

NAD+...the Fountain of Youth Discovered?

Long before Descartes philosophical, "I Doubt, therefore, I Think, therefore, I Am" (1641) described the basis of Western Philosophy, indeed, from the moment we humans became conscious as a species, we have been looking for anything that can **EXTEND LIFE**.

In the last decade scientists, geneticists, nuclear scientists, mathematicians, neurobiologists and a plethora of Nobel Peace Prize winners have come to the conclusion that one of the key elements of ensuring true life extension has been sitting right in front of us for over 70 years...it is the energy source of every living cell and it is a coenzyme (think vitamin) called NAD+.

NAD+ is created in the energy production units of our cells called mitochondria. When NAD+ levels decline the mitochondria die and when the mitochondria die, the cells die. Like a toy with no batteries the whole shebang comes crashing down. More significantly scientists have now discovered that low NAD+ levels lead to the upregulation (think "turn on" switch) of age acceleration genes like the ones that code for arthritis, heart disease, alzheimers and, of course, cancer genes.

In other words low NAD+ levels are the switch for accelerated decline of any living organism.

The most startling proof of this hypothesis came from a joint UNSW and Harvard University study published worldwide to much acclaim in March of this year. The study involved over 100 mice that

were fed a simple vitamin, (NMN), which has been shown to increase the natural levels of NAD+ in living cells by up to 33%. The mice given the NMN lived to a startling 130+ years! This led to the inevitable question of "Well if the mice took the NMN can we as humans?".

The answer is yes.

Currently NMN is not commercially available for consumption but another vitamin, very similar to NMN and just as powerful in terms of increasing NAD+ levels called Nicotinamide Riboside or NR is available with a prescription in Australia.

NR has been extensively tested by a team of Nobel prize winning scientists at an amazing new company called Elysium Health. What is interesting about this company is NOT the fact it only sells one item (NR), NOT that the item (NR) is a vitamin which they haven't even got the patent on but more so because of its scientific board. No less than seven Nobel Peace Prize winning scientists, some of the finest names in Anti-Ageing sit on the Elysium Health board! For anyone who knows anything about medicine this is an extraordinary sign that something "Big" has occurred in terms of life extension.

Increasing NAD+ levels by infusion has been successfully used in treatment of neurodegenerative disorders such as Alzheimers and Parkinson's disease and most recently has been enormously successful in restoring energy levels and removing cravings from individuals suffering from eating and drug and alcohol addictions.

In Australia NAD+ infusions can only be administered under strict prescribing guidelines in medical facilities and the ensuing NR tablets (to maintain high NAD+ levels once re-established with up to four infusions) are also strictly under prescription authority.

Anyone who is doubting the enormity of the NAD+ revolution in healthy ageing need only look up the UNSW university study or review the information and scientific board that Elysium has developed on www.elysiumhealth.com.

For more information of NAD+ in Australia go to www.agelessclinics.com.au/NADplus

Dr Jeremy Cumpston has been working in Anti-Ageing for the last 17 years and is creator of Ageless Clinics. He has been working with NAD+ infusions for the last 18 months

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months, whereas the esters of ascorbic acid (especially Ascorbyl tetraisopalmitate) are much more stable and have a shelf life of over 18 months. Therefore when purchasing anti-oxidant skincare it is important to check with your skin therapist on the shelf-life of your product. Furthermore, make sure that you keep the product in a cool place away from direct sunlight.

The Delivery Into The Skin

Now what about getting the active ingredients at a deep enough level to support skin renewal. Here we have to consider the solubility of the ingredient. Water-soluble ingredients have an inherent difficulty of getting through the top layer of the skin (stratum corneum) as well as the cell wall, because these areas are virtually impermeable to water-soluble molecules. On the other hand, lipid soluble molecules can more easily penetrate the skin and the cell wall because lipids have a greater chance to diffuse through them.

The top layer of the skin, the stratum corneum, is the real protective barrier of the skin and consists of dead flat cells filled with keratin (corneocytes) that are surrounded by lipid bilayers. These lipid bilayers are arranged in double molecular layers with outer lipid-soluble and inner water-soluble components arranged in a mirror image fashion.

It is now believed that for active ingredients to penetrate

through the skin's surface (stratum corneum) they need to traverse through the lipid bilayers. This requires that the active ingredients are lipid or, fat-soluble. This resistance to the ingress of water also means that any water-based ingredient will not be able to penetrate into the skin.

Delivery Systems

Most cosmetic companies are only interested in making the skin feel smooth and soft and are not concerned with the issue of getting the product to penetrate to the deeper layers of the skin. However, if a product is to improve the skin, the active ingredients need to penetrate the skin to support and instigate cell renewal.

A great deal of marketing has concentrated on liposomes and new formulation technologies that deliver trans-epidermal delivery systems. These theoretically offer a solution to this dilemma. For example the classical liposome is a sphere with a lipid-soluble outer wall that is filled by the less soluble active ingredient that is released once the liposome has passed the stratum corneum. In that way the water-soluble ingredient is transferred to the inner layers of the skin, while penetration is facilitated through a lipid-based sphere.

However, penetration into skin is fraught with difficulties, which is why very often only tiny fractions of what is applied actually reach to the deeper skin levels. There are a number of ways to

enhance penetration and ensure that the applied vitamins do get to the target cells.

Enhancing Skin Penetration

While applying a skincare product with credible ingredients and a good delivery system are beneficial to the skin, there are ways you can gain even better results. These are through the use of advanced equipment that uses light-based technologies that are designed to stimulate the deeper layers of the skin and significantly improve skin permeability as well as cellular response. These include lasers, IPL technologies, ultrasound, LED light-based devices. Also iontophoresis, sonophoresis and electroporation are technologies specifically designed to enhance product penetration. Many of these technologies are only found in beauty salons and clinics.

A qualified aesthetic or dermal therapists in trained to perform a thorough skin analysis on your skin, identify deficiencies and recommend a treatment program and appropriate skincare for a more targeted approach to a short and long-term anti-ageing skin improvement. If you want to bring your skincare results to the next level a multi-pronged approach offers significantly better results for younger-looking skin.

Tina Viney – CEO, Aesthetics Practitioners Advisory Network. www.apanetwork.com.au

Introducing the Latest in Anti-Ageing Therapy

Nad+ Infusions with Ageless Clinics



Low NAD levels are associated with cellular decline (ageing).

Improving NAD levels has shown benefit in:
 Alzheimers and Parkinsons Neurodegenerative Disorders
 Fibromyalgia and Chronic Fatigue
 Alcohol and Drug addiction
 Food addiction and healthy weight regulation
 Depressive disorders
 All patients are provided full medical assessment prior to prescription of NAD+ infusion or NR tablets

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