

Anti-Angiogenic Juice Recipes

By Geoff D'Arcy Lic. Ac. D.O.M.

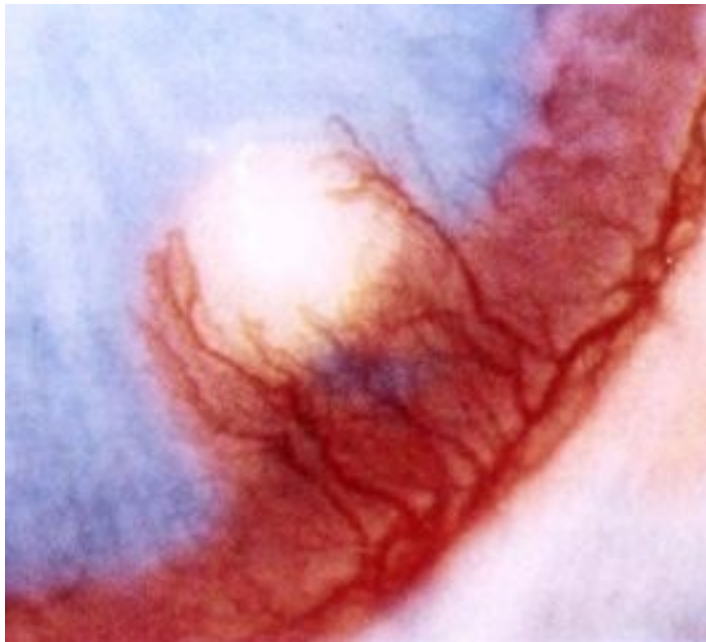


Angiogenesis

From the Greek:
angio for vessel
genesis for birth

The right diet of anti-angiogenic foods may be our best weapon in preventing cancer.

Did you know that up to 40 percent of women ages 40 to 50 may have tiny cancers in their breasts—no larger than the tip of a ballpoint pen? Microscopic tumors are forming all the time, but our body's natural cancer-fighting system usually prevents them from growing large enough to cause harm. A key component of this system is **angiogenesis**, the formation of new blood vessels. "Angiogenesis is what makes the difference between a small, innocuous cancer and a runaway, dangerous disease," says William Li, MD, president and medical director of the Angiogenesis Foundation. Already about a dozen drugs battle cancer by keeping blood vessel growth in check, but Li is even more excited by research that shows that adding certain foods to our diet can have a similar effect.



Angiogenesis, new capillary blood vessel growth, as seen by researchers in the laboratory.

Proliferation of new blood vessels also takes place in adults, although it is a relatively infrequent event. In women, angiogenesis is active a few days each month as new blood vessels form in the lining of the uterus during the menstrual cycle. Also, angiogenesis is necessary for the repair or regeneration of tissue during wound healing.

Angiogenesis is regulated by both activator and inhibitor molecules. Normally, the inhibitors predominate, blocking growth. Should a need for new blood vessels arise, angiogenesis activa-

tors increase in number and inhibitors decrease. This prompts the growth and division of vascular endothelial cells and, ultimately, the formation of new blood vessels. Cancer researchers studying the conditions necessary for cancer metastasis have discovered that one of the critical events required is the growth of a new network of blood vessels. This process of forming new blood vessels is called angiogenesis.

Tumor angiogenesis is the proliferation of a network of blood vessels that penetrates into cancerous growths, supplying nutrients and oxygen and removing waste products. Tumor angiogenesis actually starts with cancerous tumor cells releasing molecules that send signals to surrounding normal host tissue. This signaling activates certain genes in the host tissue that, in turn, make proteins to encourage growth of new blood vessels.

Preventing Cancer Growth

Common method is by destroying the cancerous tumor by:

- 1) Surgery,**
- 2) Radiotherapy**
- 3) Chemotherapy** (Usually done together).

Limitations

- Surgery –cannot eliminate all cancerous cells.
- Radiotherapy (X rays) –radiation will kill some of the normal cells too.
- Chemotherapy by medication or drugs to reach cancerous cells –many side effects including hair loss or drop in immune cell, organs complication.

