



# dr paul clayton's

## Health Newsletter

Summer 2008

The Mediterranean Diet

As thoughts turn to summer holidays in the "Med", this newsletter brings the latest overwhelming evidence that the Mediterranean lifestyle, and the Mediterranean diet, reduce the risk of almost every illness under the sun. In contrast, the Great British lifestyle is a recipe of overweight, disease and a shorter life.

Here is the traditional Mediterranean diet set out in the form of a food pyramid.

Approved foods include bread, pasta, rice, couscous and potatoes, although only in moderate amounts if you are not physically very active; olives, avocados and grapes; aubergine (eggplant), tomatoes, peppers, nuts and beans; cheese and yogurt.

Moderate consumption of fish and poultry is also encouraged, whereas consumption of red meat is advised only a few times a month, and processed meats should be kept to a minimum.

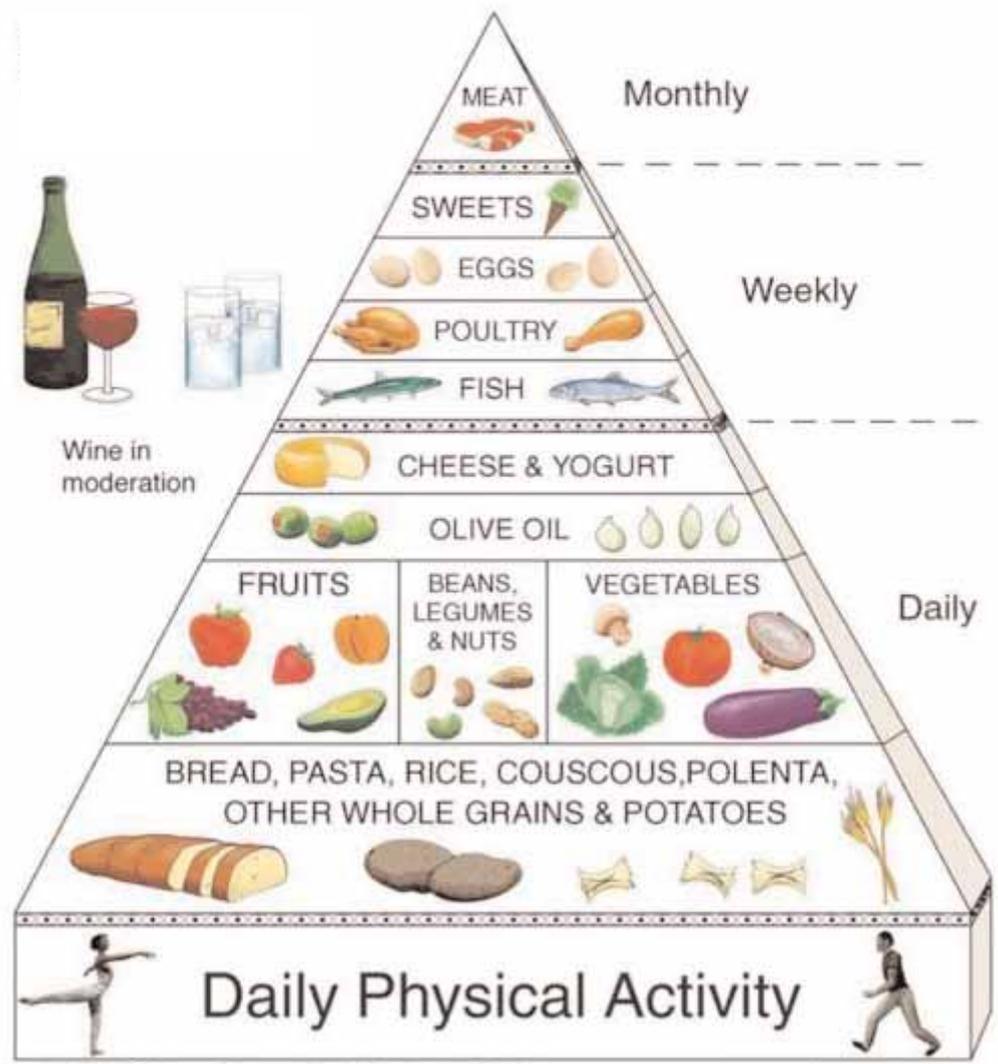
Two or three daily glasses of red wine are in the plan (I do not stipulate the size of glass!), and dark chocolate is recommended, albeit in small doses. Pomegranates are healthy additions, as are all other fruits.

