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Nota di contenuto	1. Meet your stem cells. What are stem cells? What do stem cells do? A stem cell fountain of youth? The cancer connection. Stem cell therapies. Stem cell veterinary medicine: helping our pets and animals too. Getting schooled in stem cells. Recommended stem cell resources. Summary -- 2. The types of stem cells and their clinical potential. What stem cell treatments promise. The four main kinds of stem cells for treatments. Summary -- 3. Stem cell treatments: applications and obstacles. The key ways stem cells can be used as medicines. Powerful applications for iPS cells: disease modeling and drug discovery. Stem cells may greatly reduce the need for animal research via modeling. Lessons from bone marrow transplants. Cautionary lessons from gene therapy for the stem cell field. Four key biological roadblocks to stem cell treatments. Cell fusion and confusion of cell identity. Bias. Building rather than burning stem cell bridges. What really happens to transplanted stem cells: more challenges. Stem cell capsule. Summary -- 4. Stem cell models: past, present, and future. The discovery of stem cells. Models of stem cells based on function. A new global symbol for stem cells for the future. Not lost in translation: a global model of stem cells for the future. The cultural language of stem cells -- 5. All in the

family: an insider's tale of two stem cells and a black sheep. Starting the tour: a backstage pass to a stem cell lab. An insider's tour of a prototypic stem cell. A day in the cellular life of an endogenous stem cell. My pet stem cell: the very different cellular life in a lab. What could go wrong in the lab? The black sheep of the family: cancer stem cells. Summary -- 6. Aging: the stem cell connection. Stem cell banking: another way to battle aging? Summary -- 7. Law and order stem cells. US laws and regulations on stem cell procedures. Are stem cells a drug? Balancing innovation with safety. Compliant, but scientifically and medically questionable use of 361 stem cell therapies. FDA regulation of stem cell claims. Human subjects research and IRBs. Stem cell clinical trials process. Suggestions for an improved FDA of the future. Expanding stem cell compassionate use: proceed, but with caution. Summary.

8. Stem cells for profit: an ethical spectrum. Having our innovation and ethics too. The non-compliant, for-profit stem cell world. An overview of ethical landmines in stem cell commercialization. Lack of physician training. Stem cell tourism. Stem cells go global. Call it anything but research: avoiding regulation. Potentially divided loyalties: profits versus patients. Lack of proper informed consent. Self-experimentation. Recruiter-patients. Another clinic trick: fake patients as recruiters. Ethical challenges in stem cell social media. Strategic lawsuits against public participation (SLAPP). The stem cell black market. Non-compliant predictions. A deregulated stem cell future? Summary -- 9. Patient bill of rights and guide to stem cell treatments. Advocacy. Stem Cell Patient's Bill of Rights. An insider's guide to stem cell procedures. Summary -- 10. Are we there yet? How stem cells might work to treat specific diseases. Alzheimer's disease (AD). Amyotrophic lateral sclerosis (ALS). Arthritis. Autism. Cancer. Chronic obstructive pulmonary disease (COPD). HIV/AIDS. Huntington's disease. Multiple sclerosis. Parkinson's disease (PD). Spinal cord injury (SCI). Summary -- 11. Stem cell cosmetics: more than skin deep? An emerging billion dollar industry. How are stem cells isolated from fat? Summary -- 12. Stem cell tests for humanity. Embryonic stem cells: when does a human life begin and who decides? When do cells become people and a human being's life begins? Emerging ethical debates in the stem cell field. IVF: "cure" for infertility, but also gateway technology for questionable practices? Creating more genetically modified humans to potentially treat mitochondrial diseases: is it worth the risk? Human cloning and its technology. Somatic cell nuclear transfer (SCNT). How iPS cell-based human cloning could work. Phony clone. The ethical complexities of human egg procurement. Summary -- 13. Getting your stem cell geek on. Cool stem cell ideas. Myths and urban legends. Secrets. Stem cell paradoxes. Summary -- 14. Conclusion: the future of stem cells.

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## Sommario/riassunto

Stem Cells: An Insider's Guide is an exciting new book that takes readers inside the world of stem cells guided by international stem cell expert, Dr. Paul Knoepfler. Stem cells are catalyzing a revolution in medicine. The book also tackles the exciting and hotly debated area of stem cell treatments that are capturing the public's imagination. In the future they may also transform how we age and reproduce. However, there are serious risks and ethical challenges, too. The author's goal with this insider's guide is to give readers the information needed to distinguish between the ubiquitous hype and legitimate hope found throughout the stem cell world. The book answers the most common questions that people have about stem cells. Can stem cells help my family with a serious medical problem such as Alzheimer's, multiple sclerosis, or autism? Are such treatments safe? Can stem cells make me

look younger or even literally stay physically young? These questions and many more are answered here. A number of ethical issues related to stem cells that spark debates are discussed, including risky treatments, cloning and embryonic stem cells. The author breaks new ground in a number of ways such as by suggesting reforms to the FDA, providing a new theory of aging based on stem cells, and including a revolutionary Stem Cell Patient Bill of Rights. More generally, the book is your guide to where the stem cell field will be in the near future as well as a thoughtful perspective on how stem cell therapies will ultimately change your life and our world.

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