

Prescribing Information

Sucraid® (sacrosidase) Oral Solution:

DESCRIPTION
Sucraid® (sacrosidase) Oral Solution is an enzyme replacement therapy for the treatment of genetically determined sucrose deficiency, which is part of Congenital Sucrose-Isomaltase Deficiency (CSID).

CHEMISTRY
Sucraid® is a pale yellow to colorless, clear solution with a pleasant sweet taste. Each milliliter (mL) of Sucraid® contains 8,500 International Units (I.U.) of the enzyme sacrosidase, the active ingredient. The chemical name of this enzyme is 8-D-fructofuranoside fructohydrolase. The enzyme is derived from baker's yeast (*Saccharomyces cerevisiae*).

It has been reported that the primary amino acid structure of this protein consists of 513 amino acids with an apparent molecular weight of 100,000 g/mole for the glycosylated monomer (range 66,000-116,000 g/mole). Reports also suggest that the protein exists in solution as a monomer, dimer, tetramer, and octamer ranging from 100,000 g/mole to 800,000 g/mole. It has an isoelectric point (pI) of 4.5.

Sucraid® may contain small amounts of papain. Papain is known to cause allergic reactions in some people. Papain is a protein-cleaving enzyme that is introduced in the manufacturing process to digest the cell wall of the yeast and may not be completely removed during subsequent process steps.

Sucraid® contains sacrosidase in a vehicle comprised of glycerol (50% w/w), water, and citric acid to maintain the pH at 4.0 to 4.7. Glycerol (glycerin) in the amount consumed in the recommended doses of Sucraid® has no expected toxicity.

This enzyme preparation is fully soluble with water, milk, and infant formula. DO NOT HEAT SOLUTIONS CONTAINING SUCRAID®. Do not put Sucraid® in warm or hot liquids.

CLINICAL PHARMACOLOGY
Congenital Sucrose-Isomaltase Deficiency (CSID) is a chronic, autosomal recessive, inherited, phenotypically heterogeneous disease with very variable enzyme activity. CSID is usually characterized by a complete or almost complete lack of endogenous sucrose activity, a very marked reduction in isomaltase activity, a moderate decrease in maltase activity, and normal lactase levels.

Sucrose is naturally produced in the brush border of the small intestine, primarily the distal duodenum and jejunum. Sucrose hydrolyzes the disaccharide sucrose into its component monosaccharides, glucose and fructose. Isomaltase breaks down disaccharides from starch into simple sugars. Sucraid® does not contain isomaltase.

In the absence of endogenous human sucrose, as in CSID, sucrose is not metabolized. Unhydrolyzed sucrose and starch are not absorbed from the intestine and their presence in the intestinal lumen may lead to osmotic retention of water. This may result in loose stools.

Unabsorbed sucrose in the colon is fermented by bacterial flora to produce increased amounts of hydrogen, methane, and water. As a consequence, excessive gas, bloating, abdominal cramps, nausea, and vomiting may occur.

Chronic malabsorption of disaccharides may result in malnutrition. Undiagnosed/untreated CSID patients often fail to thrive and fall behind in their expected growth and development curves. Previously, the treatment of CSID has required the continual use of a strict sucrose-free diet.

CSID is often difficult to diagnose. Approximately 4% to 10% of pediatric patients with chronic diarrhea of unknown origin have CSID. Measurement of expired breath hydrogen under controlled conditions following a sucrose challenge (a measurement of excess hydrogen excreted in exhalation) in CSID patients has shown levels as great as 6 times that in normal subjects.

A generally accepted clinical definition of CSID is a condition characterized by the following: stool pH < 6, an increase in breath hydrogen of > 10 ppm when challenged with sucrose after fasting and a negative lactose breath test. However, because of the difficulties in diagnosing CSID, it may be warranted to conduct a short therapeutic trial (e.g., one week) to assess response in patients suspected of having CSID.

