

# ...positively coffee

Newsletter from the International Coffee Organization



Spring 2004

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## Coffee and liver health - the good news

For many of us the day does not begin until we have enjoyed our first cup of coffee. We know it helps increase our energy and alertness, but there is increasing scientific evidence to show that coffee may also help provide significant protection against the development of liver disease.

In a presentation at a recent Symposium in Rome, Professor Amleto D'Amicis, Head of Nutrition Information

Unit at INRAN\*, highlighted three major ways how coffee drinking specifically could be protective against:

- Cirrhosis of the liver (a disease causing progressive damage and scarring of the liver tissue and function).
- Gallbladder disease - by reducing the risk of gallstone formation.
- An increase of liver enzyme activity. A high liver enzyme activity is a recognised indicator that there has been deterioration in the functioning of liver cells and possible



development of disease in the liver.

"Such significant data shows us how drinking coffee could provide a real benefit to our health", said Prof D'Amicis. He went on to outline the many functions the liver undertakes to maintain the body's health and the beneficial role that coffee plays. These are discussed in more detail overleaf.



\*Professor Amleto D'Amicis is Head of Nutritional Information Unit of the Istituto Nazionale di Ricerca per gli Alimenti e la Nutrizione (INRAN). Rome, Italy.



## LIVER

The liver is the largest organ in the human body, weighs between 1.5 to 2.5 kg and is responsible for many vital life functions, which can be divided into three basic categories:

- **Regulation**, synthesis, and secretion of key substances.
- **Storage** of important nutrients including glycogen (glucose), vitamins A, D, B12, and iron for release, as needed by the body.
- **Detoxification** of every substance toxic to the body including metabolic wastes (e.g. ammonia), insecticide and pesticide residues, drugs, alcohol, etc. Failure of this function will usually cause death in 12 to 24 hours.

As presented by Prof. D'Amicis in Rome 2003

## 20<sup>th</sup> International symposium on coffee science

The 20th ASIC Conference will be hosted by the Coffee Board of India. The event will take place from Oct. 11 to 15, 2004, in Bangalore (India), at The Grand Ashok Hotel. Since 1963, the International Coffee Science Association (Association Scientifique Internationale du Café - ASIC) has provided the forum for coffee scientists and technologists from all over the world to present and discuss the latest developments in all aspects of coffee science and technology.

Further information available on



www.asic-cafe.com

# Ahhh..... coffee

Gallstone disease affects many millions of people around the world and costs many \$billions to treat. Caffeine in coffee has been demonstrated to have the ability to increase bile flow and inhibit biliary cholesterol crystallisation, both key factors in limiting the risk of developing gallstones.

In one large study, Health Professionals Follow-up Study, consumption of coffee was monitored in 46,008 men aged 40-75, all with no history of gallstone disease. The results of this study, published in the Journal of the American Medical Association in 1999 (Leitzmann 1999), showed that men who regularly drank two to three cups of coffee per day – filtered, instant or espresso – had

about a 30-40% reduction in risk of gallstone disease. For men who drank four cups per day, the reduction was even more significant – the risk was cut in half.

More recent studies (Leitzmann 2002) have shown that women who drink caffeinated coffee regularly experience a similar reduction in gallstone risk. During a 20 year follow-up study in a group of 80,898 women aged 34 -59, again with no history of gallstone disease, results showed that, within moderation, coffee may play an important role in the prevention of symptomatic gallstone disease also in women.

So, yet another good reason for starting the day with that refreshing cup of coffee!

**So, yet another good reason for starting the day with that refreshing cup of coffee!**



## References


Leitzmann MF, Willett WC, Rimm EB, Stampfer MJ, Spiegelman D, Colditz GA, Giovannucci E. A prospective study of coffee consumption and the risk of symptomatic gallstone disease in men. JAMA 1999 Jun 9;281(22):2106-12

Leitzmann MF, Stampfer MJ, Willett WC, Spiegelman D, Colditz GA, Giovannucci EL. Coffee intake is associated with lower risk of symptomatic gallstone disease in women. Gastroenterology 2002 Dec;123(6):1823-30

## Time for Coffee – cheers!!

### Our liver operates as one of the body's most efficient processing systems

It is the largest organ in the body and is essential in keeping us functioning properly. So, when studies show that individuals who drink coffee have a lower risk of cirrhosis of the liver. (a disease causing progressive damage and scarring of the liver tissue and function), that could offer us a significant benefit to our health.



