

You've also probably heard that too much UV can cause your skin to "age" early, forming unsightly wrinkles (a process sometimes called **photoaging**). Cigarette smoke causes the same problem: free radicals damage the **collagen** in your skin the same way that they tear into your DNA.

The best defense against photoaging – not to mention skin cancer, cataracts, and macular degeneration – is to shield yourself from the sun with sunscreens, protective clothing, and sunglasses with 99-100% UV protection. But if free radicals *cause* your skin to wrinkle up early, then might antioxidants (which fight free radicals) *protect against* photoaging?

To get an answer to that kind of question, you'd look into the connections between antioxidants in the diet (on the one hand) and skin wrinkling at the sites on the body which get the most sun exposure (on the other). And to get a really *complete* answer, you'd have to look to see if the protective effects of antioxidants still hold in people whether they tend to be exposed to more or less damaging solar radiation, and whether their skin is fair and easily-damaged or darker and more burn-resistant.

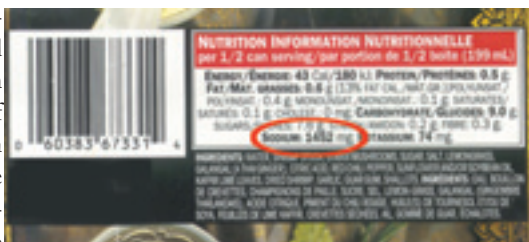
A group of scientists at Monash University in Melbourne, Australia did just that.¹⁸ The team collected some extreme close-ups of skin from four groups of older people: people living in sunny Greece and Australia who were genetically either of darker-skinned Greeks or of paler Anglo-Keltic stock, and naturally pasty-fleshed Nordic people living in Sweden's almost year-long gloom. Not surprisingly, the pale, sun-starved Swedes were the least photoaged, followed by the Greeks (who get lots of sun, but have protectively swarthy skin), while the sun-exposed, pale Anglo-Kelts of Australia had the worst wrinkling of the lot.

Next, the scientists looked at what the study subjects ate, looking to see if there were any protective elements in the diet. As they'd guessed, there were. In fact, across all the study populations, nearly a *third* of the variance in sun-induced wrinkling was accounted for by six out of the ten major food types. And in fact, **fully a fifth all skin aging could be accounted for by the apparent protective effects of a diet rich in vegetables, legumes, and olive oil**; by contrast, a high intake of meat and dairy had only a minor (and negative) effect (explaining less than one-twentieth of the variance).

Even more remarkably, when the researchers focussed in on the most vulnerable group – the pale-skinned, sun-exposed Anglo-Keltic Australians – they found that **a third of all differences in photoaging could be predicted by looking at a person's intake of just three foods: prunes, apples, and tea**. Why these foods rather than others? Part of the reason is likely to be that they're rich in brightly-colored, antioxidant **flavonoids**

such as **quercetin** (which is found in tea and apples alike), **catechins** (like the **epigallocatechin gallate** (EgCG) in tea), and the **anthocyanins** in the skins of plums (and thus, of prunes) which give them their rich reds and purples.

But why these *specific* foods, rather than other antioxidant-rich delicacies? It's a good guess that the fact that these are *common* foods in the diet, which an Australian might very well consume nearly every day of his or her life, also factors into the story. Outside of supplements, few Australians would get a daily dose of curcuminoids (from turmeric) or hawthorne berry – while in other parts of the world, these same foods might be providing the antioxidants which play the biggest part in protecting the skin from the harsh caress of the sun. In other words, tea, prunes, and apples might be local variations on a more global theme: that an antioxidant-rich diet is a key way to hang onto your youthful glow. But you knew that already, didn't you?



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The Holistic Kitchen
Tom Yum Gung Soup

You will need

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| 750mL (3C) water or light chicken broth/stock | into 1-inch lengths |
| 250 g (8 oz) shrimp/prawns, shelled and divided | 5 hot green chillis |
| 2 garlic cloves, minced | 125 mL (1/2 C) sliced straw mushrooms |
| 5 leaves Kaffir lime | 65 mL (1/4 C) lime juice |
| 3 slices fresh or dried galangal | 90 mL (3/8 C) chopped shallots or green onions |
| 65 mL (1/4 C) fish sauce (nam pla) | 1 T roasted chilli paste (nam phrik pao) |
| 2 stalks (lower third only) lemongrass (citronella), cut | 1 T chopped cilantro |

Directions

In a serving bowl, mix the lime juice and chilli paste. Set aside. In a stock pot, bring chicken broth to a boil over medium heat. Add garlic, Kaffir lime, galangal, fish sauce, lemongrass, and shallots, mushrooms, and chillis. Simmer 2 minutes. Add shrimp and reheat to boiling. Cook until the shrimps are pink and firm (1 minute maximum). Pour the soup into the serving bowl, stir, and garnish with cilantro. Serves three.

