Starch

Almidón; Amido; Amidon; Amidon de blé (wheat starch); Amidon de maïs (maize starch); Amidon de pomme de terre (potato starch); Amidon de riz (rice starch); Amidon prégélatinisé (pregelatinised starch); Amilo; Amylum; Amylum pregelificatum (pregelatinised starch); Bulvių krakmolas (potato starch); Burgonyakeményítő (potato starch); Búzakeményítő (wheat starch); Hidegenduzzadó keményítő (pregelatinised starch); Kukoricakeményítő (maize starch); Kukurūzų krakmolas (maize starch); Kviečių krakmolas (wheat starch); Maissitärkkelys (maize starch); Majsstärkelse (maize starch); Maydis amylum (maize starch); Oryzae amylum (rice starch); Perunatärkkelys (potato starch); Potatisstärkelse (potato starch); Pregelifikuotas krakmolas (pregelatinised starch); Pšeničný škrob (wheat starch); Riisitärkkelys (rice starch); Risstärkelse (rice starch); Rizskeményítő (rice starch); Ryžių krakmolas (rice starch); Škrob bramborový (potato starch); Škrob kukuřičný (maize starch); Škrob předbobtnalý (pregelatinised starch); Škrob rýžový (rice starch); Skrobia kukurydziana (maize starch); Skrobia pszeniczna (wheat starch); Skrobia ziemniaaczana (potato starch); Solani amylum (potato starch); Stärke; Tritici amylum (wheat starch); Vehnätärkkelys (wheat starch); Vetestärkelse (wheat starch).

CAS — 9005-25-8 (starch); 9005-82-7 (α-amylose); 9004-34-6 (β-amylose); 9037-22-3 (amylopectin).

Description. Starch consists of polysaccharide granules obtained from the caryopsis of maize, *Zea mays*, rice, *Oryza sativa*, wheat, *Triticum aestivum* (*T. vulgare*), from the tubers of potato, *Solanum tuberosum* or from the rhizomes of cassava, *Manihot utilissima*. Maize starch is also known as corn starch. Starch contains amylose and amylopectin, both polysaccharides based on α-glucose.

Pharmacopoeias. Some or all of the starches described are included in *Chin.*, *Eur.* (see p.vii), *Int.*, and *Jpn.* Also in *USNF*. *Chin.* and *Eur.* also include Pregelatinised Starch, *USNF* also includes Pregelatinized Starch, Modified Starch, and Pregelatinized Modified Starch. *US* includes Absorbable Dusting Powder and Topical Starch.

Ph. Eur. 6.2 (Maize Starch; Maydis Amylum). It is obtained from the caryopsis of *Zea mays*. It is a tasteless, matt, white to slightly yellowish, very fine powder that creaks when pressed between the fingers. The presence of granules with cracks or irregularities on the edge is exceptional. Practically insoluble in cold water and in alcohol. Store in airtight containers.

Ph. Eur. 6.2 (Potato Starch; Solani Amylum). It is obtained from the tuber of *Solanum tuberosum*. It is a very fine, white or almost white powder which creaks when pressed between the fingers. It does not contain starch grains of any other origin but may contain a minute quantity, if any, of fragments of the tissue of the original plant. Practically insoluble in cold water and in alcohol. The pH of a 20% mixture in water after 15 minutes is 5.0 to 8.0. Store in airtight containers.

Ph. Eur. 6.2 (Rice Starch; Oryzae Amylum). It is obtained from the caryopsis of *Oryza sativa*. It is a tasteless, very fine, white or almost white powder which creaks when pressed between the fingers. The presence of granules with cracks or irregularities on the edge is exceptional. Practically insoluble in cold water and in alcohol. Store in airtight containers.

Ph. Eur. 6.2 (Wheat Starch; Tritici Amylum). It is obtained from the caryopsis of *Triticum aestivum* (*T. vulgare*). It is a very fine, white or almost white powder which creaks when pressed between the fingers. It does not contain starch grains of any other origin but may contain a minute quantity, if any, of fragments of the tissue of the original plant. Practically insoluble in cold water and in alcohol. The pH of a 20% mixture in water after 15 minutes is 4.5 to 7.0. Store in airtight containers.

