

The New Atlantis

Bacon was dead set on moving the king or other influential members of society to sponsor scientific research as a means to develop new inventions that would redound to the health of the commonwealth. Instead of the open hearts he hoped to find when he offered his plans, however, all that his proposals met were deaf ears. Yet he was not downhearted; if he was, it did not deter him from constantly trying different avenues of persuasion.

We've seen that in his *Advancement of Learning*, he dared to assail all the learning of his time, pointing to huge gaps in knowledge, noting that current methods were not producing anything of salient value (books were begetting more books, but nothing to the people's benefit) and assailing scholars' obsequious adherence to dead authorities, even when these past masters were patently deficient. However, as we've also seen, this demolition work was not the only means he used to put forward his program. In *Novum Organon*, he laid out the principles of experimentation, insisting that this method was the best way to learn more about nature on the road to increasing mankind's control over it. Moreover, in *The New Atlantis*, a book we have not yet considered, he attempted to rouse interest in his ideas through the world's first work of science fiction!

The New Atlantis is a utopian romance, but unlike what happens in other books in this favorite Elizabethan genre, the reader does not find peculiar customs or bizarre social arrangements; instead he or she takes a voyage to a society whose center is neither the royal court nor the countinghouse, but the laboratory. (Thus, I dub it a founding work of science fiction.) A ship runs off course and ends

up on a mysterious but well-run island. The book is a direct rejoinder to More's *Utopia*, which it refers to sneeringly. In More, the described country is vastly superior to others in the world because of new social arrangements. There is no private property and the rulers are elected democratically from among the learned. Bacon, on the other hand, leaves a replica of the English social structure intact, with a king and an aristocratic class, but founds Bensalem's superiority (in wealth, fealty of the people to their monarch, health and good disposition of the populace, and so on) on its creation of the House of Solomon (a kind of National Academy of Science)—which devotes its time to scientific experiments, many of which eventually issue in new inventions that make life easier, happier, and more healthful.

This house also bears another name, the hero is told.

It is sometimes called "the College of the Six Days' Work"... [for, according to the Bible] God has created the world and all that is therein is, in six days, and therefore he [the founder of Bensalem], instituting that house for the finding out of the true nature of all things, whereby God might have more glory in the workmanship of them, and men the more fruit in their use of them, did give it [Solomon's House] also that second name.¹

I might add that where More's *Utopia* is still enjoyed today, Bacon's foray into science fiction gathers dust in libraries or is grudgingly taken up by students as assigned reading. Bacon lacked the common touch, writing here with an uncharacteristic wooden style and seeming (if he wanted to catch the popular imagination) to place the wrong emphases. For instance, he quickly passes over the scientific wonders of the island (the type of things readers want to hear about, such as submarines and airplanes) with a brief word or two, then devotes pages to minute descriptions of pompous ceremonies.

I bring all this up to prepare a large analogy. If the first part of our book can be called a combination of *The Advancement of Learning* and *Novum Organon*, since it charted both the deficiencies of mainstream science and suggested how science should be conducted and judged, then these final pages combine *The Advancement of Learning* with *The New Atlantis*. It will be recalled that *Advancement*, while largely disapproving of contemporary science, did highlight a few bright spots where genuine knowledge existed and was being created. So, immediately following this chapter, I will begin examining treatments that avoid the morass that so much AIDS therapy has fallen, treatments following the lead of the new paradigm, concentrating on building up the body's natural powers rather than focusing on fighting a germ. At the very end, I will trace out my own utopia, though not by hatching an ideal arrangement of medical care from a nest in my brain. I will simply note how both the three types of alternative therapy outlined and some of the political struggles around AIDS I've already mentioned suggest how we might create a radically different and saner way of conducting health care in our society.

Examining a New Approach

How can the fear and suffering of those who become infected by HIV be lessened? Results of conventional treatments tell us that there is a need for a shift of emphasis. Uncommon physicians report success with treatments that are getting less attention than they deserve. It is our belief that additional resources should be devoted to certain aspects of this public health problem, to increase the likelihood of ameliorating it.

This part of the book will look at examples of alternative ways to understand the health disturbances that now fall under the rubrics of "asymptomatic HIV infection," ARC, and AIDS. We then will look at examples of alternative approaches to treating these disorders. The objective is to show some current directions for therapy that seem deserving of more intensive and extensive testing.

We've already said that the new paradigm directs us to put aside narrow ideas of helping the sick that focus simply on exterminating some disease-producing agent. Instead the way forward in this new way of thinking is to look at the patient's whole environment in making the diagnosis, not only analyzing infections and obvious illness-creating components but also looking at toxins in the environment, unhealthy lifestyle practices, and stresses, even up to the mental attitude with which a person views her or his own body. A totally holistic therapy would work in all areas at once, aiming to direct a person toward positive health practices while helping the body make the best possible use of its own defenses and healing capacities. The three doctors we will meet shortly all practice holistically, though for purposes of exposition I will highlight a particular key element of their treatment that has proven particularly successful. I begin by isolating each of these special components, but this does not mean that any of these natural healing methods alone will do all the work of repairing a weakened body without complementary lifestyle and attitude changes (to the degree these are needed).

The first method that will be examined is aimed primarily toward supporting the organism's own mechanisms for healing and defense, by bringing deficient nutrient levels back toward optimal levels (which for the diseased organism may be higher than those considered "normal," if there is a need to compensate for lowered abilities to absorb and/or utilize those nutrients). This supporting approach may also use herbal products that have been found to strengthen immune responses or other body functions, even where the exact mechanism of these effects remain unknown.

The second direction involves a sophisticated but highly nonconventional approach to normalizing the body's metabolic balance, mostly through use of special fatty acid and trace metal preparations.

The third direction is a therapy that uses an elevated yet apparently entirely safe blood level of the triatomic form of the most common element in our body, oxygen, employing it for its effects on (a) the immune system, (b) the metabolism of other cells, and (c) viral activity and replication.

Then, examples of the application of these therapies to HIV infection will be given. Nutritional therapy will be exemplified by Dr. Christopher Calapai, metabolic balance adjustment by Dr. Emmanuel Revici (who originated and is the main exponent of this approach), and ozone therapy by Dr. “Z” and Dr. John Pittman. In each case, we will look at patient records to help us assess the benefits of each therapy.

Nutritional and Lifestyle Changes

When HIV-infected patients who had been asymptomatic or had early ARC are evaluated, they usually exhibit decreased body mass, body fat, and total protein, which may result in part from the frequently reported gastrointestinal dysfunction, diarrhea, and malabsorption.¹ This malabsorption may be an early and continuing consequence of HIV infection, for “small intestinal malabsorption is a major component in the severe wasting seen in some HIV-infected patients with chronic diarrhea.”² If this is so, and the virus creates problems in nutrient uptake at the same time, these problems will stimulate the virus. As an article in the *Annals of the New York Academy of Sciences* puts it, “Once occurring, malnutrition leads to immunosuppression, infection, and mucosal damage, with failure of normal intestinal mucosal turnover and healing, resulting in further malnutrition.”³

(You’ll note that this therapy assumes HIV plays a cofactorial role in AIDS.)

Malabsorption in HIV-infected patients, at an early or a later stage, might also result in part from defective gastric acidity (possibly from an autoimmune reaction against gastric mucosa). For example, in forty-eight AIDS patients the mean fasting pH of gastric juice was 5.9, compared to 2.9 in controls.⁴ The resulting multiple depletions are insidious and progressive.

Malnutrition in HIV-infected patients can result not only from malabsorption of nutrients but also from anorexia (high in HIV positive patients), and from high resting energy expenditure (REE), which also occurs with HIV infection.⁵ Whereas in malabsorption, the body is not drawing sufficient nutrition from in-

gested food, in REE, though the nutrition supply may be adequate, more energy is being expended than is warranted by the processes taking place. The latter may be quite important in AIDS, as Melchior et al. put it in the *American Journal of Clinical Nutrition*: “In stable and malnourished HIV patients, the progressive wasting may be partly related to an increase in REE,” even in the absence of opportunistic infections.⁶

This is very interesting, for an increase in resting energy expenditure may characterize other kinds of tissue damage that have no direct relation to AIDS, yet share an impairment of immune responses. These metabolic imbalances may also be aided by nutritional therapy.⁷

Malabsorption associated with HIV disease has other effects. It may be that the cognitive deficits (“AIDS dementia”) that often characterize later stages of the disease result at least in part from B12 malabsorption.⁸ Vitamin B12 malabsorption is common in AIDS and may be a very early manifestation of HIV infection.⁹ Correspondingly, cognitive deficits may occur early in HIV infection.¹⁰ Psychological functions are quite sensitive to vitamin deficiencies; and in early AIDS patients, various measures of cognitive function were found to correlate with B12 levels.^{11, 12} Further, neural damage from demyelination may be a consequence of B12 or folate deficiencies in HIV-infected patients.¹³

Thus, boosting nutrient levels would seem to be a called-for treatment. This therapy can begin early. While most of this data has been gathered from patients with advanced disease and opportunistic infections, Dr. Calapai thinks it is critical to look at the nutritional state in a person as soon as he or she is diagnosed. He looks at this state as soon as a patient comes to his office, “rather than waiting for some medical problem to occur, and then looking at how to play ‘catch-up’ medicine to help the person back to health.” As he sees it, the whole concept of preventive medicine is to make periodic assessments of the healthy person; and when you find things that are abnormal or problematic, you must correct them before they end up causing major problems.

Nutritional therapy was pioneered in working with patients who had multiple organ failure following trauma or surgical infection. Cerra et al. noted that after major surgery, shock, or acute infection, what often occurred was “an abnormal metabolic regulation that appears to result in persistent inflammatory response with associated immune suppression.”¹⁴ In their work in combating such metabolic weaknesses, Cerra used “substances such as arginine, n-3 polyunsaturated fatty acids, and RNA... for their ability to modulate inflammation and improve immune function.” His group found a good response to this program. The results “suggest that the administration of the added nutrients is associated with the return to more normal responses of the immune system.”¹⁵

This type of treatment has also been used successfully with the elderly. When older people are institutionalized, they are at risk of both malnutrition and infection. “To determine whether supplementation with vitamins A, C and E would improve cell-mediated immune function in elderly long-stay hospital

patients, researchers from St. James University Hospital, Leeds, conducted a controlled trial.”¹⁶ A group of thirty was divided into those who received the supplementation and those on placebo. “Several indices of immune function... showed significant improvement in the treated group but not in the placebo group.”¹⁷

Nutritional support of immune function with antioxidants also appeared in a geriatric study, which concluded: “Improving the antioxidant status of the aged might be very beneficial in slowing the decline of immune response, which could then decrease the incidence of severe age-related diseases.”¹⁸

If we look into studies that have measured the effect of nutritional supplementation on people with AIDS, we will find good work indicating that such treatment can not only be useful in helping the body gain the capacity to fight the incursion but aid health in other ways, such as by directly countering the retrovirus and helping the body absorb the harsh antivirals.

It has been established that vitamins E and B6 are necessary for immune response, “and supplementation at higher than RDA levels may be necessary for optimal immune function.”¹⁹ Beta-carotene may also prove useful for raising immune competence.²⁰ The usefulness of this last vitamin was shown in a “trial with eleven HIV-infected patients [which] showed rises in numbers of natural killer cells and activated lymphocytes after three months treatment, with no evidence of clinical toxicity.”²¹ A second experiment has shown that beta-carotene will generally augment immune function for healthy people; while a third study, this one again with HIV positives—twenty-one were in the study—“showed a 17 percent higher CD4 (helper t-cell) count during a four-week period of beta-carotene than during the placebo period.”²²

While, as we have been discussing, several sorts of nutrient augmentation improve immune function, and thereby aid the body in coping with infection (including that by HIV), some nutrients—if in adequate amount—may have more direct effects upon infecting organisms. For example, some trials indicate HIV is suppressed by ascorbate.²³ One of the most interesting investigations of the subject summarizes comparisons of the anti-HIV activities of ascorbate (vitamin C) and thiol-containing reducing agents like glutathione and n-acetyl cysteine in chronically HIV-infected cells in vitro.²⁴ They report several studies showing that vitamin C both inactivates HIV and inhibits its growth. After showing the last using infected T lymphocytes, the researchers conclude: “These results further support the potent antiviral activity of ascorbate and suggest its therapeutic value in controlling HIV infection in combination with thiols.”²⁵ This is collaborated by another examination of ascorbic acid alone, which was shown to inhibit the activity and growth of the AIDS virus.²⁶

Besides increasing immune system potency and striking against HIV, nutrients may aid the use of more conventional antiviral medications. It has been suggested, for example, that vitamin E has clinical potential in ameliorating the fetal and bone marrow toxicity of AZT.²⁷

Granted that certain vitamins or other nutrients can help the body tolerate antivirals and hinder the proliferation of HIV, still the main focus of the treatment we are going to examine is how various nutrients enhance immunity and improve absorption. Nutritional treatment must start from the knowledge that individuals that have full-blown AIDS have overwhelming nutritional problems resulting from malabsorption—whether from secretion defects or gut infection. One way Dr. Calapai addresses this problem—we are only going to take a representative example of his treatment now, since we will profile it more fully below—is by putting patients on total parenteral nutrition (TPN). He does this when the PWA is not eating and not absorbing terribly well. TPN is a way to try to bypass the gut and get nutrients into the bloodstream.

Others have dealt with the problem of poor absorption by using diet supplements given directly into the intestines (enteral diet). Some nutrients, whether given enterally or orally, have been shown to enhance immunity by directly affecting the lymphoid system and immune cell function. These would include certain amino acids as well as omega-3, omega-6, and short-chain fatty acids. Arginine has been shown to enhance the function of T cells and reduce infection. “Fish oils containing EPA were shown to have beneficial effects in inflammatory skin disorders.... They may also be useful in treating autoimmune diseases.”²⁸

Nutritional Depletion and Augmentation

Vitamins and Other Nutrients

The main object of this chapter will be the examination of Dr. Calapai's practice; however, in discussing his extraordinary work, we will be looking at the select vitamins and other nutrients he has employed in reempowering the immune system and aiding absorption. We will thus be leaving in the shade many other supplements that have shown some effectiveness in fighting AIDS but are not featured in this practice. The use of supplementation is an area in which more work needs to be done. Still, many studies that prove the benefits of different nutrients in combating the immunodeficiency disease have already appeared, but they have received little of the recognition they merit.

Having immersed myself for many years in the scientific literature that examines the health value of different vitamins, minerals, and other supplementation, I thought it might be of use if, before we examined Calapai's practices, I provided a compendium of some recent findings on different substances in relation to their alleviation of AIDS or AIDS-related diseases. I will also include my notes on substances such as bifidus, which have not been tested against AIDS but have been proven to support the immune system or aid absorption, properties that likely would be helpful in combating immunodeficiency diseases.

So before outlining Calapai's work, I will make a brief mention of studies reported in refereed journals concerning these nutrients. Notes refer the reader to the exact citation so that investigations can be consulted further at the source.

Bear in mind that one study should not be given too much weight; but as the positive findings pile up about a nutrient, as they do in relation to many listed here, one's level of trust in the value of the supplement ay increase.

ACETYL-L-CARNITINE

Results of one study show that six grams (g) per day of L-carnitine for two weeks improved lipid metabolism as well as immune response in AIDS patients receiving AZT.¹ This indicates that L-carnitine will dampen some of the toxic effects of AZT; although our stressing of such a type of investigation, here or later, should not be taken to be a backhanded endorsement of AZT and other antivirals, whose demerits have already been amply illustrated. Rather, they indicate that PWAs who feel they must take these pills can supplement them with other nutrients that will act to counteract some of the known side effects.

Acetyl-L-carnitine has also been shown to help in such AIDS-related diseases as dementia and senility.² As to the latter, one double-blind, placebo-controlled study examined the effects of 1,000 mg per day of L-acetylcarnitine on the senile human brain. Results showed treatment led to significant improvements relative to controls.³

ACIDOPHILUS

Acidophilus is a beneficial bacteria that is normally found in the intestine, where it transforms various substances into lactic acid, consequently creating an acidic environment that keeps down the existence of various illness-causing bacteria. A report in *Gut* testify to this antibacterial power, showing that human *Lactobacillus acidophilus* strains had an inhibitory effect against *Escherichia coli* (aka *E. coli*), *Salmonella typhimurium*, and *Yersinia pseudotuberculosis*.^{4, 5}

The bacteria's ability to stop *Candida* in its tracks is also well known, as is its general aid with other intestinal problems. For instance, an article in *Digestive Disorders* notes that preparations containing viable lactic acid bacteria of human origin may be of value in restoring normal microbial function and reducing symptoms in patients suffering from gastrointestinal infection and related conditions.⁶ A similar study was reported in *Clinical Teratology* where a mix of *Lactobacillus acidophilus* and *Bifidobacterium bifidum* was shown to be effective against gastritis and duodenitis.⁷

Since the elderly are prone to digestion difficulties, particular attention has been paid to their response to acidophilus therapy. Results of one study showed that a multibacterial combination consisting of *L. acidophilus* and *B. bifidum* administered to elderly patients with bowel disorders proved effective with respect to restoration of duodenal bacterial flora and subsidence of clinical symptoms.⁸ A second study looked at sixty elderly patients with symptoms of diarrhea, abdominal pain, and meteorism. Following a seven-day washout

period, all patients were given six capsules per day consisting of live lyophilized *L. acidophilus* and results showed significant relief of symptoms in all patients.⁹

Moreover, acidophilus can help restore the microflora in the intestine that have been weakened or wiped out by antibiotics. This is directly relevant to AIDS; as we remarked earlier, one dissident theory has it that the killing off of beneficent bacteria in the gut due to constant dosing with antibiotics or by other means creates the internal environment in which harmful bacteria can become prominent inhabitants. An investigation of the effects of *L. acidophilus* on gastrointestinal side effects of oral broad-spectrum antibiotic therapy in outpatients with ear, sinus, or throat infections indicated that *L. acidophilus* in combination with amoxicillin/clavulanate was correlated with a significant decrease in patient complaints of gastrointestinal side effects and yeast superinfection, with 89 percent reporting the elimination of infection. Similar findings were reported in a separate inquiry in *Nabrung*.¹¹ Beyond that, studies have noted acidophilus's effectiveness in countering side effects of specific antibiotics.¹²

Knowing that a breakdown of digestive functioning and absorption in the intestines is a symptom of AIDS, and then seeing the value of acidophilus in combating a number of intestinal problems, such as the increase in malign bacteria in the region, it's a shame more studies haven't been commissioned on how this bacteria might affect PWAs. We do know studies have appeared showing that acidophilus enhances immunity. An article in *Immunology* concluded that *L. casei* and *L. acidophilus* enhanced the activation levels of immune systems, while an animal study showed that mice given 50 micrograms per day of viable cultures of *L. acidophilus* and *Streptococcus thermophilus* experienced significant enhancement in their immunity.^{13, 14}

Further we possess one study that was reported in the *Journal of Experimental Medicine* that reached the tentative conclusion that the survival of HIV in the female genital tract and possible transmission may be inhibited by *L. acidophilus* -peroxidase-halide system activity in the vagina.¹⁵ Nonetheless, there is a crying need for more work on this bacteria to find out what bearing it may have in alleviating AIDS-related problems, such as the adjunct proliferation of harmful bacteria in the GI tract.

ALPHA-LIPOIC ACID

This is an acid manufactured by the body in small amounts to help with carbohydrate metabolism. It has antioxidant properties; that is, it will act to deactivate free radicals. It is widely used, for example, in Germany, in treating diabetes, because it decreases the body's resistance to insulin and decreases the symptoms of the disease. A handful of studies have been done suggesting that supplementation with this acid increases resistance to HIV. The two most widely cited are those done by Baur and by Suzuki.¹⁶

BIFIDUS

Bifidus is a supplement that contains *B. bifidum*, which, like acidophilus, is a gut bacteria that plays a helpful role by eliminating toxins. It also manufactures a number of B vitamins and lowers the pH level. Like acidophilus, it comes to the aid of the normal microflora in the intestine when they have been depleted by antibiotics or disease. You may have noticed that some of the articles cited in connection to acidophilus, such as the one in *Clinical Teratology*, discussed studies where patients were given a mixture of acidophilus and bifidus to effect improvements. Thus a number of the articles brought up in that discussion are equally applicable here.¹⁷

In other studies that we have not mentioned, bifidus with acidophilus or other substances has constantly proven itself a friend to beneficent microflora and an enemy to various invasive agents such as the rotavirus. For instance, a double-blind, placebo-controlled study published in *Lancet* in 1994 found that infant formula supplemented with *B. bifidum* and *S. thermophilus* decreased the incidence of acute diarrhea and rotavirus shedding (production) in hospitalized infants.¹⁸ A further study looked at bifidus's effect on mice who were infected with rotavirus, which commonly causes diarrhea. Onset of diarrhea was significantly delayed in pups treated with Bifidobacterium relative to placebo litters suffering from the infection.¹⁹

Other investigations have recorded that bifidus is equally resistant to salmonellosis infection.²⁰

Bifidus has been shown to resemble acidophilus in its effects by aiding the elderly in a positive modulation of the immunological and inflammatory response and by counteracting the sometimes baleful effects of antibiotics on digestive functioning.^{21, 22}

Unfortunately, nothing has been done to study this substance's effect on AIDS. Here is another nutrient whose immune-mobilizing, antiviral, and intestinal microflora-enhancing properties should make it a prime candidate for research into its possible usefulness in combating AIDS.

BORON

Boron is a trace mineral that is found in many fruits and vegetables. It appears to decrease the excretion of calcium and thus a deficiency of it is implicated in diseases such as arthritis and osteoporosis, where calcium is deficient. More work is being done now into how these bone diseases can be treated by using boron as a nutritional supplement.

A study published in the proceedings of the 1993 International AIDS conference showed that amino acids modified by boron inhibited HIV protease.²³

BROMELAIN

Bromelain refers to a group of enzymes that have a place in the body's metabolism in digesting proteins. Unlike most other enzymes, these have been shown to aid digestion. They also possess anti-inflammatory capabilities and so have proved important in treating muscle injuries: pain, swelling and bruising. Thus, they are prominently used in sports medicine. Not much work has been done in assessing what value they may have in treating AIDS, but an article in the *Journal of Immunology* reports an investigation showing bromelain supplementation boosting T cell proliferation.²⁴

COENZYME Q10

Coenzyme Q10 is another substance found in the human body. Its role is to help in the creation of ATP, which supplies energy for cellular functions. Studies have shown its value in improving cardiac function, reducing tooth decay, and bolstering immunity.²⁵

The study of this enzyme's relation to AIDS has become imperative, because it has been established that AIDS patients have a significant blood deficiency of CoQ10 relative to controls and relative to ARC patients. In an examination by Folkers et al., it was established that ARC patients show a significant deficiency in the substance relative to controls, as did patients infected with HIV. CoQ10 deficiency increased with the increased severity of the disease.²⁶

Since AIDS leads to depressed levels of the coenzyme, administration of it would seem to be a helpful countermeasure. A later study by Folkers looked at just this possibility. The study profiled two ARC patients who have survived four to five years with no symptoms of adenopathy or infection while taking CoQ10 continuously. The authors also report results on fourteen newly found normal subjects that experienced increased T4/T8 ratios in response to CoQ10 administration.²⁷ Two years later the Folkers group went beyond observation and did an investigation in which CoQ10 and vitamin B6 were administered together and independently to three groups of subjects. Results showed that blood levels of IgG increased significantly when CoQ10 and B6 were administered together as well as when CoQ10 was administered alone. T4-lymphocyte blood levels increased significantly when CoQ10 and B6 were administered together and independently as did the T4/T8 lymphocytes ratio.²⁸

Hopefully, in the future more scientists beyond this pioneering team will take an interest in the coenzyme's qualities.