CLINICAL STUDIES
A two-phase (dose response preceded by a breath hydrogen phase) double-blind, multi-site, crossover trial was conducted in 28 patients (aged 4 months to 11.5 years) with confirmed CSID. During the dose response phase, the patients were challenged with an ordinary sucrose-containing diet while receiving each of four doses of sacrosidase: full strength (9000 I.U./mL) and three dilutions (1:10 (900 I.U./mL), 1:100 (90 I.U./mL), and 1:1000 (9 I.U./mL)) in random order for a period of 10 days. Patients who weighed no more than 15 kg received 1 mL per meal; those weighing more than 15 kg received 2 mL per meal. The dose did not vary with age or sucrose intake. A dose-response relationship was shown between the two higher and the two lower doses. The two higher doses of sacrosidase were associated with significantly fewer total stools and higher proportions of patients having lower total symptom scores, the primary efficacy end-points. In addition, higher doses of sacrosidase were associated with a significantly greater number of hard and formed stools as well as with fewer watery and soft stools, the secondary efficacy end-points.

Analysis of the overall symptomatic response as a function of age indicated that in CSID patients up to 3 years of age, 86% became asymptomatic. In patients over 3 years of age, 77% became asymptomatic. Thus, the therapeutic response did not differ significantly according to age.

A second study of similar design and execution as the first used 4 different dilutions of sacrosidase: 1:100 (90 I.U./mL), 1:1000 (9 I.U./mL), 1:10,000 (0.9 I.U./mL), and 1:100,000 (0.09 I.U./mL). There were inconsistent results with regards to the primary efficacy parameters.

In both trials, however, patients showed a marked decrease in breath hydrogen output when they received sacrosidase in comparison to placebo.

INDICATIONS AND USAGE
Sucraid® (sacrosidase) Oral Solution is indicated as oral replacement therapy of the genetically determined sucrose deficiency, which is part of Congenital Sucrose-Isomaltase Deficiency (CSID).

CONTRAINDICATIONS
Patients known to be hypersensitive to yeast, yeast products, glycerol (glycerol), or papain.

WARNINGS
Severe wheezing, 90 minutes after a second dose of sacrosidase, necessitated admission into the ICU for a 4-year-old boy. The wheezing was probably caused by sacrosidase. He had asthma and was being treated with steroids. A skin test for sacrosidase was positive. Other serious events have not been linked to Sucraid®.

PRECAUTIONS
Care should be taken to administer initial doses of Sucraid® near (within a few minutes of travel) a facility where acute hypersensitivity reactions can be adequately treated. Alternatively, the patient may be tested for hypersensitivity to Sucraid® through skin abrasion testing. Should symptoms of hypersensitivity appear, discontinue medication and initiate symptomatic and supportive therapy.

Skin testing as a challenge has been used to verify hypersensitivity in one asthmatic child who displayed wheezing after oral sacrosidase.

GENERAL
Although Sucraid® provides replacement therapy for the deficient sucrose, it does not provide specific replacement therapy for the deficient isomaltase. Therefore, restricting starch in the diet may still be necessary to reduce symptoms as much as possible. The need for dietary starch restriction for patients using Sucraid® should be evaluated in each patient.

It may sometimes be clinically inappropriate, difficult, or inconvenient to perform a small bowel biopsy or breath hydrogen test to make a definitive diagnosis of CSID. If the diagnosis is in doubt, it may be warranted to conduct a short therapeutic trial (e.g., one week) with Sucraid® to assess response in a patient suspected of sucrose deficiency.

The effects of Sucraid® have not been evaluated in patients with secondary (acquired) disaccharidase deficiencies.

INFORMATION FOR PATIENTS
See Patient Package Insert. Patients should be instructed to discard bottles of Sucraid® 4 weeks after opening due to the potential for bacterial growth. For the same reason, patients should be advised to rinse the measuring scoop with water after each use.

Sucraid® is fully soluble with water, milk, and infant formula, but it is important to note that this product is **sensitive to heat**. Sucraid® should not be reconstituted or consumed with fruit juice, since its acidity may reduce the enzyme activity.

USE IN DIABETICS
The use of Sucraid® will enable the products of sucrose hydrolysis, glucose and fructose, to be absorbed. This fact must be carefully considered in planning the diet of diabetic CSID patients using Sucraid®.

LABORATORY TESTS
The definitive test for diagnosis of CSID is the measurement of intestinal disaccharidases following small bowel biopsy.

