

TEST RESULTS:



Cod. ID: 123456

CCV: 25d

Date: 01/01/2013

Patient: Rossi Mario

Rapport de:

NatrixLab

Via Cavallotti, 16

42122 Reggio Emilia

Aut.n. 67 del 26.01.10

Direttore Sanitario

Dott. Michele Cataldo

www.natrixlab.it

ANTI-AGEING PROFILE **Global assessment of oxidative stress**

Free Radicals Test (F.R.T.) **Antioxidant Capacity Test (A.C.T.)**

Dott.ssa Ausilia Rausa

A handwritten signature in black ink, appearing to read "ARausa", is positioned below the printed name.

Rossi Mario

Cod. ID: 123456
01/01/2013

NatrixLab
Via Cavallotti, 16
42122 Reggio Emilia
Tel. (+39) 0522 232606

OXYGEN FREE RADICALS

Result:	257.6 U.CARR
---------	--------------

TOTAL STRENGTH OF ANTIOXIDANTS

Result:	2451.2 mmoli/L
---------	----------------

1. CONTROL Date: 31.12.2013 Result: 2451.2 mmoli/L Result: 257.6 U.CARR	2. CONTROL Date: Result: Result:	3. CONTROL Date: Result: Result:
4. CONTROL Date: Result: Result:	5. CONTROL Date: Result: Result:	6. CONTROL Date: Result: Result:
7. CONTROL Date: Result: Result:	8. CONTROL Date: Result: Result:	9. CONTROL Date: Result: Result:
10. CONTROL Date: Result: Result:	11. CONTROL Date: Result: Result:	12. CONTROL Date: Result: Result:

ATTACHMENT:

Useful remarks for patient and doctor, to be associated to the analytical results. Your doctor should interpret this report.

Cod. ID: 123456

CCV: 25d

Date: 01/01/2013

Patient: Rossi Mario



Rapport de:

NatrixLab

Via Cavallotti, 16

42122 Reggio Emilia

Aut.n. 67 del 26.01.10

Direttore Sanitario

Dott. Michele Cataldo

www.natrixlab.it

ANTI-AGEING PROFILE

Global assessment of oxidative stress

Free Radicals Test (F.R.T.)

Antioxidant Capacity Test (A.C.T.)

FREE RADICALS, ANTIOXIDANT BARRIER AND OXIDATIVE STRESS

OXIDATIVE STRESS AND AGEING

OXIDATIVE STRESS AND DISEASE

WHAT IS THE ANTI-AGEING PROFILE?

GUIDE TO READING THE TEST

CAUSE OF OXIDATIVE STRESS

WHAT TO DO ONCE YOU HAVE RECEIVED THE REPORT

DIET

USEFUL TIPS

FREE RADICALS, ANTIOXIDANT BARRIER AND OXIDATIVE STRESS

Free radicals are atoms or clusters of highly reactive atoms that can damage cells in our body through the process of oxidation.

A certain amount of free radicals are to be considered natural. Our body is able to defend itself from attack by free radicals through a complex defence system called *the antioxidant system*. This system was developed during the evolution of living organisms and is composed of enzymes, vitamins, trace elements and vitamin-like substances.

An imbalance between free radical production and the strength of antioxidants must be considered a danger to the integrity of an organism. This imbalance causes damage that can be so severe as to cause cell death and, consequently, cause damage to organs and systems, thus painting a picture of so-called *oxidative stress*.

Based on these considerations it is appropriate that oxidative stress is evaluated in a comprehensive manner. For this reason it is necessary to know both the pro-oxidant and the anti-oxidant components.

OXIDATIVE STRESS AND AGEING

A genetic predisposition is, of course, the basis of longevity. However, there is no doubt that other factors associated with the production of free radicals (such as being overweight, having an excessive caloric intake or doing inadequate physical activity) also affect ageing. So it is possible that oxidative stress may contribute to reduced longevity.

OXIDATIVE STRESS AND DISEASE

Free radicals are directly involved in the damage of cells and tissues that occur in atherosclerosis, diabetes mellitus, inflammatory diseases, in the course of tumour diseases and in certain diseases of the liver and lungs. More generally, however, there is no disorder in which some pathogenic role of free radicals has been documented.

WHAT IS THE ANTI-AGEING PROFILE?