DHEA

DHEA is a substance produced by the adrenal glands, which is later converted to either testosterone or estrogen. It is reputed to increase energy and build up

the immune system; but whatever the merits of these claims, it has been shown to reduce the viral load of AIDS patients and stem HIV replication. It is also noteworthy that one study showed that high-risk homosexual males who were HIV negative had significantly higher DHEA levels than age-matched HIV-positive males.²⁹

(I should pause to insert another caveat here. I have already shown that the concept of viral load is not the most useful measure of disease level, but again I am citing such studies not because I have suddenly become an advocate of using this test but to show the effectiveness of these natural supplements according to the establishment's own criteria. Further, since most scientists have accepted these criteria, some of the best studies of supplementation's effect on the disease are couched in these terms.) Studies in such journals as *AIDS Treatment News* and *AIDS Res Human Retroviruses* as well as ones delivered at various international AIDS conferences have brought out DHEA's effectiveness in such areas as killing HIV in vitro and in lowering viral load.^{30, 31}

One investigation indicated that there was an inverse association between DHEA levels and increased HIV progression in patients with CD4 counts below 300. Supplemented DHEA to levels greater than 400 mg/dl increased survival in such patients.³² A second study showed that the administration of an average oral dose of 75 mg qd of DHEA coupled with standard antiviral treatment to patients infected with HIV led to significant increases in CD4 and CD8 counts.³³

As was the case with CoQ10, the fact that AIDS correlates with deficiency of DHEA suggests the need for supplementation as one means of fighting the illness.

GLUTATHIONE

Glutathione is a substance that is found mainly in the liver where it detoxifies many harmful compounds. It is the primary antioxidant in the body, protecting against free radicals, which cause cellular damage. It also stimulates lymphocytes and helps to defend the organism against viral illnesses, including HIV.

Its effectiveness against viruses has been pointed to by the conclusions of a study by Palamara et al., which found that glutathione acted against human herpes 1, inhibiting the replication of the virus by as much as 99 percent.³⁴

As with a number of other substances whose presence in PWAS we have canvassed, glutathione appears in reduced levels in AIDS patients.³⁵ Since studies show glutathione is important in the regulation of T cells, disruption of its production will represent a breach in this important line of defense of the immune system.³⁶

Taken as a supplement, glutathione may reduce HIV activity. Research by Kalebic et al. suggests that HIV activity is profoundly decreased by the presence of antioxidants, such as glutathione and ascorbic acid.³⁷ Their study posits, "Glutathione may be essential in stopping the virus from activating."³⁸

Specific studies of glutathione's effect on in-vitro HIV have exposed its extinguishing capabilities. An examination by David Ho and S. Douglas looked at such effects and found that HIV-1 infection was blocked or substantially reduced by glutathione or NAC in cultivated cells. Reductions of 90 percent and higher in the amount of virus released were seen when cells were treated for four hours with a minimum of 10 mm of glutathione or NAC.³⁹ Similar findings were made known by Palamara's team at the 1993 International AIDS Conference.⁴⁰

NAC (N-acetyl cysteine), by the way, is a substance that converts into glutathione in the body; this is why in the aforementioned experiment we made reference to "glutathione or NAC." However, other, less directly related substances also act to remedy glutathione deficiency, including selenium and vitamin C. In addition, silymarin, a flavonoid complex from milk thistle, has the ability to increase glutathione in the GI tract, liver, and erythrocytes.⁴¹

As you have seen, most of the lab work on glutathione has looked at its effects in vitro, but a number of complementary physicians are using intravenous glutathione as a part of their HIV and AIDS protocol. Dr. Joan Priestley, for example, says that:

Glutathione is a wonderful substance. It deserves all of the attention that our government and the NIH are giving to it right now. I have all my clients take NAC on a daily basis. NAC [as we know] becomes glutathione in your body. Glutathione specifically attacks the AIDS virus in about four different steps.⁴²

Dr. Calapai had this to say:

When we add glutathione intravenously with vitamin C, we see a significant turnaround in the [AIDS] patient's comfort, attitude, and well being. Their T cells seem to stabilize or increase. NAC taken intravenously can inhibit reverse transcriptase activity better than ninety percent. There is no drug available for any treatment or disease that can do better than ninety percent with minimal or no side effects.⁴³

Recall that glutathione is used by the body as an eliminator of toxins. It makes sense, then, that it would not have the hazardous side effects we find with artificially created substances, such as AZT, which have not been refined over many generations to do the detoxifying job in harmony with the body's liveliness.

IODINE

Iodine is an element that is needed to make the thyroid hormones. It is found in many vegetables, such as kelp. These hormones are necessary for normal cell metabolism to be carried on.

The shame about iodine is that it has proven again and again to be an effective fighter against viral infections, yet nothing has been done to test whether it will have any devitalizing effects on HIV.

Let me note some of the many benefits that have been found from iodine treatment.

Iodine has been used in the treatment of goiter, hypothyroidism, fibrocystic breast disease, and other diseases. For example, a trial of the value of povidone-iodine vaginal pessaries given twice a day for two weeks to women with candidal, trichomonal, and nonspecific vaginitis discovered the treatment to be effective and free of side effects.⁴⁴ Other studies have gauged it and found it successful in fighting conjunctiva of newborns and adults, reducing the occurrence of intestinal bacterial infections after colorectal surgery and bacteremia after tooth extraction, as well as in eliminating nasal methicillin-resistant *S. aureus* from the nasal cavity and other bacteria from the mouth.⁴⁵⁻⁴⁸ Further, a study reported in the *Journal of Internal Medical Research* indicated that a povidone-iodine paint administered to patients with a fungal infection resulted in the patients' complete or significant improvement; a study in *Obstetrical Gynecology* recorded that patients with vulvovaginal and cervical herpes virus infection, who had received external and intravaginal povidone-iodine preparations, showed a reduction in duration of symptoms in nine of the ten cases.⁴⁹

In vitro studies note that the povidone-iodine solution decreases herpes virus, type II, by upward of 99.99 percent and has like devastating results in vitro against *S. auerus*.⁵⁰⁻⁵² Animal studies show an iodine preparation having antibacterial/cariostatic effects on rats' teeth as well as guarding rabbits against staphylococcal infection.⁵³

With all these studies showing iodine preparations as effective countermeasures against varied infective agents, then, the lack of research into how it would impinge on HIV replication is sad.

ISOFLAVONES/GENISTEIN

More excusable is the underutilization of the isoflavones in AIDS studies, because these are a variety of phytochemicals, bioactive plant chemicals, which have only lately been noticed and studied. The isoflavones are phytoestrogens, exhibiting weak estrogenic activity, and are found especially in chick peas and legumes. One study shows that one of them, genistein, inhibited the replication of herpes simplex virus type 1 in vitro.⁵⁴ Little else has been done with them to date.

L-DOPA

L-dopa is a drug that, it is surmised, converts into dopamine in the brain. Dopamine is a neurotransmitter chemical, whose absence results in Parkinson's disease. Understandably, supplementation with L-dopa is used in working to alleviate Parkinson's. It is not available over the counter.

The one study done that relates administration of L-dopa to AIDS indicates that it has alleviating symptoms of nerve dysfunction arising in relation to HIV infection in children between the ages of four and thirteen years.⁵⁵

This is another chemical whose potential AIDS-fighting qualities should be delved into further.

MELATONIN

Melatonin is a substance produced by the pineal gland when the eyes send signals that it is getting dark. Thus, it helps the body regulate sleeping and waking and can be used as a sleeping pill.

While it has not been studied for its relevance in AIDS treatment, its marked assistance to the immune system in animal studies make it a candidate for such study. Its ability to restore depressed immune function following soft-tissue trauma and hemorrhagic shock in mice was noted in an article in the *Journal of Surgical Research*.⁵⁶ A couple of other studies of mice who had weak immunity due to other conditions also came to positive conclusions about melatonin's restorative abilities.⁵⁷ Moreover, one study showed it counteracted the effects of acute anxiety stress on immune response in sheep red blood cells.⁵⁸

These good results indicate that this substance deserves a fuller treatment by AIDS scientists.

NAC

We saw earlier that NAC is substance converted into glutathione in the body, so what we said previously about glutathione's HIV-diminishing capacity, as well as our point that those with AIDS have glutathione levels below the norm, should be read in conjunction with NAC.

As we mentioned earlier, doses of NAC can help restore depleted glutathione. An inquiry reported in the journal *AIDS* found that this restoration was evident in mononuclear cells of HIV patients.⁵⁹ A Stanford University double-blind, placebo-controlled study of two hundred volunteers who were HIV positive made the same point: the administration of NAC increased glutathione levels, which may have enhanced survival rates.⁶⁰ A piece in the *FASEB Journal* argued further that NAC's ability to increase glutathione levels accounted for the enhanced number of CD4 positive T cells in patients infected with HIV, as found in its study.⁶¹

Where we saw with glutathione a number of studies showing the substance's anti-HIV effects, so with NAC there are a sheaf of reports on how it restricts HIV proliferation. One by David Ho et al. indicated that NAC significantly reduced HIV infection in in-vitro cell cultures, and this is backed up by a study from Roederer in *AIDS Research* and one by Raju et al. that states NAC

was found to be a more powerful antiviral agent than oxothiazolidine with respect to HIV.⁶²⁻⁶⁴

Another favorable comparison with the establishment-recommended antivirals can be drawn from a study reported at the 1992 International AIDS Conference, which assayed the safety of large doses of NAC on patients infected with HIV. "Patients with under 500 CD4 cells/mm³ received either 6 weeks of NAC doses of 3.7, 11, 33 and 100 mg/kg IV or 6 weeks of oral doses of 600, 1200, 2400 and 4800 mg qd. Results showed no major side effects and found NAC to be safe at the doses noted above."⁶⁵ Unlike the antivirals, while depressing HIV, NAC also builds up T cell function and growth.⁶⁶

PHOSPHATIDYL SERINE

Phosphatidyl serine is an organic compound that is found particularly in the brain. It supports the membrane proteins that facilitate nerve function. Although its ability to aid a PWA in his or her struggle with the immunodeficiency disease is unknown, we do know that this compound inhibits other viruses, such as the vesicular stomatitis virus, and that it works to offset declines in the humoral immune response.^{67, 68} In consequence, it would be an excellent candidate for further study in relation to effectivity against AIDS.

SELENIUM

Selenium is a nonmetallic element that activates an enzyme in the body. Its presence is necessary for healthy immune functioning. "Food sources high in selenium are brewer's yeast, brown rice, cod, lobster, oysters, scallops, shrimp, wheat germ, bran and brazil nuts."⁶⁹ As we made mention, selenium increases intracellular glutathione levels. Mark Konlee notes that a further aspect of selenium is that it lowers beta 2 microglobulin levels. "It has been long established that HIV+ persons with low beta 2 microglobulin levels either do not progress to AIDS or progress very slowly where persons with high levels of beta 2 microglobulin levels are rapid progressers."⁷⁰

Furthermore, as with glutathione and a number of other supplements in our survey, a low level of selenium correlates with an advanced stage of AIDS. Konlee refers to a study of 125 HIV positive persons at the University of Miami's School of Medicine, which "showed that persons with below normal levels of selenium were 20 times more likely to die of AIDS-related opportunistic infections than those with normal levels."⁷¹

Unfortunately, where recognition that low levels of glutathione in PWAs led to some work on trying to discover the effect of glutathione supplementation on those with the disease, this has not happened with selenium. But we do have a few investigations of the element's ability to improve immune reaction.

One study showed that selenium produced a significant increase in the activity of natural killer cells.⁷² Another studied its effect on hemodialysis patients and concluded that the supplementation brought about an improvement in T cell response.⁷³ Lastly, an inquiry whose results appeared in *Nutrition*, noted that supplementation with 200 micrograms of selenium per day for two to four months led to enhanced immune response in patients suffering from short-bowel syndrome.⁷⁴

VITAMIN A/BETA-CAROTENE

In brief, beta-carotene is a safe form of vitamin A known to stop damage from pollution, to enhance the immune system, to inhibit viruses, and to prevent premature aging. In addition, it is a powerful anti-oxidant that may protect the body against cancer, AIDS-related complex and other diseases.⁷⁵

Let me qualify what I might have implied in the last section: The fact that AIDS correlates with the body's loss of a given nutrient does not prove that re-supplying the body with that supplement will do anything to weaken the hold of the disease. I did not directly say it would, but some of my remarks may have been construed in that direction. Yet there is an implication in a deficiency, which is that AIDS or one of its related conditions is depleting or halting production of the nutrient in some way and that understanding why this is so would help us comprehend the path of the illness better.

In this part of the book, we are not concerned so much with this understanding. However, we can highlight that there are a few nutrients, such as vitamin A, both which are known to be lacking in those with AIDS and whose administration has helped sufferers. These nutrients must be centrally involved in the immunodeficiency syndrome's invasion.

Let's look at this deficiency in some depth. Dr. Gregg Coodley, speaking at the Third International Conference on Nutrition and AIDS in Philadelphia in October 1994, emphasized, "Vitamin A deficiency increases the rate of HIV infection."⁷⁶ He stated that one investigation done in Africa of three hundred pregnant mothers who were deficient in vitamin A found that the rate of transmission of HIV to their babies was 32 percent. By contrast, those who had been taking vitamin A supplements had a 7 percent rate. Of note, this supplementation "more favorably reduced HIV transmission than [taking] AZT."⁷⁷

This particular investigation was done by researchers from the Johns Hopkins School of Medicine in Baltimore and their colleagues in Malawi in a team led by Dr. Richard D. Semba of Hopkins, who reported the findings at a meeting sponsored by the American Society for Microbiology.

He criticized those who "in the high-tech rush to develop vaccines and other therapies... have been ignoring some of basics," such as looking at the role of poor nutrition in causing people to acquire the disease.⁷⁸

As a science writer for the *New York Times* noted:

A link between vitamin A deficiency and AIDS has a plausible biological explanation. Studies in several laboratories have shown that when deprived of vitamin A, T cells and B cells... fail to function properly. T and B cells are critically important in helping the body fight HIV. A lack of vitamin A also leads to impaired production of cytokines, substances produced by cells that are important in immune reactions.

“Thus, vitamin A deficiency can be a double whammy on the immune system,” Dr. Semba said, because pregnancy itself increases demand for the vitamin for both the woman and fetus and HIV infection can interfere with intake and absorption of vitamin A and can deplete existing stores.⁷⁹

In general, low levels of vitamin A are associated with disease in both children and adults. For children, we might mention a study of vitamin A deficiency on T cell subsets of Indonesians between the ages of three to six years. Results found that children deficient in vitamin A had underlying immune abnormalities in T cell subsets.⁸⁰ A review of twelve studies showed that the adequate levels of vitamin A is a key factor in the prevention of mortality and morbidity of children in developing countries.⁸¹

As for adults, the links are there, not only between a number of diseases and abnormally low levels of A but between such low levels and AIDS in particular. An article in the *Journal of Infectious Diseases* reports that fifty adult injection drug users who died from AIDS were matched to 235 controls who survived. Results found that vitamin A deficiency and wasting were associated with mortality and common during HIV infections.⁸² The *Archives of Internal Medicine*, meanwhile, featured a study examining the effects of vitamin A plasma levels on immunologic status and clinical outcome in patients infected with HIV-1. It was seen that a deficiency in vitamin A was associated with lower CD4 levels as well as increased mortality in seropositive individuals. The authors conclude that vitamin A deficiency is a serious risk factor for the progression of disease in those infected with HIV-1.⁸³

We know from this that PWAs are depleted in vitamin A. What happens if a doctor tries to reverse this state and supplement with A? Will this have any effect on the course of the illness or the immune system's staying power?

As to the vitamin's aptitude for increasing immunity, this is well documented both in relation to people with AIDS and those suffering from other diseases. For one example, we can look to a study reported at the 1989 International AIDS Conference. Thirty mg per day of beta-carotene were given for four months to eleven AIDS patients. Results showed significant increases in the number of immune system lymphocytes with NK markers and markers of activation after three months.⁸⁴ An investigation by Coodley studied the effect of a daily dosage of 180 mg of beta-carotene for four weeks on the CD4 counts in HIV-infected patients. Results showed significantly increased CD4 counts and

improvement in CD4/CD8 ratios relative to controls.⁸⁵ Garewal et al. gave eleven HIV-infected patients 60 mg of beta-carotene per day for four months. Increases were found in the percent of natural killer cells, among other improvements.⁸⁶

We might note that A supplementation is known to ratchet up immunity also in relation to other diseases and immune-weakening stresses. Cigarette smokers, for instance, improved immunity with 20 mg of beta-carotene per day for two weeks, as did those exposed to overdoses of ultraviolet light.^{87, 88} It has also helped those with already developed serious conditions, such as those with chronic pneumonia, following extensive surgical treatment, and for those with leukemia.⁸⁹

Animal studies have pointed in the same direction, showing immune-boosting capacities of A dosage in relation to various depressing conditions. As one example, Watson et al. studied mice with LP-BMR murine leukemia virus (which produces an AIDS-like condition) and found immune system improvement after vitamin A supplementation.⁹⁰ Others can be consulted in the notes.⁹¹

Let's get to our second question on whether the administration of vitamin A will, besides improving PWAs' immunity, be of any benefit in alleviating symptoms or onset of the full-blown version of the disease. Here we also have some hopeful results. In a single blind pilot study by Bianchi-Santamaria et al. ARC patients supplemented with beta-carotene experienced a decrease in the progress toward AIDS, as well as recoveries from asthenia, fever, nocturnal sweating, diarrhea, and weight loss.⁹² A pilot study by Pontiggia worked with ten patients infected with HIV who had just discontinued use of either AZT or ddI. Along with other treatments, they received 120 mg per day of beta-carotene. Nine patients (one died shortly after treatment began) experienced an HIV burden diminution, clinical improvement, and amelioration of negative laboratory data, and reported subjective improvements in overall quality of life.⁹³

Since this last study did not use A by itself, it is not a definitive look at the value of the vitamin, and both this and the previous study were only pilot projects; hopefully more full-scale investigations of this vitamin, whose promise is evident, will be undertaken.

Work has also been done on children born to women infected with AIDS. One study found that children receiving supplements of A had a lower overall morbidity than controls and that diarrhea in HIV-infected children was significantly reduced.⁹⁴

Further, taking A seemed to help maintain intact immunity for adult PWAs on AZT.⁹⁵

VITAMIN B1

Along with A, the B vitamins have been the object of a few studies, where their utility in treating AIDS or in revving up the immune system were gauged, although only B12 has garnered relatively extensive interest.

An article on vitamin B1 was published in 1994 by Shoji et al. and showed that the substance inhibited the production of progeny HIV-1 in chronic and acute HIV-1-infected cells in vitro.⁹⁶

VITAMIN B2

Vitamin B2 has been featured in one important study as well, although this merely indicated the vitamin's ability to stimulate the immune system, here in response to *E. coli* infection.⁹⁷

VITAMIN B6

Jumping to B6, we have one study of how the normalization of vitamin B6 levels in HIV-infected patients suffering from a deficiency led to significant improvements in CD4 cell number as well as other functional parameters of immunity.⁹⁸

VITAMIN B12

More has been done with B12 than with the other B vitamins. As was the case with A, it has been noted that many PWAs are low in B12. "Decreased Vitamin B12 levels occur in up to 20 percent of AIDS patients and may adversely contribute to hematologic and neurologic dysfunction."⁹⁹ This deficiency has been tied to decreased secretion of acid, pepsin and gastric juice, which contributes to vitamin B12 malabsorption.¹⁰⁰

Along with studies that show B12 augments immune function in vitro, work that centers on PWAs has shown some remarkable results with supplementation.¹⁰¹ An exciting investigation recorded in the *American Journal of Gastroenterology* followed an AIDS patient with advanced dementia complex associated with low serum vitamin B12. After treatment with vitamin B12, the symptoms resolved over a two-month period. The researchers conclude that the AIDS dementia complex is a reversible adverse synergistic interaction between the human immunodeficiency virus and vitamin B12 deficiency.¹⁰²

The researchers' final generalization may be too broad, since it is based on a single case, but another study that dealt with a large population discovered that normalizing the status of vitamin B12 by supplementation of 250 mg/ml in HIV-infected patients produced significant improvements in cognitive function.¹⁰³

We might add that vitamin B12 dosage has also been seen to counteract some effects of senile dementia.¹⁰⁴

VITAMIN C

Vitamin C has a grand (some might say "overblown") reputation as possessing potent immune-stimulating capacities. You may have heard, for example, of Linus

Pauling's assertion that massive doses of vitamin C can overcome cancer. Equally strong claims have been made for its AIDS-battling characteristics. And these claims are not only supported by pilot studies and in animal experiments, but by the findings of doctors who are using C in their treatments of AIDS patients.

Although it is not yet the time to begin a complete, in-depth examination of therapy strategies, I thought that since the use of vitamin C is a subject I have brought up repeatedly on my radio program and in interviews I included in *AIDS: The Untold Story*, I might note the viewpoints of a few doctors who are immersed in using C in working with PWAs. We will move on to a summary of relevant scientific literature on C's capabilities. Note that vitamin C is also known as ascorbate.

"Vitamin C can double the life expectancy of AIDS patients," according to Dr. Robert Cathcart. His study entitled "Vitamin C in the Treatment of AIDS" concludes that massive doses of buffered ascorbate (50 to 200 grams per twenty-four hours) in combination with other treatments for secondary infections often produces a clinical remission that shows every evidence of being prolonged if treatment is continued.¹⁰⁵

When I questioned him about the basis of his treatment, he outlined the properties of vitamin C that made it a particularly hardy foe of free radicals, whose presence is increased by immunodeficiency disease. In his words, "Massive amounts of ascorbate—which I like to call ascorbate to distinguish it from vitamin C in tiny doses—neutralize free radicals."¹⁰⁶ We've seen that these radicals are offshoot electrons that careen around the body, causing tissue damage. Cathcart continued, "We have within the body this system called the free radical scavenging system which consists of electron donators.... When the free radical scavengers are overwhelmed, then we have inflammation and other diseases."¹⁰⁷ Vitamin C acts to support the free radical scavenging system, which, we are assuming, is put under stress by HIV or other internal environmental changes associated with AIDS.

Free radicals, however, are not solely destructive agents but are harnessed by the immune system. "When a white cell engulfs a virus by the process of phagocytosis, it puts the virus in a vacuole and then secretes these free radicals called superoxide, peroxide, [and] hyperchlorous acid, into the vacuole killing the virus."¹⁰⁸ A second valuable attribute of C is that it aids the white cell in this killing process.

How does it do this? We've said certain white cells have free radicals in store to use in eliminating viruses. However, these free radicals may damage the host cell. If "a white cell makes too many free radicals it actually poisons itself.... The ascorbate provides the reducing equivalents necessary to protect it against the toxic products that it makes."¹⁰⁹ So C acts to both help the body eliminate these free radicals and harness them.