Ph. Eur. 6.2 (Pregelatinised Starch; Amylum Pregelificatum). It is prepared from maize starch, potato starch, or rice starch by mechanical processing in the presence of water, with or without heat, to rupture all or part of the starch granules, and subsequent drying. It contains no added substances but it may be modified to render it compressible and to improve its flow characteristics. It is a white or yellowish white powder that swells in cold water.

BP 2008 (Tapioca Starch). It is obtained from the rhizomes of *Manihot utilissima*. It is a very fine powder which creaks when pressed between the fingers. Practically insoluble in cold water and in alcohol. Store in airtight containers.

The BP 2008 gives Cassava Starch as an approved synonym.

The BP 2008 directs that when starch is specified and the type is not indicated, Maize Starch, Potato Starch, Rice Starch, Wheat Starch, or in tropical countries where these are not available, Tapioca Starch may be supplied or used.

USNF 26 (Corn Starch). It consists of the starch granules separated from the mature grain of corn, *Zea mays* (Gramineae). Irregular, angular, white masses or fine powder. Is odourless, and has a slight, characteristic taste. Insoluble in cold water and in alcohol. A 20% slurry in water, allowed to stand for 15 minutes after 1 minute of moderate agitation, has a pH of 4.0 to 7.0.

USNF 26 (Potato Starch). It is obtained from the tuber of *Solanum tuberosum*. Irregular, angular, white masses or fine powder. Is odourless, and has a slight, characteristic taste. Insoluble in cold water and in alcohol. A 20% slurry in water, allowed to stand for 15 minutes after 1 minute of moderate agitation, has a pH of 5.0 to 8.0.

USNF 26 (Tapioca Starch). Granules separated from the tubers of tapioca (cassava), *Manihot utilissima* (Euphorbiaceae). Irregular, angular, white to pale yellow masses or fine powder. Insoluble in cold water and in alcohol. A 20% slurry in water after 5 minutes of continuous agitation has a pH of 4.5 to 7.0.

USNF 26 (Wheat Starch). It is obtained from the caryopsis of *Triticum aestivum* (*T. vulgare*). Irregular, angular, white masses or fine powder. Is odourless and has a slight, characteristic taste. Insoluble in cold water and in alcohol. A 20% slurry in water, allowed to stand for 15 minutes after 1 minute of moderate agitation, has a pH of 4.5 to 7.0.

USNF 26 (Pregelatinized Starch). It is starch that has been chemically and/or mechanically processed to rupture all or part of the granules in the presence of water and subsequently dried. It may be modified to render it compressible and flowable.

USNF 26 (Modified Starch). It is starch modified by chemical means. Food starch may be acid-modified, bleached, oxidised, esterified, etherified, or treated enzymatically to change its functional properties. A 20% slurry in water, after 5 minutes stirring at a moderate rate, has a pH of 3.0 to 9.0.

USNF 26 (Pregelatinized Modified Starch). It is Modified Starch that has been chemically or mechanically processed, or both, to rupture all or part of the granules to produce a product that swells in cold water. Moderately coarse to fine, white to off-white powder. It is odourless and has a slight, characteristic taste. Slightly soluble to soluble in cold water; insoluble in alcohol.

Adverse Effects

Effects of cassava. In 1985 WHO added *malnutrition-related diabetes* (which included the type previously known as tropical diabetes) to its classification of diabetes mellitus.[1] Epidemiological evidence had suggested an association between fibrocalculous pancreatic diabetes (a subclass of malnutrition-related diabetes) and the consumption of cassava root (tapioca, manioc), which for many people living in tropical developing countries, where protein intake was low, was the main source of food energy.

