



SCIENTIFIC SOURCES ON THE HEALTH BENEFITS OF BLOOD ORANGES



Our eating habits have both a positive and a negative impact on our health.

In scientific papers, blood oranges and lemons rank highly among the fruits linked to healthy diets, since they are high in vitamin C and antioxidants.

Well-known facts about blood oranges and vitamin C.



Vitamin C increases the body's resistance against chemical, physical and environmental agents. It is well known for its ability to boost the immune system's ability to fight viruses and bacteria. A good stock of vitamin C over the winter months means taking care of ourselves.

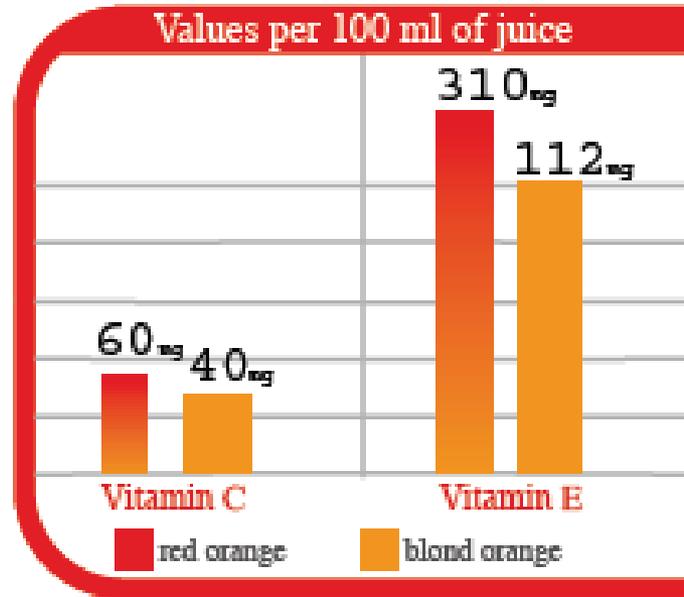
It improves the deposition of calcium and phosphorus in both bones and teeth. It is extremely important in the diet of pregnant and postmenopausal women, and helps prevent osteoporosis.

Since it contributes to the absorption of iron, vitamin C is also an ally against anaemia. A regular supply of vitamin C is also important for smokers in order to reduce the effects of nicotine.

The pulp of oranges is also used in face masks, to prevent premature skin aging. Besides being a tasty cure-all that can be eaten any time of day, orange juice is also an important ingredient of astringent and toning lotions.

In cosmetics, blood oranges are highly recommended as their high levels of vitamin C, which is an antioxidant, fight the formation of wrinkles and boost anti-inflammatory action, thus preventing pimples and skin irritation. It is also essential for the natural production of collagen, which is crucial for skin elasticity.

RED OR BLOND?



Blood oranges are different from common oranges because their content of red pigments called Anthocyanins (most of all cyanidin-3-glucoside) and a greater amount of antioxidants like (ferulic, coumaric, caffeic e sinapinic), flavanones (hesperidin and narirutin) and ascorbic acid.

THE COLOUR DIET

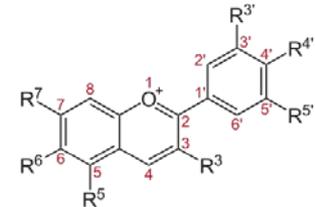
Renato Bernardini – Professor of Pharmacology – Faculty of Medicine – Catania University – ITALY

CITRUS HYBRIDS MAY OFFER ANTIOXIDANT-RICH EXTRACTS FOR NUTRACEUTICALS

by Stephen Daniells, 31-Aug-2009 – www.nutraingrediets.com

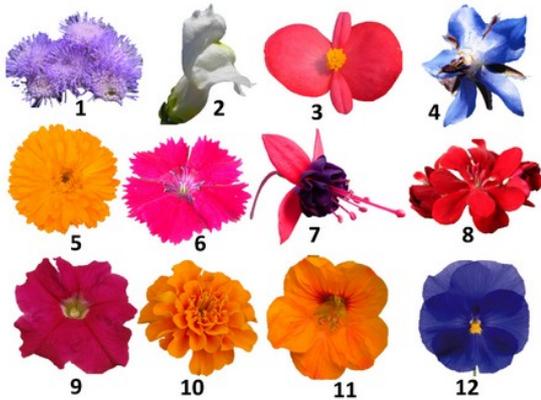
The main antioxidant compounds are:

- anthocyanins (mainly cyanidin – 3 – Glucoside*); they are also responsible of red colour of pulp;
- Vitamin C and others substances with antioxidant effect.