Let's run through the comments of a few other doctors who have extolled the use of this supplement. Dr. Calapai, whom we met earlier, sees the use of C

as part of an all-around natural therapy: “We need to be aggressive in a non-toxic fashion to be able to inhibit the replication of viruses. Research has shown that large doses of ascorbate intravenously and orally can inhibit intra- and extracellular viruses,” he states.¹¹⁰

Dr. Joan Priestley has also seen the research into ascorbate’s antiviral utility and has proven its practical value on PWAs she has treated. “I use very high doses of certain nutrients which have direct anti-viral and immune-system-booting or immunomodulatory effects,” she told me. When I asked her which nutrients she used in particular, she expanded, “Specifically [I use] vitamin C in high doses á la Linus Pauling, industrial strength doses. I feel it is a cornerstone of an AIDS management, AIDS prevention program.”¹¹¹

Nutritionist Dolores Perri also sees the administration of megadoses as proper therapy. “We can’t possibly get enough vitamin C from what we eat as it is a very unstable vitamin. Anyone with a compromised immune system needs a vitamin C drip.” In the clinic where she works with AIDS patients, patients are getting from 25,000 to 100,000 units in a vitamin C drip that also includes B complex, glutathione, a multiple vitamin, and minerals. Taking the drip, she explains, is “bypassing the digestive system, going right to the blood stream and getting incorporated into the cells.”¹¹²

With such benefits (as we have seen and will see below), one would think more practitioners would look into C as a complement to other treatments, but too many doctors are uninformed or misinformed. Joy DeVincenzo, an HIV-positive AIDS activist, says, “A lot of doctors including mine do not believe in giving vitamin C just because it’s not approved.” It was her own study of health that convinced her of the value of ascorbic acid. “Without it I know I wouldn’t have stayed stable for this long.”¹¹³

Other doctors may have heard that if people take large amounts of vitamin C, they will develop kidney stones. Dr. Cathcart disputes this claim. He notes that judged purely by biochemical theory, ascorbate should partially break down to oxalate, and thus could contribute to kidney stones. In reality, the stones don’t appear, even with maximum intake of C. “So theoretically, people should develop oxalate kidney stones—[but] they don’t,” Cathcart states. “And I think in science the facts should determine the theory, not the theory the facts. So while the theory advanced that people who take ascorbate should have kidney stones despite the fact that they didn’t produce kidney stones, that idea still keeps perpetuating.”¹¹⁴

Going further, he argues that theory does not jibe with facts in this case because ascorbate is a mild diuretic. With more water leaving the body, “that makes the stones less likely to deposit.”¹¹⁵ Moreover, the ascorbic acid flowing out in the urine is “binding calcium, which makes it unavailable to the oxalate acid” that is used in the creation of the stones.¹¹⁶

Let’s move on to a quick survey of scientific papers that have documented ascorbate’s ability to improve immune function, help the body respond to vari-

ous debilitating conditions and arm itself against AIDS. In contrast to most of the other supplements examined in this chapter, there is a substantial body of work testing the mettle of this nutriment in direct relation to AIDS. Before handling those materials, though, I want to briefly note how C has proven itself against other conditions.

Cathcart, whose reliance on C in treating AIDS patients we just learned about, has also seen good effects from this vitamin when it is given to combat other illnesses. To his knowledge, a topical C paste is highly effective in the treatment of herpes simplex and Kaposi’s lesions. Furthermore, massive doses of ascorbate in combination with lysine will reverse viral illnesses such as hepatitis A, B and C, mononucleosis, shingles, and herpes, he told me when I queried him about C’s properties. Moreover, he said, “When drug therapies are indicated, such as the use of Septra or Bactrum to treat pneumocystis, large amounts of ascorbate will help to prevent allergic reactions from the drugs and will usually stop the pneumocystis from re-occurring.”¹¹⁷

To go to particular studies, we can begin with genital herpes. Two examinations have indicated the ability of ascorbate to combat this viral condition. One by Fitzherbert showed the administration of 100 mg of zinc sulfate and 250 mg of vitamin C twice daily for six weeks to patients with recurrent herpes simplex type I resulted in either total suppression of the eruption or limited eruptions.¹¹⁸ A study led by Terezhalmay came to similar positive conclusions.¹¹⁹ Large dosages have also been effective in lowering the incidence of symptoms of upper-respiratory-tract (URT) infections.¹²⁰

Jariwalla and Harakeh in the book *Nutrition and AIDS* state, “A striking property of ascorbic acid is its ability to inactivate viruses and inhibit viral growth in their host cells. Ascorbic acid has been known to be an antiviral agent since 1935.”¹²¹ They go on to refer to a host of studies that have uncovered ascorbate’s power against various viral diseases, noting such important studies as that of Jungeblut in connection to the inactivation of polio virus by crystalline vitamin C; Holden and Molloy on herpes viruses; Kligler and Bernkopf on vaccinia virus; Langenbush and Enderling on the virus that causes foot-and-mouth disease; Amato on rabies; and Loijkin on tobacco mosaic virus.¹²²

Moreover, C not only takes a hand in directly attacking viruses but also facilitates the work of other medicines. For example, one double-blind study reported in the *Annals of Allergy* found that two grams of vitamin C administered to patients with allergic rhinitis produced a significant positive effect one hour after treatment on bronchial responsiveness to inhaled histamine relative to controls.¹²³ That is, the C made the body more sensitive to the histamines used in treatment. Similar findings about increasing responsiveness were found in relation to the weakened bronchial cavities of heavy smokers.¹²⁴ A work in the *Journal of Antimicrobial Chemotherapy* attested to the fact that ascorbic acid enhanced the lethality against the infection but not the permeabilizing effects of the medicine amphotericin B on *Candida albicans* and *Cryptococcus neoformans* cells.¹²⁵

Finally, before we look at AIDS and C, it should be noted that there are plenty of studies of ascorbate's general immune-boosting potency. An extensive literature review by Banic found, among other advantages, that ingestion of C increased resistance against infections and stimulated phagocytic activity of granulocytes and macrophages. You may recall that these last-mentioned entities are key components of the antibody system.¹²⁶ Delafuente, meanwhile, conducted a placebo-controlled study of vitamin C supplementation's effect on immune enhancement among the elderly, discovering that vitamin C may be an important factor in correcting faulty immunologic functions.¹²⁷

When a drug or nutrient is being tested for its effectiveness against a virus, as can be surmised from what we have been recounting, it is brought through a number of stages. First, it has to prove itself against cultured cell lines in the laboratory. These are called *in vitro* studies. Next are trials in which living subjects are enrolled, *in vivo* studies, whether of animals or humans. In the case of vitamin C, this supplement has repeatedly shown its HIV-suppressing abilities in the lab, though not as much work has been done *in vivo*. Along with the anecdotal testimonies of practitioners, we also have a number of studies of patients to rely on.

One *in vitro* examination of vitamin C and HIV was presented in the *Proceedings of the National Academy of Sciences*. It concluded that nontoxic levels of ascorbate suppressed virus replication in HIV-infected T lymphocytic cell lines. The article put it like this: "In chronically infected cells expressing HIV at peak levels, ascorbate reduced the levels of extracellular reverse transcriptase (RT) activity (by > 99 percent) and of p24 antigen (by 90 percent) in the culture supernatant."¹²⁸ Further, unlike AZT and other strong antivirals whose noxious effects we have assayed, the ascorbate showed "no detectable inhibitory effect on cell viability, host metabolic activity, and protein synthesis."¹²⁹ A second study by the same authors found HIV-inhibiting power in both ascorbic acid itself and in another form of C, its calcium salt (Ca-ascorbate). Further, they tried C in combination with two thiol-based reducing agents (glutathione, GSH, and N-acetyl-L-cysteine, NAC), both of which we mentioned earlier, and found that these pairings amplified the suppressing agency of all the nutrients. The authors feel these positive results "further support the potent antiviral activity of ascorbate and suggest its therapeutic value in controlling HIV infection in combination with thiols."¹³⁰

By the way, such lab culture studies should not be seen as necessary but nontherapeutic first steps that will have no immediate effect on practice. As we saw much earlier, HIV contamination of blood products was an early problem in the AIDS crisis. It can be seen that although HIV-infected blood would not be consciously given in transfusions, it would certainly be useful to have a substance, such as C is proving to be, that could decisively suppress the action of the retrovirus in blood products. A study in *Biologicals* looked into this question. It examined cell-free human immunodeficiency (CFHIV) inactivation by the

treatment of blood products with ascorbic acid. Results demonstrated that 500 mcg/ml of ascorbic acid in a culture medium, whole blood or leukocyte-depleted blood, inactivated CFHIV *in vitro*.¹³¹

While these studies make it clear that vitamin C stops the reproduction of HIV, others have asked how it does so. Let us keep in mind as we look over these investigations, by way of contrast, how AZT and the protease inhibitors work. It is believed that AZT stops the action of RT as HIV tries, upon entering a cell, to transform its RNA into DNA. The protease inhibitors are effective later in the virus life cycle and inhibit HIV from replicating.

Findings on C make a number of points about its probable action. One study Penn found that in HIV-infected cells, there was no significant differences in the synthesis or processing of individual viral RNA and polypeptides, which indicates that ascorbate's inhibitory effect is not focused on steps of viral transcription or translation. Rather, the authors argue, C interferes with enzymatic activity after HIV has settled in the cells.¹³² A further examination of this topic by Jariwalla and Harakeh, agreeing with the postulation that C interferes with enzyme production by the virus, suggests that "the biological activity of an HIV LTR-directed reporter protein made in ascorbate-treated cells was reduced to -11 percent relative to that of untreated controls."¹³³ To restate that, once the HIV came in contact with C, the HIV's ability to manufacture protein was cut down. This dampening effect means the HIV would have diminished infectivity, that is, lessened ability to invade host cells.¹³⁴

More general ideas about the antiviral abilities of the vitamin—we have already heard of its skill in hindering free radicals—come from the already cited chapter in *Nutrition and AIDS* where it is affirmed that "important metabolic functions of ascorbate include stimulation of collagen and carnitine synthesis, reduction of molecular oxygen during respiratory burst in phagocytic cells [acting as an aid in antibody activity, that is] and neutralization of toxic free radicals."¹³⁵ These functions, the authors claim, "may aid in the prevention/ alleviation of opportunistic infections and wasting syndrome associated with advanced stages of AIDS."¹³⁶ They point out further that beyond what Cathcart said about C's effectivity against free radicals, the C in the body addresses the fact that when a person gets sick, the radical scavengers remain unreduced. In other words, the repair mechanism cells, once they are finished with their work, are normally broken down by the body and their parts reintegrated into other operations; but under stress, they are left to clog the infrastructure. To go on, this can lead to deficiencies, and AIDS patients who experience this "often exhibit symptoms of acute-induced scurvy characterized by life threatening weight loss, brittle bones and swollen glands."¹³⁷ However, vitamin C can get the scavenging system back on track as well as help the body eliminate these radicals in other ways.

It might be mentioned at this point that, in contrast to the drugs favored by the establishment as ones that interfere with HIV, vitamin C is non-toxic even at very high dosages. As the piece in *Nutrition and AIDS* says illuminatingly,

“The advantage ascorbate has over other anti-HIV agents is that it can be taken at large doses without producing adverse side effects.”¹³⁸ And this is serendipitous in that there are qualitative differences in effect at certain high doses. The authors of the chapter summarize:

The unique ascorbate functions that become manifest at high doses, permitting it to act as a powerful scavenger of free radicals/oxidants... empowers it with the dual ability to keep oxidant-induced HIV activation in check as well as protect tissues from cellular damage. In addition, its ability to suppress HIV replication and inhibit microbial growth (directly or via stimulation of phagocytic cells) affords an additional line of defense against proliferation of the AIDS virus and opportunistic pathogens associated with HIV infection.¹³⁹

At least one comparative study has shown, by the way, that in vitro vitamin C has a stronger HIV-suppressing power than AZT. In this study, reported in the *Journal of Nutritional Medicine*, “the effects of ascorbate (vitamin C) and Azidothymidine (AZT) were examined on HIV expression in permanently infected and reporter cell lines.”¹⁴⁰ On all the different parameters examined, C appeared the better anti-HIV agent. With HIV-infected HXB cells, for instance, “ascorbate suppressed HIV production and reduced the yield of infectious virus released into the culture supernatant. AZT, which has been reported to block de novo infection of freshly infected cells, did not inhibit constitutive virus production in HXB cells.”¹⁴¹

Turning, at last, to the more limited work that has been done on surveying the effects of vitamin C supplementation on people with AIDS, we can start with a report Cathcart published in *Medical Hypotheses* based on a careful study of his own work. He reports, “Preliminary clinical evidence is that massive doses of ascorbate (50 to 200 grams per 24 hours) can suppress the symptoms of the disease (AIDS) and markedly reduce the tendency for secondary infections.”¹⁴² He goes on: “In combination with usual treatments for the secondary infections, large doses of ascorbate will often produce a clinical remission which shows every evidence of being prolonged if treatment is continued.”¹⁴³

An investigation of PWAs by Jariwalla was focused on the correlation of AIDS and “abnormal [i.e., low] blood levels of key micro-nutrients and sulphated amino acids (thiols) that are prevalent early in infection.”¹⁴⁴ He argues, then “micro-nutrient imbalance may contribute to increased oxidative stress... and abnormalities in immunologic/neurophysiologic functions underlying HIV/AIDS.” Although this is taking us beyond the effects of ascorbate alone, evidence from studies of asymptomatic HIV-positive patients who have corrected these micronutrient deficiencies, by taking ascorbate as a main supplement along with other vitamins and compounds, showed “micronutrient consumption or multi-vitamins used at baseline was associated with significant reduction in rate of progression to AIDS.”¹⁴⁵

To this study should be added one done by Tang et al. in which 108 seropositive AIDS homosexual or bisexual males were studied for daily micronutrient intake relative to the progression rate to AIDS over a period of 6.8 years. It was learned, “Progression rates for those with highest total intake of vitamins C and B1 and niacin were significantly slower than those ingesting lower doses.”¹⁴⁶

While Tang’s study did not intervene in the PWAs’ treatment (if any) but simply observed what the PWAs were doing, an investigation by Kodama et al. looked at vitamin C’s effect when given to four patients with autoimmune disease. Results indicated that vitamin C induced an increase of plasma glucocorticoid activity with a two-hour delay. We learned earlier that the glucocorticoids were steroids that play a role in reducing inflammations. So, this study can be taken to indicate that vitamin C supplementation will boost immune system activity in PWAs.¹⁴⁷

You may find that this last section is not quite satisfactory, in that although a start has been made in using vitamin C in trials with people with AIDS, on the whole little has been done, especially considering how much evidence there is that C suppresses HIV in vitro. Sadly enough, reams of information are generated about AZT and other establishment, legal drug lord-sponsored drugs, while substances such as C from which little profit can be hoped (since they are not patentable) get far less attention.

VITAMIN D

The other vitamins and minerals have not been given the attention C has received, although a lot of good work has been done here also, especially on vitamin E and zinc. For vitamin D, one significant study has been published in proceedings of an international AIDS conference, which showed that the nutrient given to PWAs would correct certain immune system cells (macrophages) that suffered deformation under the disease’s scourge.¹⁴⁸

VITAMIN E

With vitamin E, which has already been found to be an essential antioxidant that can prevent many diseases caused by environmental stressors, including cancer, cardiovascular disease, atherosclerosis, and cataracts, considerably more work has been done.

This vitamin is available in many foodstuffs, such as fish and vegetable oil, nuts, and whole grains; however, research suggests that even the average person is not getting enough vitamin E in the diet. In one survey, 70 percent of women nineteen to fifty were getting less than 100 percent of the RDA of vitamin E, and 41 percent were getting less than 70 percent.¹⁴⁹ Other studies suggest that higher vitamin E intake is correlated to a lower incidence of cancer.¹⁵⁰

In noticing what research has been done on this vitamin's ability to help the body cope with AIDS, we find that, in contrast to work on C, which has been mainly in vitro studies, work on E has concentrated on animal models.

From our perspective, the problem with this is that no adequate animal models have ever been found for AIDS, a point we've come back to a number of times. However, by looking at some of these experiments, we can at least learn how E acts in a body affected by an immune-weakening condition.

For mice, the virus that is considered roughly similar to AIDS is murine AIDS, caused by the LP-BM5 retrovirus. A number of studies have gone forward that test the effect of heavy doses of E on mice laboring under this illness.

One published in *Thymus* looked into the vitamin's ability to improve thymus function, since this organ's manufacture of immune system components is impaired by the disease (as it is in humans), specifically by interfering with thymocyte cytokine production, which impacts on T cell differentiation. Results indicated that dietary vitamin E supplementation at extremely high levels can modulate in a positive way cytokine production by thymocytes.¹⁵¹ A study by Wang et al. saw similar results in terms of recording marked improvement in immune function in murine-sickened rats who were put under a heavy regimen of E.¹⁵² A second study of infected mice, also headed by Wang, noted that after giving the mice large amounts of E, the group witnessed, among other effects, restored concentrations of vitamins A, E, zinc, and copper in the liver, serum, and thymus, as well as partially restored production of IL-2 and IFN-gamma by splenocytes. Both of these last had been undermined by the murine AIDS. They also found the vitamin prevented a suppression of splenocyte proliferation and natural killer cell activity, which suppression would normally have taken place as a result of the virus.¹⁵³

These findings are in line with non-AIDS-related examinations of the enhancing effects of E on debilitated rodent immune systems. Such aggrandizements of weakened immune systems have been found, for example, in mice exposed to chronic alcohol consumption, whose compromised immune responses experienced a complete restoration of immune status following three days of supplementation with 5 IU of vitamin E.¹⁵⁴ Supplementation was effective also with mice whose immunity was decreased by aging.¹⁵⁵ Hypertensive rats, too, were found to improve immunity when fed vitamin E.¹⁵⁶

Of more direct bearing than these studies, though, is one done by Gogu et al. in which E was given along with AZT to mice and was found to protect their bone marrow by 75 percent and 86 percent, respectively, relative to controls.¹⁵⁷

Studies with other animals have brought in similarly encouraging findings, at least in terms of E's value as an immune system support. This has been noted with calves, guinea pigs, rabbits, and sheep.¹⁵⁸

I stated earlier while E in vitro studies seem to have been bypassed in general in comparison to those focusing on animals, a few have appeared. One published in 1989 indicated that growing cells in a vitamin E-laced medium

increased these cells' antiviral stamina. The authors concluded, "Such findings support the possible use of vitamin E derivatives as a treatment for AIDS."¹⁵⁹

Let's turn to the effect of E supplementation on humans, both in connection to AIDS and other situations of immune weakness. Bear in mind that general studies of the vitamin show that, like C, it is a powerful antioxidant. "AIDS research shows that antioxidants, such as vitamin E, may help normalize retrovirus-induced immune dysfunctions, undernutrition and other pathological symptoms, thereby retarding the progress of the disease to AIDS."¹⁶⁰

As with animals, it has been found that humans who are given large doses of E find that their immune capabilities, which have been under assault from the immune disease, are enhanced. In a literature review of E's capacities vis-à-vis the immune dysfunction, the authors note that the immune abnormalities surrounding AIDS are not unlike those stimulated or restored by high intake of vitamin E. They call the reader's attention to other studies in which vitamin E supplementation also has been shown to result in a decrease in the progression of disease to AIDS.¹⁶¹

The positive effects of E supplementation have also been experienced by patients who have liver transplants, are on dialysis, or undergo heart surgery.¹⁶² Taking vitamin E has also been recommended for older adults. A double-blind, placebo-controlled study found that healthy older adults taking 800 mg of vitamin E for thirty days experienced an improvement in some in vivo and in vitro parameters of the immune function relative to controls.¹⁶³

Again, we could wish that the effectivity of this substance against AIDS had been delved into further by scientific researchers. Yet from what we have observed, especially from suggestive animal studies, it can be seen that vitamin E could play a yeoman role in helping the body fight off the immune damage caused by AIDS.

VITAMIN K

Little has been done in studying what effects vitamin K might have on immune deficiency disease. One study has appeared, nonetheless, by Qualtiere, which indicated that vitamin K compounds inhibited HIV replication in vitro.¹⁶⁴

ZINC

In strong contrast with the characterizations we have offered of the scientific studies of the other nutrients in this chapter, most of the work I have seen on zinc concerns studies of people (not animals or cell cultures). Work in this line has been on the effect of zinc supplementation both on AIDS and other diseases.

As to other conditions, those most commonly studied to show zinc's benefits are childhood diarrhea and herpes.

A double-blind, placebo-controlled study done in India examined the effects

of 20 mg per day of elemental zinc on diarrhea in children between the ages of six and thirty-five months. "Results showed significant reductions in both the severity and duration of diarrhea relative to controls."¹⁶⁵

'Extensive work has also looked at zinc's effects on herpes. A piece published in the *British Journal of Dermatology* found that zinc sulphate solution had preventive effects on recurrent herpes simplex of the skin and oral mucous membrane.¹⁶⁶ Other work has shown its ability to alleviate the symptoms of herpes labialis recidivans.¹⁶⁷

Supplementation with this mineral has also been helpful for those suffering from age-associated immune dysfunction.¹⁶⁸

Our main point here is to see what zinc has accomplished in combating AIDS. Fortunately, we have a few excellent investigations on this topic.

The paper "Effect of Zinc Normalization on Immunological Function in Early HIV-1 Infection," which was given at the 1991 International Conference on AIDS by Beach, showed that normalization of deficient zinc status was associated with significant increases in CD4 count and improved functional immune parameters among homosexual male patients with HIV.¹⁶⁹ This was followed by a paper at the 1993 conference that backed up Beach's findings by indicating that the administration of 200 mg per day of oral zinc sulphate had immunostimulant T cell effects in asymptomatic patients with HIV infection.¹⁷⁰

Zhang et al., perhaps noting Beach's happy results, did an in vitro study that indicated the HIV-inhibiting effects of zinc. Results of this study demonstrated that zinc can inhibit renin and protease from HIV-1. Such inhibition, the authors suggest, may explain some of the benefits seen in AIDS patients following zinc therapy.¹⁷¹

Although there aren't all that many studies on zinc, at least concentrating on PWAs, they cut right to the heart of the matter. You might well ask, in connection to some of the other substances we have examined, why so much time and expense has been spent on in vitro and animal studies—even though these are ultimately necessary—on substances that have few or no side effects at huge dosages. I'm thinking of such supplements as C, particularly, for not all the nutrients mentioned in this chapter are hazard free. Where in vitro and animal model experiments are de rigueur for chemicals such as AZT, whose side effects are so devastating, it turns out that it is drugs like this that have often bypassed the safer, nonhuman studies to rush into human trials. Meanwhile, it seems that benign substances like C are dallied with when they should be quickly put into clinical trials.

Herbal Treatments

To complement such programs of nutritional supplementation, herbal therapies also deserve exploration. Here there has already been much done in working with AIDS, particularly in the devising of herbal combinations. Such combina-

tions (called formulas) have long been a high point of Chinese medicine, based on a balancing of the various effects of different plants in relation to a bodily imbalance, which is traditionally seen as due to an excess of ying or yang energy. Translated into the terms of alternative health, a translation that is easy to do, we would say that a disease like AIDS arises through the kicking in of an otherwise innocuous retrovirus—because internal conditions have been deranged by long-term disruptions, such as would come about through addiction to powerful substances, or the destruction of intestinal microflora through overreliance on antibiotics, or in one of the other ways we have outlined. The herbal formula would work to offset this imbalance—given that the destructive behavior is no longer continued—by bolstering and restoring the activity of deteriorated sectors.

As we did when we looked at vitamin C, I think we should begin by hearing the stories of some practitioners who have had success treating people with AIDS, this time by the herbal route. Here especially I will concentrate on some herbal formulas that seem to be paying off in forestalling the progress of the disease and alleviating symptoms. Once we have dwelt on these topics, we will provide another listing, this one of herbs that have shown themselves implacable foes of the immune deficiency disease.

