The most up-to-date nutrient at a genetic level

Anti-ageing nutrient "Nucleic Acid"

1. Why is human being aged?

A common desire for a healthy and beautiful life.

Since long time ago, human being has had a desire for an eternal life. If the eternal life is not obtainable, we wish we could live healthy and beautiful as long as we live. Such a common desire human being has long made us study the process of ageing just like the study of alchemy. Even with the modern technology, eternal youth is yet to be achievable. However, the modern science, particularly genetic engineering technology (biotechnology) has been so advanced that the studies have started elucidating the process of ageing at the genetic level.

① *DNA (gene) is programming a human life*

You have 60 trillion of cells in your body. Each cell has as many as 3 billion of DNA.

Currently DNA (deoxyribonucleic acid) is drawing attention. In all living creatures, what generates heredity is the DNA. A human being is made of 60 trillions of cells, of which each cell nuclear has the gene DNA. All the information of you being a human being is programmed in DNA. It is considered that even the life span of a person is decided by this DNA.

You can live as long as 120 years old.

The life span programmed in DNA is said to be 120 years. If this is correct, you can live as long as 120 years old, subject to all the conditions being satisfied, Then why can't we live as long as 120 years?

② *Ageing is accelerated by DNA damage*

Your DNA is always exposed to damages.

Human cells, except some cells such as brain cells, repeat cell fission and are regenerated. However, cells can be damaged by carcinogenic substances, ultraviolet rays and other chemical substances existing inside body and cannot be regenerated or produce wrong proteins, which lessen the immunity of human body, causing cancer in cells or promoting ageing.

③ *Man lives by oxygen and dies by oxygen*

Man cannot live without oxygen. However, the same oxygen, when it enters into a human body, can be changed into "active oxygen" which reacts aggressively. This oxygen gives rise to damages to DNA, cell membranes and proteins consisting in organs such as veins. This not only accelerates ageing but is detrimental to human health. Normally, man has a function (anti-oxidant function) to protect himself from the attack of active oxygen. This function gets inactive as gets older.

④ *The lessened function to restore damaged DNA induces ageing.*

You should keep much more DNA materials.

Everybody has the function to restore damaged DNA. The difference in the ability of the function makes the difference in life span. Damaged DNA is either regenerated or restored. This is the mechanism every human body has. This ability or function is lessened as one gets older. In order to help regenerating or restoring DNA, DNA materials need to be supplied to human bodies. The more the supply of DNA materials, the higher the ability or function of DNA regeneration or restoration.

2. The cause of an adults' disease is the phenomenon of ageing itself

The best way of avoiding an adults' disease is "prevention" of the diseases.

The 70% of the causes of death are cancer, cardiovascular disorders, cerebral vein disorders which are all called adults' diseases. Those adults' diseases are often highly advanced when those are found symptomatically. At that stage, it can cause a death. Therefore, the prevention of such adults' diseases is very important. To prevent such diseases is to find the real causes of the diseases. However, to find the causes is not as easy as to find the causes of infection. Those are very complicated. The modern technology elucidates that the cause would lie in the damages to DNA. This is the same cause as ageing. In other words, it is the ageing phenomenon itself. The prevention of ageing is the prevention of adults' diseases.

3. The main effects of DNA/RNA (Nucleic acid)

(1) the first effect taking place after the administration of nucleic acid is the change of facial impression. This change on face is from the strengthened facial skins and lessened number of facial spots and wrinkles. The dryness from ageing facial skins get moisturized.
(2) Disorders in metabolism, for example, acnes resulting from excessive secretion of fats, can be removed.
(3) Loss of hair or white hair is caused from the slow-down of cell division. It can be returned to normal cell division.
(4) It can promote the respiratory function, heightening the function of lungs and reducing fatigue.

(5) It reduces cholesterol, preventing arteriosclerosis.
(6) It increases cerebral blood flow, enhancing the oxygen consumption, which prevents cerebral vascular dementia. After effects of cerebral apoplexy and cerebral encephalomalacia can be improved.
(7) It increases coronary blood flow, enhancing the function of cardio-muscular metabolism. This has effects in prevention of cardiac insufficiency, angina pectoris, and cardiac infarction.
(8) Increase of intestinal blood flow, activating intestines. It also has a function of promoting an evacuation of the bowels.
(9) Prevention of cerebral ageing. Improvement of eye fatigue and auditory sense.
(10) It stops supplying nutrients to cancer cells and in this way it helps preventing and curing cancer.
(11) It has a dietary effect.
(12) Other causes of diseases can be removed by activating cells.