*which reportedly has a stronger antioxidant activity than other common anthocyanins.

ANTHOCYANINS



- ▶ Anthocyanins (from Greek: ἀνθός (anthos) = flower + κυανός (kyanos) = blue)

(1) *Ageratum houstonianum*, (2) *Antirrhinum majus*, (3) *Begonia semperflorens*, (4) *Borago officinalis*, (5) *Calendula officinalis*, (6) *Dianthus x barbatus*, (7) *Fuchsia hybrida*, (8) *Pelargonium peltatum*, (9) *Petunia x hybrida*, (10) *Tagetes erecta*, (11) *Tropaeolum majus*, (12) *Viola x wittrockiana*.

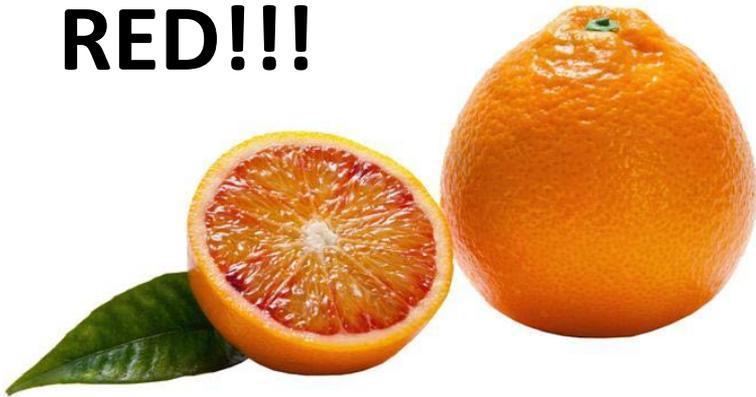
Anthocyanins are natural pigments that are responsible for the distinctive red colour of orange juice. They play an important antioxidant role against free radicals, that is to say those molecules that can alter the structure of both cell membranes and genetic material (DNA), thus favouring premature aging and a long list of reactions involved in the development of several forms of cancer.

SOME SCIENTIFIC STUDIES ON BLOOD ORANGES

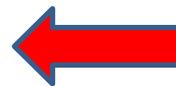
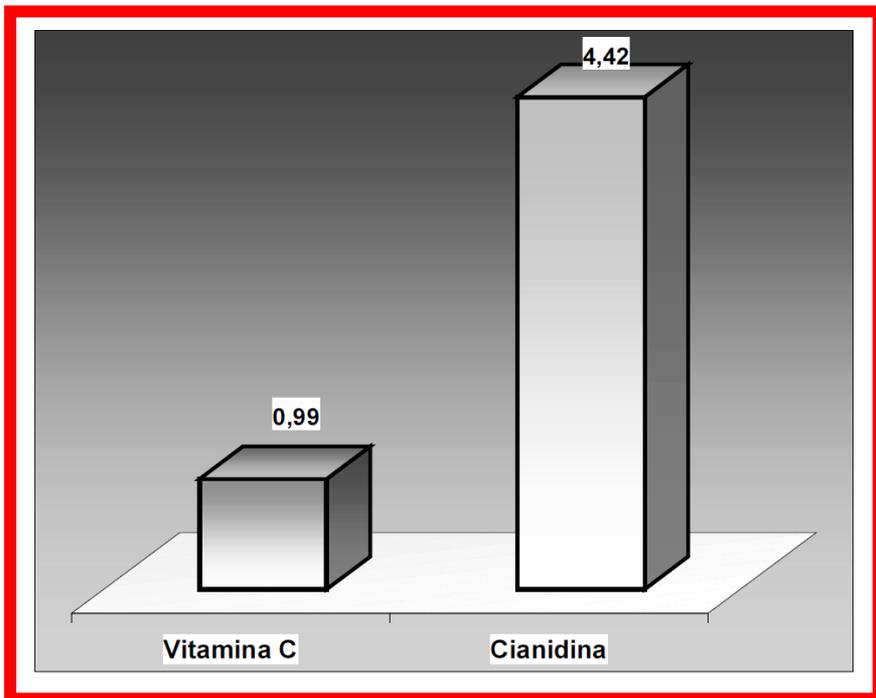
- Antioxidant and antiradical effect in different models in vitro (Arena et al., 2001).
- They improve antioxidant defences in some categories of subjects with compromised antioxidant capability, caused by high oxidative stress, as smokers (Cornelli et al., 2000) and diabetics (Bonina et al., 2002).
- They are effective in protecting the skin in vivo and its cellular systems, from the negative effects caused on the skin (skin erythema, premature aging) from excessive exposure to ultraviolet radiation. (Morini et. Al., 2000).
- Oculistics therapy (they aid the regeneration of the visual purple); the ulcer treatment and in angiology. (Maccarone, 2004).