One place where a diligent search after herbs that may benefit people with AIDS has been carried out is at the Institute for Traditional Medicine (ITM) in Portland, Oregon. For the last several years the Institute has been sponsoring studies at AIDS clinics around the country, studying the effect of Chinese herbs on AIDS.¹⁷²

Subhuti Dharmananda (ITM's founder) has developed a formula for HIV-infected patients combining strong tonic herbs and other herbs used to directly inhibit infection and inflammation. In addition to the basic formula, ITM herbalists have developed a variety of adjunct formulas tailored to an individual's unique symptoms and constitution.

Dharmananda commissioned a study with 150 PWAs who took the herbal formula for twelve weeks in San Francisco and Chicago centers. Questioned about their energy levels, 76 percent of people who had described their pre-study energy levels as "poor" or "fair" reported an increase in energy. Sixty-eight percent of the patients increased their activities. For patients suffering from diarrhea, 62.5 percent reported that this condition ended and 12.5 percent said it was improved.¹⁷³ There was a general improvement in health across the group, with only one of the 150 progressing to a more severe stage of AIDS.¹⁷⁴

Another doctor who has been trying to devise herbal formulas to deal with AIDS is Dr. Chang at Sun Yat Sen Medical Center. In one of his published studies, eleven herbs used as traditional Chinese anti-infective medications were seen to suppress HIV. "Extracts of the eleven herbs had inhibitory activity against HIV in the H9 cell line... and five of the extracts produced nearly complete inhibition of the synthesis of HIV antigens (97-100 percent inhibition)."¹⁷⁵

(See Appendix I for HIV-inhibitory herbs and an in-depth list of immune-building Chinese herbs.)

A third practitioner who has devoted his life to the study of herbal medicine is Dr. Quingcai Zhang. When I interviewed him, he made a compelling point about the rationale for using herbal treatments against AIDS in place of the orthodox antivirals. What he said had to do with the nature of the body's own response to infection. "We find that our body does not fight a viral infection by interfering with one step of the virus's life cycle." That, of course, is precisely what AZT and the protease inhibitors do. "Instead," he went on, "our body uses cell-mediated immunity, which consists of natural killer cells, phyto-toxic cells, and antibody-dependent cytotoxic cells."¹⁷⁶ In other words, when facing a virus, the body draws on a whole panoply of antibody defenses; and, equally important, these defenses do not consist of merely throwing a spanner into the virus's life process while leaving unattacked the cells the viruses have commandeered. Rather, the body's immune cells "can recognize the viral-infected cells and then destroy them."¹⁷⁷ Whereas such treatments as are now preferred by the establishment, such as AZT, simply stop the virus from carrying out a part of its life cycle, thus leaving the stymied virus and the infected cell intact, but at the same time also stopping the life cycles of all kinds of innocent cellular mechanisms in other cells, the human defense system wipes both the virus and virus-laden cells out completely. As Zhang told me, "Our body has established this mechanism over millions of years. We should follow the body's example of fighting viral infections. In this way we can do it much more naturally and not harm noninfected cells."¹⁷⁸ As he outlined, the proper herbal formulas will mirror the body's immune actions, eliminating completely the viral intruders while leaving untouched cells alone.

Many of the plant remedies used to counter AIDS, ARC, or HIV are a special category of herbs known as adaptogens. These herbs have a wide repertoire of capabilities and work to help the body create biological homeostasis. They are known to help normalize the system regardless of the pathology and are especially good at stimulating the body's own natural immunity. For example, adaptogens have been shown to increase CD4 counts, interferon production, macrophage activity, and natural killer action.¹⁷⁹ Adaptogens are often combined with each other for a more potent synergistic effect. They have long been used in Russia and the Orient with cancer patients.¹⁸⁰

Certain adaptogens that researchers find beneficial in aiding the immune system are described in more detail below. As with my considerations of vitamins, we will find that as the study of herbs is off-limits for most establishment researchers, there will be many places where no work has been done on a particular herb's possible effectivity against AIDS. However, if the herb has been shown to be useful in treating related diseases or acting to stimulate immunity, we will take that as good enough reason to include it in this list, since it may be a contributor to an anti-AIDS program.

ALOE VERA

Readers will be familiar with this herb as being an ingredient in many natural beauty preparations; indeed, its use for this purpose dates back to Cleopatra. However, it also has less cosmetic effects and has been shown in some studies to have antitumor effects. In *Natural Health, Natural Medicine*, Dr. Andrew Weil reports one study where an extract of aloe was found to promote anti-cancer activity.¹⁸¹ Fine and Brown note the leaf's value for treating radiation injuries.¹⁸² Although this tells us little about how it would affect an immune deficiency disease, it is a plant whose full medicinal properties have not yet been explored.

AMERICAN CREOSOTE BUSH

This shrub, which grows in the Mojave Desert, is, surprisingly enough, believed to be the oldest living thing on the face of the earth. The shrub grows by stem tops branching off into different segments. Although the original stem eventually dies, the younger parts, which lived for many years connected to the earlier parts, can be said to be a still living part of the first growth. And these Mojave shrubs are estimated to have come from a first growth, twelve thousand years ago!

To have lasted such a long time, such a plant must be hardy. A scientific study reported in the *Journal of Ethnopharmacology* shows that *Larrea tridentata* [American creosote bush] exhibited strong antimicrobial activity against numerous organisms, including *L. monocytogenes*, *C. perfringens*, *S. dysenteriae*, and *Y. enterocolitica*.¹⁸³ It remains to be tested against HIV, but its suppressant effects make it a plant that merits more attention.

ANGELICA

This plant has been considered to have medicinal properties since ancient times. According to one story, it received its name because an angel revealed in a dream that this plant would cure a plague that was then raging. Like the creosote bush, it has been shown to have antimicrobial features. An investigation by Inamori found that compounds isolated from its root "showed antibacterial activities against gram-positive pathogenic bacteria."¹⁸⁴ So, also like the creosote bush, this plant deserves study.

ASTRAGALUS

Astragalus membranaceous root has been used medicinally in China for centuries. They put it into many formulas because it was felt that rather than heightening one element of immunity, it is an all-around worker that stimulates all aspects of the immune system. Today scientists are learning why the Chinese

so revered this plant. Modern research shows astragalus to possess powerful immune-strengthening properties. Of particular note is its ability to foster normal immune response in cancer and AIDS patients (most work has been done with cancer), to correct T cell deficiency and to promote antiviral action.

The plant has generally been researched by fractionating it into compounds of different molecular weights. These fractions are then tested for their antiviral properties. Some of the research conducted on astragalus in this manner is cited below.

Dr. G. Mavligit performed an experiment at the University of Texas in Houston and found that one fraction of a semipurified extract of astragalus stimulates T cells in healthy animals and restores immune function in cancer patients with impaired immune function.¹⁸⁵ His findings suggest that something within astragalus—possibly a polysaccharide—may be able to completely restore immune function of cells in cancer patients. Mavligit further demonstrated astragalus fraction 3 to be a potentializer of interleukin-2 (which, as noted, is a blood cell in the immune system).¹⁸⁶

In another study, Da-Tong Chu et al. confirmed that some derivatives of astragalus were capable of fully correcting in vitro T cell function deficiency found among cancer patients.¹⁸⁷ Their data indicates that the crude extract of *Astragalus membranaceus* can completely restore a failing immune system and bring T cell function in vitro to the level of normal, healthy people. Since this data is coming from an in vitro study, quite rightly the researchers called for clinical trials of astragalus with AIDS sufferers and recipients of chemotherapy or radiation therapy.¹⁸⁸

Another compound extracted from astragalus that may benefit the immune system was examined by M. J. Humphries and colleagues and reported in *Cancer Research*. This was the alkaloid swainsonine, which was found to inhibit cancer cells from colonizing the lungs in mice.¹⁸⁹ “The authors concluded that the activity of swainsonine [in suppressing cancer cell development] is apparently due to its ability to enhance Natural Killer cell function.”¹⁹⁰

We see that astragalus has shown utility in backing the immune system when it is fighting cancer. Another example of this is to be located in an experiment noted in *Cancer*. It involved nineteen cancer patients and fifteen healthy subjects given an extract of astragalus root. Its conclusions were that “people whose immune systems were devastated by cancer experienced full restoration of immune function.”¹⁹¹

Some research also indicates that astragalus is of benefit to the liver. In a 1986 experiment conducted by J. W. Jiang and Q. S. Xiao, astragalus was shown to protect animals against the liver toxin carbon tetrachloride.¹⁹² Z. L. Zhang et al., meanwhile, found in animal studies that astragalus protects the liver against stilbenemide, a chemotherapy drug.¹⁹³

By itself, then, astragalus can help fight cancer or the dolorous effect of toxins on the liver by aiding the immune system. This doesn't mean a person's im-

munity has to be under assault for astragalus to be of benefit. Studies of the effects of astragalus on normal immune systems have also been carried out. One conducted on rats found that the herb “exhibited a marked immune potentiating activity.”¹⁹⁴ Work on humans has produced similar findings. In one study, subjects with weak immune systems (as evidenced by depressed natural killer cell activity) were examined. “Ten patients were treated with intramuscular injections of astragalus extract at a dosage of 8 grams per day for three to four months.... At the study's conclusion, NK activity was tripled in the astragalus group from 15.6 percent to 44.9 percent.”¹⁹⁵

Another approach to studying astragalus is to look at the effects of combining the whole plant with other herbs rather than to look at its isolated components. According to Donald Brown, N.D., astragalus combined with *ligustrum lucidum* produces immune-stimulating effects five times as great as using the astragalus alone.¹⁹⁶ Benjamin discovered that astragalus and *ligustrum* combined were able to inhibit the growth of transitional cell carcinoma in mice.¹⁹⁷

At the Institute for Traditional Medicine, whose work was mentioned earlier, twenty immunodeficient ARC patients were given astragalus as part of their treatment protocol along with other immune-enhancing Chinese herbs. After eight months, nearly all the symptoms of ARC cleared up and patients were able to dramatically reduce their use of antibiotics.¹⁹⁸

BASIL

Not many plants have been studied to the extent that astragalus has, though quite a few have established themselves as immune benefactors in the limited work that has been done. Basil, which you will know from the kitchen, is considered a sacred plant in India, and that is where its health-related properties have been studied. Researchers at Sardar Patel Medical College in Rajasthan, India, examined immunoregulatory effects of basil, where the herb was shown to increase antibodies in mice.¹⁹⁹

BEE PROPOLIS

Bee propolis is a substance collected by bees from trees and smaller plants and placed as an antiseptic coating on the walls of their honeycombs. A number of in vitro studies have brought out its antibacterial characteristics. One study showed the propolis acted forcefully against the tuberculosis bacillus.²⁰⁰ It also acts vigorously against *Staphylococcus aureus*; *Trichomonas vaginalis*; and herpes simplex I.²⁰¹

Another study I've seen that tested the bee's compound on humans used propolis films “applied behind the lower eyelids before bed over a period of 10-15 days [which] cut recovery time in half in patients with posttherapeutic trophic keratitis.”²⁰² Keratitis is an inflammation of the cornea.

BUPLEURUM FALCATUM

Bupleurum is a Chinese herb containing saikosaponins, which stimulate phagocytosis (the consumption of foreign cells) by macrophages in vivo.²⁰³

It has also shown itself helpful, like astragalus, in protecting the liver by increasing protein synthesis there.

BURDOCK

Burdock is a genus of coarse biennial weeds that feature bristly burrs. Scientists have isolated chemical constituents of some varieties of the plant and these have proven to be antibacterial, antifungal, tumor protective, and desmutagenic (inhibiting of cancer-causing agents).²⁰⁴

CARNIVORA (DRONAEA MUSCIPULA)

In 1923, the West German oncologist Helmut Keller discovered that the juice from the carnivora plant (better known as the Venus flytrap) was an effective, nontoxic cancer treatment. It has become something of this doctor's hobbyhorse, although this doesn't mean his findings are not crucial.

In his original study, Dr. Keller implanted human tumor tissue into the cheekfolds of Syrian hamsters and then treated the animals with intraperitoneal injections of carnivora juice. In fourteen days the tumors became necrotic, that is, the cancers were dying. Controls themselves died of the effects of the spreading localized tumor.

Dr. Morton Walker, who has studied Keller's work, saw "82 to 87 percent remission rate for most types of carcinoma when the patient's immune system has not been compromised by conventional, allopathic chemotherapy or radiation therapy."²⁰⁵

After interviewing fourteen AIDS and cancer patients in Germany who were taking carnivora infusions, Dr. Keller concluded that carnivora comes "closer to curing cancer and AIDS than anything else ever uncovered by members of the medical community." All these patients, he reported, were thriving. "Their cancers or other pathologies were either in a state of remission, regression or were gone altogether."²⁰⁶

I can't resist relating a story here of a patient who was at his last gasp and found Dr. Keller to be his final hope. I read the tale in a report by Walker in the *Townsend Letter for Doctors* (May 1992).

There came a time... in April 1991 that Collin Rasmussen acknowledged to himself that his body was steadily worsening.... The continuum being traveled, he recognized, was taking him to the point of dying sooner than he had hoped—perhaps a matter of months.... He decided to take one last stab at life by selling all his possessions in order to accumulate

enough money for a trip to Paris and consultations at the Louis Pasteur Institute....

[As Rasmussen narrated] "It was the eve of my departure.... By attending a meeting of my underground AIDS care organization I was able to say goodbye to many of my caring friends. I knew that it might be the last time ever for me to see any of them.... just as I was going out the door, one... handed me an article [about carnivora]. The article's information caused me great excitement. When I landed in Paris, instead of going to the Louis Pasteur Institute, I telephoned Dr. Helmut Keller in Germany to make arrangements to visit his chronic disease clinic.

"I arrived at the center feeling a great amount of distress and fear. By the end of the second week of IV carnivora, however, my T-helper cell count quadrupled to 272. Then I began detoxifying—breaking out in pimples and urinating more—to rid myself of the HIV blood debris. The carnivora kills the HIV and leaves behind their dead bodies floating in one's blood. At the end of my fourth week of treatment, my T-helper cells elevated to beyond 500 while the suppressor cells decreased constantly. Whatever carnivora does in the body, it seems to work fine for me."²⁰⁷

Carnivora can be acquired from the product's manufacturer, Edgar Fischer, manager; Carnivora-Forschungs-GmbH; Postfach 8; Lobensteiner Strasse 3; D-8646 Nordhalben, Germany.

Acknowledging that Rasmussen's singular success may be a fluke, until further study is done of Keller's therapies we can't say if he is really a seer, pointing the way to improved AIDS treatments, but his work does cry out for more attention and evaluation.

CASTANOSPERMINE

Castanospermine is a plant alkaloid from an Australian chestnut. Studies indicate that it inhibits HIV growth, possibly by interfering with the retrovirus's enzyme production. This, however, has not been given sufficient attention.

CATERPILLAR FUNGUS

Caterpillar fungus is a Chinese adaptogenic herb used since ancient times. Its name comes from the fact that the fungus begins to grow on the body of dead caterpillars, once leading people to think it was a form of worm. Chinese doctors have been prescribing it for bone marrow fortification, among other uses. The fortification builds immunity, since the bone marrow is an essential part of the immune system. It also inhibits bacteria and fungal infections. The Chinese use caterpillar fungus in combination with other herbs to treat malignant tumors, anemia, and, most recently, AIDS. This course has not yet been pursued or studied in the West.

CHLORELLA

Chlorella is a green algae, which, in a study by Fukada, was observed to have immune-stimulating qualities.²⁰⁸ It's another herb whose healing properties have not been of much interest to Western medicine.

CRUCIFEROUS EXTRACT

Cruciferous vegetables (cabbage, cauliflower, and broccoli, among others) contain a substance with remarkable protective properties. The active agent in these vegetables is a dithiolthione compound. When I questioned Dr. Bruce Halstead about the dithiolthione isolate, he noted that it had shown some evidence of protecting normal cells of cancer patients from the radiation used in therapy and also appeared to protect the liver.²⁰⁹ Here is another substance that should be tested to reveal if its positive qualities may be of benefit to AIDS patients.

CITRUS SEED EXTRACTS

More directly relevant to AIDS, or rather to dealing with the common fungal infections that spring up in its wake, are citrus seed extracts. These are derived from oranges, grapefruits, lemons, and limes. Immunologist and Nobel laureate Jacob Harrish first discovered their tremendous antimicrobial activity. He found citrus seed extracts to be broad-spectrum, nontoxic antibiotics that are antifungal, antibacterial, antiprotozoal, and antiviral.

According to Dr. Alan Sacks, a former medical researcher at Downstate Medical Center now in private practice, who was speaking at an AIDS symposium, citrus seed extracts eliminate over thirty types of yeast infection. Since in AIDS patients *Candida albicans* and other fungi, such as oral thrush, invade the body, causing grievous damage, there is good reason to look to citrus seed extracts as one means to handle the trouble. Sacks explained that the extracts are "probably the most powerful antifungal[s] on the market. I've seen many people with chronic *Candida albicans*, cases that were resistant to very strong medicinal antifungals, improve dramatically within a couple of weeks of using the citrus seed extract." Thus, their usefulness is clear. "My research and... feedback from many physicians in the field are very encouraging about the use of these products as an immune support to the secondary infections that are so threatening to the lives of AIDS patients."²¹⁰

COMPOUND Q (TRICHOSANTHINES KIRILOWII) AND BITTER MELON

Compound Q is the purified extract of Chinese cucumber and has been featured in Chinese medicine for centuries. At one time, it was the new "wonder drug,"

not for the establishment but in underground circles.²¹¹ Eventually, grandiose claims for its curative powers had to be scaled back. The story is told well in *Against the Odds*, a book to which we have already referred.²¹² Of note is that it was the testing of this substance, after unconscionable foot-dragging over studying the herbal extract on the part of the FDA, that gave birth to the first community-based drug testing program, run by Project Inform. A couple of deaths of PWAs in the program caused some reaction against the treatment, although published findings so far have seen some positive effects from administering the compound.

In vitro studies have signaled that use of the purified form of Q is a mixed blessing. It does "block HIV replication in infected t-cells and kill HIV-infected macrophages in cell cultures" without affecting healthy cells. "Unfortunately, there are some undesired side effects from using the purified protein," which are said to be absent when the crude herb is used.²¹³

Dr. Zhang, taking note of these in vitro studies and also aware of the history of the herb's use in Chinese tradition, employs compound Q in his anti-HIV therapy. When I discussed this with him, he gave me some of the specifics. He uses two related herbs to attack HIV infection. One is compound Q itself and the other is bitter melon, which is in the same cucumber family as Q. "Both these herbs," he told me, "have proteins that can selectively kill HIV-infected cells and not harm noninfected cells."²¹⁴ Moreover, this combination does not only eliminate virus particles, as would the good orthodox therapies, but "can help the immune system to recover."²¹⁵

He then went on to talk about the success he has had in administering this mixture to PWAs. He expounded, "I have one person who started with a hundred thousand copies of virus. After three months of taking bitter melon, that number dropped to around sixteen thousand." Moreover, what he is shooting for, and achieving to a degree, are results that last. As he put it, "In [the treatment of] conventional medicine, after half a year, the virus load would be back to the baseline or over the baseline. If people can take this [compound Q] treatment persistently, it can keep the virus load at a lower level."²¹⁶

Again, to repeat one of the threads of this discussion, one should not extrapolate grand claims about the value of a particular treatment from one doctor's anecdotes; but one can acknowledge that they indicate a promising direction for fuller study.

DASM (DEHYDROZNDROGRAPHOLIDE SUCCINIC ACID MONOESTER)

Another herbal extract, DASM, a compound found in the Chinese medicinal herb *Andrographis paniculata*, which has shown up in Chinese medicine for years, has been tested for its effect in vitro on HIV, where it inhibits the virus's

replication.²¹⁷ So far, an investigation of its effects on AIDS has not been pursued further.

ECHINACEA

You will have grasped by now that much of this compendium does not point the way to proven AIDS fighters. Later in this chapter we will turn to specific treatments that have worked, but for now I am trying to both shed light on a few substances, such as C, that have shown they have the capability to combat the immunodeficiency illness, and give notice of those substances that have relevant qualities, such as being immune system boosters, but that have not been considered or tested in relation to AIDS. These latter substances are ones that would seem to offer good promise as anti-AIDS agents, although how they would actually perform remains to be seen.

Such a substance, one that has shown an immune-enhancing character but has not been looked at for its effect on HIV, is echinacea purpurea, the purple coneflower. We know that it has immunological-stimulating properties and enhances macrophage activity, cytotoxicity, and phagocytosis. In plainer language, it boosts the action of immune system cells and aids the system by helping in the killing of infected body and blood cells. In vivo testing showed polysaccharides of the plant dramatically increase the number of leukocytes (white blood cells) in circulation, and the number of developing cells in the bone marrow and spleen. From in vitro tests, we know it helps cells resist infections from *Listeria monocytogenes* and *Candida albicans*.²¹⁸ Many other in vitro and animal studies of the herb have gone on to indicate that the plant increases nonspecific immunity.²¹⁹

ECLIPTA ALBA

In *For Women Only*, I mention that eclipta alba grows wild in the Southwest of the United States. Herbologist Letha Hadady calls it a strengthener, which will “build up the blood” (i.e., increase the production of the white blood cell component of immunity) without causing inflammation.²²⁰

Whereas Hadady comes to the herb via Chinese medicine, it is also well known in ancient Indian medicine. More recently, Indian doctors have tried to assess whether its value can also be proven in the laboratory. T. Chandra et al. studied its effects on liver injury from carbon tetrachloride. They found that liver weight decreased (increased liver weight results from fatty cirrhosis due to injury) and levels of enzymes caused by liver injury were reduced to near normal levels.²²¹

FEVERFEW

Also in *For Women Only*, I speak of the work of Dr. Mary Gordon, who has spent some energy working on the alleviation of migraines. She has found that

feverfew is a useful antidote to these headaches because of its sedative qualities.²²² Scientific studies tell us that it is also an antiviral, having displayed vigor in killing candida in vitro.²²³

GARLIC

As with vitamin C, garlic's reputation as an antiviral precedes it. Perhaps because it has already been tried and found valuable in a number of scientific studies, it has also been given limited experimental exposure in AIDS treatment.

Garlic has been proven effective against opportunistic microbes, like Herpes virus hominus type I, cryptococcal mycobacterial, and candida organisms.²²⁴ A study by Guo et al. also brought up garlic's ability to suppress human cytomegalovirus in vitro.²²⁵ In fact, garlic is so effective against bacteria that it has been found to work when antibiotics don't. Experiments by Singh and Shukla found garlic outshining penicillin, ampicillin, doxycycline, streptomycin and cephalexin in its ability to fight against eight out of nine strains of antibiotic-resistant Staphylococcus, Escherichia, Proteus, and Pseudomonas.²²⁶

Another way garlic resembles vitamin C is that it is a free radical scavenger, which helps to eliminate highly reactive oxidation products implicated in aging, arthritis, and cancer.²²⁷ Moreover, when used against cancer, the herb has given evidence of being toxic to some tumor cells, able to prevent implantation of others, inhibit tumor enzymes, and alter tumor cell antigens.²²⁸

Because garlic possesses these laudable attributes, some doctors have chosen to test it against AIDS and use it in personalized AIDS treatments.