The Anti-Ageing Profile allows the evaluation of oxidative stress with a single blood sample, by measuring both the concentration of free radicals and the strength of antioxidants.

The determination of free radicals is done through the Free Radicals Test (FRT, spectrophotometric method). This test stems from Italian research, and helps determine the concentration of free radicals, in particular of hydroperoxides (ROOH), molecules generated in cells from oxidative attack, which are responsible for ageing and diseases related to oxidative stress.

The evaluation of the strength of antioxidants is obtained through the Antioxidant Capacity Test (ACT, spectrophotometric method). This test measures the capacity of antioxidants present in the bloodstream to reduce iron ions. This ability can be taken as the measure of the strength of antioxidants in the plasma analysed.

The purposes of the comprehensive assessment of oxidative stress (Anti-Ageing Profile) are many:

- To identify and prevent oxidative stress and its consequences (cellular ageing and the onset of disease).
- To monitor the evolution of various diseases (chronic-degenerative diseases, cardiovascular, reproductive and chronic inflammatory diseases, skin ageing, cases of psychological and neurovegetative stress, etc.)
- To monitor, over time, the effectiveness of specific therapies and treatments where supplementary antioxidants are put in place to prevent damage from oxidative stress.

GUIDE TO READING THE TEST

The value of oxygen free radicals in the blood, measured with the FRT, is expressed in Caratelli units (U.CARR). One U.CARR is equivalent to a concentration of hydrogen peroxide equal to 0.08 mg per 100 ml.

OXYGEN FREE RADICALS reference values (U.CARR)	
200 - 300	Normal
301 - 320	Monitory level
321 - 340	Mild oxidative stress
341 - 400	Average oxidative stress
401 - 500	Severe oxidative stress
> 500	Extremely serious oxidative stress

VALUES OF LESS THAN 200 U.CARR MAY BE INDICATIVE OF A STATE OF IMMUNOSUPPRESSION OR OF ONGOING IMMUNOSUPPRESSANT THERAPY TREATMENT OR CORTISONE TREATMENT.

VALUES BETWEEN 200 and 300 U.CARR ARE THE STANDARD. THE SUBJECT HAS A GOOD ANTIOXIDANT CAPACITY, PRESUMED TO BE RELATED TO A DIET RICH IN ANTIOXIDANTS OR TO TAKING TARGETED SUPPLEMENTS.

VALUES OF MORE THAN 300 U.CARR ARE INDICATIVE OF A STATE OF OXIDATIVE STRESS AND THEREFORE AN ACCELERATED STATE OF AGEING.

THE GREATER THE VALUE EXPRESSED IN UCARR IS, THE MORE SIGNIFICANT THE STATE OF OXIDATIVE STRESS MUST BE CONSIDERED.

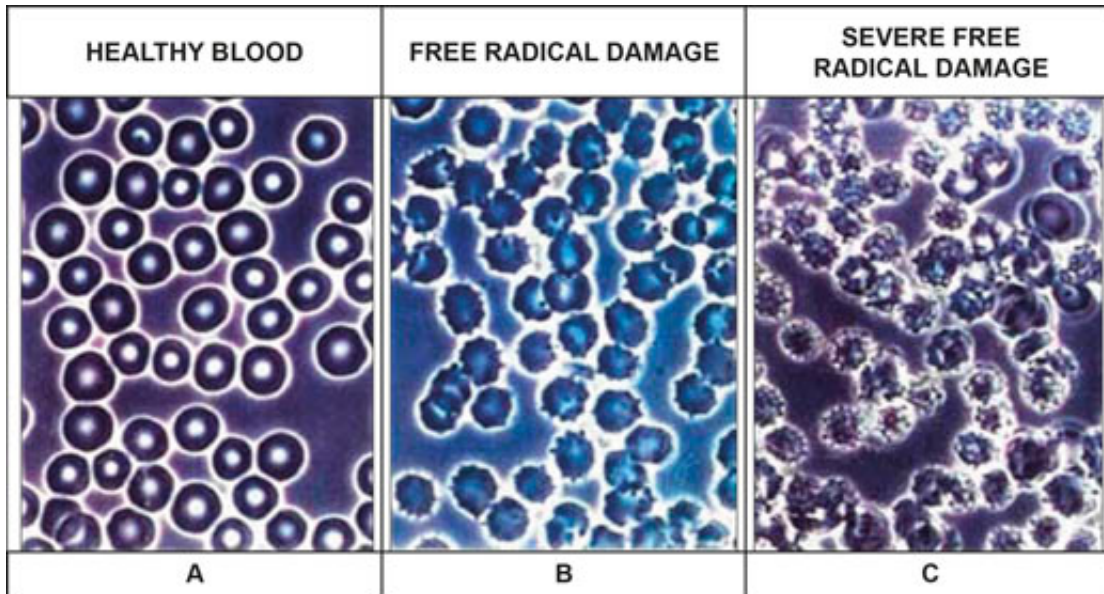
The antioxidant capacity, measured by the ACT, is expressed as $\mu\text{moli} / \text{liter}$.

