



Over time, particularly the last 3 centuries, increase in our scientific and technological understanding has had a large part to play in improved life expectancy, which is around 80 years today. Moreover, where will be in a further 50 years time?

Special Briefing

by Ian Hay

It is clearly plausible that we will be able to extend the human lifespan beyond the current norms. This has been made possible through the biomolecular revolution in past 200 years.

- 1) improvements in understanding of germ theory, and sanitation developments
- 2) widespread development and use of antibiotics, improved surgery techniques and vaccine programmes
- 3) improvements in understanding of genetic medicine and structures

Over the past 60 years there has been a steady development in our understanding of science, but some major scientific breakthroughs have led to fundamental changes to the scientific landscape:

- 1) Manhattan Project 1950s – Enhanced our understanding of particles at the molecular level, the building blocks of human life
- 2) Modern Computers 1960s – The development of the PC over past 50 years has been critical to the ability to process, analyse and model the large volumes of data required in modern science
- 3) Internet Revolution 1980 – the start of the information revolution, and the internet enabling the sharing, and dissemination of data worldwide
- 4) Human Genome 1990s – A revolution in healthcare. Up to this point all experiments were conducted in living animal cells, but could now be undertaken in laboratory cells under controlled conditions
- 5) Cloning (Dolly the Sheep) 2000s – We are now able to isolate the individual function of genes, and the proteins they produce and replicate them in the lab.

The October briefing was presented by Dr Sultan Al-Sedairy, PhD, Executive Director of the King Faisal Specialist Hospital & Research Centre.

Dr Al-Sedairy is an internationally-known and highly-respected figure in the field of Tumour and Transplantation Immunology. Born in Riyadh, he gained his BSc in Biology/Chemistry from the University of Puget Sound, Washington, USA in 1979, and later completed his postdoctoral fellowship at the Department of Pathology, College of Physicians and Surgeons, Columbia University, New York City.

The presentation focused on the Dr Al-Sedairy's own journey through Biotechnology, how it has developed, where we are now, and looked to the future and what it might hold for the human race

Biotechnology touches our lives directly, across every aspect of our lives, from industry and research, the environment around us and the population diversity within the human race.

Development of Biotechnology

In the past, there was a distinct segregation of research and studies into subject, Chemists concentrated on Chemistry, Biologists on Biology and so on. However, in the past 50 years this has changed; more recently the focus has been on cross-functional science, and biotechnology is one of the greatest exponents of such a shift.

Historically the life span of humans has been increasing over time. A thousand years ago it was very short, on average our ancestors died in their 20's, as a result of the harsh environment they lived in, and diseases killed more people, more often.

