

# FACTS about HEART DISEASE

## Biotechnology is Providing Promising New Treatments for Cardiovascular Disease

**None of our cells and tissues** can function without the adequate oxygen and blood supply the heart provides. If there are any problems with the heart, the rest of the body suffers. It is the vital sign we check as an indicator of good health.

- **Two million Californians** live with some form of cardiovascular disease, including congenital heart disease, coronary heart disease and high blood pressure. Heart disease is the number one killer in California, and the leading cause of mortality in the nation. Heart disease does not discriminate, killing men and women—young and old.
- **There are many factors** that can increase the risk of cardiovascular disease, including genetics, obesity, tobacco use, physical inactivity, high blood pressure and cholesterol, and diabetes. Biotechnology is being applied in a variety of ways to combat this deadly disease.



## California's Biotechnology Companies are Committed to Preventing Heart Disease

California's biotechnology companies are constantly researching techniques to treat cardiovascular disease, correct genetic defects, moderate heart disease progression and even cure heart disease. A prime example of a breakthrough treatment is biotech's introduction of clot-buster drugs, or **thrombolytics**, which revolutionized the treatment of a heart attack. **Thrombolytics** work by dissolving a clot that blocks a coronary artery and restoring blood flow to the heart. Hundreds of other therapies have been discovered and mass produced that detect heart disease, lower cholesterol, treat hypertension, stabilize heart rhythms and lessen the damage of a heart attack.

Thanks in large part to the new drug treatments developed by biotech companies, death rates from heart disease are falling. More than 30 California biotechnology companies have more than 50 potential new treatments in development to help fight heart disease. These new medicines promise to continue the already extraordinary progress against heart disease and raise the quality of life for patients suffering from this potentially life-threatening disease.





**Louis Rottenberg, M.D.  
(retired), Palm Springs, California**

*After experiencing shortness of breath, Dr. Rottenberg went for an echocardiogram which found that he had aortic valvular stenosis, an advanced cardiovascular disease. A few months later, he had his first heart attack, and a local cardiac surgeon told him that he should have his aortic valve replaced. However, at 94 years old, his surgeon did not want to perform the high-risk surgery.*

*Dr. Rottenberg's activity was very limited by his aortic valvular stenosis, and he could not do many of the things he loved to do such as play golf. It was very discouraging for him to live under these conditions and he said, "I had really nothing more to look forward to except keeping my wife company." Living in his poor condition with severely restricted activity was unacceptable for Dr. Rottenberg, so he contacted another doctor who suggested that he might be a good candidate to participate in a clinical trial of the Edwards SAPIEN Transcatheter Heart Valve from Edwards Lifesciences.*

*The Edwards SAPIEN Transcatheter Heart Valve is used to replace a failing native aortic heart valve by a procedure performed through the femoral artery in the leg rather than traditional, invasive open-heart surgery. This procedure is done on a "beating heart" without cardiopulmonary bypass, and has the potential to shorten recovery times. It provides a treatment option for patients considered to be high-risk or non-operable for open-heart surgery.*

*The valve was implanted successfully and Dr. Rottenberg was discharged just three days later. Within a few weeks after his heart valve replacement, Dr. Rottenberg was able to play several holes of golf without any shortness of breath. He says, "[My wife and I] look forward to having a good life together. We have a lot of plans and things we want to do."*

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