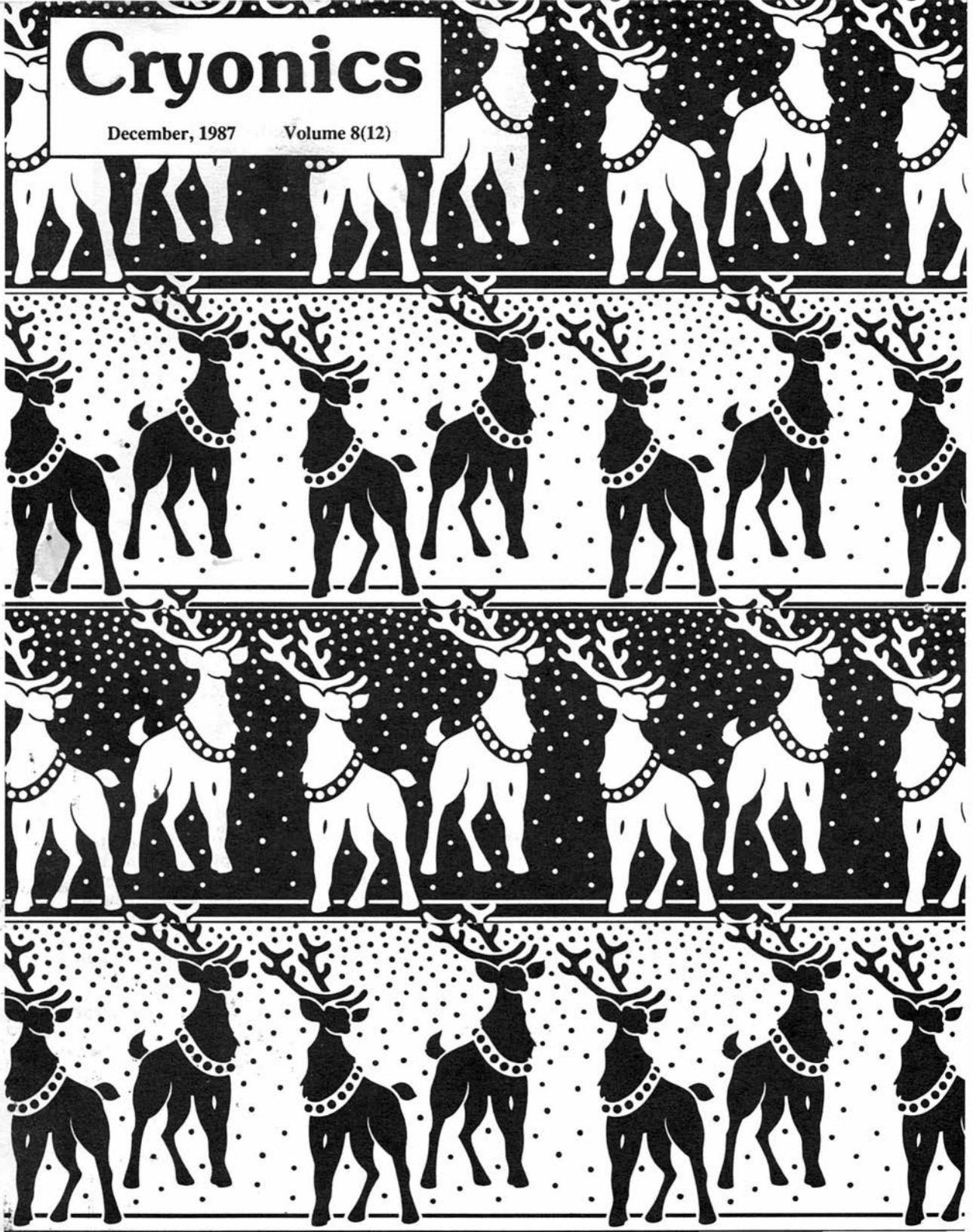
Cryonics

December, 1987 Volume 8(12)



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CRYONICS is the newsletter of the ALCOR Life Extension Foundation, Inc. Mike Darwin (Federowicz) and Hugh Hixon, Editors. Published monthly. Individual subscriptions: $20.00 per year in the U.S.; $30.00 per year in Canada and Mexico; $35.00 per year all others. Group rates available upon request. Please address all editorial correspondence to ALCOR, 12327 Doherty St.; Riverside, CA 92503 or phone (800) 367-2228 (in California: (714) 736-1703). The price for back issues is $2.00 each in the U.S., Canada, and Mexico, and $3.00 for all others.

EDITORIAL MATTERS

Errata

The paper **TBW-16: Evaluating An Ametabolic Flush System For Patient Transport: A Preliminary Report** contained a number of significant errors. The most serious of these errors was a misprint in Table 1, which contained the formulation of UW-Lactobionate perfusate used in the study. The concentration of lactobionic acid as it appears in the Table should read 100 mM instead of 30 mM. Additionally, it should be noted that the lactobionic acid was neutralized with KOH to produce potassium lactobionate.

Additionally, Charts I, II, III and IV should have borne a legend that they were **arterial** samples. Left out from the discussion of the Procedure and Results section was a notation that the femoral surgical wounds were irrigated with Xylocaine during rewarming and that additional anesthesia was given immediately after signs of returning consciousness were noted.