RED OR BLOND?

RED!!!



Many researches prove the antioxidant effect and anti-radical activity of the substances contained in blood oranges. The 90% of anthocyanins contained in blood oranges is cyanidin-3-glucoside, whereas in other fruits (elder, blueberry, etc.) the anthocyanins composition is more variegated (different pigments).



Cyanidin-3-glucoside is more active than Vitamin C against free radicals.

ANTI-OBESITY EFFECT OF A BLOOD ORANGE JUICE

International Journal of Obesity (2009) 1–11

L. TITTA, M. TRINEI, M. STENDARDO, I. BERNIAKOVICH, K. PETRONI, C. TONELLI, P. RISO, M. PORRINI, S. MINUCCI, P.G. PELICCI, P. RAPISARDA, G. REFORGIATO, RECUPERO AND M. GIORGIO.



Blood oranges are recommended by nutritionists to fight obesity.

OBESITY PREVENTION, POSITIVE EFFECTS ON THE REDUCTION OF BOTH TRYGLICERIDES AND PLASMA CHOLESTEROL LEVELS

Study published by the World Journal of Gastroenterology, carried out by the University of Catania in cooperation with the European Institute of Oncology (EIO)

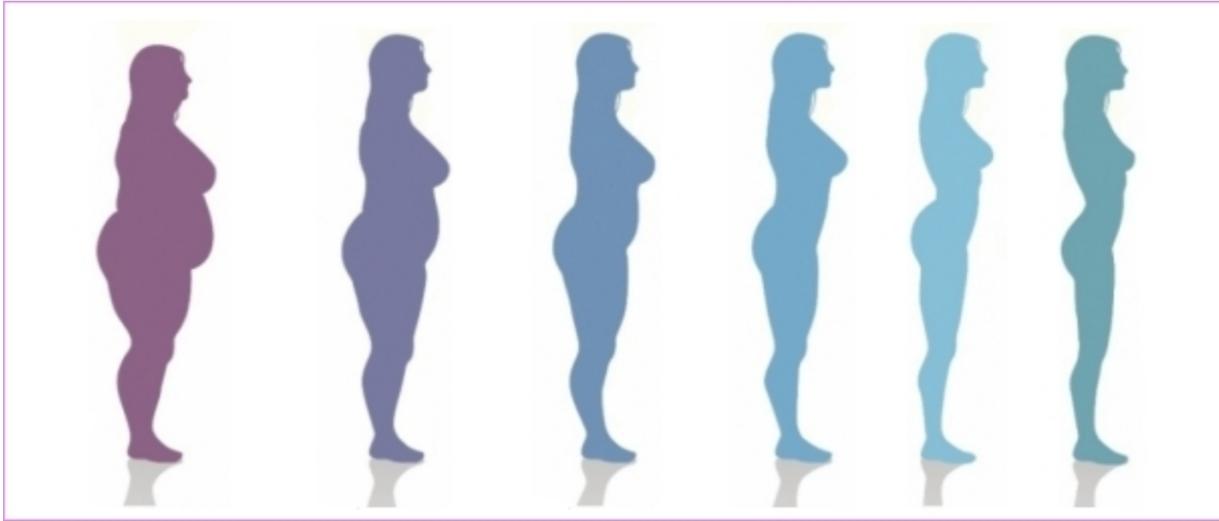
The administration of blood orange juice in laboratory animals reduced the build-up of fat in the liver, caused by a fat-rich diet.

Positive effects on the reduction of triglycerides and plasma cholesterol levels were also found.



OBESITY PREVENTION, POSITIVE EFFECTS ON THE REDUCTION OF BOTH TRYGLICERIDES AND PLASMA CHOLESTEROL LEVELS

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Lucilla Titta, EIO researcher and co-author of the study, explained that our daily diet should be rich in whole grain cereals, legumes, vegetables and fruit in order to prevent obesity, the build-up of fat and the risk factors associated with many kinds of cancer. Foods rich in anthocyanins, such as Sicilian blood oranges, should always be present in our diet.