Cassava root contains several cyanogenic substances and although food preparation and processing could reduce the cyanide content, there was the possibility that in persons with an inadequate protein intake, particularly if deficient in sulfur-containing amino acids which are involved in detoxification pathways, accumulation of cyanides might occur. WHO, however, did consider that further research was necessary to firmly establish any relation between this type of diabetes and high levels of cassava consumption. In a review that appeared in the following year[2] the cassava/malnutrition hypothesis was thought to be attractive, but unproven; also there was strong evidence against it being the only cause.

WHO deleted malnutrition-related diabetes from its most recent report on the classification of diabetes.[3] Fibrocalculous pancreatic diabetes is now fibrocalculous pancreatopathy, a disease which may cause diabetic mellitus but is not considered a form of diabetes.

Konzo, an upper motor neurone disease characterised by spastic paraparesis,[4] and commonly associated with optic neuropathy,[5] has been reported to be caused by dietary exposure to cyanide after ingestion of cassava root. *Growth retardation* has also been associated with consumption of inadequately processed cassava.[6]

1. WHO. Diabetes mellitus: report of a WHO study group. *WHO Tech Rep Ser 727* 1985.
2. Abu-Bakare A, *et al.* Tropical or malnutrition-related diabetes: a real syndrome? *Lancet* 1986; **i:** 1135–8.
3. Alberti KGMM, Zimmet PZ. Definition, diagnosis, and classification of diabetes mellitus and its complications. Part I: diagnosis and classification of diabetes mellitus. Provisional report of a WHO consultation. *Diabet Med* 1998; **15:** 539–53.
4. Ernesto M, *et al.* Persistent konzo and cyanogen toxicity from cassava in northern Mozambique. *Acta Trop* 2002; **82:** 357–62.
5. Mwanza J-C, *et al.* Neuro-ophthalmologic findings in konzo, an upper motor neuron disorder in Africa. *Eur J Ophthalmol* 2003; **13:** 383–9.
6. Banea-Mayambu J-P, *et al.* Dietary cyanide from insufficiently processed cassava and growth retardation in children in the Democratic Republic of Congo (formerly Zaire). *Ann Trop Paediatr* 2000; **20:** 34–40.

Glove powder. The use of starch glove powders by surgeons has resulted in contamination of surgical wounds by starch and in the development of complications such as inflammation, adhesions, and granulomatous lesions. In addition, glove starch powder may be a risk factor in the development of latex allergy, and may act as a vector for bacterial pathogens. Because of these risks, it has been proposed that the use of powder in latex gloves be banned.[1-4]

1. Haglund U, Junghanns K, eds. Glove powder—the hazards which demand a ban. *Eur J Surg* 1997; **163** (suppl 579): 1–55.
2. AAAAI and ACAAI joint statement concerning the use of powdered and non-powdered natural latex gloves. *Ann Allergy Asthma Immunol* 1997; **79:** 487.
3. Dave J, *et al.* Glove powder: implications for infection control. *J Hosp Infect* 1999; **42:** 282–5.
4. Edlich RF, Reddy VR. A call to ban glove cornstarch. *Arch Surg* 2001; **136:** 116.

Uses and Administration

Starch is absorbent and is widely used in dusting powders, either alone or mixed with zinc oxide or other similar substances. Starch is used as a surgical glove powder, but such use has been discouraged (see above). It is incorporated in many tablets as a binder, diluent, or disintegrating agent. Pregelatinised starch is used similarly as a tablet binder.

Starch mucilage is given by mouth in the treatment of iodine poisoning; it has been used topically as a skin emollient.

Rice-based solutions may be used in the prevention and treatment of dehydration due to acute diarrhoeal diseases (p.1694).