Young people may not realise the effect DNA/RNA has. However, the ageing itself is just around the corner when they get as old as 10 years. This means that they would be better supplied with nucleic acid to maintain right cell divisions. This is the best way to prevent ageing.

Panel test analysis results of Health foods containing DNA

(1) 50 males of 40-60 years old (Data from Nissan Chemical Industries, Ltd)

Effects	Effective period			Number of persons who felt it effective
	1 week	2 weeks	3 weeks	
Feel well	13	17	15	45 persons (90%)
Do not feel tired	6	13	19	38 persons (76%)
Sexual desire enhanced	14	15	8	36 persons (74%)
Don't run out of steam in sports	5	10	9	19 persons (38%)
Skin gets smooth	8	11	12	31 persons (62%)

(2) Females who eat salmon soft roe (600mg / day) (Data from Jet-Slim Co., Ltd.)

Total 223 persons (female only) -Contents-	Number of persons who felt it effective	(8)	(113)	(55)	(25)	(15)	(9)	(No. of person)
		10's	20's	30's	40's	50's	60's	%
Lessened number of spots	37	1	13	9	7	5	2	16
Loss of acne	58	3	35	16	3	1	0	26
Lessened wrinkles	35	0	12	8	6	6	3	15
Loss of rough skin	116	3	56	31	14	8	4	52
Soft and flexible skin	76	2	31	20	12	8	3	34
Smooth skin	97	3	48	26	11	5	4	43
Better skin condition for cosmetics	125	4	58	33	15	11	4	56
Get less tired	96	4	42	31	6	6	4	43
Improved physical fitness	47	2	15	16	5	4	5	21
Enhanced sexual desire	4	0	1	1	1	1	0	2
No constipation	102	3	55	27	10	5	2	45
Darkened white hair	8	0	3	2	1	1	1	3
Fresh wake-up	94	7	40	26	9	7	5	42
Good sleep (quickly fall sleep)	131	7	69	29	13	6	7	58
Increased number of urine	102	6	54	23	10	6	3	45
Good condition of intestines	75	2	34	25	7	4	3	33
Good memories without forgetness	16	0	8	3	2	2	1	7

The source of life [DNA/RNA]

In human body cells always absorb nutrients to repeat cell-divisions. Those die and regenerate. With such metabolism human life is maintened. All human cells, except a part of brain cells, are regenerated every 4 months. Nucleic acid is important in supporting human life. Nucleic acid is produced inside liver but the amount of nucleic acid produced is being reduced as one gets older. The lesser the amount of nucleic acid the faster the process of ageing.

4. Nucleic acid as a beauty product

Effect for keeping beautiful skin

A supply of nucleic acid makes your skin beautiful

The first sign of ageing for a lady appears on their skin. When she is young, the cell metabolism is very active and new cells are born in every 2-4 weeks. However, as ageing progresses, the metabolism weakens with reduced amount of nucleic acid, which leads to the skin ageing. With the weakened cell metabolism by reduced amount of nucleic acid, spots and wrinkles on skin are increased. To keep young and fresh skin the supplies of nucleic acid are essential. Nucleic acid has such an effect as to control the metabolism of fats in skin and is an ideal product for beauty, The result of monitor tests would prove this fact

Slimming effect

Right diet for your purpose

A person who gets fat though he does not eat much or a person who repeats wrong way of dieting is often suffered from reduced basic metabolism. Reduced metabolism makes the slimming effort invalid. Protamine – a protein associated with nucleic acid – contains a lot of amino acids such as arginine and lysine and promotes growth hormone metabolism, burning brown fatty cells and delaying the absorption of lipids. Nucleic acid not only activates the metabolism but also reduces the absorption of carbohydrates. Therefore, it is an ideal product for dieting.

