



**WINTER AT LAST!**





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## 1. A few definitions

Raynaud's phenomenon, as defined in 1862 by Dr. Maurice Raynaud, describes color changes in the fingers triggered primarily by cold: a pale to blue and/or red sequence of color changes of the digits is reflective of different reactions of peripheral blood circulation to cold, i.e. blood-flow stopping, slowing down or resuming in the digital arteries. Raynaud's phenomenon affects 4-5% of the general population, about 80% of whom are women.

To date, more than 40 different diseases are known to cause Raynaud's phenomenon, which will then be referred to either as **secondary** Raynaud's phenomenon or Raynaud's syndrome. Patients with collagenosis or connective tissue disease (Scleroderma, Lupus Erythematosus, Rheumatoid Arthritis) often exhibit clinical features of Raynaud's phenomenon, which may precede the diagnosis of one of these diseases by several

months or even years. However, the most common form is idiopathic, since its etiology remains mysterious: it is the **primary** Raynaud's phenomenon (also referred to as essential Raynaud or Raynaud's disease); which accounts for more than 50% of patients seeking professional consultation for this medical condition. In such case, the physical examination and blood work will usually turn out to be completely normal.

Nailfold capillaroscopy (NFC), a technique which uses the lens of a microscope to observe the capillary morphology and microcirculation of nailfold, can sometimes reveal the presence of a connectivitis many months in advance. Thus, this non-invasive and inexpensive method is now considered as a complementary examination to the basic blood work.

A first medical assessment may often provide us with valuable information about the underlying disease condition (primary or secondary). Sometimes several visits may be needed to confirm the diagnosis and help establish the prognosis. ❄️

## 2. Severity factors

The onset of Raynaud's phenomenon first symptoms typically begins in winter, or when one or more fingers and/or toes are exposed to sudden changes in temperature. The clinical picture may change over time with successive winters, more often confined to the fingers.

On some rare occasions, the nose, the cheeks and exceptionally the tongue, the ears, or the breasts can develop changes in skin coloration brought about by exposure to cold. For some patients, humidity, wind, stress or fatigue may turn out to be more important factors than the cold itself.

A persistent bluish or cyanotic discoloration most commonly occurring in the hands and/or feet is not in or by itself indicative of Raynaud's phenomenon, nor of any disease per se. It is the **acrocyanosis**, by means of a sympathetic hypertonia mechanism, which

is widespread in the general population, frequently stress-related and associated with cold feet, especially around bedtime. A very small number of these patients will actually have a Raynaud's phenomenon, most often essential. This condition requires protection against the cold and smoking cessation without any further medical treatment.

The number of fingers affected is not an indication of the severity of the disease. The development of painful lesions (ulcers) in the fingertips indicates the presence of a connective tissue disease, Buerger's disease (tobacco-related), a coagulation problem, or an embolism that will initially require a complete medical check-up followed by the appropriate medical treatment.

Some medications may aggravate or cause Raynaud's phenomenon and/or acrocyanosis, especially those used for the treatment of attention deficit disorder. Your doctor or pharmacist can tell you what to do if you are taking any of these medications. ❄️

### 3. The first visit



**A summary questionnaire and physical examination will determine whether the patient has acrocyanosis or Raynaud's phenomenon.**

If it is Raynaud's phenomenon, the basic blood work and capillaroscopy will allow to differentiate between a primary and a secondary phenomenon. In the latter case, further tests consisting of organs function assessment (heart, lungs, kidneys, liver, digestive tract, muscles, joints, eyes, bones, skin) may also be required.

Sometimes several months may be required to complete an extensive clinical examination and follow-ups, which often turn out to be essential for tracking the evolution of a disease over time. It is always in the patient's best interest to honour his or her appointments: the diagnosis, the prognosis, and the treatments will be all the more accurate for it. ❄️



## 4. Treatment



To date, there is still no treatment of Raynaud's phenomenon that addresses the root cause of this condition effectively and permanently. The first line of treatment is protection against the cold along with smoking cessation and stopping medications that may lead to this clinical picture.

Since there is currently no treatment for the underlying cause, medical management focuses primarily on relieving symptoms (coldness, whiteness), aim to reduce, if not avoid, a too strong reaction of the extremities to the cold.

## 4.1 Protection against the cold



Protection against the cold is the first treatment and usually the only one required.

The entire body should be kept warm throughout, as if ensconced in a heat bubble. It is easier to keep warm than to warm up once the body temperature begins to fall. A surplus of heat without, however, crossing the body sweating threshold will be redistributed to cold areas such as the hands and feet. Here we are introducing the multilayering concept where

### HEAT = THICKNESS

for clothes, which should be worn in successive layers, appropriate seasonal clothing that is best suited for specific planned activities:



## 4.1 Protection against the cold

### 1) ➔ The first or base layer:

the underwear that keeps the body dry during outdoor activities, facilitates the evacuation of perspiration, and allows a better moisture management. Synthetic fabrics like polyester or polypropylene are excellent at keeping your skin dry and retaining heat even when they get wet. Acrylic, silk, nylon or wool fibers are also good alternatives. Cotton (which does not dry quickly enough) and rayon are to be avoided.

