

Caffeine in the diet

Caffeine or 1, 3, 7-trimethylxanthine is the most widely consumed pharmacologically active substance in the world. Caffeine is a substance that exists naturally in certain plants. It can also be produced synthetically and used as an additive in food products. It is a central nervous system stimulant and a diuretic.

Food Sources

Caffeine is widely consumed. It is found naturally in the leaves, seeds, and fruits of more than 60 plants, including tea leaves, kola nuts, coffee, and cocoa beans. It is in coffee, tea, chocolate, cocoa and some colas. Caffeine is frequently added to over-the-counter medications such as pain relievers, appetite suppressants, and cold medicines. Caffeine has no flavor and can be removed from a food by a chemical process called decaffeination.



Standard values for the caffeine content of these foods and beverages have been set (1). Thus an average sized cup (150 ml) of ground roasted coffee contains around 85 mg, instant coffee 60 mg, decaffeinated coffee 3 mg, leaf or bag tea 30 mg, instant tea 20 mg and cocoa or hot chocolate 4 mg caffeine.

Caffeine absorption from the gastrointestinal tract is rapid and virtually complete about 45 minutes after ingestion. The peak plasma caffeine concentration is reached 15-120 minutes after ingestion.

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Special points of interest:

- * Food sources for caffeine.
- * Actions of caffeine.
- * Side effects of caffeine.



The half-life of caffeine in the plasma is 2.5-4.5 hours in young and elderly men increasing to 80 hours in newborn infants and over 100 hours in premature infants. The caffeine half-life is reduced by 30-50% in smokers, doubles in women taking oral contraceptives and rises to 15 hours in the last trimester of pregnancy.

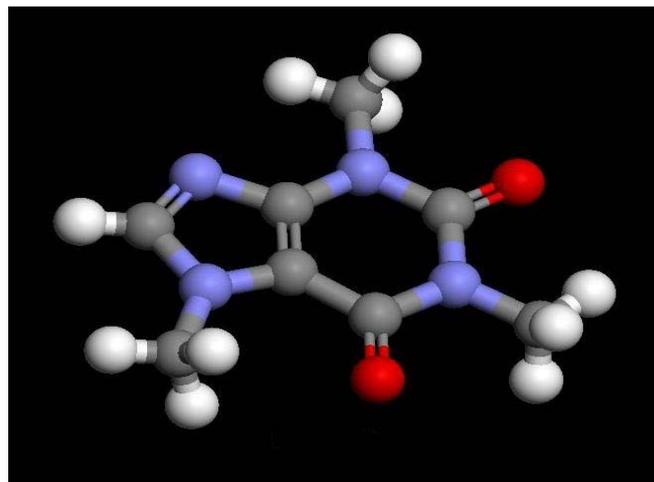
The metabolism of caffeine is species specific. In humans about 80% of caffeine is demethylated to paraxanthine and about 16% converted to theobromine and theophylline in the liver. Further demethylation and oxidation forms urates and uracil derivatives. About a dozen caffeine metabolites can be recovered in the urine but less than 3% of ingested caffeine.

Caffeine will not reduce the effects of alcohol, although many people still believe a cup of coffee will "sober-up" an intoxicated person.

Caffeine may be used as a treatment for migraine headaches and in relieving, for a short time, fatigue or drowsiness.

Side Effects

Excessive caffeine intake can lead to a fast heart rate, excessive urination, nausea, vomiting, restlessness, anxiety, depression, tremors, and difficulty sleeping. The American Medical Association Council on Scientific Affairs says that moderate tea or coffee drinking likely has no negative effect on one's health. Abrupt withdrawal of caffeine may cause headaches, drowsiness, irritability, nausea, vomiting, and other symptoms. Reduce caffeine intake gradually to prevent any symptoms of withdrawal.



caffeine molecule

The amount of caffeine in some common foods and beverages is as follows:

- Coffee, brewed - .40 to 180 mg. per cup
- Coffee, instant - 30 to 120 mg. per cup
- Coffee, decaffeinated - 2 to 5 mg. per cup
- Tea, brewed American - 20 to 90 mg. per cup
- Tea, brewed imported - 25 to 110 mg. per cup
- Tea, instant - 25-50 mg. per cup
- Cocoa - 2-20 mg. per cup
- Chocolate, milk - 2-7 mg. per ounce
- Chocolate - bittersweet - 5-35 mg. per ounce
- Cola and other soft drinks, containing caffeine - 36 to 90 mg. per 12 ounces
- Cola and other soft drinks, decaffeinated - 0 mg. per 12 ounces.