Glycogen storage disease type I. Type I glycogen storage disease is an autosomal recessive metabolic disorder in which glucose-6-phosphatase is not expressed, resulting in hypoglycaemia due to lack of glucose production. Accumulation of glycogen and other metabolic derangements can lead to complications including renal impairment, hepatomegaly and hepatic adenoma, hyperuricaemia, hyperlipidaemias, and lactic acidosis. The condition has been successfully managed by continuous nocturnal nasogastric infusion of glucose and frequent daytime feedings. However, such a regimen requires good patient compliance and monitoring of the night-time infusions.[1] As an alternative, a more standard diet together with uncooked corn starch suspensions prepared with tap water at room temperature and taken every 6 hours in doses of 1.75 to 2.5 g/kg have been reported[2] to be very satisfactory in maintaining normoglycaemia. In one infant, in whom starch was unsatisfactory, the lack of response was considered to be due to inadequate pancreatic amylase activity and although it was subsequently reported[3] that addition of a pancreatic enzyme concentrate had produced some improvement, the response was still inadequate to maintain normoglycaemia for more than 2 hours. It was considered that other amylase preparations should be identified for possible use in such patients. A small study of 7 young adults with glycogen storage disease type I found that a single dose of uncooked corn starch maintained plasma glucose concentrations for 7 hours in 5 of the patients.[4] A long-term study of the effects of corn starch therapy found that complications were less among patients with near normal metabolic control and in those having started therapy at a younger age, but other factors appeared to be involved in the pathogenesis.[5] Corn starch therapy has nonetheless been reported to have caused the amelioration of proximal renal tubular dysfunction in 3 patients who had previously only received frequent daytime feeding as therapy. In 16 other patients who had previously received treatment with corn starch or glucose infusions such renal dysfunction was not identified and it was considered that the rapid response to therapy may explain why renal tubular dysfunction is not found more frequently in these patients.[6]

Because optimal metabolic control reduces the risk of developing long-term complications, an attempt has been made to define guidelines for long-term management of the disease.[7] Continuous nocturnal nasogastric feeding with a glucose or glucose polymer or a sucrose-free maltodextrin formula low in lactose may be introduced in very young infants. Uncooked corn starch should not be started in patients under 1 year of age as pancreatic amylase activity may be immature. Thereafter, since no significant differences in growth or biochemical parameters have been found between the use of nocturnal nasogastric infusions and uncooked corn starch overnight, corn starch may be started at a dose of 250 mg/kg and increased slowly to prevent adverse effects. It is recommended that the corn starch be mixed with water in a ratio of 1:2 and that an uncooked corn starch tolerance test be performed to establish the duration of the fasting period. The total dietary plan should aim to provide 60 to 65% of the total energy intake from carbohydrates, 10 to 15% from protein, and the remainder from fat, preferably vegetable oils with a high linoleic acid content. Lactose, fructose, and sucrose should be restricted. Drug therapy for metabolic complications may be necessary, such as allopurinol for hyperuricaemia, and bicarbonate for correction of lactic acidosis.[7]

For mention of the possible role of starch in glycogen storage disease type V, see under Sucrose, p.1970.

For a brief description of glycogen storage disease type II, see under Acid Alpha Glucosidase, p.2245.

1. Goldberg T, Slonim AE. Nutrition therapy for hepatic glycogen storage diseases. *J Am Diet Assoc* 1993; **93:** 1423–30.
2. Chen Y-T, *et al.* Cornstarch therapy in type 1 glycogen-storage disease. *N Engl J Med* 1984; **310:** 171–5.
3. Chen Y-T, Sidbury JB. Cornstarch therapy in type 1 glycogen-storage disease. *N Engl J Med* 1984; **311:** 128–9.
4. Wolfsdorf JI, Crigler JF. Cornstarch regimens for nocturnal treatment of young adults with type I glycogen storage disease. *Am J Clin Nutr* 1997; **65:** 1507–11.
5. Weinstein DA, Wolfsdorf JI. Effect of continuous glucose therapy with uncooked cornstarch on the long-term clinical course of type 1a glycogen storage disease. *Eur J Pediatr* 2002; **161** (suppl): S35–S39.