BLOOD ORANGES AND THEIR PROTECTIVE PROPERTIES AGAINST THE SIDE EFFECTS OF CANCER THERAPIES

Ongoing experimental study conducted on volunteers at the European Institute of Oncology with the project STAR (Smart Trial Arancia Rossa)



The study aims at assessing the effects produced by Sicilian blood oranges juice on women with breast cancer who underwent a therapy with side effects such as weight gain and hypercholesterolemia.

The tests intend to fight such effects through the administration of juice in order to help patients prevent obesity.



EVALUATION OF OXIDATIVE STRESS IN DIABETIC PATIENTS AFTER SUPPLEMENTATION WITH A STANDARDISED RED ORANGE EXTRACT.

Diab. Nutr. Metab., Vol. 15, N.1, 14-19, 2002.

BONINA F.P., LEOTTA C., SCALIA G., PUGLIA C., TROMBETTA D., TRINGALI G., ROCCAZZELLO A.M., RAPISARDA P. AND SAIJA A.



Blood oranges are healthy fruits, recommended in all diets, both to adults and children.

Being low in sugar, they are suitable for diabetics.

THE SMARTFOOD DIET

Eliana Liotta, scientific journalist - Rizzoli, February 2016



The fat-blocking juice, that's how Elena Liotta defines fresh blood orange juice in her book, where she links oranges to the metabolic pathways that influence longevity. She explains that blood oranges have proven to have a protective effect against heart diseases in rats and stimulate the genes associated with life expectancy.

THE SMARTFOOD DIET

Eliana Liotta, scientific journalist - Rizzoli, February 2016



The European Institute of Oncology (EIO) has carried out a research on oranges ability to inhibit adipogenesis, that is to say the build-up of adipose tissue, which is boosted by p66, one of the genes responsible for aging.

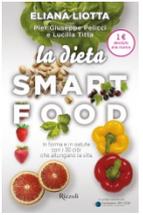
The outcomes of the study conducted by the EIO are remarkable: consuming blood oranges help prevent fat build-up.

Blood orange juice modifies the lipid metabolism. Despite a diet rich in fats, adipose tissue is not stored.



THE SMARTFOOD DIET

Eliana Liotta, scientific journalist. Publication in collaboration with Pier Giuseppe Pelicci and Lucilla Titta - Rizzoli, February 2016



As for the advantages concerning cardiovascular diseases, the journalist explains that "we should be grateful to anthocyanins" as it has been scientifically proven that they provide cardiovascular protection and reduce risk factors. They also reduce high blood pressure, and lower the so-called bad cholesterol (LDL, Low Density Lipoprotein). They reduce inflammatory conditions and increase the elasticity of blood vessels.



THE SMARTFOOD DIET

Eliana Liotta, scientific journalist - Rizzoli, February 2016



The Smartfood diet is the first Italian diet to have been awarded a scientific certification by an important research centre: the European Institute of Oncology (EIO) of Milan.

According to the studies conducted on the Smartfood diet, blood oranges and their juice are an elixir of fasting mimicking molecules, that is to say molecules that can influence the genetics of longevity: more years to live, fewer chances to contract diseases linked to senescence such as cancer and diabetes.

THE SMARTFOOD DIET

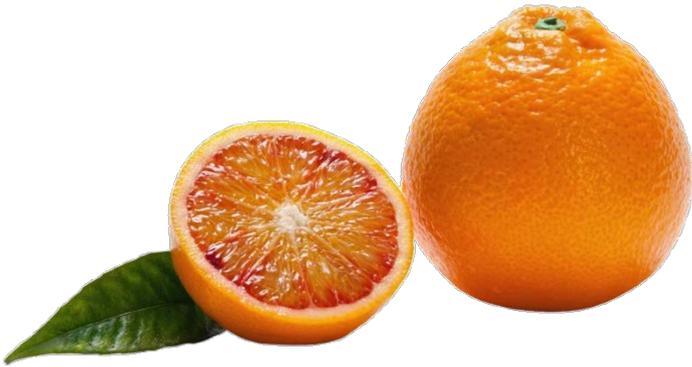
Eliana Liotta, scientific journalist - Rizzoli, February 2016



