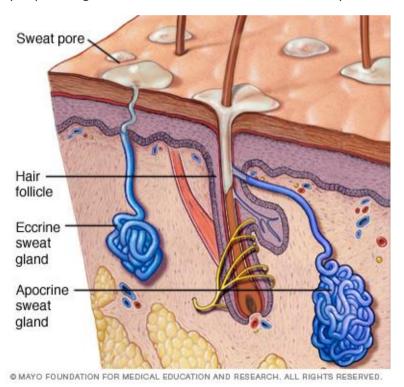
# Perspiration (Sweat) and Homoeopathy

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### Introduction

Perspiration is the secretion of fluid by the sweat by sudoriferous glands. These small, tubular glands are situated within the skin, and the subcutaneous tissue under it. They discharge their fluid through tiny openings called pores in the surface of the skin. Perspiration serves minimum two purposes by removing waste products such as urea and ammonia, and cooling the body temperature as sweat evaporates. Sweat is transparent, colourless, acidic fluid secreted by the sweat glands. It contains some fatty acids and mineral matter. Adult perspiration gains its characteristic odour from the waste products excreted.



The major sweat glands in humans are eccrine and apocrine glands. They vary in type and density, depending on anatomic location.

#### **ECCRINE SWEAT GLANDS**

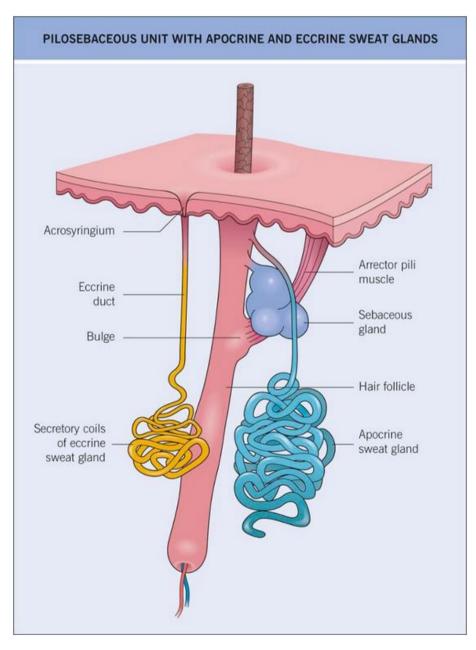
Eccrine sweat glands have a generalized distribution, with the highest density on the palms and soles. They are activated by emotional and thermal stimuli and are necessary for thermoregulation. The eccrine secretory unit consists of a coiled secretory portion that drains into a long thin duct whose apical portion called acrosyringium opens to the skin surface. Innervation of eccrine glands consists of postganglionic sympathetic fibres that have acetylcholine as the principal neurotransmitter.

### APOCRINE SWEAT GLANDS

Apocrine sweat glands are androgen-dependent for their development and have an unclear function in humans. There primary locations are the axillae, anogenital region, periumbilical region and nipples. Apocrine glands, whose apical portion known as acrosyringium drains into terminal hair follicles, continuously secrete a sterile odourless viscous fluid that is rich in precursors of odoriferous substances.

#### APOECCRINE SWEAT GLANDS

These are found in axillae and have combined features of eccrine and apocrine gland. These are controlled by sympathetic fibres and acetylcholine. Probably these are not present before adolescence. They have no relationship to pilosebaceous follicle. Their roles in thermoregulation is suspicious. Their malfunctioning may lead to axillary hyperhidrosis and non-follicular apoeccrine Fox Fordyce disease.



# A-Disorders of Abnormal quantity of sweat

Hyperhidrosis, oligohidrosis and anhidrosis

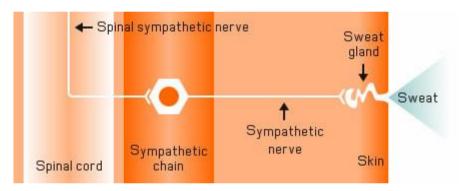
# Hyperhidrosis

### Definition

Hyperhidrosis is a medical condition in which a person sweats excessively and unpredictably (Psora/ Pseudopsora). People with hyperhidrosis may sweat even when the temperature is cool or when they are at rest.