5. The effective way of taking nucleic acid

From the above-mentioned it is understood that to take nucleic acid is necessary for the prevention of ageing. Then, how much nucleic acid is it necessary for us to take? The necessary daily intake is about 2 grams per each 50kg of body weight. The foods we daily take contain nucleic acid but what matters is the amount we take daily. Highly nutrient egg or milk does not contain nucleic acid. Fish/shell fish contain a high amount of nucleic acid but even sardine which most contains nucleic acid has to be eaten as much as 1kg to satisfy a daily need of nucleic acid. Foods which contain a large amount of nucleic acid are fish milt (soft roe) and beer yeast. Those foods are normally not eaten. Therefore, health foods containing a large amount of nucleic acid are recommended to be taken. The effects of nucleic acid can be heightened when it is taken along with other vitamins such as vitamins C and E.

Amount of nucleic acid contained in Japanese foods

Data from Food Research (no mark) & Fukuoka Univ., College of Science (*mark)

Unit: mg in 100g of each fresh food

Fresh foods	Low molecular nucleic acid	RNA	DNA	High molecular nucleic acid	Nucleic acid (total)
[Meats]					
Beef	265	130	78	208	473
Pork	125	77	40	117	242
Chicken	332	147	47	194	526
Pressed ham	153	43	50	98	246
Liver of pig	262	452	164	615	878
Liver paste	233	215	111	323	559
Internal organs of chicken	156	192	112	304	460
[Eggs]					
Hen's egg	37	40	33	73	110
Hen's egg*				66	
York (hen's egg)	14	102	19	121	135
White (hen's egg)	28	21	13	34	62
[Fishes/Shell fishes]					
Tuna	343	72	30	102	445
Flatfish	257	110	59	169	426
Sardine	267	126	77	203	469
Sardine*				539	
Clam	242	307	494	801	1043
Crab (Kegan)	193	59	45	104	297
Prawn	309	58	27	85	394
Jellyfish	32	250	32	282	314
Oyster	387	382	133	515	902
Seaweed	621	2551	335	2886	3507
Sujiko (salmon roe)	104	45	19	64	168
Salmon soft roe	138	219	697	1116	1254
Salmon soft roe*				10600	
Puffer soft roe*				5276	
Iriko*				3605	
Mackerel				251	
Dried bonito				907	
Chirimenjako*				2388	
[Grains]					
Rice	30	145	60	205	235
Wheat	25	96	72	168	193
Soybean	116	620	216	836	952
Adzuki bean	35	311	32	343	378
[Fruits / Vegetables]					
Banana	17	31	4	35	53
Onion*				78	
[Fungi]					
Shitake	27	43	13	56	83
Shitake				324	
Mushroom	45	90	4	94	134
[Yeast]					
Bread yeast	1561	5054	267	5321	6882
Beer yeast				1399	

There are differences between Food Research and Fukuoka Uni. At the tests of same foods.
The data of salmon soft roe has a large difference particularly. The reason may be the difference of salmon's oil condition. Because Fukuoka Univ. used salmon which were just before fertilization, and Foods Research used immature salmon. We recommend to use the data of Fukuoka Univ.

6. What is nucleic acid?

Nucleic acid which plays an important role in maintaining the human life itself is contained in cell nucleus and is consisting of two kinds, DNA and RNA.

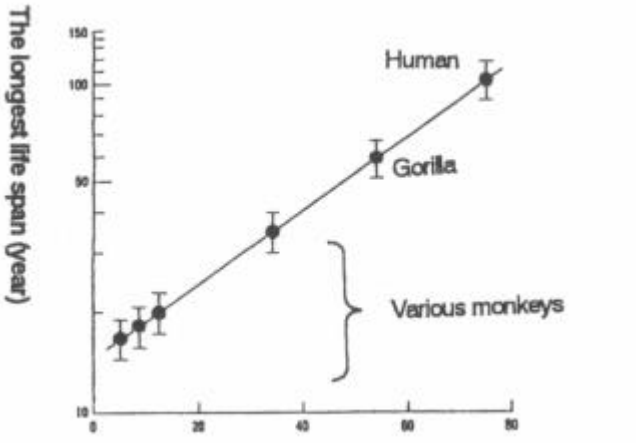
① *DNA (deoxyribonucleic acid)*

The capacity of producing DNA declines when one gets older.

