

The Top Ten Medical Advances of the Decade

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ABC News convened a panel of 800 medical specialists and historians to determine the top medical advances of this first decade of the 21st century. Here are their findings and why they are so important:

- The mapping of the human genome has allowed scientists to find cancer genes, degenerative disease genes, and specific changes in the genetic code that cause drug sensitivity.
- Information technology: 20 billion dollars is being spent to convert paper medical records into digital electronic records. This will save lives by making patient information available to health care providers everywhere. It is protected by HIPAA federal laws that provide security for this sensitive data.
- Anti-smoking laws in 27 states and D.C. have now been proven to prevent heart, lung and other diseases in those states and saved countless lives. It all started with the Surgeon General 's report in 1964. The discovery that second hand smoke can cause disease is now well understood.
- Heart disease deaths have decreased by 40% over the last 10 years, mainly due to fast diagnosis and transport to cardiac centers where clots are dissolved and stents placed. Prevention of heart disease is now possible with diet and exercise, lipid lowering drugs, and blood pressure control medications.
- Stem cell research provides new approaches to treating diseases. Someday hearts will be repaired with muscle stem cells and genetic and degenerative diseases will be cured this way.
- Cancer treatment has been improved with the discovery of Herceptin that targets breast cancer cells and prevents recurrence; Gleevec targets cancer cell genes preventing their growth.
- Combination drug therapy called HAART for HIV now prevents vertical transmission of the virus. It also extends the life span of infected patients turning AIDS into a chronic, treatable disease.
- Minimally invasive surgery allows for shorter and less painful recovery time. Robotic surgery enables surgeons to make smaller incisions and improves the accuracy of procedures.
- Reduction of the use of hormone replacement therapy when a very large study showed that it increased heart disease and breast cancer in post-menopausal women. However, HRT still has a place in the reduction of risk of colorectal cancer, fractures, and treatment of menopause symptoms.
- Functional MRI allows scientists to study mind function and thought processes in action. It is proving to be a valuable tool to study depression, brain cancer, autism, and memory disorders.