The answers from thus provide a snapshot of the perceptions of the time. Scientific American - November 1, Following are excerpts from the first- and second-prize essays, along with a statistical tally of all the entries that were sent in. The first-prize essay was written by William I. Wyman, who worked in the U. Patent Office in Washington, D. The steam turbine, invented by Charles Parsons in and commercially introduced over the next 10 years. A huge improvement in powering ships, the more far-reaching use of this invention was to drive generators that produced electricity. Wyman gave the honor specifically to Gottlieb Daimler for his engine, arguing: Such success did come with the advent of the Daimler motor, and not before. Entertainment always will be important to people. Systems for transmitting information between people have been around for centuries, perhaps millennia. Telegraph signals got a speed boost in the U. Wireless telegraphy as invented by Guglielmo Marconi, later evolving into radio, set information free from wires. It appears on this list for only one reason: It is used to extract gold from ore. The Nikola Tesla induction motor. The Linotype machine enabled publishersâ€”largely newspapersâ€”to compose text and print it much faster and cheaper. It was an advance as large as the invention of the printing press itself was over the painstaking handwritten scrolls before it. The electric welding process of Elihu Thomson. In the era of mass production, the electric welding process enabled faster production and construction of better, more intricate machines for that manufacturing process. The electric welder invented by Elihu Thomson enabled the cheaper production of intricate welded machinery. Assembled in numbers, they provided an efficient means of driving electrical generators and producing that most useful commodity. Dowe, also of Washington, D. He divided his inventions into those aiding three broad sectors: Electrical fixation of atmospheric nitrogen. As natural fertilizer sources were depleted during the 19th century, artificial fertilizers enabled the further expansion of agriculture. Preservation of sugar-producing plants. McMullen of Chicago is credited with the discovery of a method for drying sugar cane and sugar beets for transport. Another success of chemistry. Henry Ford began production of the Model T in and it was quite popular by Charles Duryea made one of the earliest commercially successful petrol-driven vehicles, starting in Cars for personal transportation were an improvement on railways. Bartlet, who each had a milestone on the road pun intended to successful automobile and bicycle tires. The giant rotary press was quite capable of churning out masses of printed material. The bottleneck in the chain of production was composing the printing plates. The Linotype and the Monotype dispensed with that bottleneck. The essays sent in were compiled to come up with a master list of inventions that were considered to be the top Here are the rest of the results:

Chapter 2 : Innovation is the Best Medicine | Vivaldi

Research shows that humor and laughter can produce many great benefits, including: Increased creativity and innovation; Improved problem-solving ability; Increased productivity; Healthy physical changes (boost energy and immune system, diminish pain and stress).

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Chapter 3 : Innovations in Medicine | American Health Journal

The Top 10 Medical Innovations for were unveiled at Cleveland Clinic's 14th annual Medical Innovation Summit, held in Cleveland, October 24-26,

