

Scientific consensus on coffee and health

咖啡与健康的相关科学共识



科信食品与营养信息交流中心
China Food Information Center



关于科信

吃得安心、健康，是每个人的心愿。但网络上有关食品的信息纷繁芜杂、真假莫辨，消费者无所适从。为了帮助公众了解食品、健康饮食，在国家食药总局、国家卫生计生委、民政部等部门的支持下，由陈君石院士等科学家发起的科信食品与营养信息交流中心 (China food information Center) 于 2014 年 7 月 21 日正式成立。

该中心围绕信息交流、科普宣传、国际合作、专业培训和咨询服务五大核心业务，为消费者提供通俗易懂的饮食知识、答疑解惑；配合政府监管部门，提供决策咨询和技术支撑；服务于食品行业，促进行业良性发展。

中心始终以科学为支撑，其专家组共吸纳了 120 余位国内一流的食品与营养专家。近百位专家以专业视角、客观态度、通俗语言为公众剖析食品与营养热点，借助 70 余家平面媒体、电视媒体、网络媒体及自媒体广泛传播。在白酒塑化剂、草莓乙草胺、辣椒酱矿物油等事件中，第一时间作出科学解读，起到了舆论压仓石的作用。2015 年，中心荣获中国科协颁发的“年度最具活力微博奖”。

中心与政府部门、技术机构紧密合作，积极构建第三方风险交流平台，广泛参与国家食品安全抽检计划制定、食品安全满意度调查研究、食品安全标准制修订、进口食品质量安全状况白皮书编纂等工作，得到各相关部委的高度认可。

中心为合作伙伴组织了多种形式的专业咨询及交流考察，包括食安法、广告法培训，中新国际食品安全高峰论坛等，极大地促进了行业交流和发展。中心也与国际食品信息组织 (FIOs) 各成员单位保持紧密的信息沟通和互访，建立了良好的信息共享和交流合作关系。

中心以“凝聚智慧、传播真知、追求卓越”为理念，以传播食品与营养科学信息为己任，继续与我们的合作伙伴携手同行，努力为公众舌尖上的健康做出贡献，力争将我中心打造成最具影响力的食品信息交流平台。



About CFIC



Eat safety and health is everyone's wish. While the customers confused since all kinds of information about the food from the internet. With the supports of the China food and Drug Administration, the National Health and Family Planning Commission of the P.R.C, the Ministry of Civil Affairs of the P.R.C, the Academician Chen Junshi and other scientist established the China Food Information Center (CFIC) on July 21.2014,which help the public to understand the food and the health diet.

The CFIC focuses on the five core business of information communication, science popularization, international cooperation, professional training and consulting service. Provided the consumers with the popular diet knowledge and solved the problem; Cooperated with the supervision department of the government and provided the decision-making advice and technical support; Served to the food industry and promoted the virtuous development of the industry.

The CFIC has always been supported by the science, which group has absorbed more than 120 domestic first-class food and nutrition experts. During the three years, about 100 experts with the professional perspective, objective attitude, popular language to analysis the food and nutrition hot spots for the public, it spread widely via more than 70 print media, television media, network media and we-media. In the Liquor Plasticizer, Strawberry Acetochlor, Chili Sauce Mineral Oil and other events, the CFIC make a scientific interpretation timely, and play the significate role.

The China Science and technology Association awarded the most dynamic Weibo award to the CFIC in 2015.

The CFIC cooperated with the government departments, the technical agencies, built the third party risk exchange platform, participated in the formulation of national food safety sampling plan, took the survey about the food safety satisfaction, revised the food safety standard, compiled the white paper on quality and safety of the imported food .These efforts are highly recognized by the relevant ministries.

The CFIC has organized various forms of professional consultation and exchange visits for partners, including the Food and Safety Law, the Advertising Training Law, and The international food safety communication Seminar between China and New Zealand, which has promoted the communication and development of the industry. The CFIC also maintains close information communication and exchange visits with the member of FIOs, and has established information sharing and cooperation relationships.

For four years, we have been making great strides. We will take the condense wisdom, spread the truth, pursue excellence as the concept, to spread the food and nutrition science information as our mission, continue to work with our partners, strive to make a contribution to the health for the public, and make efforts to create the most influential food information exchange platform.