### COFFEE AND LIVER CELLS DAMAGE

The working cells of the liver, called hepatocytes, are unique in their capacity to regenerate in response to liver injury or even after surgical removal of part of the liver. This remarkable ability to react to damage and repair itself can, however, be compromised by repeated abuse, which can lead to liver failure and death.

The findings of several epidemiological studies suggest a protective effect of the coffee on liver cells damage due to alcohol and other lifestyle factors.

*As presented by Prof. D'Amicis in Rome 2003*

Early studies (Klatsky 1992) showed that coffee drinking was inversely related to alcoholic cirrhosis. Persons drinking four cups per day were at one fifth the risk of those who did not drink any coffee. This study involving over 128,000 adults in Italy, between 1978 and 1985, was part of the Kaiser Permanente Medical Care Program looking at risk profiles for development of liver cirrhosis.

More recent studies (Corrao 2001) suggest that it is specifically coffee, but not other

beverages containing caffeine, that is a key factor in reducing the risk of developing of both alcoholic and non-alcoholic cirrhosis of the liver.

We cannot live without a functioning liver – so here is some good news – that cup of coffee we all enjoy drinking is safe and, in moderation, may even be beneficial to our liver.

## References

Corrao G, Zambon A, Bagnardi V, D'Amicis A, Klatsky A; Collaborative SIDECIR Group. Coffee, caffeine, and the risk of liver cirrhosis. Ann Epidemiol 2001 Oct;11 (7):458-65

Klatsky AL, Armstrong MA. Alcohol, smoking, coffee, and cirrhosis. Am J Epidemiol 1992 Nov 15;136 (10):1248-57

## COFFEE TRIVIA QUIZ

1. Which famous whodunit author wrote "Black Coffee?"
2. Which famous 18th century King is reputed to have made his coffee with champagne rather than water?
3. Where in the world has the café marron tree just been saved from extinction?
4. When does the coffee tree produce its first full crop?
5. Why is cappuccino so called?
6. How many of these are descriptive terms used by coffee tasters?  
Acid, buttery, green, mellow, nutty
7. Do you always know how to ask for a cup of coffee?  
Match country and word for coffee  

Country	Word for coffee
(a) Russia	(1) Kafeo
(b) Japan	(2) Kai- fey
(c) Indonesia	(3) Café
(d) Greece	(4) Qahwa
(e) Finland	(5) Koppe
(f) China	(6) Kahvi
(g) Mexico	(7) Kopi
(h) Inuit (Eskimo)	(8) Kehi
(i) Jordan	(9) Kaufee
8. Which country developed a coffee scented stamp in 2001?
9. Virtually all the world's coffee is grown within 1,000 miles of the equator. True or False?
10. Which painter said " I have tried to show the café as a place where one can go mad"

# Coffee and liver enzymes

In the same way as a good oil filter helps keep your car engine running smoothly, so a healthy liver helps keep our body functioning efficiently. For those of us who wonder whether drinking that cup of coffee is good for us, then the scientific evidence increasingly shows that it may even have some health benefits and has a role to play in keeping our liver ticking over more smoothly.

The effects of regular daily coffee consumption on some liver enzymes were studied in a large number of subjects from the Italian general population (Casiglia 1993). Results show that levels were lower than in non-drinking subjects or in those consuming less than three cups a day.

A high activity of certain liver enzymes in the blood is a recognised indicator that there has been deterioration in the functioning of liver cells.