DNA conveys the gene information and controls the cell division, cell growth and the production of energy. It controls the birth and death of cells. DNA has pentose, phosphoric acid and 4 kinds of bases (A,G,C,T) connected with each other ina spiral structure. One type of DNA is produced in liver (de novo synthesis) and another type is taken from foods and goes through a synthesis (salvage synthesis). Nucleic acid is supplied in those two routes. Cancer cells and some other cells make use of DNA produced in liver and normal cell such as those in intestines and bones use DNA taken from foods. As one gets older, the ability of de novo synthesis declines, which gives rise to the slow-down in speed of cell divisions or the production of inferior cells or imperfect cells. This is the cause of ageing and various diseases. Therefore, the supply of DNA by taking health foods is necessary for the prevention of ageing, cancer and other diseases.

The ability of DNA restoration
Decides the life span

According to Hart et al. the stronger the DNA recovery the longer the life span in Primates.



Ability of DNA restoration

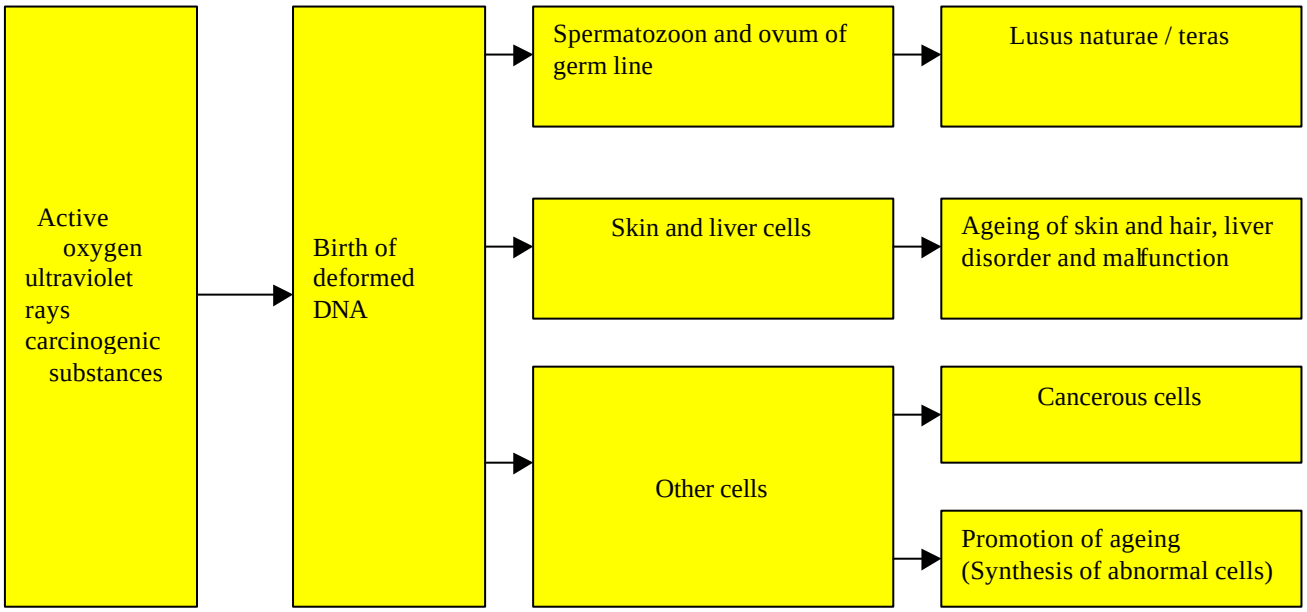
Slow in number of silver Particles irregular DNA Synthesis per each cell nuclear

② *Activities of DNA*

1) Is your DNA conveying the gene information correctly?

In all living creatures, cells repeat division as they grow. When the growth reaches a certain level, cells repeat regenerating. Healthy cells produce the exactly same DNA and cell nuclear in the process of division.

In case DNA fails, its restoration, example:-



2) Synthesis of proteins

Are your DNA and RNA producing proteins (your body) correctly?

The main components of human body such as heart, blood and skin are proteins. Enzymes which are involved in various chemical reactions inside body are also made of proteins. Those proteins are made of the reactions between amino acids and RNA (ribonucleic acid) under the control of DNA which has the gene information. If any error takes place in the combination of amino acids, imperfect form of protein is produced as the result, cells in blood, skin, hair, organs are degenerated, causing the ageing phenomena and adults' diseases.

