

IMAGE AWARENESS HEALTHLETTER THE IMMUNE SYSTEM

The Enemies: Viruses II

VOLUME 102 NO. 3

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NOTICE

This newsletter is designed for educational purposes only. Any individual suffering from health problems which are mentioned or discussed should consult a physician for proper diagnosis and treatment.

OVERVIEW

Dr. Jacques M. May used the illustration of three dolls to indicate the different responses of individuals to assaults of infectious organisms or other environmental challenges.

One doll was made of glass. This doll would shatter when hit by a hammer. A second doll was made of celluloid. This doll would scar when hit by a hammer. The third doll was made of steel. This doll would echo forth a delightful musical sound when hit with a hammer.

One has to ask the question of how one individual succumbs to every virus he

or she comes in contact with, while another is rarely if ever ill. Susceptibility to damage as a result of viral attack is a result of genetic inheritance as well as overall nutritional status.

Roger Williams chose to call this the "genetotropic" concept of illness. In other words, a person has a genetic predisposition toward developing different kinds of health problems. That disposition can be augmented or decreased by the diet a person chooses to eat.

This issue of healthletter will deal with strategies for fortifying the body's resistance to viral attack.

References:

Cheraskin, Emanuel, et al., **The Vitamin C Connection**, New York: Harper and Row, 1983, p. 11.

Williams, Roger, **Nutrition Against Disease**, New York: Pitman Publishing Corp., 1971, p. 21.

THE BODY DEFENDS ITSELF

It would be a mistake to assume that viruses have their own way when they attack the body. A healthy

body is a formidable opponent to any virus or bacteria. The body has four main lines of defense against viruses.

Physical and Chemical Processes

The skin is almost impenetrable by viruses. The skin is composed of dead cells which have nothing to offer to viruses. The rabies virus found a way to



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penetrate the skin through the bite of an animal. The hepatitis virus penetrates the skin in a hypodermic needle.

The mouth, throat, nostrils and other orifices of the body offer a more favorable environment for viral attack. This is why colds, flu, and herpes viruses create such problems.

Even here the body has some defenses. The respiratory tract is covered with mucous and cilia that are in constant motion. The cilia move the mucous and particles that are trapped by it out of the body or into the stomach where they are inactivated by powerful hydrochloric acid and digestive enzymes. Blinking and the flow of tears serves the same function for the eye.

If stomach acid is low, the "gastric barrier" (see No. 1 in this series) can be breached and viruses can attack the delicate intestinal lining (flu virus).

Phagocytes

The invading virus usually enters the lymph system before entering the blood stream. This is a system that bathes all the tissues with fluids and nutrients. The lymph system is filled with cells called phagocytes ("cell eaters") or lymphocytes ("lymph cells").

These cells can gobble up and destroy many viruses, especially large ones. Some of the smaller viruses like the AIDS virus can actually take over these cells and use

them to spread throughout the body.

The activity of these defensive cells is seriously hampered by malnutrition. We know, for example, that a large intake of sugar can decrease the activity of these cells for five hours afterwards. Vitamin C, protein, and other nutrients can also influence the proliferation and activity of these cells.

Antibodies

The antibody is like a little magnet that attaches itself to viruses. Antibodies are produced by cells called B cells that seem to be little factories specifically designed for the manufacture of these little magnets. Antibodies can so bind with viruses that it becomes impossible for them to enter into cells and take them over. Viruses may also be more susceptible to destruction when attached to antibodies. Production of antibodies is nutrient dependent.

Interferon

A chemical with a remarkable ability to **interfere** with the normal activity of a virus in duplicating itself was first observed in 1957. It was called "interferon" for this reason. This may be the most powerful defensive component the body

can muster against viral attack.

Interferon is a small protein produced by the body when invaded by viruses. Interferon travels to uninvaded cells and causes the creation of another protein substance about which little is known.

This substance makes it impossible for viruses to reproduce in that cell. Viruses can enter the cell that has been influenced by interferon, but they cannot reproduce there and are thus rendered harmless.

Interferon slows the progress of a viral disease dramatically. This gives the body a chance to produce antibodies to the virus that prevent its spreading from cell to cell.

Without the inactivation of viruses that interferon offers it would be much easier for viruses to reproduce more rapidly than the body could handle them.



Reference: Locke, David, **Viruses: The Smallest Enemy**, New York: Crown Publishers, 1974, pp. 189-207.

LARGE AND CROWDED POPULATIONS

When populations of animals or people are crowded together there is an increase in the "prevalence, spread, persistence and evolution of numerous different virus infections." With the huge human population and the opportunity for proliferation, this offers for viruses the appearance of new and dangerous viruses like the AIDS virus is to be expected with ever-greater frequency.

Reference:

Marxer, Webster M.D., and Cowgill, George, Ph.D., **The Art of Preventive Medicine**, Springfield, Illinois: Charles C. Thomas, 1967, p. 187.

THE AIDS VIRUS

The AIDS virus attacks the T-helper cell, one of the most crucial components of the immune system. The virus does not directly bring about death, rather it so weakens the immune system that other diseases can not be fought off.

As many as 1.5 million Americans may have already been infected with the AIDS virus. The full-blown disease will take place in 20-30% of these.

