



# Sleep apnoea

Recognising symptoms – Increasing quality of life



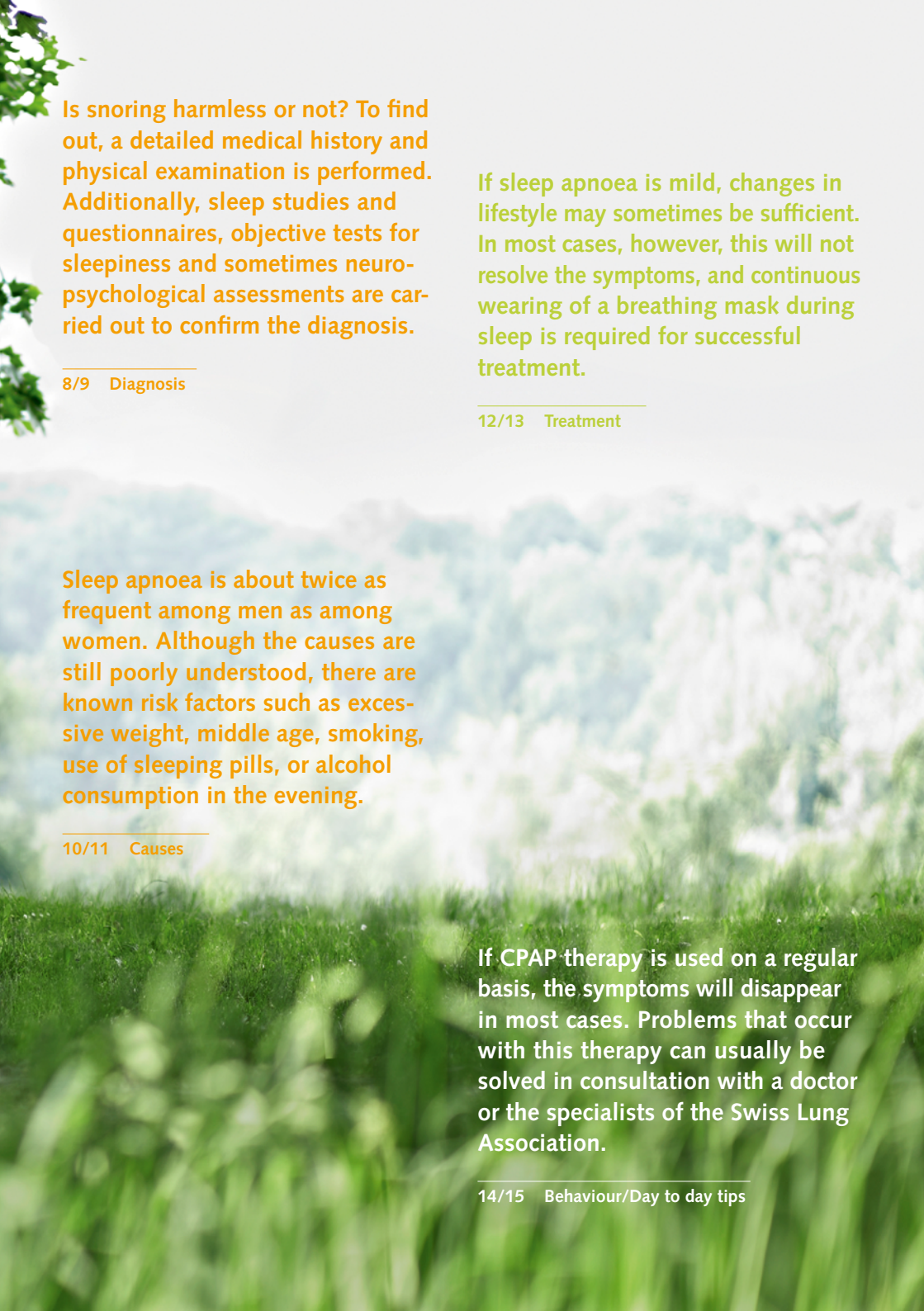
SWISS **LUNG** ASSOCIATION

Anyone who snores at night and feels extremely tired during the day should consult his or her doctor to rule out sleep apnoea. Nocturnal breathing pauses and daytime fatigue may cause accidents and relationship problems, and in the long run trigger cardiovascular disease. In most cases, specific treatment is rapidly effective.