6. Chen Y-T, *et al.* Amelioration of proximal renal tubular dysfunction in type I glycogen storage disease with dietary therapy. *N Engl J Med* 1990; **323:** 590–3.
7. Rake JP, *et al.* Guidelines for management of glycogen storage disease type I - European study on glycogen storage disease type I (ESGSD I). *Eur J Pediatr* 2002; **161** (suppl): S112–S119.

Preparations

BP 2008: Compound Zinc Paste; Dithranol Paste; Talc Dusting Powder; ***USP 31:*** Absorbable Dusting Powder; Topical Starch.

Proprietary Preparations (details are given in Part 3)

Austral.: Karicare Food Thickener; ***Mex.:*** Panaline†; ***NZ:*** Karicare Food Thickener.

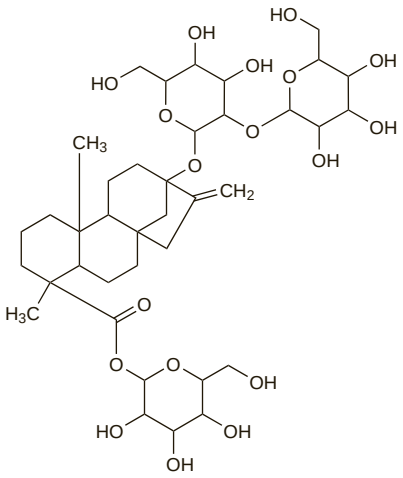
Multi-ingredient: ***Austral.:*** Nucolox; ZSC; ***Braz.:*** Talco Alivio†; ***Fr.:*** Magic Mix; Poudre du Marcheur; ***India:*** Feel Chill; ***Israel:*** Baby Paste; ***Ital.:*** Lenipasta†; ***NZ:*** Lamisil Odor Eze; Nucolox†; ***Port.:*** Cuidaderma; ***S.Afr.:*** SB Universal Ointment; ***UK:*** Herbheal Ointment; Psorasolv; Skin Clear; ***USA:*** Balmex Baby; Desitin with Zinc Oxide; Diaparene Corn Starch; Mexsana; Norforms†; Paladin; Yeast-X†.

Stevioside

Estevióside; Eupatorin; Rebaudin; Stevin; Steviosin.

$C_{38}H_{60}O_{18}$ = 804.9.

CAS — 57817-89-7.



Pharmacopoeias. In *Chin.*

Profile

Stevioside is a glycoside extracted from the leaves of yerba dulce, *Stevia rebaudiana* (Compositae). It has about 300 times the sweetness of sucrose and has been used as a sweetening agent in foods. Both the related glycoside rebaudioside A (rebiana), and an extract of the leaves of *Stevia rebaudiana* which contains these and other glycosides, have been used similarly. The use of stevioside or stevia leaves as a sweetener has been banned in some countries due to concerns about genotoxicity and possible effects on fertility.

◊ References.

1. Geuns JM. Stevioside. *Phytochemistry* 2003; **64:** 913–21.

Hypertension. The antihypertensive action of stevioside has been investigated. An oral dose of 250 mg three times daily was found to lower blood pressure in patients with mild to moderate hypertension,[1] and 500 mg three times daily decreased blood pressure and the incidence of left ventricular hypertrophy in patients with mild hypertension.[2]

1. Chan P, *et al.* A double-blind placebo-controlled study of the effectiveness and tolerability of oral stevioside in human hypertension. *Br J Clin Pharmacol* 2000; **50:** 215–20.
2. Hsieh M-H, *et al.* Efficacy and tolerability of oral stevioside in patients with mild essential hypertension: a two-year, randomized, placebo-controlled study. *Clin Ther* 2003; **25:** 2797–2808.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Edulsan; Steviadulri.

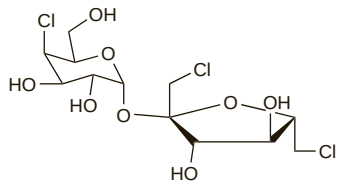
Multi-ingredient: ***Chile:*** Nature Complex Reduct-Te.