Other Considerations

One relatively new Alcor Suspension Member felt very strongly that the layman's abstract and the paper in general failed to contain adequate information about the significance of this work in relation to cryonics procedures in general. This individual's objections can be summarized as follows:

1) Studies such as TBW-16 may be very misleading to new or prospective members. They may not yet understand that current failure to achieve viable preservation of the whole organism probably has little to do with the ultimate success or failure of cryonics. The ultimate criterion for "giving up" on a patient is **structure**, not function. The animal which did not survive TBW-16 would certainly be rescuable by a fully developed molecular technology, and indeed, the damage done was trivial compared to the damage inflicted by current solid state (i.e., subzero) preservation techniques being used on cryonics patients today.

2) Such research is a poor expenditure of Alcor dollars and efforts should be concentrated elsewhere on basic studies such as better brain cryopreservation techniques.

3) Studies such as TBW-16 relate almost exclusively to whole-body members who are "crazy anyway" and should not have precious Alcor research dollars expended upon them.

We largely agree with the first two of the above comments. But we respond that things aren't quite that simple. In addressing point #1, we wish to point out that flush-store studies mean getting patients in better condition; and that means better perfusion, better cryoprotective distribution and less injury. Right now patients who go down "remote" from Alcor Southern California (A-SC) or Alcor South Florida (A-SF) will receive treatment very similar to what was done during TBW-16. If we can do some relatively simple and straightforward things to improve the condition of such patients dramatically upon arrival at A-SC we feel very strongly that we should do so.

But first and foremost it should be remembered that the primary purpose of TBW-16 was and is training! If we could effectively combine more critical research objectives with training we would. But that is not possible. As it is, TBWs provide tension- and value-laden training with high incentive for successful behavior (i.e., the animal survives (positive reinforcement) or doesn't (negative reinforcement)). If we can combine a research project of some interest with a training exercise TBW, then that is just so much extra gravy.

Keep in mind also that success with such a model might allow for outside funding to continue such studies, and even though they are not "core research" that would provide much-needed capital for more regular training, increase our prestige and capabilities, and probably allow for additional budget for purchase of capital equipment and free up money for commitment to other, more important research.

We agree that brain vitrification or freezing studies are the core research we should be focused on. But that is easier said than done. Research work in this area requires considerable capital equipment and expertise which Alcor currently lacks. It also requires time. Unless large sums of money are made available to hire additional, skilled staff, such research is not going to occur. Period.

Finally, as to point #3. As President of Alcor I have a difficult job. That job is not made any easier by the presence of differing schools of thought about the importance of whole body vs. neurosuspension. It has been my experience that the overwhelming majority of whole-body members are thoughtful about their choice, and have not made unreasonable demands that Alcor shift its emphasis away from brain cryopreservation as the most important area for research dollars to be committed to at this time. Indeed, overall, most whole-body members have been less radical and more flexible about their position than have most neurosuspension members.

The bottom line is that Alcor has and will continue to pursue a course of action that is best for **both** groups of members. Where there is a conflict we will be clear about it and open it up for the widest possible discussion before a resolution is made. The case of TBW-16 hardly represents such a conflict.

It should be viewed as what it was; training with "research icing". I am sorry if the paper itself and the layman's abstract which preceded it failed to make that abundantly clear. --MD

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CERTIFICATE OF RELIGIOUS BELIEF

Several years ago we ran an article in CRYONICS announcing the availability of a new legal protection for cryonicists against autopsy: the Certificate of Religious Belief. This information was sent to us by Northern California attorney and American Cryonics Society President Jack Zinn. Mr. Zinn sent along a copy of the model certificate which he had drafted and encouraged us to pass this along to our members, which we did. We understand that Mr. Zinn similarly sent his version of the certificate out to ACS members -- in fact he reviewed the Alcor effort and complimented us on our typesetting format for the form. At that time relations were reasonably cordial between the Northern California and Southern California cryonics groups and a feeling of reasonable mutual trust existed.

Recently, Alcor had its core paperwork reviewed by counsel and it was discovered that the Certificate of Religious Belief as Mr. Zinn has prepared it is invalid since the statute requires that witnesses print their names as well as sign them.

All of the Alcor forms executed to date lack this important provision. We are therefore enclosing a copy of the certificate in this issue which should be re-executed properly. This change **includes** the individuals who have already gone through a paperwork update with Arthur McCombs. If you are an Alcor Suspension Member, please make a copy and fill out the two Certificate and return them to us promptly.

We apologize for the inconvenience.

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CI PLACES MEMBER INTO SUSPENSION

We understand that sometime during the first part of November the Cryonics Institute (CI) (based in the Detroit, MI area) placed a second member into suspension. As is usual for CI, there was no disclosure of any technical or logistic details surrounding the case.

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LIFE AGAINST DEATH CONFERENCE

On Memorial Day weekend, May 27-30, 1988, Alcor will be sponsoring the **Life Against Death Conference**, at the Red Lion Inn, at Ontario Airport, California. See the formal announcement later in this issue for details on the program and how to make arrangements to attend.

AIDS RISK: WHERE DO WE *ALL* STAND NOW?