The most frequent symptoms of sleep apnoea include snoring, breathing pauses during sleep, daytime fatigue with lack of concentration, and headaches. If left untreated for years, sleep apnoea often leads to severe health problems.

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6/7 Symptoms



Is snoring harmless or not? To find out, a detailed medical history and physical examination is performed. Additionally, sleep studies and questionnaires, objective tests for sleepiness and sometimes neuro-psychological assessments are carried out to confirm the diagnosis.

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8/9 Diagnosis

Sleep apnoea is about twice as frequent among men as among women. Although the causes are still poorly understood, there are known risk factors such as excessive weight, middle age, smoking, use of sleeping pills, or alcohol consumption in the evening.

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10/11 Causes

If sleep apnoea is mild, changes in lifestyle may sometimes be sufficient. In most cases, however, this will not resolve the symptoms, and continuous wearing of a breathing mask during sleep is required for successful treatment.

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12/13 Treatment

If CPAP therapy is used on a regular basis, the symptoms will disappear in most cases. Problems that occur with this therapy can usually be solved in consultation with a doctor or the specialists of the Swiss Lung Association.

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14/15 Behaviour/Day to day tips



## What you should know about sleep apnoea

Anyone who snores at night and feels extremely tired during the day should consult his or her doctor to rule out sleep apnoea. Nocturnal breathing pauses and daytime fatigue may cause accidents and relationship problems, and in the long run trigger cardiovascular disease. In most cases, specific treatment is rapidly effective.

### Years of suffering before diagnosis

People with sleep apnoea may live with extreme fatigue for years. They report difficulties concentrating and suffer from a variety of symptoms ranging from headaches to depression without knowing the cause. Many consult a doctor only when the consequences have become serious, for example, after narrowly escaping an accident due to dozing off at the wheel.

### Obstructive and central sleep apnoea

A distinction is made between the more frequent obstructive sleep apnoea and the rarer central sleep apnoea (see pages 10–11). The causes are different but the symptoms are similar. Large-scale studies estimate that in Switzerland at least four per cent of men and two per cent of

women aged between 30 and 60 suffer from obstructive sleep apnoea – often without being aware of it.

### Snoring: not always harmless

A conspicuous symptom of sleep apnoea is loud snoring interrupted by breathing pauses. These are usually caused by constricted airways or occlusion in the throat and neck region (obstructive), leading to breathing pauses and wake-up reactions as a consequence. Patients usually remain unaware of these events also named “micro-arousals”. They only notice that their sleep is not restful and that they are very tired during the day – symptoms are experienced as unpleasant but rarely as dangerous. However, if sleep apnoea is not recognised, cardiovascular diseases may develop in the long run. Diagnosis brings relief: at long last, the cause is discovered. Moreover, sleep apnoea is usually amenable to treatment that rapidly improves the patient's condition.

The Greek word “**apnoe**” (pronounced “apno-ay”) means breathing arrest. Frequent, brief breathing arrests during sleep are referred to as **sleep apnoea**. The combination of symptoms and health problems caused by the breathing arrests are called **sleep apnoea syndrome**.

## How to recognise sleep apnoea

The most frequent symptoms of sleep apnoea include snoring, breathing pauses during sleep, daytime fatigue with lack of concentration, and headaches. If left untreated for years, sleep apnoea often leads to severe health problems.

### Loud snoring with breathing pauses

A conspicuously audible symptom of obstructive sleep apnoea is snoring. This may attain a level of loudness that disturbs not only their partner but even the neighbours. Due to the breathing pauses, people with sleep apnoea typically snore very irregularly.