Other tests used alone may be inaccurate: for example, the breath hydrogen test (high incidence of false negatives) or oral sucrose tolerance test (high incidence of false positives). Differential urinary disaccharidase testing has been reported to show good agreement with small intestinal biopsy for diagnosis of CSID.

DRUG INTERACTIONS
Neither drug-drug nor drug-food interactions are expected or have been reported with the use of Sucraid®. However, Sucraid® should not be reconstituted or consumed with fruit juice, since its acidity may reduce the enzyme activity.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY
Long-term studies in animals with Sucraid® have not been performed to evaluate the carcinogenic potential. Studies to evaluate the effect of Sucraid® on fertility or its mutagenic potential have not been performed.

PREGNANCY
Teratogenic effects. Pregnancy Category C. Animal reproduction studies have not been conducted with Sucraid®. Sucraid® is not expected to cause fetal harm when administered to a pregnant woman or to affect reproductive capacity. Sucraid® should be given to a pregnant woman only if clearly needed.

NURSING MOTHERS
The Sucraid® enzyme is broken down in the stomach and intestines, and the component amino acids and peptides are then absorbed as nutrients.

PEDIATRIC USE
Sucraid® has been used in patients as young as 5 months of age. Evidence in one controlled trial in primarily pediatric patients shows that Sucraid® is safe and effective for the treatment of the genetically acquired sucrose deficiency, which is part of CSID.

ADVERSE REACTIONS
Adverse experiences with Sucraid® in clinical trials were generally minor and were frequently associated with the underlying disease.

In clinical studies of up to 54 months duration, physicians treated a total of 52 patients with Sucraid®. The adverse experiences and respective number of patients reporting each event (in parenthesis) were as follows: abdominal pain (4), vomiting (3), nausea (2), diarrhea (2), constipation (2), insomnia (1), headache (1), nervousness (1), and dehydration (1).

Note: diarrhea and abdominal pain can be a part of the clinical presentation of the **genetically determined sucrose deficiency**, which is part of congenital sucrose-isomaltase deficiency (CSID).

One asthmatic child experienced a serious hypersensitivity reaction (wheezing) probably related to sacrosidase (see Warnings). The event resulted in withdrawal of the patient from the trial but resolved with no sequelae.

OVERDOSAGE
Overdosage with Sucraid® has not been reported.

DOSE AND ADMINISTRATION
The recommended dosage is 1 or 2 mL (8,500 to 17,000 I.U.) or 1 or 2 full measuring scoops (each full measuring scoop equals 1 mL; 28 drops from the Sucraid® container tip equals 1 mL) taken orally with each meal or snack diluted with 2 to 4 ounces (60 to 120 mL) of water, milk, or infant formula. The beverage or infant formula should be served cold or at room temperature. The beverage or infant formula should not be warmed or heated before or after addition of Sucraid® because heating is likely to decrease potency. Sucraid® should not be reconstituted or consumed with fruit juice since its acidity may reduce the enzyme activity.

It is recommended that approximately half of the dosage be taken at the beginning of the meal or snack and the remainder be taken during the meal or snack.

The recommended dosage is as follows:

1 mL (8,500 I.U.) (one full measuring scoop or 28 drops) per meal or snack for patients up to 15 kg in body weight.

2 mL (17,000 I.U.) (two full measuring scoops or 56 drops) per meal or snack for patients over 15 kg in body weight.

Dosage may be measured with the 1 mL measuring scoop (provided) or by drop count method (1 mL equals 28 drops from the Sucraid® container tip).

HOW SUPPLIED
Sucraid® (sacrosidase) Oral Solution is available in 118 mL (4 fluid ounces) translucent plastic bottles, packaged two bottles per box. Each mL of solution contains 8,500 International Units (I.U.) of sacrosidase. A 1 mL measuring scoop is provided with each bottle. A full measuring scoop is 1 mL.

Store in a refrigerator at 2° - 8° C (36° - 46°F). Discard four weeks after first opening due to the potential for bacterial growth. Protect from heat and light.

Rx only.

Distributed by:
QOL Medical, LLC
Vero Beach, FL 32963

To order, or for any questions, call 1-866-469-3773
www.sucraid.com

NDC# 67871-111-04

Patient Package Insert

INFORMATION FOR PATIENTS

Sucraid® (sacrosidase) Oral Solution

Please read this leaflet carefully before you take Sucraid® (sacrosidase) Oral Solution or give Sucraid® to a child. Please do not throw away this leaflet. You may need to read it again at a later date. This leaflet does not contain all the information on Sucraid. For further information or advice, ask your doctor or pharmacist.

