No. 2: Lycopene Soup

More commonly known as **tomato soup**

I love this recipe because unlike many soups it uses store cupboard ingredients and is very quick to cook. So, you can make it as a last minute supper when you get in late and have 'nothing' in (a kitchen should always have a tin of tomatoes, an onion and a pack of Philadelphia cheese kicking around – otherwise what's the point in having a kitchen?). If you have fresh vegetables available you can add a little at the same time as the onion to ring the changes. Carrot and celery both work well.

Vegetable soups are a great way to get up to your **8-10 portions of fruit and veg. a day**. If you normally have sandwiches for lunch then swap half for this soup and create a much more balanced meal. Remember for a really healthy diet **half of everything you eat should be fruit and vegetables**.

I used to make tomato soup without the cheese and couldn't work out why it always tasted like it was 'missing something'. Then I looked at the ingredient list on the back of a pack of supermarket tomato soup (a great way to steal recipes) and saw cream cheese listed. I added a couple of spoons of Philly cheese, the bright red soup turned that lovely orange colour synonymous with the famous Heinz tomato soup and it smoothed the taste out to perfection.

After eating this for a while tinned soup tastes like pudding because of all the sugar. Make this and you'll never go back.

Ingredients

Method

1. **Heat the olive oil in a large saucepan.**

2. **Peel and chop the onion, add to the oil and stir to coat the onion in the oil.**

3. **Turn the heat down low, put the lid on the pan and 'sweat' the onion in the oil for about 5 minutes.**

4. **Chop the tomatoes in the can with scissors (if not already chopped) and add to the pan.**

5. **Fill an empty can with vegetable stock (I like the liquid concentrate if you don't have time to make your own) and add to the mix.**

6. **Simmer on a low heat for at least 15 minutes if you are in a hurry but longer gives a more mellow taste.**

7. **Tear the basil and add to the pan with the cheese towards the end of the cooking time. Stir until the cheese has melted.**

8. **Take off the heat and blitz with a hand blender until smooth.**

9. **Return to the heat, add more stock if it looks too thick, reheat and season to taste.**

Top Tips

- Freeze any extra in large yogurt pots. It can then be carried to work without spilling and reheated for your lunch.
- It is more than convenience that this recipe uses tinned tomatoes. Unlike other fruits and vegetables, where nutritional content such as vitamin C is diminished upon cooking (particularly in the microwave), **processing of tomatoes increases the concentration of available lycopene.** Lycopene in tomato paste is four times more bioavailable

than in fresh tomatoes and there is loads (technical measurement again) in tomato sauce.

- **Cooking and crushing tomatoes** (as in the canning process) and serving **in oil**-rich dishes (such as spaghetti sauce or pizza or the oil and cheese included in this recipe) greatly increases absorption from the digestive tract into the bloodstream. Lycopene is fat-soluble, so the oil is said to help absorption. **More evidence that super low fat diets are really not the way to go and you should always put dressing on your salad - hurrah!**

- If you don't like tomatoes all is not lost. **Watermelon, pink grapefruit, pink guava, papaya, red bell pepper, goji,** (a berry relative of tomato), and **rosehip** all contain lycopene. **Goji berries** are very useful as they are very high in antioxidants and you can buy them dried so they are a bit easier to carry around than tomatoes. I always take some when I go trekking and can't carry fresh fruit and veg. Apparently **Victoria Beckham** swears by them for her complexion and eats them by the bucket load so what better recommendation could you need (she actually eats something?). They are definitely cheaper than Botox.

The Science Bit

Lycopene is a bright red carotenoid pigment and phytochemical found in tomatoes and other red fruits. It makes them look pretty but why are we bothered? Well, lycopene is one of the most, perhaps *the* most powerful **carotenoid quencher of oxygen free-radicals known to man**. Which is interesting because….?

