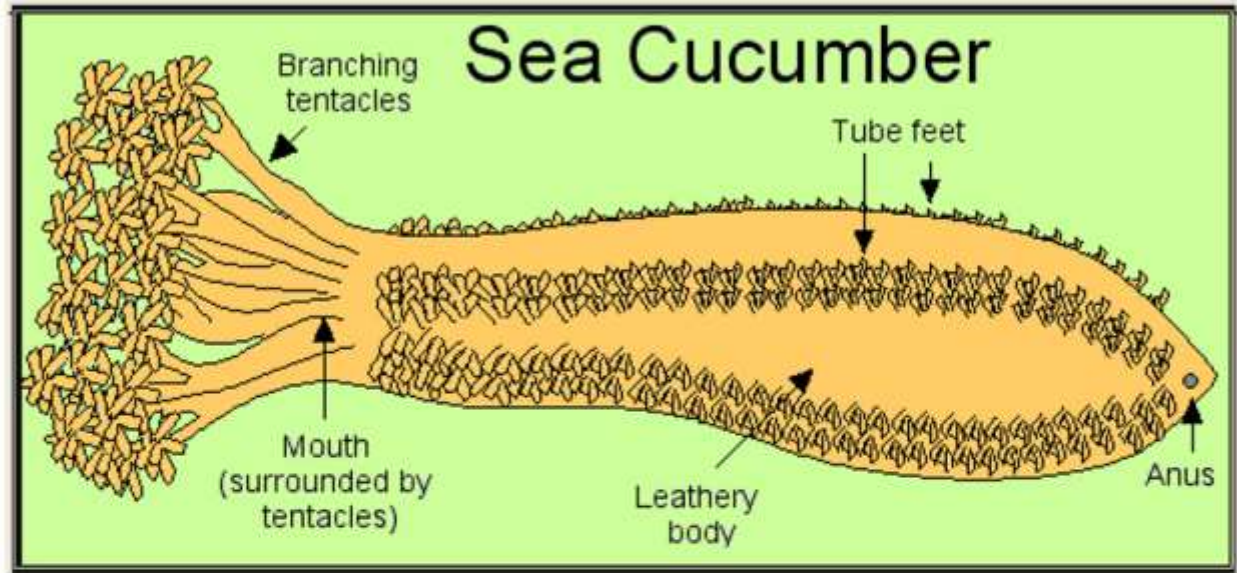


Natural Food Supplements

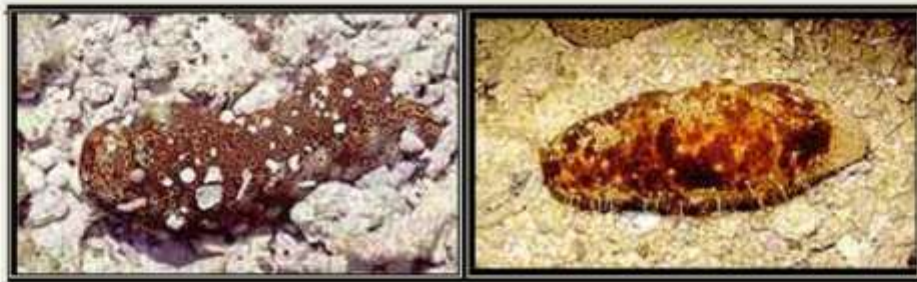
SEA CUCUMBER (SEA CUKE)

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For more detailed information contact your health care provider about options that may be available for your specific situation.



Sea cucumbers, also known as *Bêcher-de-mer*, *Gamat*, *Hai Shen*, *Sea Ginseng*, *Sea Slug*, *Knobby Black Cucumber*, *Holothurian* and *Trepang*, are not actually cucumbers, but are marine animals related (same class as) to starfishes, sea lilies, sea stars, brittle stars, and sea urchins. Other names for sea cucumber include *Stichopus japonicus selenka*, and *sea slug*.