«Blood oranges are not just fruits: they are a sort of miniature chemical laboratory and almost each of their substances lubricates the mechanisms of our body. What has made the Moro, Tarocco and Sanguinello varieties the stars of the research carried out all over the world, is the extraordinary amount of anthocyanins they contain, that is to say the pigments that confer the colour red to the fruit. Anthocyanins are fasting mimicking molecules and blood oranges contain so many of them that they are considered the longevity smartfood of excellence. Anthocyanins are essential. In the realm of vegetables they are the queens of smart molecules thanks to their many properties: they protect from tumours, arteriosclerosis, diabetes»

THE NUTRITIONAL RAINBOW OF BLOOD ORANGES

Francesco Leonardi, nutritionist and national secretary of FeSIN,
Florence (Italian Federation of Italian Societies for Nutrition)



«Blood orange juice is well-known and highly appreciated as it is high in vitamin C and anthocyanins. However, these super-fruits also contain many other important substances: 441 compounds. Among them, there are 14 different vitamins and 67 mineral salts, amino acids, enzymes, carbohydrates, carotenoids, flavonols, etc.

Thanks to the combined action of this precious mix of bioactive substances that cannot be artificially reproduced yet, oranges have shown antioxidant, anti-inflammatory, antidysmetabolic effects, which appear to be useful for the prevention of several chronic non-communicable diseases such as obesity, diabetes, hypertension, dyslipidemia, cardiovascular diseases».

THE NUTRITIONAL RAINBOW OF BLOOD ORANGES

>400 chemical substances

JUICE

Chemistry (g):

Sugars

Amino acids

Vitamin

•Oxoacids

•Minerals

Flavonoids

- Anthocyanins (%):

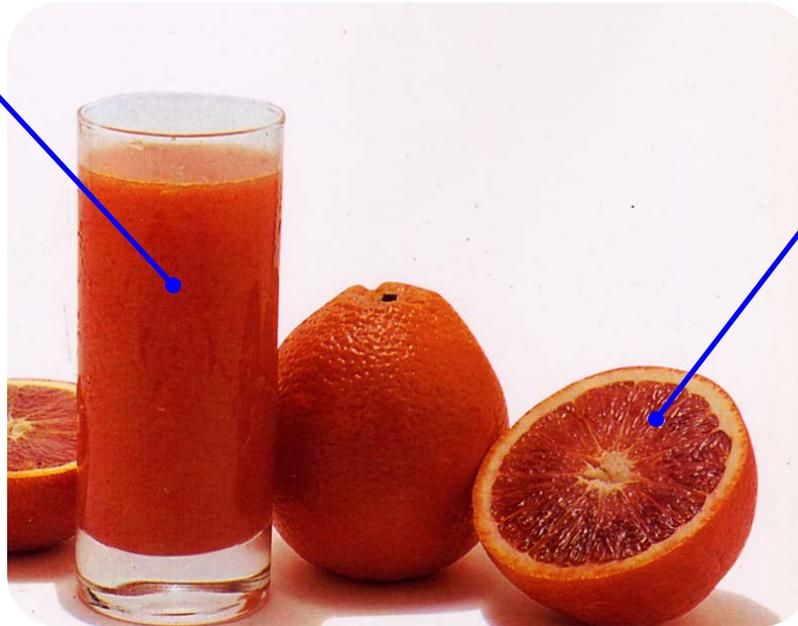
Delphinidin 10

- Petunidin

- Pelargonidin 10

- Peonidin

- Cyanidin 80



FRUIT

Structure (%):

Peel 28-32

-Flavedo

-Albedo

Pulp 20-22

Juice 46-50

Seeds 0,5-1,5

Chemistry (g):

Total 100

Edible 80

Water 87,2

Carbohyd. 7.8

Proteins 0,7

Fats 0,2

-MUFA 0,04

-PUFA 0,04

VITAMINS (mg)

