



Best of the Berry Doctor 2008

It's November 2008, 2 years of weekly essays concluded.

Time to review what readers liked best about the past year's reports.

Measured by a webpage visit counter, we're presenting again the top 3 articles of 2008!

This was Number 1 !

Numbers 2 and 3 are [listed in the Archives](#)

Busting Berry Myths

No. 1: ORAC

Myths about health and the healing value of berries or any plant food or juice product come from two sources

- [folk or indigenous medicine](#) (no foundations in science)
- scientific illiteracy

Myths gain life in the public when they're used to market products, most often by persuasive personal testimonials of how a product provided benefit to

an individual or small group of people with similar experiences.

Unscientific and difficult to replicate in valid research, testimonials are wide open to exaggeration and misleading information motivated to sell a product.

Myths give pizzazz for selling.

Science ...by contrast...

*seeks objective information demonstrated
by repetition under controlled conditions
of the laboratory or clinic...*

then confirmed by expert skeptical peers.

This is how science works best -- subject a myth, subject any unconfirmed concept... to a *trial by fire* ... the fire of scientific doubt, replication, challenge, and scrutiny.

Any concept surviving can be said to have achieved "significant scientific agreement", a future topic to be covered more thoroughly at the Berry Doctor's Journal.

And this is also what most consumers want -- *the plain truth*, so we're going to begin Year 3 of the Berry Doctor's Journal by covering controversial topics in a series of myth-busting essays, exposing misinformation about berries and berry products.

*We're going to keep manufacturers and
marketers honest,
and set the record straight.*



Spoon up the truth about berries.

Let's bust myths.

[follow the [Wikipedia](#) links]

Myth

Busted!

If ever a bandwagon was overloaded, the use of ORAC to rank berries or market berry products and superfruit juices is stacked deep in misunderstanding, stretched truths and exaggeration.

ORAC -- the oxygen radical absorbance capacity -- *has meaning only* in a test tube yet it has become synonymous with berry rankings **tabulated before at the Berry Doctor's Journal**

1. açai
2. seabuckthorn
3. wolfberry (goji)
4. black chokeberry (aronia)
5. etc.

The ORAC scores apply *only* to laboratory test tube conditions and *were developed and are intended for use by scientists only* to quantify the antioxidant *potential* of such berries used as foods or ingredients.

Armed with such rankings, however, unscientific, unscrupulous marketers proclaim that açai is better for you than seabuckthorn which is better than goji which is better than....

Manufacturers go even further down the confused road of misunderstanding and misinformation by putting juices of multiple high-ORAC fruits all together in one product, then claiming it all adds up to be a superior health beverage.

Why?

It's as if they're saying, "The more, the better".

Or "Our product has more ORAC than yours, so ours is better".

Let's ask what's in it that *really* serves health.

As human science stands today, **ORAC is meaningless.**

Until proved to exist in a living animal, any evidence of antioxidant activity in a test tube cannot be applied to humans.



Getting sufficient intake of antioxidants
may be as easy as selecting a few colorful foods
or common juices like orange, rich in vitamin C and pro-vitamin A carotenoids

A few reasons why ORAC has no meaning in the human body

1. the high acid properties of the human stomach (pH 1-2, very acidic) alter the chemistry of the consumed antioxidants in berries, other food or beverages -- the anthocyanins, flavonoids, ellagic acid, tannins and other polyphenols.

What goes in is not what the body gets.

2. our bodies want and need antioxidant vitamins A, C and E, but **do not want and actively metabolize or eliminate polyphenols like anthocyanins and flavonoids** -- the *most marketed* ingredients of superfruit juices.
3. evidence from recent science shows that absorption of ingested polyphenols reaches **saturation** rapidly, indicating that **ability to store these chemicals as antioxidants is small and limited**.
4. other than for vitamins A, C and E, a **physiological response** or benefit of antioxidant compounds from food or juice has never been shown by expert-validated science.

More ORAC is not better because

1. it is an artificial benchmark applying only to conditions in a test tube
2. the ORAC test is fraught with **many mysteries and weaknesses as a measurement**
3. there is no scientific evidence that ingesting more ORAC-enriched foods or juices means better antioxidant protection in the body
4. there is good evidence that our bodies see **antioxidant polyphenols as "foreign" and unwanted in high quantities, so actively metabolize and excrete them**
5. *the more anthocyanins consumed, the more that are eliminated* click!
6. there is as much theory for **pro-oxidant effects of high antioxidant intake** as there is for antioxidant effects

7. antioxidant-rich juices may interfere with the therapeutic actions of prescribed drugs
8. if manufacturers and marketers want to state something about ORAC on a product label, they are **obligated to demonstrate to the scientific community and FDA that the antioxidants actually have biological activity in the human body** and can be defined by a **Reference Daily Intake** value (no such science exists)
9. it is easy to fulfill dietary antioxidant intake (vitamins A, C and E) by selecting common, inexpensive whole foods needed for daily meals -- just follow the simple **Color Code**. Due to their varied colors, berries (fresh, frozen, dried, canned) are a good guide for keeping selection simple.

Summarizing ... the potential values of antioxidants in the human body are

1. we **naturally make our own antioxidants, like glutathione, alpha-lipoic acid and melatonin** which, combined with dietary antioxidant vitamins A-C-E, are probably enough to supply antioxidant protection and should not be exceeded in overall content to minimize possibilities for pro-oxidant effects
2. **antioxidants may be best in small, precise quantities that have fine-tuning roles in cell physiology** similar to those of hormones
3. there is no scientific evidence supporting the view that more ORAC is better for human health. Moderate intake by simply involving common colorful foods in meals, juices and snacks is inexpensive and effective

Highlights from this research study:

Anthocyanins, proanthocyanidins and catechins are the least well-absorbed of dietary polyphenols, *click!*

- "Gallic acid and isoflavones are the most well-absorbed polyphenols."
- "**The least well-absorbed polyphenols are the proanthocyanidins, tea catechins, and anthocyanins.**"

Berries and superfruits rich in gallic acid

- pomegranate
- mango
- grape seeds
- acai

Isoflavones are a signature of soybeans and soy products

How do I get colorful antioxidant foods into my diet?

It's easier, less expensive and tastier than you may think...

Just use 3-5 different colors a day in your meals!

Orange-yellow Plant Foods Mean **Vitamin A** Content: oranges, mangoes, carrots, squash, yellow potatoes or yams (sweet potatoes) all contain **carotenoids which are pro-vitamin A compounds**

Red or **Green** Plant Foods Mean **Vitamin C** Content: red - strawberries, red raspberries, red delicious apples, red bell peppers, tomatoes; green - spinach, broccoli, kiwifruit

Seeds, Nuts or Plant Oils Mean **Vitamin E** Content: blackberries (chew the seeds), unsalted peanuts with skins, flaxseeds, sunflower seeds, almonds, olive, soy, safflower or canola oil

Reading

- **Nutraceuticals: Fact and fiction**

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