The healthcare industry was no exception to the rise in disruptive technology changing the way people are impacted. Read the version: Want to be featured as a top health IT company? Without a doubt the pace at which new technology is impacting our everyday lives is increasing at lightning speeds. These technologies are starting to allow healthcare practitioners to offer cheaper, faster and more efficient patient care than ever before, which is certainly a step in the right direction. The healthcare industry has long been overburdened by a slow moving innovation due to the complexity of the medical ecosystem, but due to this technology the industry has finally seen some far reaching changes. Everything from new artificial hearts to electronic aspirin, the healthcare industry is slowly but surely becoming more agile, effective and cost-effective for patients looking for care. Of the many disruptions reaching the masses this year, here are some of the biggest innovations in healthcare technology with far reaching impacts: Microchips Modeling Clinical Trials The potential to streamline, improve, and perhaps transform the current healthcare system is huge. Microchip modeling clinical trials aim to replace the use of animals in clinical trials to more accurately test the safety and efficacy of treatment for human patients and spare the lives of countless animals typically used in testing. These microchips are smaller than a human thumb, can reconstruct the complicated interface between organs and capillaries, which is similar to the idea of microfabrication, the process of making structures on a micrometer scale. By eliminating animal models in certain circumstances, scientists and doctors have been able to reconstruct organs like the human lungs by focusing on the use of complicated systems of microchips to emulate these bodily systems. Microchips more closely resemble live tissue, cell types and realistic three-dimensional interactions occurring in the human body than do other forms of clinical testing to date. Wearable Technology like Google Glass Wearable technology is still in its infancy but has already started to have widespread influence across many industries. Rafael Grossmann was the very first surgeon to use Google Glass or wearable technology in general while performing a surgery. As wearable technology continues to improve to better meet the needs of its users, healthcare providers continue to hope that its use will impact both the experience of patients and practitioners to better receive and administer care. He sees this new technology as allowing a doctor to someday interact with a patient, while simultaneously pulling up their medical history using Google Glass. The surgery performed using Google Glass could serve as an example of real-time education for medical students and other professionals alike. There are even telemedicine opportunities with Google Glass as well, allowing doctors and other medical professionals to provide clinical care in certain capacities from a distance. He argues that with the continued adoption of wearable tech like Google Glass, more lives will be saved since communication between medical professionals and patients will continue to improve to the next level. Here are seven applications of 3D printers in healthcare that could have an important impact in the future: These cells have already been successfully printed in a lab and could be one-day use to create tissue that could help test drugs and assist in the growth of new organs. There have been many advances in the areas of developing skin to help burn victims and skin disease patients, 3D printers can help further jumpstart these advances with the addition of laser-printed skin cells. Organovo is a company that has already successfully printed blood vessels and sheets of cardiac tissue that actually beat along just like a real heart. Printing cancer cells is a way of growing these cells on tissue in a lab to study, test drugs on and to eventually find a cure for. Printing cells with a 3D printer proves useful in a recent study of rats that had previously suffered heart attacks and were given these patches of cells to help slowly help improve their heart function overtime. Printing new part for organs or entire organs all together will help solve an ongoing medical need and help save hundred of thousands of people every year waiting for an organ donation to come thru. Optogenetics A new technology has jump-started the technique in neuroscience known as optogenetics where neuroscientists target a single neuron in the brain of a mouse merely by turning on a light. This is done by using a light activated gene and inserting it into the genome of a mouse to be able to easily identify when

the particular neuron is firing in the brain. Optogenetics is a hot topic amongst the medical community today, surrounded by both praise and criticism. This could have far reaching benefits with humans to help better understand the complex network of neurons that make up the brain. A stronger understanding could help humans better grasp how we create thoughts, emotions and behaviors. By controlling the activity of specific neurons, neuroscientists will begin to learn how each type of neuron contributes to the overall functions of the brain. The firing of a neuron through lighting may someday be a technique to finding the answers to some of the many open questions mankind has wondered about themselves both medically and physiologically since the dawn of time or this technique may not be able to work with humans due to its invasive nature in its current applications with rats. Time will tell as to whether this approach is effective, but nevertheless, the study of the human brain using light will help neuroscientists on the path to better understanding the neurons and how they work across this complex organ. This is a difficult task for healthcare professionals due to the complexities of the systems, technologies and operations currently in place at all healthcare facilities, hence why this industry is often the slowest moving when it comes to impactful change. A hybrid operation room is a new innovation where a traditional OR is outfitted with advanced medical technology to improve the care delivered to patients and enhances the skill-sets of medical practitioners when it comes to administering treatment. The Lakeland Regional Media Center is an example of a hybrid operating room, one of the first in its area, but definitely an indicator of more widespread changes to come to operating rooms around the country innovating on existing processes and technologies with traditional surgical procedures and treatment options. Technologies used in hybrid operating rooms have typically helped reduce trauma, scarring, spurred faster rehabilitation and has helped decrease hospital stays. Digestible Sensors Approved in , digestible sensors will continue to provide healthcare professionals with more information about the human body and how various treatment solutions affect each system of organs. A digestible sensor is a sensor that transmits information about a patient to medical professionals to help them customize the care to the individual as well as the care provided to other individuals experiencing similar health conditions or ailments. This technology would eventually allow an individual to swallow a pill provided by their doctor and skip their physical because the digestible sensors, that look like regular pills, could perform all the same functions a doctor typically handles in a standard physical and then some. An innovation of this nature could have far reaching effects for healthcare by helping detect diseases and conditions at earlier stages in people digesting these sensors that are in turn, constantly monitored wirelessly. From referrals, progress updates, and insurance authorizations; these types of communications result in huge amounts of money and time being wasted and a liability to every healthcare provider. Patients are stuck in the middle as doctors still communicate with antiquated systems ex. As many as 50 percent of referrals are not received by the specialty care provider causing patients to miss treatment and healthcare providers to lose money.

