

Documents

Hamdan, N.A.^a, Sabere, A.S.M.^b, Ruslan, A.H.^a, Buari, N.H.^c, Rahim, M.A.S.A.^a, Azemin, M.Z.C.^a, Yusof, F.^a

The Short-term Effects of Coffee and Caffeine on Intraocular Pressure in Healthy Subjects
(2024) *Journal of Health Science and Medical Research*, 42 (6), art. no. e20241108, .

DOI: 10.31584/jhsmr.20241108

^a Department of Optometry and Visual Science, Kulliyah of Allied Health Sciences, International Islamic University Malaysia, Bandar Indera Mahkota, Pahang, Kuantan, 25200, Malaysia

^b Department of Pharmaceutical Chemistry, Kulliyah of Pharmacy, International Islamic University Malaysia, Bandar Indera Mahkota, Pahang, Kuantan, 25200, Malaysia

^c Centre for Optometry Studies, Faculty of Health Sciences, Universiti Teknologi MARA Puncak Alam Campus, Selangor, Puncak Alam, 42300, Malaysia

Abstract

Objective: Coffee consumption is a prevalent habit with potential implications for ocular health. This study investigated the short-term effect of caffeine in coffee beverages on healthy subjects' intraocular pressure (IOP). **Material and Methods:** Thirty subjects (10 males, 23.40±1.33 years) attended three visits at similar times. During each visit, subjects were asked to ingest either 250 ml of water, 250 ml of caffeinated coffee, or 250 ml of decaffeinated coffee within five minutes. The initial drink set was randomised. IOP was measured before ingestion (baseline) and at 0-, 5-, 10-, 15-, 20-, 30, 45-, and 60 minutes after each beverage consumption. Repeated measures of ANOVA and pairwise analysis were utilised to analyse the IOP difference within and between groups. **Results:** Baseline IOP across beverage groups were not significantly different (p -value>0.05). Water and caffeinated coffee groups showed a significant increase in IOP over time (p -value<0.0005), whereas decaffeinated coffee did not (p -value=0.437). The highest IOP values recorded were 16.09±2.41 mmHg for water and 15.22±2.26 mmHg for caffeinated coffee, 10 minutes and 15 minutes post-consumption, respectively. IOP spiked until minute 45 for the caffeinated coffee group but only until minute 20 for the water group. IOP in the water and caffeinated coffee groups returned to baseline levels by minute 30 and 60, respectively. **Conclusion:** Caffeinated coffee has a prolonged effect on increasing IOP compared to water. Additionally, low doses of caffeine, such as those found in decaffeinated coffee, may protect against IOP spikes. Further study is needed to investigate the long-term effect of coffee and caffeine consumption on ocular health. © 2024 JHSMR. Hosted by Prince of Songkla University. All rights reserved.

Author Keywords

caffeine; decaffeinated coffee; Intraocular pressure; water

Correspondence Address

Yusof F.; Department of Optometry and Visual Science, Bandar Indera Mahkota, Pahang, Malaysia; email: yfirdaus@iium.edu.my

Publisher: Prince of Songkla University

ISSN: 25869981

Language of Original Document: English

Abbreviated Source Title: J. Health Sci. Med. Res.

2-s2.0-85209174231

Document Type: Article

Publication Stage: Final

Source: Scopus