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A Design Perception of Future Healthcare System

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Abstract: ***Healthcare represented a driver for the future research and development, involving an extremely connected system of individuals, resources, processes, and establishments. In this paper, we clarify the challenges, the benefits and significances that might accompany the implementation of designer babies, IoT in Healthcare and Hospital redesign. Design babies are the road to healthy life. Here we process about the Design Tone and Copying memories from Brain. IoT in Healthcare has numerous applications, from remote monitoring to smart sensors and medical device integration. Hospital redesign involves in achieving speedy and effective care from a patient perspective. Various sensors are used such as Blood sampling, Blood pressure cuffs suitable for invasive applications.***
Keywords: ***Design babies, IoT in Healthcare, Hospital redesign***

I. DESIGNER BABIES

After 20 to 40 years from now the people will further move to the Designer Babies. The designer babies can be developed by the eggs grown human skin and fertilized with sperm. By developing the 100 Embryo samples and choose the best one to implant. The designer babies may lead the healthy life. Here we have more possibility to tweak from genetic and hereditary disease, after some years we design the babies with skin color, Height, Hair growth and personality. Technologies incorporated in designer are tools like CRISPR/CAS9, ECS, Gene editing and IPSCS can be done by certain computer Technology. In U.S the past few years, group of Scientists successfully edited a human Embryo to eradicate a heart condition for an Athlete which was published in Nature research articles.

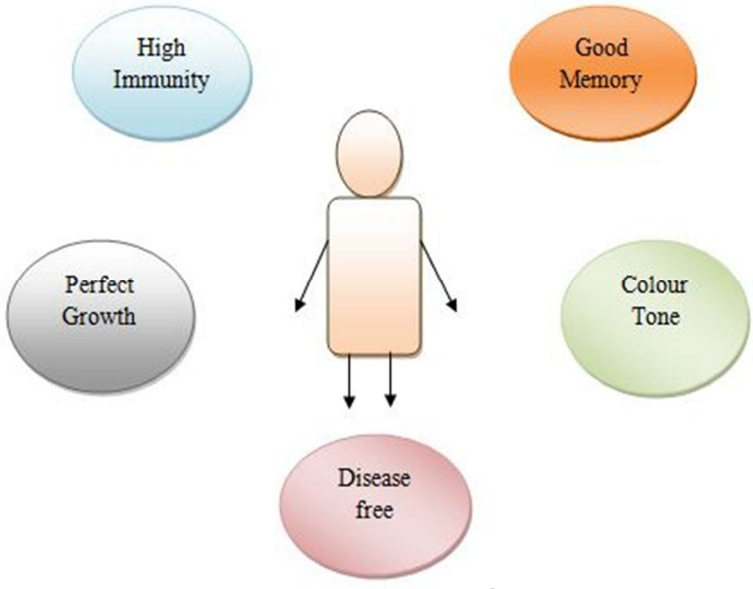

Fig. 1.1 Designer Baby practices

A. Designing The Colour Tone

For Designer Babies we can choose appropriate color tone for the baby. Most of the people prefers to the white skinned babies. It is possible to Implant before the birth by replacing the specific parts of a of a cell's DNA with the new one. In Research process, The Mice skin color changed to green by replacing a specific parts of a Cell's DNA with the DNA taken from the Jelly fish. It changed the Mice skin tone into green after some days of research.

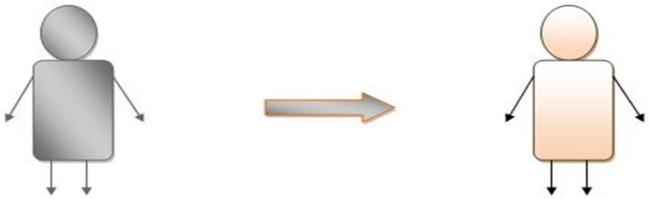

Fig.1.2 Designing the Colour Tone

B. Growth Of Designer Babies

Babies can be designed with certain height, appropriate weight, Hair growth and the muscles growth. These are the things which give a perfect outlook for the Human. So, it can be designed before the birth of a baby. The Gene called myostatin which can be replaced with the revised gene it can be able to develop a super-muscles. The Gene editing which decides the Height, Weight and immunity of future babies. Case study is done By Gene-Editing the weight of a pig reduced from some pounds to 30 pounds (approximately).The growth of long hair in goat was done successfully. By replacing a gene myostatin which converts a normal dog into a super-muscular dog.