Chapter 4 : Cleveland Clinic announces top 10 medical innovations for - Modern Healthcare

Top 5 Medical Technology Innovations In the run-up to national health care reform, the best new medical technologies are designed to make more people better for less.

Innovation at Its Best: The combination of the two drugs had caused her blood pressure to plummet. This incident occurred because the hospital discharge process failed to communicate to the patient that she should stop taking her previous blood pressure medicine. While techniques and policies for medication reconciliation can vary widely from one facility to another, depending on factors such as size, staff awareness, and electronic vs. When all the medications someone is taking at home are newly inventoried, documented, and reconciled with other medication records that may be on file and any new prescription orders from an admitting physicians. Patients are not always reliable sources on their own drug regimens. Contra Costa Regional Medical Center CCRMC The bed suburban San Francisco Bay Area county hospital, where the elderly woman mistakenly took two different blood pressure prescriptions post-discharge, reduced its rate of unreconciled home medications on admission and discharge from 25 percent to 1 to 3 percent within two years. The hospital now encourages patients to carry a wallet card listing all their medications or to bring them along in a paper bag. We designed work flows so that there would be less work, not more, for everyone except the pharmacy staff. And we designed low-tech solutions that we could weave into the existing work flow. At admission, the paper medication reconciliation form also doubles as the physician order form for medications. If no box is checked, or if the hospital pharmacy receives no form for a patient, a pharmacy technician investigates the oversight. As with transfers, the clinical system used for medications produces a paper med rec form that lists all current in-hospital medications, plus the at-home list captured during admission. The physician uses both lists to compile discharge medications instructions, and the discharge nurse transcribes all the updated information onto a patient-friendly form. Our goal is percent accuracy throughout our process. A close inspection of admission forms revealed an average of 2. The changes were well received, but electronic interface with the clinic system remained elusive. Transfer and discharge forms are still paper, but hospital pharmacists review discharge medications, update the clinic records, and provide the patient with an accurate take-home list. In inpatient areas, we have steadily improved to the point where our reconciliation is now above 97 percent. As a result, 86 percent of the discharge medication lists contained one mistaken piece of information and 42 percent contained two or more. Patients, too, were informed via a public forum on medication management. To help them stay on top of their own needs, discharged patients now receive a wallet-sized card listing current meds in a durable plastic sleeve. Compliance with the new processes has grown steadily, from 41 percent in , to 88 to 96 percent in , depending on the clinical service. In , the hospital is looking at medication outcomes to improve medication safety, says Lee. Medication reconciliation should be patient centered. There must be agreement as to the elements of medication reconciliation; this is the foundation to building a reliable process. Use of standardization and simplification are a must. Engagement of staff at the front line is essential; this means those who have to do the work: Engagement of administrative and clinical leadership is critical for all else to succeed. Medication reconciliation is one part of a comprehensive plan to improve patient safety. Federico notes that some have challenged this work, insisting that collecting a medication list is difficult. Focus on doing what is right for the patient, and the rest will follow.

Chapter 5 : Consent Form | Popular Science

*Innovation is the Best Medicine: The Extraordinary Story of Datascope [Richard F. Hubbard Jeffrey L. Rodengen] on calendrierdelascience.com *FREE* shipping on qualifying offers. In modern times, angioplasty, valve replacements, and open-heart surgery have become commonplace procedures.*