Sucralose *(BAN)*

Sucralosa; Sucralosum; TGS; Trichlorogalactosucrose. 1,6-Dichloro-1,6-dideoxy-β-D-fructofuranosyl 4-chloro-4-deoxy-α-D-galactopyranoside.

$C_{12}H_{19}Cl_3O_8$ = 397.6.

CAS — 56038-13-2.



Pharmacopoeias. In *USNF.*

USNF 26 (Sucralose). A white to off-white, crystalline powder. Freely soluble in water, in alcohol, and in methyl alcohol; slightly soluble in ethyl acetate. Store in a cool, dry place at a temperature not exceeding 21°.

Profile

Sucralose is used as a sweetening agent in foods, beverages, and pharmaceuticals. It has between about 300 and 1000 times the sweetening power of sucrose and is stable to heat. It has no food value and is noncariogenic.

◊ References.

1. Anonymous. Sucralose—a new artificial sweetener. *Med Lett Drugs Ther* 1998; **40:** 67–8.
2. Roberts A, *et al.* Sucralose metabolism and pharmacokinetics in man. *Food Chem Toxicol* 2000; **38** (suppl): S31–S41.

Preparations

Proprietary Preparations (details are given in Part 3)

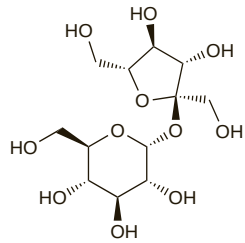
Chile: Sugafor.

Sucrose

Azúcar; Cane Sugar; Refined Sugar; Sacarosa; Saccharose; Saccharosum; Saccharum; Sacharosa; Sacharoza; Sacharozė; Sackaros; Sakkaroosi; Sucre; Sucrosum; Szacharóz; Zucker. β-D-Fructofuranosyl-α-D-glucopyranoside.

$C_{12}H_{22}O_{11}$ = 342.3.

CAS — 57-50-1.



Description. Sucrose is obtained from sugar-cane, *Saccharum officinarum* (Gramineae), sugar-beet, *Beta vulgaris* (Chenopodiaceae), and other sources.

Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), *Jpn*, and *Viet.* Also in *USNF.*

Br. also contains Compressible Sugar.

Eur. also includes Sugar Spheres.

USNF also includes Compressible Sugar, Confectioner's Sugar, and Sugar Spheres.

Ph. Eur. 6.2 (Sucrose). A white or almost white, crystalline powder or shiny, colourless or white or almost white crystals. Very soluble in water; slightly soluble in alcohol; practically insoluble in dehydrated alcohol.

USNF 26 (Sucrose). A sugar obtained from *Saccharum officinarum* (Gramineae), *Beta vulgaris* (Chenopodiaceae), and other sources. White, crystalline powder or lustrous, dry, colourless or white crystals. Soluble 1 in 0.5 of water, 1 in 0.2 of boiling water, and 1 in 170 of alcohol; practically insoluble in dehydrated alcohol.

Incompatibility. Sucrose may be contaminated by traces of heavy metals or sulfites and this can lead to incompatibility with other ingredients when it is used as a pharmaceutical excipient. Syrup preserved with hydroxybenzoates has been reported to be incompatible with a range of compounds.

Adverse Effects and Precautions

Sucrose consumption increases the incidence of dental caries.

Sucrose use should be avoided in patients with the glucose-galactose malabsorption syndrome, fructose intolerance, or sucrase-isomaltase deficiency. The intake of sucrose from dietary and other sources must be controlled in patients with diabetes mellitus.

Dietary sugar. The Panel on Dietary Sugars reviewed the evidence relating to sugars in the diet and the health of the population in the UK.[1]

No evidence was found that the consumption of most sugars naturally incorporated into the cellular structure of foods (intrinsic sugars) represented a threat to health and consideration was therefore mainly directed towards the dietary use of sugars not so incorporated (extrinsic sugars), of which sucrose was the principal non-milk extrinsic sugar.