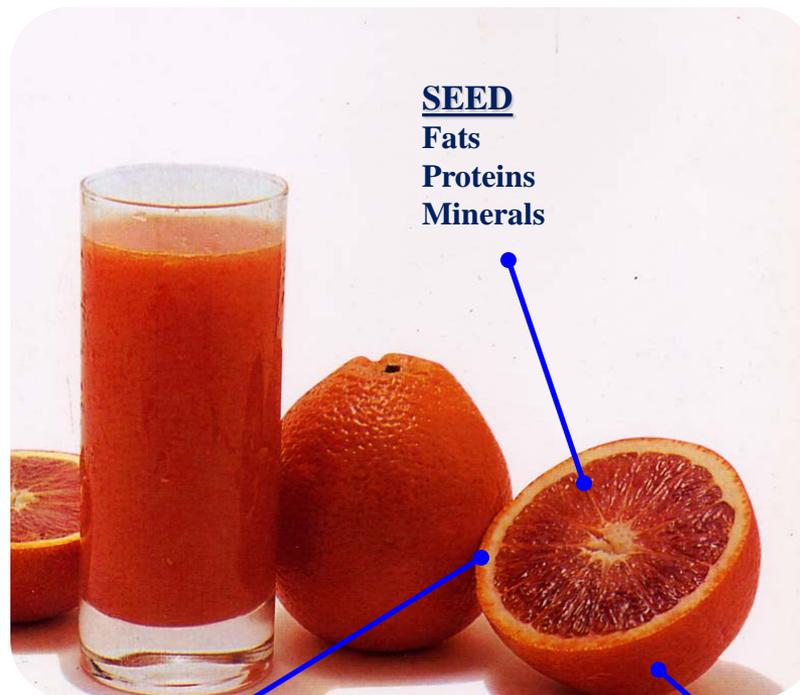
	Juice	Fruit
A eq.*	3	71
B ₁ 0,06	0,08	
B ₂ 0,05	0,02	
B ₆ 0,10	0,07	
C	39	50
E*	0,17	0,24
K*	-	1,8
Nicot.	0,29	0,22
Pant. Ac.	0,23	0,17
Biotin*	1,40	1,66
Fol.* Ac.	20	31
Niacin	0,20	0,20

* (µg)

Dietetic Specifications

Energy (kcal)	34
Glycemic Index	43
Dietary Fiber (g)	1,6
Purines	0,0
Uric Acid	0,0
Cholesterol	0,0
Atherogenicity Index	0,38
Oxalic Acid (mg)	1,0
Phytic Acid (g)	295

THE NUTRITIONAL RAINBOW OF BLOOD ORANGES



SEED

Fats
Proteins
Minerals

ALBEDO

Cellulose
Pectin
Amino acids
Flavonoids

FLAVEDO

Essential Oil
Carotenoids

MINERALS (mg)

	Juice	Fruit
Na	10	3
K	150	200
Mg	12	10
Ca	10	49
Mn	30	21*
Fe	0,2	0,2
Co	9,0*	0,36*
Cu	57*	48*
Zn	0,01	0,2
Ni	-	7,2*
Cr	13*	0,72
P	13	22
Cl	28,5-2,9	
F	-	3,6*
I	-	1,5*
Br	-	38,9*
Bo	0,11	0,13
Se	-	2,52*

* (µg)

ORGANIC ACID (mg)

	Juice	Fruit
Malic	170	120
Citric	1090	760
Ferulic	-	0,72
Caffeic	-	3,60
p-Cumaric	-	0,36
Salicylic	-	2,4
Volatilile	3	-

THE NUTRITIONAL RAINBOW OF BLOOD ORANGES

FLAVEDO
Carotenoids



ALBEDO
Cellulose
Pectin
Amino acids
Flavonoids

Flavonoids

- Anthocyanins:
- Delphinidin 10 %
- Pelargonidin 10%
- Cyanidin 80%**

VITAMINS (mg)

	<i>Juice</i>	<i>Fruit</i>
C	39	50
A eq.	3	71
Fol. Ac. (µg)	20	31

MINERALS (mg)

	<i>Juice</i>	<i>Fruit</i>
K	150	200
Na	10	3
Mg	12	10
Ca	10	49

THE NUTRITIONAL RAINBOW OF BLOOD ORANGES

Citrus fruits are recommended to those who suffer from water retention since they are low in sodium.

They also contain organic acids (citric, tartaric and many others), which help reduce the acidity of urine and, therefore, the risk of kidney stones.

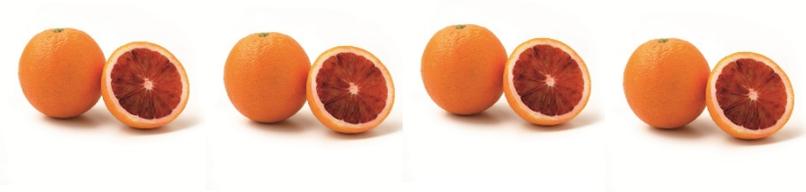
Among their precious substances, citrus fruits also contain carotenoids, which are antioxidants, as well. Through the metabolism, they are turned into Vitamin A.