3) Your DNA removes active oxygen

Another important activity DNA has is to reduce the amount of active oxygen called "anti-oxidant activity". This means that DNA removes decomposed low molecular nucleic acid (A,T,G,C, etc.) and ureic acid resulting from oxidised DNA removes active oxygen. The anti-oxidant activities of DNA and ureic acid are stronger than other anti-oxidant ingredients such as vitamin C and E. Here we can understand that DNA plays the important role in removal of active oxygen and in preventing ageing.

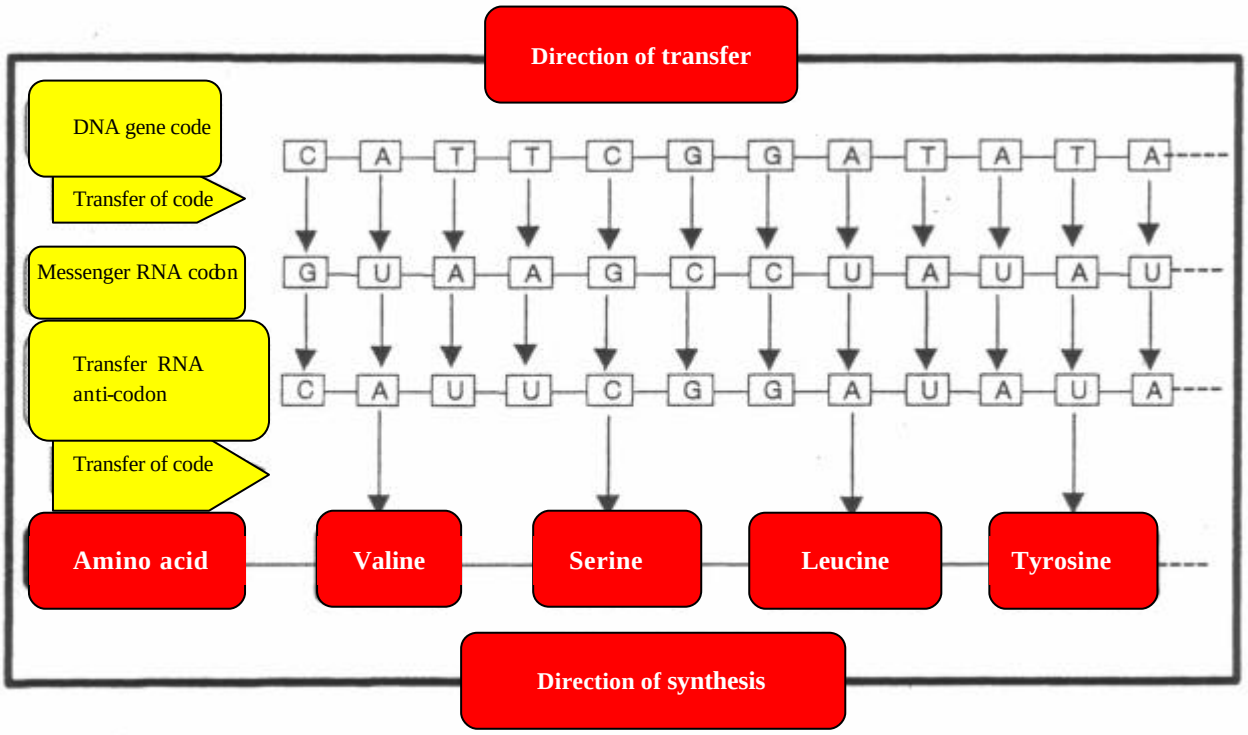
Formally, ureic acid is considered as a cause of gout but currently such an important role ureic acid plays has been brought to our knowledge. Statically, it is understood that the higher the ureic acid value body the lesser the cases of cancer.

③ *RNA (ribonucleic acid)*

RNA prevents your dementia

RNA jointly with DNA synthesizes proteins and in addition RNA activates the function of brain cells. Different from other cells, brain cells do not have cell division. Therefore, those cells do not require DNA. Instead, RNA functions to activate brain cells. The more activity brain cells, the smarter your brain. The same applies to RNA. Activated brain cells increase the amount of RNA. In

other words, the supply of RNA makes brain cells more active. In this way, RNA can prevent your dementia.