A team of more than doctors and researchers assembled by the Clinic examined nearly nominations to identify and rank the top 10 innovations. The Top 10 Medical Innovations of are listed below in order of anticipated importance: Using the microbiome to prevent, diagnose and treat disease Trillions of bacteria in the body make up communities known as the microbiome. Within the last 10 years, researchers have discovered that the chemicals microbes emit can interfere with how food is digested, medicine is deployed or how a diseases progresses. Diabetes drugs that reduce cardiovascular disease and death In the past, medications have fallen far short of addressing the mortality rates for type 2 diabetes. Half will die from complications from cardiovascular disease. But new medications began dropping mortality rates this year. Empaglifozin modifies the progression of heart disease by working with the kidneys, and liraglutide has a comprehensive effect on many organs, according to the release. Cellular immunotherapy to treat leukemia and lymphomas One of the first cellular immunotherapies is about to hit the market, and early results suggest leukemia and non-Hodgkin lymphomas might be curable, even in advanced stages, according to the release. Chimeric antigen receptor CAR T-cell therapies are a form of immunotherapy in which T-cells are removed and genetically reprogrammed to find and destroy tumor cells. After attacking and killing foreign cancer cells, they often remain to minimize the risk of relapse. The treatment, results for which have been impressive, is expected to be presented to the U. Food and Drug Administration next year for treatment for acute lymphoblastic leukemia. Several companies are developing testing kits expected to hit the market this year. Liquid biopsies are being hailed as a flagship technology of the Cancer Moonshot Initiative, a national effort to end cancer. Automated car safety features and driverless capabilities New automatic safety features could make a dent in dangerous car accidents, which remain a leading cause of death and disability as well as a major expense. The automated features include collision warning systems, drowsiness alerts and adaptive cruise control. More are likely coming. Though legal and safety questions remain, major investments into driverless cars are being made by software, private transportation and auto manufacturing companies. Experts predict that is the year to make sense of this tangled web. The first release will focus on clinical data while the second will look at administrative data, with the potential to end a lot of frustration. Alternatives include intensive treatment options, such as electroconvulsive therapy. The FDA gave some, like esketamine, breakthrough status, enhancing the potential for these drugs to be available to patients in Using data, stereoscopic systems create visual templates. Augmented reality glasses that display holographic images of human anatomy could bring the end of cadaver labs at medical schools. Along the same lines, software companies are building augmented reality glasses that display holographic images of human anatomy. Medical schools see the end of cadaver labs. The most common malignancy is in women 35 years and younger. HPV prevention and treatment, which have made great strides, are restricted to women who have access to tests and vaccines. An approach to expand that care will launch in with self-administered HPV test kits developed by scientists with the idea that women can mail samples to a lab and be alerted to dangerous HPV strains. Bioabsorbable stents In July, the first bioabsorbable stent was approved in the U. The stent, made of a naturally dissolving polymer, widens clogged arteries for two years before being absorbed much like dissolvable sutures, leaving behind a healthy natural artery. Annually , people are treated for coronary artery blockage with metal coronary stents, which stay in their chests permanently most of the time. These stents may inhibit natural blood flow or cause other complications.

Chapter 6 : Medical Advancements: Who Is Leading the World? | HuffPost

We exhibited Knowledge+ at the Association of Program Directors in Internal Medicine and the American College of Physicians meeting. The response was overwhelmingly positive both from individual physicians and residency program directors.

Let me show you the most promising new gadgets, sensors and wearables in medicine! It is even more exciting this year, since the exhibition celebrates its 50th anniversary – so it is obviously bigger and better than ever before. Here are the two most important. So smart objects and apps do not only gather information about the users or the environment for the sake of data, but in order to ultimately achieve a better life. Looking through the latest technologies presented at CES – I have to emphasize that not every product was introduced at the tech gathering, but they certainly get here the most attention -, I believe real innovation is missing. Instead of impacting, long-lasting, real innovation, tech companies are mostly upgrading their already existing products. Which is also quite exciting and requires a lot of work, it just indicates more of a gradual than a disruptive process. However, no matter how the big picture looks like, there are still truly inspiring and forward-looking innovations out there with great potential for medicine and healthcare. Here, let me show you the best health technologies to find at CES ! It is actually a very dangerous health condition. It means that breathing stops periodically during sleeping. Apnoea might generate hypertension, heart disease, brain attacks, diabetes or somnolence. Neogia offers a smart solution for recognizing the problem and normalizing sleep. Its wearable, MOTIO HW detects sleep apnoea and improves sleeping quality via a personalized artificial intelligence that learns about the user. There are always some movements, plush animals or bodily fluids involved. Now, the struggle is over. It continuously senses, records, and sends temperature data to mobile devices so caregivers can keep track without unnecessarily disturbing the child. It is amazing due to its double effect: It was first introduced at CES , and the first batch of these smart and tiny chest straps will be shipped to their lucky users as early as April What if reaching 10 thousand steps a day is actually great for your annoying co-worker, Nathan, but bad for your health? Every single person has a different body in need of a personalized fitness plan and health solution. And Mio Slice wants to take that into account. At first sight, it looks and acts like a fitness tracker. It measures steps, calories burned, distance, all day heart rate and sleep. It can reform the market of fitness trackers! Aira is eager to help everyone who has problems with vision. It would be a bit easier crossing a busy street, shopping for dinner or finding the light switch. You could even help the company by becoming their agent! Is the little one healthy? Am I doing okay? Is my wife or girlfriend doing okay? Bloomlife wants to help every concerned parent-to-be out there. It sends the information to your smart phone and lets you read and interpret the data. This way, you can make a difference between false alarms such as Braxton Hicks contractions and the real thing. Also, one of the most awesome idea of the start-up is that you do not need to buy the wearable. Since it is useful for you only for a limited time, the company is leasing the product instead of selling it. It combines a Bluetooth sensor, a smartphone app and some soothing panpipe melodies. The wearable around your waist analyses your breathing patterns, and then your phone gives out guidance in the form of smooth, lilting melodic tones to prolong exhalation and reduce brain activity, thus making you sleepy. And believe me, you do not have to count sheep anymore before falling into a sweet dream. For a long time, companies and start-ups are experimenting with the idea of stuffing all their features into a tiny ring. Now, I believe Motiv succeeded. Its ring acts like a fitness tracker – with step counter, heart rate monitor or sleep tracker. It also withstands the elements – so you can wear it during swimming as well as on the North Pole. The ring is elegant, stylish and tasteful. Your facial skin is one of the best indicator of your health due to its sensitivity. It responds to your mood, stress level and changes in the environment. Thus, it needs your peculiar attention. S-Skin wants to help you achieving it. It measures biometric information from your ear. It is not well-known that the ear is actually a great spot for measurement, but I believe when the hype around the wrist will calm down, start-ups and tech companies will find the ear irresistible for their innovations. Although by that time, Bodytrak will be way before them. Its device measures body temperature, heart rate, VO2, speed, distance and cadence – continuously – and all in real-time. Moreover, since it fits

