



Diet Distortion

Have you heard the theory that a calorie-reduced diet is the key to longevity? While there is some scientific validity to this notion, there is much more to the story than simply cutting calories.

In the 1960s, researchers observed that the people of Okinawa, Japan lived longer and were in better health than other Japanese and Americans. The phenomenon was attributed to their diet, which was low in calories (62 to 83 percent lower depending on age) and rich in nutrients, particularly antioxidants (1, 2, 3, 4).

In a number of studies conducted as far back as 1932, rodents fed a low-calorie although highly nutritious diet lived longer than other rodents and developed less chronic disease, evidently confirming the theory that calorie-restriction was implicated in longevity. The various researchers involved in these studies determined several factors that might contribute to this, including



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Word of the life-lengthening benefits of calorie-restriction spread and it became a popular diet trend. Subsequent research further endorsed the theory, suggesting that a moderate low calorie diet (no more than a 20 percent reduction in calories) decreased inflammation (6), reduced oxidative stress (7), improved diastolic blood pressure (8), and protected against atherosclerosis (9).

In 2004, researchers conducted a long term study on human subjects (non-smoking Japanese-American males) who had been following a "longevity diet" for 36 years. The results suggested that a moderately calorie restricted diet (85 percent of the mean) led to a slight decrease in all-cause mortality (10).

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Let's Eat Curry! Turmeric vs. Curcumin

The ancients understood the therapeutic power of food. Hippocrates, the Greek physician, remarked "Let your food be your medicine and your medicine be your food." People of his time revered spices not just for their brilliant colors and taste but also for their medicinal value (1). The father of Western medicine, Aristotle taught us that the whole is more than the sum of its parts. We've come to understand this concept as "synergy". All phytochemicals (natural plant chemicals) have synergy. Regular consumption of fruits and vegetables is strongly associated with a reduced risk of developing chronic diseases, such as cancer and cardiovascular disease. Antioxidant nutrients taken alone, however, have not demonstrated consistent preventive effects. In other words, no single antioxidant can replace the combination of natural phytochemicals. Scientific evidence suggests that antioxidants or bioactive compounds are

best acquired through whole-food consumption. More than 5,000 phytochemicals have been identified in fruits, vegetables and grains, but a large percentage still remain unknown. A 2004 Nutritional Sciences study showed that the combination of oranges, apples, grapes and blueberries (think smoothies!) displayed a synergistic effect in antioxidant activity five times higher than that of each fruit alone, suggesting synergistic effects after combination of the four fruits (2).

Holistic practitioners also understand that isolating the components of a living organism and then remixing them does not re-create the living organism or a live energy field. Science tends to overlook the concepts of "wholeness" and energy fields. Instead, Western science strives to isolate a plant's "active" compound, synthesize it and then patent it as a pharmaceutical drug.

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Spring is when you feel like whistling even with a shoe full of slush.

Doug Larson



Let's Eat Curry! Turmeric vs. Curcumin

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Ayurveda, the ancient Hindu art of medicine and life prolongation, holds that the present of a condiment, such as an herb or spice, can change and greatly enhance the physiological effect of a food (3). Turmeric (*Curcuma longa* L.), also called curry, has a rich history as a medicinal plant in Ayurveda, Unani and Siddha medicine as a home remedy for various diseases (4).

Three decades of scientific research confirms that turmeric does indeed have medicinal applications. To name a few: anti-inflammatory, antioxidant, anticarcinogenic, antimutagenic, anticoagulant, antidiabetic, antibacterial, antifungal, antiprotozoal, antiviral, and remedy for peptic ulcer (1-7). Curcumin, the main yellow bioactive component of turmeric, is used in the bulk of these scientific studies. Diseases of the gastrointestinal tract are at the forefront as one of the most promising targets for curcumin therapy(9).

In a 2005 study it was determined that turmeric was more effective than its corresponding levels of curcumin in delaying diabetic cataract in rats. The pronounced effect of turmeric may be due to other ingredients besides curcumin. In addition to curcuminoids, turmeric

contains protein, fat, minerals, carbohydrates and essential oils (6).

One has to wonder if the outcome of some of the scientific studies would differ had the researchers investigated the effects of whole turmeric rather than curcumin or synthetic curcumin, commonly used in clinical research. Isolating and using curcumin alone may have some undesirable effects, including promoting infertility and inhibiting human sperm motility (4 –ref #113). In India, the second most populated country in the world, turmeric rather than curcumin is used in traditional cooking. Adjusted on a per capita basis, India has the lowest incidence of prostate and liver cancers, the second lowest colon cancer rate, third lowest breast cancer rate and sixth lowest incidence of stomach and lung cancer in the world (8). Could these impressive statistics be related to the regular consumption of turmeric? Some would argue that a standardized extract of curcumin is required for medicinal or therapeutic purposes because the absorbability and bioavailability of turmeric is so low that one could never eat enough, but the Indian cancer statistics seem to say otherwise.

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Role of Chemicals In Disease

The question has always been nature or nurture, genetics versus environment, as the primary foundation for health and disease – but are we even aware of the full extent to which the physical environment factors into the nurture side of the equation? Scientists have been looking long and hard at the role of pesticide and chemical exposure in the etiology of human disease and disorder and are now beginning to focus their attention on the specific effect of environmental chemicals on insulin resistance.