# Pathophysiology

It is due to overactive sweat glands (Psora) and linked it to over-activity in the sympathetic nervous system (Psora). Specifically, the Thoracic Sympathetic Ganglion Chain which controls the apocrine and eccrine glands, responsible for general sweating. Depending on which part of the chain becomes overactive (Pseudopsora), different parts of the body become affected.



It may also develop secondary to a metabolic disorders, febrile illness, or malignancy. Heat and emotions may trigger hyperhidrosis, but hyperhidrosis sweat nearly all the time, regardless of their mood or the weather.

### Types

#### PRIMARY OR FOCAL HYPERHIDROSIS

When excessive sweating affects the hands, feet, and armpits, it is called primary or focal hyperhidrosis (Psora/ Sycosis). In most cases, no cause can be found. It seems to run in families. Excessive sweat in palms and soles is called palmo-plantar hyperhidrosis and that in axillae- axillary hyperhidrosis.

#### SECONDARY HYPERHIDROSIS

If the sweating occurs as a result of another medical condition, it is called secondary hyperhidrosis. The sweating may be all over the body or it may be in one area. Causes of secondary hyperhidrosis are-

- Acromegaly
- Anxiety conditions

- Cancer
- Carcinoid syndrome
- Certain medications and substances of abuse
- Glucose control disorders
- Heart disease
- Hyperthyroidism
- Lung disease
- Menopause
- Parkinson disease
- Pheochromocytoma
- Spinal cord injury
- Stroke
- Tuberculosis or other infections

# Diagnosis

### STARCH-IODINE TEST

An iodine solution is applied to the sweaty area. After it dries, starch is sprinkled on the area. The starch-iodine combination turns a dark blue colour wherever there is excess sweat.

#### PAPER TEST

Special paper is placed on the affected area to absorb the sweat, and then weighed. The heavier it weights, the more sweat has accumulated.

# Hypohidrosis or Oligohidrosis

### Definition

Abnormally diminished or absent perspiration is called oligoghidrosis or hypohidrosis. (Psora/ Syphilis)

### Causes

Both generalized and focal or segmented (reduced or absent sweating in circumscribed locations) forms of the disease are usually associated with other underlying conditions. Hypohidrosis can lead to hyperthermia, heat exhaustion, heat stroke and possibly death.

It may be caused by a number of factors-

- a. Medications
- 1- Anticholinergic agents
- 2- Opioids
- 3- Botulinum toxin
- 4- Alpha-2 receptor antagonists

- 5- Clonidine
- 6- Barbiturates

#### b. Physical agents

- 1- Tumours
- 2- Burns
- 3- Radiation
- 4- Surgery
- 5- Scars
- 6- Sores
- c. Dermatological
- 1- X-linked hypohidrotic ectodermal dysplasia
- 2- Incontinentia pigmenti
- 3- Bazex disease
- 4- Fabry disease
- 5- Miliaria
- 6- Sjogren syndrome
- 7- Systemic sclerosis
- 8- Graft-versus-host disease
- d. Neuropathic
- 1- Multiple system atrophy
- 2- Dementia with Lewy bodies
- 3- Multiple sclerosis
- 4- Cerebrovascular accident
- 5- Tumour
- 6- Encephalitis
- 7- Cervical myelopathy
- 8- Diabetes mellitus
- 9- Guillain-Barre syndrome
- 10- Hereditary sensory and autonomic neuropathy
- 11- Alcoholism
- 12- Amyloidosis
- 13- Ross syndrome
- 14- Pure autonomic failure
- e. Horner's syndrome

### **Anhidrosis**

# Definition

Anhidrosis is the inability to sweat normally. (Psora/ Syphilis)

### Causes

Anhidrosis occurs due to sweat glands failure (Psora/ Syphilis). There are several causes-

- a. Nerve damage
- 1- Ross syndrome
- 2- Diabetes
- 3- Alcoholism
- 4- Parkinson's disease

- 5- Multiple system atrophy
- 6- Amyloidosis
- 7- Sjogren's syndrome
- 8- Small cell lung cancer
- 9- Rare metabolic disorders, such as Fabry disease
- 10- Horner syndrome

#### b. Skin damage

- 1- Clogged ducts due to some skin diseases that block sweat ducts or poral occlusion are the most common cause of anhidrosis.
- 2- Skin injuries especially from severe burns, can permanently damage sweat glands.
- c. Medications
- 1- Many prescription medications including those for heart and blood pressure, bladder control, nausea and psychiatric conditions can reduce sweating.
- d. Genetic factors
- 1- Hypohidrotic ectodermal dysplasia, an inherited disorder, causes the body to develop with few or absent sweat glands.
- e. Dehydration

# B-Disorders of Abnormal odour or smell of sweat

**Bromhidrosis or osmidrosis** 

### Definition

Abnormal sweat odour is called as bromhidrosis or osmidrosis.

