

a diversity of approaches for internal and external wellness; a module for behaviour modification and a strategy for risk avoidance with the inclusion of bio-identical therapies.

## *Prevention is truly better than cure*

According to Bill Gates, founder of Microsoft and billionaire philanthropist "sometimes people ask me what field I would be in if not computers, I think biotechnology. I expect to see breathtaking advances in medicine over the next two decades and biotechnology researchers and companies will be the centre of that progress". Never a truer word said as we see the developments in products and technologies and medical advances that are enabling professionals to deliver forever improving standards of internal wellness and aesthetic services.

In his opening address to delegates, visiting Chairman of the Board of the world's leading medical society on ageing, The American Academy of Anti-Ageing Medicine (A4M) and parent organisation of Australia's A5M, Dr Robert Goldman, told distinguished delegates that the organisation is at the cutting edge of a major shift in medical science, from the treatment of disease to a focus on wellness.

The science of anti-ageing medicine was borne out of sports medicine explained Dr Goldman. He is a founder and international President Emeritus of the National Academy of Sports and has been awarded the International Olympic Committee Tribute Diploma for contributions to the development of Sport and Olympism. It originated in the field of sports science where elite athletes have a team of medical specialists from physicians, endocrinologists, plastic surgeons and internal wellness specialists, to assist the athlete to enhance peak performance for ultimate success. This proactive approach to medicine is now moving mainstream.

Dr Goldman likened the advances in medicine and technology today to the telecommunications revolution we are living through now: "who would have thought 15 years ago that we would be able to walk around with our own mobile telephone, or be able to send a 1000-page book to 100, 000 people with one simple push of the email button? Just like those advances have been made, so medicine will be unrecognisable in the same period of time," he said. Dr Goldman explained how doctors and scientists are now able

to understand the human body better than ever before. How and why it ages and sickens, how to prevent disease and fix or replace body parts that degenerate. With early detection and appropriate intervention, many diseases can be prevented, cured, or have their downward course reversed. The cumulative effects of these advances mean that where previously living to 80 was the maximum life expectancy. We are now seeing healthy and comfortable life spans of up to and over 100 and 120 years becoming all the more possible," he said.

**"The skin is the largest living organ of the body which controls and transmits contacts with the external world. It is a highly sophisticated bio-factory that performs dynamic activities such as growth, repair and maintenance"**

Longevity and overall wellness, from all angles were discussed at length. From unlocking the secret of genomic (gene) variations that make a person particularly susceptible to a specific type of disease, to the role that inflammation (known as the silent killer) plays in accelerating ageing; how diet and nutritional supplementation can help regulate the immune system and down-regulate inflammatory mediators; oxidative stress and the theory of free radical damage; trends in skin rejuvenation with the advances in peptide therapies and compounding pharmaceuticals. All these topics presented the delegates with cutting edge concepts that are leading the way in preventative medicine. The effect of all of these on skin was just one of the common denominators. Skincare definitely has a role to play in unlocking the key to rejuvenation.

## *Aesthetics, skincare and the 21st century*

There is no doubt that aesthetic enhancement should start with effective skincare. According to Darryl Knowles, Board Member of A5M and Managing Director of Australian Custom Pharmaceuticals, Australia's largest custom

compounding pharmacy, "two of the key indicators of success in skincare are the method of transdermal delivery (penetrant enhancers) and the nature of ingredients.

- Ingredient compounds with specific focus on the power of the protein
  - from peptides to growth factors
- concentration of the active ingredients
- transdermal delivery systems including chemical enhancers and penetrating enhancers."

## *What are growth factors and how are they delivered to the skin?*

According to Theresa Hryniewiecka for New Ageing, "Growth factors are naturally occurring proteins that act as chemical messengers between cells and are capable of supporting cellular growth. They are made of a variety of cells, including skin cells. Their role is very diverse - from cell division to new cell and blood vessel growth, to collagen and elastin synthesis. These growth factors have been shown to positively counteract signs of ageing and photodamage - wrinkling, uneven skin tone and thinning of the epidermis. They improve the proliferation of fibroblasts, which synthesize collagen and elastin, stimulate synthesis of all important hyaluronic acid, increase permeability of skin blood vessels to increase absorption of topical products; and induce proliferation, growth and differentiation of skin cells.

Incorporating growth factors into skincare products is one thing, but delivering them into the skin is another. Targeted delivery is one of the biggest challenges facing the industry today and non-technology, for its targeted penetration is leading the way in optimal anti-ageing skincare."

## *Vitamin D and nutrition and ageing*

It is commonly accepted that vitamin A is responsible for regulating the health of the DNA in every cell of the body including the skin and with the depletion of such by light, application of vitamin A in effective forms and concentrations from an early age can help stave off ageing of the skin.

The importance of vitamin D as a key player in overall health of the body and skin is gaining momentum and was thus highlighted, as evidenced in research based on studies of the Okinawans (Japan) who live 6,000 feet above sea level, producing higher levels of vitamin D - living to 100 years, plus.