It's a little publicised fact that despite the fact that we'd die pretty quickly without it, Oxygen is actually very toxic. Its double molecules break down easily into unstable, highly reactive single molecules commonly known as **free radicals**. Unchecked these zip around knocking bits off anything in their path, damaging cells and causing DNA mutations that lead to **cell aging and cancers**. Free radicals produced during exposure to ultraviolet light are a **primary cause of skin aging**. A little more interested now?

So how do we live surrounded by something so damaging?

When life on earth first began with the first microorganisms it wasn't a problem - there was no oxygen. Oxygen only appeared as a by product of photosynthesis when microorganisms worked out that they could harness the energy of light to turn water and carbon dioxide into sugars. Oxygen started

to appear in the atmosphere but it still wasn't a problem for life for a long, long time (eons to be exact) because the low concentrations were kept even lower by the fact that the oxygen reacted with everything in sight (particularly all the earth's free iron) to form stable compounds. Only when it had reacted with ALL the available iron in the whole world (which as you imagine took some time – eons infact) did atmospheric oxygen levels start to build up.

Then it started to be a problem. Some organisms were alright because they could literally go underground. Microorganisms that use minerals as a source of energy rather than light could live quite happily in sticky anoxic mud (not necessarily our definition of happy I admit). These ancient bacteria are still around causing the sulphurous stink in mud flats and decaying flesh (nice). Exposure to the air will still kill them.

As for the others? Microorganisms seem to always find a way to inhabit any environment no matter how inhospitable and since the oxygen levels had risen gradually they were able to evolve with it and develop several coping strategies. The one we are interested in here is the use of compounds like **lycopene and other antioxidants** (including **vitamin C**, **vitamin E** and **carotenes**) that **react with the free-radicals and effectively mop them up.**

It took a few more years but we eventually evolved from those microorganisms (I think I just heard Darwin turn in his grave) and the antioxidants from the fruit and veg. in our hunter gatherer diet kept protecting us. Infact many of the chemical reactions in our body are oxidation reactions and need anti-oxidants to mop up the free-radicals they produce. Now that we are more likely to hunt and gather bread, pasta, ready meals etc from the supermarket the **energy content of our diet has gone up as the antioxidant content has gone down.** Result – if we are not very careful we turn into lardy, unhealthy bloaters (technical speak again).

Given its antioxidant properties, substantial scientific and clinical research has been devoted to a possible correlation between lycopene consumption and general health. Early research suggested some combating of **cardiovascular disease, cancer, diabetes, osteoporosis, and even male infertility**. In addition the brain is uniquely vulnerable to oxidative injury, due in part to its high metabolic rate and antioxidants are commonly used as medications to treat various forms of brain injury. Antioxidants are therefore being investigated as possible treatments for neurodegenerative diseases such as **Alzheimer's and Parkinson's disease**.

There is nothing conclusive though and an extensive review reported in November 2005 by the United States Food and Drug Administration showed no link between lycopene and prevention of prostate cancer and has cast significant doubt on its potential for lowering disease risk.

This is not too surprising as we already know that diets high in antioxidant containing fruit and vegetables (this is where the **8-10 a day comes from**) promote health and reduce the effects of aging, yet **antioxidant vitamin supplementation has no detectable effect on the aging process**. Time and again diets high in fruit and vegetables have been found to be linked with reduced incidence of all sorts of disease including heart disease and some neurological diseases and yet **treatment with individual vitamins has been found to have no effect**. This suggests that other substances in fruit and vegetables, or a complex mix of substances are responsible for the better health of those who consume them. I repeat there is no evidence that bottles of vitamins actually work. Better to save your money and buy an apple (or make tomato soup).

What we do know is…

Oxygen free radicals damage cells

This damage leads to cell aging and cancers

The cells inside and outside our body are exposed to free radicals

Antioxidant compounds neutralize free radicals

Lycopene is a powerful antioxidant

Tomatoes are one of the best sources of lycopene

There are the facts.

Make your own mind up.

Anyway…….regardless of that debate. **Tomato soup** is one of the most warming and satisfying dishes on earth and this is a really good one.

References for the science bit can be found under 'Lycopene' and' antioxidants' in Wikipedia if you want to check.