There are many contributing factors to the skyrocketing prevalence of obesity, insulin resistance and diabetes, including changing dietary patterns, changing physical activity habits, changing lifestyle factors including smoking, alcohol consumption and poor stress management. Nonetheless, research studies have found that increased exposure to certain synthetic chemicals may be an etiological factor in this epidemic as well (1). A recent study found that exposure to one of these chemicals, specifically phthalates, is

correlated with both abdominal obesity and insulin resistance (1).

Phthalates are found commonly in cosmetics, soaps, pesticides, lubricants, plastics and paints, in fact they have permeated populations around the world for all age groups (5), so much so that more than 75% of the U.S. population carries detectable levels of multiple phthalate metabolites (6). Humans are exposed to phthalates through ingestion via food sources, inhalation and dermal contact, and phthalate metabolites have been detected in many body tissues including urine, blood, semen, amniotic fluid and breast milk (7). Despite the relatively fast metabolism of phthalate metabolites, urine markers remain relatively stable over periods of days to months likely due to common and consistent sources and patterns of exposure (8, 9).

Insulin resistance occurs when increased levels of insulin are necessary in order to regulate the transport of glucose from the blood stream into the cells of the peripheral tissues.

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Planting the Seed

According to Cate Henderson, Gardener and Seed Saver for the Heirloom Seed Sanctuary in Kingston Ontario, less than 3% of the 250,000 plant varieties are available to be agricultured today. As simple as it sounds, saving seeds means recovering the seeds of crops and saving them to replant; open pollination is used (pollination from insects, birds and wind); this produces new generations of plants with varying genetic traits-in other words bio-diverse crops. For more information stay tuned for CAHN-Pro's April newsletter. Visit

www.providence.ca to learn more about the HSS. In the meantime, ponder these ideas ... Henderson gave the following reasons to save seeds:

- *maintains connection with the Earth and the mystery of creation

- *sustainable farming

- *historical value

- *cultural relationship to the land

- *adaptability of crops

- *diversity of our food crops

- *variation

- *taste



Purple carrots have the highest phytonutrient content of all the carrots and can be found in many health food and grocery stores



Diet Distortion

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There is a downside, however. The apparent health benefits of calorie restriction are only found under certain circumstances and within narrow margins. Reducing calories more than 60 percent can lead to nutrient deficiency, and calorie reduction among those with already low body fat levels can be harmful (11). Also, weight loss due to calorie restriction without accompanying weight-bearing exercise can lead to bone loss (12).

Furthermore, in 2009, researchers introduced the question of protein. The longevity diet, though lower in calories, was higher in protein than what is currently recommended by most health experts and health organizations, including Canada's Food Guide. A human study looking at IGF-1 concentrations in humans following a calorie restricted yet highly nutritious diet for 1 or 6 years (13) found that, contrary to what was seen in rodents, IGF-1 levels did not decrease in humans until both calorie and protein intake were reduced (14). Increasing protein intake can lead to an increase in IGF-1 levels, which has been linked to a greater risk of developing cancer. The conclusion, therefore, was that reducing protein intake might be a key factor in an anti-aging diet (15).

To reduce both calories and protein while still maintaining adequate nutrition is difficult to

sustain. Add to the mix that body fat, exercise and bone density need monitoring and the 20 to 40 percent reduction margin must be maintained, and the rosy picture of calorie restriction becomes a bit tainted.

Creating imbalance by restricting calories or omitting an entire food group (for example, carbohydrates) results in an increase of something else, such as protein or fat. The goal of a healthy diet is cellular nourishment of the entire body; focusing on one outcome (for example, longevity or weight loss) loses sight of that and might lead to unforeseen consequences. A holistic approach to diet and lifestyle helps us avoid such extremes.

Canada's Food Guide bases its recommendations on a 2,000 calorie diet. Reducing this a bit might be beneficial. Rather than tediously counting calories and obsessing over numbers, get to know your satiety cues and eat nutrient dense food. Eat when you're hungry and stop when you're full. Overeating carries negative health consequences, but if you are overeating, consider why. Is your body still hungry for nutrients? Might you have a hormone imbalance? Are you eating for emotional reasons? Is your blood sugar unstable? Adopting a diet of nutrient dense, high quality foods is the best way to make every calorie count. Allow every mouthful to nourish your cells - this is the key to health.

