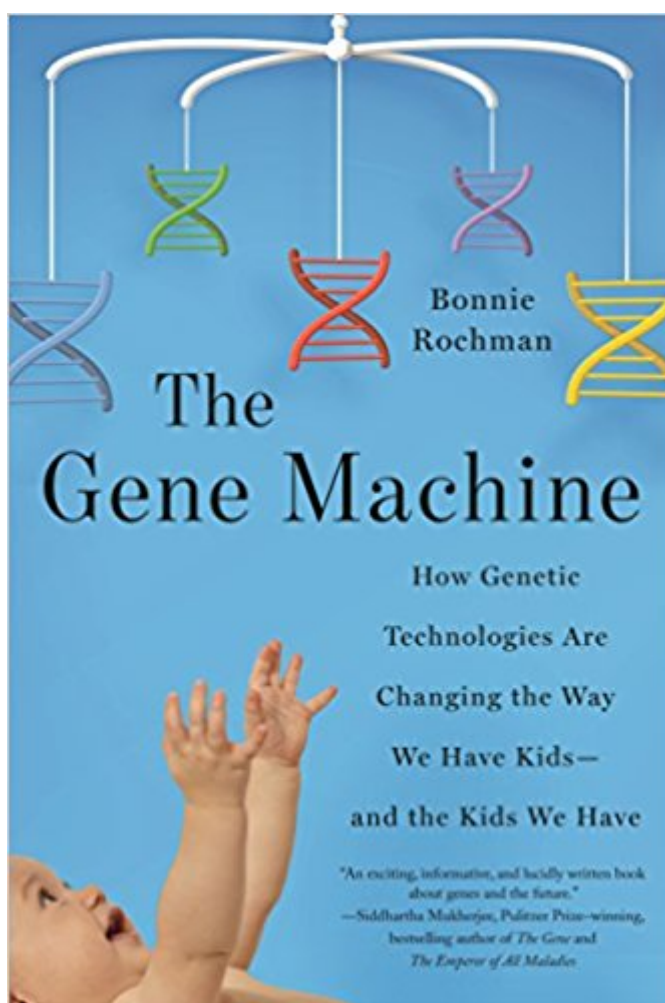


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# The Gene Machine: How Genetic Technologies Are Changing The Way We Have Kids--and The Kids We Have



## Synopsis

A sharp-eyed exploration of the promise and peril of having children in an age of genetic tests and interventions: Is screening for disease in an embryo a humane form of family planning or a slippery slope toward eugenics? Should doctors tell you that your infant daughter is genetically predisposed to breast cancer? If tests revealed that your toddler has a genetic mutation whose significance isn't clear, would you want to know? In *The Gene Machine*, the award-winning journalist Bonnie Rochman deftly explores these hot-button questions, guiding us through the new frontier of gene technology and how it is transforming medicine, bioethics, health care, and the factors that shape a family. Rochman tells the stories of scientists working to unlock the secrets of the human genome; genetic counselors and spiritual advisers guiding mothers and fathers through life-changing choices; and, of course, parents (including Rochman herself) grappling with revelations that are sometimes joyous, sometimes heartbreaking, but always profound. She navigates the dizzying and constantly expanding array of prenatal and postnatal tests, from carrier screening to genome sequencing, while considering how access to more tests is altering perceptions of disability and changing the conversation about what sort of life is worth living and who draws the line. Along the way, she highlights the most urgent ethical quandary: Is this technology a triumph of modern medicine or a Pandora's box of possibilities? Propelled by human narratives and meticulously reported, *The Gene Machine* is both a scientific road map and a meditation on our power to shape the future. It is a book that gets to the very core of what it means to be human.