BEFORE TAKING SUCRAID®

WARNING: Sucraid may cause a serious allergic reaction. If you notice any swelling or have difficulty breathing, get emergency help right away. Before taking your first and second doses, be sure that there are health professionals nearby (within a few minutes of travel) just in case there is an allergic reaction.

INFORMATION ABOUT YOUR MEDICINE

The name of your medicine is Sucraid® (sacrosidase) Oral Solution. It can be obtained only with a prescription from your doctor.

The purpose of your medicine:

Sucraid is an enzyme replacement therapy for the treatment of the genetically determined sucrose deficiency, which is part of Congenital Sucrose-Isomaltase Deficiency (CSID). CSID is a condition where your body lacks the enzymes needed to break down and absorb sucrose (table sugar) and other sugars from starch.

The symptoms of CSID often include frequent watery diarrhea, abdominal pain, bloating, and gas. In many cases, the symptoms of CSID are similar to other medical problems. Only your doctor can make a definite diagnosis of CSID.

Sucraid can help improve the breakdown and absorption of sucrose (table sugar) from the intestine and can help relieve the gastrointestinal symptoms of CSID.

Sucraid does not break down some sugars resulting from the digestion of starch. Therefore, you may need to restrict the amount of starch in your diet. Your doctor will tell you if you should restrict the amount of starch in your diet.

Discuss the following important information with your doctor before you begin to take Sucraid®:

Tell your doctor if you are allergic to, have ever had a reaction to, or have ever had difficulty taking yeast, yeast products, papain, or glycerol (glycerol).

Tell your doctor if you have diabetes. With Sucraid, sucrose (table sugar) can be absorbed from your diet and your blood glucose levels may change. Your doctor will tell you if your diet or diabetes medicines need to be changed.

Side effects to watch for:

Some patients may have worse abdominal pain, vomiting, nausea, or diarrhea. Constipation, difficulty sleeping, headache, nervousness, and dehydration have also occurred. Other side effects may also occur. If you notice these or any other side effects during treatment with Sucraid, check with your doctor.

Stop taking Sucraid and get emergency help immediately if any of the following side effects occur: difficulty breathing, wheezing, or swelling of the face.

How to take your medicine:

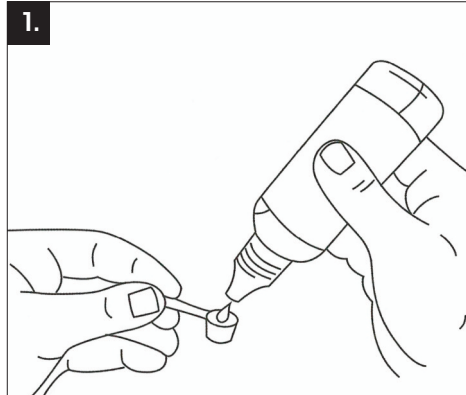
Each bottle of Sucraid is supplied with a plastic screw cap which covers a dropper dispensing tip. Remove the outer cap and measure out the required dose. Reseal the bottle after each use by replacing and twisting the cap until tight.

Write down the date the sealed bottle is first opened in the space provided on the bottle label. Always throw away the bottle four weeks after first opening it because Sucraid contains no preservatives. For the same reason, you should rinse the measuring scoop with water after each time you finish using it.

To get the full benefits of this medicine, it is very important to take Sucraid as your doctor has prescribed. The usual dosage is 1 to 2 milliliters (mL) with each meal or snack: 1 mL = 1 full measuring scoop (28 drops from the bottle tip) and 2 mL = 2 full measuring scoops (56 drops from the bottle tip).

Measure your dose with the measuring scoop provided (see Figure 1). Do not use a kitchen teaspoon or other measuring device since it will not measure an accurate dose.