# Pathophysiology

Aroma of the skin in human is, mainly, determined by apocrine gland secretion. There are some other sources too. Sebaceous secretion has characteristic odour, and decomposition products of keratinization, especially in the presence of hyperhidrosis, produce offensive smells (Psora/ Sycosis/ Pseudopsora). Eccrine (major sweat glands) secretion is generally odourless, but various substances may be excreted in it. Garlic, drugs, arsenic etc. are frequently excreted with sweat (Psora/ Sycosis/ Pseudopsora).

Apocrine secretion is essentially odourless as it reaches the surface, apart from excreted substances such as garlic. Bacterial decomposition liberates certain substances along with fatty acids producing characteristic smells. This process occurs only after some hours, and frequent removal of apocrine sweat prevents its decomposition.

Fructooligosaccharide (FOS), a fructan being a natural constituent of inulin, found in artichokes, chicory roots, asparagus, onions, garlic, Jerusalem artichoke and leeks gives its characteristic odour. Inulin is a nondigestible oligosaccharide containing fructose which provides texture, rheology, dietary fibre properties, and selective fermentation by colon bacteria. Allicin is an oily substance present in garlic, which has antibacterial activity, also has aroma. These herbs contain phytochemicals like allicin, ajoene, saponins and phenolic compounds that may have antioxidant and immune-enhancing functions give certain odour to sweat. (Causa occasionalis).

Different aminoaciduria may produce characteristic odours. Sweat has a characteristic odour in gout, diabetes, scurvy, typhoid and other diseases.

### Types

It may be generalized or localized.

Osmhidrosis in a specific area of the body is localized one.

#### GENERALIZED BROMHIDROSIS

Generalized bromhidrosis associated with nasal foreign bodies have been recorded in children. This symptom may be a clue to premature puberty too (Psora). Body odour may be seen in paranoia or phobias i.e. monosymptomatic delusions of malodour or from organic lesions of the central nervous system. ((Syphilis)

#### LOCALIZED BROMHIDROSIS

Most frequently axillae, groins and feet are involved. Other body parts may also be involved in localized bromhidrosis. (Syphilis/Pseudopsora) A strong axillary odour tends to be associated with a richer bacterial flora, especially corynebacteria. Increased axillary pH may facilitate the overgrowth of these bacteria, and some deodorants may help by acidifying the axillary skin.

There is noticeable individual and racial distinction in body odour, and its social acceptance varies greatly with race and social education. There is histological difference between normal and bromhidrotic apocrine glands. In the bromhidrotics, the apocrine glands are larger and more numerous. (Sycosis) Elevated activity of type I  $5\alpha$ -reductase activity has been shown in bromhidrosis. (Psora/ Sycosis)

# Some special conditions

#### FISH ODOUR SYNDROME

Fish odour syndrome or trimethylaminuria results from excessive amounts of the offensively smelling tertiary amine trimethylamine appearing in both eccrine and apocrine sweat, breath and urine, which imparts a disagreeable rotting fish smell (Syphilis). Affected individuals are unable to oxidize this substance, which is produced by the intestinal bacterial degradation of choline and carnitine in food to the odourless trimethylamine N-oxide. There are two types of fish odour syndrome-

#### PRIMARY TRIMETHYLAMINURIA

This can occur as a result of a mutation in the flavin containing monooxygenase 3 (FMO3) gene. (Psora/ Syphilis)

#### SECONDARY TRIMETHYLAMINURIA

This can occur when there is an increased burden of trimethylamine, and is seen when there is an increased production of trimethylamine (TMA) (Sycosis/ Psora) from its precursors by gut bacteria, in conditions such as blind loop syndrome, uraemia and liver disease.