You may have noticed there's a epidemic in progress. **AIDS**, arguably the most insidious venereal disease in recorded history is out among us. Accompanying it is a much more common human problem: **ignorance.** The television and radio blare out constant warnings about "safe sex". Everywhere there is anxiety, and remarks are often heard to the effect that "we know so little about this disease...how can we be sure we can't get it from this or that". In part the warnings and remarks of fearful uncertainty are justified. AIDS is a disease that has been characterized by extremes: extremes of denial and a flat refusal to face the threat in the early days of the epidemic, and extremes of reassurance in an attempt to prevent panic in these, the slightly later early days. The truth lies somewhere in between the extremes.

America is a country which has never dealt easily or well with sexuality. Denial leaves a vacuum which will be filled with ignorance, overcompensation and fear. So much of the tragedy which is AIDS could have been avoided if only those things hadn't been a problem in this country. But they were and they are.

Sexual Transmission

A prominent symptom of that problem is lack of hard numbers on the actual risk of getting AIDS from a given type of sexual encounter. The studies necessary to answer those questions have been very slow in being done and diffusion of the information from the few studies that have been carried out has proceeded even more slowly. We are going to try to do something about that. Based on information by provided by internist Neil R. Schram, former head of the Los Angeles City/County AIDS Task Force, we are going to provide some "seat of the pants" numbers. They are approximate, but we believe they are better than nothing.

Obviously for homosexuals the risk of AIDS transmissions depends on who you are and where you are. If you are in a stable relationship and have been monogamous since 1977 or before you have no significant risk of contracting AIDS. Unfortunately, to the degree you have been sexually active since 1977 with multiple partners your risk rises

sharply. If you are a homosexual and engage in anal intercourse your risk is higher than if you engage exclusively in oral intercourse. In the former case, if you have been sexually active through the present and engage in unprotected anal sex with with multiple partners your risk of being infected approaches 100%. Not very good odds. But not very informative either.

Perhaps more to the point Dr. Schram estimates that every act of unprotected anal sex with an infected partner yields a risk of one in 200 of infection. Use of a condom probably decreases the risk by a factor of ten so that risk of any one episode of anal sex is about 1 in 2500. Similar numbers apply for female heterosexual anal intercourse. The risk for vaginal intercourse appears to be roughly half that of anal intercourse, so the risk of one episode of unprotected vaginal intercourse would appear to be about 1 in 500 versus roughly 1 in 5000 for intercourse using a condom.

What about oral sex? Studies of this area are available only in gay men. The risk appears to be much lower, perhaps in the range of 1 in 50,000 for each episode of unprotected oral sex with an infected partner.

The next question which comes to mind is how great is the **overall** risk of having sex with an infected partner. Obviously if you are a male homosexual the risks are very high. In San Francisco some studies have indicated an overall infection rate of 65% to 70%, with infection rates of greater than 90% in some exclusively gay areas of the city, such as the Castro district. In New York City, the infection rate is believed to be even higher.

If you are a heterosexual female the overall risk is currently, statistically speaking, quite low. Studies of military recruits and blood donors indicate a current overall infection rate of well under 1% of the population. Most of those infected are bisexual men or IV drug abusers. The trouble arises in sorting out just exactly who is whom. Many bisexual males will deny sexual experiences with men and, most distressingly, an increasingly large number of bisexual males or even homosexual males are turning their sexual attentions exclusively towards women after a history of promiscuous sex with men. This almost certainly means a steadily increasing risk to heterosexual women of contracting the disease.

What To Do?

Obviously one simple and highly effective recommendation is to become or remain celibate. In practice, for many, if not most of us, this is not so simple. In lieu of celibacy, monogamy with a trusted partner is the next best thing.

Where doubt or promiscuity prevail, a number of recommendations can be made. Some of these recommendations have **not** appeared in the popular press. Some have no clinical evidence to back them up. Nevertheless, we make them because we think they are very likely to work and will at very least not hurt you.

HIV Testing?

If you have had promiscuous heterosexual relations in the past

(particularly if you are female) it is important to know your HIV status. If you are a homosexual male and have had any sexual activity involving exchange of body fluids since 1977 it is doubly important (In fact, it is probably more important by several orders of magnitude!). If you are already HIV positive, it will provide extra incentive for you to protect others, and if you are HIV negative it will provide very powerful incentive for you to stay that way. Also, knowing if you are HIV positive will provide you with an opportunity to short-circuit the development of full-blown disease as early as possible. Right now a number of clinical trials are underway with a variety of agents to try to prevent progression of HIV seropositive status to full blown AIDS. We think this is a promising area and we expect positive results to be demonstrated within the next 12 to 24 months. Some of these programs are actively looking for volunteers. Knowing if your HIV status is positive may allow you to be in the vanguard of those receiving prophylactic medications.

Prevention

Short of abstinence the next best course of action is to first and foremost use a condom. Condoms are not 100% effective but they are better than nothing. We also suggest use of a chemical barrier contraceptive foam containing at least 9% nonoxyl-9. Nonoxyl-9 is a detergent which is very effective at destroying the AIDS virus in the test tube and which is also effective at greatly reducing the transmission of other venereal diseases such chlamydia (now the number one sexually transmitted disease in the United States). While no clinical evaluations of contraceptives that contain nonoxyl-9 have been performed documenting a reduction in AIDS transmission, the use of nonoxyl-9 in conjunction with a condom as a "belt and suspenders" would seem prudent. These preparations have a long clinical history of safety and are readily available and easy to use. **Delfin** foam is one such product.