And a word of comfort to those who have neither the time nor the inclination to cook all their meals with basic foods. A recent study has shown that even if the Mediterranean diet is consumed in the form of fast foods, the benefits are likely to be the same (Aronis et al '07).

And for those who just don't like the choices of foods above, NutriShield was broadly designed to pack the nutritional elements of the Mediterranean diet into a supplement form.

It is not a complete Mediterranean diet, but it is as close as current technology permits.

### The Traditional Healthy Mediterranean Diet Pyramid



## Mediterranean Diet and Diabetes

In the UK, the incidence of adult-onset diabetes is shooting up and is projected to exceed 5% of the population by 2010 (Diabetes UK '05). It will not stop there. We are waddling behind the Yankees, as usual, and the New Yorkers have just claimed a world record; a full 10% of the city's population now has diabetes (www1).

Already, 1 in 4 British adults has Impaired Glucose Tolerance (IGT), a condition which generally progresses to clinical diabetes within ten years. This will bring the poor old NHS to its knees; there aren't enough hospital beds and nursing staff, let alone kidneys and corneas, to cope with this flood of largely self-inflicted degenerative disease. You could, if you wish, take prophylactic anti-diabetic drugs, but these are not very effective when used preventatively, and exert a wide range of interesting and unpleasant side effects. Which brings us back to the Med ...

A new study carried out at the University of Navarre in Spain shows that eating a traditional Mediterranean diet rich in fruit, vegetables, olive oil and fish, may reduce the risk of developing diabetes by over 80% (Gonzales-Martinez et al '08). The researchers followed 13,380 subjects for a period of 52 months, closely monitoring what they ate. The subjects were all non-diabetic at the start of the trial, but as the trial continued a number of them developed the condition. When the results were analysed the researchers found that people with the highest adherence to the Mediterranean diet were 83 per cent less likely to develop type-2 diabetes than those with the lowest adherence.

This protective effect was not restricted to the health nuts; surprisingly, people who adhered most strictly to the Mediterranean diet had the highest prevalence of risk factors for diabetes such as older age, a family history of diabetes, and a higher proportion of ex-smokers. But despite being expected

to have the highest incidence of diabetes, the Mediterranean diet was so protective that it more than neutralised these risk factors in this group. These results were not entirely unexpected; previous studies by the same group had found that the Mediterranean diet also protected against metabolic syndrome, the precursor to diabetes (Tortosa et al '07), and reduced the risk of heart attack (Martinez-Gonzalez et al '02). Well-regarded teams at the Universities of Naples and Boston had published broadly similar findings (Esposito et al '04, Fung et al '04).



## Medi-Heart

Back in 1999, Michel de Lorgeril and co-workers at the University of Saint-Etienne published an important paper showing that the Medi diet dramatically reduced the risk a second heart attack (de Lorgeril et al '99).

A number of other trials have shown similar results, and now one particularly well-designed study has proved that elements in the Medi diet have cardio-protective effects on blood chemistry; that is, they lower LDL cholesterol levels and, more importantly, stabilise the LDL, making it more resistant to oxidation (Fito et al '07).

The Prevencion con Dieta Mediterranea (PREDIMED) study selected 372 subjects at high cardiovascular risk (average age 67.8), and randomly assigned them to a low-fat diet or one of two Traditional Mediterranean Diets (TMD plus virgin olive oil or TMD plus nuts) in a controlled, parallel-group trial for three months. After three months, the researchers found that consumption of the olive oil Medi diet led to reduction in levels of oxidised LDL by 10.6 units per litre, while the nut-rich Medi diet led to reduction of 7.3 units per litre. Systolic and diastolic blood pressure also fell in the diet groups, as did serum triglycerides; while HDL cholesterol rose.

This is a powerfully cardioprotective array of effects. The lead author Dr Estruch stated, "... the participants who follow the Mediterranean diet supplemented with olive oil or with nuts will show in the long run a 50 per cent reduction in the incidence of cardiovascular complications."

## Med-Head

The Mediterranean diet is not only far more effective than drugs at protecting against diabetes and heart disease, it also tastes better, and provides other benefits as well. For one, it appears to reduce the risk of Alzheimer's disease and its pre-clinical precursor, Age-Related Cognitive Decline (ARCD). Given the increasing numbers of cases of dementia and the failure of Big Pharma to produce effective drugs, the brain-protecting effects of the Mediterranean diet look to be very valuable indeed.

