



SENNA

Also Known As:

Alexandrian Senna, Alexandrinische Senna, Casse, Indian Senna, Khartoum Senna, Sena Alejandrina, Séné d'Egypte, Sennae folium, Sennae fructus, Sennosides, Tinnevelly Senna, True Senna.

Scientific Name:

Senna alexandrina, synonyms Cassia acutifolia, Cassia angustifolia, Cassia senna, Cassia lanceolata.
Family: Fabaceae/Leguminosae

People Use This For:

Orally, senna used as a laxative for constipation, irritable bowel syndrome (IBS), anorectal surgery, hemorrhoids, evacuating the GI tract to facilitate diagnostic tests, anal fissures, weight loss, and in "cleansing" teas.

Safety:

LIKELY SAFE ...when used orally and appropriately, short-term. Senna is an FDA-approved nonprescription drug (15429, 15431, 15442).

POSSIBLY UNSAFE ...when used orally long-term or in high doses. Long-term, frequent use, or use of high doses has been linked to serious side effects including laxative dependence and liver toxicity (13057, 13095).

CHILDREN: LIKELY SAFE ...when used orally and appropriately, short-term. Senna is an FDA-approved nonprescription drug for use in children 2 years and older. (15429, 15434, 15435). **POSSIBLY UNSAFE** ...when used orally long-term or in high doses. Long-term, frequent use, or use of high doses has been linked to serious side effects including laxative dependence and liver toxicity (13057, 13095).

PREGNANCY: POSSIBLY SAFE ...when used orally and appropriately, short-term (15429). **POSSIBLY UNSAFE** ...when used orally long-term or in high doses. Long-term, frequent use, or use of high doses has been linked to serious side effects including laxative dependence and liver toxicity (13057, 13095).

LACTATION: POSSIBLY SAFE ...when used orally and appropriately, short term. Although small amounts of constituents of senna cross into breast milk, senna has been taken by breast-feeding mothers with apparent safety. Senna does not cause changes in the frequency or consistency of infants' stools. (15429, 15436, 15437).

Effectiveness:

LIKELY EFFECTIVE

Constipation. Taking senna orally is effective as for a short-term treatment of constipation. Senna is an FDA-approved nonprescription drug for adults and children ages 2 years and older (15429, 15433, 15436, 15441, 15442). However, in children ages 3-15 years, mineral oil and lactulose might be more effective (15434, 15435). In geriatric

patients, senna plus psyllium is more effective than lactulose for treating chronic constipation (15438, 15439, 15440).

POSSIBLY EFFECTIVE

Bowel preparation. Taking senna orally might be effective for bowel cleansing before colonoscopy; however, sodium phosphate or polyethylene glycol are more effective (15431).

There is insufficient reliable information available about the effectiveness of senna for its other uses.

Mechanism of Action:

The applicable parts of senna are the leaf and fruit. Senna leaf and fruit are stimulant laxatives. The cathartic properties of the leaf are greater than the fruit (15430). Senna is an anthranoid (anthraquinone) laxative that contains mainly sennosides. Sennosides are high molecular weight dianthrone glycosides. Sennosides are prodrugs, which are not absorbed in the upper GI. Instead they are activated by bacterial enzymes in the colon. There is very little systemic absorption of senna (15429).

Senna is a stimulant laxative that is thought to exert its laxative effect by inducing fluid secretion, which increases colonic motility and colonic transit. Other proposed mechanisms include modulation of prostaglandins and serotonin in the colon. (15429, 15432). Senna usually produces a laxative effect 8-10 hours after oral administration (15429).

Anthroid laxatives can have direct toxic effects on the colonic mucosa, which can cause inflammation and increased cell death. However, anthroid laxatives do not seem to be associated with an increased risk of developing colorectal adenoma or carcinoma (6138, 15425).

Adverse Reactions:

Orally, senna can cause abdominal pain and discomfort, cramps, bloating, flatulence, nausea, urgency, and diarrhea (15427, 15434, 15435, 15436, 15440, 15441). Excessive use of senna has also been linked to tetany and finger clubbing (15426). Excessive use can cause potassium depletion and other electrolyte abnormalities (15425). Other adverse effects of excessive use include development of cachexia, decreased serum globulin concentrations, cardiovascular disorders, muscular weakness, osteomalacia, arthropathy, hepatitis, coma, neuropathy, asthma, allergy symptoms, and rhinoconjunctivitis (4, 6). There is a case report of hepatitis in a woman who consumed moderate amounts of senna tea. The patient was a poor metabolizer of cytochrome P450 2D6 (CYP2D6). It's thought that moderate doses of senna in this patient led to toxic hepatitis due to the patient's reduced ability to metabolize and eliminate the rhein anthrone metabolites of senna, which are thought to cause systemic toxicity (13057).