Dr. Zhang, whose encomiums of herbal medicine we read earlier, recommends garlic to PWAs because it can be used to treat many opportunistic infections, even those with no conventional treatment. “Garlic is very easy to absorb through the gastrointestinal system and it can even be used as an inhalant to treat respiratory infections. It has a low toxicity, can be used to treat a wide spectrum of infections, and is relatively cheap,” he told me.²²⁹

The rationality of his recommendation is backed up by a study published in the German medical journal *Deutsche Zeitschrift* in 1989 by T. H. Abdullah and others. It reports on the results of seven AIDS patients taking five grams of garlic daily. Six of the seven patients had normal natural killer cell activity (NK cells are inevitably reduced by the illness) after six weeks and that all had normal NK cell activity after twelve weeks. They also reported a lessening of diarrhea in one patient with Cryptosporidia, and fewer outbreaks of herpes, thrush, candidiasis, and sinus infections, among other positive findings.²³⁰

A study by Abdullah, which was publicized at the 1989 AIDS conference, showed comparable results. Here seven out of ten HIV positive patients received five grams, then ten grams a day of aged garlic extract over three months. They “experienced significant improvements in immune parameters and opportunistic infections.”²³¹

It's a shame more studies of this type are not being done.

GINKGO BILOBA

In *Get Healthy Now*, I point out that ginkgo, long regarded as a memory tonic, also has been seen to increase circulation, and so has been useful in dealing with impotence in men and other problems that have to do with blood flow. Studies in other areas reveal that it is capable of coping well with some infections, such as that of *P. carinii*.²³² This is one herb whose healing qualities have not yet been tapped.

GINSENG

Another standby of herbal medicine is ginseng. Although to date I know of only one study that has challenged the herb to display its abilities in fighting AIDS, that is, by conducting experiments with it, it has repeatedly shown itself a strong booster and husbander of immune function.

Siberian ginseng is said to increase overall vitality, thus helping the body to ward off autoimmunity disorders, fatigue, stress, and degenerative disease. It also helps to normalize arterial pressure, decrease cholesterol, and improve elasticity of the arterial walls.

If you have time and would like to really plumb the depths of research into ginseng's health-giving qualities, you might consult Norman Farnsworth's *Economic and Medicinal Plant Research*. In the book, the American researcher collected and translated many original studies performed in the Soviet Union in the sixties and seventies. These studies found evidence that use of ginseng offers protection against environmental pollution and radiation, and helps normalize body temperature and regulate blood sugar levels. Other experiments saw the herb offering liver protection and enhancement of its ability to eliminate drugs from the body, as well as charting improved adrenal function and increased cellular ability to dispose of lactic acid and other byproducts of metabolism.²³³

Of more direct relevance to our topic are recent studies that indicate ginseng abets immune functioning. For instance, a double-blind, placebo-controlled investigation by F. Scaglione et al. on the effects of Panax ginseng extracts on cell-mediated immune functions in healthy volunteers came to the conclusion that consumption of one capsule every twelve hours for eight weeks led to significant enhancements in chemotaxis, phagocytosis index, phagocytosis fraction, and intracellular killing.²³⁴ Another study showed that ginseng extract might have potentiating effects on T cell immunity when combined with hydrocortisone.²³⁵

Experiments in which mice were given the herb indicate that it has beneficial effects on natural killer cell activity and other components of the immune system.²³⁶

The one direct testing of the plant's effect on AIDS that I have seen was presented at the 1994 International Conference on AIDS. Results showed that Korean red ginseng exhibited positive effects on immune markers in subjects infected with HIV.²³⁷

GOLDENSEAL

Goldenseal is another much-extolled herb, dubbed by Jethro Kloss as "one of the most wonderful remedies in the entire herb kingdom." Its remarkable healing qualities cause proponents to liken it to a cure-all.²³⁸ In fact, in *Get Healthy Now*, I warn against believing any overly extravagant claims about it, using these words, "The root is quite powerful, and should be used sparingly and for limited periods of time; the consumer should also be wary as goldenseal is expensive and may be sold in adulterated preparations."²³⁹

That said, we can acknowledge that the herb seems to have restorative effects on the immune system and is capable of performing broad-spectrum antimicrobial, antiprotozoal, antifungal actions. According to Joseph E. Pizzorno Jr., N.D., it is effective against a variety of organisms, including *E. coli*, Shigella, Salmonella, Klebsiella, Giardia, Candida and *Cryptococcus neoformans*.²⁴⁰ Further, work reported in the *Anti Microbial Agents and Chemotherapy* journal indicated that berberine sulfate (one of goldenseal's active factors) blocked the replication of the streptococci virus.²⁴¹

Along with berberine sulfate, the plant has two other especially valuable components, all of them derived from alkaloids in the roots and rhizomes of the plant. These are hydrastine—a colorless alkaloid with astringent properties—and canadine. Hydrastine inhibits certain microbes, while canadine has been shown in vitro to destroy human carcinoma cells. Berberine, whose antimicrobial abilities we just related, is a mild immune system stimulator.

As an attested antiviral, goldenseal is another herb that should be studied for its ability to curtail HIV.

LICORICE ROOT

A little more thought has been given to the role licorice root might play against HIV, probably because it has known antiviral capacities as well as having a history of being used extensively in both Oriental and Occidental herbal medicine to enhance the immune system.

According to Pizzorno's book on herbal medicine, licorice root "helps the immune system by increasing macrophage activity and the endogenous production of interferon-gamma." He continues, "It has also been found to inhibit Herpes viruses and to stop the growth and cytopathology of several unrelated DNA and RNA viruses while not damaging the organism."²⁴² An article in *Nature* gave greater meaning to these findings by isolating the active component

in the root, which is said to be glycyrrhizic acid. It goes on to collaborate Pizzorno's opinion about the herb's antiviral capacity.²⁴³

Influenced by the root's known virus-suppressing skills, scientists did an in vitro study that showed the herb kept "HIV virus from replicating. No toxicity to normal cells are noted."²⁴⁴

Here is another area in which promising beginnings need to be followed further.

LIGUSTRUM LUCIDUM

I would also recommend that some attention be paid to the Chinese herb *ligustrum lucidum*, which has been used traditionally to increase immune system function and vitality. Clinically, it is used to treat leukopenia (low white blood cell level) caused by chemotherapy or radiotherapy. Preparations containing *ligustrum lucidum* are used to treat such conditions as hepatitis, early cataracts and Parkinson's disease.

Perhaps it might have the same blood-stimulating effects on those taking AZT or other antivirals as it has on those affected by chemotherapy.

MAITAKE MUSHROOMS

Mushrooms have long been enrolled in the pharmacology of the Japanese, and recently some work has been done on the anti-HIV qualities of maitake mushrooms. This variety has already been tested on cancer in animal studies. For evidence of this, we can refer to an inquiry by Aduchi et al., which showed that cancerous tumor growth was suppressed 40-50 percent in mice fed this food.²⁴⁵ Another study attributed maitake's antitumor effects to two factors. "It was found to directly activate various effector cells that attack foreign cells (macrophages, natural killer cells, ... T cells, etc.), and to potentiate the activities of various mediators, including lymphokines and interleukin-1."²⁴⁶

In a review article, Dr. Hiroaki Nanba states, "Although present analysis of its effectiveness is still at the animal experimental level, there are already many cases of people with cancer whose lives have been prolonged by taking the powder." He then extended its potential effectiveness to AIDS, noting, "Just recently, anti-HIV effect has also been recognized in in-vitro tests, both in the U.S. and Japan."²⁴⁷

Hopefully more details will be forthcoming about this mushroom's capacity to hinder HIV expression.

MAYAPPLE (PODOPHYLLOTOXIN)

The next few herbs I would like to briefly characterize are known for their toxic effects on various viruses. They all lack the recognition they deserve from the

medical community as possible supplements that might combat the retrovirus while leaving healthy cells unaffected.

Podophyllotoxin is a compound derived from a species of mayapple. In vitro tests by Dr. Zhang et al. at the University of South Florida on cultures infected with leukemia have shown that this compound suppresses human lymphocyte proliferation and stimulates the production of interleukins as well as increasing macrophage activity. "This cytotoxic (cell-killing) formula is more toxic to leukemia cells than to normal ones."²⁴⁸

MISTLETOE

Of two notable studies of mistletoe, the plant hung up at Christmas, one indicated that iscador, an extract from European mistletoe, when combined with lactobacillus, doubles the ability of natural killer cells to destroy malignant cells; while a second examination, reported at a 1992 AIDS conference, indicated one extract from the herb "had anti-HIV, immunomodulating and anti-cancer activities in 12 symptomatic HIV disease patients followed for 6 years."²⁴⁹

OSHA ROOT AND LEPTOTANIA

Observations by Pizzorno indicate that osha root and leptotania, which are indigenous to the American West and important healing plants in Native American medicine, should be studied as elements of a protocol for viral diseases, such as AIDS. So far, scarce attention has been given to these plants.²⁵⁰

PEPPERMINT

This well-known plant has been looked at in a few scientific studies, one indicating that it kills the herpes simplex virus, among many other microorganisms; another showed it "to be effective in reducing abdominal symptoms associated with irritable bowel syndrome."²⁵¹

REISHI MUSHROOMS

Where maitake mushrooms have been revered in Japan for their healing qualities, reishi mushrooms have been valued in China since ancient times. Herbalists say the vegetable helps with blood sugar regulation and blood oxygenation, while protecting the body from free radicals and radiation.²⁵²

RHUBARB

The tasty vegetable rhubarb is another common plant that has been established as containing factors that inhibit viral activity. In a study of 178 Chinese herbs

for their antibacterial activity against *Bacteroides fragilis*, a major microorganism in the intestinal flora of humans, “results showed that rhubarb root was the only one... to have significant activity” in reducing the bacteria’s activity.²⁵³ It has also been suggested in other experiments that “rhubarb may enhance immune response” due to its action on spleen cells.²⁵⁴

ROYAL BEE JELLY

Earlier we saw the beneficial properties of the bees’ propolis. These valuable insects also provide us with royal bee jelly, which contains a full spectrum of vitamins and minerals. It is the only naturally occurring source of pure acetylcholine, a substance vital to the transmission of nerve impulses in the body and brain. According to work by Wang and Watson, royal jelly has strong immune-enhancing properties and also helps kidney, liver, and pancreatic function. It has been of some help to those suffering from asthma, liver disease, and digestive problems.²⁵⁵

SCHIZANDRA

This tonic herb plays a vital role in traditional Chinese medicine. The small red fruit of the plant helps to balance body systems. When combined with Siberian ginseng, schizandra helps to detoxify the liver.²⁵⁶

SPV-30

Let’s move on to some herbals that have been taken seriously as possible candidates in the battle against AIDS. The first is SPV-30, which is a boxwood evergreen extract that is in clinical trials in France. A less formal study of the extract was begun in the United States in 1995. A phase I trial, completed in France in 1992, had inarguably positive results. As the trial was described by David Stokes, who has been taking the extract, “After 30 weeks, a group of 22 HIV positive individuals had an average increase of approximately 100 CD4/mm³... while the placebo group had an average drop of approximately 50 CD4/mm³ during the same period.” Stokes says that the same or better results were seen in the informal U.S. trial. “Most participants... report increases in CD4s after two months, and even greater increases in CD8s.”²⁵⁷

ST. JOHN’S WORT

Another herb that can be put in the category of having already been studied, with good preliminary results for its effect on HIV, is St. John’s Wort.

Studies performed at New York University’s Medical Center by Dr. D. Meruelo have looked into the herb’s ability to inhibit HIV both in vitro and in

vivo. Meruelo has found that St. John’s Wort contains two potent antiviral chemicals: hypericin and pseudohypericin.²⁵⁸

Both substances have been found effective in preventing the spread of retroviruses, such as that causing leukemia, in vitro and in vivo. Of particular note, Meruelo found that pseudohypericin can reduce the spread of HIV. Moreover, it is a substance that can pass the blood-brain barrier, which prevents most medicines from entering the brain and attacking any virus that may be lurking there. He sums up his overall findings:

Hypericin and pseudohypericin display an extremely effective antiviral activity when administered to mice after retroviral infection. Their marked activity can completely prevent the rapid splenomegaly induced by aggressive viruses....

Availability of the St. John’s Wort plant throughout the world and the relatively convenient and inexpensive procedure for extraction and purification of hypericin and pseudohypericin further enhance the potential of these compounds.²⁵⁹

TANNINS

Less well known than St. John’s Wort, the tannins have been noted in several studies to effectively inhibit virus-cell interactions. These vegetable compounds are a group of glycosides, such as the one that gives the reddish quality to oak bark. Ghee T. Tan et al. studied their effects on HIV and concluded that tannins are “potent reverse transcriptase inhibitors.”²⁶⁰ In another experiment R. E. Kilkuskie et al. described tannins as “a new class of compound that could inhibit HIV reverse transcriptase and HIV replication in vitro.”²⁶¹

TURMERIC

Turmeric is the bright yellow spice that gives the coloration to curry powder. As I note about this herb in *Get Healthy Now*, “turmeric has been getting a lot of attention lately from evidence of its ability to stabilize mast cells, which line our trachea and intestinal tract, and serve as a first line of defense for the immune system.”²⁶² These cells are tightly bound together to prevent the intrusion of unwanted materials. Turmeric helps to strengthen these cells. Beyond helping the immune system in this way, the spice has been revealed (in an experiment conducted by a team led by Mazumder) to inhibit HIV replication.²⁶³ Similar findings were arrived at by Sui.²⁶⁴

VIOLET

Lastly, in another comparative experiment, such as the one noted above under the rhubarb heading, R. Shihman et al. experimented with twenty-seven extracts of Chinese herbs and found eleven effective against HIV.²⁶⁵

The top contender here was violet, breaking up “HIV growth in repeated experiments.

PHYTOCHEMICALS

You may have noticed that in my discussion of herbs, I often refer to research that aimed at isolating active factors in the nutrient, since researchers often found that these chemical components are the force behind immune-stimulating or antiviral qualities of the herb. When we examined St. John's Wort, for instance, two anti-viral chemicals were named as probably accounting for the substance's good qualities. Again, when we focused on goldenseal, we pinpointed three chemicals found in the root and rhizomes of the plant, which were said to be responsible for the herb's antimicrobial action.

This brings up what must be called one of the most exciting, emerging health fields in the world today: that of phytochemicals. These are substances found in edible plants that exhibit potential benefits in the prevention and treatment of disease. It is only now that we have the technical skills of modern chemistry that we can isolate these particular substances; and it is only with the rise of alternative medicine that we have the mind-set that is willing to look into nature's cornucopia in hopes of finding ready-made health-enhancing substances.

Identifying plant chemicals and discovering what (if any) health benefits a particular substance may have is a challenging yet rewarding task for contemporary medicine. The *Journal of the American Dietetic Association*, for one, states that research into these phytochemicals should be put on the front burner. The journal editorialized,

It is the position of the American Dietetic Association (ADA) that specific substances in foods (e.g. phytochemicals as naturally occurring components and functional food components) may have a beneficial role in health as part of a varied diet. The Association supports research regarding the health benefits and risks of these substances.²⁶⁶

“Functional foods” is a designation the association gives to any food or food ingredient providing health benefits beyond the traditional nutrients it contains.

So far there has not been a great deal of research into these phytochemicals. Of course, the great number of them would make it impossible to fully examine their range without years of study. However, on pages 000-000 I will provide a list compiled by the Department of Agriculture indicating which phytochemicals seem to be helpful in various health areas impacted by AIDS. Don't forget that since many of these chemicals are found in commonly eaten foods, they do not have the same danger of possible side effects that are often an unwanted adjunct to man-made medicines and even to some vitamins or nutrients.

Before providing the list, though, let me say a little more as to what has been found out so far about phytochemicals and functional food components.

In the same issue of the ADA journal from which we just quoted, the areas in which the use of phytochemicals have so far proved valuable are laid out. “Phytochemicals,” it is said, “have been associated with the prevention and/or treatment of at least four of the leading causes of death in the country—cancer, diabetes, cardiovascular disease, and hypertension.”²⁶⁷

One researcher who has seen the positive effects of phytochemicals on the first-named of those diseases is Dr. Potter, professor of epidemiology and director of the University of Minnesota Cancer Prevention Research unit. He has been studying the relationship between diet and cancer for more than fifteen years. He has found that people whose diets are heavy in fruits and vegetables have lower rates of most cancers. Most scientists would acknowledge that. However, Potter believes one reason for this correlation is that some of the phytochemicals in the fruits and vegetables are actively protecting the body from cancerous eruptions. Limonene in citrus fruits, for example, is known to increase the production of enzymes that help the body dispose of potentially carcinogenic substances.

Working along the same lines, Michael Gould, professor of human oncology at the University of Wisconsin Medical School, has found that d-limonene, the major component of orange peel oil, protects rats against breast cancer.

Important to note here also is that clinical trials indicate the beneficial effects associated with high fruit and vegetable diets cannot be duplicated by nutritional supplementation alone. In other words, there are benefits to be had in eating healthy foods beyond what would be obtained from the common nutrients associated with them, such as vitamins C, E, A, and beta-carotene.

The following is a list of foods and herbs whose phytochemicals are felt to be either palliatives for the noted conditions or boosters of different parts of the internal architecture. Although determinations are still being made in this field about the exact properties of each foodstuff, an emphasis on eating foods that have shown promise in connection to health improvement is obviously to be recommended. So, for instance, if one has been afflicted with diarrhea, the eating of pomegranates and sunflower seeds would be a sound practice to adopt.

The material on phytochemicals that follows has been obtained from the extensive electronic database assembled by Stephen M. Beckstrom and James A. Duke at the National Germplasm Resources Laboratory, Agriculture Research Service, U. S. Department of Agriculture. This database is accessible on the World Wide Web at: <http://www.ars-grin.gov/duke/>.

ANTIBACTERIAL: Chinese goldthread; generic goldthread; mango; huang-lia; goldenseal; witch hazel; emblic; pomegranate; aleppo oak; barberry; huang Po; prickly poppy; strawberry; rhubarb; soybean.

ANTIDIARRHEIC: red mangrove; rowan berry; arbutus; pomegranate; marsh-mallow; canaigre; babul; gum ghatti; poison hemlock; sunflower; guava; coconut;

nance; emblic; pomegranate; fenugreek; winter's bark; smooth sumac; simaruba bark; chinaberry.

ANTIFATIGUE: lettuce; asparagus; endive; black gram; cowpea; lambsquarter; radish; chayote; Chinese cabbage; purslane; oat; garland chrysanthemum; dill; dandelion; pigweed; cucumber; kudzu; spinach; borage.

ANTIGLAUCOMIC: camu-camu; pansy; Japanese pagoda tree; pumpkin; acerola; Chinese foxglove; buckwheat; sang-pai-pi; celery; peegee; bitter melon; American elder; pokeweed; parsley; common smartweed; warburghia.

ANTI HIV: rowan berry; licorice; poison hemlock; sunflower; coconut; fenugreek; winter's bark; rice; white willow; corn; giant reed; black Locust; crab's eye; cork oak; evening-primrose; oats; hull husk; lantana; red mangrove; coffee; mango.

ANTIVIRAL: khasi pine; lemon; chilgoza pine; celery; red mangrove; Camu-camu; rowan berry; arbutus; pomegranate; emblic; canaigre; babul; gum ghatti; poison hemlock; guava; sunflower; chir pine; celery; coconut.

BACTERICIDE: lemon; chir pine; khasi pine; celery; chilgoza pine; grape; red Mangrove; Mangosteen; Camu-camu; Copaiba; Hindi Chaulmoogra; Rowan Berry; Arbutus; Pomengranate; Marshmallow; Canaigre; Babul.

CANDIDICIDE: clove; grape; cowberry; coconut; allspice; garlic; cucumber; bayrum tree; carrot; cherimoya; common thyme; basil; carrot; clove; cantaloupe; allspice; pignut hickory; purslane; spinach; oats.

FUNGICIDE: parsnip; grape; lemon; clove; coconut; potato; grape; cardamom; oats; coffee; rice; common thyme; celery; java-olive; bayrum tree; winter savory; celery; turmeric; allspice.

HEPATOPROTECTIVE: cantaloupe; English walnut; red mangrove; avocado; cucumber; safflower; arbutus; Brazil nut; apricot; sunflower; great scarlet poppy; butternut; canaigre; babul; opium poppy; calabash gourd; pomegranate; gum ghatti; guava; sesame.

IMMUNOSTIMULANT: chicory; gobo; elecampane; dandelion; licorice; cone-flower; costus; leopard's-bane; crab's eye; coffee; mugwort; Chinese goldthread; generic goldthread; java-olive; huang-lia; goldenseal; beet; malangra; lambsquarter.

VIRICIDE: lemon; celery; red mangrove; camu-camu; rowan berry; arbutus; pomegranate; emblic; canaigre; babul; gum ghatti; poison hemlock; sunflower; guava; coconut; nance; fenugreek; winter's bark; grape.

Other Natural Remedies

Studies performed on the healing properties of natural substances falling outside of the adaptogen category have also elicited some very exciting findings. Here we have categorized remedies according to proven benefit.

AL-721 (EGG LECITHIN EXTRACT)

AL-721 is a formula made from two active phospholipids found in egg yolk, phosphytile choline and phosphytile diethylamine. It is used as an adjunctive therapy for the containment of AIDS and other viral diseases.

The substance was first developed at the Weissman Institute of Science in Israel by a team led by Meier Shinitzky. Researchers found this formula effective in treating memory loss and impaired immune function, and in easing withdrawal effects from alcohol and drug addiction. The formula was found to rehabilitate physiological functioning in drug addicts, especially in those with HIV-positive blood.

AL-721 was also found to prevent human T cells from becoming infected by HIV. It is thought to work by removing cholesterol from the envelope surrounding the virus and interfering with important receptor configurations, thereby rendering the virus ineffective.

There was great excitement at the time AL-721 was first discovered. In fact, Robert Gallo reported in the *New England Journal of Medicine* in November 1985 that egg lipids inhibited cell invasion by the AIDS virus in laboratory experiments. Within months hundreds of patients with AIDS and ARC were using egg lipids. But shortly thereafter egg lipids became unavailable, and AZT became the drug approved by the FDA.

An examination of why the searchlight of establishment medical interest suddenly shifted away from this compound would make for interesting study, although where the real energy needs to be put in relation to this substance is into further evaluations of its anti-HIV power.

DNCB

A number of other natural substances have proven startlingly good at eliminating HIV in vitro. Before alerting you to them, let me mention one chemical that is being tried as a stimulator of immunity. Anyone familiar with the rationale for acupuncture will know that the purpose of inserting the thin needles is to stimulate blood flow in the targeted area. This blood flow, it is posited, will increase immune and other activity in this locale.

DNCB (dinitrochlorobenzene) has a similar mode of action. According to an article by James, DNCB is swabbed on the skin with a cotton ball. It is believed that the substance penetrates the skin and elicits an immune

response, which then cascades into a full-scale rejuvenation of the immune system. More specifically, the chemical, after getting in the body, migrates to the lymph nodes. Once inside, “the DNCB antigen is presented to the CD4 T-helper cells which then initiate a cell-mediated immune response. The CD4 cells then proliferate and start to circulate, activating other immune cells.”²⁶⁸ The aroused system would presumably also eliminate HIV.

DIOXYCHLOR

To get to a number of natural remedies that have triumphed over HIV and other viruses in vitro, and thus whose study should be moved along into animal trials—or if they have already shown themselves to be active antivirals in animals, as has GE-3-S, they should be moved into small-scale human trials—we can begin with dioxychlor. It is an antiviral, antibacterial, antifungal, and antiparasitic agent that has been shown in vitro to harm HIV, CMV, herpes I and II, polio, Epstein-Barr, and many other viruses. It attaches to any free-floating pathogenic virus in a serum as the virus moves from one point to another through the bloodstream. Dioxychlor kills bacteria by supplying those that thrive in an atmosphere of little or no oxygen with an abundance of it. It has proven so antagonistic to the growth of bacteria, in fact, that if twenty drops of dioxychlor are added to a quart of milk, it is said the milk will be preserved for three to four weeks.