TOTAL ANTIOXIDANT CAPACITY reference values ($\mu\text{moli} / \text{L}$)	
> 2200	Optimum value
2200 - 2000	Monitory level
2000 - 1800	Discrete state of deficiency
1800 - 1600	State of deficiency
1600 - 1400	State of acute shortage
< 1400	Strong state of deficiency

The arbitrary range, estimated in "healthy" individuals is more than 2200 $\mu\text{moli} / \text{L}$.

A reduction of the tested values below this threshold can be correlated with a reduced efficiency of the plasmatic antioxidant capacity.

The following images (A, B, C) obtained with dark field microscopy techniques, show the blood cells, respectively, in conditions of health (A), in condition of cell damage caused by oxidative stress (B) and in a condition of severe cell damage caused by oxidative stress (C).



CAUSE OF OXIDATIVE STRESS

Oxidative stress may be a temporary condition in normal individuals if it is linked to the acceleration of energy production due to a necessity. We can therefore expect that, in a healthy subject, the levels of U.CARR during rest are lower than those of the subject during activity. The levels tend to rise during the day when the subject is active, in any case staying primarily within the normal range. If this activity involves a muscular exertion or particular conditions of stress it is to be regarded as normal that the values momentarily exceed 350 U.CARR.

A sustained increase of values higher than 350 U.CARR. is not to be regarded as physiologically normal, no matter how they may be caused. In these cases it is believed that the antioxidant system could be compromised.

Bad habits like smoking, excessive alcohol consumption or excessive use of UV lamps can be the cause of an increase of free radicals. For example, it has been observed experimentally that about 70% of smokers (in the vicinity of 20 cigarettes per day) are positioned between 350 and 480 U.CARR. In these cases the use of antioxidants is able to reduce oxidation levels.

WHAT TO DO ONCE YOU HAVE RECEIVED THE REPORT

DIET

Once the value of free radicals present in the serum has been determined it is advisable to adapt your diet according to the outcome obtained. In the case of an oxidative stress imbalance between free radical production and antioxidant capacity, you should supplement your diet with substances rich in antioxidants.

Endogenous antioxidant action consists of an arsenal of enzymes which is not inexhaustible, and in any case must be reinforced and integrated with other antioxidant elements found in food. With the right foods it is in fact possible to take in vegetable pigments (polyphenols and bioflavonoids) and vitamins (C, E, beta carotene) and micronutrients (selenium and Q10) and enzymes, which have their main source in vegetables, preferably consumed fresh.

In reality, every antioxidant is specific to just a few types of free radicals and has limited effectiveness, which is why it is important to vary the diet qualitatively to ensure a wider coverage of antioxidants. It is also important to consume an adequate amount, recognized, for example, by the British Ministry of Health as at least 5 servings of fruits and vegetables daily.

Below is a list of foods rich in antioxidants:

Berries

Berries are full of fibre, minerals and vitamins and full of healthy antioxidants. Blueberries, raspberries and blackberries are rich in proanthocyanidins, antioxidants that can help prevent heart disease and cancer. Strawberries, raspberries and blackberries contain ellagic acid, a plant compound that combats carcinogens. In

addition, blueberries seem to delay the onset of loss of cognitive functions related to ageing.

