Factors And Biomarkers For Aging

Exercise and aging

Although lots of money and efforts have been invested into drug development, no drug is found to be effective in combatting aging. It is important to note that exercise is a truly effective anti-aging measure. In the absence of suitable treatments for age-related dysfunction, exercise is currently the only intervention that shows significant efficacy, reducing the incidence of age-related diseases, improving quality of life, and even increasing the life expectancy of the human body. Even moderate exercise can bring seeable benefits. Although key molecular participants mediating the protective effects of exercise on age-related diseases are not yet known, efforts are being made to identify these molecular participants and to figure out whether we can use this knowledge to improve the health of an aging population.

Nutrition and aging

Diet may be one of the most important factors that can influence health and aging. The relevant research is almost exclusively focused on the effects of dietary restrictions on longevity and healthy longevity, but on the other hand, overeating and consequent obesity can shorten life and reduce healthy life. Between these two extremes, there is sufficient evidence that the optimal diet is associated with an increase in life expectancy and a reduction in the risk of all chronic diseases. Many people claim a competitive advantage between different diets. However, it is very difficult to conduct rigorous long-term studies using unbiased and unambiguous variables to compare the effects of different diets on longevity. Without such a direct comparison, one cannot claim that any particular diet is better than other diets. However, there have been some new topics in the study of comparing different diets and the study of people who are geographically associated with longevity. Diets that are beneficial for longevity are often characterized by less processed foods, primarily botanical diets, low alcohol intake, and non-overeating.

In the field of nutrition, research has been done regarding intermittent fasting, fasting simulated diets and limited time eating. Recently, there has been an increase in interest in the ketogenic diet, which is characterized by the production of high levels of endogenous ketone beta-hydroxybutyrate. This diet has long been used as a treatment for childhood epilepsy, and two recent independent studies of mice have shown that it can increase healthy longevity. These two studies have recently been supported by the fact that ?-hydroxybutyrate regulates the enzymatic activity of epigenetic regulators and histone deacetylases, thereby promoting FOXO3 expression. Future research will focus on the impact of these dietary interventions on longevity, as well as the identification of their interactions with pathways that regulate aging.

Demand for biomarkers of aging

Biomarkers are needed in the field of geriatric science to assess the effectiveness of aging processes and interventions. Over the past 40 years, medicine has undergone a gradual shift from sick care (treatment of sickness after the onset of disease) to healthcare (identifying a

unique risk factor for disease progression and suppression before the onset of disease. For example, high plasma cholesterol and high blood pressure are not diseases themselves, but both are important risk factors for myocardial infarction and stroke.

Similarly, aging is not a disease, but a significant risk factor for a variety of diseases including myocardial infarction, stroke, some age-related cancers, macular degeneration, osteoarthritis, neurodegeneration, and many other diseases. For example, even after adjusting for other risk factors, the risk of cardiovascular disease will double every 10 years after age 40. Decades of cardiovascular research have identified risk factors and have shown that even if the patient does not have symptoms, treating these risk factors can prevent injury. Nowadays, under the guidance of these cardiovascular biomarkers, the treatment time is getting earlier. The availability of true aging biomarkers will allow testing of anti-aging agents in a faster time frame. They will further allow for the early identification of patients at higher age-related risks throughout the life and in various clinical situations in order to target anti-aging treatments.

Early efforts to identify such markers have not been successful, but recent advances in new technologies such as high-throughput proteomics, transcriptomics, and epigenomics indicate that such biomarkers do exist and may be of high clinical importance. A potential biomarker, the epigenetic clock, is based on measurements of DNA methylation at multiple sites and it appears to be more relevant to biological age (i.e., physiological age) and age-related risks compared to chronological age (i.e., actual age). Advanced glycation end products represent another potential biomarker that accumulates in age and in several age-related diseases. In addition, increased levels of certain advanced glycation end products are also associated with increased mortality in humans. There is already evidence that aging biomarkers can be modified by interventions that target aging. Identifying other biomarkers that predict biological age and disease risk will represent a significant advance in human struggle for age-related diseases and dysfunction.

This era has brought tremendous hope for people who are pursuing health and longevity. According to new scientific findings, it is possible to prevent or delay or even reverse the aging process. It is clear that 30 years after the discovery of the unique genes associated with aging, a solid foundation has been established and clinical trials that directly target the aging process have begun, although it is foreseeable to encounter great difficulties when transferring these studies to the human body. Creative Peptides can provide in anti-aging peptide, anti-pigmentation peptide and eye care peptide, the efficacy of which has been proven in clinical trials. The most popular anti-aging peptides are Acetyl hexapeptide-3 (Argireline), Palmitoyl Tripeptide-5(CPC1609), Trifluoroacetyl-Tripeptide-2 (CPC1617), Palmitoyl Tripeptide-1(CPC1629) and Palmitoyl Tripeptide-38 (CPC1654).