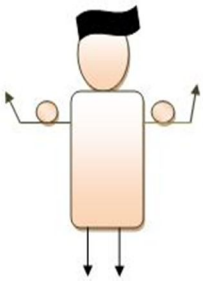

Fig.1.3 Growth in Designer baby

C. Copying Memories From Brain

From the Human, the memories are collected and it copied from One-human's brain to another human's brain. The brain which contains a various chemicals was interconnected by the neurons, which have the memories of a human life. Where, we have to transmit the silicon gel over the brain which contains lots of Nano transmitters .Which copy the memories from the brain and stores those memories in the digitalized hard disk through fiber optic cables and it can be copy into another Human's brain or into the designer baby's brain or it can be able to edit or delete the memories which we think unwanted by passing an electric current over brain and it vanishes the old memories and it again stores in the same human's brain.The memory copying which has been done over the machine which was computerized one and the copied memory can be stored in the digitalized hard disk and the transmission can be done through fiber optic cables.

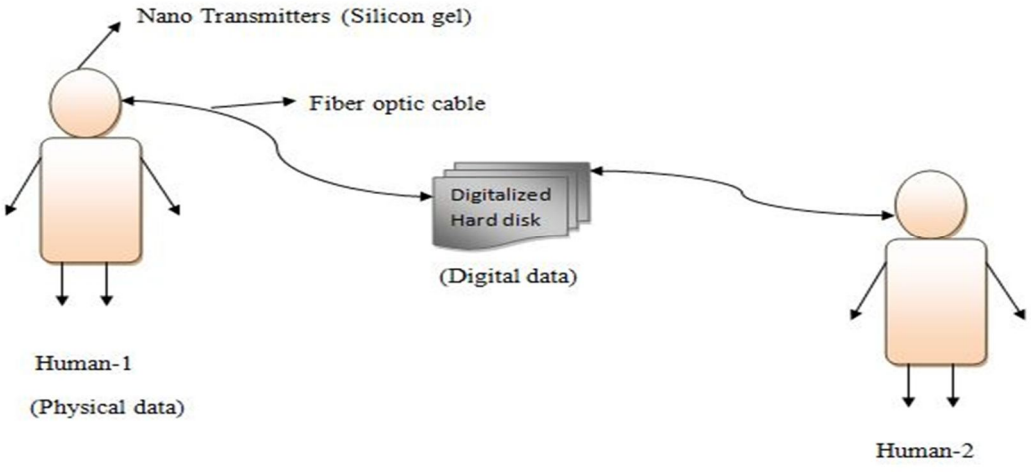

Fig.1.4 Copying memories from Brain

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II. SENSORS FOR MODEL APPLICATIONS

Emerging technological innovations enabled by next generation sensors will define the landscape for the future commercialization devices. Sensors are wearable's that allows continuous physiological monitoring with reduced manual intervention and at low cost. It can be integrated into various accessories such as garment clothes, wrist bands, shoes, smart phones, etc. The main aspect is Wearable sensors are the future of Personalized Medicines.

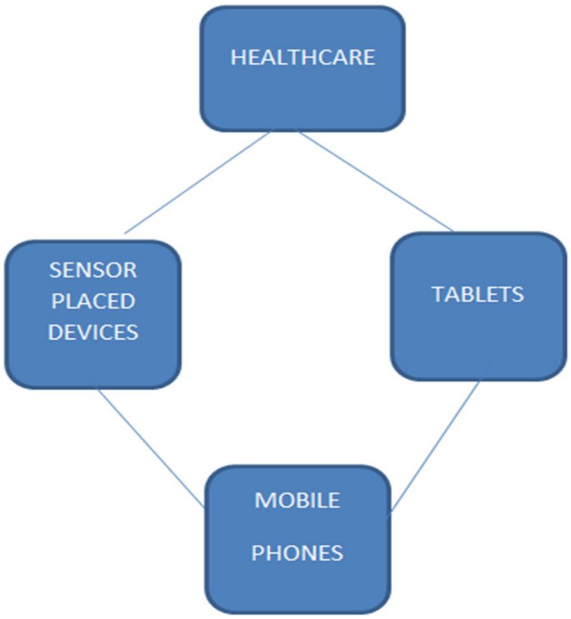

Fig.2.1 Wearable Sensors

A. Technologies Used In Sensors

Information and Communication Technology (ICT) has programmed beyond simple tracking and measuring our all the basic movements of our healthcare. In the modern world, technology has playing a major and vital role. So each and everyone need fast and secured usable devices. Everything has changed to modern technology.IOT being a game changer in the healthcare field as it combines sensors, microcontrollers, gateways and microprocessors to analyze and send sensors data to the cloud and then into caregivers.

B. Smart Sensors Transforms Healthcare

Everyone today is so busy in their lives, even they forget to take care of their health. By keeping all these things in minds, technology really proves to be an asset for an individual. With the advancement in technology, lots of smart or **medical sensors** came into existence that continuously analyses individual patient activity and automatically predicts a heart attack before the patient feels sick.