SEA CUCUMBER DESCRIPTION

It is a cylindrical, cucumber or sausage-shaped (hence named sea cucumber) animal found in all seas of the world, at all depths usually lying

on the bottom on one flattened side. They abound on the British and European coasts, and from Nantucket northward to the rocky coasts of northern Massachusetts and Maine. Sea cucumbers can grow 3 to 4 inches thick, ranging in length from 1 inch to almost five feet, often brownish, but may range in color from black to bright yellow and red stripes.

Scientifically called holothurians, class of the phylum echinodermata (from the Greek word *enchainos*, a hedgehog, and *derma*, meaning skin), they have elongated tubular bodies that are rubbery and without bony skeletons. There are more than 500 species of sea cucumbers, and some of the larger species are considered delicacies in the Orient and are used in the preparation of soups and some other delicate specialty dishes. When cooked, it is soft, cartilaginous, almost transparent, absorbing all the flavors of the sauce and the other ingredients. It is certainly a must-try for the adventurous taste buds, and for the Asian cuisine-intrigued cooks.

SEA CUCUMBER HISTORY

Sea Cucumber is an oblong-shaped, gelatinous, invertebrate marine animal that, as an echinoderm, is distantly related to starfishes and sea urchins. It is aptly named, because it is shaped like a cucumber, and has also been thought to have a distinctly phallic appearance, which may account for its reputation as an aphrodisiac. Like all echinoderms, Sea Cucumbers have an endoskeleton just below the skin, but this can actually be absent in some species. The diet consists of plankton and decaying organic matter found in the sea. One way they might get a supply of food is to position themselves in a current where they can catch foods that flow by with their tentacles when they open. Another way is to sift through the bottom sediments using their tentacles. They can be found in great numbers beneath fish farms.

In China, Sea Cucumber is called Hai Shen, which translates roughly into Sea Ginseng, and it is unclear whether this refers to its aphrodisiacal qualities or healthful properties as a tonic for the kidneys and blood. It has been used in China for thousands of years as a treatment for arthritis, fatigue, impotence, constipation, frequent urination and joint pain, and the herb was listed as a medicinal agent in the *Bencao Congxin* of 1757. Modern research has confirmed they are beneficial for musculoskeletal inflammatory diseases, especially rheumatoid arthritis, osteoarthritis, and ankylosing spondylitis, a rheumatic disease that affects the spine.

Sea Cucumber is a great delicacy in Chinese and other Asian cuisines, such as Malaysia (gamat), Singapore, Japan, Korea and Indonesia (trepang), and often eaten at feasts and on holiday celebrations. Sea Cucumber is also considered a delicacy in certain Mediterranean countries such as Spain. It is also highly valued for its supposed medicinal

properties. Cooking it is very complicated and takes place over several days, requiring careful cleaning, gutting, soaking and boiling (several times). The food item is often purchased dried and then rehydrated before use. The product is used in soups, stews and braised dishes due to its gelatinous texture. Like tofu, it is flavorless but will absorb the flavors of its surrounding seasonings and foods and is highly nutritious - an ideal tonic food - providing more protein than most foods and less fat than most foods. It is frequently included in stir-fries.



BENEFICIAL USES OF SEA CUCUMBER

Sea Cucumber is said to have excellent healing properties, and there are pharmaceutical companies being built based on this product. Researchers believe that sea cucumbers improve the balance of prostaglandins, which regulate the inflammatory process. Extracts are prepared and made into oil, cream, or cosmetics. Sea Cucumbers are rich source of substances known as mucopolysaccharides and chondroitins (mainly chondroitin sulfate), a cartilage builder, which are often lacking in people with arthritis and connective tissue disorders; and, consequently, it has been used to ease joint pain and arthritic conditions. In addition, sea cucumbers provide protein, branched chain fatty acids, saponins (triterpene glycosides, philonopside A, intercedensides), vitamins A, B-1 (thiamine), B-2 (riboflavin), and B-3 (niacin), and C, as well as minerals calcium, iron, magnesium, and zinc.

