Raynaud phenomenon

What is Raynaud phenomenon?

Raynaud phenomenon is an intermittent constriction of the blood flow to the fingers and toes precipitated by cold, emotion and some drugs that cause spasm of the small arteries bringing blood to the fingers and toes. The fingers become cooler, look blue and white. Then as the episode passes and the blood flow returns, the affected fingers and toes become red, warm and may be uncomfortable.

What causes it?

The condition may occur on its own without evidence of underlying disease but may be part of an underlying autoimmune connective tissue disorder or other disorder.
There are two forms of the condition:

Primary Raynaud phenomenon (idiopathic Raynaud disease) is the most common type of the condition and is not associated with any underlying medical problems. It is considered an exaggeration of normal constriction of the blood vessels to cold exposure (particularly if the core body temperature is reduced) or emotional stress. It may run in families.

Secondary Raynaud phenomenon: (Raynaud syndrome) is associated with the following underlying causes:
Autoimmune connective tissue diseases such as systemic sclerosis (scleroderma), systemic lupus erythematosus, Sjogren's syndrome and dermatomyositis
Various drugs or toxins
Haematologic abnormalities with increased blood thickness
Occupational and environmental causes such as vascular trauma, the use of vibrating tools, frostbite and carpal tunnel syndrome
Obstructive arterial diseases such as atherosclerosis
Neurological diseases.

What does it look like?

A typical attack consists of a sudden sensation of cold associated with well-defined pallor (white discoloration) of one or more digits. This is followed a few minutes later by cyanosis (bluish color) or sometimes by erythema (red color). In primary Raynaud phenomenon involvement is usually symmetrical and involves several digits. In secondary Raynaud phenomenon, only one or a few digits are affected and asymmetry is not unusual.
Severe cases are usually of the secondary type and may be complicated by permanent damage to the affected extremities.
Attacks may be painful, can last from minutes to hours and may occur infrequently or many times each day.
The condition most commonly affects the hands but sometimes involves the feet or other sites such as the nose or earlobes.

How is it diagnosed?

Evaluation of people with Raynaud phenomenon includes a detailed history and physical examination to differentiate between the primary and secondary forms of the condition. Further investigations will be needed if an underlying cause is suspected.

How is it treated?

Individuals with Raynaud phenomenon need to use treatment strategies to avoid or reduce the frequency of attacks.

General measures

The following measures can help control symptoms in people with primary Raynaud phenomenon.
Avoid exposure to cold or rapidly changing temperatures, especially sudden changes such as walking into the frozen food section of a grocery store.
Use strategies to keep the whole body warm and keep the digits of the hands and feet warm (e.g. wearing winter gloves and heavy wool stockings, using chemical hand warmers).
Know how to help terminate an attack, e.g. placing hands under warm water or in a warm place such as under the armpits, swinging arms around or rubbing hands together.
Stop smoking.
Avoid stimulants or sympathomimetic drugs (such as decongestants, amphetamines, diet pills, herbs containing ephedra).
Avoid activities that are likely to trigger an attack such as repeated trauma to the fingertips or vibrating tools.
Counselling or relaxation therapy may help if stress or emotional upsets are triggering factors.
Topical or oral glyceryl trinitrate and oral sildenafil may be helpful.
Occasionally general measures are not sufficient and systemic medications may be required. The most effective of these are calcium channel blockers such as nifedipine or diltiazem. The dose may be increased gradually if necessary but it is important that blood pressure is monitored,
Further management of secondary Raynaud Phenomenon depends on controlling the underlying disease (such as systemic sclerosis, systemic lupus erythematosus) or other conditions that reduce the blood flow to the hands and feet.
People with underlying disease may need a more potent medication such as sildenafil and prostacyclin infusions may be used to increase the blood flow to the hands and feet.

What is the likely outcome of Raynaud phenomenon?

The condition tends to run a variable course. In primary Raynaud phenomenon the outcome is good in 80% of cases but some disability may occur in 20% of cases. In secondary Raynaud phenomenon the prognosis is dependent on resolution of the underlying disease.