7. Eating nucleic acid revitalises your cells

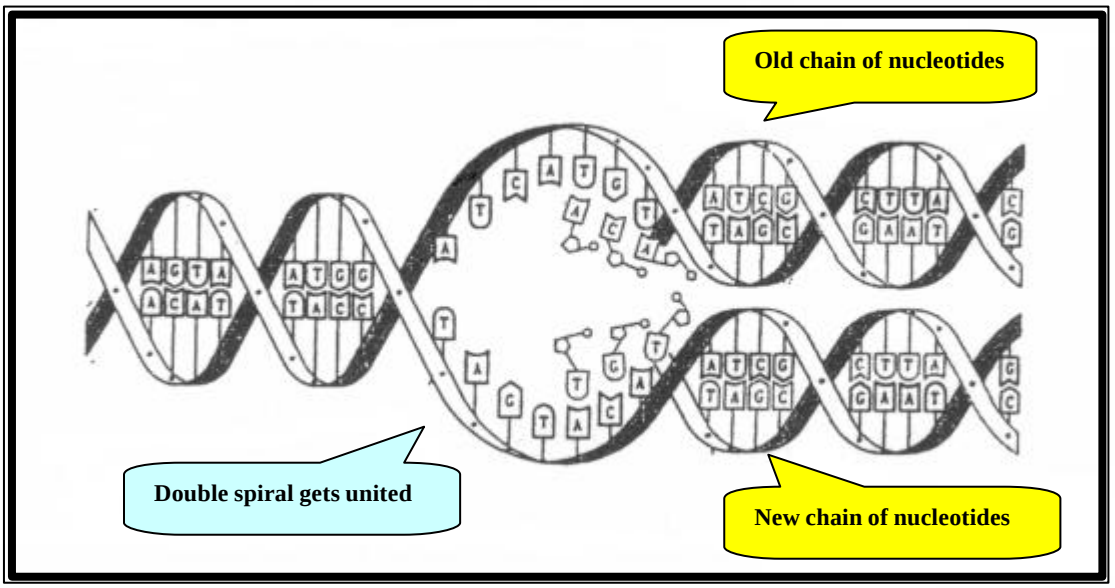
The administration of nucleic acid helps DNA synthesizing while DNA declines as one gets older.

About 60 trillion cells inside a human body, except a part, regenerate every 4 months. “Nucleic acid” is necessary in the process of cell divisions and in restoring damaged DNA. Particularly, cells of parietes, hair, skin, bone marrow and reproduction organs are repeating cell divisions and therefore require the constant supplies of nucleic acid. It is also clear now that those cells are particularly in need of nucleic acid deriving from foods.

A person who gets older than 20 years should eat foods full of nucleic acid.