## Book Information

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## Customer Reviews

A Publishers Weekly Pick for Book of the Week One of 15 Books That Will Nurture Your Nerdier Side in 2017, New York magazine "Thoughtful [and] engaging . . . Rochman explores the impact and uncertainty that information relating to an individual's genetic material may have on his or her life and family . . . Despite the various pitfalls, Ms. Rochman concludes that 'knowing your genes' is more beneficial than not." [Adrian Woolfson, The Wall Street Journal](#) "The Gene Machine shows how genetic testing is changing the lives of prospective parents and explores the dilemmas many people now face . . . Rochman navigates these difficult waters with skill and compassion, drawing on conversations with families and physicians and setting out the ethical challenges and the range of solutions adopted by different people, without being preachy or moralistic." [Matthew Cobb, The New York Review of Books](#) "An exciting, informative, and lucidly written book about genes and the future." [Siddhartha Mukherjee, Pulitzer Prize-winning, bestselling author of The Gene and The Emperor of All Maladies](#) "Knowledge is power, and it's especially empowering when you're pregnant. But with genetic technology, mining an overwhelming amount of information from the moment of conception (and before!) on, how do parents sort through what they need to know, what might be nice to know, and what they might be better off not knowing about the baby they've created or will create? What screens and tests should they opt for and what is this about sequencing? The Gene Machine provides parents with a clear-eyed explanation of the promise and pitfalls of ever-evolving genetic technologies so that they can make clear-eyed decisions about the unprecedented choices they'll be facing on their baby-making journey." [Heidi Murkoff, bestselling author of the What to Expect When You're Expecting series](#) "[Rochman] delves into discussions well along among geneticists, physicians and other scientists about the benefits, pitfalls and dangers of these genetic advances. For the nonscientist who wants to catch up and join in, the book is an excellent starting point . . . The Gene Machine is well researched and written as a helpful guide on the choices potential parents may be called upon to make. It can also help guide society out of the ethical thickets planted by this advancing science." [John B. Saul, The Seattle Times](#) "As a health journalist and a mother, [Rochman is] a thoughtful guide. She doesn't offer easy answers, but she gives voice to scientists, doctors, ethicists, and parents grappling with these questions so that we can better understand them." [Alice Callahan, The Washington](#)

Post"Bonnie Rochman beautifully weaves real-life scenarios and expert interviews with scientific data and historical context." *—Olivia Campbell, Vice*"Careful, judicious weighing of the pros and cons of genetic tech." *—Navneet Alang, The Globe and Mail*"The Gene Machine expertly unravels this brave new world of family engineering, from both scientific and human perspectives." *—Jon Foro, Omnivoracious*"Calm, thorough, and nonsensationalist . . . Rochman's thoughtful take highlights important issues for parenting in an increasingly high-information world." *—Publishers Weekly (starred review)*"Knowledge can be power, but as Rochman rightly points out, sometimes the ability to know doesn't mean one should know. Solid research into dilemmas regarding screening and how it is used for fetuses and newborns." *—Kirkus Reviews*"Rochman provides important, reader-friendly information about a complex and timely topic." *—Donna Chavez, Booklist*"The author delves into an intriguing and intimate topic with sensitivity and compassion . . . For anyone who has or will have children as well as those with an interest in genetics and popular science." *—Tina Chan, Library Journal*"Rochman's research is clear, and it's impressive how carefully she's included all viewpoints on each issue, revealing the complexity within each question and each answer." *—Leah Rachel von Essen, While Reading and Walking*"A mind-bending exploration of what makes us human, *The Gene Machine* will make you reconsider the meaning and mechanisms of parenthood." *—Kelley Benham French, coauthor of Juniper: The Girl Who Was Born Too Soon*"Strikes a great balance between describing the science and technology behind genetic advances, and translating those into real patient stories and experiences. It's a fascinating read." *—Mary E. Norton, M.D., professor of obstetrics, gynecology, and reproductive sciences at the University of California, San Francisco*"Bonnie Rochman's *The Gene Machine* is as profoundly important and timely as it is readable and relatable. Through deeply human stories, Rochman unpacks the complicated science of genetics and how it has changed the ways we build and understand our families in the modern world. In short, this is genetics with a human face." *—Emily Rapp Black, New York Times bestselling author of The Still Point of the Turning World*"Bonnie Rochman has taken a subject that every parent worries about but few understand, and made it accessible, urgent, and humane. *The Gene Machine* is like a guidebook to the future. It will be invaluable for many families." *—Bruce Feiler, New York Times bestselling author of The Secrets of Happy Families*"Bonnie Rochman dives into the turbulent waters of genetic testing and emerges with *The Gene Machine*, a smart and compassionate account of this ever-advancing science. Her curiosity and compelling narrative will challenge you to consider all the 'what-ifs' of the future of gene sequencing. Go on this journey with her. Take the plunge. You'll come away