Broccoli

Broccoli and other vegetables from the cruciferous family like cabbage, cauliflower and Brussels sprouts contain a compound called indole-3-carbinol, a powerful antioxidant that reduces the risk of breast cancer, as well as ovarian and cervical cancer. Other studies have shown that broccoli can help fight cervical dysplasia, a pre-cancerous condition. In addition, broccoli contains other protective constituents like beta carotene which can help prevent cancer and heart disease.

Tomatoes

Tomatoes may prevent some types of cancer (lung, colon and breast cancer), prevent macular degeneration, cataracts, and decrease the risk of heart attacks. They contain lycopene, a member of the carotenoid family, which is also found in pink grapefruit, watermelon and red fruits. It is considered to a large extent more effective than beta carotene. Research focusing on prostate cancer shows that frequent consumption of tomatoes, even in the form of preserves, significantly lowers the risk of incurring these types of cancer.

Note: Tomatoes are preferable after cooking, as the heat makes many antioxidants available for assimilation. Furthermore, lycopene is a fat-soluble molecule, so seasoning them with olive oil improves their absorption.

Red Grapes

Grapes contain substances such as resveratrol and quercetin. These powerful antioxidants improve cardiac health due to their role as sweepers that remove free radicals by reducing platelet aggregation, and protecting blood vessels. The resveratrol present, particularly in red wine, is capable of activating some enzymes that play a major role in the ability of brain cells to regenerate and also activates contacts between them. Moderate drinkers (1 or 2 glasses a day) showed a decreased tendency to minor degenerative diseases in old age.

Garlic

The healing properties of garlic are actually recognized for the sulfur compounds which give it its characteristic pungent odour. Several studies have shown that garlic keeps the heart in good health: it lowers cholesterol, helps maintain blood pressure within optimal ranges, fights free radicals and reduces the possibility of intravascular coagulation. Garlic has anti-fungal properties and is a valuable partner in the fight against yeast infections. It is also implicated in improving conditions in asthmatic subjects.

Spinach

Spinach contains lutein, a very important if not the main pigment of the macula, the region of greatest visual sensitivity. No less important is the content of this substance to be found in lettuce, cabbage and beans. Eating spinach may help protect against cataracts and macular degeneration: it is estimated that it reduces the risk of cataracts by 20%.

Green tea

A significant reduction in the incidence of cancer, degenerative cardiovascular diseases and strokes has been proven to be linked to the consumption of green tea. More recently the properties of dark tea have been highlighted, which have similar benefits of prevention in humans.

Carrots

Carrots are loaded with a powerful antioxidant called beta-carotene. Also found in beetroot, sweet potatoes and other yellow-orange vegetables, beta-carotene helps protect against tumours (lung, breast and oesophagus) and helps improve the immunitary response in immunosuppressed individuals.

Note: cooked carrots have considerably higher levels of antioxidants than raw carrots. In fact, heat releases the active compounds and makes them more easily assimilated.

Soy

Most of the health benefits of soy have been attributed to its content of genistein and other isoflavones. Genistein helps to prevent cancers of the breast, colon, and prostate. Soy can lower cholesterol levels, help prevent osteoporosis and is helpful in relieving symptoms of menopause such as hot flashes.

Wheat

Vitamin E in cereals is a powerful antioxidant that plays a key role in preventing cancers, especially prostate cancer. The cereals contain phytic acid, a potent antioxidant that may help protect against tumours of the breast, liver and colon.

USEFUL TIPS

Some steps can significantly reduce the loss of dietary antioxidants which often occur in foods:

- Avoid food which is not fresh
- Cook the vegetables with little water or even better, steam them or cook them in the pressure cooker.
- Do not over cut, slice, wash or soak them in water.
- Do not extend cooking time for too long.
- Do not cook at too high a temperature.
- Try to consume the water used for boiling (contains antioxidants).
- Avoid buying food which is already cut.
- Do not keep cooked foods in the refrigerator for more than a day and fresh ones for more than 3-4 days.

We also recommend:

- Avoid undergoing frequent exposure to UV rays.
- Limit the use of cigarettes and alcohol.

REPEATING THE TEST

We recommend repeating the test after about 2-3 months. In the case of therapeutic drug monitoring, or pathological conditions, we recommend repeating the test according to the advice of your doctor. In case of difficulties in interpreting the report or during the course of a pathological condition it is advisable to seek the opinion of a specialist able to provide targeted treatment support.