I reported last year on two studies carried out at Columbia University, which showed that adherence to a Mediterranean diet was associated with a 60-70% reduced risk of developing Alzheimer's; and that in those that did develop it, the course of the disease appeared to be considerably slowed (Scarmeas et al '06, Scarmeas et al '07).

Another group at the University of Bari in Italy had come to a similar conclusion, finding that the Mediterranean diet was associated with a reduced risk of Age-Related Cognitive Decline (Panza et al '04). As a result of these and 32 other similar studies, the authors of a meta-analysis recently announced that "the evidence to support nutritional interventions in the prevention and treatment of Alzheimer's is growing, and has a potential as a treatment modality." (Burgener et al '08). This is a bold statement, and one which will, hopefully, eventually, change the minds (and hearts) of the buffoons who currently determine health policy in Whitehall and, more importantly, in Brussels.

## Mediterranean Diet and Lung Disease

Chronic obstructive pulmonary disease (COPD) is a particularly horrible condition, as anyone with an affected friend or relative can attest. As with Alzheimer's, there is little the medical profession can do to treat this condition; other than to hook the sufferer up to an oxygen cylinder. Better not to develop the condition in the first place. The best way to avoid COPD is not to smoke, but it is becoming increasingly obvious that dietary factors are also very important.

The good news is that Mediterranean foods seem to reduce the risk of developing this terrible illness. A large prospective cohort study used data from the Health Professionals Follow-up Study and compared the relative risk of COPD amongst men consuming a Mediterranean-style diet to those with a Western-style diet, rich in refined grains, cured and red meats, fries and desserts.

In the Medi group, the risk of developing COPD was slightly less than half of the Western diet group in both men (Varraso et al '07a) and in women (Varraso et al '07b). The Harvard team believed that it was the range of antioxidants in the diet that was protective,

and singled out vitamin C and the polyphenols (a set of flavonoids) as being particularly valuable.

They also identified cured meats (such as ham, bacon and hot dogs) as a significant risk factor (Jiang et al '07, Varraso et al '07c). These foods contain high levels of nitrites, which form reactive and tissue-damaging nitrogen radicals in the body, and cause emphysema in animal and other models (ie Paik et al '97). Interestingly – and this all fits together very neatly – the damaging effects of nitrogen radicals are blocked by flavonoids (Roychowdhury et al '01).



## Mediterranean Diet and Cancer

The evidence that the Mediterranean diet reduces the risk of cancers is mostly mechanistic; ie there is plenty of evidence that various elements in the diet impact on cancer cells in vitro, killing them or slowing their growth.

Clinical data, however, are still scarce, although a number of studies suggest that the risk of certain cancers is indeed reduced (ie Trichopoulou et al '03, Dixon et al '07, Knuops et al '04, Mitrou et al '07). Watch this space for further developments.



## Medi-Health

Given all the above, one would expect the Mediterranean diet to be associated with generally better health and a longer life; and this is increasingly well documented. An excellent Greek study (Trichopoulou et al '03) found that the Medi diet was associated with reduced risks of coronary artery disease (by 30%), cancer (by 25%), and all-cause mortality (death from all causes).

Fortunately for us Brits, you don't have to live in a Mediterranean country to enjoy the benefits of a Mediterranean diet. A multi-centre study which followed elderly subjects all over Europe published even better

findings, in which the Mediterranean diet (plus moderate exercise, plus NO SMOKING) was linked to a 50% reduction in all-cause mortality (Knuops et al '04).

And on the other side of the Atlantic, a study of almost 400,000 people aged 50 to 71 reported that greater adherence to an American version of the Mediterranean diet reduced the risk of death from cardiovascular disease and cancer by 22 and 17 per cent in men, and 12 per cent for women. All-cause mortality was reduced by 21 per cent among men and 20 per cent among women with the greatest adherence to the Medi diet (Mitrou et al '07).

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www1 - [www1 - www.diabetes.org.uk/en/About\\_us/News\\_Landing\\_Page/2586/](http://www.diabetes.org.uk/en/About_us/News_Landing_Page/2586/)

## Pomegranate - the nutritional grenade

The word 'grenade', in the sense of the hand-thrown explosive weapon we all know and love, first appears circa 1530 and is derived from the French word for pomegranate 'la grenade'. The weapon got its name as it was approximately the same size and shape as the fruit, and apparently the shrapnel it produced reminded the happy soldiers of pomegranate seeds.

The pomegranate is now looking rather like an explosive nutritional device in the sense that there has been an explosion of research showing its health benefits, and this in turn is demolishing the bureaucratic nonsense that insists that food and medicine are totally different things. In fact, the pomegranate shows us that food overlaps considerably with medicine, and is in many cases far superior in terms of both effectiveness and, of course, safety.