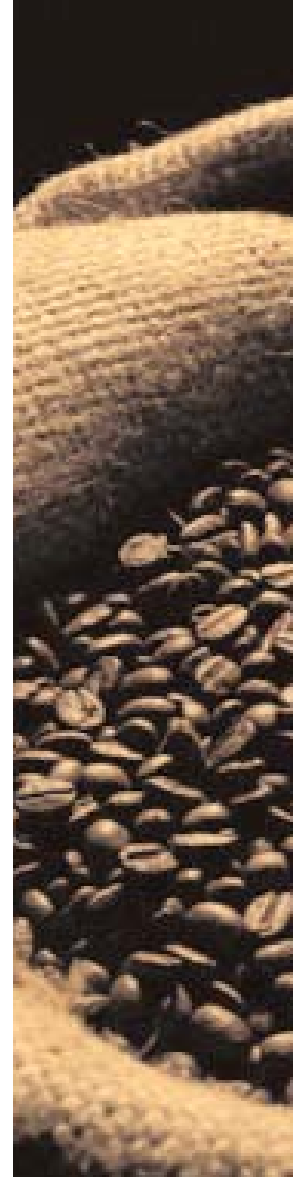
In an animal study, the protective effect of coffee components was shown to be even more significant. These substances showed a powerful protective capacity to modify the enzyme activity, preventing damage by toxic substances of cells during development. It is believed that this effect is due mainly to the coffee components kahweol and cafestol, but possibly other substances are also involved. (Huber 2002).

So enjoy that cup of coffee knowing that the scientific evidence increasingly shows that it may have some health benefits for our liver function.

## References

Casiglia E, Spolaore P, Ginocchio G, Ambrosio GB. Unexpected effects of coffee consumption on liver enzymes. *Eur J Epidemiol* 1993 May; 9(3): 293-7

Huber WW, Scharf G, Rossmanith W, Prustomersky S, Grasl-Kraupp B, Peter B, Turesky RJ, Schulte-Hermann R. The coffee components kahweol and cafestol induce gamma-glutamylcysteine synthetase, the rate limiting enzyme of chemoprotective glutathione synthesis, in several organs of the rat. *Arch Toxicol* 2002 Jan;75 (11-12):685-94



## COFFEE AND LIVER ENZYMES

These enzymes are released by dead liver cells. When a blood test, known as a "liver panel", shows an increase in liver enzymes in the bloodstream indicates that damage to the liver has occurred.

*The higher the enzymes activity the higher the damage of liver cells*

**Negative correlations between coffee consumption and some of serum liver enzyme levels have been repeatedly reported.**

As presented by Prof. D'Amicis in Rome 2003

## So what else do we know about coffee and liver function?

Here are answers to some of the most frequently asked questions.

### Q1: Is caffeine the active coffee component in influencing liver function?

**A:** For the majority of the effects, the answer is no. Caffeine does have a role, but there are other more active substances such as cafestol and kahweol

### Q2: I have heard that coffee consumption can increase blood cholesterol levels. Is there any contradiction between the positive effects reported and cholesterol elevation?

**A:** Some scientific papers have reported a modest elevation of cholesterol due to the presence of cafestol and kahweol. This happens when cafestol and kahweol are consumed in relatively high quantities, mainly coffees prepared by boiling coffee grounds with water as opposed to more conventional methods of preparation e.g. filter, soluble, espresso etc.

### Q3: Does drinking coffee permit drinking more alcohol without the risk of developing cirrhosis?

**A:** No, excessive alcohol consumption is never advised. Even when scientific evidence exists that coffee may have beneficial effects on liver functions, alcohol consumption can present other serious risks. These risks are not counterbalanced by coffee consumption.

### Q4: I have heard that the effects of alcohol can be different for women than for men. Is coffee effect different according to gender?

**A:** There is no evidence that coffee acts on women in a different way than on men. This is based on data from some large epidemiological studies that involved men and similar numbers of women.

### Q5: How many cups of coffee should I drink to assist my liver function?

**A:** According to the results of epidemiological studies the degree of protection varies according to the number of cups consumed daily. In the majority of the studies, a statistically significant result is obtained for 3 or 4 cups a day, which represents an average and safe level of consumption. Research is ongoing to elucidate the mechanisms of action.

### Q6: Is daily coffee consumption a key factor in generating a positive effect on liver functions?

**A:** The reported positive effects are based mainly on results obtained from epidemiological data. These studies take into account the consumption as reported by the participants, and significant results are obtained for a daily consumption of 3 to 4 cups.

### Q7: Are effects similar when drinking espresso, filter, or instant

**A:** Studies have not differentiated between various types of coffee preparation. There is no reason to suppose that these effects on liver function will be different in any way.

### Q8: Are the effects of decaffeinated coffee as beneficial as those of regular?

**A:** No studies have been undertaken specifically using decaffeinated coffee.

### Q9: I usually drink my coffee with milk and sugar. Can I also benefit from the effects reported for black coffee?

**A:** There is no evidence from studies to indicate that the addition of milk and/or sugar or their absence affects the benefits noted.