4) Anti-Angiogenesis is a new approaches by attacking the tumor's blood supply thus depriving it food. But anti-Angiogenesis Metronomic has to be a continuous process. The good news is that a significant quantities of someAnti-Angiogenesis molecules are present in fruits and vegetables.

Angiogenesis Inhibitors

- Other angiogenesis inhibitors have been found in nature, and concentrated -in green tea, broccoli sprouts, maqui berries, fungi, mushrooms, assorted greens, Chinese cabbage, tree bark, shark tissues and many other substances.
- Manufactured synthetically , Still other angiogenesis inhibitors have been manufactured synthetically in the laboratory.
- Some FDA-approved medicines have also been "re-discovered" to have anti-angiogenic properties.

Anti-Inflammatory Phyto Nutrients

- Healthy, healing inflammatory processes, act as chemical fertilizers, to promote cell reproduction, are hijacked into growing micro-tumors and tumors.
- By encouraging immune cells to produce inflammation, the tumor gets the body to make the fuel needed for its own growth and invasion of surrounding tissues||*

(Anticancer David Servan-Schreiber MD, PhD)

- (Cancer) patients with the lowest level of inflammation were twice as likely to live through the next few years (Anticancer, David Servan-Schreiber MD, PhD)
- Several studies show people who take anti-inflammatory medication (Advil, Nuprofen, ibuprofen etc.) are less vulnerable to cancer.
- It is as if the body's chronic underlying state of inflammation were the determining factor of health (Anticancer, David Servan-Schreiber MD, PhD)

NF-kappa B, the Black Knight of Cancer

—The growth and spread of cancer cells relies to a large extent on a single pro-inflammatory factor secreted by the tumor cells—a sort of black knight without which tumors become much more fragile. It also prevents them from creating metastases||

NF kappa B: Linking Inflammation and Immunity to Cancer Development and Progression. 2005, Karin M. & Greten F.R.

—Almost every cancer preventative is an inhibitor of NF kappa B

Albert Baldwin PhD., Professor at the University of North Carolina

The White Knights of Cancer PhytoNutrients fight NF-kappa B

There are many natural molecules known to block and act against NF-kappa B,

- catechins in green tea,
- Sulphuraphane in broccoli sprouts
- curcumin in turmeric,
- resveratrol in grapes
- andrographolide in andrographis
- ingredients in maqui berry

Strengthen the —Terrain|| of our Bodies!

One New definition of cancer: (Nature, 2007, reported in Anticancer by David Servan-Schreiber MD, PhD)

“Cancer can be understood as a breakdown in the balance between cells that have always been “dormant” in the body and natural defenses that normally keep them at bay”. This Study highlights how important it is to nourish and strengthen our “terrain”. **Cancer arises only from those cancer cells that find fertile „terrain“ in which to grow”**

Strengthen the “terrain” of our bodies with natural, anti-angiogenic foods and dietary supplements!

The Power of Phyto-Nutrients in our Diet

- Green Tea—3 cups a day 50% reduction reduced risk of relapse of Breast cancer or Prostate cancer

Simple changes in Nutrition and exercise,

- reduced cancer by 40% according to a World Cancer Fund that synthesized several thousand studies.
- 60% reduction in cancer mortality (20,000 people followed over 11 years)
- Increased life expectancy by 14 years.
- 68% decreased mortality in breast cancer spread to lymph. David Servan-Schreiber, MD, PhD

Anti-Angiogenic Foods

Green Tea	Dark Chocolate	Soy Beans
Artichokes	Tomatoes	Strawberries
Blackberries	Raspberries	Blueberries
Cranberries	Garlic	Apple
Pineapple	Cherries	Oranges
Grapefruit	Lemons	Red Grapes
Red Wine	Kale	Broccoli
Cauliflower	Brussels Sprouts	Bok Choy
Ginseng	Licorice	Lavender
Turmeric	Maitake Mushroom	Ginger
Parsley	Pumpkin	Olive Oil
Grape Seed Oil	Nutmeg	compiled by: Christianna Pierce, MA, RD