Keep in mind also that accidental exposure of the eyes to semen or pre-ejaculatory fluid (or other body fluids) may be a very risky thing. Conjunctival exposure is very effective at spreading colds, hepatitis B, and other systemic viral infections. There are already several instances of blood-eye contact which are suspected to have resulted in transmission of the HIV virus to health care workers. The eyes are especially vulnerable to infectious agents and special efforts should be made to avoid conjunctival contact with body fluid(s) from your partner.

Limiting the number of partners and "getting to know them" is also of obvious importance. A

potential partner should be known at least long enough to get some degree of feeling for how trustworthy and con scientious they are. An even better idea is to insist on mutual HIV antibody testing before beginning a sexual relationship.

Most of the above comments are most urgently aimed at women and gay men. The risk of transmission from female to male during "normal" heterosexual activity remains unknown at this point. All that can be said is that it is low, although by no means zero.

Transfusion Transmission

We are repeatedly assured by the blood banks and media that the blood supply is safe and that AIDS transmission via blood transfusion is of "negligible" risk. It would be more accurate to say that the risk is very low. It is not zero, and it may or may not be negligible depending upon the level of risk you consider acceptable.

A few observations: Few if any diseases will provoke antibody response in 100% of the people who are infected with them. AIDS is unlikely to be any different. Mike Darwin worked for some years in a plasma center in part "harvesting" antibodies from the blood of donors who had been vaccinated against things like tetanus toxoid or previously infected with hepatitis B. The rate of antibody formation was anywhere from 98% to 85% depending upon the population vaccinated, their nutritional status, and no doubt a host of other factors. Similarly, a small percentage of individuals infected with hepatitis B will never make antibodies to it. There are now some media accounts of individuals who have obviously died of AIDS and who were not antibody positive. The October 1, 1987 edition of the **LOS ANGELES TIMES** carried an article pointing out that in some individuals the latency period between infection and antibody production may be as long as 1 year. It seems reasonable to assume that it not only may be longer in some individuals; it may never occur. The

current "AIDS test" is not really an AIDS test at all, rather it is a test for antibody made by the infected person's body to the AIDS virus.

This means that the blood supply, while much safer than it was, is by no means completely safe. Getting a blood transfusion remains a low but unquantified risk. It would seem prudent to avoid transfusions or the use of human-derived blood products where any alternative exists. In particular it should be pointed out that AIDS is only the current problem. There may very well be other lethal blood-borne infectous diseases with long incubation times in the future. Indeed, Dr. Luc Montaigner, one of the first to discover the AIDS virus, claims to have isolated a variant which is just as lethal but which does not cause an antibody response in the infected individual which can be detected by the tests currently in use. Also, keep in mind that the AIDS virus is very unstable and is mutating at a rate approximately 100 times that of influenza. The epidemiological implications of this are unknown, but unsettling.

Finally, by way of comparison, there is and has been a test for hepatitis B for some years now, and all blood is screened for hepatitis B before transfusion. Last year there were over 200,000 transfusion related cases of hepatitis B resulting from over 2 million transfusions.

Medical/Laboratory Risks

Of particular interest to suspension team members is the risk of acquiring AIDS from so-called "medical" or laboratory risks. The situation here is cloudy at best. Authorities bent on avoiding panic are stating that the risk of transmission appears to be very low. The unfortunate thing is that very few medical facilities are systematically looking at the risk. California law forbids mandatory AIDS testing and protects the confidentiality of the person being tested. This has effectively blocked in-depth epidemiological investigation in California. Most medical facilities where staff are exposed to blood or blood products such as open heart surgery teams, dialysis units, and emergency rooms have no patient and staff testing programs in place. Recently Mike Darwin asked the medical directors of dialysis units in Southern California and Indianapolis, Indiana if they had any HIV seropositive patients. Most said they didn't know. The director of the unit in Indiana replied "We don't know, and what's more we don't want to know!" This situation hardly lends itself to establishing realistic risk profiles. If, as we are told by the CDC and

the media, AIDS is only about 10% as infectious as hepatitis B, then the toll among health care workers will still be tragically high.

Unfortunately, several cases of AIDS transmission to health care workers which have been recently reported are very disturbing. The Centers for Disease Control's MORBIDITY AND MORTALITY WEEKLY REPORT (volume 36, number 19, May 22, 1987) reports that nine allied health care workers have become infected with HIV so far. Four of those cases followed needle stick exposure. Two cases involved health care workers providing nursing care to AIDS patients who came into contact with body secretions; blood, urine, sweat, feces... Neither health care worker had any needle stick exposure or history of wound contact with patient body fluids or secretions.

Three other health care workers became HIV seropositive following non-needle stick exposure. One patient had index finger contact with blood on a gauze pad for 20 minutes while holding an arterial stick site in the emergency room. She may have had a small cut on her finger -- although she recalls no noticeable lesion at the time. A second victim was a person involved in drawing blood who attempted to syringe-fill a glass vacuum blood collection tube which had lost its vacuum. During the procedure the top of the tube flew off and the worker was splattered with blood and got blood in her mouth. Despite that fact that she was wearing gloves and glasses and that she cleaned up immediately after exposure she developed HIV infection nine months later.