Citrus fruits stimulate about sixty polyphenols, including hesperidin. They strengthen blood vessels, reduce their permeability and prevent cellulite.

Thanks to the mineral salts contained in citrus fruits, including potassium, they help reintegrate the salts we lose while doing sport or due to physical efforts.

PROTECTIVE ROLE OF BLOOD ORANGES AGAINST TUMOURS AFFECTING THE DIGESTIVE SYSTEM OR THE AIRWAYS

Study published by Cancer Causes & Control, carried out by the Mario Negri Institute, Milan



The risk of oral or pharyngeal cancer is 53% lower in people who eat more citrus fruits (at least 4 portions a week) compared to people who eat fewer (less than 1 portion a week).

TOTAL ANTIOXIDANT ACTIVITY (TAA) OF SOME IMPORTANT KINDS OF FRESH FRUIT JUICES

Study conducted by the Department of Organic and Industrial Chemistry of Parma - Marcelli.



There are fruits and vegetables that contain more vitamin C than oranges. However, we must also consider their antioxidant activity and their cost.

All in all, blood oranges remain the cheapest natural solution to satisfy our daily need of vitamin C.

TOTAL ANTIOXIDANT ACTIVITY (TAA) OF SOME IMPORTANT KINDS OF FRESH FRUIT JUICES

Study conducted by the Department of Organic and Industrial Chemistry of Parma - Marcelli.

Tabella 6. TAA (attività antiossidante totale) di alcuni succhi freschi.

	Acido Ascorbico mg/100ml di succo	ATTIVITÀ ANTIOSSIDANTE TOTALE	
		A mM di Trolox (equivalente idrosolubile della vitamina E)	B Vitamina E equivalente (mg/100ml di succo)
Arancia Rossa*	60	7.18	310
Arancia Bionda*	40	2.61	112
Pompelmo (giallo)	34	2.8	121
Pompelmo (rosa)	32	4.5	194
Mela	0,9	0.84	36
Ribes	66	5.07	218

I valori di TAA in tabella sono stati calcolati con il metodo di Rice-Evans.^{10,11,12}

* Dallo studio sull'arancia rossa, Prof.ssa R. Marchelli, Dipartimento di Chimica Organica e Industriale dell'Università di Parma.

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The fruits with the highest vitamin C content are currants. They are rare and pricey but they are packed with beneficial substances.

Blood oranges come right after them. They are cheaper and have a remarkable anti-radical power as they are high in vitamin C and other substances.

In terms of total antioxidant activity, currants come second.

TOTAL ANTIOXIDANT ACTIVITY (TAA) OF SOME IMPORTANT KINDS OF FRESH FRUIT JUICES

Study conducted by the Department of Organic and Industrial Chemistry of Parma - Marcelli.



Our daily requirement of vitamin C is around 80 mg, depending on season, age and job. The vitamin C of fruit is closely related to its freshness and to the way we eat it: the less we process raw materials, the more vitamins we absorb. Therefore, it is highly recommended that we avoid drinking hot orange juice, as heat deteriorates vitamins. Centrifuging and excessive filtering negatively affect the juice, and spoils its beneficial properties.



One glass of fresh orange juice (200 ml) is enough to satisfy our daily requirement of **vitamin C**.

And there is more: orange juice is low in calories (34 kcal per 100 ml) and it is a natural source of sugar which is **immediately sent** to our muscles and brain.

VITAMIN SUPPLEMENTS OR FRESH ORANGES? FRUIT WINS

Study published on the Journal of Food Science (2011) and conducted by Tory Parker and other researchers of the Brigham Young University (USA)



It is better to take vitamin C through oranges in the most natural way rather than through pills or supplements.