There is also a case of liver failure, encephalopathy, and renal insufficiency in a woman who consumed excessive amounts of senna tea. In this case, liver failure and renal insufficiency developed after over 3 years of consuming 1 liter/day of senna tea prepared from 70 grams of dried senna fruit (13095).

Chronic use can cause pseudomelanosis coli (pigment spots in intestinal mucosa) which is harmless, usually reverses with discontinuation, and is not associated with an increased risk of developing colorectal adenoma or carcinoma (6138).

Chronic use has also been associated with "cathartic colon," radiographically diagnosed anatomical changes to the colon such as benign narrowing, colonic dilation, and loss of colonic folds (15428). The clinical relevance of these findings is unclear.

Increased use of the laxative is more likely to be associated with worsening constipation rather than laxative dependency (13096).

Interactions with Herbs & Supplements:

HORSETAIL: Theoretically, concomitant use of senna with horsetail increases the risk of potassium depletion (19).

LICORICE: Theoretically, concomitant use of senna with licorice increases the risk of potassium depletion (19).

STIMULANT LAXATIVE HERBS: Theoretically, concomitant use with other stimulant laxative herbs increases the risk of potassium depletion (15425). Stimulant laxative herbs aloe, alder buckthorn, black root, blue flag, butternut bark, colocynth, European buckthorn, fo ti, gamboge, gossypol, greater bindweed, jalap, manna, Mexican scammony root, rhubarb, senna, and yellow dock.

Interactions with Drugs:

DIGOXIN (Lanoxin)

Interaction Rating = **Moderate** Be cautious with this combination
Severity = High • Occurrence = Possible • Level of Evidence = D

Theoretically, overuse/abuse of this product increases the risk of adverse effects of cardiac glycoside drugs by depleting potassium (15425).

DIURETIC DRUGS

Interaction Rating = **Moderate** Be cautious with this combination
Severity = High • Occurrence = Possible • Level of Evidence = D

Overuse of senna might compound diuretic-induced potassium loss (15425). There is some concern that people taking senna along with potassium depleting diuretics might have an increased risk for hypokalemia. Initiation of potassium supplementation or an increase in potassium supplement dose may be necessary for some patients. Some diuretics that can deplete potassium include chlorothiazide (Diuril), chlorthalidone (Thalitone), furosemide (Lasix), and hydrochlorothiazide (HCTZ, Hydrodiuril, Microzide), and others.

WARFARIN (Coumadin)

Interaction Rating = **Moderate** Be cautious with this combination
Severity = High • Occurrence = Possible • Level of Evidence = D

Senna has stimulant laxative effects. In some people senna can cause diarrhea. Diarrhea can increase the effects of warfarin, increase international normalized ratio (INR), and increase the risk of bleeding. In one report, excessive use of senna for 3 weeks resulted in diarrhea, bloody stools, and an elevated INR of 11.9 (16530). Advise patients who take warfarin not to take excessive amounts of senna.

Interactions with Foods:

None known.

Interactions with Lab Tests:

COLORIMETRIC TESTS: Senna can discolor urine (pink, red, purple, orange, rust), interfering with diagnostic tests that depend on a color change, due to its anthraquinone content (1, 4, 12, 275).

POTASSIUM: Excessive use of senna can cause potassium depletion, reducing serum potassium concentrations and test results (15425).

Interactions with Diseases or Conditions:

ELECTROLYTE DISTURBANCES, POTASSIUM DEFICIENCY: Overuse of senna can exacerbate these conditions (15425).

FLUID DEPLETION: Senna is contraindicated in individuals with dehydration, diarrhea, or loose stools. It can exacerbate these conditions (15425).

GASTROINTESTINAL (GI) CONDITIONS: Senna is contraindicated in people with abdominal pain, intestinal obstruction, and acute intestinal inflammation including Crohn's disease, ulcerative colitis, appendicitis, stomach inflammation, anal

prolapse, hemorrhoids, or undiagnosed abdominal pain (4, 19).

HEART DISEASE: Senna can cause electrolyte disturbances and exacerbate these conditions (15425).

Dosage/Administration:

ORAL: Senna is an FDA-approved nonprescription drug. For constipation in adults and children age 12 and over, the usual dose is 17.2 mg daily, with a maximum of 34.4 mg per day (15442). For constipation following pregnancy, 28 mg in 2 divided doses has been used (15436). In children, 8.5 mg daily titrated to cause one bowel movement daily has been used (15434, 15435). In elderly patients, 17 mg daily has been used (15441).

Editor's Comments:

Because senna fruit is gentler than senna leaf, the American Herbal Products Association only warns against long-term use for senna leaf, not senna fruit (12). The AHPA recommends that senna leaf products be labeled "Do not use this product if you have abdominal pain or diarrhea. Consult a healthcare provider prior to use if you are pregnant or nursing. Discontinue use in the event of diarrhea or watery stools. Do not exceed recommended dose. Not for long-term use" (12).

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