The development of the Positively Coffee website was a major undertaking during 2003 and the site went live and operational in August.

The website has its own identity, but is part of the Positive Communication programme of the International Coffee Organization. The aim is to provide accurate, balanced and consistent information to all audiences who have an interest in learning more about the benefits of coffee consumption, as covered by the Positively Coffee Programme.

All Positively Coffee materials are available for downloading in English, French, Portuguese and Spanish and topics available so far include:

- Coffee and Mental Performance - "Good Thinking" series
- Coffee in the Workplace - "Work Well" series
- Coffee and Antioxidants
- Coffee and Liver Protection

New resource materials are added regularly, so keep a look out for new topics.

In addition, you may download this Newsletter along with previous issues. There is also a page of useful contact links to other coffee related organisations.

**We want to make this website of use and interest to everyone wishing to learn about the benefits of coffee, so please let us have your comments and ideas. You can contact us via email at: [positivelycoffee@ico.org](mailto:positivelycoffee@ico.org). We look forward to hearing from you.**



## Seminar on

### Coffee and health

**Cartagena de Indias  
Colombia, 15 September 2003**

The Seminar on 'Coffee and Health', was held in Cartagena, Colombia on 15 September 2003 as part of the International Coffee Organization's 40th anniversary celebrations. Distinguished scientists and some 300 participants attended this from both public and private sector and from academia from more than 60 countries.

A succession of presentations based on the latest scientific research examined the positive health benefits of coffee consumption. These included its antioxidant and anti-inflammatory action, its protective effect against cardiovascular disease, cancer and conditions of the central nervous system, its anti-depressant action and its assistance in treating drug addiction.

The Seminar proceedings in English and Spanish language editions will be available in the near future. Please contact Martin Wattam, ICO Library Administrator, on [wattam@ico.org](mailto:wattam@ico.org), for further information.

## COFFEE TRIVIA QUIZ *the answers....*

1. In 1930, Agatha Christie's first original play, "Black Coffee" reached the London stage and subsequently became a favourite with amateur theatrical groups. Only recently has Charles Osborne, the author of a guide to Christie's life and works, turned it into a novel.
2. Frederick the Great, King of Prussia 1740 - 86, is believed to have brewed his own coffee with champagne when he was in the front lines leading his troops in battle. He occasionally added a little mustard also to his coffee!
3. Expert horticulturists at the Royal Botanic Gardens at Kew in London produced the new plants from cuttings sent from Mauritius in 1980. It was believed extinct until a schoolboy, looking for rare plants on the island, found a specimen growing by the roadside. Local botanists sent cuttings to Kew in the hope they could save the tree from becoming extinct. Plants recently returned to Mauritius are now protected from damage by local residents, who believe it can cure many ills, by three corrugated iron fences.
4. The coffee tree produces its first full crop when it is about 5 years old. Thereafter it produces consistently for 15 or 20 years.
5. Cappuccino is so named because of the drink's peak of foam, which resembles the cowl of a Capuchin friar's habit.
6. All of these are used to describe the taste of coffee.
 

Acid	The more "acidic" the coffee has, the more of a bite it has (no relation to actual PH balance)
Buttery	A full flavoured coffee with an oily feeling in the mouth, resembling the richness of butter
Green	A sharp tasting coffee, resulting from early harvesting and/or not roasting the beans sufficiently
Mellow	A smooth flavour, without acidity
Nutty	Tasting and smelling of roasted nuts
7. The correct combination is:
 

Country	Word for coffee
(a) Russia	(5) Koppe
(b) Japan	(8) Kehi
(c) Indonesia	(7) Kopi
(d) Greece	(1) Kafee
(e) Finland	(6) Kahvi
(f) China	(2) Kai-fey
(g) Mexico	(3) Caf�e
(h) Inuit (Eskimo)	(9) Kaufee
(i) Jordan	(4) Qahwa
8. Brazil produced a coffee scented postage stamp in 2001 to promote its coffee - they claim that the smell should last up to 5 years.
9. True. All coffee is grown within 1,000 miles of the equator, from the Tropic of Cancer in the north, to the Tropic of Capricorn in the south.
10. Vincent Van Gogh was a well-known member of the caf e society and is reputed to have made this comment.