



## CAFFEINE

- Date:** December 31, 2007
- Proper name(s):** Caffeine, 1,3,7-trimethylxanthine (USP 30)
- Common name(s):** Caffeine (USP 30; IOM 2003)
- Source material(s):** Isolate (Ashihara and Suzuki 2004), synthetic (Zajac et al. 2003; Gennaro 2000)
- Route(s) of administration:** Oral (Higdon and Frei 2006)
- Dosage form(s):** Only allowable pharmaceutical dosage forms: tablets, capsules and strips. This monograph is not intended to include food-like dosage forms such as bars, chewing gums or beverages.
- Use(s) or Purpose(s):** Statement(s) to the effect of:
- ▶ Helps (temporarily) to promote alertness and wakefulness, and to enhance cognitive performance (Christopher et al. 2005; Kamimori et al. 2000; Zwyghuizen-Doorenbos et al. 1990).
  - ▶ Helps (temporarily) to relieve fatigue, to promote endurance, and to enhance motor performance (Philip et al. 2006; Doherty and Smith 2005; Smith et al. 2005).
  - ▶ Used (temporarily) as a mild diuretic (Shirley et al. 2002; Neuhäuser-Berthold et al. 1997).
- Dose(s):**
- Promotion of alertness and wakefulness, and enhancement of cognitive performance:  
100 - 200 mg, every 3 - 4 hours, as needed, not to exceed 1000 mg every 24 hours (Sawynok 1995; FDA 1988; Greden 1974)
- Relief of fatigue, promotion of endurance, and enhancement of motor performance:

100 - 200 mg, every 3 - 4 hours, as needed, not to exceed 1000 mg every 24 hours (Sawynok 1995; FDA 1988)

Mild diuretic: 100 - 200 mg, every 3 - 4 hours, as needed, not to exceed 800 mg every 24 hours (Shirley et al. 2002; IOM 2001; Neuhäuser-Berthold et al. 1997)

**Duration of use:** For occasional use only (Higdon and Frei 2006; Juliano and Griffiths 2004; Evans and Griffiths 1999)

**Risk information:** Statement(s) to the effect of:

**Caution(s) and warning(s):**

- ▶ Consult a health care practitioner prior to use if you have high blood pressure (Cornelis and El-Sohemy 2007; Noordzij et al. 2005; Jee et al. 1999), glaucoma (Chandrasekaran et al. 2005; Avisar et al. 2002), and/or detrusor instability (overactive bladder syndrome) (Arya et al. 2000; Creighton and Stanton 1990).
- ▶ For a dose >300 mg per day consult a health care practitioner if you are of childbearing age, pregnant or breastfeeding (Nawrot et al. 2003).
- ▶ Consumption with natural health products (e.g. bitter orange extract, synephrine, octopamine (Bui et al. 2006; Bouchard et al. 2005; Haller et al. 2005), ephedra (FDA 2004; Vahedi et al. 2000)), or other drugs (e.g. ephedrine (FDA 2004; Vahedi et al. 2000)) which increase blood pressure is not recommended.
- ▶ Consult a health care practitioner prior to use if you are taking lithium (Mester et al. 1995; Jefferson 1988).
- ▶ Consumption with other caffeine-containing products (e.g. medications, coffee, tea, colas, cocoa, guarana, maté) is not recommended (Berardi et al. 2002; Zimmerman 1992; FDA 1988).
- ▶ This product is not intended as a substitute for sleep (Berardi et al. 2002; Zimmerman 1992, FDA 1988).

**Contraindication(s):** No statement required.

**Known adverse reaction(s):**

- ▶ At doses > 600 mg per day, caffeine may cause anxiety, tachycardia (rapid heart rate), palpitations, insomnia, restlessness, nervousness, tremor and headache (IOM 2001; Zhang 2001; Sawynok 1995).
- ▶ Hypersensitivity/allergy is known to occur; in which case, discontinue use (Infante et al. 2003; Hinrichs et al. 2002).

**Non-medicinal ingredients:** Must be chosen from the current NHPD *List of Acceptable Non-medicinal Ingredients* and must meet the limitations outlined in the list.

**Specifications:** Must comply with the minimum specifications outlined in the current NHPD *Compendium of Monographs*.

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