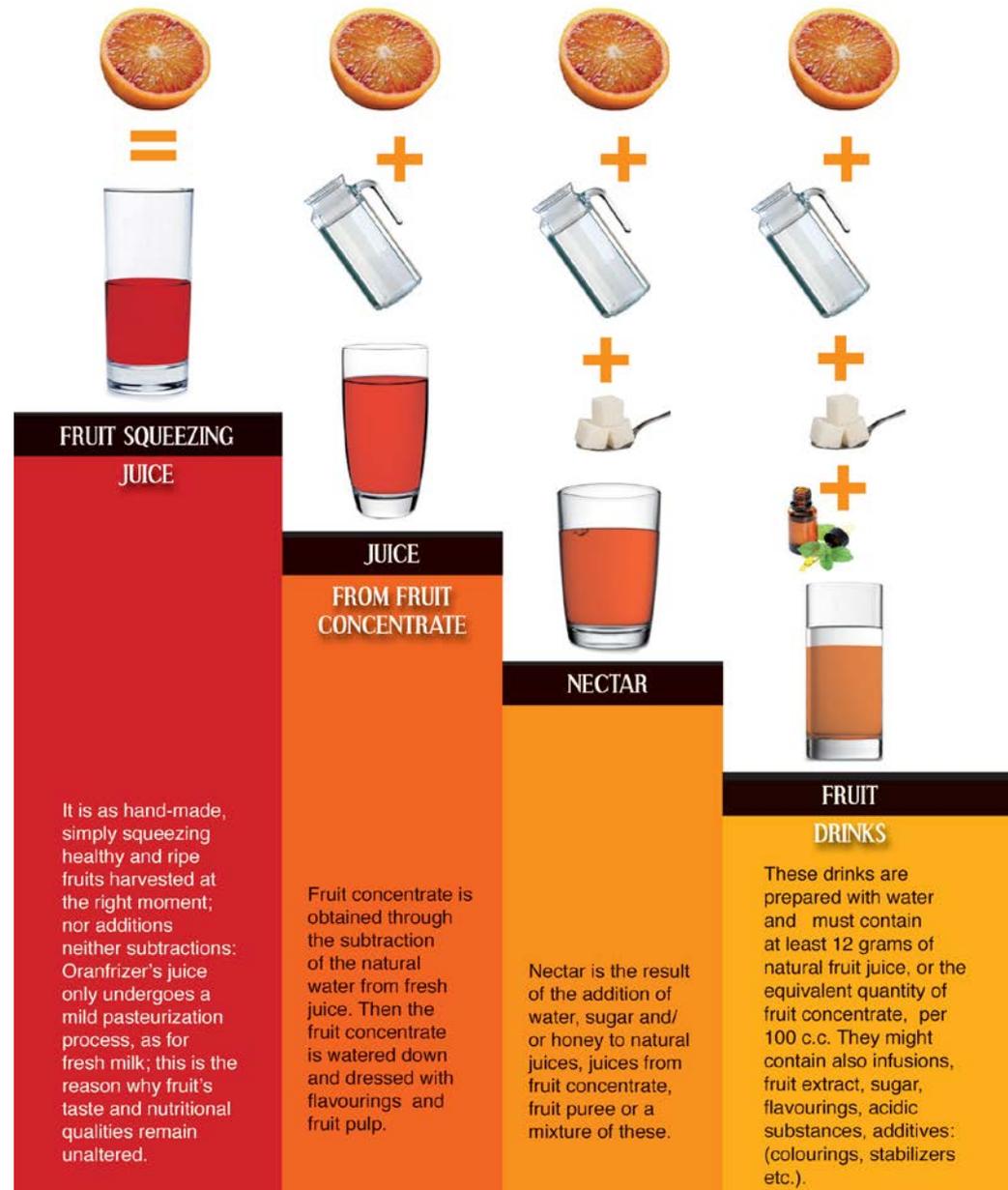
Researchers have tried to understand whether both ways boost our immune system. Well, there is no doubt about it: orange juice is by far the best.

"Its mix of antioxidants and antimicrobials makes the difference". These are the words of nutritionist Tory Parker, Professor of Nutrition, Dietetics and Food Science. He carried out the study together with other researchers of the Brigham Young University (USA).



LET'S JUICE IT UP! 100 NFC!

BE CAREFUL..
THERE ARE
MANY DRINKS
THAT CONTAIN RED FRUIT.
WE MUST CONSIDER
ATTENTIVELY
THE DIFFERENCES AMONG
THEM
AND TELL CONSUMERS



100% NFC

Not From Concentrate



Oranfrizer produces 100% NFC fresh juices without adding or taking anything away from the juice obtained by squeezing citruses selected to this end.

Oranfrizer manages the entire food chain: grows the citruses, squeezes them and then packs the fresh juices.

NFC juices produced by Oranfrizer are a volcano of health, and are recommended for everybody. The products undergo only a heat treatment to preserve the juice's organoleptic and nutritional features and a two months shelf life from the packing.

Oranfrizer juices are like home-made fresh squeezed juices and are ready to drink (shaken before using, to be consumed within three days after opening)

Oranfrizer citrus juices offer a unique taste and are an ideal break in a healthy diet.



Thanks for your attention!