Sources:

Dulak, J. —Nutraceuticals as Anti-Angiogenic Agents: Hopes and Reality, *J. of Physiology and Pharmacology* 2005, 56, Suppl1, 51-69.L

i, William. —Dietary Sources of Naturally-Occurring Antiangiogenic Substances, *Angiogenesis Foundation* (<http://www.angio.org>)

Servan-Schreiber, David. *Anti-Cancer: A New Way of Life*, Viking, 2008. Confidential and proprietary

Protective ingredients in plants protect us

- **Berry fruit extracts** and their bioactive compounds, when isolated, significantly inhibited activator protein-1 (AP-1), nuclear factor-KappaB (NF-κB) and mitogen-activated protein kinases (MAPKs) signaling induced by UV or 12-tetradecanoylphorbol-13-acetate (TPA). Berry extracts specifically induced apoptosis and differentiation
- **Antioxidants**—The chemopreventative effects of berry fruits might be through their antioxidant properties by blocking reactive oxygen species-mediated AP-1, NF-κB and MAPK activation.²²—
- **Flavonoids:** Anti-angiogenic effects: modulation of cell signaling pathways by flavonoids could help prevent cancer.
- **Delphinidins** inhibit EGFR kinase inhibitors downstream. It's the delphinidin aglycone in the anthocyanin group of compounds that recently has captured the attention of the French and produced a November 2005 NIH overview on delphinidins in brain cancer research (Quebec study).

How can we guarantee we get the right vegetables and fruits in high amounts?

Well, one major way is to make fresh Juice daily, that are filled with known angiogenic inhibiting compounds, and then add a scoop of concentrated green drink powder, to the fresh anti-angiogenic juice. It tastes great and you start your day with approximately 7 or 8 portions of fruits and vegetables *before* you start eating!!! Now that is really great prevention.

The following juices have the major anti-angiogenic juices highlighted... and they taste great!! A special thanks to Dr. Annie Jackman to get them to taste great.

The Power of Phyto-Nutrients in our Diet

Green Tea— 3 cups a day 50% reduction **reduced risk of relapse of Breast cancer or Prostate cancer**

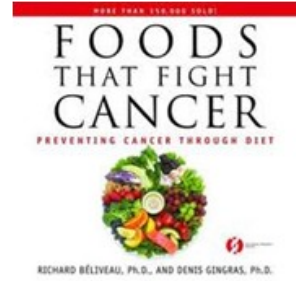
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Cancer Prevention Food Studies

Source: Béliveau, R., and Gingras, D. Eating Well, .

McClelland & Stewart Ltd., Toronto, 2009



Foods	# of participants	Type of cancer	Reduced risk (%)
Cruciferous vegetables	47,909	Bladder	60
	4,309	Lung	30
	29,361	Prostate	50
Tomatoes	47,365	Prostate	25
Citrus fruits	521,457	Stomach, esophagus	25
Green vegetables (dietary folate)	81,922	Pancreas	75
	11,699	Breast (post-menopause)	44
Lignans	58,049	Breast (post-menopause)	28
Carrots	490,802	Head and neck	46
Apples, pears, plums	490,802	Head and neck	38
Green tea	69,710	Colorectal	57
Vegetable oils and nuts	295,344	Prostate	32

Kale is very high in anti-angiogenic compounds, as well as B-carotene, lutein, zeaxanthin (which helps prevent retinal detachment and macular degeneration) vitamins A and K and B complex.

1 cucumber

4 stalks celery

4-5 kale leaves

1 lemon

1 apple

1 1" piece of ginger

The lemon, apple and ginger are all high in A-A compounds and make the kale very tasty. The cucumber and celery are very high in water and flavor as well as potassium, magnesium, vitamin c, phosphorus and folate. I generally begin every juice with cukes and celery.

