

O-13: BIOAVAILABILITY AND BIOACTIVITY OF TEA POLYPHENOLS IN HUMAN PROSTATE TISSUE AND BLOOD AFTER INGESTION OF GREEN TEA, BLACK TEA AND A TEA SUPPLEMENT

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Tea is consumed as green tea (GT), black tea (BT) and as tea supplements (TS). Tea contains monomeric (flavanols or catechins) and polymeric polyphenols (proanthocyanidins and theaflavins) with strong antioxidant activity. There are few *in vivo* studies comparing the bioavailability and bioactivities of different tea products. Further, there is no data on bioavailability of tea polyphenols in human tissues. We conducted two separate human studies. First, in a pharmacokinetic study, we investigated the effect on plasma antioxidant capacity (PAC) 8h after consumption of GT, BT or TS containing equivalent amounts of epigallocatechin gallate (EGCG). Enhanced flavanol absorption and a small but significant increase in PAC were obtained from the TS intervention group compared to the other treatment groups. Second, in an intervention study with 20 men scheduled for radical prostatectomy, we detected tea polyphenols in prostate tissues of subjects who consumed GT and BT but not in a soda control group. *Ex-vivo* assays using pre- and post treatment serum from the GT and BT subjects also showed significant inhibition of human LNCaP prostate cancer cell growth. This is the first report on the bioavailability of tea, and notably, of any polyphenols in human tissues.