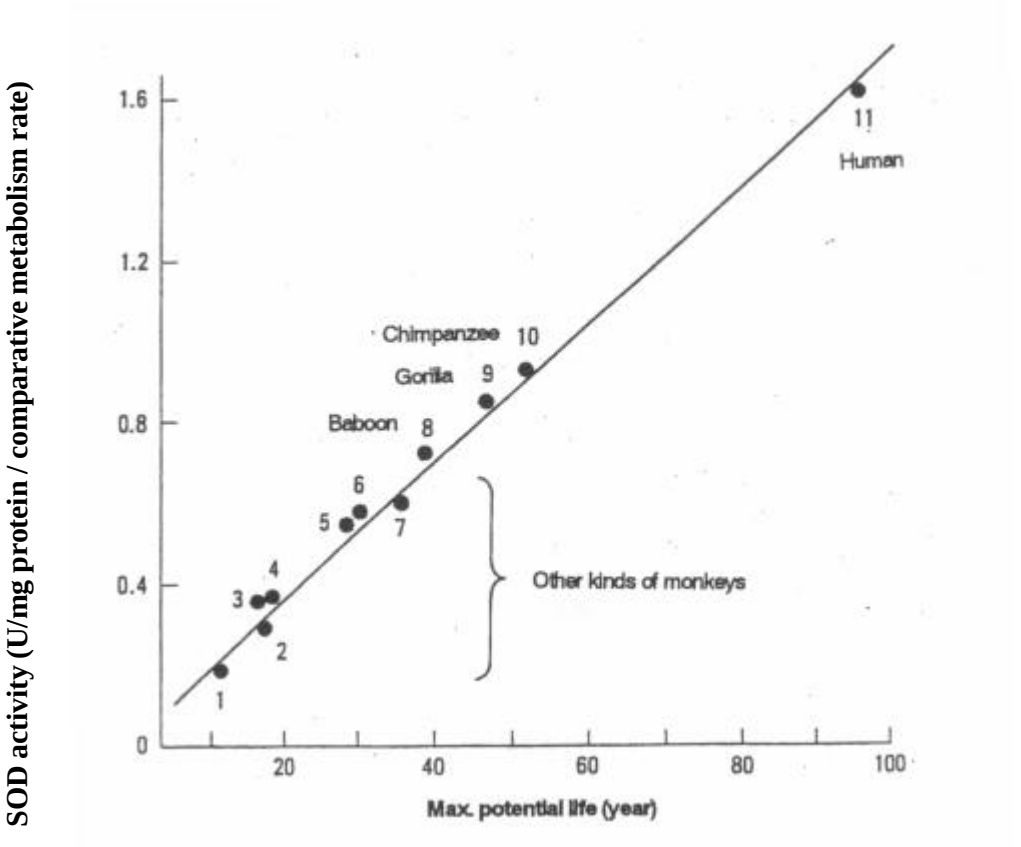
Nucleic acid can be synthesized in liver 8de novo synthesis) but the process reaches its peak at an age of 20 years old. After than the synthesis ability declines gradually. Nucleic acid taken from mouth are decomposed by enzymes into nucleotide and nucleoside and are absorbed and transferred is re-synthesized into DNA. Eating nucleic acid supplies enough amount of nucleic acid to cells, thus activating metabolism and re-vitalising cells.

< Self recovery of DNA >



The stronger the SOD activity the longer the life span

The stronger SOD activity per the rate of comparative metabolism the longer the life span.



8. Clinical experience using Nucleic acids (Nucleosan®)

The personal clinic experience of Prof. Jurasunas with nucleic acids, derives of using a formula of DNA, extracted from Salmon's albino (including four kinds of nucleotides at the same volume) mixed with RNA, extracted from yeast, in a product called Nucleosan®. The experience with this product has proved that nucleic acids are not only anti-ageing nutrients, but that they also have application in various organic dysfunction and even in cancer disease.

Many studies have shown that nucleic acids can induce apoptosis of the perverted cells, which may be the best system for eliminating damaged cells, including cancer cells. During chemotherapy, many cells from the intestine mucous membrane are damaged and must be eliminated to avoid their accumulation. Besides Nucleic acids minimizes the bad influence of the genetic injury.

Nucleic acids can interfere in various situations, such as:

- promotion of the proliferation and differentiation of cells;
- stimulation of the immune system;
- to inhibit the production of lipid peroxides:
- to improve the intestinal flora;
- to help or recovery of liver function

1. At anti-ageing level:

- prevention of physical and mental deterioration;
- middle cognitive impairment (M.C.I.). (It is estimated that more than 80% of patients with MCI develop Alzheimer's disease within ten years at a rate of about 10-15% of patients *per* year);
- Alzheimer's disease in early stage;
- to improve in case of ageing the consequence of physical deterioration and fatigue.

2. In organic disorder:

- intestinal disorder;
- chronic liver disease;
- infertility;
- nervous and psychiatric disorders.

3. In cancer disease:

- as adjuvant during chemotherapy and most indicated in colon cancer cases.

4. In cases of serious cognitive disorders and early cases of Alzheimer, were verified and experimented significant results in the recovery of the memory and of a normal life quality, even in cases of 45-50 years women in early stages of Alzheimer's disease. The clinic experience also includes and involves serious psychiatric disorders, where complete recovers within a six month cure were verified, using the formula contained in the Nucleosan® product.

Masaji Matsunga wrote several scientific articles about Nucleic acids. The induction of apoptosis by exogenous nucleotides (nucleic acids) is of major interest to read.

Finally from Prof. Jurasunas' clinic experience and besides the use of Nucleosan®, the best food sources of nucleic acids are salmon roe, seaweed, oysters, soybean, clams, bread yeast and sardines, which corroborates the study of the Fukuoka University in Japan.