Following features of smart or medical sensors are

1) Warn early for medical problems
2) Enable Neural Technologies
3) Automate smart medical devices
4) Manage chronic conditions of patients

C. Types Of Sensors

1) Fit bit Watches
2) Blood Sampling Sensors
3) Pulse Oximeter
4) Blood Pressure Cuffs

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1) *Fitbit Watches:* It just tracks our physical activities such as heartbeat, walk able distance, etc., It can be attached to software for becoming more active and healthier. It was introduced by Eric Friedman in 2008. Its size is about 5cms long and 1.2cms thick. It logs a range of data about our activities, number of steps and calories burned. It has built in OLED that scroll current activity data. Algorithms have been developed that work well for tracking the steps you take and how far we have been moved. Sleep tracking feature is often move throughout the night.

Fig 2.2 Fit bit watch

Advantages and Disadvantages

a) Easy to use
b) Size consumption
c) Reliable one
d) Must connect with a smartphone or computer
e) It isn't very discrete

2) *Blood Sampling Sensors:* It is a type of sensor that is cable of detecting multiple proteins and enzyme is a small volume of blood, which brook up diagnostic healthcare process. The presence of injection or disease requires sample of blood form a patient which is later analyzed in a laboratory to detect mark of disease.
3) *Pulse Oximeter:* Pulse oximeter is a painless test that measures your oxygen saturation level or the oxygen levels in your blood. It can rapidly detect even small changes in now efficiently oxygen in lungs carried to the further from the heart including the legs and arms. It is a small clip like device that attaches to body to toes or ear back. It is commonly put on a finger like emergency rooms or hospitals. The purpose of this is to be checking how well your heart is pumping the oxygen through your body. It may be used to monitor the health of individual with any type of condition that affects blood oxygen levels, especially in hospitals. Accessing the need for supplemental oxygen. Monitoring oxygen saturation levels in people under anesthesia.
4) *Blood Pressure Cuffs:* It is used to take blood pressure. The cuffs has an inflatable rubber bladder that is fastened around the arm. A pressure meter indicates the cuff's pressure, a small handhold are pump inflates the blood pressure cuff. After the cuff has been inflated an air valve is used to slowly release, a stethoscope is used to listen to aerial blood flow sounds. Various Types are,

a) Mercury type
b) Aneroid(a mechanical dial)
c) Digital blood pressure cuff

D. Uses Of Sensors

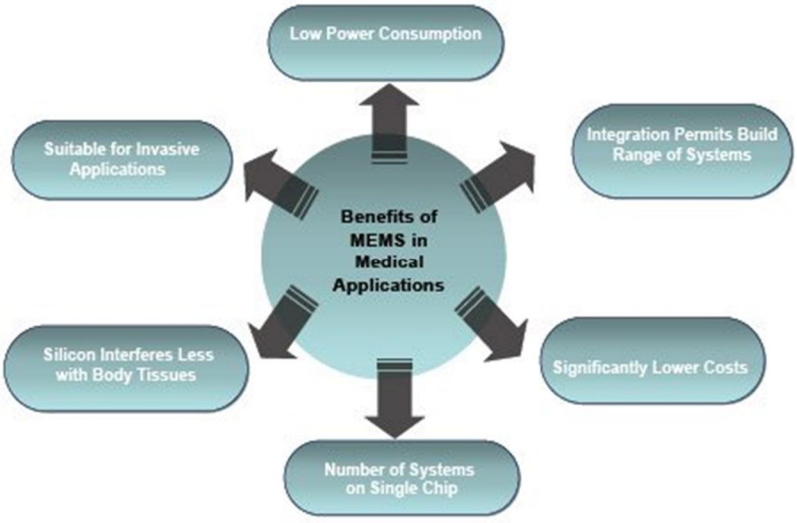

Fig 2.3 Benefits of MEMS in medical Applications

III. HOSPITAL REDESIGN

In future, our home will be transformed to hospital. We will have our all basic need for complete body check up. By having advanced devices in our homes we can measure all to be measured.

A. Weight Machine And Digital Mirror

This weight machine will measure not only your weight it also calculates your BMI (Body Mass Index), which should be between 19 – 25 and sends the data immediately to your smart phone. This can be done by fixing extendable magnetic base antenna in the machine and to scale the human height AR1000 laser distance sensor can be used. Through this machine, we can maintain our BMI in correct level. We all have mirrors in our home but this mirror identifies your stress level just by looking you. Also it recognizes your skin dirt and helps you to maintain good skin. Camera fixed like mirror can identify you.

B. Toothbrush And Smart Sleep Monitors

This toothbrush actually recognizes your hydration level which should be around 50% - 60% for men and 45% - 60% for women. Microchips can be used to monitor our hydration level. It helps you to be hygiene and healthy. It analyses and give data about your quality of sleep. Wakes you for best time. It also helps for your good sleep by playing lite music, mild fragrance and also maintains the temperature of room. Electrical signals from electrodes can help to monitor your sleep. MRI machines are used to monitor. When there is good sleep the day will be good.