enthralled and informed." ~~~~~Randi Hutter Epstein, M.D., M.P.H., author of *Get Me Out: A History of Childbirth from the Garden of Eden to the Sperm Bank* "How much do you really want to know about the future health of your children or yourself? In *The Gene Machine*, Bonnie Rochman provides us with a beautifully written, thoughtful examination of this complex issue. It is a must-read for anyone grappling with the brave new world of genetic possibilities." ~~~~~Richard L. Berkowitz, M.D., professor of obstetrics and gynecology at Columbia University "The Gene Machine is a great read. Bonnie Rochman negotiates the pros and cons of genetic technologies and humanizes scientific endeavors by venturing into the hearts and homes of families facing tough choices caused by the hardship of inherited disease." ~~~~~Dr. James Grifo, director of the New York University Langone Fertility Center "Real issues confronted by real people, with real implications for their decisions: Bonnie Rochman tells their stories and clearly and compellingly examines the issues they confront." ~~~~~Jeffrey Kahn, Ph.D., M.P.H., Andreas C. Dracopoulos Director of the Johns Hopkins Berman Institute of Bioethics "A vivid introduction to the new world of pre- and postnatal genetic testing: a guidebook for the person who wants a deeper understanding of all the amazing things this technology can do, and why you still might want to think twice." ~~~~~Laura Hercher, director of student research at the Joan H. Marks Graduate Program in Human Genetics, Sarah Lawrence College

Bonnie Rochman is an award-winning journalist. A former health and parenting columnist for Time.com and staff writer for Time magazine, she has written for The New York Times Magazine, The Wall Street Journal, MIT Technology Review, Scientific American, and O, The Oprah Magazine. She lives in Seattle with her husband and three children.

As a child and family psychotherapist, I am always on the hunt for informative and timely books for clients. I am quite selective with recommended reading. Recommendations are not only a reflection of my work but also time consuming for already very busy and often stressed parents. After both reading "The Gene Machine" and having the good fortune to see Ms. Bonnie Rochman speak at Town Hall, Seattle, I immediately placed her book in my waiting room. Rochman is sharp, enlightening, and contemporary. She is both insightful and knowledgeable (with her experience as both a mother and writer/journalist), in approaching an often controversial topic -- having children in an era of modern medicine and genetic testing. Rochman spoke to many topics that are essential to explore and often are not broached. Rochman focuses on navigating the complexities of genetic screening, when to screen and when one might reconsider. 5 stars!

Thoroughly enjoyed this book. The author does an excellent job of exploring the progress and possibilities for genomics, specifically as it relates to influencing how we create families. Clearly the potential for genome sequencing to dramatically change and improve our lives is materializing - but this will of course present many questions as to what the best way to approach this opportunity may be, as individuals, scientists, and society as a whole. Bonnie does an excellent job laying out the information from all sides, leaving the reader to refine their own perspective on important topics in how we approach genomics. Ultimately this book left me very excited for the potential of genomic sequencing to help us raise better, happier and healthier families.

I like the fact that this book presents thought provoking topics that make the reader think about the complexities of the world we are entering and doesn't resort to easy answers. Really interesting and making me rethink my philosophy!

The Gene Machine is an important book to read. It is both thoughtful and provocative. Bonnie Rochman makes this complicated subject accessible and personal to the reader. I appreciate the countless interviews and research that this author did. It is extremely informative and objective without being moralistic or judgmental. I am more optimistic about the potential of genomic sequencing.