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**Snoring does not automatically imply sleep apnoea. Most people who snore have no health problems.**

**However, anyone who snores heavily and irregularly and is very tired during the day should consult his or her doctor.**

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### Chronically tired and poor concentration during the day

People with sleep apnoea experience several hundred stress episodes per night. While the breathing arrests and the subsequent wake-up reactions are not consciously perceived, they prevent a restful sleep. Since the interruptions occur mainly during deep sleep phases, affected people feel poorly rested in the morning and can barely keep awake during the day. Their concentration is also impaired. Time and again they doze off: while watching TV, while at work or, very dangerously, while driving.



Dozing off: especially dangerous while driving.

### The physical and social consequences of the disease

Nocturnal breathing arrests cause physical stress that strongly stimulates the autonomic nervous system. As a result, sleep apnoea is a risk factor for developing high blood pressure and other cardiovascular diseases (heart attack, irregular heartbeat, heart failure, stroke). If snoring and daytime fatigue continue for years, patients may lose their initiative or even get depressed, and thus become a significant burden to their families and friends. Moreover, their occupational performance may decline, sometimes even to the point of losing a job.

### The most frequent symptoms:

- loud, irregular snoring
- nocturnal breathing pauses noticed by their partner
- excessive tendency to fall asleep during the day
- unrestful sleep
- night sweats
- reduced concentration and performance
- headaches
- sexual disturbances, libidinal and erectile dysfunction
- depression

### Sleep apnoea and driving

People who suffer from sleep apnoea and feel tired and exhausted already in the morning should abstain from driving. If this is not feasible, it is important to take regular breaks. Driving for hours on motorways and especially driving at night must be avoided. After successful treatment, driving is usually no longer impaired.

## Reliably confirming sleep apnoea

Is the snoring harmless or not? To find out, a detailed medical history and physical examination is performed. Additionally, sleep studies and concentration tests are carried out to confirm the diagnosis.

### Online risk test: the first step

With the online test at [www.lungenliga.ch/test](http://www.lungenliga.ch/test) (test in German, French, Italian), anyone can assess his or her sleep apnoea risk. The test result will indicate whether a doctor should be consulted.

### Observations by partners: useful for diagnosis

People with sleep apnoea are often unaware of their snoring and nocturnal breathing arrests – in stark contrast to their partners. Observations by partners are helpful to the doctor. If the symptoms and other risk factors such as excessive weight point to sleep apnoea, sleep studies and concentration tests (see above) are usually performed.



Observations by partners are often useful for diagnosis.

### The home sleep study

The patient sleeps in his or her familiar surroundings. During the night, a portable device records various body parameters such as heart rate, blood oxygen, respiratory movements and nasal airflow. These data are later evaluated by a doctor.

### What happens at the sleep lab?

At the sleep lab, a device records brain waves, the electrical activity of various muscles, eye movements, respiration and blood circulation. A lab assistant observes the sleeping patient through a video camera, monitors the technical devices and, if necessary, performs medically indicated treatments with a respirator. Evaluation of the data will reveal disturbances of breathing and blood circulation, unusual body movements as well as their effects on the quality of sleep.

### Wakefulness and concentration tests

Tests at the sleep lab are carried out during the day, too. For example, the patient's brain waves are measured to determine how soon he or she falls asleep after the room is darkened. In the concentration test, the patient has to push a button when prompted by a light signal. Driving impairment is assessed with driving simulators. Often a whole battery of tests is needed to comprehensively evaluate the patient's vigilance, concentration and reactivity.

