



Townhall Meeting

Should I Buy Antioxidant Superfruit Juices or Supplements?

Part 4



Taking control of your diet is in your own hands.
Practice a color-rich diet of whole foods.

Should we be buying expensive antioxidant superfruit juices?

Part 1, *click!*

Part 2

Part 3

What's in Part 4 ?

- superfruit juice products are marketed partly just on their color -- usually an attractive purple, blue or orange/red juice. The colors come mainly from anthocyanin pigments of the fruits used
- why and how does a plant make anthocyanins? What conditions affect anthocyanin density in plants?

- the **ORAC** and antioxidant marketing of superfruit products are based mainly on the promise of health benefits from anthocyanins. What happens to anthocyanins after ingestion and what science supports their value to health of the human body?
- in the final analysis, what health values do superfruit beverages actually offer?

[follow the [Wikipedia](#) links]

Berries and other fruits qualifying as **superfruits** are not only just enjoyable to eat, but we have an expectation from them: we want them to contribute **antioxidant** value in our diet.

If fresh berries or other whole food superfruits are not convenient, however, many consumers turn to antioxidant superfruit juices, pills or powders for fighting **oxygen radicals**.

The convenience factor of using juices, smoothies, powders or pills is important in consumer behavior and is unlikely to change, so we accept these more convenient product formats as semi-permanent ways of achieving nutrition.

But questions remain about what we're actually getting...

Do these products really provide benefit?

Is the dietary antioxidant story really all it's cracked up to be?

Or are we buying the marketing message?

In science, we want to hear all points of view, especially those that put exaggerated marketing hype under the spotlight of objective scrutiny.

In a "Townhall Meeting", we stand on the stage with no props or camouflage of the truth -- it's just the audience, the speaker and the topic... all *undressed* of fanfare.

So for August, we're going to look at 3 questions each week to unravel the truth about antioxidant superfruit juices and supplements -- sold to consumers like Aspirin is for headaches.

Aspirin works.

What benefits do antioxidant superfruit juices really offer?



Townhall Meeting

PART 4

[follow the [Wikipedia](#) links]

Question #1

*Where do these colors derive from in the plant and why does the plant make them?
What factors affect their density?*

Let's think critically.

Antioxidant superfruit juices are usually expensive (\$30-\$55 for 750 ml), packaged in attractive bottles and labels, come with an exotic marketing story and are usually appealing to the eye, having a rich color.

But devoted consumers buy these products for what they're told and apparently believe is a health value.

Many people make these following subjective relationships (none confirmed by science):

*deeper color = more anthocyanins = more ORAC
= more antioxidant benefit*

Another way of superfruit product marketers may state it:

*Deeper juice color from anthocyanins means
better antioxidant protection for the user*

Is this all true?

*So, to begin, let's see where these colors
derive from in the plant
and why the plant makes them*



Whether from berries or flower petals, anthocyanins are produced by plants to attract pollinators or predators that will help disperse seeds.

In berries and other colorful fruits, they also are in skins to protect seeds from ultraviolet light, assuring regeneration.

Anthocyanins might have an adage like many police departments: *"to serve and protect"*

As color agents in the plant world, they are usually synthesized in the most external plant components, such as flower petals, fruit coats or leaves

Their functions? (listed briefly below, but [click here for a longer FAQ](#))

- provide a visual guide to attract **pollinators** or **foraging animals** to the plant for seed dispersal, the whole purpose serving to perpetuate the species
- filter and absorb intense sunlight and **ultraviolet radiation**, a protective role for plants exposed to sun throughout the growing season
- respond to environmental stressors, like pests or plant diseases, increasing in density to create further attraction and defense

Studies of plants in the field have shown the precise effect of **soil pH or acidity** level affects anthocyanin synthesis.

In other words, a typical anthocyanin may be red in acid soils, violet in neutral soils, and blue in basic soils (high PH, low acidity).

A single type of anthocyanin can be responsible for different colors; for example a red tulip, purple pansy, yellow daffodil and blue iris may all contain the same anthocyanin in a different pH environment.

Laboratory experiments have also shown that anthocyanins have antioxidant or anti-stress properties, but this is *only in test tube studies or experiments on lab animals* showing especially good promise for an effect on cancer mechanisms.



Question #2

What is the fate of ingested anthocyanins in the human body ?

We'll make 4 points

1. From what we've just reviewed, an important conclusion needs to be made concerning ingested foods containing anthocyanins:

as soon as the food encounters the **acid environment of the human stomach** (pH = 1-2, i.e., extreme acidity), the **anthocyanin properties change** in a way difficult to measure accurately in the living body.