The Gene Machine is a well written book that clearly explains the nuances of genetics and introduces readers to the resultant dilemmas many parents in this era face. 10/10 would recommend.

Very informative

If you knew your baby would be genetically impaired, would you have an abortion? Bonnie Rochman discusses the tests now available and the impact that people's choices will have on society in The Gene Machine. When she offered me the chance to review this book, I asked if it were for scientists or lay people. The truth is that it's a well written, well researched narrative that can be read and understood by clinicians, scientists, parents, potential parents, students, and anyone with an interest in biology and ethics. We live in a complex world of options. How much information do you need? How much do you want? And how much will test

results inform your decisions? No one knows until she faces the situation, of course, but Rochman, a skilled journalist, presents all sides without judgment, trusting her readers to make informed choices. She is a scientist who does her homework. This is an excellent book for educated, interested readers. Some will take notes. Others may bleep right over the technical terms. Every reader will have lots to think about. Talent

Rochman is a journalist who knows how to captivate her readers. Genetic technology, can be a very dry subject especially when a book is merely citing the advances made in the past decade or so. Written in that fashion, the book might not require more than a hundred pages even though the advances have been tremendous. Indeed, the criticism of this book may be the opposite

ÃfÂçÃ â ÑÃ â œ Rochman weaves many long stories into her book. One of them is the story of Cara Greene, the baby with a rare autoimmune condition due to her genetic make-up. She was initially diagnosed as having cancer and was about to have chemotherapy ÃfÂçÃ â ÑÃ â œ which would have been pointless ÃfÂçÃ â ÑÃ â œ and her parents were persuaded to have her genome sequenced and eventually the problem was identified that way. She was cured, not with chemotherapy, but with a strong dose of riboflavin ÃfÂçÃ â ÑÃ â œ a vitamin. This book begins with a discussion about DNA, our ÃfÂçÃ â ÑÃ Æœbuilding block of lifeÃfÂçÃ â ÑÃ â„ç, and the four letters in the DNAÃfÂçÃ â ÑÃ â„çs alphabet ÃfÂçÃ â ÑÃ â œ A, T, C, and G. It describes how genetic disorders arise, and how they can now be detected. This leads to the question of how identification of genetic disorders can lead to mighty difficult questions such as abortion and litigation in the ÃfÂçÃ â ÑÃ Æœwrongful birthÃfÂçÃ â ÑÃ â„ç cases where parents have to ÃfÂçÃ â ÑÃ Æœgo on record as saying they would have aborted their child had the doctor told them there was a problemÃfÂçÃ â ÑÃ â„ç. Rochman recognises that that is a tall moral order. Some may be castigated for claiming they ÃfÂçÃ â ÑÃ ÆœloveÃfÂçÃ â ÑÃ â„ç their child and ÃfÂçÃ â ÑÃ Æœat the same time claim that they also wish that they had aborted them?ÃfÂçÃ â ÑÃ â„ç As a blogger quoted by Rochman says, ÃfÂçÃ â ÑÃ ÆœThey just had the perfect family until their little girl had the audacity to be born with an extra chromosome, and now, they have to be paid off in order to deal with the problem of raising herÃfÂçÃ â ÑÃ â„ç. Treatment can involve the silencing of a gene, or repairing a genetic fault using new techniques in genetic technology (CRISPR). Ongoing research on how to mitigate the symptoms of Down syndrome will have a profound effect on many parents who have such babies. The question of testing for Down syndrome and abortion is dealt with in detail in the chapter entitled ÃfÂçÃ â ÑÃ ÆœPlaying GodÃfÂçÃ â ÑÃ â„ç. It is a difficult issue but Rochman deals with it,

setting the positions of pro-choice and pro-life. More is to come, and Rochman closes by saying, "In truth, although technologies now exist that our parents couldn't have envisioned, the goal of most mothers and fathers remain the same: a healthy baby. Technology is just a means to an end, a way to make and keep children healthy."

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