

# Green Tea Extract 200 mg Capsules



## Product Summary:

Beyond its recognition as a mild and pleasant beverage, green tea has an established reputation for general health enhancement. Abundantly endowed with polyphenols, green tea comprises natural substances that offer weight management support. Since so many do not regularly drink a green tea beverage, the water extraction of the green tea solids with its polyphenols is available in gelatine capsules, with a minimum of 80 percent polyphenols content.

## Properties/Uses:

The claim as approved by the *Natural Health Product Directorate* (NHPD): Source of antioxidants for the maintenance of good health. To be used with a program of reduced dietary calories and increased physical activity (if possible) to support weight management.



GENERAL HEALTH  
& WELLNESS



## Pharmacology:

The therapeutic benefits of green tea are mostly due to the catechins.<sup>1</sup> Green tea is a nonoxidized, nonfermented product that contains several polyphenolic components, such as epicatechin, epicatechin gallate, epigallocatechin, and epigallocatechin gallate (EGCG). EGCG is the primary polyphenols in green tea extract.

In vitro and in vivo studies suggest that oral administration of green tea extract stimulate thermogenesis, fat oxidation and can inhibit gastric and pancreatic lipase activities.<sup>2,3</sup> Therefore it has the potential to influence body weight and body composition via changes in both energy expenditure and substrate utilization in humans.

An in vitro study conducted by Juhel *et al.* (2000) found that green tea extract can inhibited gastric and intestinal lipases, enzymes that break down fat, and also reduced the emulsification of fats, a necessary step for their digestion and absorption<sup>3</sup>. Although experiments were made in vitro, the findings of this study prompt us to speculate that the inhibitory effect of green tea extract can be observed in vivo. This hypothesis is supported in an experimental system that mimicked in vivo conditions; researchers showed that green tea extract decreases the digestion of fat in the stomach by nearly 37 %.<sup>3</sup>

Another study conducted by Dullo *et al.* (1999) found that green tea extract stimulated thermogenesis better than caffeine alone, and also potentiated the thermogenic action of epinephrine better than caffeine or ephedrine. Green tea extract increased 24-hour energy expenditure and the portion of fat calories burned.<sup>2</sup> Thermogenesis and fat oxidation are under control of the sympathetic nervous system. Treatments that are involved in mimicking or interfering with the sympathetic nervous system and its neurotransmitter norepinephrine offer a basis for managing obesity. The tea catechins within green tea extract are believed to inhibit O-methyltransferase (COMT- the enzyme that degrades norepinephrine), resulting in an increased or more prolonged effect of norepinephrine on thermogenesis and fat metabolism or both.<sup>2</sup>



## Manufactured product information:

**Manufacturer:**

WN Pharmaceuticals Ltd.

**Size/UPC:**

180's ..... 7 77747 10272 3

**NPN:**

80005493

**Expiry Date:**

36 months from date of manufacture

**Active Ingredients:**

Each capsule contains:

Green Tea Extract (Camellia sinensis) (leaf) .....200 mg

(standardized to 12.5% caffeine, 60% catechins and 25% EGCG)

**Non-Medicinal Ingredients (in descending order):**

Rice starch, gelatin capsule (gelatin, purified water), magnesium stearate.

**Appearance:**

Pinkish-brown powder in a hard gelatin capsule.

**Packaging:**

225 cc white round bottle with safety seal under a 45 mm white cap with vented interior seal and a label applied to the bottle.

Lot number and expiry date are printed on label applied to exterior of bottle.

**Storage:**

Store in a light-resistant, tightly sealed container in a cool, dry place.





## Dose:

The NHPD Monograph for Green Tea indicates: Antioxidant: Extracts providing up to 690 mg total catechins, and no more than 150 mg caffeine, per day. Weight management: Extracts providing 136-300 mg (-)-epigallocatechin-3-gallate (EGCG) and 75-150 mg caffeine, with an EGCG:caffeine ratio of 1.8:1 to 4:1, per day.

## Directions:

(Adults): 3 capsules daily with meals or as recommended by a physician. For use beyond 12 weeks consult a physician.

## Caution:

The cautions as approved by the Natural Health Product Directorate (NHPD): KEEP OUT OF THE REACH OF CHILDREN. Consult a physician prior to use if you have an iron deficiency, a liver disorder or develop symptoms of liver trouble (such as abdominal pain, dark urine or jaundice), or if you are pregnant or breastfeeding. STORE AT ROOM TEMPERATURE IN A DARK, DRY PLACE. DO NOT USE IF SEAL UNDER CAP IS BROKEN OR MISSING.

## Osteoporosis:

Urinary excretion of calcium can increase because of the caffeine in green tea. Caffeine consumption should be limited to less than 300 mg per day (approximately 2–3 cups) of green tea. To compensate for the calcium loss, individuals could take an adequate calcium supplementation. Postmenopausal women identified with a genetic variant of the vitamin D receptor should use caffeine with caution 1.