咖啡与健康的相关科学共识

科信食品与营养信息交流中心

中国疾病预防控制中心营养与健康所

中华预防医学会健康传播分会

中华预防医学会食品卫生分会

中国食品科学技术学会食品营养与健康分会

通讯作者：钟凯，邮箱：billyzhongkai@163.com

【关键词】

咖啡；咖啡因；癌症；糖尿病；

心血管疾病；骨质疏松；健康。



Scientific consensus on coffee and health

China Food Information Center

National Institute for Nutrition and Food Safety, Chinese Center for Disease Control and Prevention

Branch of Health Communication, Chinese Preventive Medicine Association

Branch of Food Hygiene, Chinese Preventive Medicine Association

Branch of Food Nutrition and Health, Chinese Institute of Food Science and Technology

Corresponding author: Zhong Kai, Email:

billyzhongkai@163.com

【key words】

coffee; caffeine; cancer; diabetes; Cardiovascular disease; osteoporosis; health

咖啡是将咖啡豆经过烘焙、研磨、冲泡等工艺制成的饮料，已有悠久的饮用历史，是世界上流行范围最为广泛的饮料之一。数据显示，日本和韩国人均每年喝 200 杯咖啡，美国是 400 杯，而欧洲是 750 杯。中国的人均咖啡消费量虽与上述国家或地区相比低得多，但喝咖啡的人群增长迅速，咖啡爱好者已不在少数。

Coffee is a drink that is made from coffee beans through roasting, grinding, brewing and other processes, and has a long drinking history, making it among the most popular drinks all over the world. Statistics show that Japanese and Koreans drink an average of 200 cups of coffee per year, while the number reaches 400 cups in the U.S and 750 cups in Europe. Although the per capita consumption in China is much lower than that of the above countries or regions, but the number of coffee drinking people is fast growing, including a large number of coffee lovers.



咖啡豆含有绿原酸、咖啡因、单宁等成分，经不同程度的烘焙后可形成独特的香味。人们将咖啡豆研磨后冲调饮用，现代食品工业还可通过萃取工艺将其制成速溶咖啡[1]。消费者常喝的咖啡一般分为两大类：一种是纯咖啡，一种是混合咖啡（花式咖啡）。前者是咖啡加水制成，后者则辅以乳及乳制品等成分。咖啡并没有国际统一的计量单位，但常以杯计，比如每杯 150ml，约含 100 毫克咖啡因。

Coffee beans contain such components as chlorogenic acid, caffeine, tannins, organic acids, and other compounds. These components in coffee produce the unique flavor developed through roasting at different temperatures and times. People drink coffee by grinding and then brewing coffee beans. Instant coffee is also made through an extraction process commonly used in the modern food industry[1]. Coffee that people usually drink is divided into two categories: One is black coffee and the other is blended coffee (fancy coffee). The first is made only of coffee plus water, while the latter is mixed with components like milk and dairy products. There is not an international unified unit of measurement for a cup (single serving) of coffee, such as a cup of coffee is 150ml and contains 100mg caffeine.

咖啡可根据个人情况 适量饮用

综合美国食品药品监督管理局、欧盟食品安全局、加拿大卫生部、澳新食品标准局等国际权威机构的观点，咖啡可适量饮用 [2],[3]。建议消费者初次尝试时小口啜饮，并根据自身情况，合理掌握饮用频次和饮用量。

Coffee can be moderately consumed according to personal differences in physiology

Moderate consumption of coffee is safe for healthy adults, according to international authoritative institutions, such as the U.S. Food and Drug Administration (FDA), European Food Safety Authority (EFSA), Health Canada, the Food Standards Australia New Zealand (FSANZ), etc.[2],[3] view. Consumers should take a sip when they try coffee for the first time; consumers also need to determine their drinking frequency based on personal choice and other physical factors.