References

1. Brahe C, Bertini E. Spinal muscular atrophies: recent insights and impact on molecular diagnosis. *J Mol Med.* 1996 Oct;74(10):555-62.
2. Friesen WJ, Massenet S, Paushkin S, Wyse A, Dreyfuss G. Snn, the product of the spinal muscular atrophy gene, binds preferentially to dimethylarginine-containing protein targets. *Mol Cell.* 2001 May;7(5):1111-7.
3. "Vitamin Deficiency May Worsen Motor Neuron Disease." Howard Hughes Medical Institute News. <http://www.hhmi.org/news/dreyfuss2.html>
4. De Keyser J, Schaaf M, Teelken A. Peptidylarginine deiminase activity in postmortem white matter of patients with multiple sclerosis. *Neurosci Lett.* 1999 Jan 22;260(1):74-6.
5. Martin R, Whitaker JN, Rhame L, Goodin RR, McFarland HF. Citrulline-containing myelin basic protein is recognized by T-cell lines derived from multiple sclerosis patients and healthy individuals. *Neurology.* 1994 Jan;44(1):123-9.
6. Moscarello MA, Wood DD, Ackerley C, Boulias C. Myelin in multiple sclerosis is developmentally immature. *J Clin Invest.* 1994 Jul;94(1):146-54.
7. Pritzker LB, Joshi S, Harauz G, Moscarello MA. Deimination of myelin basic protein. 2. Effect of methylation of MBP on its deimination by peptidylarginine deiminase. *Biochemistry.* 2000 May 9;39(18):5382-8.
8. Reynolds EH, Bottiglieri T, Laundry M, Crellin RF, Kirker SG. Vitamin B12 metabolism in multiple sclerosis. *Arch Neurol.* 1992 Jun;49(6):649-52.
9. Kira J, Tobimatsu S, Goto I. Vitamin B12 metabolism and massive-dose methyl vitamin B12 therapy in Japanese patients with multiple sclerosis. *Intern Med.* 1994 Feb;33(2):82-6.
10. Nijst TQ, Wevers RA, Schoonderwaldt HC, Hommes OR, de Haan AF. Vitamin B12 and folate concentrations in serum and cerebrospinal fluid of neurological patients with special reference to multiple sclerosis and dementia. *J Neurol Neurosurg Psychiatry.* 1990 Nov;53(11):951-4.
11. Kleiner K. Power Lunch. A diet packed with vitamins could help stop muscle wastage. *New Scientist.* 2001 June 2.
12. Wong BC, Ching CK, Lam SK. Helicobacter pylori infection and gastric cancer. *HKMJ.* 1999 Jun;5(2):175-9.
13. Murakami A, Jiwajinda S, Koshimizu K, Ohigashi H. Screening for in vitro anti-tumor promoting activities of edible plants from Thailand. *Cancer Lett.* 1995 Aug 16;95(1-2):139-46.
14. Murakami A, Ohigashi H, Koshimizu K. Review article: Possible anti-tumor promoting properties of traditional Thai food items and some of their active constituents. *Asia Pacific J Clin Nutr.* 1994;3(4):185-91.
15. Murakami A, Toyota K, Ohura S, Koshimizu K, Ohigashi H. Structure-activity relationships of (1S)-1'-acetoxychavicol acetate, a major constituent of a southeast Asian condiment plant Languas galanga, on the inhibition of tumor-promoter-induced Epstein-Barr virus activation. *J Agric Food Chem.* 2000 May;48(5):1518-23.
16. Murakami A, Gao G, Kim OK, Omura M, Yano M, Ito C, Furukawa H, Jiwajinda S, Koshimizu K, Ohigashi H. Identification of coumarins from the fruit of *Citrus hystrix* DC as inhibitors of nitric oxide generation in mouse macrophage RAW 264.7 cells. *J Agric Food Chem.* 1999 Jan;47(1): 333-9.
17. Ohshima H, Bartsch H. Chronic infections and inflammatory processes as cancer risk factors: possible role of nitric oxide in carcinogenesis. *Mutat Res.* 1994 Mar 1;305(2):253-64.
18. Purba MB, Kouris-Blazos A, Wattanapenp-aihoon N, Lukito W, Rothenberg EM, Steen BC, Wahlqvist ML. Skin wrinkling can food make a difference? *J Am Coll Nutr.* 2001 Feb;20(1):71-80.

Trouble in what area??



Funny Thing.

It used to be that most people buying Maca were **women**, because Peruvian tradition has it that Maca is helpful for the symptoms of menopause. But when scientists looked into how the stuff worked, they found evidence to suggest that Maca isn't a "women's herb," but a **sex hormone herb**, affecting the way a mammal's "master gland" (hypothalamus) regulates sex hormones through the pituitary.

So the herb could have one effect in women ... and a very different effect in men.

While there aren't yet any controlled trials, studies on animal sexual behavior seem pretty clear. Maca supports male sexual function. You can't ask a lab animal if he's having fun ... but you can sure tell when he's having a hard time.