For anthocyanins, what goes into the stomach does not equal what goes out into the digestive tract or blood (where the pH is 7.4 (neutral to basic) and the anthocyanin properties may change again).

2. We have already discussed in **Part 2, Question 1** of this series that our bodies see anthocyanins and other polyphenols as "foreign" substances that need to be rapidly metabolized or excreted.

In other words, the body's need for anthocyanins is low, and most consumed (about 97%) are eliminated within hours.

3. There is significant risk of too much anthocyanin intake resulting in pro-oxidant effects, that is, actually increasing the chances of more oxygen radical production.

Read a **research abstract about pro-oxidant effects here**, *click!*

4. Despite the above cautions, there is considerable research on the potential for health benefits from anthocyanin intake, meaning scientists are still searching for answers -- something reported here at the **Berry Doctor's Journal in an 8-part series last year**, *click*

A respected berry and anthocyanin scientist has stated: ***"until the absorption and metabolic fate of anthocyanins in vivo is unravelled, it would be unwise to conclude that a high consumption of them will reduce the risk of chronic diseases."***

Understanding of anthocyanin effects in the human body is very rudimentary and preliminary at best, maybe even pointing toward a conclusion of minor importance.

*Is this the best case manufacturers of
superfruit beverages
can make for providing health benefits
from these products?*

Question #3

So what expectations should consumers have about possible health benefits of superfruit juices?

The emphasis of a superfruit product is its color or apparent anthocyanin content.

However, nearly all superfruit beverages and supplements *ignore diverse and significant nutrient content* -- the signature qualifying feature of why a fruit is "super".

Commercial superfruit juices are highly processed, double-pasteurized drinks devoid of nutrients and with dubious value as antioxidant sources.

What real value do they give us?

The easiest and most healthful solution for getting antioxidant nutrients (vitamins A, C and E) and natural **prebiotic fiber**, essential minerals and other vitamins is to eat **whole foods** containing these valued qualities.

*Conveniently, they come as plant foods
in attractive colors that encourage us
to shop and prepare meals by the **Color Code!***

*Also recognized as the "**5-10 a day plan**", click*

Buy plant foods with edible skins (**sources of fiber** and pigments) and **seeds** where contents of essential **omega fats**, minerals and vitamins are naturally abundant.

Conclusion:

Ingested anthocyanins:

- have a change in properties when entering the acid environment of the stomach -- *what you drink as a superfruit beverage is not what you get as a dietary antioxidant*
- are mostly metabolized or excreted
- may cause oxidative reactions if in high concentrations

- have *never been shown* to affect health in humans

Better to focus on high nutrient intake, especially of foods with the antioxidant vitamins A, C and E, and dietary prebiotic fiber, which have proven health benefits, and may be the true "**signatures**" of superfruits.

Reading

The Possible Health Benefits of Anthocyanin Pigments and Polyphenolics by

R.E.Wrolstad, PhD

"There is much to be learned about the bioavailability of these compounds, how they are metabolized, structure-activity relationships, and the mechanisms by which they may prevent disease.

We also need to determine if some of these compounds might act as pro-oxidants at certain dosage levels, leading to harmful effects.

It may be advantageous for us to consume a variety of antioxidants in food that have somewhat different oxidation potentials, solubilities, rates of absorption, and mechanisms of action, which mirrors the nutritionist's recommendation that we eat a wide variety of fruits, vegetables, and cereal grains."

References (inexpensive books on [Amazon.com](https://www.amazon.com))

- Heber D. What Color Is Your Diet?, ReganBooks/HarperCollins, New York, 2001
- Joseph JA, Nadeau DA, Underwood A. The Color Code, Hyperion Books, New York, 2002

NEXT!

- Busting berry myths

ARCHIVES ([click!](#))

Pass this information on to a friend...

Suggest a visit to the **Berry Doctor Sign-in Page!**

Dr. Paul
The Berry Doctor

contact [The Berry Doctor](#)

Want to reprint an article? I have a wide variety of articles on berry nutrition and food antioxidants you can consider for your website or newsletter. I'm sure there's a perfect fit for you! [Please email me](#) and I'll be happy to give you some choices and the attribution line.

Privacy policy: I do not rent, sell, trade or share your email address with anyone, ever.

To change your email address: send a note with the new address to [The Berry Doctor!](#)

To unsubscribe: Click once on the "unsubscribe" link at the end of the email page you receive.

The fine print: This newsletter is Copyright© 2006-8 by The Berry Doctor