儿童及青少年

儿童及青少年应当控制咖啡因摄入。家长可以帮助孩子控制包括咖啡、茶及其他含咖啡因饮料的摄入。美国儿科学会的建议是儿童和青少年不喝咖啡 [11]。美国食品药品监督管理局、欧盟食品安全局、加拿大卫生部、澳新食品标准局等机构认为，儿童和青少年每天的咖啡因摄入不超过每公斤体重 2.5-3 毫克（对于 30 公斤重的儿童和青少年来说，约为 75-100 毫克咖啡因）[12] 是安全的。

Children and adolescents

Children and teenagers should limit the intake of caffeine. Parents should monitor their kids to control the intake of coffee, tea and other caffeine drinks. The American Academy of Pediatrics (AAP) suggests that children and teenagers should avoid drink coffee[11]. Other institutions like FDA, EFSA, the Health Canada and FSANZ suggest that the safe limit is set at 2.5-3mg per kilogram of body weight (about 75-100mg caffeine for child or adolescents weigh 30 kilograms) per day.

健康成年人

每天 3-5 杯是适宜的。综合美国食品药品监督管理局 [4]、欧盟食品安全局 [5]、加拿大卫生部 [6]、澳新食品标准局 [7] 等机构的建议，健康成年人每天摄入不超过 210-400 毫克咖啡因（大约相当于 3-5 杯咖啡）是适宜的。

Healthy adults

3-5 cups per day are appropriate. International institutions such as FDA, EFSA, the Health Canada and FSANZ vary in their suggested daily maximum intake of caffeine up to 400mg caffeine (equivalent to about 3-5 cups of coffee) per day by healthy adults.

孕妇

不建议孕妇喝咖啡，如果饮用，每天不超过 2 杯。尽管加拿大卫生部、美国妇产科学会、美国孕产协会等机构认为，孕期可少量饮用咖啡（每天不超过 150-300 毫克咖啡因，约 2 杯）[8] [9] [10]，但不应鼓励孕妇喝咖啡。

Pregnant women

Pregnant women are not advised to drink coffee and those with a drinking habit may consume up to two cups of coffee per day. Although institutions such as the US FDA, Health Canada, American College of Obstetricians and Gynecologists (ACOG) and American Pregnancy Association suggest that pregnant women should limit their overall caffeine consumption per day to not exceed more than 150-300mg caffeine per day, about two cups) [8] [9] [10].



公众关注的常见话题

Common topics of public concern

咖啡是否致癌？

2016年，国际癌症研究机构（IARC）对现有研究进行综合分析后认为，并没有足够的证据显示喝咖啡会增加人类癌症的风险[13]。2017年，国际癌症研究基金会WCRF发布的报告指出，目前并没有证据显示喝咖啡会使人致癌，同时有部分证据表明，咖啡能降低某些癌症的风险，例如乳腺癌、子宫内膜癌及肝癌[14]。

Is coffee carcinogenic?

In 2016, through comprehensive analysis of existing research, the International Agency for Research on Cancer (IARC) concluded that there was insufficient evidence to prove that drinking coffee can increase the risk of having cancer[13]. In 2017, the World Cancer Research Fund International (WCRF) released a report pointing out that currently there is no evidence to indicate that drinking coffee can cause cancer. Some evidence shows that coffee could reduce the risk of certain cancers, such as breast cancer, endometrial carcinoma and liver cancer[14].



咖啡是否增加健康成人的心脏病和心血管疾病风险？

美国心脏病协会[15]、欧洲心脏病学会[16]、澳大利亚国家卫生和医学研究协会[17]等机构认为，健康成年人适量饮用咖啡（约每天1-2杯咖啡）不会增加患心脏病和心血管疾病的风险。

但需要提示的是，部分对咖啡因敏感的人可能会出现心跳加速、恶心、头晕等不适感，类似“茶醉”的现象。建议消费者根据自身情况调整频次及饮用量。

Can coffee increase healthy adults' risk of having heart disease and cardiovascular disease?

The moderate consumption of coffee (about 1-2 cups per day) for healthy adults will not increase the risk of having heart disease and cardiovascular disease, according to institutions such as the American Heart Association (AHA), the European Society of Cardiology (ESC) and Australia' National Health and Medical Research Council (NHMRC).

However, it is worthy of noting that some people sensitive to caffeine may have some unpleasant effects like faster heartbeats, nausea and dizziness, similar to the phenomenon of drinking too much tea. It is suggested that consumers adjust the coffee drinking frequency and consumption according to their own physical factors.