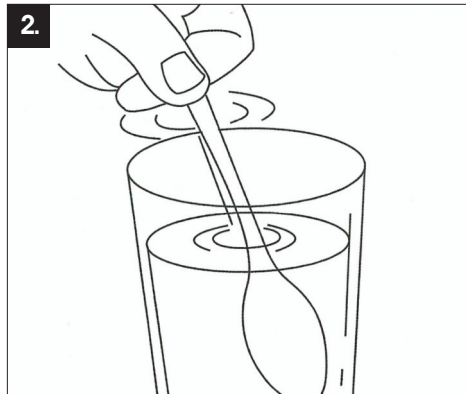
Figure 1. Measure dose with measuring scoop.



Mix your dose in 2 to 4 ounces of water, milk, or infant formula (see Figure 2). Sucraid should not be dissolved in or taken with fruit juice.

NEVER HEAT SUCRAID® OR PUT IT IN WARM OR HOT BEVERAGES OR INFANT FORMULA. Heating Sucraid causes it to lose its effectiveness. The beverage or infant formula should be taken cold or at room temperature.

Figure 2. Mix dose in beverage or infant formula.



It is recommended that approximately half of your dosage be taken at the beginning of each meal or snack and the remainder of your dosage be taken during the meal or snack.

WHAT IS

CSID? SUCRAID® Sucraid ASSIST™? US Bioservices?

Sucraid®
(sacrosidase) Oral Solution
WWW.SUCRAID.COM

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See Important Safety Information on Sucraid page and full Prescribing Information for Sucraid on back pages of this brochure

CSID

What is CSID?

Congenital Sucrase-Isomaltase Deficiency (CSID), sometimes referred to as Genetic Sucrase-Isomaltase Deficiency (GSID), is a rare disorder that causes a reduction of the enzyme activity needed to break down and absorb table sugar (sucrose) and other sugars from starch.

What are the common symptoms of CSID?

Symptoms of CSID include chronic, watery diarrhea, gassiness, bloating, and abdominal pain. Vomiting and constipation have also been reported. In severe cases, symptoms may lead to weight loss, poor weight gain, and/or failure-to-thrive.

Who should be screened for CSID?

Infants, children, and adults who suffer from the common symptoms of CSID should be screened.

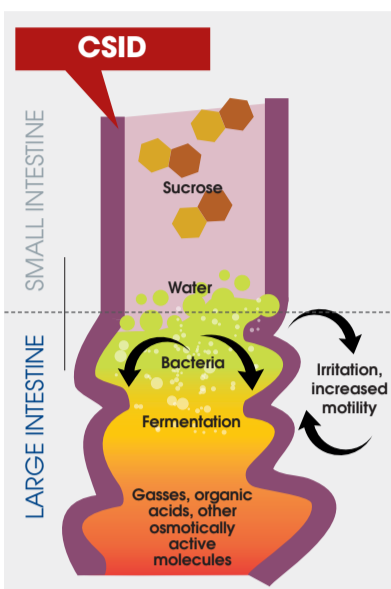
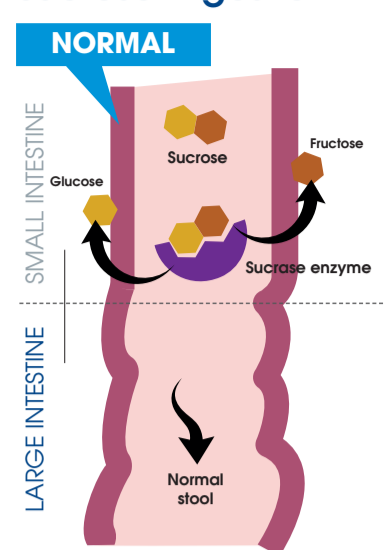
How is CSID diagnosed?

Diagnosing CSID can be difficult because the symptoms are similar to other gastrointestinal disorders. The gold standard for diagnosing CSID is by endoscopy, with small intestinal biopsies taken to test for disaccharidase activity. The sucrose breath test can also aid in the diagnosis of CSID.

What are the treatment options for CSID?

Current treatment options for CSID include Sucraid® (sacrosidase) Oral Solution, dietary restrictions (sucrose and starch), or a combination of these two. Please see your healthcare provider about which treatment options are best for you.

Sucrose Digestion



Sucraid®

What is Sucraid?