nicely into your ear, you can listen to music and make telephone calls as well. What a win-win situation! And what about the flops? The smart hairbrush is here eagerly claiming its place in the universe of smart devices. It is able to tell you whether you are brushing your hair too hard causing irreparable hair damage. What an indispensable piece of information! Yes, you read it correctly. ReNu apparently offers a stress management kit with all kinds of stuff in it. At first, you are supposed to use some sort of supplements in the form of a cream or chewable nutrients??? These patches are apparently going to absorb the nutrients then. Which sends calming vibes to your brain. News shaping the future of healthcare Advice on taking charge of your health Reviews of the latest health technology News shaping the future of healthcare Advice on taking charge of your health Reviews of the latest health technology The Medical Futurist Webicina Kft.

Chapter 7 : BEST Medicine : The University of Akron

The Cleveland Clinic announced its list of the top 10 medical innovations that have the potential to transform healthcare in The 11th annual list was announced Wednesday during the Cleveland.

Medicine in the Future – Part I The Medical Futurist 14 July As there are so many amazing things going on worldwide in medicine and healthcare, a shortlist of some of the greatest ideas and developments would give us a glimpse into the future of medicine. It is always a challenge to detect the projects with the biggest potential to be used in everyday medical practices, but here are the most promising candidates for fulfilling this notion. While the prototype is going through vigorous testing, regulations must prepare to quickly allow this disruptive technology to enter the market and benefit patients. Microsoft HoloLens can also change medical education and how we look at the world by projecting digital information onto what we are seeing. A clinic in Germany started experimenting with an application using augmented reality on iPads in the OR. During operations, surgeons can see through anatomical structures such as blood vessels in the liver without opening organs therefore they can perform more precise excisions. It means we could upload our minds to a computer and live on in a digital form. As Google hired Ray Kurzweil to create the ultimate artificial intelligence controlled brain, this opportunity should not be so far away. We might have been looking for the secret of immortality in the wrong places. Advances in future medical technology will not just repair physical disadvantages such as impaired eyesight but will create superhuman powers from having the eyesight of an eagle to having the hearing of a bat. While a patient wearing implanted defibrillators or pacemakers can also be added to the group of cyborgs, I expect to see more cases when patients ask for the implantation of a certain device without having medical problems. It will destroy and re-design the whole pharmaceutical world, but regulation will be a huge challenge as anyone will be able to print any kind of drugs that contain patented molecules at home. There are already examples of 3D printing used in medicine. Success stories come from all over the world: Several start-ups have targeted this issue with different solutions such as a pill bottle that glows blue when a medication dose should be taken and red when a dose is missed winner of the Healthcare Innovation World Cup ; or tiny digestible sensors that can be placed in pills and can transmit pill digestion data to physicians and family members. While patients do not like the term adherence as they want to be partners with their caregivers rather than following orders, health insurance companies will use more and more data to check whether the patients comply with their prescriptions to decrease their insurance costs. The wildly popular Pokemon Go motivates people to walk more which might lead to fighting obesity while playing a game. New types of diseases will appear due to the excessive use of virtual reality solutions in gaming and other industries including healthcare. Examples include virtual post-traumatic stress disorder v-PTSD which might be the diagnosis for gamers who participate in large virtual battles wearing VR masks such as Call of Duty of Battlefield and experience similar symptoms as those soldiers who fought in real wars. Virtual reality as an extension of online activity and particularly that of gaming might also cause addiction. Expect to see ICD codes assigned to such new conditions. With the iKnife, the vaporized smoke is analyzed by a mass spectrometer to detect the chemicals in the biological sample. This means it can identify whether the tissue is malignant real-time. Surgeons will love this surgical Jedi knife which can significantly reduce the length of operations. Holographic and virtual keyboards will make us forget about smartphones and tablets. Only small projectors will be needed, while the data will be stored exclusively in the cloud. One multi-functional machine will be able to detect plenty of medical problems, biomarkers and symptoms at once. Naturally, artists and movies are already way ahead of us: With one quick check-up it tells you what percentage of your cells are cancer free.