Turmeric Honey Chicken Stir Fry

1/4 cup honey
 1 tbsp white onion, chopped
 1 tbsp sesame seeds
 1/2 tsp ground ginger
 1/4 tsp ground cinnamon
 1/4 tsp ground coriander
 1/2 tsp turmeric; optional
 1/2 tsp black pepper or cayenne for extra zing
 2 tbsp fresh lime juice
 1 tbsp olive oil
 1 tbsp coconut butter
 Sea salt and pepper to taste
 8 oz or 225 g skinless chicken breast, cut into cubes*
 1 cup cooked brown rice
 1/2 red pepper, cut in thin 2 inch strips
 2 celery stalks, chopped
 1 head of baby bok choy, cut into 3 inch pieces



In a large bowl, combine the honey, sesame seeds, ginger, cinnamon, coriander, turmeric, black pepper or cayenne, lime juice, and olive oil. Season to taste with salt and pepper. Pour over the chicken pieces, mix and marinate, covered, at least 6 hours or overnight in the refrigerator. Heat a skillet over medium heat. Add the chicken and marinade and stir fry the chicken, about 5 minutes. Add the red pepper and celery and continue to stir until vegetables soften. Add bok choy and stir for another minute. If the sauce thickens too much add water or broth to keep it at the right thickness. Season to taste. Remove from heat. Spoon the brown rice on a plate and pour the chicken mixture over it.

To cook brown rice: Rinse 1/2 cup of rice in water and place in a small saucepan. Add 1 1/4 cups water or broth and 1/4 tsp sea salt. Bring to a boil. Cover and lower to simmer and cook for 40 minutes or until liquid is all absorbed into the rice. Rinse off the excess starch and serve.



Metagenics

More than the sum of its parts: Research shows ingredients such as garlic, turmeric, honey, coriander, ginger, black pepper, cayenne and cinnamon contain powerful polyphenols that help prevent health issues as they all have anti-oxidant and anti-inflammatory properties. The good news is these delicious herbs and foods work well together to make great tasting meals. It would be interesting to see what would be discovered if researchers studied recipes instead of individual ingredients. Would the combined effect be more powerful? We know that pepper aids the absorption and therefore the effectiveness of turmeric and other nutrients. What more is there to be learned?

**Vegetarian Option: Substitute 1 cup cooked chickpeas (garbanzo beans) for the chicken. Marinate as above but since the beans are already cooked, stir-fry with the red pepper and celery and cook long enough to soften the vegetables and thicken the sauce. Season to taste.*



Let's Eat Curry! Turmeric vs. Curcumin

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One study compiled and listed thirteen compounds and extracts in turmeric and referenced their biological activity (4).

Turmeric powder	Wound-healing
Ethanol extract	Anti-inflammatory, Hypolipemic, Antitumour, Antiprotozoan
Petroleum ether	Anti-inflammatory, Antifertility
Alcoholic extract	Antibacterial
Crude ether extract	Antifungal
Chloroform extract	Antifungal
Aqueous extract	Antifertility
Volatile oil	Anti-inflammatory, Antibacterial, Antifungal
Curcumin	Antibacterial, Antiprotozoan, Antiviral, Hypolipemic, Hypoglycemic, Anticoagulant, Antioxidant, Antitumour, Anticarcinogenic
Ar-turmerone	Antivenom
Methylcurcumin	Antiprotozoan
Demethoxycurcumin	Antioxidant
Bisdemethoxycurcumin	Antioxidant
Sodium curcuminat	Anti-inflammatory, antibacterial

Without doubt, more compounds will be isolated and identified as research continues on this remarkable spice, but why not eat the whole spice and get **all** the benefits?

Turmeric can be somewhat sticky bonding to the intestinal wall which hinders absorption. Interestingly, the addition of black pepper increases absorption.

Studies have shown that administration of piperine (extracted from black pepper)



produced a 2,000 percent increase in nutrient bioavailability in humans. The absorption of curcumin is doubled in the presence of piperine (5, 10).

Dietary supplements and standardized isolated compounds certainly play an important therapeutic role, but they are just that – 'supplements' to a whole-foods diet. They are not meant to replace food.

Role of Chemicals In Disease

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The exact mechanism for the development of insulin resistance is known to be multifactorial and it is usually accompanied by visceral adiposity. To that end, testosterone affects the distribution of body fat as well as insulin sensitivity, especially in men (1), as it has been shown that testosterone lowers total fat mass (2).

The question that remains is what can we do and how can we protect ourselves? The only way to protect ourselves is to be pro-active. We come in contact with phthalates in three ways: dermal contact, inhalation and ingestion. Educate yourself about the ingredients of all of your personal care products and use

products that are naturally preserved and do not contain phthalates or other POPs or ECDs. Consult the Environmental Working Group (EWG) website to identify the names of these dangerous ingredients (www.ewg.org). The next step is to avoid using plastic as often as possible and never ever use plastics to heat food in the microwave. Phthalates will leach out of plastics into your food and beverage. Instead, use glass, ceramic and stainless steel vessels when storing and transporting food and beverages. By tackling all sides of the current obesity and type 2 diabetes epidemic, including diet, lifestyle and our physical environment we as a society can regain control of our health.

150 Consumers Road,
Suite 210
Toronto, Ontario,
M2J 1P9
info@cahnpro.org
www.cahnpro.org
416.499.2660

Editor:

Lisa Tsakos R.H.N.

Content Manager:

Lorene Sauro R.H.N.

Writers:

Lorene Sauro R.H.N.

Debby Raabel R.H.N.

Meredith MacKay R.H.N.

Jess Sherman R.H.N.

Eleanor Healy R.H.N.

Research:

Shawna Smith R.H.N.

Designers:

Olga Bromberg R.H.N.

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