C. Smart Spoons And Forks

They are actually amazing one. The spoons and forks scan the calories in food you eat and sends the data to your smart phone application which controls your diet. These can help you to burn un wanted fat.

D. 3D-Food Printer And Smart Cloths

It can prepare your fresh and healthy food for your diet. Also it reminds to take food in correct time. Analyze about your stress levels, postures, activities and body size. They can do better performance and improve your health better. If each and every moment was being monitored by a doctor there is very less percent of problems may occur in our body.

IV. CONCLUSION

Healthcare transfers into people's households and combines medical devices with services. Design Babies will tend to be the next peak progression in Healthcare. With the combination of sensor unit the Hospital redesign its process with the Internet of Things. Cloud computing holds the data and it can be accessible with the valid authentication. These advance technologies will redefine the whole Healthcare environment.

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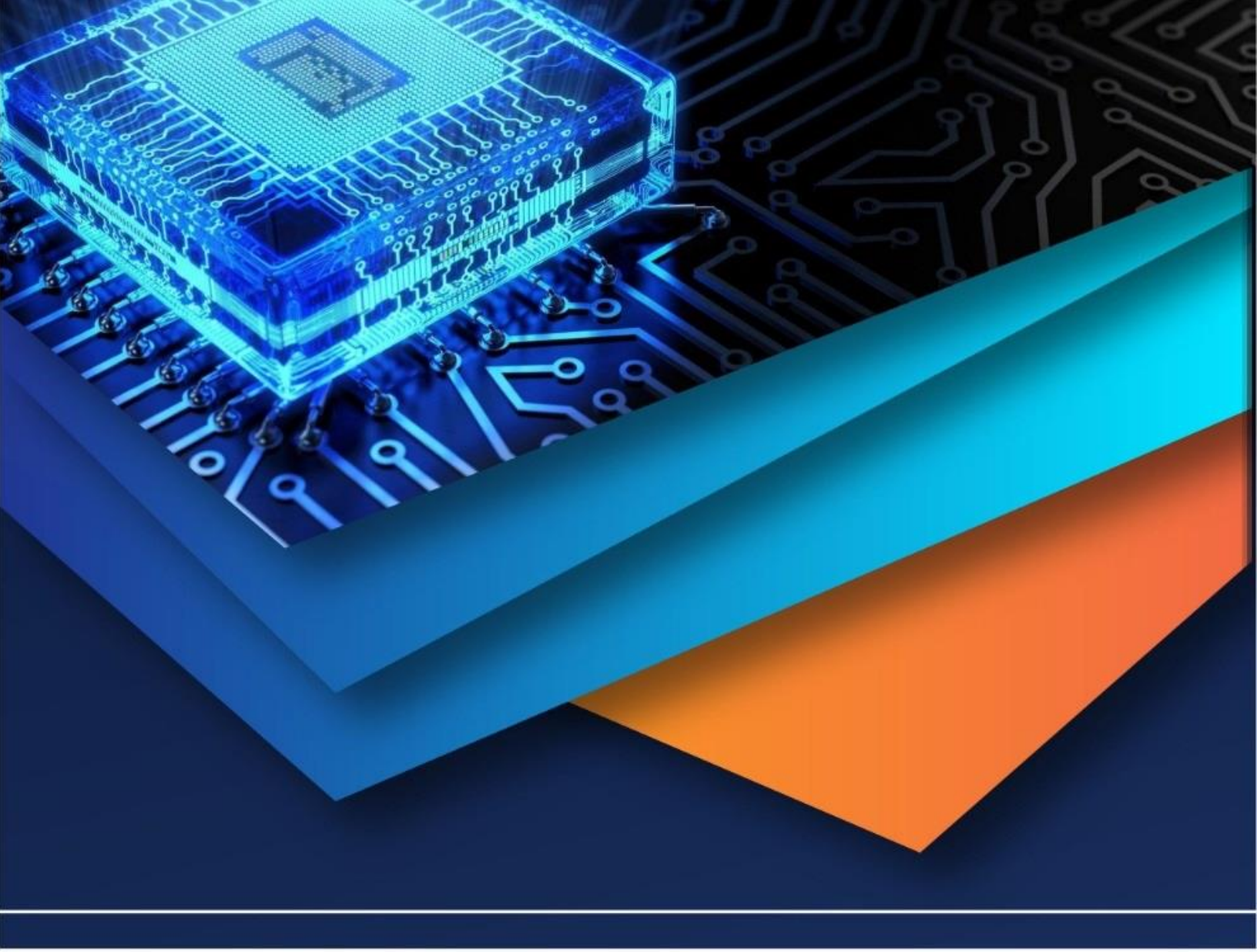

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