

# Drink to your health

**Researchers explore green tea's potential in fighting HIV** *by Dave Boyack*

A simple leaf that is dried and steamed has been used as a medicine for nearly 4,000 years. The Chinese have been brewing the leaves of the *Camellia sinensis* plant as green tea. It's been part of their health regimens for eons, and only recently has the West become more interested in the medicinal effects of this Asian plant.

In the West, we've known for many years that green tea has antioxidant qualities. Antioxidants help prevent cellular damage which can lead to many diseases.

Test tube studies have demonstrated green tea's health-giving properties. Ingredients in the tea have shown to have anti-fungal, anti-tumor and anti-viral effects. Recent studies reveal that green tea can reduce HIV replication, but this is in test tube studies only.

One ingredient of green tea is called Epigallocatechin gallate (EGCG). Researchers have found EGCG to be 100 times more powerful than vitamin C and 25 times more effective than vitamin E. Scientists believe that EGCG is the main ingredient that provides green tea's widely reported health benefits. Many previous studies have suggested green tea can protect against cancer, aging, heart disease, Alzheimer's disease, and other diseases.

**Test tube studies  
have demonstrated green  
tea's health-giving properties.  
Ingredients in the tea have  
shown to have anti-fungal,  
anti-tumor and anti-viral effects.**

It's not surprising, then, that scientists have delved into green tea's potential effects on HIV. Researchers from the University of Genoa in Italy claimed in a 2001 report that their study was the first to demonstrate EGCG-inhibited HIV infection and replication in test tube studies. They said further studies were needed to examine the mechanism into how EGCG inhibits HIV replication. They also foresaw the potential low cost of producing green tea extracts or EGCG, which could be used in conjunction with current HIV therapies.

In 1993, scientists in Japan reported that they found EGCG stopped HIV from binding to healthy immune cells. If HIV can

be blocked from binding to the CD4 cells, then HIV infection might be avoided. The Japanese scientists concluded from their study that much more research is needed to determine if EGCG could be used in new anti-HIV drugs. They also noted that simply drinking green tea would not protect a person against HIV infection.

However, a more recent test tube study earlier this year in Sheffield, England also found that EGCG may reduce the HIV virus's ability to bind to CD4 cells by as much as 40 percent within just one hour of drinking 2-3 cups of green tea. The investigators noted that much more research needs to be done in order to determine if green tea protects against HIV disease or disease progression.

Professor Mike Williamson, from the Department of Molecular Biology and Biotechnology at the University of Sheffield, and his colleagues from Baylor College of Medicine in Texas, cautioned that green tea shouldn't be used a sole prophylactic against HIV. They concluded that green tea "may be useful in combination with other retroviral therapies."

"It is not a cure, and nor is it a safe way to avoid infection," said Professor Williamson. "However, we suggest that it should be used in combination with conventional medicines to improve quality of life for those infected. Future research is also currently underway in order to determine how much effect can be expected from different amounts of tea."

Keith Alcorn, an editor with the Aidsmap website, cautions that these results are from test tube studies and that research with animals is needed before conclusive evidence shows drinking green tea has any potential benefits. He noted that many substances in test tube studies have been shown to prevent HIV infection but in real life they have little or no effect.

Lisa Power, from the Terrence Higgins Trust, concurs. "Anything that boosts your immune system is beneficial for people with HIV," she says, "but green tea can't be a substitute for proper medication and prevention techniques." ☺



**Dave Boyack** is a volunteer with BCPWA's Communications and Education Department.