DYSIDIA AND SEAWEEDS

Dysidia, an ocean sponge, produces a compound that attacks the HIV virus. Ocean seaweeds also contain potent yet nontoxic antiviral agents. In one red seaweed the dilution factor at which it is no longer virotoxic has not yet been found. In other words, even at very low dilutions, it still attacks viruses. Obviously, this is an area ripe for further investigation.

GE-3-S

Hirabayashi et al. report that the lichen compound GE-3-S prevents HIV particles from attaching to the surface of T4 cells in mice.²⁶⁹ The compound is derived from the lichen *umbilicaria esculenta*. In the experiment under discussion, when cells were examined by immunofluorescence for the presence of viral antigens, those given higher concentrations of the lichen compound showed virtually no expression of the viral antigen. Anti-HIV activity was also demonstrated by the inhibition of visible damage to infected cells in vitro. GE-3-S showed no acute toxicity to the mice, even at very high doses. Obviously, further study of this substance is demanded.

GLANDULAR POLYPEPTIDE EXTRACTS

Highly purified polypeptide extracts from animal thymus and spleen also have shown anti-HIV properties in experiments. Dr. Donald J. Brown from Seattle pointed out to me that the extracts being used in these trials are not the type of glandulars one might purchase in health food stores. “These are very specific, highly purified, polypeptide extracts that are extracted from thymus and spleen.” For proof of the value of these extracts, he noted an investigation in which thymus gland extract was given to 130 subjects, twenty-three of whom were HIV-positive: “What was most interesting was that there was a rise in the CD4 count, and a drop in the CD8 count in HIV-infected individuals who were taking this. In addition, there was a correction of a number of other abnormalities, including weight loss and diarrhea, and an overall sense of well being.”²⁷⁰

Oral splenic polypeptide has been combined with Siberian ginseng to create PCM-4, a formula that was developed by Dr. Nikolaus Weger in Germany. The formula was given to HIV-positive individuals; and, according to a report in *Nutrition Review*, “Within 4 to 8 weeks, subjects had a 95 percent increase in CD4 counts, a cessation of diarrhea, weight gain, and increased energy.”²⁷¹ This treatment is approved for use with HIV positives in Tanzania and Uganda.

Let me pause a moment to answer a question that may have been at the back of your mind as you have been thumbing through this list. The reader might put it like this: “Why do so many natural compounds prove effective for human use against viruses?” Although I have no definitive answer, I do ask you to remember one thing. Viruses are ubiquitous in the animal and plant world. Some of them have evolved into peaceful coexistence with their host, so they thrive in a modest way without damaging the overall well-being of the animal or plant on which they are parasiting. Be that as it may, there are also harmful viruses, and because they are so widespread, protection against them, which either eliminates or thins out the intruders in the organism, is also widespread. I believe this is an important factor explaining why we often find helpful antiviral attributes in plant or animal extracts, because all plants and animals have safeguards against the imposition of these parasites. Thus, I might add, there is a certain rough and ready truth in the belief of the Puritans. They held that in the Garden of Eden, humans had a complete knowledge of medicine along with marvelous recuperative powers. Once expelled for eating the forbidden apple, they lost these skills. However, the Puritans held, “The lower animals were left with an intuitive ability to cure their own ailments, as a constant reminder to man of the powers sacrificed at his transgression.”²⁷²

Moreover, getting back to our main strand, it stands to reason that substances derived from animal or vegetable protective systems will not have the toxicity to healthy cells that man-made concoctions like AZT might have, because they have been developed within living bodies in the first place and have been tailored to their ongoing optimum functioning.

HYPERTHERMIA

Let's interrupt our honor roll of substances that have proven potent against HIV to note another type of treatment, hyperthermia, or the administration of an artificial "fever" to a patient to literally burn the virus out of the blood. This may seem like other "heroic cures" we mentioned earlier. Recall that "heroic cures" refer to nineteenth-century treatments, like bleeding, which seemed to put the sick person under so much new stress it was as likely to kill as cure. We cited AZT as the modern-day equivalent. In fact, inducing a high fever in a patient was used in the old days against syphilis.

Though this therapy may seem to readers a relic of the past, recent success with its uses has made even the stodgy FDA sit up and take notice. The federal agency has now allowed testing of the practice after pressure from Senator Lautenberg of New Jersey. One of the reasons for the agency's willingness is the success story of Chuck DeMarco. He was in an advanced state of AIDS, with Kaposi's sarcoma, a persistent cough, weight loss, and (according to his doctor) less than a year to live. I talked to him three years later! He was now in good health and told me about his hyperthermia treatment in Italy.

I went through the procedure where the blood was removed from my body in dialysis fashion, heated up to about 116 degrees and put back in hot so that a fever could be raised in me above 108 degrees, which is the temperature that viruses begin to die off at.

The very next day, the cough that I had was totally gone. And to this day, 32 months later, it is still gone. The KS lesions I had disappeared. The thrush in my mouth was gone within about 48 hours. Incredible amounts of energy. Energy to the point where instead of sleeping 18 to 20 hours a day, I was sleeping now two to three hours a day.

My CD-4 count, the t-cell count rose. Twenty-one days after the procedure, when I was back here in the U.S., it had gone here from 220 to almost 890 and has remained that way ever since.²⁷³

Again, as I've said repeatedly, since each case of AIDS is unique, a single case of dramatic improvement like this does not mean a cure is in sight; but what it does mean (something that even the FDA acknowledges) is that researchers should declare full speed ahead on studying how effective hyperthermia would be given to PWAs in various stages of the disease.

LIGNOSULFONATE (LS)

To return to my discussion of supplements that have been shown to be effective against HIV and so demand further study, let me briefly mention lignosulfonate (LS), a water-solubilized lignin obtained from the waste liquor in pulping wood, that is, the wood crushing in the process of making paper and other such products. One study shows LS to have antiviral activity against HIV in vitro. An

article by Harumi Suzuki et al. reported that "LS completely inhibits the HIV-induced cytopathic effect, the HIV-specific antigen expression, and syncytia formation to the concentrations of >50 ug/ml." The authors further underline, "LS inhibits the reverse transcriptase activity in a cell-free system."²⁷⁴ To put that in slightly simpler language, LS stops HIV from killing cells (cytopathy) or making them clump together (syncytia), which is eminently harmful. It also stops the retrovirus from replicating (inhibiting RT) and from locking onto healthy cells (antigen expression). Obviously, this is a formidable foe to HIV at least in cell cultures.

PENTAMIDINE

The story of pentamidine, well told by Arno and Feiden, is another one of the lackluster, bungling performances of the pharmaceutical industry and government regulators when it comes to AIDS drugs. As cases of AIDS began to be seen, it was quickly evident that a rare form of pneumonia, PCP, was one of the opportunistic infections that commonly accompanied it. Twenty years of research had already shown that pentamidine was effective against it, but no company was producing it in 1983 and the world's only stockpiled supply was discovered to be water-damaged and unusable! Moreover, ignoring the requests of the CDC, no U.S. firm was interested in making it; companies said that with the AIDS crisis at that time so small, they couldn't make a big enough profit on selling the commodity. Eventually, the government paid a reluctant company, Lymphomed, to make it. This company's owner would eventually become a millionaire many times over due to the money he made from pentamidine.²⁷⁵

The problem with injected pentamidine was that most of it went to the liver and other internal organs, not the lungs, where it was needed. Animal studies showed that putting the drug into a spray was a feasible way to attack pneumonia most successfully. However, the red tape was piled so high that, even though companies, seeing Lymphomed's skyrocketing profits, were now eager to make the drug, it took the FDA two years just to approve the plans for drug trials—two years, that is, before the studies could even begin!

As expected, it was shown that inhaled pentamidine can reduce the rate of relapse by 50 percent in patients with (PCP).²⁷⁶ If and when PCP returns, it is mild and much less fatal. This drug is available by prescription only.

RICIN

Another plant derivative that has anti-HIV qualities is the chemical ricin, a constituent of castor oil. Its effectiveness in extirpating leukemia in laboratory animals made it seem a substance that would have an impact on HIV. Later, its ability to kill cells infected with HIV was demonstrated.²⁷⁷ Scientists have called it "a sort of biological missile" as it seeks out virus-infected cells and kills

them. It works by destroying the ability to manufacture proteins, which are the basic building blocks of cells,” presumably shutting down the cells’ operations, so its parasites (like HIV) are put out of action.²⁷⁸

ROVITAL-V (R-1103) AND CARCIVIREN-V (C-1983)

R-1103 and C-1983 are composed of a group of plant extracts that appear to possess a broad spectrum of antiviral effects and are completely nontoxic. Dr. J. Roka investigated the inhibition of viral replication for several DNA and RNA viruses with different cell cultures, and found a significant degree of inhibition produced by the R-1103 and C-1983 formulas in cell cultures.²⁷⁹ Most relevant to our purposes, these substances slow down or even stop the progression of HIV from Stages I, II, III, and IV.

SHARK CARTILAGE

In an interview, Dr. Morton Walker suggested that shark cartilage may have a role to play in the treatment of AIDS, particularly Kaposi’s sarcoma (KS). When I asked him why this substance would be of such value in hindering KS, he told me it was because the cartilage contains a great amount of angiogenesis-inhibiting factor. What is angiogenesis inhibiting factor and how could it interfere with KS? Angiogenesis, he first explained, is the formation of new blood vessels; certain cancer cells are known to secrete cytokinins that will form a local capillary network to bring blood to a developing tumor. For KS, this will be located on the surface, since KS is a vascular cancer. He continued, “Angiogenesis inhibiting factor causes Kaposi’s sarcoma to stop spreading over the surface of the body because it prevents the capillary network of blood supply from entering into the tumor sites.... The tumor stops growing and stops spreading.”²⁸⁰

KS is a frequent accompaniment of AIDS. Shark cartilage may provide a necessary tool in helping the body cope with this threat.

Lifestyle Changes

At the heart of the new medical paradigm—a description of its properties has appeared as a submotif of this book—is the idea that one’s state of health or illness is the product of multiple, interconnected factors, both in the person’s surrounding environment and internally. Moreover, to identify the cause of a viral disease, for example, one has to sort through not only what “bug” has followed what route of transmission to get into the body, but, equally importantly, learn what state of susceptibility has made the person ready to receive the bug with open arms, as it were. This is to say, a disease does not get the opportunity to infiltrate and begin lording itself over a human body unless that body already has a defense system that is functioning suboptimally.

This is not to say a person should be blamed for his or her disease (in that the patient allowed his or her immune system to deteriorate). Rather, I am saying a person is quite often “partially” to blame in that he or she has adopted an unhealthy lifestyle, taking drugs, for example, which has ended up weakening immunity. It goes without saying that in some instances external factors may far outweigh lifestyle as causes behind the eruption of a disease. Moreover, in some cases, one’s lifestyle may not be under one’s own control. (Think of our prisoners in our scandalous jail system, who are often given a diet of unrelentingly starchy, unwholesome foods. Or think also, to repeat an earlier thought, of smokers in the United States in the 1940s, when even the vast majority of doctors told them cigarettes would not affect health.) Taking all this under advisement, I still would have to say that in my experience, for most people who get

sick, and especially those who are struck down in their prime, their adoption (perhaps unwittingly) of unhealthy habits played a major role in leaving them open to disease. So as another component of the alternative way to deal with AIDS and HIV infection, we must look at what lifestyle changes can be put into practice to help move a person toward health and self-sufficiency.

Let me say first off that unlike the types of therapy discussed in the preceding few pages, supplements that are meant to be taken only by those who are suffering under disease conditions, the practices to be outlined in this chapter are not even properly classified as therapies, since such things as exercise and the avoidance of sugar should be adopted by everyone, even the healthiest specimen of humanity, insofar as the person wants to remain healthy and live life to the fullest.

These practices are ones I have also spent much time enumerating in such books as *Get Healthy Now*, where I outline the components of a healthy lifestyle. In this book, then, I will only skim the surface in describing needed lifestyle changes, since more details on each point can be gathered from disparate works by me and other alternative health writers. My stress here will be on how common prescriptions one gives for health have been shown to have ameliorative effects on PWAs.

Dietary Modifications

Nutrition is significant in minimizing the intensity of HIV infection and AIDS, and is infrequently recognized and cited as such. "AIDS patients need to be made aware of the importance of eating only highly nutritious organic foods," Patrick Donnelly, program coordinator of the Whole Foods Project, told me when we spoke of this topic.

I queried him on what foods he saw as the best for a PWA's diet. His reply, as I expected, pointed not only to foods that those ill with AIDS should be focusing on, but ones that should be at the center of everyone's diet. What he said was both succinct and enlightening:

We're working with what the Physician's Committee for Responsible Medicine calls the new four food groups which are whole grains, legumes, fruits and vegetables. These are foods which are very high in antioxidants. They have nutrients like beta carotene, vitamin C, vitamin E, zinc, selenium, which help to boost the immune system.

For the most part, these nutrients are not found in the high fat, high protein standard American diet. So, we're offering a different point of view. We're trying to get people to look at a new way of eating that is not about providing calories so much as it is about supporting the immune system.¹

From there, I interviewed Richard Pierce, the project's director. He put a more philosophical spin on Donnelly's prescription: "You have only to look at this food to see that it's full of life. These greens are full of the life that came directly from the earth that grew them. The vitality of that food is what nurtures us."²

Remember that attention to the problems of malnutrition in patients with AIDS is of paramount importance because the timing of death in these patients may be more closely related to degree of body cell mass depletion than to any specific underlying infection.³ Research supports the long-term efficacy of diet counseling and enteral nutrition supplementation in AIDS patients to increase or maintain weight, restore lean tissue, and lessen the ravages of HIV/AIDS.⁴ These factors could help to decrease mortality. In addition, enteral nutrition supplementation (that is, putting the supplements directly into the intestines) improves bowel function.⁵

While it is especially essential for people with immune-compromised conditions to eat pure whole foods and take supplements, it is just as necessary to know which foods to stay away from.

FOODS TO AVOID: SUGAR AND YEAST

Several doctors I have interviewed spoke to me of the immunosuppressive qualities of sugar, which presents obvious dangers to people with AIDS, as they knew from working with their own patients.

Dr. Marjorie Siebert told me, "One of the key things in a person having a good immune system is that they're not consuming sugar. Sugar is a definite immune suppressant. A hundred grams of sucrose will cut antibody production by 50 percent for 24 hours."⁶ Joan Priestley added, "The average sugar consumption [in the U.S.] is in the hundreds of pounds per year and a high sugar diet is very clearly immunosuppressive."⁷

When I broached the subject with Robert Cathcart, he more directly related the way sugar depressed immune function to the reactions of people with AIDS, particularly in relaying to me how sugar can cancel out any positive effects drugs may provide: "Patients are sent to me who have thrush and who have been put on Nystatin or Diflucan but not told to stop eating sugar," he explained. "This is terrible because it [sugar consumption] breeds resistant strains.... I've already seen patients with Candida that Diflucan does not kill off anymore because of the fact that they were eating sugar."⁸

As we know, those who have AIDS are often beset with yeast infections in the mouth, gut, and other places. Thus the consumption of yeast is to be avoided for positives or people with AIDS. Priestley, whose opinions on sugar we just heard, believes yeast is an unappreciated cofactor in AIDS. While warning her patients of the trouble they might be causing themselves by drinking alcohol and eating white flour and other processed foods, which many people are

allergic to, she put particular stress on the PWAs getting “yeasted foods out of their diet in an effort to keep their yeast under control.” She further noted, “There is some evidence that the PCP organism is a yeast and not a parasite, so an anti-yeast diet is actually a self-empowering way to control PCP”⁹

Thus, ideally, the PWA should be following the same whole foods, vegetarian diet that any intelligent, health-conscious person would embrace.

Exercise

Another prime component of a well-tempered lifestyle that is also relevant to PWAs is exercise. While exercise’s facility in helping those with heart disease and other disabilities is well known, less publicity has been given to the fact that studies indicate exercise is therapeutic for those with AIDS. Schlenzig et al. studied the long-term benefit of physical exercise on the biological condition of HIV and AIDS patients as well as on the course of illness. They found that physical exercise improves biological condition at all stages of HIV infection, including AIDS. “Furthermore, a delay of AIDS-related complications seems possible through exercise. Regular exercise also seems to be correlated with a more stable T4 cell count.”¹⁰

Emotional Resolution

Let’s recur for a moment to the thoughts of Schmidt on the immune deficiency disease. It will be remembered that, while finding weaknesses in his overall theory of hysteria and AIDS, we had cause to concur with his feeling that gay males suffering from AIDS, as from any other disease, found their weaknesses compounded by the stress they were under living in a (in many ways) homophobic society. Schmidt mentioned that based on his experience treating patients, some gay males had internalized the negative stereotypes of homosexuality prevailing in U.S. society. The psychotherapist then argued reasonably that a PWA who was burdened with such emotional baggage would profit by not only treating his disease but trying to overcome internal blockages. (A similar case could be made for drug addicts, who also may accept negative stereotypes of themselves that cause health-diminishing stress.) Other medical practitioners have heartily agreed on this last point concerning the need to do emotional clearing as part of a comprehensive AIDS treatment.

I talked with Joan Priestley about this issue. “Another area people need to look at,” she said, “is what I call nutrition of the mind.” Dr. Priestley believes an essential element in her patients’ getting well is their clearing emotions. “I ask my clients who are gay to handle their emotional issues or their emotional issues will handle them.” This would mean, in part, people with AIDS coming to grips with and accepting themselves, confronting others who attempt to unjustly stereotype and discourage them, and dislodging themselves from dys-

functional relationships. It would also mean stepping outside themselves. She puts it like this: “I encourage them to develop a spiritual kinship with some kind of benevolent power beyond themselves so that they don’t feel like it’s just them against the world with this infection.”¹¹

Dr. Paul Epstein concurs and looks to a combination of emotional and physical healing as preparing the way to regenerate the immune system on the road to besting the disease. “By scientifically strengthening their immune systems and resolving deep issues and conflicts and stuck places inside, people may be improving their immune response. When we put the whole piece together, it really happens,” he says.¹²

Stress Reduction

The last cited doctors, when they are laying emphasis on emotional clearing, do not mean that the person with AIDS should sit in a corner and try to reconfigure his or her attitudes through strength of will. Various changes in attitude, such as the ability to deal with stress or escape disempowering relationships, will grow as the person talks over situations with supportive friends and therapists as well as participates in group activities, whether protests or dances, that integrate the individual into his or her community. The ability to individually reflect on one’s choice of lifestyle and make changes will be nurtured by these discussions and actions. Moreover, the stress reduction that is a necessary prelude to facing one’s own hangups—for it is impossible to think lucidly when one is beset by constant anxieties—can be cultivated by becoming a practitioner of one of the techniques that have evolved for damping stress and channeling and focusing one’s energy.

Let’s pause to look at some of these recommended practices, beginning with those that arose over long periods in what was once called the celestial kingdom.

For centuries, the Chinese have understood that one’s inner energy or chi makes life possible. Through practices such as tai chi and meditation, and treatments such as acupuncture and reflexology, this life force can be freed, strengthened, and enhanced. We will also note the importance of yoga, an Indian technique.

TAI CHI

Tai chi involves the learning of a set of sequential movements that are neither strenuous nor quick, but which are graceful, flowing, and precise. On the surface, such routines would seem to be ideal for increasing flexibility, poise, concentration, and ease. However, as Eric Schneider, director of the Northeast Tai Chi Association, explained to me when I quizzed him on other health benefits of this practice, perhaps tai chi’s greatest overall result is the boosting of energy. “The way one can increase their storehouse of energy is by practicing some-

thing like tai chi because the environment has energy and that energy is brought into the system.”¹³

What is he getting at? It is a commonplace that classical Chinese painting is of landscapes absent of any people or with people depicted on the margins. However, given traditional Chinese beliefs, this is not because the human is considered of little importance. In fact, these landscapes can be seen as profoundly humanist if viewed in the right way. The Chinese perspective has been that the human and natural world are in profound congruence. When the human world is proceeding smoothly—the Emperor is ruling benevolently, for example, farms will be productive and the forests, hill, seas, and mountains will be pacific and thriving. Thus a painting of a tranquil landscape is evidence not only of that slice of nature but of a tranquil state in the human community. In other words, for the traditional Chinese, the picture by a great artist of a bush on a mountain says as much about the human soul as about a species of vegetation. We should add, moreover, that while this may not be the case with men and women, the normal state of nature is one of peace and harmony; so if a human is out of sync, nature will be pushed out of the tranquility that is its common resting point.

Taking this to the exercise we have been considering, we can say that it is believed tai chi is a way of helping the body gravitate into harmony with the surroundings. That is why, by the way, tai chi purists, such as Teacher Linn, who has a class in a park in New York’s Chinatown, says that true tai chi must be done out of doors.

Schneider explained further that this gravitation has to do with achieving proper vibrations in the body, by drawing energy from the environs “vis a vis the simple breathing apparatus. The body goes through an alchemical process converting that to useful chi.” He noted that according to ancient thought the body has five systems, each with a separate vibration pattern. In the same way, the immune system consists of a number of overlapping, interlocking parts. “When you start practicing tai chi,” Schneider mentioned, these systems “start to resonate with the core of the vibration in the body. Then they harmonize themselves.”¹⁴

As Nhi Chung, my coauthor’s wife, explains, “The concept of chi relates to air.” Chung has practiced tai chi for thirty years, since her youth in Saigon, where hundreds used to start their day by going through different routines in public parks. “The word chi,” she says, “in Chinese is literally air. The ideogram for chi contains the sign for rice. Above the rice, you can see two horizontal lines, which represents the steam rising from it.”



“When the rice is half cooked, the steam comes up. Steam means chi. In tai chi, you try to move your chi to circulate your body and to circulate through your organs.”

A more philosophical explanation is offered by longtime practitioner and renowned sculptress Yuko Otomo.

Tai chi is to honor your body, which is a tool to connect to the universe, which is you. Tai chi helps me to get in touch with who I am which is part of the cosmos.

It helps me to slow down, to be rooted and, at the same time, uplifted. It also helps me to appreciate what we have.

Acupuncture

While Schneider has seen PWAs profiting from tai chi, this practice has not really caught on among those with the disease. Acupuncture, on the other hand, is one of the more popular treatments that HIV positives patients have turned to since 1982.

Acupuncture, as is well known, involves inserting very thin needles into select points in the skin. As with tai chi, the philosophy behind it focuses on energy. Where tai chi is set on getting the various energetic vibrations to move in harmony, acupuncture is centered on dealing with energy that is not flowing fluently because of internal obstacles. Nurse Abigail Rist-Podrecca told me: “Wherever disease processes are occurring you’ll find a blockage. Acupuncture needles inserted in these different points... open these pathways and let that energy flow smoothly through those meridians.”¹⁵ Explaining this in terms of physiology, she said that sticking in a needle “dilates the blood vessels so that... you get more circulation, more of the nutrients, more oxygen flowing through.”