咖啡因是否增加骨质疏松风险？

健康成年人可适量喝咖啡，但过多的咖啡因会增加骨质疏松的风险。中国《原发性骨质疏松症诊疗指南（2017版）》提示，大量饮用咖啡、茶会影响钙的吸收，增加骨质疏松的风险[21]。国际骨质疏松协会[22]、美国国家骨质疏松协会[23]认为，每天的咖啡摄入量控制在3杯以内为宜。

对于骨质疏松患者来说，除适当控制含咖啡因饮料的摄入量，还应当保持膳食平衡以确保足量的钙和维生素摄入，辅以适度的运动和阳光照射。

Can caffeine increase the risk of having osteoporosis?

Healthy adults can moderately drink coffee, but the excess intake of caffeine can increase the risk of having osteoporosis. The large consumptions of coffee and tea can affect the absorption of calcium and increase the risk of having osteoporosis, according to The Guide to the Diagnosis and Treatment of Primary Osteoporosis (Version 2017) published by China[21]. The International Osteoporosis Foundation (IOF) [22] and the National Osteoporosis Foundation (NOF) [23] of the U.S. suggest that the intake of coffee should be limited to three cups per day.

Osteoporosis patients should appropriately control the intake of caffeine beverages, and keep a balanced diet to ensure the intake of sufficient calcium and vitamins, supplemented by moderate exercise and sunlight.

咖啡是否增加糖尿病风险？

中国营养学会的《食物与健康 - 科学证据共识》指出，适量饮用咖啡（约每天3-4杯）可能降低2型糖尿病风险[18]。国际糖尿病联盟[19]、美国糖尿病协会[20]等机构认为，糖尿病患者可以适量饮用咖啡，纯咖啡可以作为健康膳食的一部分。糖尿病患者喝咖啡时，应当注意控制添加糖的摄入量。

Can coffee increase the risk of having diabetes?

The moderate consumption of coffee (about 3-4 cups per day) may reduce the risk of having type 2 diabetes, the Chinese Nutrition Society pointed out in its book Food & Health - Evidence Based Review[18]. Institutions such as the International Diabetes Federation (IDF) [19] and the American Diabetes Association (ADA) [20] believe that diabetics can moderately drink coffee, and regard black coffee as part of their healthy diet, but diabetic should limit the intake of sugar.

咖啡是否影响睡眠？

咖啡因具有一定的中枢神经兴奋作用，因此咖啡和茶都可以提神。人体对咖啡因的反应存在较大个体差异，对于敏感人群可能影响睡眠，建议根据自身情况酌情控制饮用频次和饮用量。

Can coffee affect sleep?

Caffeine has effects on the central nervous system to some degree, so both coffee and tea can be refresh people. There are large individuals differences in the physical reaction to caffeine, it is suggested that the frequency and amount of drinking coffee should be controlled according to the individual situation.

总结

咖啡在世界范围内具有长期的饮用历史，综合各国专业机构及国际组织的研究成果，消费者可根据自身情况适量饮用并合理掌握饮用频次和饮用量。同时，关于咖啡与健康的研究正在中国展开，希望在不久的将来，能够给出更加切合国人实际的咖啡饮用指导。

Conclusion

Coffee has a long drinking history all over the world. Based on the research results of professional institutions and international organizations in various countries, consumers should reasonably master the frequency and quantity of drinking coffee, according to their own physiology. In the meantime, the research of coffee and health is ongoing in China and around the world, and more coffee drinking instructions for Chinese people will be given in the near future.