Chapter 8 : Innovation: Medical Scribes in Australian Emergency Departments - The Best of Emergency M

A Special minute Public Television Program. "Innovations in Medicine" is a minute Special that will air on PBS stations. Currently the show is being broadcast on the PBS NETA satellite and airs in over 44 million households to over million viewers (see national TRAC report).

Hide Caption 1 of 11 Photos: Scientists are now working on the Human Microbiome Project in hopes of better understanding the complex bacterial systems that live in and on our bodies. Hide Caption 2 of 11 Photos: As such, researchers say they have enormous potential for curing diseases and repairing damaged tissues. In , scientists showed that adult cells -- including skin cells -- can be "turned back" into stem cells, which are called induced pluripotent stem cells. Scientists have also cloned human stem cells and have made promising developments in stem cell therapies for heart repair and eye disease. Hide Caption 3 of 11 Photos: Atripla changed that by combining three antiretroviral drugs into one daily "cocktail" pill. The FDA approved Atripla in . In , Gilead Sciences received approval to sell its Stribild pill , which combines four HIV medications into one dose. Hide Caption 4 of 11 Photos: These therapies are much more direct than treatments like chemotherapy or radiation, which also attack healthy cells. Targeted therapies have been the focus of cancer research over the last decade; more than 25 drugs have been approved by the FDA. Hide Caption 5 of 11 Photos: Patients who undergo laparoscopic procedures generally endure less pain, smaller scars and a shorter recovery time. Up next for surgeons? An increase in natural orifice procedures, where surgeries are performed through an opening like your mouth or anus. Hide Caption 6 of 11 Photos: By that number had topped . There are now 28 states that ban smoking in these indoor areas, although some exclude casinos, private clubs and tobacconists. Hide Caption 7 of 11 Photos: The vaccine is delivered in three injections over six months and protects against four HPV strains that can trigger cervical cancer and genital warts. However, research shows only half of girls ages 13 through 17 received at least one dose of the vaccine in . Hide Caption 8 of 11 Photos: The first full-face transplant done in the United States was performed on Connie Culp , seen here, in . Hide Caption 9 of 11 Photos: But in , the FDA approved Seasonale, a new kind of birth control that enabled women to have full periods only four times a year. With these drugs on the market, women now have more choices when it comes to when -- or if -- they have a monthly cycle. Hide Caption 10 of 11 Photos: This month, she showed off her new bionic hands , which can be positioned using an iPad app. Amputees are living life to the fullest, thanks to advances in prosthetics. From computer chips that sync joints , to Bluetooth devices that coordinate movement, to 3-D computer models that customize socket designs, new technology has helped these limbs feel as real as possible.

Chapter 9 : Innovation at Its Best: Medication Reconciliation

The 11 winning companies with the BEST new sports medicine technologies for are: AlloSource, Arch Day Design (Smith & Nephew), CyMedica Orthopedics, Lipogems, Micro-Imaging Solutions, Orthopedic Sciences, Å–ssur, Stryker, Topical Gear, VICIS, Vomaris Innovations and ZipLine Medical.