The unpleasant odour, which is often worse after eating seafood, during periods of stress and during menstruation, can cause much distress, rejection and resentment. Victims are sometimes unaware of their smell, which may be intermittent and may not be detected by attendants. (Syphilis/ Psora)

Direct estimation of TMA in the urine can be used to diagnose it. A diet low in carnitine and choline may help. Charcoal and copper chlorophyllin have been shown to reduce urinary trimethylamine concentrations.

# C-Disorders of Abnormal colour of sweat

Chromhidrosis and ochronosis

### Chromhidrosis

Coloured sweating called as chromhidrosis. Apocrine sweat may be stained with a yellow, green or blue hue in some individuals, but only rarely does it occur so striking as to term chromhidrosis. (Psora/ Syphilis/ Sycosis)

Generally it leaves blue—black, yellow or green colours. It is due to the secretion of lipofuscins in apocrine sweat, and may be associated with the secretion of coloured breast milk. The higher the degree of oxidation is there, the deeper is the colour. i.e. the more oxidized lipofuscins appear deeper in colour while the lighter coloured pigments may only fluoresce. These can be diagnosed by finding lipofuscin pigment granules that may fluoresce on fluorescence microscopy in the apocrine secretory cells. The secretion of coloured sweat starts at puberty and persists until there is a gradual regression of apocrine function in old age. Coloured sweat may be secreted from the glands in response to exercise and emotional stimuli as well as after manipulation of the skin. (Causa occasionalis)

The axillae are the most frequently affected sites, along with facial and areolar chromhidrosis. Topical capsaicin reduces facial and nipple chromhidrosis (Syphilis). Botulinum toxin successfully suppresses facial chromhidrosis. Pseudochromhidrosis refers to the colouration of otherwise colourless sweat when it reaches the surface of the skin due to dyes, paints or chromogenic or porphyrin producing bacteria on the skin. (Causa occasionalis) Blue pseudochromhidrosis is seen in workers occupationally exposed to copper salts. (Causa occasionalis) Red pseudochromhidrosis has been seen somewhere in a group of flight attendants who had new reddyed labels put into their uniforms. (Causa occasionalis) Eccrine chromhidrosis is usually due to exogenous dyes and is usually weak in shade. (Causa occasionalis)

### Ochronosis

Ochronosis is the bluish black discoloration of certain tissues, such as the ear cartilage and the ocular tissue, seen with alkaptonuria, a metabolic disorder. Additionally, ochronosis can occasionally occur from exposure to various substances such as phenol, trinitrophenol, resorcinol, mercury, picric acid, benzene, hydroquinone, and antimalarials. (Psora/ Syphilis)

# Repertory of Sweat disorders

CHILL - PERSPIRATION - more he sweats the colder he becomes; the Cinnb. cist.

Chills - PERSPIRATION, chills, with - colder, he becomes, the more he sweats the Cinnb.

Chills - STAGES, of chills and fever, general - chill, followed by heat, then perspiration - internal chill, then heat and sweat phos.

Chills - STAGES, of chills and fever, general - chill, followed by heat with perspiration - with sweat, of the face alum.

Chills - STAGES, of chills and fever, general - chill, followed by heat with perspiration - without sweat graph. nat-m.

Chills - STAGES, of chills and fever, general - chill, followed by heat with perspiration - thirst then sweat kali-c. thuj.

Chills - STAGES, of chills and fever, general - heat, alternating with chill, followed by perspiration, then heat - then heat - finally sweat bry. kali-c. Spig.

Chills - STAGES, of chills and fever, general - heat, followed by chill, then perspiration - cold sweat caps. Verat.

Fainting - PERSPIRATION, during - suppressed foot sweat, from Sil.

FEVER - NIGHT - perspiration, with - clammy sweat and quick pulse cimic.

FEVER, HEAT - SUCCESSION of stages - heat - alternating with chill - sweat, followed by - heat, followed by - perspiration, finally bry. kali-c. spig.

Fevers - NIGHT, fever - perspiration, with - clammy sweat and quick pulse cimic.

Fevers - STAGES, of fever and chills, general - chill, followed by heat, then perspiration - internal chill, then heat and sweat phos.

Fevers - STAGES, of fever and chills, general - chill, followed by heat with perspiration - with sweat, of the face alum.

Fevers - STAGES, of fever and chills, general - chill, followed by heat with perspiration - without sweat graph. nat-m.

Fevers - STAGES, of fever and chills, general - chill, followed by heat with perspiration - thirst then sweat kali-c. thuj.

