The Medical Challenges of the 21st Century

The most up-to-date diagnostic approaches and treatments are used today in the research and cure of diseases that affect a growing number of people. Basic research with super-fast computers and high-resolution tomographs provide new insights into the emergence of these illnesses. New medicines with improved performance and fewer side effects are taking over the market; new methods of treatment, equipment and appliances are making life easier for patients. The three-part documentary *The Medical Challenges of the 21st Century* assesses current progress in medical research and focuses specifically on these common diseases. The film observes patients coping with their illnesses on a daily basis: people suffering from cardiovascular disease, diabetes and dementia. They all have one thing in common – the unshakeable will to live an unrestricted life without pain, and faith in medical progress.

01  The Heart – Hope for the Human Motor
Of those suffering from cardiovascular disease, the number of people with heart insufficiency is steadily rising, and this looks set to become a dominant issue in cardiology in the 21st century. What does the future have in store for the heart, the most important organ in the human body? What are researchers and pharmaceutical concerns working on? What kind of treatment can heart patients expect to receive in five or 10 years’ time? Donor hearts are rare. Among other things, the documentary shows the operative implantation of a newly developed bypass system from the US, and highlights perhaps the most important innovation to come out of Germany in recent times, a largely autonomous artificial heart. The heart, developed during trials in outer space, should soon be ready for its market debut. Experts calculate that these two systems should reduce the current reliance on donor hearts, which are in acutely short supply. There is yet another glimmer of hope on the horizon in Hamburg, where researchers are working to cultivate artificial tissue, for example entire muscles for children with diseased hearts.

02  Diabetes – Sweet Poison in the Blood
Diabetes – the disease that used to be shrugged off as a sign of old age – has since become a global epidemic, a threat to billions of people. The number of those afflicted is growing rapidly, and no longer just in industrialized countries such as the US or in Europe. There, the number of sufferers has been high for some time. Much more worrying is the spread of Type 2 diabetes, which is primarily a result of obesity and insufficient physical exercise, and especially prevalent in emerging nations and indigenous communities. Presently, the average global death rate from diabetes is one person every 10 seconds, and a limb amputation is carried out as a result of the disease every 30 seconds. What can medicine in the 21st century hope to achieve in the face of such alarming statistics? The film documents the fundamental differences between Type 1 and Type 2 diabetes, and hears the views of renowned scientists on the latest research developments and successes in the fight against the disease.
Dementia – Hopes for a Cure?

It can affect anyone, from labourer to Nobel prize winner, janitor to president. Physicians have identified more than 70 causes of lasting mental deficiency, which occurs as a result of organic neuronal damage. This presents clinical diagnostics worldwide with an apparently irresolvable task. But in practice, two thirds of dementia cases are caused by Alzheimer’s disease – figures that are on an upward trend. Age is a decisive factor in the onset of dementia. The film shows the success of promising medical trials aimed at halting this catastrophe. Scientists are currently developing medicines and vaccinations that could potentially cure this disease in the future. The film also reports on ways that society has found to better understand people with dementia, and accompany them on their journey into a world devoid of memory.