### 2) ➔ The second or middle layer:

it helps contain the body's radiant heat by trapping insulating air, while allowing moisture to wick away from the skin. These are the polar fleeces or a sweater made with a high percentage of wool (from 60 to 100%). This second layer can be worn alone, or over an underwear in windless, dry weather.

### 3) ➔ The third layer or shell is designed to protect against bad weather conditions.

The choice of clothing should be made according to the activity and weather. It should consist of one of the following three classes of materials:

- Windproof and breathable fabrics: micro-polyester and/or nylon fibers.
- Windproof and waterproof fabrics: urethane-coated ripstop nylon.
- Waterproof and breathable fabrics: nylon with hydrophobic microporous membrane laminate or coating.

## 4.1 Protection against the cold

**For winter, this third layer should consist in an insulated coat that will contain one of the following insulation of your choice:**

- High loft insulation material (made of one of several types of heat-retaining fibers);
- Down: more expensive, but adequate if it is dense enough and well maintained;
- High-density thin polyester-olefin fibers.

There is a wide variety of coats and jackets available on the market and the prices can sometimes be outrageous. Special attention should be paid to zippers with storm flaps to keep out the cold wind, sealed cuffs, drawcords or other means of tightening at the waist and/or the thighs, and the back of the neck to avoid painful contact of the zipper with the skin. One should also pay careful attention to the properties stated on the labels, which sometimes specify the level of protection provided against the outdoor temperature. Outdoor gear retailers offer a wide range of high performing and durable garments, which can sometimes be quite expensive. Other stores may have alternative items at more competitive prices.

## 4.1 Protection against the cold

More than half of the body's heat can be lost through the head, thus it is absolutely essential to keep the head and neck warm and dry.

Hands must be protected without being cramped. Mittens are warmer than gloves. They should be made of insulating materials and may be covered with a waterproof laminated fabric. One can also use a multilayering system with a fleece or natural wool under-glove that fits into an over-glove made of a waterproof and breathable fabric. Adjustable cuffs can help prevent cold air from seeping in. A muff made of fur or synthetic fabric is sure to add a touch of class to your winter season.

Undergarments are as useful for the legs as those trapping heat in the trunk area and helping maintain body temperature. The pants' fabric should be similar to that of the coat, depending on the season and outdoor activity.

Leg gaiters can also provide many benefits that will enhance your outdoor experience.

As far as socks are concerned, wear two pairs: a thin one to act as a liner, and a thicker pair of traditional hiker-style socks on top. A combination of two materials will provide the desired properties: polypropylene as the first layer (to remove moisture from the foot) and a wool sock (which absorbs moisture, serves as a cushion and increases insulation against the cold) as a second one.

The boots should be comfortable with felt insoles, and all seams should be sealed with a water resistant coating. Some models are water resistant and/or made with insulating materials specifically designed to keep your feet warm in cold weather.

## 4.1 Protection against the cold

**An artificial heat supplement is not harmful as long as it is not excessive. However, it should be pointed out that it has no bearing whatsoever on the long-term progression of Raynaud's phenomenon.**

These are:

- disposable hand warmers and foot warmers (pouches)
- glove and mitten heaters (coal, lighter fluid or batteries)
- heated socks and insoles
- foot warmers (electric)
- electric blankets keeping the bed at a constant temperature or with integrated thermal sensor regulating heat according to body temperature
- heating pads for the back, some of which are suitable for car use
- remote automobile starters or car heaters, with or without a timer
- bathroom fan heaters to quickly warm the room, with or without an integrated towel warmer
- heated floors.

If you have to stay in contact with a cold surface (either sitting or standing), a thick styrofoam-type material or even a stack of newspapers can be used to provide extra insulation for improved comfort.

## 4.1 Protection against the cold

The aforementioned proposed solutions, however, are not suited for all, and everyone needs to find out what suits him or her best.

If the extremities become white, one should try to warm them up as quickly as possible without using excessive heat: holding them against a warm part of the body (armpits, thighs...) is often enough. Hot water is also effective, but first, make sure to check that the temperature is not too hot by dipping your elbow into it. During an outdoor activity, you can also change gloves with spares kept warm by your body heat or by switching pair with someone whose extremities are already warm.

Hot, sweet drinks help maintain body heat; our bodies actually absorb warm drinks, i.e. drinks closer to the body normal temperature, quicker than cold ones. Alcohol can give a false sense of well-being and should be avoided as a means of keeping one's heat.