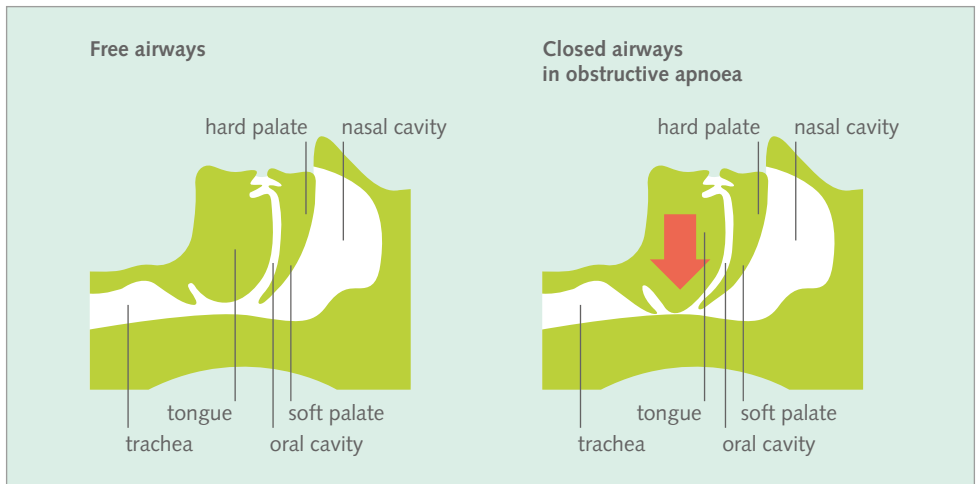
## Why does breathing stop at night?

Sleep apnoea is about twice as frequent among men than among women. Although the causes are still poorly understood, there are known risk factors such as excessive weight, middle age, smoking, use of sleeping pills, or alcohol consumption in the evening.

### Obstructive sleep apnoea

In many people the muscles and soft tissues of the throat and neck slacken considerably during sleep, thus narrowing the airways. In obstructive sleep apnoea, the airways are even completely blocked for brief periods. As a result, breathing is temporarily arrested: for a few seconds or even more than a minute. Blood oxygen slightly drops and the sleeper briefly wakes up. Breathing then resumes and the sleep continues – until the next breathing pause. These apnoea

episodes may occur several hundred times a night. The breathing arrests and the brief wake-up events are not remembered. The first person to notice the heavy snoring and frequent breathing pauses is usually the patient's partner. It is important for the partner to bring up the subject with the patient so that diagnostic procedures can be initiated.



### Causes and risk factors

The causes of obstructive sleep apnoea are still largely unknown. The disease often runs in families. In such families, predisposing anatomical features and a tendency for the throat muscles to collapse may be inherited. Some factors that increase the risk of obstructive sleep apnoea are known. For example, men of middle age who are strongly overweight and have a large neck circumference are most frequently affected. Smoking and alcohol consumption in the evening also raise the risk. In rare cases, however, the disease may also occur in slender young people.

### Central sleep apnoea

In the less common central sleep apnoea, breathing intermittently stops because the respiratory control centres are dysfunctional. The airways are free but the respiratory drive is impaired. People with central sleep apnoea also wake up repeatedly due to breathing arrests and drops in blood oxygen.

#### The risk of obstructive sleep apnoea is increased in people who

- ... are overweight and have a large neck circumference
- ... have narrow segments in the nose and throat region
- ... have enlarged tonsils
- ... consume much alcohol, especially in the evening
- ... smoke regularly
- ... consume sleeping pills or tranquilisers
- ... have relatives with sleep apnoea syndrome
- ... are male.

## Successful therapy – restful sleep

If sleep apnoea is mild, changes in lifestyle may sometimes be sufficient. In most cases, however, this will not resolve the symptoms, and continuous wearing of a breathing mask during sleep is required for successful treatment.

### Pressurised ventilation with a nose mask (CPAP therapy)

Continuous positive airway pressure (CPAP) refers to the continuous supply of pressurised air during sleep. The CPAP device blows a gentle flow of air through a nose or face mask. This increases the pressure in the nose and throat cavity and thus prevents the collapse of the airways. During sleep, the patient breathes normally without snoring or breathing pauses.

CPAP therapy is prescribed by the pulmonary specialist. The Swiss Lung Association provides the devices and assists in the treatment.

### Improvement after a few nights

The patient must first get accustomed to breathing through the nose and wearing the CPAP mask. If free breathing through the nose is not possible, for example because of a deviated nasal septum, this must

be treated before CPAP therapy begins. Trained staff of the Swiss Lung Association assist patients at the start of therapy and carry out the individual adjustments. It is especially important to tightly fit the breathing mask which has to be worn all through the night.



