

Healthy aging and anti-aging medicine

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Abstract. Aging should be accepted an inevitable process that every living creature had to experience instead of a disease. However, anti-aging is a philosophy of life that slows down the aging process. A healthy and slow aging is possible through this philosophy. Aging has sociological, economical, biological and psychological dimensions. Thanks to anti-aging medicine, these dimensions are substantially positive. A regular life-style, physical activity, genetic structure and exercising are imperative for achieving a slow and healthy aging. Youth and old age are relative concepts depending on different cultures and having slowness of physiological movements and even becoming almost functionless is accepted as aging. It will be possible to make huge developments when the studies of stemcell and genes and the studies of anti-aging are performed together abiding by ethical principles. Exercising should be done regularly as a part of life to secure a healthy life.

Key Words: Aging, Anti-aging, Stemcell, Exercising

1 INTRODUCTION

Apart from the fact that aging is a relative concept changing from culture to culture and its physiological, sociological and psychological definitions are different, it's a process which is inevitable and every living creature has to experience. Biologically aging is an event resulting from inner (developmental and heritable) and external(defects in living molecules cause damages and it causes loss of physiological activities) factors (Nalbant, 2006; Zarit et al, 2007).

It's possible to define aging as a reduced homeostasis after maturity and increased sensibility. However, during this process we confront natural phases: childhood (puberty), young adulthood(maturation) and middle-old ages (returning). While normal aging states physiological reduction (for example in menopause) that everybody experience, customary aging states the whole frequent pathological events (coronary vein diseases etc) (Elena, 2005).

Technological developments have been reflected on scientific and medical world and this situation cause various studies about aging and raising life expectancy. Besides, studies about aging have dealt with especially slowing aging down, in other words anti-aging and improving the quality of life.

The most important aging symptoms are wisdom lines, gray hairs and hair loss, increasing pain and ache, decreasing energy, having a weak immune system, fatigue, hearing loss and visual impairment and decreasing muscle mass. Scientists define aging as systems' deteriorating in progress of time and being destroyed (Saltman et al, 2006) Nuclear radiation, ultra-violet rays, environmental pollution are factors who accelerates aging process. Because these facts speed up free radical formation which is the basis of aging. Free radicals are very active fragments and they may attack some molecules like protein, fat, DNA by oxidising and make them harmful for body. Aging rate is also affected by some reasons like lifestyle and heritable facts. For now, it's not possible to control genetic factors, but lifestyle changes including healthy and regular exercising(Butler et al, 2000) may help aging slow down. Aging, which is a complex event, involves various important health problems like diabetes, cataract, heart diseases and joint diseases (Yu B et al, 2001; Yaar et al, 2003). In Anti-aging lifestyle there's regulating aging biomedical events, reducing psychological changes after aging and preventing from frequent diseases occurring during aging.

We should discuss aging in cultural, biological and moral perspectives. For example, some cultures define menopause as losing femininity functions. In such cultures, aging and menopause cause anxiety.

Correspondingly, women are more free and respected during menopause in some other countries (Holstein et al, 2011).

People usually don't want to accept that they get old. With these attitudes, they prove the distance between their inner and outer appearances. Therefore, many medical studies have been done about anti-aging by from gene science to plastic surgery thanks to the developments of medical technology and these studies draw attraction (Turner, 1995).

The common direction of anti-aging studies is true nutrition methods, true diagnosis, true lifestyle, exercising and increasing lifespan expectancy. Because of the fact that each individual has different physical, social and genetical features, the most important way of anti-aging is forming personal methods (Saltman et al, 2006; Mather et al, 2005).

Especially, current situation of studies about genes is hopeful for anti-aging but it involves also ethical problems. Studies show that a balanced diet, exercising and reducing stress may extend the lifespan of people up to 25 years. However, it will be possible to extend the lifespan more by positive results of studies (Rowe et al, 1997).

2 ANTI AGING AND MEDIA

As it's known, media has power for manipulating societies in whole world and molds public opinion. Besides from its ability to mold public opinion in every aspect (social, economical, political), it's an important reference source to see social reflection of events (Fealy et al, 2011).