Another incident of infection occurred when a technician who was manipulating an apherisis machine experienced a blood spill which covered her hands and arms. She had no cuts or dermatitis on her hands and cleaned up promptly. She did however have dermatitis on one ear and she may have touched it while she still had traces of blood on her hands.

Finally, several additional cases of health care related HIV infection have come to light. Both involve workers who were handling concentrated HIV being processed for research and diagnostic reagents. One technician can recall no break in technique, the other recalls a blunt needle stick which was immediately made to bleed and then cleaned up with antiseptic.

As the number of AIDS patients and individuals infected with HIV rises, the risk to health care workers will also increase. It seems likely that in those areas of medicine where blood exposure is almost constant and unavoidable, such as hemodialysis, phelebotomy, and open heart surgery, the risk will be very significant over the long haul.

What does this mean to suspension team volunteers? Unfortunately it probably means that risks are higher than we thought. Every member of the suspension team should seriously rethink his or her involvement. It is impossible for us to know in advance the HIV status of any given member who may be suspended. While some cases will clearly be greater risks than others, the risk of any given individual remains unknown until testing is carried out **after** suspension.

Alcor can and will test for HIV antibodies in all suspension patients. Technically we do not need permission of the patient to do so, as he or she is legally "dead" and thus has no rights to privacy. Our attitude towards our patients is obviously different, so we are taking this opportunity to inform you that we intend to check every Alcor suspension patient for HIV antibodies

(and for HIV antigen if and when that test becomes available). The results of such testing will be kept confidential within the practical limits of informing the team members of their risk in having participated in a given operation.

The risk of exposures to suspension team members such as have been described above under "medical/laboratory" seem high at this time. We are taking aggressive action to minimize such risks and expect to conduct specialized training sessions to deal with this problem in the immediate future. How often such "exposures" translate to "infection" remains sadly unknown at this time. Finding out will likely be by the route of hard experience.

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Life Insurance Update

by Steve Bridge

Alcor Midwest Coordinator

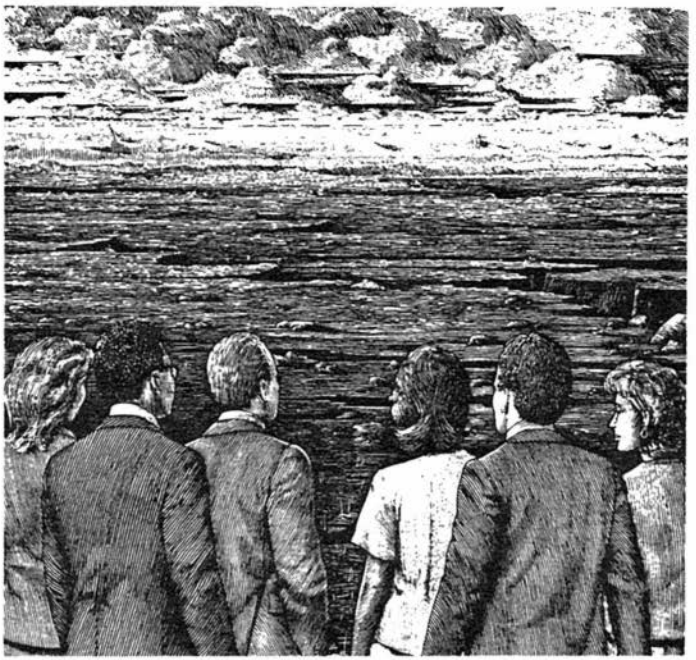
Most cryonic suspension agreements are funded with life insurance. It is the simplest way for the average person to arrange for the $35,000 (neuropreservation) or $100,000 (whole-body) required by ALCOR. Few people have that amount of cash on hand; but from your very first payment, a life insurance policy guarantees (with occasional exceptions) your full death benefit. And life insurance can be surprisingly affordable if purchased while you are still fairly young. For example, I pay $60.00 per month for a $100,000 universal life policy purchased when I was 34 -- a small price to pay for the possibility of an indefinite lifespan.

I am not a life insurance agent or even much of an insurance "expert." But I do try to keep track of life insurance developments which may affect cryonics policies and to pass that news on to our readers.

Potential Life Insurance Crisis--Buy Now!

The basic rule of life insurance at any time is buy it as soon as you can. The cost for you will increase every year that you wait. At some point, around age 55-60, you may find yourself totally unable to purchase life insurance at any price. I would recommend that you investigate insurance prices immediately even if you haven't decided whether or not to be suspended. Get specific prices for you. Many people delay because they are afraid insurance will cost too much. If they wait long enough, it will cost too much.

This year it is becoming even more important to buy your life insurance quickly. A number of newspaper and magazine articles suggest that the AIDS epidemic may be creating the beginnings of a life insurance crisis. You see, AIDS generally kills young people; and insurance companies lose money if insured young people die. Within the next two or three years, insurance policies may become more expensive and harder to come by, especially if you are a single male (homosexual or not) in one of the AIDS-High-Risk areas of the country: (in order of risk) New York City, San Francisco, Los Angeles, Miami, Washington DC, Houston, Newark, Chicago, Philadelphia, Dallas, Boston, Atlanta, Ft. Lauderdale, Nassau-Suffolk Counties (NY), and Jersey City.