Rist-Podrecca has proved the value of this treatment in practice. I asked her to outline her general approach to PWAs. “With people that have HIV, we’re working on some of the immune system points and also just symptomatically working to... energize... the various areas that are not working smoothly.”¹⁶

Dr. Michael Smith, who had worked at Lincoln Hospital in the Bronx, which had pioneered in developing acupuncture in a hospital setting for both those coping with drug addiction and AIDS, notes that after a number of treatments, there is a decrease in diarrhea, night sweats, and other symptoms.¹⁷

Other treatment centers that have reported symptomatic relief through use of this time-honored therapy are the Somerville Acupuncture Center in Boston, the AIDS Alternative Health Project in Chicago, and the Quan Yin Herbal support program in San Francisco.¹⁸

Aside from these testimonies, there have been scientific studies on the effectiveness of acupuncture. In fact, one investigation was carried out at the same Lincoln Hospital. The conclusion here was that for most of the two hundred

AIDS patients treated from 1982 to 1987, there was “a reduction in fatigue, abnormal sweats, diarrhea and acute skin reactions after 4 or 5 treatments. Some experienced a 15 to 25 pound weight gain and others a decrease in side effects to AIDS-related medications.”¹⁹

Another study, published in the papers of an international AIDS conference, found that people with HIV who use the acupuncture have extended survival rates. “In addition, they regularly report a substantial reduction in symptoms and side effects to HIV related drugs. CBC blood counts frequently normalize.” The study concludes by suggesting that acupuncture be made a part of standard treatment for HIV infection.²⁰

Yoga and Meditation

While tai chi and acupuncture act to restore a natural balance in the body's flows of energy, they are more oriented to general well-being than stress reduction. Yoga and meditation, though also broadly health producing, have been seen in the West as particularly helpful in reducing the load of stress we all are apt to shoulder under conditions of “civilization.” While yoga is ultimately rooted in East Indian practices, meditation has been a standard religious exercise in most faiths.

To say just a word about these techniques, which are covered widely in other sources, let's note that yoga and meditation do more than help the body on a physical level; they also quiet the mind and allow rebalancing and healing on the spiritual level.

When I asked Dr. Majid Ali to define the basis of his work with these ancient practices, he used these words: “The way that you look at the world around you determines the state of the biology under your skin.... You can be in a stress that wears you down or in an even steady state energy mode which is restorative.”²¹

As he describes it, you can glimpse the parallel with Chinese thought. Where tai chi seeks through restrained movement to tap into and harmonize with natural energies, yoga and meditation act to bring the mind into an awareness of the inner energy pulsations. This is not done directly, that is, so that the adept can influence this activity, but as a way to create a healing temperament, as the meditator or yoga practitioner “allows this energy to guide... [the student] into a healing mode.” As Ali summarizes, “We want a transition from an ordinary thinking stressful mode which causes disease into a non-thinking meditative deep restorative healing mode. That's our goal.”²²

Reflexology

Let me conclude by mentioning a couple of Western alternative therapies that are being applied to AIDS patients with a modicum of success.

The first is reflexology. As I explain in *For Women Only*, “Reflexology is based on the principle that people have areas in their feet that correspond to every part of their body.... Massaging these specific areas on the feet thus helps to improve the functioning of particular organs and glands.”²³

This therapy has been used as a relaxation treatment for AIDS patients in Uganda. According to a report given at the 1994 International Conference on AIDS, “As of November 1993, four months after this program began, 85 percent of AIDS patients reported some pain relief, relaxation and better sleep after the exercise.”²⁴

Reflexology has also been employed as part of a comprehensive program for HIV positives and people with AIDS at the John Bastyr College of Naturopathic Medicine. (I will provide more information about this innovative program in appendix III where I present the school's supplementation and botanical protocol).

Aromatherapy

Lastly, we come to aromatherapy, the use of plant essences in healing. One might see this as the precursor to the development of phytochemical therapy, which isolates different chemicals found in plants and acts to mobilize them for purposes of building health. In aromatherapy, the distilled oils of different plants are used.

Because a number of these oils have already been seen to have antiviral properties, it is not unreasonable that doctors would try them against HIV. The antivirals include essences of palmarosa, cinnamon, and cloves, which have been used to counter tuberculosis bacillus, and lavender essence that has been effective against gonorrhea and syphilitic sores and chancres.^{25, 26}

Taking up the task of exploring whether similar antiviral effects could be useful against HIV, Teopista did a study that was published as “The Use of Aromatherapy in the Management of People with AIDS.” The investigation worked with eighty randomly selected AIDS patients. Half received psychological counseling with aromatherapy; the other half received counseling but no aromatherapy. “Results showed that the aromatherapy group reported less aches and pains, faster healing of wounds, restored physical strength and a better ability to cope.”²⁷

This brings to an end our survey of various changes in lifestyle, such as eliminating certain unproductive foods from the diet and stress reduction techniques that are of proven benefit to PWAs. It is fitting that we ended with a therapy whose benefits are both physical, such as helping healing, and psychological, in that those who used the plant essences seemed to having less problems dealing with stress. All of the recommendations that have appeared in the foregoing section are of the same nature, since they are found to be active both physically and psychology.

Sir Francis Bacon and Ancient Wisdom

I mentioned that Bacon was a consummate persuader, though one who, due to recalcitrant historical circumstances, found most of his advice falling on fallow ground. At the head of our discussion of therapies, I noted that in *The New Atlantis*, he envisioned a refurbished commonwealth in which a state-supported scientific institution, the House of Solomon, busied itself with experimental investigations that provided labor-saving and health-promoting devices and discoveries.

It was appropriate to mention it there because, as in Bacon's fiction, much of what was looked at were AIDS therapies whose full value, if they truly possessed any, will only come out in the future. For one, we talked about supplements and alternative therapies that often had well-attested histories of fighting other viruses, and so would seem to be well suited for combating HIV. In these instances, though, the substances or methodologies had not yet been used in any experiments to see whether, indeed, there would be any AIDS-fighting utility to these techniques or supplements. Use of future tense, then, was quite appropriate there. Secondly, we talked about therapies and substances, which had been shown to militate against HIV replication or act in some other way to block the disease or build up the power of the immune system. Though this second group of treatments already has shown promise, it either had not been taken far enough in studies or, as in the case of vitamin C, though it had repeatedly shown its use value, had been generally ignored by practitioners and writers on the AIDS

issue. Again future tense was deemed suitable in that we have to await for a later time before these substances are fully proved out or more widely adopted.

Now, Bacon, wily arguer that he was, thought not only of the future as supplying ammunition for his cause—and the Atlantis correctly foresaw state sponsorship of scientific endeavor—but of the past. He called attention to the Greek pre-Socratic philosophers, who he noted indulged in a more experientially based scientific theorizing than Plato and later thinkers of the classical age. This was a time-tested means of recruiting allies, poring over history until writers whose ideas seem to jibe with the arguer's are found. However, Bacon also had a more ingenious trick up his sleeve. In his book *The Wisdom of the Ancients*, he claimed that Greek myths, such as the love affairs of Jove or the tale of Orpheus, were disguised allegories of (along with other things) the methods of true Baconian science, as far as its principles were understood in olden days. "Upon deliberate consideration," Bacon writes, "my judgment is that a concealed instruction and allegory was originally intended in many of the ancient fables."¹ The reason discourses on scientific method and its findings had to be dressed in this way, he goes on,

is because it is sometimes necessary [to use myths to convey information] in the sciences, as it opens an easy and familiar passage to the human understanding, in all new discoveries that are abstruse and out of the road of vulgar opinions. Hence, in the first age, when such inventions and conclusions of the human reason as are now trite and common were new and little known, all things abounded with fables, parables, similes, comparisons, and allusions, which were not intended to conceal, but to inform and teach, whilst the minds of men continued rude and unpracticed in matters of subtlety and speculation.²

In *Wisdom of the Ancients*, Bacon lays bare what he sees as the inner sense of certain fables. For example, he shows that the story of Proteus, who readers of *The Odyssey* will recall was the shape-shifter that Ulysses had to beat in wrestling in order to get him to disclose a secret, is actually an allegory of what the ancients knew about matter. Bacon notes, at one point, that Proteus is said to be a servant of the sea god Neptune, because "the various operations and modifications of matter are principally wrought in a fluid state."³ Again, the way Ulysses made him yield by binding him, holding tight as he changed from octopus to tiger to eagle and so on till he eventually tired and gave in has the following meaning in Bacon. "If any skillful minister of nature [i.e., experimental scientist] shall apply force to matter and by design vex it... [then nature] changes and transforms itself into a strange variety of shapes and appearances." Gold, for instance, is heated till it liquefies, then vaporizes, then combines with another element, and so on. "At length running through the whole circle of transformations and completing its period, it in some degree restores itself if the force be continued."⁴ It is the same with those trying to identify a new chemical in the brain (this is

precisely what the scientists Latour observed in *Laboratory Life* are doing) run various elaborate tests on it—seeing what it combines with and so on—to determine if it is indeed a new substance and, if so, what its properties are.

(We might note that according to the research of Rossi Bacon adopted this procedure of claiming to find allegories of scientific method in old chestnuts when he realized his ideas were not likely to get a very kindly reception from the intellectuals of the day. As a preliminary flyer he sent an unvarnished presentation of his views to two friends. The one whose reply survives reproved Bacon for his audacity. Rossi, commenting on this friend's negative letter, says, "These lines undoubtedly impressed Bacon, who had already begun to feel the hostility of scientific circles to his programme and to suffer from intellectual isolation."⁵ Rossi argues that these early rebuffs determined Bacon to find a less direct way of presenting his viewpoint.)

By now, you're probably wondering how this relates to the work at hand. Well, we are going to look at the work of a quartet of doctors who have already been working with people with AIDS for a number of years using some of the alternative methods we have been discussing. We will see their hope-inspiring results and hear their individual philosophies. (While a doctor doling out the AZT and going the establishment route does not have to evolve his or her own way of viewing AIDS but merely parrot the party line, a doctor who is striking out with alternative methods has to carefully consider and elaborate his or her understanding of what AIDS is.) Although these doctors' opinions and treatment styles cannot be conceived of as allegories in the usual sense, that is, they don't stand for anything other than what they are, they can be seen as metaphors of the emergent medical paradigm. To say this another way, each of these doctors has a keynote element in his practice that can be appreciated not only as beneficial to the patients under his care but as exemplifications of one of the principles of the new paradigm. After detailing each doctor's philosophy, treatment, and results, then, I will pause and note how his work underlines one component of emergent science. In our finale, we will sum up what I take to be the parameters of this new way of seeing health and disease.

Dr. Christopher Calapai

Nutritional Support: Dr. Calapai's Philosophy

The first doctor to receive an in-depth profile here is Christopher Calapai, whom I interviewed at length. He was kind enough to walk me through all his protocols and share his healing philosophy, which in a nutshell is this: Immune function is strongly influenced by nutritional status. In treating immunological disorders—AIDS currently being the most prominent—it seems eminently reasonable to pay close attention to nutrition.

Regrettably, Calapai told me, this rather elementary fact is usually rated as of low or no importance by conventional medicine. “We see many patients who, as soon as they were determined to be HIV positive, were put on antiretroviral medication, with no attention to their diet, or other aspects of their lifestyles that might affect their immune function.” This in spite of the fact that “there is considerable published research that supports our view that nutrition is highly relevant and should not be neglected.”¹

Approach, Method, Results

Dr. Calapai asks new patients to bring in a week's worth of their diet history, in which they jot down any food they consumed over the period as well as noting other intakes, such as cigarettes. He goes over this history meticulously. He then tells them how important it is to institute certain lifestyle changes that are beneficial for them.

The first strong message he wants to convey is to stop habits that are contributing to ill health. One of these contributors is smoking. He is convinced that smoking is very damaging in many ways—it helps to wipe out vitamin C (interfering with its actions) and generates free radicals. He makes sure his patients don't drink any alcohol—again, because that interferes with the uptake of nutrients as well as generating free radicals. He informs them about other dietary factors that also have strong effects on immune function. He points out, for example, that high-fat diets depress immunocompetence.²

Some people, I told him, might find it surprising that a person with a life-threatening disease such as AIDS is still smoking and drinking, doing things that most would recognize as not conducive to good health. He then spoke of the motivational root underlying such habits. They take these things “to try to change their symptoms or their mood, to feel better.” And this is a symptom of a wider problem. “We're a little bit of an overindulgent society, and we like to have a very quick response to our problems; and we're not really concerned with what's causing it.”

Again and again, he has seen the tragic consequences of this tendency toward self-indulgence. He mentioned a patient who almost made the changes that seemed essential for her health and survival, but she couldn't stay with it and resumed smoking. She had a recurrence of bronchitis and expired in the hospital. He said that only reinforced his low opinion of cigarettes.³

Procedures and Protocol

This doesn't mean that Dr. Calapai is a drill sergeant, who comes down hard on any patient who may want to take a substance that is not healthful, strictly speaking. He is flexible, acknowledging that he has to accept the place where the patient has arrived and try to influence, not control, him or her. For example, if a patient wants to use the antiretrovirals—and many of the patients that do come in either have taken them or want to take them—that's fine. While the crux of what he is doing is nutritional assessment and adjustment, if PWAs do want to take the prophylactic Bactrim or antibiotics, that's fine, too. He has recommended that for patients and has written prescriptions for it. He has no objection if a patient wants to see other doctors.

Besides, his program is not composed simply of don'ts. Equally or more important are the do's, getting the patient on a diet and supplementation program where the intake is augmenting immunity, not tearing it down.

To prepare a proper program, Calapai has to precisely judge the patient's present status. This involves both aggressive testing for common infections that can contribute to the progression of the disease—for example, CMV, EBV, herpes, mycoplasma, TB, toxoplasma—as well as detailed blood evaluations of cellular, mineral, vitamin, hormone, and viral and antigen levels, plus immunologic indices.

(Dr. Calapai's general diagnostic protocol is outlined in greater detail in appendix II.) It also includes a physical examination.

The results plus the history are used to devise dietary recommendations, recommendations for lifestyle changes, and programs of oral, intravenous, and intramuscular supplementation. (Also see appendix II for more specifics.)

He outlined for me how he proceeds. “I sit down with my patients, give them a five-page handout as to what they should eat and what they shouldn't eat. I like to try to get them away from red meat, get them more toward a vegetarian diet.” In fact, in his book, even eating chicken or shellfish is not safe insofar as both can present that body with arsenic, which is damaging to immunity. “I like to have people as close to a vegetarian diet as possible,” he finished.

To recur to any earlier point, he ended by saying, “I don't expect the people to be a hundred percent or thousand percent on the diet or the protocol. But when people are doing well, that's reassuring and reinforcing.”

Clinical Experience

Now for the ten million dollar question. What results is he seeing?

Many of the patients that I put on the protocol after two weeks or so say they're feeling very good. They have a lot of energy, they're sleeping better, many say that some of the skin problems that they have are improving. I have not had people say this is causing me a problem or I feel worse. The overwhelming majority of people say that they feel better in a number of different ways.

Although Dr. Calapai is probably aware of many of the studies that have shown problems with AZT and other antivirals in terms of the health of those who take them and in terms of their theoretical justification, he doesn't talk about them but rather the evidence he has seen personally. This can be broken into two parts: first, cases of patients who shun the antivirals and with a suitable natural treatment program do well; and, second, those who have taken the antivirals and seen a precipitous decline in health.

Although he doesn't prohibit his patients from taking antivirals, most of those who come to him “don't want to take prescription medication, they don't want to take antivirals.” It seems that without these pills, “they're doing extremely well just on this protocol.”

You may remember that some pages ago, we mentioned that the exact relevance of T cell count to health has never been established. That is, the benchmark of what a normal, healthy person's T cell count should be is undetermined. Thus, basing a drug's ability to combat AIDS on this measure seems rather dubious. From the experiential side, Calapai has noticed a similar anomaly. He noted, “Some of them [his patients] do have very low T cells, and I don't know whether

or not that's a great indicator of how well a person is doing." He doesn't know in that he has seen patients with direly low (by orthodox standards) counts who seem to be thriving. "I have patients," he said, whose "T cells may be five or twelve total helper cells—but they've been for a year free of coughs, colds, or any other opportunistic infections." Moreover,

Some of them are exercising, gaining weight—some are body builders. It's hard to get a good handle on everything that's going on with them, but these people are coming back and saying that they're doing wonderfully! So, I think that's certainly an important picture.

As to his observations on the second point, the poor health of those on antivirals, he related, "Patients say to me that all of their friends and people that they've known that have gone on some of the strong antivirals—especially AZT—are individuals that either have expired, or have gotten sicker and sicker continually." Admitting this is anecdotal evidence, he added, "I don't know whether that's a wonderfully accurate statement but this observation seems to be relatively common."

Although you might say his positive results speak for themselves, a scientist might argue that he is just lucky in his patients. Our imaginary scientist will not be satisfied, as indeed he shouldn't be, until scientific studies have been published on the value of such a program. Although Dr. Calapai would not gainsay the need for more research, he does emphasize this:

AIDS is a syndrome where people are dying relatively rapidly, so I don't know how appropriate it is to wait until there's firm and hard data before recommending some of these safe, nontoxic treatments. A lot of people are not doing well with the conventional approach. I think we have to try to use the safe things—the herbs and nutrients—and see how much help we can offer the patient, whether they do or don't want to take the antivirals.

Case Summaries

Dr. Calapai provided me with four brief case summaries so I could see his actual results.

PATIENT #045

This is a 32-year-old Caucasian female presenting, that is, coming to the doctor, January '92 with a HIV+ history since testing Sept '91. She has had headaches, sinus congestion and fatigue.

Initial testing revealed low cholesterol level. CD4 T cells prior to presentation here (recorded October '91) were 616.

The patient was put on protocol.

CD4 cells went up to 1,000 by September '92; P24, B2 and neopterin were normal as of February '93.

The patient feels very good and hasn't had any opportunistic or other infections.

C PATIENT #046

A 33-year-old male Caucasian presented January '93. He had tested HIV+ in August '91. History of IV substance abuse 11 years ago. Patient experiencing fatigue. Patient had been put on Bactrim three times weekly.

Initial blood testing revealed elevated liver enzymes, low WBC (white blood cell count), RBC (red blood cell count) and hemoglobin, high monocytes and low vitamin C levels. CD4 was 2 percent.

Patient was put on IV protocol and after three weeks felt significant improvement in energy and strength. Patient exercises regularly, including weight lifting, and has gained weight since on protocol.

P24 test was negative February '93, while B2 micro, measured in the same month, was normal. Neopterin 12.5H. Repeat chemistry showed a decrease in LFTs. CD4 count was 3 on April 4 '93.(All tests that were abnormal are in the process of being repeated.)

The patient clinically feels "great," hasn't had any symptoms, or infection history, and continues to exercise regularly without problem.

PATIENT #541

This is a 32-year-old Caucasian male who presented February 10 '93 with a three year history of HIV+ test. He had hepatitis B in the past.

Initial testing revealed high protein, high LFTs, herpes and CMV. There were magnesium, vitamin A, B6 and vitamin D deficiencies. CD4 were 62 at 3 percent.

The patient was put on protocol. LFTs decreased, vitamin and mineral deficiencies were corrected, P24, B2 and Neopterin were normal. CMV turned negative.

Clinically, the patient is doing very well, weight is stable. Patient exercises frequently and is very energetic.

PATIENT #559

This is a 33-year-old male Caucasian presenting February '93 with a four-year history of being HIV+. The patient has had no apparent opportunistic infections; however, has some fatigue.

Initial blood testing revealed hypocalcemia (lack of calcium in the blood), hyperproteinemia (subnormal level of protein in blood), low cholesterol, low

WBC, high monocytes, positive for herpes and cytomegalovirus. B2 micro was 3.0, Neopt. was normal, P24 was negative, and beta-carotene was deficient.

The patient was put on IV protocol. Repeat testing revealed B2 of 2.8, CMV negative (IgM), and a slight increase in WBC.

The patient feels great, has a lot of energy, and weight is stable.

Clinical Results

All four of the above patients showed a substantial improvement in health status in a very short time.

Dr. Emmanuel Revici

In contrast with Dr. Calapai's therapeutic approach, which (as we have tried to show) rests upon a broad framework of research by investigators in nutritional and herbal methods, Dr. Emmanuel Revici's therapeutic approach is highly individual, and his theory of health and disease is largely his own creation, carefully worked out both in the laboratory and in the clinic over more than fifty years.

Thus, it will be in order, before we move onto an assessment of his protocol and results in treating people with AIDS, that we get some idea of his framework.

Metabolic Imbalance and AIDS: Dr. Revici's Philosophy

Dr. Revici's theory of health and disease concerns the balance and imbalance of opposing processes. The body undergoes two basic processes: the anabolic (building up) process, and the catabolic (breaking down) process. The metabolism cycles through both processes. "The two antagonistic intervening factors... act alternately, each being predominant for a period of time."¹

As in the Chinese theories we glanced at a few pages ago, the ebb and flow of these processes need to go on in an even rhythm for health to be maintained. If they fall out of sync, disease will come about. "Abnormal changes can take place in either of two opposite directions ... resulting from the exaggerated predominance of one of the coupled factors over its antagonist," Revici writes.²

So, how does he see AIDS in relation to this theory of imbalances? He relates AIDS to the loss of specific phospholipids (which he calls “refractoriness lipids”) that normally play an important role in disease resistance. Phospholipids, as you may know from high school biology, are fats that are important in the architecture of human cell membrane.

Revici sees the route of AIDS as the type of step process we earlier identified in theories such as the one that holds AIDS arises from immune collapse brought on by overusing antibiotics, which itself comes about usually because the patient has been repeatedly infected with venereal diseases, which itself—last point—can be attributed to promiscuity. Or so that theory has it.

Revici’s idea is that AIDS comes about via four steps: (1) a primary viral infection inducing (2) a deficiency of the body’s natural lipidic defense, followed by (3) secondary opportunistic infections or specific neoplastic conditions, consequent to the lack of the refractoriness lipids, resulting in (4) an exaggerated manifest imbalance, usually catabolic.³

The most original point here, since the first three are found in a number of hypotheses we have already examined, is that the immune system failure leads to an imbalance in the metabolism’s functioning.

Revici’s approach then encompasses interventions in all four steps. He uses antivirals to clear up the infections. “For the refractoriness deficiency, the refractoriness lipids are administered by injection.”⁴ Opportunistic infections are dealt with using traditional antibiotics or other antimicrobial/antifungal agents. “For the imbalances... the appropriate anticatabolic or antianabolic agents are used.”⁵

Case Summaries

Again, as with Dr. Calapai, the proof of the pudding, an evaluation of the adequacy of his four-pronged attack on the disease state, must come from a dispassionate evaluation of patient records. For Dr. Revici, we examined ten treatment records for HIV positive patients. Their ages at the time of HIV infection ranged from twenty-four to fifty (averaging thirty-three years), and their periods of treatment by Dr. Revici ranged from one to ten years (averaging a little less than five). There were seven men and three women.

PATIENT #1

A 31-year-old man was diagnosed HIV positive in March 1986. In August, when therapy was started, there were swollen inguinal lymph glands, and a rectal discharge, with a slight elevation of temperature (99.5), but he was otherwise asymptomatic. Before therapy his T4 count was 668, and since it has fluctuated between about 700 and 850 (November ’88 through July ’91), then dropping slightly to a range between 500 and 650 (January through October 1992). T8

has also decreased correspondingly, so that his T4/T8 ratio remains between 0.4 and 0.6 with no downward or upward trend evident.

He continues to “feel pretty good,” and is continuing therapy. He remains active and holds down a full-time job.

PATIENT #2

A 50-year-old man was diagnosed HIV positive in July 1988. He had submaxillary and axillary adenopathy. (Adenopathy refers to any glandular disease. The submaxillary gland is more commonly known as the salivary gland, while the axillary glands are in the armpit.) He was treated from May 1989 to spring 1993 (when the chart was read). In August 1989, shortly after the initial diagnosis, his CD4 count was 813; a year later it had dipped to 517. However, since then, it has remained in the range from 750 to 850, and his T4/T8 ratio has varied between 0.6 and 0.9, with no downward or upward trend evident.