There was extensive evidence suggesting that sugars were the most important dietary factor in the cause of dental caries and it was recommended that consumption of non-milk extrinsic sugars should be decreased.

It was considered that dietary sugars may contribute to the development of obesity, a condition which plays an important part in the aetiology of a number of diseases. For the majority of the population, who had normal plasma lipids and normal glucose tolerance, the consumption of sugars within the present range carried no special metabolic risks but those persons consuming more than about 200 g daily should replace the excess with starch. It was, however, recommended that those with special medical problems such as diabetes or hypertriglyceridaemia should restrict non-milk extrinsic sugar to less than about 20 to 50 g daily unless otherwise instructed by their own physician or dietitian. It was also concluded that current consumption of sugars, particularly sucrose, played no direct causal role in the development of cardiovascular (atherosclerotic coronary, peripheral, or cerebral vascular) disease, essential hypertension, or diabetes mellitus, and also had no significant specific effects on behaviour or psychological function. Although links between sucrose intake and certain other diseases (such as colorectal cancer, renal and biliary calculi, and Crohn's disease) had been proposed it was not felt that the evidence was adequate to justify any general dietary recommendations.

The conclusions of a joint FAO/WHO consultation on carbohydrates in human nutrition[2] were broadly in agreement with the above. However, they noted that the terms intrinsic and extrinsic sugars had not gained wide acceptance, either in the UK or other countries in the world, and they recommended against the use of these terms.

1. DoH. Dietary sugars and human disease: report of the panel on dietary sugars of the committee on medical aspects of food policy. *Report on health and social subjects 37.* London: HMSO, 1989.
2. FAO/WHO. *Carbohydrates in human nutrition: report of a joint FAO/WHO expert consultation. FAO Food and Nutrition 66.* Rome: Food and Agriculture Organization of the United Nations, 1998.

Effects on the kidneys. Acute renal failure with severe hyponatraemia has followed the use of granulated sugar to treat an infected pneumonectomy wound cavity.[1] It was noted that intravenous sucrose had long been known to be nephrotoxic in both *animal* models and man and that mild renal insufficiency before sucrose intoxication might have contributed to the nephrosis. Others, however, considered that the nephrotoxicity might have been caused by gentamicin, a solution of which had been used to irrigate the cavity before packing the wound.[2] Intravenous immunoglobulin preparations containing sucrose (as a stabilising agent) have also caused acute renal failure.[3,4]

1. Debure A, *et al.* Acute renal failure after use of granulated sugar in deep infected wound. *Lancet* 1987; **i:** 1034–5.
2. Archer H, *et al.* Toxicity of topical sugar. *Lancet* 1987; **i:** 1485–6.
3. Ahsan N, *et al.* Intravenous immunoglobulin-induced osmotic nephrosis. *Arch Intern Med* 1994; **154:** 1985–7.
4. Zhang R, Szerlip HM. Reemergence of sucrose nephropathy: acute renal failure caused by high-dose intravenous immune globulin therapy. *South Med J* 2000; **93:** 901–4.

Pharmacokinetics

Sucrose is hydrolysed in the small intestine by the enzyme sucrase to glucose and fructose, which are then absorbed. Sucrose is excreted unchanged in the urine when given intravenously.

Uses and Administration

Sucrose, a disaccharide, is used as a sweetening agent. It is commonly used as household sugar. If the sweetness of sucrose is taken as 100, fructose has a value of about 173, glucose 74, maltose 32, galactose 32, and lactose 16.

Sucrose is used as a tablet excipient and lozenge basis, and as a suspending and viscosity-increasing agent. Syrups prepared from concentrated solutions of sucrose form the basis of many linctuses. Treacle (molasses), a byproduct of sugar production that contains sucrose and minerals, has also been used.

Sucrose 30% eye drops have been used as a hypertonic agent for clearing corneal oedema.

Cough. Sucrose syrups are used as demulcents in linctuses used for treating cough (p.1547).