Sucraid (sacrosidase) Oral Solution is an FDA-approved, enzyme replacement medication used to treat genetically determined sucrase deficiency. After obtaining a definitive diagnosis of CSID, taking Sucraid can help your body break down and absorb sucrose (sugar) from the small intestine to help relieve symptoms of CSID, such as diarrhea and abdominal pain. Sucraid does not break down isomaltose which is found in starchy foods like rice, potatoes, corn, pasta, and bread, you may need to limit the amount of starch you eat. You usually take Sucraid with each meal or snack, mixed into 2 to 4 ounces of water, milk, or infant formula. You do not take Sucraid straight or mix Sucraid with soda, juice, or hot beverages. **It is best to take half of the dose at the beginning of each meal or snack and the other half during the meal or snack.**

INDICATION

Sucraid® (sacrosidase) Oral Solution is an enzyme replacement therapy for the treatment of genetically determined sucrase deficiency, which is part of Congenital Sucrase-Isomaltase Deficiency (CSID).

IMPORTANT SAFETY INFORMATION FOR SUCRAID® (SACROSIDASE) ORAL SOLUTION

- Sucraid may cause a serious allergic reaction. If you notice any swelling or have difficulty breathing, get emergency help right away.
- Sucraid does not break down some sugars that come from the digestion of starch. You may need to restrict the amount of starch in your diet. Your doctor will tell you if you should restrict starch in your diet.
- Tell your doctor if you are allergic to, have ever had a reaction to, or have ever had difficulty taking yeast, yeast products, papain, or glycerin (glycerol).
- Tell your doctor if you have diabetes, as your blood glucose levels may change if you begin taking Sucraid. Your doctor will tell you if your diet or diabetes medicines need to be changed.
- Some patients treated with Sucraid may have worse abdominal pain, vomiting, nausea, or diarrhea. Constipation, difficulty sleeping, headache, nervousness, and dehydration have also occurred in patients treated with Sucraid. Check with your doctor if you notice these or other side effects.
- Sucraid has not been tested to see if it works in patients with secondary (acquired) sucrase deficiency.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch or call 1-800-FDA-1088.

Sucraid (sacrosidase) Oral Solution

is only available through a specialty pharmacy that will ship Sucraid directly to your home or your physician's office. Sucraid is not available through a neighborhood retail pharmacy.



Phone: 1-800-705-1962
Fax: 1-866-777-7097

WWW.SUCRAID.COM

See Important Safety Information above and full Prescribing Information on back

SucraidASSIST™

What is SucraidASSIST?

The SucraidASSIST program is designed to be the primary resource for Sucraid® patients, caregivers, and healthcare providers. ASSIST stands for "Access and Support Services in Sucraid Therapy." One Patient Services offers the SucraidASSIST program that provides dedicated case management, excellent customer service, and comprehensive support services. One Patient Services is dedicated to improving your outcomes by assisting you to understand your disease, drug, diet, and daily living with Sucraid.

US Bioservices

Who is US Bioservices?

You cannot fill your prescription for Sucraid at your local pharmacy. It can only be filled by a specialty pharmacy, US Bioservices, that ships Sucraid to you or your prescribing physician.

Here are the steps for filling a prescription for Sucraid from the specialty pharmacy:

- The physician must complete the Sucraid Prescription Form and fax it to **1-866-850-9155**.
- Current health insurance must be reported for review.
- If you need or request financial assistance, financial information will be collected.
- The specialty pharmacy will contact you to schedule the delivery of Sucraid.
- Sucraid will be shipped directly to your home or your physician's office.

Important

Sucraid (sacrosidase) Oral Solution is only available through a specialty pharmacy. Always respond to phone calls from the SucraidASSIST™ and US Bioservices specialty pharmacy teams to schedule delivery. Sucraid will not be shipped without your confirmation.

To Order Product

To order product, contact
US Bioservices
Phone: 1-833-800-0122
Fax: 1-866-850-9155
usbioservices.com

Diet

Nutritional and dietary support is available to all patients. Contact Anne Boney, Registered Dietitian, 1-800-705-1962 aboney@onepatientservices.com

Daily Living

To talk to a Peer Coach, contact Brandi Rabon, 1-704-692-1634 or brabon@onepatientservices.com.


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SUC19.1027 03/2019