At the end of 1991, he said he was “feeling very, very well”—is working and continuing treatment at this time.

PATIENT #3

A 27-year-old man was diagnosed HIV positive in 1986. He had axillary adenopathy and complained of tiredness, headaches and night sweats. He was treated from April 1987 through March 1993 and is continuing treatment. Around the time of his initial HIV-positive diagnosis his absolute CD4 was 625; subsequently, it stayed near 650 until February 1992, when it was reported to have doubled to 1,310. Correspondingly, his T4/T8 ratio has risen from about 0.8 in 1986 and 1991 to 1.6 in 1992 and 1.7 in 1993.

In 1992, he said he was “feeling well” in March 1993, he reported “feeling very well,” with “no complaints except mild weakness.” In May 1993, he is working and feeling well.

PATIENT #4

A 30-year-old man was diagnosed HIV positive in 1990. He came for treatment in 1992 with memory difficulties and cervical, axillary and inguinal adenopathy. (Inguinal adenopathy refers to diseases in glands in the groin area.) He was treated from March 1992 through April 1993, and is continuing treatment. Around the time of his initial HIV-positive diagnosis, his absolute CD4 was 243. After three months of treatment, it had risen to 636, but by April 1993, though still above the pretreatment level, it had dropped somewhat to 420. Over this time, his T4/T8 ratio changed very little. In April 1993, the adenopathy remained and there was a mild oral thrush.

PATIENT #5

A 35-year-old man came for treatment in November 1988 with a previous diagnosis of being HIV positive. His only reported symptoms were “pain in the left leg” and a herniated disk. He was treated from November 1988 through November 1992 and is continuing treatment. Over this period his T4 count showed a gradual decline, especially in 1992, starting above 600 (July 1988 and February 1989) and ending at 153 (July 1992), while his T4/T8 ratio changed very little. Nevertheless, throughout, he continued to report feeling “very well” (as noted in July and August 1989, and in February and July 1991) and “feeling fine” (mid-June and November 1992). During the period of therapy, no symptoms were reported.

PATIENT #6

A 31-year-old woman was diagnosed HIV positive in April 1988 after her husband had died of AIDS. She complained of fatigue, insomnia, pain in abdomen, weak knees, itchy skin, hair loss, ganglions (cysts in tendons), and hemorrhoids, as well as alternating constipation and diarrhea. She was treated from summer 1988 through November 1992 and is continuing treatment. She reported feeling “very well” soon after the start of therapy, and by 1989 she was gaining weight. Her T4 counts varied over a range from 158 to 953, but showed no consistent trend. Her count at the start was 510, and in November 1992 was 425. (Her T4/T8 ratios also varied widely, but ended just slightly below where they started.) Throughout, she continued to report “feeling well,” though in September 1989 there may have been a fever episode, and in August 1991 she complained of “some pain in upper abdomen.” In the following February, there was mention of herpes, and nine months later it was reported that she had axillary adenopathy and had had diarrhea for two months. Nevertheless, she said she “feels fine.”

PATIENT #7

A woman diagnosed HIV positive in 1985, at the age of 24, came for treatment in 1989. She was treated from November 1989 to April 1993. When she came she had carcinoma in situ of the cervix, bilateral adenopathy, tiredness, nausea, and complained first of constipation, then (after starting treatment) some diarrhea. In October 1991, she reported severe pain in her lower abdomen during her menstrual period. Endometriosis (cysts or adhesions in the uterine lining) was also noted. Over the course of her treatment, her T4 counts and T4/T8 ratios nearly doubled from 600 to 1,016 and from 0.42 to 0.83, respectively. Axillary adenopathy was again noted in March of '92. She reported feeling well in May and June 1992, though there was “tiredness” in September.

In March '93, she had no complaints. As of the following May, she was well, working, and continuing treatment.

PATIENT #8

A 40-year-old man who was HIV positive came for treatment in 1987, with no symptoms except bronchitis, attributed to smoking (which he stopped). He was treated from November of that year until October 1992. His T4 levels fluctuated considerably, but ended (at 560) about where they had started (at 617); however, his T4/T8 ratios more than doubled over the same period, going from 0/74 to 1.67.

He continued to report “feeling well” or “very well” most of the time, and at the end of treatment there was still no adenopathy or other symptoms except a “harsh pulmonary murmur with crackles” and he reported feeling “tired.”

PATIENT #9

A 36-year-old man came for treatment in 1983, having been found in 1980 to be HIV positive. He had left axillary and submaxillary adenopathy, a slight elevation of temperature and was “tired.” He was treated from March 1983 to February 1993. His T4 levels started at 1305 in August 1983, by January 1985 had dropped to 544, then in October 1985 to 275; but thereafter fluctuated between 500 and 700, ending at 591 in June 1992. Over the same period, his T4/T8 ratios dropped gradually to about half the starting value—from 0.8 to 0.47. In March 1985, he had a “cold” with fever and chills, and then in August of that year herpes zoster was noted. In March 1986, a fever of 102-104 degrees was noted, but was gone a few days later. In September 1987 “some pain in the right upper chest front” appeared. At the beginning of 1989, a “very small lesion on the left arm” was noted, and in April he was “not well.” However, by June he was well and in August 1989, he reported “feeling well.” In November 1990, herpes is mentioned and in the next month there is a notation of “severe herpes—otherwise well.”

Moving forward to July 1991, we find he had a rectal biopsy revealing Kaposi's sarcoma lesions. But the next year (by October 1992) his proctologist said that “The KS was totally gone.” In July 1992, he was feeling “well,” and finally, it is recorded, “patient says he's doing pretty good” (as of November).

PATIENT #10

A 24-year-old woman whose ex-boyfriend had AIDS was diagnosed HIV positive and treated from May 1987 to February 1993. Her T4 count was 717 when she came, and 479 at the end. The T4/T8 ratio increased slightly, from 0.50 to 0.69. At the start, she had some adenopathy, fever, night sweats, and pains in the legs, neck, and hands. In July 1987, diarrhea was reported. By October, she was “not well,” but did not have diarrhea any longer or fever. In February 1988, she was “feeling well” but had a “bad taste.”

At the end of therapy, in February 1993, there was no adenopathy, but a low-grade fever, a cough, and ralls at base of thorax were noted; and night sweats were again mentioned.

Clinical Results

Of these ten patients, only three (two men and one woman; patients #5, #9 and #10) seem not to have improved during therapy. Yet, of these three, patient #9, though worsening in immunologic markers (T4 count and T4/T8 ratio declining to about half) nevertheless felt “well” at the end of ten years of treatment, and his KS had disappeared, according to his proctologist. Further, patient #5, though his T4 count also declined considerably (from 625 to 153) over his four years of treatment, was still “feeling fine” at the end of that period.

Of the other seven who showed more clear improvement, two (patients #3 and #7) had considerable increases in T4 counts and T4/T8 ratios—they roughly doubled. Both also showed complete resolution of pretreatment symptoms (which for patient #3 had been fatigue, adenopathy, headaches, fevers, and night sweats; for patient #7, adenopathy and diarrhea).

Two others (patients #2 and #6), though not showing such improvement in immunologic markers, also had diminution of symptoms.

Thus, of the ten patients, eight currently (or recently) report feeling well (or “very well”—patient #3; and “very, very well”—patient #2) after an average period of 5.2 years of therapy. Five of the eight also report no remaining symptomatic complaints; and two of those have had a marked improvement in immune markers. All are currently continuing in therapy.

It appears, then, that some HIV positive patients were certainly helped by Dr. Revici’s therapy. However, since we do not yet have full statistics on all the HIV-positive patients he has treated, nor on the relation of this subset to that larger population, we cannot draw inferences about the overall effectiveness of his treatment. We can say, though, judging from what we have seen, that there is reason to believe there is some value in Revici’s way of doing things.

Allegorical Significance

Where Dr. Calapai’s therapy can be seen as exemplifying the idea developed in the new paradigm that human disease is the result of multiple factors, including some rooted in the stricken’s lifestyle, Revici’s thoughts tie in with the more complex theory of the process of causation. An HIV = AIDS theory, even in a sophisticated form such as that provided by Dr. David Ho, will tend to have a rather crude vision of how the disease takes command, simply because there is only one factor, the retrovirus, to play with. HIV may lie low in a gland or, as Dr. Ho sees it, wage an unrelenting war against the immune system for years, but all one has to look at, in the orthodox view, to understand the progress of the disease is the retrovirus’s machinations. However, once we adopt the more complex etiological explanations that are to be conceived under the new paradigm, the picture of the disease’s progress becomes much more multifaceted. We saw with Dr. Revici that an infection led to a breakdown of one component

of the immune system, which brought about the rise of secondary infections, which ended by cascading into an overall metabolic derangement. Moreover, in these pages, we’ve seen other examples of such etiologies, where the breakdown of one internal system exposes another to more stress and heightens its own susceptibility.

Thus, Dr. Revici’s understanding of AIDS suggests in wider terms the ability of the new paradigm to put forward an idea of the disease process that sees the initial factors leading to a host of new debilitations, each of which must be coped with via new bodily disposition and each of which can strip another layer from health.

Oxygen, Ozone, and AIDS

The last two physicians whose treatments we will probe both use a form of ozone therapy. Although a few passing remarks have been made in this text about oxygen and free radicals, we have not spoken of the importance of oxygen in health. Before moving to these final presenters, then, let us comment briefly on this subject.

Some Roles of Oxygen and Ozone

When the reader thinks of nutrients that are essential to health, what first comes to mind is probably vitamin C or protein in general or vegetables, anything related to food or supplements. What is probably forgotten is the nutrient more important than any of these, oxygen. After all, one can go a day without eating anything, but one can barely go a few minutes without breathing. This is because the body needs a constant supply of oxygen. Although to stay alive at all, the oxygen intake system must be working, some doctors have wondered if the levels necessary for life are identical with those that support optimal health. To put this in other words, they ask whether it is possible that a given person may be receiving enough oxygen to stay alive but not getting enough to keep in tiptop shape. The answer is that it is possible, since chronic hypoxia (an inadequate oxygenation of the blood) is consistent with continued life but has many deleterious health effects.

Although hypoxia as a general state of bodily discomfort has been studied, alternative practitioners have called attention to “hidden” hypoxias, which would

be highly localized hypoxias, far less obvious than the gross ones we're wary of. Such hypoxias would occur, for example, if a particular organ or region of the body was having a problem receiving oxygen from the blood-ferrying system or, more importantly, if a subset of blood cells were not holding or transferring oxygen properly. The existence of such localized breakdowns of oxygen utilization might explain the sometimes surprising therapeutic effectiveness of oxygenation therapies, in which the patient receives ozone-containing blood.

This type of therapy has shown good results in combating pulmonary epithelium (a disease of the tissues of the lungs and breathing apparatus), and it has also been found to be "highly effective against viruses and has an unusually high degree of tolerance when administered parenterally."¹

A study by Kief that was reported in a German journal indicated that this manner of ozone therapy shows "efficacy in cases of chronic aggressive hepatitis."²

Ozone and HIV Disorders

LABORATORY AND CLINICAL EXPERIENCE

Of more immediate concern to us is whether this therapy will have any beneficial result if used against AIDS. Current research provides no clear-cut answer. Although for use of ozone in vitro against HIV we have positive findings, the data on its utility in vivo is mixed.

In studies, ozone has been shown to inactivate human immunodeficiency virus (HIV) in serum at noncytotoxic concentrations and in whole blood.³ Carpendale and Freeberg conclude their study, which was published in *Antiviral Research*, by arguing that ozone's suppressive effects means that it would be a good choice for decontaminating blood used for transfusions. They write, "We have demonstrated here an agent which, in vitro, acts to both inactivate cell-free HIV and suppress intracellular replication without apparent cytotoxicity. These results indicate a potential HIV inactivation treatment for blood and blood products."⁴

Turning to what has been learned when this treatment is used on PWAs, we can note a study by Carpendale alone and the one mentioned by Kief that noted "improved clinical and immunologic status found in patients with AIDS or ARC who have undergone ozone therapy."⁵

An inquiry by Steinhart et al., which focused more narrowly on people with AIDS-related chronic fatigue, said the ozone treatment "increases functional work capacity and appears to improve quality of life and decrease sleep requirements," adding that the therapy "also may be helpful in the treatment of HIV-associated painful PN (peripheral neuropathy)."⁶

Kief's investigation discriminated between patients at different stages of the disease, finding that ozone-laced blood transfusion would have maximum effect earlier in its course. He states that "ozone therapy can lead to obvious remittances of the reduced lymphocytic population and to an astonishing improve-

ment in the clinical status provided that the disease has not severely progressed."⁷ If, however, AIDS is in a later stage, "partial remissions can still be achieved in 30 percent of the cases," indicating that against a far progressed disease much of the treatment's potency is lost.⁸

I mentioned mixed results earlier. This is due to one in vitro study that indicated that providing cells with ozone to eliminate viruses was counterproductive in that at the level given it also killed healthy cells. This study appears to be at odds with others that hold ozone therapy can be carried out without damage to normal cells.⁹ However, the investigation was utilizing extraordinarily high levels of ozone, greater than would be needed to eliminate most viruses. It may better be said, therefore, that the level of cytotoxicity is low relative to its antiviral effectiveness but may not be zero.

More devastating to the case for ozone therapy are reports that in use with patients, while no toxicity to healthy cells was found, there was no improvement in patients' health, either. A report published in *AIDS* by Garber et al. in a Phase II controlled and randomized double-blind study with an eight-week treatment period discovered "ozone therapy does not enhance parameters of immune activation nor does it diminish measurable p24 antigen in HIV-infected individuals."¹⁰

This means, since we have studies that both find and don't find usefulness in this treatment, that the ozone methodology is still under adjudication in the court of science.

SUGGESTED MECHANISM OF ACTION

Inactivating Viruses Outside Cells

While the ability of ozone administration to defeat AIDS is still a matter of dispute, work has gone forward, done by those who believe the treatment is effective, to consider by what process ozone hinders the activity of the virus or bucks up the immune system.

An in vitro study by Wells looked at the effect of ozone on HIV located outside of the cells. While concurring with other scientists who had found the ozone having a devastating effect on the retrovirus, the study went on to identify what it took to be this form of oxygen's method of viricide. "The data indicate that the antiviral effects of ozone include viral particle disruption, reverse transcriptase inactivation, and/or a perturbation of the ability of the virus to bind to its receptor on target cells."¹¹

Inactivating Viruses Within Cells

The findings thus far convinced the group led by Staal, which reported its own investigation in the prestigious *Lancet*, that "ozone treatment must somehow reach and inactivate intracellular virus because otherwise the inactivation could not be as extensive as has been observed."¹² They posit that the ozone's ability

in this department arises not from any ability it can display in “inactivating the intracellular virus—but rather by destroying infected cells. Studies indicate that infected cells are in fact more vulnerable.”¹³

Effects on immune system

Just as research showing ozone therapy is effective against a number of viruses led some scientists to invest time in assaying the treatment’s ability to combat AIDS, so some who have observed ozone’s ability to support immune function have theorized that the improvement of PWAs under the treatment comes from this same immune enhancement.

Several studies have shown that ozone treatments can strengthen immune responses. Bukowski and Welsh point out, since “oxidizing agents can induce IFN (interferon) and probably other cytokines [immune cells,]... it appeared to us reasonable to hypothesize that ozone may act mainly via the stimulation of PBMC (peripheral blood mononuclear cells) and release of lymphokines” in combating HIV.¹⁴ These authors argue that ozone is particularly damaging to HIV not because it directly interferes with replication, its attachment to hosts, or in other such direct ways, but because it stimulates the immune system to clear out these retroviruses. (It shouldn’t be necessary to repeat that we are here assuming HIV plays a cofactorial but not definitive role in producing the disease.)

HOLISTIC PHYSICIANS USING OZONE

Given the grimness of the prognosis for those who have AIDS and the fact that accepted strategies to counter the disease cannot be used by many patients—the side effects they experience with AZT or another antiviral, for example, are so severe they cannot be treated with the therapy—a number of physicians on the front line, that is, who are seeing people with AIDS daily, have introduced unproven treatments that they have either heard are helpful or they feel should be considered because they have worked against other viral diseases. Making a decision to go with such a therapy is certainly defensible to a degree, particularly if the chosen treatment is nontoxic and lacking in drastic side effects.

Ozone therapy can have unwanted side effects, but only at quite high concentrations; so insofar as there is evidence of its ability to suppress other viruses and even some research indicating it is effective against AIDS, it is to be expected that a number of doctors have taken it up in their work. Let’s look at two of them.

DR. Z’S TREATMENT PROTOCOL AND CASE SUMMARY

I will begin with a brief look at the procedures and results of Dr. Z (who for personal reasons not detailed to me wants to remain anonymous), before giving a fuller presentation of how this therapy has functioned in the hands of Dr. John Pittman.

Dr. Z has treated many HIV positives and AIDS patients, but the outcome of one particular treatment stands out. The method he used with the patient is this. About a pint of venous blood was taken from the patient into an IV bottle, to which was introduced an O₃/O₂ mixture. The blood is shaken up with the ozone mixture and then dripped back into the patient.

Patient Report

A man was diagnosed as being HIV positive in 1988 and then began to experience fevers, night sweats, malaise, muscle aches and swollen glands. His T4 cell count was 153. He immediately started on a seventy-day program of daily ozone treatments, plus adjunctive therapy.

He became asymptomatic within about a month, and his T4 cell count began to rise, reaching 728 a year later. Some time thereafter, he applied for a hospital job and was retested for AIDS. The result showed him to be HIV negative. This was confirmed by repeated testing, including a PCR test indicating no virus in his system.

This case is anomalous in that it is the only such episode Dr. Z has ever seen. It may be that the first positive ID’ing of the patient’s positivity was in error. It may also be that the adjunctive therapy was the basis of the seroconversion. However, in reporting this case, I just want to emphasize that the seroconversion results that Dr. Ho, the latest defender of orthodoxy, has hoped vainly to reach by pouring on the antivirals early in a positive’s infection seem to actually occur more often when patients are trying alternative rather than establishment methods.

DR. JOHN PITTMAN’S TREATMENT PROTOCOL

We can get a more balanced view of ozone treatment by looking in depth at the work of Dr. John Pittman, whose Carolina Center for Bio-oxidative Medicine has long used this therapy in ministering to patients with AIDS, HIV, and other immune-compromising conditions.

We begin by describing Dr. Pittman’s general outlook. He believes that ozone can arrest the progression of AIDS diseases and turn the syndrome into a manageable condition. He values the treatment’s ability to help alleviate chronic problems that plague patients, including dermatological conditions and low-level infections. He also sees a connection between the administration of ozone and improved T cell and CD4 counts.

As we saw in the study by Kief, the therapy is of limited effectiveness for people with end-stage AIDS, numerous opportunistic infections, and those who have taken AZT or lots of antibiotics and other prescription medications. The best reactions usually occur in patients who have T cell counts above 100, although there are exceptions to this rule. Pittman states, “Last October, we treated a patient who came to us with CD 4 count of forty-two. His response

to therapy was remarkable and his CD 4 count went from forty-two to two hundred and eighty-five in two weeks.”¹⁵

Pittman uses ozone as part of a wider treatment protocol, working with patients for a minimum of three weeks. He explains that he begins with a modified juice fast for the first ten days of the program. “Everyone drinks fresh pressed vegetable juices and no solid food. They go on a very intensive intestinal and metabolic detoxification program. Certain nutritional supplements are prescribed and the patient begins intravenous therapies.”

As with Dr. Z, the intravenous ozone is added by withdrawing blood, infusing it with ozone, and then putting it back in the body. “After the first five days of autohemotherapy [ozone therapy], if the patient has tolerated that procedure with no problem,” Pittman explains, “we then begin with the direct intravenous infusion of ozone gas and proceed with that on a daily basis, gradually increasing concentrations and volume until we observe a healing crisis in the patient.” This crisis manifests as fevers, chills, and sometimes flu symptoms. After this crisis has abated, “we begin to taper off on the dosage and concentration and go into lower doses which have a more immune-stimulating effect.” When pressed for details, Pittman gave exact dosages, stating that he began with about 3,000 micrograms and went up to 10,000 micrograms. Post-crisis, the level is brought back down to 3,000 micrograms.

I then recurred to when he had used the phrase “intravenous therapies.” Did he also use other intravenous supplementation beside the ozone? “Concurrent with ozone therapy,” he replied, “are other intravenous therapies, which include intravenous vitamin C and mineral infusions as well as EDTA chelation therapy.” The treatment package also involves colon hydrotherapy, acupuncture, and other dietary therapies.

In other words, all bases are covered. “It’s a full day for most patients. I tell everybody before they come, this is not meant to be a health spa or country club. They’ve got a lot of hard work to do, just as much as we do. We really see this as more of a jump start for their program.”

My follow-up question was what if anything was done for the patients once they had gotten this jump start and left the program. Pittman’s response was encouraging.

Once they leave here, we put them on a very stringent home treatment program that they are instructed to follow for at least three months. During that time we have them taking certain prescription drugs and nutritional supplements that are focusing on the problems that we identify during their initial evaluation.

The clinic monitors the patient’s progress with telephone consultations and by further laboratory tests.¹⁶

What we were not able to get from Pittman was a peek at his patients’ files, so we could see for ourselves what the results have been. This is unfortunate, for

although I believe his claim that he has witnessed marked improvements in the health of his patients, it would make a better case if we had all the facts at our fingertips. What can be said is that one hallmark of his treatment is its eclecticism. In his own words,

I think the approach for AIDS has got to be one from a multi-modality standpoint. There is no one single approach. It is only through the combination of appropriate antiviral therapy, immune-stimulating therapy, diet, and detoxification programs that a patient is really going to be maintained and have any hope of improvement.¹⁷

Allegorical Significance

If we confine ourselves to Pittman’s approach, we can say that the broader implications of his program are not hard to find. So far we have suggested that the new paradigm, as embodied in these therapy strategies, sees illness as the product of a number of factors that work together to bring down the immune system and overall health. The course of a disease moves through various bodily systems, creating a cascading effect, whereby one dysfunction, if not headed off, brings about other, novel ones as different areas are beginning to show strain. The last point, the one most visible in Pittman’s method, is that such a multifactorial, multirouted disease state can only be thrown off by a similarly many-leveled way of going about a cure.

I want to close this part of the discussion by noting some nuances in these physicians’ perspectives, for though they all adopt the newer paradigm, there are strong variations on how they interpret this orientation, which should not be abstracted away. After that, I will briefly reaffirm that while they all have their own ways of doing things and understanding AIDS, these perspectives do form part of a greater whole, which is that of the multifactorial worldview built up from a new understanding of the chronic diseases. We will conclude the book with some high points. First, we will listen to stories of long-term survivors, people who have overcome the odds by following an alternative path. Then we will glance at the extraordinary AIDS conference held in South Africa in summer 2000, where we find that, though Africa is probably not the place of origin of AIDS (as was argued earlier), it may well be the place from which is launched a way of dealing with the crisis that leads to a more humane, intelligent, capable medicine and health care. At this point, we will be able to draw some final conclusions on how AIDS and the response to it have made us rethink not only the manner in which health is understood but the social arrangements that play such a significant role in promoting or discouraging it. We end with a coda in which I will offer my final thoughts on Bacon and the possibilities of science in a society that at the moment is largely controlled by the dead hand of orthodoxy.