Early attempts to require AIDS testing for insurance approval have met with cries of "discrimination" but attempts to legislate a solution have backfired. In the District of Columbia, insurers are not allowed to test for AIDS, so most companies have simply stopped writing life insurance there.

I am not interested in debating the moral issues here. Whatever the morality of testing or insuring, it will get tougher to buy life insurance and this is a practical concern for cryonicists. BUY YOUR LIFE INSURANCE NOW.

A New Look At Whole Life

For the past several years, insurance companies have been pushing a type of insurance policy known as "Universal Life." Universal policy costs and earnings are tied to bond interest rates and are very attractive when interest rates are high. Universal has some of the long-term advantages of Whole Life insurance (it is "permanent" insurance, and the policy values and death benefit grow with time, giving you a hedge against inflation), but the cost was much lower. Whole life policies are tied to the earnings of the insurance company.

My insurance agent has informed me that the new tax laws have made Whole Life a better investment that it was in the past. Companies are now able to invest their money in a broader number of areas, leading to greater profits and lowering the cost of Whole Life. Whole Life policies at many companies are now only slightly more expensive than Universal Life, and the long range value of the policy will possibly be much greater. It is always a gamble, of course; another period of runaway interest rates could give Universal the advantage again.

As an example, one Whole Life policy I was shown cost $48.00 per month for $50,000. The actual death benefit increased to $156,000 within 30 years. The Universal Life policy for $50,000 cost about $40.00 per month; but even if you paid extra on it so you paid $48.00 per month (for comparison's sake), the death benefit would only increase to $99,000 after 30 years. This is based on current interest rates and earnings, of course. Reality could fluctuate in either direction.

This is not a recommendation one way or another. Make sure your insurance agent shows you rates, earnings, and other differences for both Whole Life and Universal Life. Decide which type fits your needs and which fits your "prediction" of the economy for the next 30 years (good luck!). Definitely do not plan on Term insurance for more than a temporary fix. With term insurance, you more or less "rent" protection on a year-by-year basis. With every year, the price you pay goes up rapidly, until you can no longer purchase it. Some suspension members have combined a term insurance policy with a large savings plan, so that $35,000 will be accumulated within, say, ten years.

So why should anyone care if an insurance policy will grow in value? The problem here is that neuropreservation may cost more than $35,000 ten years from now. And whole body may well cost more than $100,000 by then. Cryonics is still pretty small. We will see normal inflation affecting us for many years before any savings are realized from the economy of a large-scale operation. My own feeling (strictly personal--there is no ALCOR policy on this) is that a reasonable projection for the next ten years will see ALCOR being forced to raise its prices to $50,000 and $150,000. If you are healthy and middle aged or young, you may be alive for 50 years or more before you are suspended. Prices could have doubled, tripled, or worse by then. A policy which grows in value (or a savings plan, if you really can handle it) may be the only way to keep up with price changes.

In addition, I strongly recommend that you start with funding well above the minimum anyway. Why bother to get involved with cryonics if you aren't willing to do what it takes to stay suspended and be revived? Your future well-being will be tied directly to the health and continued existence of ALCOR. If you give ALCOR more money for the patient suspension fund when you are suspended, ALCOR is more likely to weather economic hard times and possible physical disasters. And there will be more money available to fund your revival, which may not be cheap.

Change of Ownership

Finally, you should by now all be aware that ALCOR now requires some mechanism of accountability in insurance funding. This has generally taken the form that all suspension members make ALCOR the owner of the life insurance policy(ies), as well as being the beneficiary. As part of this type of agreement, ALCOR provides a "buy-back" guarantee, which guarantees you the right to buy back ownership of the policy for a small service fee (currently $25.00) if you decide to cancel your ALCOR suspension agreement.

The purpose of making ALCOR the policy owner is so that ALCOR will be notified if you neglect to continue payments on your policy, if you change the beneficiary without notice, or if you borrow against the policy, reducing its value. Consider the financial disaster possible if ALCOR in good faith goes to the considerable expense of suspending a member and discovers a few days later that no insurance money will be paid.

This policy has made some members (including me) a bit nervous, being afraid that they may lose control of their money in some way or that their insurance company will balk at the change. However, my insurance agent thinks that this is an excellent idea for the unusual requirements of a cryonics company. He says that you may make whomever you wish the owner of the policy, and insurance companies will treat it as a routine change. He also feels that the ALCOR Buy-Back Agreement is well thought out and provides good protection for the suspension member.

I now accept that the ownership question is not worth arguing about. Switching ownership to ALCOR, especially with the Buy-Back Agreement, is a reasonable compromise to make, since this system will protect <u>each of us</u> from the carelessness or dishonesty of a few suspension members. It would only take one or two of those people to put ALCOR in a position where <u>none</u> of us could be suspended.