Let us begin with a recent study that shows how effective pomegranate extracts are at suppressing the inflammation and damage in joints caused by collagen-induced **arthritis** in mice. (This might sound obscure but it is a very widely used model of arthritis).

Scientists in the US found that the severity of arthritis was decreased in animals receiving pomegranate extract by 70–75%; making this a very effective treatment indeed (Shukla et al '08a). Treated animals had lower levels of nitrous oxide (indicating less tissue damage), and lower levels also of the inflammatory and bone-destructive compounds Interleukins 6 and 1-beta. Previous reports from the University of Texas had already shown that pomegranate extracts suppressed a related inflammatory pathway involving nuclear-factor kappaB (Aggarwal & Shishodia '04).

These findings are very much in line with a parallel study by the same group (Shukla et al '08b), in which they showed that pomegranate extracts inhibited COX-2, the key inflammatory enzyme targeted by drugs such as Vioxx. Apologists for the pharmaceutical industry inevitably point out that pomegranate



has not been tested as intensively as have Vioxx, Celebrex etc – but nor has it killed such large numbers of patients. Pomegranate is very safe indeed (Guo et al '08). In fact, there is no record that pomegranate has ever killed anybody, which perversely leads the more obtuse clinicians to believe that it cannot therefore be effective!

There is more. The researchers discovered that the pomegranate extracts had the ability to prevent arthritis from even developing in their collagen-challenged mice (Shukla et al '08a). Whereas all the control animals developed the condition, a third of the pomegranate-treated animals did not develop arthritis at all; and in those that did, the symptoms took considerably longer to appear. These findings imply that if you eat the right kind of diet (which does not necessarily mean eating huge amounts of pomegranates, as explained below), your chances of remaining healthier for longer are very significantly improved. And it's not just your joints that will benefit ...

There is strong evidence that the versatile pomegranate can also help to protect the brain, reducing the risk of Alzheimer's and other forms of **dementia**. This is important to know, as the pharmaceutical products available to 'treat' Alzheimer's are singularly ineffective.

The animal model most commonly used to study Alzheimer's is the APPsw/Tg2576 transgenic mouse. This animal is bred to produce high levels of APP, a precursor protein that builds into the beta amyloid plaques found in the brains of patients with Alzheimer's disease. A recent study at California's Loma Linda University demonstrated that when these mice were given pomegranate juice as part of their regular diet, the build-up of beta amyloid plaque in their brains was reduced by 50% (Hartman et al '06). Nor was this just a biochemical change; the researchers found that the juiced-up mice retained their memory far better than the controls, indicating a real and sustained protection from dementia.

### Autres temps, autres fruits, autres moeurs

After having sung the praises of the medicinal pomegranate, let me now backtrack and make it clear that I do not regard the pomegranate as unique in any respect. Many other fruits and vegetables contain similar or identical components, and while there are no clinical trials of pomegranate in treating, for example, arthritis, there are plenty of reports with other foodstuffs. For example, similar extracts derived from cherries, turmeric, ginger and citrus fruits have all been shown to be effective in animal models of arthritis; and in clinical trials, ginger (Altman & Marcussen '01), turmeric (Chopra et al '04) and rose hip (Winther et al '05) have all produced good therapeutic results.

The take-home message is that we should all be eating more fruits and vegetables. If we did, we would enjoy considerable protection from the degenerative diseases that currently cause so much suffering and death. These are primarily 20th century diseases, as any historian knows, and it is becoming increasingly obvious that their dominance today is due to the unfit lifestyles, poor dietary habits and shoddy health care systems that we have been sold by the food and drug industries.

If you read the medical textbooks, they commonly state that the emergence of the degenerative diseases in the 20th century is an artefact, due solely to the fact that we are living longer. They present degenerative disease as inevitable, and a part of the ageing

process; but this is untrue.

A paper I co-wrote, just published in the *Journal of the Royal Society of Medicine* (Clayton & Rowbotham '08), shows that the mid-Victorians, who ate a super-Mediterranean diet, lived as long or slightly longer than we do today; and were relatively immune to degenerative disease.

This is very much in line with a plethora of other studies demonstrating the health-promoting and life-extending effects of the Mediterranean diet. It demonstrates that the degenerative diseases are mostly due to our generally low nutritional standards. It also shows that the way to reducing the impact of these diseases is via dietary change, and the widespread use of supplements and/or fortified foods.

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