CPAP therapy: currently the most effective treatment method.

## Alternatives to CPAP therapy

### Oral appliances

If CPAP therapy is not possible, custom-made mandibular advancement devices may be a suitable alternative in cases of mild or moderate sleep apnoea. After orthodontic fitting, the device is worn through the night. It shifts the lower jaw and the tongue slightly forward and thus prevents the collapse of the airways. Teeth and gums must be healthy. Regular checks are necessary to ensure that no tooth drift occurs.

### Surgery

Surgery in the nose and throat cavity helps only in very special cases, for example when the tonsils are massively enlarged. It is impossible to predict whether the breathing problems will be eliminated by surgery.

### Didgeridoo

Playing this instrument on a daily basis strengthens the musculature of the upper airways and helps against snoring and mild sleep apnoea.

### Palatal brace

It elevates the soft palate and is effective above the tongue. However, since the causes of breathing arrests are often located deeper in the throat and at the base of the tongue, the palatal brace is not a safe remedy for sleep apnoea. It is nevertheless likely to help against snoring and mild forms of sleep apnoea.

## What anyone can do to treat and prevent sleep apnoea

### Reduce overweight

In mild forms of the disease, this may lead to normalised breathing and improvement of the patient's general well-being.

### Avoid alcohol before going to bed

Alcohol intensifies snoring and breathing problems during sleep.

### Avoid sleeping pills

Like alcohol, they potentiate muscle relaxation.

### Sleep sideways

In some people with sleep apnoea, breathing arrests occur only while sleeping on their back. When they sleep sideways, they can breathe freely and have no problems. Methods to enforce a side position include sewing a tennis ball into the back of their pyjamas or wearing a backpack filled with a cushion. This method may be sufficient in mild cases of obstructive sleep apnoea.

## Sleeping better with the CPAP breathing mask

If CPAP therapy is used on a regular basis, the symptoms will disappear. Problems that occur with this therapy can be solved in consultation with a doctor or the specialists of the Swiss Lung Association.

### Long-term therapy with adjustments and checks

During the first months of therapy, the breathing device and the optimal fitting of the mask should be checked with the cantonal Swiss Lung Association. Once the patient has become familiar with the device, annual checks with the pulmonary specialist and the Swiss Lung Association are usually sufficient. The costs for the rental or purchase of the device are borne by the health insurance.

### Travelling with the CPAP device

Nobody has to forgo their holidays: most CPAP devices are handy, lightweight and easy to transport. They can be operated at various mains voltages and in some cases even on car batteries. Adapters for different AC sockets are useful when travelling abroad.

→ **Tip:**  
For air travel it is best to carry the CPAP device as hand luggage. To avoid problems with customs or security, the Swiss Lung Association will issue a multilingual certificate confirming the medical nature of the device.

### Potential problems with CPAP therapy

#### **Drying out of the nasal mucosa**

This usually results from opening the mouth during CPAP which leads to dry and irritated mucosa. If pure nasal breathing cannot be maintained, it is necessary to fit a mask that covers both nose and mouth. Additionally, a respiratory humidifier may be helpful.

#### **Pressure marks from the breathing mask**

This can usually be avoided by careful selection and individual fitting of the mask.

#### **Irritated eyes**

This may occur when the mask is poorly fitted so that air escapes and irritates the eyes. Again, good fitting of the mask and the headgear is helpful.

#### **Sleep disturbance from the noise of the CPAP device**

Modern devices are so quiet that this problem is virtually eliminated.

#### **Changing pattern of breathing arrests**

In these cases, it is usually necessary to adjust the pressure and the device settings.

#### **Insufficient effectiveness of CPAP therapy**

In rare cases, CPAP therapy is supplemented by medication.



# The activities of the Swiss Lung Association in sleep apnoea

Sleep apnoea is very widespread. Once diagnosed, the condition is amenable to effective and successful treatment. The Swiss Lung Association is, therefore, active in distributing information, promoting prevention and providing practical assistance to patients.