On the nutrition side, fatty foods, which are digested slowly, will be a source of long-term heat during physical activities. Finally, it is worth stressing that, to date, no food or vitamin supplement has been shown to have any effect on the frequency or severity of Raynaud's phenomenon. ❄️



## 4.2 Nicotine



**Your pharmacist can also inform you about commonly available medications designed to help with nicotine cessation.**

It is important to consider that nicotine intake from any source decreases blood circulation in the skin for 4 to 6 hours.

For some patients, nicotine cessation has significantly improved overall comfort and tolerance of the extremities to exposure to cold. For others, the very viability of their extremities is conditional on nicotine cessation: they have a Raynaud's phenomenon secondary to Buerger's disease where ulcers, gangrene, and amputations are the horrible prospects that await those who will not stop smoking. Anti-smoking clinics may turn out to be a good solution to achieve complete nicotine-cessation. Check with the CLSC in your area for information on such services. ❄️

## 4.3 Medications



The most effective drugs are sometimes the most poorly tolerated. Since the frequency of Raynaud's episodes/attacks has not been shown to influence its progression, medical treatment should, therefore, be discussed with your doctor based primarily on daily activities.

If work is adversely affected, particular attention should be paid to avoid exposure to cold or moisture. In some cases, vibrations and/or percussions have been shown to trigger or worsen Raynaud's phenomenon and patient's occupation would then be directly impacted.

Some medications can be taken depending on the activities, and then stopped for a few days. Conversely, others must be taken over a period of several days to be fully effective and cannot be interrupted. For people suffering from hypertension or angina, the attending physician will occasionally choose a medication with a combined effect on both diseases. Antihypertensive drugs of the vasodilator class can be taken in the evening, which decreases side effects without affecting their effectiveness.

A sore is a potential gateway for infections. It is, therefore, important to consider protecting our hands while performing certain tasks. Antibiotics are sometimes necessary when an infection occurs, usually administered orally (tablets) to allow the drug to target more effectively the wound we seek to heal. Good moisturizing lotions will also help prevent skin wounds. ❄️

## 4.4 Other approaches

Other alternatives may help decrease the frequency and/or severity of Raynaud's episodes/attacks such as acupuncture and biofeedback. However, there is no scientific evidence of their effectiveness. The plant-based natural product approach should be considered with caution: the use of some of these products was found to be toxic on various organs of the body.

Some studies suggest that one's belief that some particular kind of treatment will actually work may account for up to 50% of its efficacy: this is called the placebo effect. It also applies to conventional treatment with any kind of medication. ❄️

## 5. Tips from Bernard Voyer, explorer



**The end goal of protection against the cold, of proactive cold protection, is to keep warm while being ready to make acceptable compromises regarding aesthetics.**

### **Additional resources:**

With regard to the multilayering system, as a base or middle layer, one can add to the list of available fibers, polar fleece knitted lycra which makes for a very warm, stretchy and comfortable fabric as well as polar fleece with an integrated windproof fabric. If one chooses wool as a middle layer, it should be made of tight-weave wool. A Breton sweater, made of oiled wool, is also very warm.

## 5. Tips from Bernard Voyer, explorer

**Of all the parts of the body exposed to cold, the head and trunk are critical sites to protect:**

**The head:** choose a model that covers the neck, made with a windproof material or coating.

**The neck:** choose a coat cut with a lined lapel (collar) that overlaps the hat, which for winter will also include, a hood lined with fleece made of a waterproof and windproof fabric.

**The hands:** choose gloves or mittens with long sleeves.

**The trunk:** to prevent wind or snow from getting in, some coats have adjustable waist drawcords or an elastic band around the waistline (or a built-in snow skirt that sits around the waistline), which is much more efficient than a drawcord on the outside of the waistband to cut the airflow and trap the heat towards the body.

**The feet:** keep your feet dry! There are very comfortable single layer socks made of a special blend of wool and insulating material. If the boots come with felt insoles, it would be advisable to keep a spare pair on you at all time to ensure that your feet are always dry and warm.

Mohair socks (angora goat hair) are warm and a definite must for anyone who wishes to maintain a high level of foot comfort at home.



## 5. Tips from Bernard Voyer, explorer

**Buttocks and feet:** an insulator such as a floor mat (made of styrofoam) can be cut into pieces and adapted to meet specific needs such as a seat cushion or boot insoles (up to one year of use!)... it's light and economical!

**Outdoor activities:** finally, during outdoor activities, whether active or passive, it is absolutely essential to keep well hydrated. A caloric intake in the form of cereal bars is preferable to chocolate-only treats, with additional hot drinks if needed (coffee is to be avoided)... without alcohol (which reduces sensitivity to cold and increases heat loss in the extremities). ❄️

## NOTES

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