Old people mostly watch television, followed by newspapers and radio (Koçak et al, 2009). News are effective on determining perceptions about themselves (Morris et al, 1987). Especially in media or advertisements, ideal women forms are young, fit, thin and attractive, whereas old women and physical aging symptoms are utilized for corroborating mostly stories of comic types (Clarke, 2011). When some doctors who are columnists mention about alternative medicine and immortality and claim that they find the diagnosis and treatment of such disease like aging, individuals who read it and trust on experts, consult on an expert.

News about anti-aging or healthy life attract not only old people, women who experienced menopause and getting older, too. When these news are analysed, they are found to be related with cosmetic products, plastic surgery or medical miracles which are wrongly supposed to provide immortality more than social and economical news. When these news are carefully analysed, aging is pointed as if it were a disease and it's forgotten that it's a part of human life.

3 ANTI AGING STRATEGIES

To be able to keep up with the daily life, we need to be always in rush. People have to deal with stress in this rush of daily life. This situation, however, requires a strong structure and a strong immune system. Therefore, it's the most important reason of a healthy life to be know their own structures and use them right. For example, diagnosing the lack of vitamins, mineral or hormone and taking necessary precautions is needed for a health (Everitt et al 1989).

Another way of people's recognizing their personal structure is doctor control, whereas the other way is comparing their own structures with others' who are at the same age. Because being weaker than peers, having paleness on face, having paleness on nails, movelessness, reluctance, they all are indications of a problem of structure. With comparing, an individual can indicate that there's a problem and strengthen his own immune system (Joshi et al, 2000). This provides anti-aging by blocking early aging.

Scientists also state that environment should be healthy for a healthy, long and good quality of life (Peel et al, 2007).

Having a healthy and fit structure has a huge importance for a long lifespan. Balance between energy input and output is crucial to have a good quality of life (Fritsch et al, 2007).

A balanced diet programme must be done for a long lifespan. Besides from losing weight, cholesterol level, blood pressure and low blood glucose are positive effects of diet programmes. Though people who start a diet experience some problems like depression, decrease of muscle mass and bone mass, memory loss, anemia, dizziness. To avoid from these problems, a healthy diet programme which supported by exercising should be performed (Walford et al, 1992).

3 ANTI AGING AND EXERCISING

The most important condition for healthy aging is lifelong sports and physical activity. Thanks to exercising towards burning calories fat rate harming to structure is reduced while muscle mass is increased by strengthening. Continuous activities that are done planned, voluntary and programmed to provide physical vitality are called "exercising" (Thompson, 2009). When exercising is done regularly, it provides a biological, psychological and social balance and helps diet programme (Evans, 2004).

Centers for Disease Control and Prevention (CDC) expressed the receipt of healthy and long lifespan as regular life habits at the rate of 51%, physical environment at the rate of 20%, heritable features at the rate of 20% and infection and healthy treatment services at the rate of 9% (United States Of America, 1981)

For a lifelong regular exercising, frequency of exercising, density of exercising, type of exercising and progression of exercising should be determined (FITT principle of exercising receipt). However in exercising sessions, warm-up for 5-10 minutes, condition for 20-60 minutes, stretching for 5-10 minutes should be performed. It can be performed as at least twice a week 8-10 exercising as leg, arm and trunk, daily 2-4 sets and per set 8-12 repetitions (Taylor et al, 2005) or in 30 minutes at least 3.000 steps and keeping this at least 3 days per week (Marshall et al, 2009).

Benefits of exercising are, loss of weight, protection of weight, reducing the risk of thrombosis formation and cardiovascular disease, regulating the quality of sleeping, increasing bone mineral density, decreasing blood fat and glucose levels, reducing some cancer types and chronic pain, increasing muscle resistance, muscle strength and muscle flexibility. Thus, exercising is the most important source of long lifespan (Lee et al, 2012).

4 ANTI AGING AND GENETIC STRUCTURE

Special genes cause some biological events like people's wound healing earlier than normal period of time or people's being taller or having longer lifespan. Genes that affect aging are called "Gerontogene" and DAF-16 protein which protract lifetime affects by approximately 100 genes (Leslie, 2006).

If genes affecting aging (Gerontogene) are interfered, it's possible that lifetime can be longer than normal period of time. In the studies about gene, if partial or complete loss or redundancy occur and this event affects lifespan, it's possible to use "Gerontogen" term. In consequence of studies that have been made in recent 30 years, it's determined that gerontogenes control aging.

Caenorhabditis Elegans and *Drosophila Melanogaster* are among the most used ones (Kimura et al, 1997; Lin K. et al, 1997; Lin YJ. et al, 1998; Rose et al, 1992).