## Deficiency Symptoms:

N/A

## Drug Interactions /Contraindications:

*Iron:* Green tea appears to reduce absorption of non-heme iron from foods. Children given tea to drink seem to have an increased risk of microcytic anemia. However, a study of iron-deficient elderly patients suggests that concomitant use does not alter iron absorption. For most patients, this effect will not be clinically significant.<sup>1</sup>

*Caffeine-containing herbs/supplements:* Concomitant use can have additive effects with caffeine in green tea and can increase the risk of adverse side effects. Some natural products that contain caffeine include coffee, green tea, guarana, mate, cola, and others.<sup>1</sup>

*Creatine:* There is concern of an increased risk of serious adverse side effects with the combination of caffeine, ephedra, and creatine. Caffeine could decrease creatine's possible beneficial effects on athletic performance.<sup>1</sup>

*Ephedra (ma huang):* Using Ephedra with green tea could increase the risk of stimulatory adverse effects due to its caffeine content. As well, the use of ephedra with caffeine could increase the risk of serious life threatening or debilitating adverse effects such as hypertension, myocardial infarction, stroke, seizures, and death.<sup>1</sup>

*Adenosine (Adenocard):* The caffeine in green tea is a competitive inhibitor of adenosine at the cellular level. However, this does not appear to be the case in supplemental adenosine because high intestinal levels of adenosine overcome the antagonistic effects of caffeine. It is recommended that methylxanthines and methylxanthine-containing products be stopped 24 hours prior to pharmacological stress tests. However, methylxanthines appear more likely to interfere with dipyridamole (Persantine) than adenosine-induced stress testing.<sup>1</sup>

*Alcohol(Ethanol):* Concomitant use of alcohol can increase caffeine serum concentrations and the risk of caffeine adverse effects. Alcohol reduces caffeine metabolism.<sup>1</sup>

*Amphetamines:* Theoretically, the caffeine in green tea might increase the risk of additive CNS.<sup>1</sup>

*Anticoagulant/antiplatelet drugs:* Theoretically, green tea might increase the risk of bleeding when used concomitantly with these agents. Green tea and caffeine are reported to have antiplatelet activity; however, this interaction has not been reported in humans. Antiplatelet agents include aspirin, clopidogrel (Plavix), dipyridamole (Persantine), ticlopidine (Ticlid), and others. Anticoagulant agents include ardeparin (Normiflo), dalteparin (Fragmin), enoxaparin (Lovenox), heparin, and warfarin (Coumadin).<sup>1</sup>

*Antidiabetes drugs:* Theoretically concomitant use of green tea and diabetes drugs might interfere with blood glucose control due to the caffeine in green tea. The data are conflicting. Reports claim that caffeine might increase or decrease blood sugar.<sup>1</sup>



*Cimetidine (Tagamet):* Concomitant use might increase the effects and adverse effects of caffeine in green tea. Cimetidine can reduce caffeine clearance by 31–42%.<sup>1</sup>

*Ephedrine:* The use of caffeine-containing products and ephedrine can increase the risk of stimulatory adverse effects. Evidence suggests that using ephedrine with caffeine might increase the risk of serious life threatening or debilitating adverse effects such as hypertension, myocardial infarction, stroke, seizures, and death.<sup>1</sup>

*Warfarin (Coumadin):* Consumption of large amounts of green tea is reported to antagonize the effects of warfarin. This has been attributed to the vitamin K1 in green tea. However, there is little vitamin K1 in green tea that the interaction is more likely due to other constituents.<sup>1</sup>

## Toxicity/Adverse Reactions:

Green tea extract is generally well tolerated; however, High doses of green tea extract can cause nausea, vomiting, abdominal pain, dyspepsia, flatulence, and diarrhea<sup>1</sup>. If consumed in excessive amounts, it could cause central nervous system and adverse effects such as dizziness, insomnia, fatigue, agitation, tremors, restlessness, and confusion due to the caffeine content.<sup>1</sup>



## Allergen Content/Ingredient Sensitivity:

NO	YES
Artificial Colors	Starch/Modified Starch
Artificial Flavors	Sulphites
Artificial Sweeteners	
Corn Products	
Egg Products	
Fish	
Gluten	
Hydrolyzed Plant Protein	
Lecithin	
Milk Products	
Peanuts	
Preservatives	
Sesame Products	
Shellfish	
Soy Products	
Tartrazine	
Tree Nuts	
Wheat Products	
Yeast	

### NOT ACCEPTABLE FOR THE FOLLOWING DIETARY RESTRICTIONS:

Free of animal products

Kosher





#### References:

1. Natural Medicines Comprehensive Database. Green Tea Monograph [internet]. 2004 [cited October 12, 2004]. Available from: [http://naturaldatabase.com/\(bfissy55npbzeetz1j22yqqt\)/nd/Search.aspx?li=1&st=2&cs=&s=ND&pt=100&sh=0&id=960](http://naturaldatabase.com/(bfissy55npbzeetz1j22yqqt)/nd/Search.aspx?li=1&st=2&cs=&s=ND&pt=100&sh=0&id=960)
2. Juhel C, Armand M, Pafumi Y, Rosier C, Vandermander J, Lairon D. Green tea extract (AR25®) inhibits lipolysis of triglycerides in gastric and duodenal medium in vitro. *Journal of Nutritional Biochemistry* 2000;11(1):45-51
3. Dulloo AG, Duret C, Rohrer D, Girardier L, Mensi N, Fathi M *et al.* Efficacy of a green tea extract rich in catechin polyphenols and caffeine in increasing 24-h energy expenditure and fat oxidation in humans. *American Journal of Clinical Nutrition* 1999;70(6):1040-5.

#### Revision #00