Broccoli, brussels sprouts, parsley, cauliflower, tomatoes, and pumpkin are all high in A-A compounds, and should be rotated while juicing.

When preparing a fruit based juice the best fruits to include are **pineapple, grapefruit, lemons, strawberries, blueberries, blackberries, apples, oranges and red grapes**. Kale and parsley also mix very well with these fruits and, if you are new to juicing, can make the strong taste of kale more palatable. I found that the more I juiced, the more I enjoyed and actually craved more green and less sweet!

Sweet Apple Ginger Juice

1 Apple
2 Beets
3 Large Carrots
1 Piece Ginger (thumb sized)
4 cups Spinach/Kale

Apple-Cantaloupe-Honeydew-Kale-Swiss Chard

2 Apples
1/2 Cantaloupe
1/2 Honeydew
6-8 leaves Kale
6-8 leaves Swiss chard

Apple-Carrot-Beet

2 Apples
4 Carrots
2 Beets
6 kale leaves
1" ginger root (1 tablespoon)

Apple-Cabbage-Carrot-Swiss Chard-Ginger-Lemon

2 Apples
1 wedge Red Cabbage
2 Large Carrots
1 Piece Ginger (thumb sized)
6 leaves Swiss Chard
1/4 lemon

Blackberry Kiwi

1/4 large Pineapple, core removed and roughly cubed

1 cup Blackberries

1 Kiwi Fruit

1/4 Comice Pear

1/4 cup Coconut Water

30 Mint leaves

Carrot-Kale Combo

1 Green Apple

3 handfuls Spinach

6-8 Kale leaves

4 large Carrots

1 piece Ginger (thumb size)

Gazpacho Juice

4 Plum Tomatoes

1 large Cucumber

2 stalks Celery

1 Red Bell Pepper

1/4 small Red Onion

**2 cups Parsley, leaves and stems, roughly chopped
and packed into the measuring cup**

1 Lime

Great Green Fruity Mix

2 cups Beet Greens, Red Swiss Chard, Kale, Spinach or
a combination,
roughly chopped and packed into the measuring cup

1 Golden Delicious Apple

1/2 Comice Pear

10 Strawberries, green tops cut off

1 cup Coconut Water

Great Greens Juice

2 Green Apples
2-3 cups Spinach
6-8 Kale
1 Cucumber
4 stalks Celery
1/2 Fennel Bulb
1 bunch Basil

Green Lemonade

1 Green Apple
3 handfuls Spinach, 1.5 cup
6-8 Kale leaves, 2 cups
1/2 Cucumber
4 Celery Stalks
1/2 Lemon

Lemon Lime Cauliflower

1 Lemon
1 Lime
2 Asian Pears
2 Green Apples
2 Carrots
1 Piece Ginger (thumb sized)
2 cups Cauliflower

Minty-Fresh Berry

2 cups Blackberries
2 Kiwi Fruit
16 Strawberries
2 cups Mint leaves, packed into the measuring cup

Purple Power Juice

1 cup cherries, pitted
6 cups Concord Grapes
1 Golden Delicious Apple
2 2 x 2" pieces Ginger
1/2 cup Blackberries

Kale-Fennel-Cucumber-Broccoli

1 Fennel Bulb
1 Cucumber
3 Celery Stalks
3 cups Kale
1 cup broccoli

Sunset Blend Juice

1 cup Pumpkin
1 medium Carrot
1 Red Bell Pepper
2 large Red Beets
2 Golden Delicious Apples
1 Orange, optional

Sweet N Tart Citrus

3 cups Cranberries
2 2" x 2" pieces Ginger
3 Oranges
2 small Ruby Red Grapefruit
2 Lemons

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3 large Red Beets

2 medium Carrots

2 stalks Celery

4 Plum Tomatoes

4 cups Parsley, leaves and stems, roughly chopped

1 Jalapeno, ribs and seeds removed

12 Red Radishes

Fruity Delight

1 cup strawberries

1 cup blueberries

2 cups red grapes

1 cup pineapple