**NEW RESEARCH SHOWS HOW TEA CAN PACK A HEALTH PUNCH FROM REDUCING MEMORY LOSS TO HELPING EASE DRY EYE PERILS**

New research on tea continues to point to the health benefits of this popular beverage in ageing, cancer and most intriguingly for the very common condition of dry eye. The Tea Advisory Panel take a closer look at the resulting new data.

**Ageing and cognitive function**

Emerging research suggests a benefit of tea in ageing and mental function. Two new laboratory studies indicate that the antioxidative impact of tea, likely due to its content of polyphenols, could have a beneficial effect on cognitive function following stroke and be beneficial in ageing.

Commenting on the research, tea chemist and an advisor from the Tea Advisory Panel (TAP)/www.teaadvisorypanel.com, Dr Tim Bond notes: “The first study investigated the effect of green tea on short and long term memory in the context of artificially induced stroke.[[1]](#footnote-1) Supplementation with green tea was initiated 10 days before stroke surgery and continuous for six days after. The study subjects suffered short and long term memory problems following stroke as well as oxidation of beneficial lipids in cell membranes related to oxidative stress. Green tea supplementation prevented this damage, indicating that green tea has a neuroprotective role in the brain ad could therefore have a protective role in maintaining cognitive function following a stroke.

“In the second study[[2]](#footnote-2), which involved black tea, study subjects were supplemented with black tea to evaluate the impact of supplementation on the balance of oxidation or redox balance in the body[[3]](#footnote-3). Redox status was evaluated at three stages of the subjects when they were young, middle aged and old. Black tea augmented redox status at all stages of the subjects lives, an effect likely due to the presence of catechins in black tea. This finding could have positive implications for ageing.”

**Cancer**

Tea is considered to have cancer preventive properties but research is still emerging and the physiological mechanisms by which these effects occur are unclear. In this context, a new study evaluating the impact of three types of tea – black, green and purple – on a breast cancer cell model is interesting. [[4]](#footnote-4) Commenting on the research, a biochemist and herbalist, Dr Chris Etheridge from TAP noted: “Green tea demonstrated the greatest inhibition of cancer cells. Further analysis of the cancer cells treated with tea showed a different expression of cancer related genes compared with cancer cells not treated with tea.

“Genes related to killing of the cancer cells were up-regulated in the cancer cells treated with tea, offering valuable information on how tea many act as an anticancer agent.

“In a further piece of new research, green tea catechins were highlighted for a promising role in prostate cancer prevention. [[5]](#footnote-5) This work provides

further insights into the mechanism of action of green tea catechins showing like the previous study that green tea can modulate gene expression by interacting with cells, including cell surface receptors and lipids and so impact on cancer cell growth and turnover.”

**Dry eye**

Dry eye is a common condition that occurs when the eyes do not make enough tears or the tears evaporate too quickly. It causes feelings of dryness, grittiness or soreness and the eyes can become red. A UK study showed that almost 10% of women had a diagnosis of dry eye while a fifth had experienced dry eye symptoms in the past three months. [[6]](#footnote-6)

Commenting on the research, Dr Tim Bond says: “A recent study has evaluated the impact of topical green tea extract on this common condition.[[7]](#footnote-7) This was a double-blind randomised controlled clinical trial, in which 60 patients aged 30 to 70 years were selected. Standard treatment included artificial tear eye drops, three times a day for a month for all patients.

“Topical green tea extract was prescribed three times a day for one month in one of the groups. All patients were evaluated at the beginning and end of the study for clinical symptoms based on the Ocular Surface Disease Index (OSDI) score, Schirmer's test, Tear Breakup Time (TBUT), corneal and conjunctival staining and meibum score. In the green tea group, the mean score of clinical symptoms significantly improved after one month (p=0.002). Scores suggesting improvement of TBUTs and the health of meibomian glands were significantly higher in the green tea group (p=0.002). This study indicated that green tea extract is an effective, safe, and well-tolerated topical treatment for mild and moderate evaporative dry eyes and MGD.”

In summary Dr Chris Etheridge notes: “Tea is the second most commonly consumed beverage in the world after water. As a result, these latest study findings together with many other published studies continue to suggest that Britain’s’ favorite beverage is good for our health including our bones, heart, vascular system, eyes and skin to name just a few health and wellbeing benefits, whatever your age.” For more information see [www.teaadvisorypanel.com](http://www.teaadvisorypanel.com)

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**The Tea Advisory Panel:** The Tea Advisory Panel is supported by an unrestricted educational grant from the **UK TEA & INFUSIONS ASSOCIATION**, the trade association for the UK tea industry. The Panel has been created to provide media with impartial information regarding the health benefits of tea. Panel members include nutritionists; dieticians and doctors.

1. Altermann CD et al. [Brain Res Bull.](https://www.ncbi.nlm.nih.gov/pubmed/28330650) 2017 Mar 19;131:78-84. doi: 10.1016/j.brainresbull.2017.03.007. [Epub ahead of print] [↑](#footnote-ref-1)
2. Kumar D et al. [Arch Physiol Biochem.](https://www.ncbi.nlm.nih.gov/pubmed/28332429) 2017 Mar 23:1-7. doi: 10.1080/13813455.2017.1302963. [Epub ahead of print] [↑](#footnote-ref-2)
3. **Redox** (short for **red**uction–**ox**idation reaction) is a chemical reaction in which the oxidation states of atoms are changed. Any such reaction involves both a reduction process and a complementary oxidation process, two key concepts involved with electron transfer processes.[[1]](https://en.wikipedia.org/wiki/Redox#cite_note-1) Redox reactions include all chemical reactions in which atoms have their oxidation state changed; in general, redox reactions involve the transfer of electrons between chemical species. The chemical species from which the electron is stripped is said to have been oxidized, while the chemical species to which the electron is added is said to have been reduced.  [↑](#footnote-ref-3)
4. Mbuthia KS et al. [BMC Complement Altern Med.](https://www.ncbi.nlm.nih.gov/pubmed/?term=Mbuthia%2Ctea) 2017 Apr 7;17(1):202. doi: 10.1186/s12906-017-1683-6. [↑](#footnote-ref-4)
5. Naponelli V et al. [Antioxidants (Basel).](https://www.ncbi.nlm.nih.gov/pubmed/28379200) 2017 Apr 5;6(2). pii: E26. doi: 10.3390/antiox6020026. [↑](#footnote-ref-5)
6. http://bjo.bmj.com/content/early/2014/07/23/bjophthalmol-2014-305201 [↑](#footnote-ref-6)
7. Nejabat M et al. [J Clin Diagn Res.](https://www.ncbi.nlm.nih.gov/pubmed/?term=Nejabat%2C+dry+eye) 2017 Feb;11(2):NC05-NC08. doi: 10.7860/JCDR/2017/23336.9426. Epub 2017 Feb 1. [↑](#footnote-ref-7)