LIFE AGAINST DEATH

A Memorial Day Weekend
At the Red Lion Inn
Ontario Airport, California
(May 27-30, 1988)
Information, Advice and Opportunities To Extend Your Lifespan

How old are you? If you're past 30, you already know about the human condition. About lethal diseases. Cruel accidents. The ravages of aging. You know that your biologic clock is winding down. That your days are numbered. And that it's only a matter of time before you die. By the time you reach 30, you realize that--for the rest of your life--you will be engaged in a desperate struggle for survival.

As human beings, we have the ability to peer into the future. To see that our "destiny" is to grow old and die. And to suffer from that knowledge. But we also have the ability to envision a completely different future. A future of extended life, health, and youthful vigor. And to take action to make that future a reality!

On Memorial Day Weekend, May 27-30, 1988, the **ALCOR Life Extension Foundation** will help you to improve *your* future. The entire weekend will be devoted to providing you with practical *information*, *advice*, and *opportunities* to help you live longer and prosper. You'll be given information about the latest advances in Gerontology, Nutrition, Immunology, Genetic Engineering, Suspended Animation, and Nanotechnology; advice about how to design your own personal Life Extension Program, how to sign up for Cryonic Suspension, and how to "take your money with you" when you do so; as well as opportunities to make more money by investing in high-tech Life Extension Companies or by starting your own Life Extension Center.

The primary purpose of this unique Life Extension Weekend will be to persuade you to save and enhance your own life. As a result, the format will be different from the typical Conference or Seminar. Although some of the foremost authorities in the country will be giving talks that weekend, the majority of the time will be reserved for more informal activities. Every session will be an *interactive* workshop, not a passive lecture. There will be plenty of time to answer your questions and to help you take practical steps to extend your lifespan and increase your income.

THE PROGRAM

The workshops currently planned for this unique Life Extension Weekend and the authorities who have agreed to participate are listed below.

Saul Kent, the President of **The Life Extension Foundation**, will be the Moderator on the entire proceedings. He will introduce all the guest speakers and act as Co-Moderator for the workshops that follow.

An Informal Gathering

On Friday evening, May 27, there will be an informal gathering at the Red Lion Inn, where the participants can get to know each other prior to the beginning of the program.

Saturday, May 28

(9 AM - 10:15 AM) - ***THE LIFE EXTENSION DIET - Roy L. Walford, M.D.,*** **UCLA Medical Center, Los Angeles, California** - Scientific evidence will be presented that a low calorie, high nutrient diet can extend lifespan in rodents and why (according to Walford) such a diet may do so in humans as well. Dr. Walford will then answer questions about nutritional lifespan extension and his other research including immunoengineering, body temperature reduction, and the genetics of aging.

(10:15 AM - 10:45 AM) - Mid-Morning Break

(10:45 AM - 12 Noon) - ***CHOOSING NUTRIENTS FOR YOUR LIFE EXTENSION PROGRAM - Steven Arnold, M.D.,*** **Century City, California** - How supplemental nutrients can help you to live longer in good health. How to choose which nutrients to take, what dosages of these nutrients to take, and when to take them as an integral part of your Life Extension Program. Questions to follow.

(12 Noon - 2 PM) - Lunch

(2 PM - 3:15 PM) - ***DESIGNING YOUR EXERCISE PROGRAM - Workshop leader to be chosen later*** - How exercise can help you to live longer in good health. How to go about choosing the types of exercise that are best for you, how to get started with your own exercise program, and how to evaluate the results of this program. Questions to follow.

(3:15 PM - 3:45 PM) - Mid-Afternoon Break

(3:45 PM - 5 PM) - ***RECENT ADVANCES IN THE LIFE EXTENSION SCIENCES - Steve Harris, M.D.,*** **UCLA Medical Center, Los Angeles, California** - A detailed update on new advances in biomedical gerontology, brain grafting, genetic engineering, immuno-engineering, neuroendocrinology, and other fields by a medical doctor who also conducts pioneering life extension research at UCLA. Questions to follow.

(5 PM - 7 PM) - Dinner

(7 PM - 8:15 PM) - ***ADVANCES IN SUSPENDED ANIMATION RESEARCH - Gregory M. Fahy, Ph.D.,*** **American Red Cross, Rockville, Maryland and** ***Jerry Leaf,*** **Division of Thoracic Surgery, UCLA Medical Center, Los Angeles, California** - A discussion of the latest advances in hypothermia (Leaf) and cryothermia (Fahy) followed by questions about the significance of Suspended Animation for Medicine and Space Travel and the problems that have to be overcome in order to perfect this revolutionary technique.

(8:15 PM - 8:45 PM) - Mid-Evening Break

(8:45 PM - 10 PM) - ***DESIGNING THE FUTURE - THE PROMISE OF NANOTECHNOLOGY - Mark Voelker, (Ph.D. candidate), Scanning Tunneling Microscope Research and Development Scientist,*** **University of Arizona Medical Center, Tucson, Arizona** - What is Nanotechnology (Molecular Engineering)? How can it help us to conquer aging and death, travel to other stars, provide new sources of energy, redesign our environment, and create abundance for all? What are its implications for society?

Sunday, May 29

(9 AM - 10:15 AM) - ***PROFILES OF THE FUTURE - A Panel Discussion including: Keith Henson, Thomas Donaldson, Ph.D., Mike Darwin, and Saul Kent*** - A look at the fantastic changes that may occur in the next (21st) century and beyond as seen by visionary futurists who'd very much like to get together in 100 years or so to discuss the matter further.