AIDS is probably most infectious in the early stages when people have sex with seemingly healthy partners. The virus has been found in blood, semen, vaginal secre-

tions, sweat, tears, saliva, and other body tissues.

One of the problems in fighting the AIDS virus has been that it hides in the helper cells and fuses cells together when it wants to pass from one to another. This allows it to proliferate without ever entering the blood where it can be attacked by antibodies. High triglyceride levels increase the stickiness of blood cells.

The recently released drug AZT blocks an enzyme called "reverse transcriptase" that the AIDS virus needs to reproduce. This is the same enzyme that interferon blocks. This suggests that good immune function can work in a manner similar to the best that medicine can do at the present time.

References:

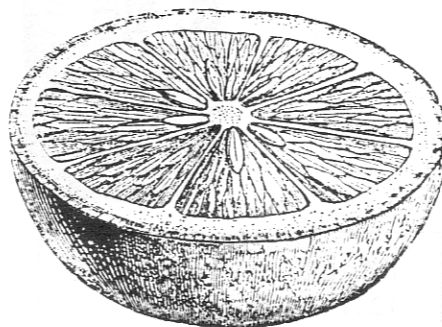
Beisel, William, M.D., et al., "Single-Nutrient Effects on Immunologic Functions", **JAMA**, Jan. 2, 1981, Vol. 245, No. 1, p.53-58.

Locke, David, **Viruses: The Smallest Enemy**, New York: Crown Publishers, 1974, pp. 189-207.

"Aids Research in New Phase," **Science**, July 18, 1986, p. 282-3.

"Grim Projections for AIDS Epidemic," **Science**, June 27, 1986, p. 1589.

"The Toughest Virus of All," **Time**, Nov. 3, 1986.



NUTRITION AND VIRUSES

That immunization without adequate nutritional provision can be dangerous has been best expounded by Dr. Archie Kalokerinos. This man was a physician among the aboriginal peoples of the Australian outback.

When he immunized the infants, he found that one out of two would die from Sudden Infant Death Syndrome (SIDS). He learned that these deaths could be prevented by supplementation with zinc and vitamin C. Both of these nutrients are essential for proper functioning of the immune system and resistance to viral diseases in particular. Vitamin C enhances the immune system as a whole.

Bioflavonoids may work right along with vitamin C in countering viral attack. In one study the length of duration of herpes simplex lesions (cold sores) was reduced from an average of 9.7 days to 4.2 days in those receiving 600 mg. of both bioflavonoids and vitamin C for the first 3 days of infection. The use of the supplement was most effective if taken within 12 hours of initial symptoms.

Reference:

Kalokerinos, Archie, **Every Second Child**, Sydney: Thomas Nelson, 1974.

Terezhalmay, G. T., et al., "The Use of Water-Soluble Bioflavonoid-Ascorbic Acid Complex in the Treatment of Recurrent Herpes Labialis," **Oral Surgery, Oral Medicine, Oral Pathology** 45:56-62, 1978.

LYSINE AND VIRUSES

Attack of herpes viruses may be hindered by the amino acid lysine. These viruses appear to have a requirement for argenine, an amino acid that competes with lysine for a presence in the tissue.

Eating foods high in argenine may contribute to outbreaks of these viruses, while eating foods high in lysine may help prevent outbreaks of these viruses.

Intake of lysine alone will not eradicate problems with herpes viruses as other factors are often involved with recurrent outbreaks. These will be discussed in a subsequent issue of healthletter.

Reference:

Kagan, C., Griffith, R., and Norins, A., "A multicentered study of lysine therapy in herpes simplex infection." *Dermatologica*, Vol. 156, 1978, p. 257-267.

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LYSINE AND ARGENINE FOODS

LYSINE FOODS

(mg of excess lysine 4 oz serving)

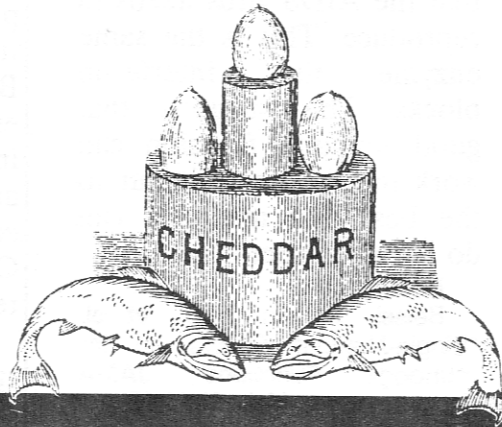
CHEESE _____	1100
FRESH FISH _____	900
CANNED FISH _____	800
CHICKEN, BEEF _____	700
MILK, LAMB, PORK _____	400
BEANS (1/2 CUP) _____	250
EGG (1 only) _____	100

ARGENINE FOODS

(mg excess argenine 4 oz serving)

HAZELNUT, PEANUT, BRAZIL NUT _____	> 2000
WALNUT _____	800
ALMOND _____	700
COCOA _____	650
CASHEW _____	400
BROWN RICE _____	200

Reference: Approximations from SerVas, Cory, M.D., "Does L-lysine Stop Herpes?" *Saturday Evening Post*, July/ August, 1982, p. 29.



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