参考文献 /References

- [1] William Harrison Ukers. All About Coffee. New York: The Tea and Coffee Trade Journal Co,1922.
- [2] Department of Health and Human Services (US), Department of Agriculture (US) 2015–2020 dietary guidelines for Americans. 8th ed. 2015.[2015-12-31] <http://health.gov/dietaryguidelines/2015/guidelines>.
- [3] National Health and Medical Research Council. Australian Dietary Guidelines. Canberra (AUST): NHMRC; 2013.[2018-6-27] <https://www.eatforhealth.gov.au/guidelines>
- [4] FDA. Caffeine and Kids: FDA Takes a Closer Look. [2013-5-3] <https://www.fda.gov/ForConsumers/ConsumerUpdates/ucm350570.htm>
- [5] EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA) .Scientific Opinion on the safety of caffeine[J]. EFSA Journal 2015;13(5):4102. DOI: <https://doi.org/10.2903/j.efsa.2015.4102>
- [6] Health Canada. Caffeine in Food. [2012-02-16] <https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/food-additives/caffeine-foods/foods.html>
- [7] Australia New Zealand Food Authority (ANZFA). Safety aspects of dietary caffeine ——report form the expert working group[M].2000.[(2000-7] <http://www.foodstandards.gov.au/publications/Pages/Safety-aspects-of-dietary-caffeine.aspx>
- [8] American Pregnancy Association (APA).Caffeine Intake During Pregnancy .[2018-8-17] <http://americanpregnancy.org/pregnancy-health/caffeine-intake-during-pregnancy/>
- [9] American College of Obstetricians and Gynecologists (ACOG). ACOG Committee Opinion No. 462: Moderate caffeine consumption during pregnancy. Obstet Gynecol. 2010,116(2):467-468.[2010-8] <https://www.acog.org/Clinical-Guidance-and-Publications/Committee%20Opinions/Committee%20on%20Obstetric%20Practice/Moderate%20Caffeine%20Consumption%20During%20Pregnancy.aspx>
- [10] Caffeine. NSW Government.[2013-7-11] <https://www.health.nsw.gov.au/aod/resources/Pages/caffeine.aspx>
- [11] American Academy of Pediatrics. Clinical Report– Sports Drinks and Energy Drinks for Children and Adolescents: Are They Appropriate? [J]. Pediatrics, 2011 Jun;127(6):1182-9. DOI: 10.1542/peds.2011-0965.
- [12] Caffeine: EFSA consults on draft assessment.[2015-1-15] <http://www.efsa.europa.eu/en/press/news/150115>
- [13] Loomis D, Guyton KZ, Grosse Y,et al. Carcinogenicity of drinking coffee, mate, and very hot beverages[J]. Lancet Oncol,2016 Jul;17(7):877-878. DOI: 10.1016/S1470-2045(16)30239-X.
- [14] WCRF.Third Expert Report-Diet, Nutrition, Physical Activity and Cancer a Global Perspective.2017.[2018-1] <https://www.wcrf.org/dietandcancer>
- [15] AHA. Your Health. [2010] <https://www.heart.org/en/about-us/your-health>
- [16] Coffee consumption and cardiovascular disease. An article from the e-journal of the ESC Council for Cardiology Practice.[2006-6-26] <https://www.escardio.org/Journals/E-Journal-of-Cardiology-Practice/Volume-4/Coffee-consumption-and-cardiovascular-disease-Title-Coffee-consumption-and-ca>
- [17] National Health and Medical Research Council. Cardiovascular disease.[2016-11-28] <http://www.health.gov.au/internet/main/publishing.nsf/content/chronic-cardio>
- [18] Chinese Nutrition Society. Food & Health - Evidence Based Review. Beijing: People's Medical Publishing House, 2016.
- [19] IDF. About Diabetes.[2014] <https://idf.org/aboutdiabetes/what-is-diabetes/prevention.html>
- [20] American Diabetes Association. What Can I Drink?[2017-9-20] <http://www.diabetes.org/food-and-fitness/food/what-can-i-eat/making-healthy-food-choices/what-can-i-drink.html>
- [21] Chinese Society of Osteoporosis and Bone Mineral Research, Chinese Medical Association. The Guide to the Diagnosis and Treatment of Primary Osteoporosis (2017) [J]. Chinese General Practice, 2017, (32):3963-3982. DOI:10.3969/j.issn.1007-9572.2017.00.118.
- [22] International Osteoporosis Foundation. Negative dietary practices.[2008] <https://www.iofbonehealth.org/negative-dietary-practices>
- [23] The National Osteoporosis Foundation (NOF). Frequently Asked. Questions.[2010] <https://www.nof.org/patients/patient-support/faq/>





科信食品与营养信息交流中心
China Food Information Center