Three 8 oz. cups of coffee (about 250 milligrams of caffeine) per day is considered an average or moderate amount of caffeine.

Ten 8 oz. cups of coffee per day is considered excessive intake of caffeine.

References

1. *Barone, J.J. and Roberts, H.R. Food and Chemical Toxicology, 34, 119-129, 1996.*
2. *David C. Dugdale, III, MD, Professor of Medicine, Division of General Medicine, Department of Medicine, University of Washington School of Medicine. Also reviewed by David Zieve, MD, MHA, Medical Director, A.D.A.M., Inc .*

Bactroban Ointment

DRUG DESCRIPTION

Each gram of Bactroban Ointment (mupirocin ointment)[myoo peer' oh sin], 2% contains 20 mg mupirocin in a bland water miscible ointment base .Mupirocin is a naturally occurring antibiotic.

Indications

Mupirocin is an antibacterial agent produced by fermentation using the organism *Pseudomonas fluorescens*. It is active against a wide range of gram-positive bacteria including methicillin-resistant *Staphylococcus aureus* (MRSA). It is also active against certain gram-negative bacteria. is indicated for the topical treatment of impetigo due to *Staphylococcus aureus* and *Streptococcus pyogenes*.

DOSAGE AND ADMINISTRATION

A small amount of *Bactroban Ointment* should be applied to the affected area three times daily. The area treated may be covered with a gauze dressing if desired. Patients not showing a clinical response within 3 to 5 days should be re-evaluated.

SIDE EFFECTS

burning, stinging, or pain in 1.5% of patients; itching in 1% of patients; rash, nausea, erythema, dry skin, tenderness, swelling, contact dermatitis, and increased exudate in less than 1% of patients. Systemic reactions to Bactroban Ointment have occurred rarely.



DRUG INTERACTIONS

The effect of the concurrent application of Bactroban Ointment and other drug products has not been studied.

PRECAUTIONS

Bactroban Ointment is not formulated for use on mucosal surfaces. Intranasal use has been associated with isolated reports of stinging and drying. A paraffin-based formulation - Bactroban Nasal® (mupirocin calcium ointment) - is available for intranasal use. As with other antibacterial products, prolonged use may result in overgrowth of non-susceptible organisms, including fungi.

Pregnancy Category B

Nursing Mothers

It is not known whether this drug is excreted in human milk, so caution should be exercised when Bactroban Ointment is administered to a nursing woman.

Pediatric Use

The safety and effectiveness of Bactroban Ointment have been established in the age range of 2 months to 16 years.

Contraindications

This drug is contraindicated in individuals with a history of sensitivity reactions to any of its components.

Mupirocin ointment for preventing Staphylococcus aureus infections in nasal carriers

Staphylococcus aureus (*S. aureus*) is the main hospital acquired pathogen and although the focus has been on preventing cross-infection between patients, it has been shown that a large number of *S. aureus* infections start from the patient's own flora. Nasal carriage of *S. aureus* is a risk factor for infection in hospital patients and using a local antibiotic treatment of mupirocin ointment is often used to eradicate nasal *S. aureus*. It has been found that if people are nasal carriers of *S. aureus* then using mupirocin ointment reduces the level of *S. aureus* infections.

References

1. van Rijen M, Bonten M, Wenzel R, Kluytmans J. Mupirocin ointment for preventing *Staphylococcus aureus* infections in nasal carriers. *Cochrane Database of Systematic Reviews* 2008, Issue 4. Art. No.: CD006216DOI: 10.1002/14651858.CD006216.pub2
2. <http://www.rxlist.com/bactroban-ointment-drug.htm>

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Address : M.U.S.T, 6 October City -
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Fax / Phone: 02/38377643

Ext : 4 404

E-mail: banhawii@yahoo.com

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