Modern researchers believe that Sea Cucumbers improve the balance of prostaglandins (hormone-like substances that act as chemical messengers in many bodily functions), which regulate the inflammatory process and are beneficial for musculo-skeletal inflammatory diseases, especially rheumatoid arthritis, osteoarthritis and ankylosing spondylitis (a rheumatic disease that affects the spine).

Sea Cucumber is considered a fine health tonic, especially for the kidneys and has been used to nourish the kidneys and treat cases of frequent urination.

Promising new research indicates that the saponin content (triterpene glycosides) and fatty acids in Sea Cucumber may possibly be useful as an agent to treat malignant growths and diseases, as well as an anti-proliferative agent. A branched-chain fatty acid isolated from Sea Cucumber, 12-methyltetradecanoic acid, is thought to inhibit malignant prostate cell proliferation by increasing caspase-3 activity; however, no clinical trials have been conducted on humans. Moreover, those same constituents may also be responsible for antiviral activities in vitro that have shown promise in inhibiting herpes viruses.

Some of the historical benefits attributed to Sea Cucumber are its nutritive tonic qualities that ease fatigue, cleanse the blood, relieve constipation, and act as an aphrodisiac to help impotence.

One clinical study suggests that Sea Cucumber extract is beneficial in treating chronic gingivitis.

SEA CUCUMBER CUISINE

Sea cucumbers are available frozen or dried. If dried, you must pre-condition before cooking. Place the sea cucumbers in a pot and add cold water to cover. Soak for at least 12 hours. Then cook over low heat for 1 to 2 hours. Add more water, as necessary, to make sure that the water always covers the cucumbers. Remove from heat and let cool to room temperature. Drain. Cut on one side down the length of the cucumbers, and remove the entrails. Scrape out the insides. Place the cucumbers in cold water to cover and soak again for 1 to 2 hours. Rinse well and then use in the recipe.

SEA CUCUMBER RECIPES



BRAISED SEA CUCUMBERS WITH MUSHROOMS

INGREDIENTS: MIXTURE #1

- 1/2 tablespoon rice wine
- 2 stalks green onions
- 4 slices ginger
- 1/4 teaspoon MSG (optional)
- 3 pre-conditioned sea cucumbers (1 pound)
- 2 cups water
- 6 green onions (1-1/4 inch sections)
- 6 slices ginger, oil snowpea pods and sliced carrots

INGREDIENTS: MIXTURE #2

- 3 tablespoons soy sauce
- 1 teaspoon sugar
- 3/4 cup stock
- 3 large Chinese black mushrooms
- 2/3 cup bamboo shoots (bite-size pieces)
- 1 teaspoon rice wine

INGREDIENTS: MIXTURE #3

- 1 tablespoon cornstarch
- 1 tablespoon water
- 1/2 teaspoon sesame oil

PREPARATION:

- Cut each cucumber lengthwise in half, cut diagonally into 6 sections.
- Soften black mushrooms in warm water, remove and discard stems. Squeeze out water.
- Heat wok or pan and add 1 tablespoon oil. Add mixture (1) and stir-fry until fragrant.
- Add 2 cups water and heat to boil.
- Add prepared sea cucumbers, cook for 3 minutes, then remove from heat and drain. Set mixture aside.
- Heat pan and add 3 tablespoons oil until very hot. Add sliced onions, ginger and stir-fry until fragrant.
- Add the sea cucumbers, rice wine, black mushrooms, bamboo shoots and carrots, and mixture (2). Simmer covered for 10 minutes over low heat, or until the liquid is almost half of original amount.
- Add mixture (3) to thicken. Add snowpea pods, sesame oil, and toss lightly until pods are crispy tender.
- Remove to a serving plate and serve immediately.

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