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Fevers - STAGES, of fever and chills, general - heat, followed by chill, then perspiration - cold sweat caps. Verat.

GENERALITIES - CONVULSIONS, spasms - extremities - perspiration, from suppressed foot sweat SIL.

GENERALITIES - PERSPIRATION - suppressed - foot sweat am-c. apis APISIN. ars. bad. BAR-C. BAR-M. bar-s. CARB-V. cham. coch. colch. CUPR. FORM. graph. haem. KALI-C. lyc. MERC. nat-c. NAT-M. nit-ac. ol-an. ph-ac. PHOS. plb. psor. PULS. RHUS-T. sal-ac. sanic. sel. SEP. SIL. SULPH. THUJ. x-ray zinc-phic. ZINC.

GENERALITIES - WEAKNESS, enervation, exhaustion, prostration, infirmity - perspiration - foot sweat, from suppressed SIL.

GENERALS - CONVULSIONS - perspiration - suppressed perspiration; from - foot-sweat; after form. SIL.

Generals - PERSPIRATION, agg. - suppressed, foot sweat, from Sil.

GENERALS - WEAKNESS - perspiration - foot sweat; from suppressed Sil.

Mind - DELIRIUM, general - perspiration, amel. - cold sweat, with Verat.

PERSPIRATION - BED, - sweat and chilliness as soon as he gets warm in arg-n.

Perspiration - BED, in, agg. - sweat and chilliness as soon as he gets warm in arg-n.

PERSPIRATION - COLD - clammy sweats with - chill corn.

PERSPIRATION - COLD - clammy sweats with - chill corn. cupr. lyss. VERAT.

PERSPIRATION - COLD - clammy sweats with - haemorrhage CHIN.

PERSPIRATION - COLD - clammy sweats with lat-h. verat-v.

PERSPIRATION - COLD - over the body, warm sweat on the palms Dig.

Perspiration - COLD, perspiration - clammy, sweats, with, chill - bleeding, with CHIN.

Perspiration - COLD, perspiration - clammy, sweats, with, chill - childbirth, during dig. hyos.

Perspiration - COLD, perspiration - clammy, sweats, with, chill corn. cupr. lyss. VERAT.

Perspiration - COLD, perspiration - over, the body, warm sweat on the palms Dig.

PERSPIRATION - EATING, - anxiety and cold sweat MERC.

Perspiration - EATING, general - agg. - anxiety and cold sweat MERC.

PERSPIRATION - HEAD, general sweat except the Bell. merc. nux-v. RHUS-T. SAMB. Sec. Sep. THUJ.

Perspiration - MORNING - side, sweat every morning agg., on the affected ambr.

PERSPIRATION - MOTION, - on making any, sweat disappears and heat comes on Lyc.

Perspiration - MOTION, general - agg. - making any, sweat disappears and heat, comes on Lyc.

PERSPIRATION - NIGHT - long lasting musty night sweats Cimx.

PERSPIRATION - NIGHT - night sweats, with prolonged, musty CIMX.

Perspiration - NIGHT, at - long lasting musty night, sweats Cimx.

PERSPIRATION - PROFUSE - night - on waking the sweat ceases, and returns again on falling asleep cham.

Perspiration - PROFUSE - night - waking, the sweat ceases and returns again on falling asleep cham.

PERSPIRATION - SCANTY sweat - after a severe chill eup-per.

PERSPIRATION - SCANTY SWEAT - chill; after a severe eup-per.

PERSPIRATION - SCANTY SWEAT alum. alumin-p. alumin-s. alumin. ant-c. apis apoc. beryl-m. bol-la. calad. casc. chinin-s. cimx. Cina conv. croc. cycl. dulc. elaps Eup-per. eup-pur. gamb. graph. ign. Ip. kali-c. kali-i. lac-h. lach. led. nux-m. nux-v. phel. ran-b. sang. sep. sil. thal-xyz. verat.

Perspiration - STOOL, general - amel. - increased sweat acon.

