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ELECTRONICS IN MEDICINE

In an age of electronic engineering, we are using electronics for different applications in medical electronics, by means of which we are able to modify the human medical treatment. Non medical professionals may also observe the health problems using easy medical electronic devices. These applications have made medical field very simple and allow perfect identification of different diseases. Medical electronics finds cures for almost all diseases that we know for today and recommends treatment of these diseases. By using medical electronics all the doctors and surgeons can do medical examinations and operations in a very smart way. Medical electronics provides sophisticated equipment with precision. Medical electronic professionals are people who know how to operate these medical electronic applications.

Without medical electronics, it would be difficult for doctors to identify particular diseases which people suffer from.

The first example of technology in medicine is the blood gas analyzer. It is used to determine the pressure of chemical elements like carbon monoxide, nitrogen, oxygen in human blood. By analyzing the results we are able to understand if there is any infection in blood. With the help of results we are also able to determine if there is any disorder when we feel sick. Blood collected from a person is fed into the chemical device strip that has particle selective electrodes. Using the device amplifiers and analog electronic device, the results will be shown digitally with ADC for a microcontroller. Then the output will be displayed on the digital display module in millimeters of mercury (mmHg) .

The second example of great technologies is blood glucose monitor. Blood glucose monitor is used to calculate glucose level for diabetic patients. Blood glucose monitor works as follows: a little drop of human blood is placed on the special chemical strip, the strip has sensors to live content of various chemical components, within seconds it calculates the amount of glucose in blood and displays the result on a LED display. It is really helpful to keep sugar levels less pricey and with a straight forward approach. It is a huge relief to all diabetic patients.

Electronic cardiac monitor is also worth mentioning. It is used in all medical electronic applications. This medical electronic device is used to show the electric current and pressure in the cardiac system. By applying specific electrodes to various parts of the body we can get ECG of the cardiac system of our heart. It will observe sporadic activity within the cardiac system and identify heart issues. It is used throughout medical treatment and especially in surgery.

Defibrillator is of no less interest. It is used in emergency conditions like heart attacks. It affects the rhythm of the heart such as ventricular fibrillation, cardiac arrhythmia and pulseless ventricular tachycardia. Defibrillator works in the following way: when the electric shock reaches the heart, it causes depolarization of the muscles of the heart and regenerates normal conduction of the electrical pulse of the heart. There are different types of defibrillators, including implanted, trans venous and external ones.

And the last example of great technologies in medicine is a MRI. The medical resonance imaging technique is used in radiology, to review inner parts of the body. It uses strong magnetic fields to make figures of the body. Magnetic resonance imaging includes a huge selection of applications in diagnosing. Magnetic resonance imaging has an impact on identification and curing in several specialties, though the effect on improved health is unsure.

So, electronics has long made an undeniable and valuable contribution to the field of medicine. New medical electronic devices are based on available medical knowledge combined with technologies available in the electronics field. Electronics

in medicine has a wide range of applications, from diagnostics to therapy, always aiming to provide new tools to improve the well-being of the population.