## Information and prevention

In Switzerland, it is estimated that 150,000 people suffer from sleep apnoea. However, only about 50 per cent of the cases are diagnosed and treated.

## The Swiss Lung Association

- carries out campaigns to raise awareness of this often unrecognised disease
- offers interested persons a risk assessment test at [www.lungenliga.ch/test](http://www.lungenliga.ch/test)
- distributes free information on symptoms, diagnosis, and treatment of the disease

## Assistance in therapy

The Swiss Lung Association assists about 83,200 affected persons in close cooperation with pulmonary specialists.

## The Swiss Lung Association

- provides respiration devices for CPAP therapy
- fits the breathing masks and correctly adjusts the device settings
- checks the breathing masks at regular intervals and distributes replacement parts
- checks and maintains the CPAP devices
- provides advice and assistance during the initial phase and long-term treatment
- promotes the exchange of experiences

among affected persons

- periodically monitors the course of treatment and reports back to the pulmonary specialist
- maintains contact with health insurers and takes care of benefit claims

### → Further information from the Swiss Lung Association:

[www.lung.ch](http://www.lung.ch) (in German, French, Italian)

Do you have any questions? Please do not hesitate to contact your nearest cantonal Swiss Lung Association (see addresses on pages 18 and 19) where you will also receive contact addresses of pulmonary specialists and certified centres for sleep medicine.

### → Additional information:

Addresses of self-help groups can be found at:

– Swiss Society for Pneumology  
[www.pneumo.ch](http://www.pneumo.ch)

– Swiss Society for Sleep Research, Sleep Medicine and Chronobiology  
[www.swiss-sleep.ch](http://www.swiss-sleep.ch)

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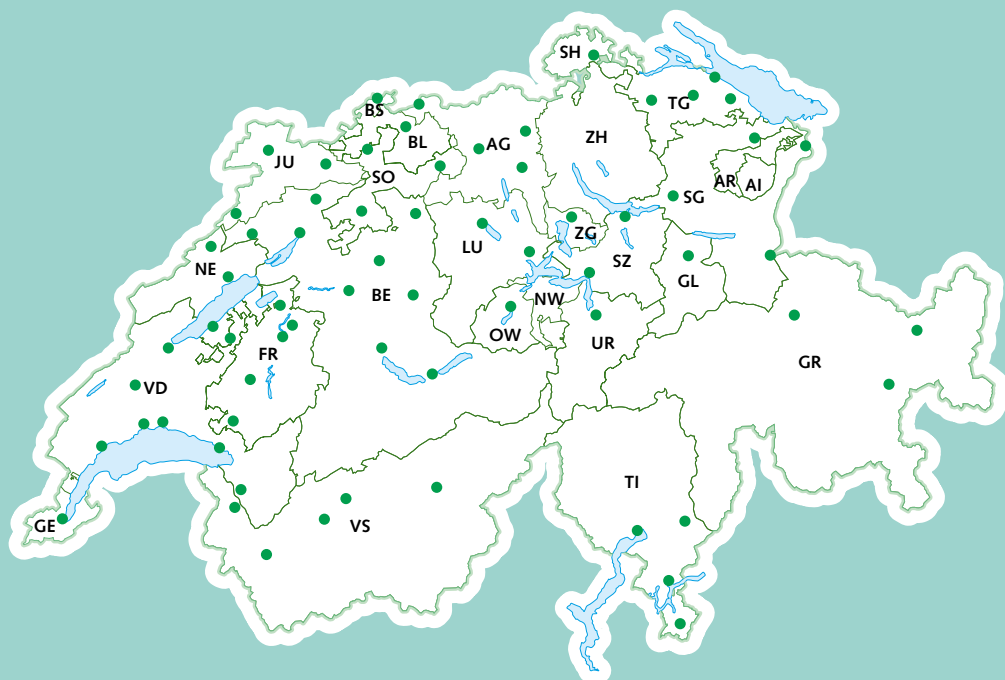
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