

## Rosacea, Rhynophyma, Pterygium & Riboflavin — & Varicose Veins

by Ray Peat

Several times lately I have heard that the cause of rosacea is unknown; for example, in Dr. Donohue's newspaper column, he wrote that "we don't know the precise cause," but then said that "hot beverages and spicy foods can contribute to such enlargement; so does alcohol." For many years I have assumed that the cause was known to anyone who cared to know, so I think it might be useful to describe some case histories, and some processes that relate to the cause.

In 1964 a somewhat alcoholic neighbor of mine was interested in improving his memory, since he had trouble finding the words he wanted when speaking or writing. His nose was remarkably red, but at the age of 41 or 42 it was not noticeably enlarged. I suggested many times that riboflavin might help, since I inferred from his very vascularized nose that his tissues were experiencing relative hypoxia, and that his brain tissue might be suffering even more than his nose, since such extensive new growth of blood vessels would seem less likely throughout the brain. For several weeks, he kept coming back asking me to remind him what it was that I had suggested; I started giving him notes, but he mislaid them. Finally he retained one of the notes long enough to ask his doctor to give him some vitamins, and the doctor prescribed daily injections of the vitamin B complex. I saw him in the afternoon a few hours after his first injection, and was surprised to see that his nose was no longer red; he spoke fluently and quickly, and did not have to search for words. Each day that week he returned for more injections, and both his nose and his memory stayed healthy. However, over the weekend, when the doctor's office was closed, both problems returned in full: his nose was as red (and shiny) as ever, and he struggled for some word in almost every sentence. By Monday it seemed that he had forgotten the whole episode, and didn't return for more injections.

I moved away around that time, and didn't see him again until 1976. At that time, his nose didn't seem particularly red, but it had enlarged and become very lumpy—a potato nose, or rhynophyma. (Rhynophyma is considered to be an advanced, hyperplastic form of rosacea.) He had undergone surgery for defective heart valves, but seemed to be in good health except for occasional nosebleeds. (He died in 1985.)

Before learning that he had nosebleeds, it had occurred to me that bloodshot eyes and a red nose probably have internal equivalents, which might be revealed as nosebleeds in some individuals, and as strokes in others. I knew a woman whose four year-old son had very frequent nose-bleeds that usually occurred around one or two AM during sleep, or during daytime naps. He also had frequent violent rages, that seemed to happen after he had eaten certain foods, usually cookies or cake. I reasoned that a riboflavin deficiency would waste glucose by blocking mitochondrial

respiration, and that blood vessels would dilate to deliver more blood to the tissues. Since blood sugar falls at night, I thought this could account for the regularity of his night-time nosebleeds. His frequent angry behavior seemed to be an exaggeration of the normal irritability of hungry children. His mother had some distinct mental problems, which had included a classical postpartum psychosis. She wore contact lenses, and I noticed that she had chronically visible blood vessels in her eyes, mainly on the side toward her nose. The area was yellowed, and lumpy. Close inspection suggested that the vessels had become increasingly enlarged, numerous, and tortuous, until the surface of the eye was distorted by the excess of blood vessels.

The cornea normally has a high concentration of riboflavin, but it is very susceptible to a deficiency of that vitamin. It receives its oxygen largely directly from the air, and partly from the ring of blood vessels at its edge, which are supplied by vessels approaching from the two sides. In her case, it seemed that the contact lenses, shutting off direct contact with the air, had led to an invasive growth of blood vessels to the edge of the cornea, probably partly because of a riboflavin deficiency.

I think this would be called a pterygium, but I think the same kind of process would be called rosacea if it occurred on the nose or cheeks. Oxygen deficiency causes connective tissue cells to produce extra collagen. This would intensify the problem of delivering oxygen to the cells, tending to set up a vicious circle. Even normal levels of riboflavin and other nutrients and oxygen in the blood wouldn't be enough to allow the necessary amount to reach the cells, once the lumpy fibrous overgrowth had begun to develop.

I gave the woman and her son each 10 mg. of riboflavin one morning, and suggested using that amount for a few weeks. The boy's nose didn't bleed that day or in the night, and as far as I know, it never bled again. He stopped having his fits of rage. Several years later his mother became chronically insane; I believe her heavy smoking, a poor diet, and an increasing hormone imbalance, were probably causing an increasingly severe energy deficiency in her brain. In that organ, as in the heart and lungs, androgenic steroids and other anti-glucocorticoids such as progesterone, are probably responsible for a normal resistance to atrophy during starvation. However, girls suffering from anorexia nervosa do sometimes have demonstrable shrinkage of the brain (which can be reversed by good nutrition) showing that the brain is not absolutely protected from catabolism, especially when the steroid hormones are out of balance.

The brain seems to be extremely resistant to the overproduction of fibrous tissue, unlike the exposed tissues of the eye and nose. There are some degenerative brain diseases, though, in which the supportive glial cells are

overproduced. This may represent a basic stress-reaction, not so different from that which occurs in potato-nose and pterygium.

Although I have seen nearly instantaneous effects of a small dose of riboflavin, I want to emphasize that the enlarged and invasive blood vessels caused by a deficiency of that vitamin will not necessarily go away even with prolonged supplementation with riboflavin. I believe that the delicate red blood vessels that often first appear around the nostrils, and the larger red, purple and blue vessels that usually appear on the sides of the feet below the ankles, and more obvious varicose veins, can also result from loss of tone in the walls of the blood vessels, in addition to any overgrowth process that might be occurring, and that various problems related to stress and nutrition can be responsible. I have seen very distinct blood vessels disappear completely after using thyroid and oral DHEA. I think this is partly the result of restored muscle tone, as can sometimes be seen in the blood vessels of the hands shortly after taking progesterone.

Many people who have taken a course in physiology think that arteries and arterioles are the only blood vessels containing smooth muscles, because of the odd over-emphasis that is usually given to the contraction of arterioles. In fact, I feel that the conventional theory about the role of arterioles in regulating circulation is wrong. It is usually assumed that the capillary wall and the endothelial cells are not contractile, and this idea, with the assumption of passive veins, creates the impression that "peripheral resistance" is only the result of arteriolar tone.

Many veins are very well-supplied with smooth muscle. When the physician scoffs at the idea that varicose veins could "recover," it is because of the idea that "they occur when the valve fails." Since the valve is just a flap of tissue, it is hard to imagine how it could be restored. But if you realize that veins (especially the subcutaneous veins which become unsightly varicosities) are well-muscled, you can see that a loss of muscle tone will lead to swelling of the vein, and that a valve which could close a small channel, simply can't reach across the channel of a distended vein. That is, valve failure will necessarily follow loss of smooth muscle tone. If the tone is restored, the channel will return to its normal size, and the valve would have a chance to function again.

Although major structural restorations can occur in many tissues, even in middle-aged people, when conditions are favorable, it is much better to stop degenerative processes before they have gone very far, by optimizing all aspects of the environment, as far as this is possible.

(Synthetic riboflavin is allergenic, so natural sources are the safest.)

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