Perspiration - SUPPRESSED, sweat, ailments from Acon. am-c. anthraci. apis arn. Ars. Aspar. atro. Aur-m-n. bell-p. BELL. BRY. cadm-s. Caj. CALC-S. calc-sil. CALC. cann-s. Carb-v. Carbn-s. cary. caust. CHAM. CHIN. Clem. coff. COLCH. coloc. cupr. DULC. Eupper. ferr-p. Ferr. Graph. hep. hyos. iod. ip. kali-ar. Kali-c. kali-sil. lach. led. Lyc. mag-c. Merc. mill. nat-c. Nat-m. Nat-s. nit-ac. Nux-m. Nux-v. olnd. op. ph-ac. Phos. plat. Plb. PSOR. puls. RHUS-T. sabad. sec. sel. senec. seneg. SEP. SIL. spong. squil. staph. STRAM. SULPH. teucr. thuj. verat. verb. viol-o.

PERSPIRATION - SYMPTOMS agg, while sweating - after agg. Acon. ant-t. calc. cham. CHIN. Con. ip. Merc. PH-AC. phos. Puls. SEP. sil. Staph. Sulph.

PERSPIRATION - SYMPTOMS agg.while sweating - amel. - except the headache Nat-m.

PERSPIRATION - SYMPTOMS agg.while sweating - amel. - except the headache - which is made worse ars. chinin-s. EUP-PER.

PERSPIRATION - SYMPTOMS agg. while sweating - amel. Acon. aesc. aeth. apis Ars. bapt. bell. Bov. BRY. Calad. camph. canth.

Cham. Chinin-s. cimx. CUPR. elat. eup-per. GELS. Graph. Hep. Lach. lyc. NAT-M. psor. RHUS-T. samb. sec. Stront-c. Thuj. Verat.

PERSPIRATION - SYMPTOMS agg, while sweating Acon. ant-t. arn. ARS. calc. CAUST. CHAM. Chin. chinin-ar. cimx. croc. eup-per. ferr-ar, Ferr, FORM, ign, Ip, Ivc, MERC, nat-act, nat-c, Nux-v, OP, phos, Psor, puls, RHUS-T, SEP, spong, STRAM, SULPH, VERAT,

Perspiration - SYMPTOMS, general - agg., while sweating Acon. ant-t. arn. ARS. calc. CAUST. CHAM. Chin. chinin-ar. cimx. croc. eup-per, ferr-ar, Ferr, FORM, ign, Ip. lyc. MERC, nat-ar, nat-c. Nux-v. OP, phos, Psor, puls, RHUS-T, SEP, spong, STRAM, SULPH,

VERAT.

Perspiration - SYMPTOMS, general - amel., while sweating - except the headache ars. chinin-s. eup-per. Nat-m.

Perspiration - SYMPTOMS, general - amel., while sweating - except the headache - which is made worse ars. chinin-s. EUP-PER.

Perspiration - SYMPTOMS, general - amel., while sweating Acon. aesc. aeth. apis Ars. bapt. bell. Bov. BRY. Calad. camph. canth.

Cham. Chinin-s. cimx. CUPR. elat. eup-per. GELS. Graph. Hep. Lach. lyc. NAT-M. psor. RHUS-T. samb. sec. Stront-c. Thuj. Verat.

Perspiration - WARM, sweats - convulsions, with sil. stry.

Perspiration - WARM, sweats - epilepsy, after sil.

Perspiration - WARM, sweats - evening anac. puls.

Perspiration - WARM, sweats - morning - every other morning ant-c.

Perspiration - WARM, sweats - morning carb-v.

Perspiration - WARM, sweats - night staph. thuj.

Perspiration - WARM, sweats - sitting, in asar.

Perspiration - WARM, sweats - somnolence with op.

Perspiration - WARM, sweats - uneasiness, causing CALC. cham. nux-v. Puls. SEP. Sulph.

Perspiration - WARM, sweats - waking, amel. on thuj.

Perspiration - WARM, sweats acon. anac. ant-c. arum-t. asar. bapt. benzol. both-a. camph. carb-v. cham. chel. cocc. corn-f. dig. dros. guare. ign. kali-c. kreos. lach. led. nat-m. nux-v. op. phos. podo. puls. sep. sil. sol-ni. staph. stram. stry. thuj. til. verat.

Sleep - DISTURBED, sleep - perspiration, by - cold, sweat bell, calc, Carb-an, carb-v, merc, Nux-v, sil, sulph,

Weakness - PERSPIRATION, weakness, during - suppressed, foot sweat, from Sil.

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