"Reaction Against Damage" theory is one of the theories about genes and long lifespan, cause acquiring different dimension. According to the theory, damages in organism cause accumulation. If damage is not responded by genetic control mechanism, aging occurs. However, if it's responded (this response is given by longevity genes), aging slows down. According to this theory, the most important factor of damage is metabolic events (Jazwinski, 1996; Murakami et al, 1996)

Cell aging occurs because of telomeres whose enzyme activity decrease get shorter. Nerve cells die in time irreversibly. This situation leads to slow disappearance of functions. With the start of aging, maximum O_2 during exercising decreases 60%, lung capacity decreases 44%, brain weight 44%, the number of nerve cells occurring in spinal cord, the speed of nerve stimulation 10%, blood elements 64%, blood transportation to brain decreases 20% (Demirsoy, 1998).

We confront biological mechanisms as only theory level that try to explain aging features. To learn theories easily, various classifications are made.

5 DISCUSSION

Apart from the fact that aging discussions are usually towards whether genetic studies are ethical or not, anti-aging discussions continue in different fields. For example, McKay (McKay, 2003) who discuss suspending aging as much as it's possible and especially aging's approach on women magazines, states popular media's

importance on perception management.

Featherstone(Featherstone, 1995) defined two kinds of ‘aging’; one of them is throwing down to aging by physical appearance and active life-style, and the other one is backing down the aging and retired from the world. According to Fealy (Fealy, 2011) and his colleagues, aging is usually related to the terms of health, benefiting from social services and being independent individuals. Turner (Turner, 1995) explains that people ontologically stand out against aging.

One of the studies that concern about aging’s relation to genes is “Cell Death Theory”. As a part of this theory, the most important study is calorie restriction and apoptosis relationship. The most important study about this was made in 1994 by Grasl (Grasl et al, 1994) which reported that calorie restriction extended lifespan by increasing T-lymphocyte apoptosis.

Thanks to anti-aging philosophy, 80-year-old people will not make dependent on somebody else and will paddle their own canoe and have quality life. Somebody who experience normal aging, however, will have problems even at the age of 60, not have quality life and be dependent on somebody else. Because of the industrial developments in some societies, people won’t be able to look after their aged parents (Bloom et al, 2012) or have to quit their jobs in order to look after them. Even someone who looks after an old person will have physical problems and this will lead to mental problems too and even a family will experience tensions (Walker, 1991; Lee et al, 2010; Henslin, 2012)

6 CONCLUSION

Youth and aging express people’s biological processes and we confront them as relative concepts that changing in different cultures. In some societies the term “old” is used for a 50-year-old person, while in some other 55-year-old person didn’t accepted as ‘old’. Anti-aging involves processes that need to be done for a long lifetime for looking as young and energetic.

For anti-aging, it’s a necessary to take active precautions and protective medicine service. The aim here is not stopping the aging process, but slowing it down as much as it’s possible and aging healthy. Therefore exercising, eating healthy, keep away from stress, alcohol and smoking are very important precautions for a regular life.

Anti-aging is not stopping aging and even it’s not a disease. It aims regulating biomedical developments, minimising psychological problems originating from aging and minimising the risk of diseases originating from aging.

Society should be informed about healthy aging and awareness should be raised about it. For healthy aging, it’s very important to change lifestyle. Besides from struggle with obesity, regular exercising should be an important part of life. The most important problem about healthy aging is smoking. Smokers may lose their battle against cancer at the very young ages.

Not only patients but also medical officers which are able to give the most trustful informations should be informed about healthy aging. Because of the fact that anti-aging and genetic are among the important discussions, genetic studies should be carried on.

Media has also huge tasks about anti-aging. Because it’s an attractive subject, people should be careful about the ones who claim that they sell aging stopping products. Modern medicine and alternative medicine are studying on anti-aging. These studies should go on to increase life quality.

For living creatures, aging is similar but also personal differentiations may occur. Although general biological features of aging are explained, pleiotropic effects of these features are not clearly known. Therefore studies have been also made about this subject.

In a close future, it’s likely that human cloning with anti aging will be frequent events. Although the proofs are not enough for today, stemcell studies show that anti-aging applications are hopeful, however ethical principles should not be ignored.

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Conflicts of interest

None declared by authors.

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