(10:15 AM - 10:45 AM) - Mid-Morning Break

(10:45 AM - 12 Noon) - ***CRYONIC SUSPENSION - HOW IT CAN SAVE YOUR LIFE! - Mike Darwin,*** **President, ALCOR Life Extension Foundation** - What is Cryonic Suspension? How is a patient placed into Cryonic Suspension? How good is the current technology used in Cryonic Suspension? What are your prospects for reanimation after Cryonic Suspension? What services does ALCOR offer? Why it is critically important for you to sign up for Cryonic Suspension--right now!

12 Noon - 2 PM - Lunch

(2 PM - 5 PM) - ***SIGNING-UP FOR CRYONIC SUSPENSION*** - The entire afternoon will be devoted to helping those who want to sign up for Cryonic Suspension do so. This workshop will be moderated by **Mike Darwin, President of ALCOR** and will include several trained counselors to answer your questions and take you through the sign-up procedure one step at a time. Also in attendence with be attornies and financial planning experts to explain--with the help of model Trust Documents--how you can attempt to "take your money with you" when you sign up for Cryonic Suspension.

(5 PM - 7 PM) - Dinner

(7 PM - 10 PM) - ***INVESTING IN LIFE EXTENSION - Saul Kent,*** **President, Life Extension Foundation, Hollywood, Florida** - A discussion of how investing your money in high-tech life extension companies can be profitable for your health as well as for your pocketbook. How you can obtain your own franchised **Life Extension Center**. Representatives of several Life Extension Companies are expected to be present to answer your questions and **Darryl Sharum**, the Director of the **Life Extension Center** in Marina del Rey, California will be on hand to discuss Life Extension franchising opportunities.

Monday, May 30

(9 AM - 2 PM) - ***TOUR OF THE ALCOR CRYONIC SUSPENSION FACILITY*** **in Riverside, California** - A bus will be available to take conference attendees to the ALCOR facility, which is approximately 35 minutes from the Red Lion Inn. The ALCOR facility is most modern and best equipped Cryonic Suspension facility in the world. ALCOR personnel will be on hand to answer your questions about the facility and the many activities that go on there.

(2 PM - 10 PM) - ***A CELEBRATION OF LIFE EXTENSION*** **at Saul Kent's private residence in Riverside, California** - The fitting conclusion to this memorable Memorial Day Weekend will be a social gathering at which the attendees will be able to eat, drink, swim, soak in the spa, exercise, listen to music, play games, and simply enjoy each other's company. The site of this Celebration of Life Extension is 10 minutes from the ALCOR facility and 30 minutes from the Red Lion Inn. A bus will be available to take people there.

Registration

Registration for the entire **LIFE AGAINST DEATH Memorial Day Weekend in 1988 is only $25** for members of the **Alcor Life Extension Foundation** or **The Life Extension Foundation**. Non-members pay **$50**.

These registration fees apply only if you register by mail or by phone (with your credit card) prior to the Memorial Day weekend. Members who register during the weekend will pay **$50** and non-members will pay **$75**.

The **Red Lion Inn** at Ontario airport in Southern California is a strikingly beautiful, ultra-modern facility with extra-large rooms. Registrants for the **LIFE AGAINST DEATH Memorial Day Weekend** can register at the Red Lion Inn at the special low rate of **$49 per night** for either a single or double room. To reserve your room at the **Red Lion Inn**, just call their toll-free number: **1/800/547-8010**.

Registrants for the **LIFE AGAINST DEATH Memorial Day Weekend** should send **$25** (if you're a member) or **$50** (if you're a non-member) to:

LIFE AGAINST DEATH
The Life Extension Foundation
2835 Hollywood Blvd.
Hollywood, FL 33020

Or call our toll-free number: **1/800/841-LIFE**

Please make checks or money orders payable to **The Life Extension Foundation**.

LETTERS TO THE EDITORS

Dear Editors,

There are two errors in the October, 1987 issue of CRYONICS, where it was reported that I "promptly retorted" to a passerby, saying, "That's quite a statement from a pile of dust!"

Error #1: The remark actually was, "Those are brave words, coming from someone who might become a pile of dust!"

Error #2: The remark was not made to a passerby, but was the subject of a comment to another Alcor member... something that one might be tempted to say in a situation such as that.

Somewhere along the line, third or fourth hand, both the words and the context of their use changed form, so that the reporting in CRYONICS conveyed something very different from what actually took place. It is probably well to check out quotes from the source before using them, to prevent this sort of distortion.

Steve Bridge's letter in the November, 1987 issue of CRYONICS points out this is not a matter to be taken lightly. When promoting cryonics, it is counterproductive to even think in terms of striking back, responding in kind to what we may perceive as blindness or idiocy on the part of others. Steve's letter is an excellent treatment on "going to the public" with the idea of cryonics, and would be valuable as a reprint to be given to any Alcor member who gets involved in promotion.

Fred Chamberlain
South Lake Tahoe, CA

Dear Mike;

When I read the November issue of CRYONICS I was somewhat surprized to find that I was member of the "scientific advisory board" of the CSC (Cryonics Society of Canada). I met Douglas Quinn, president of CSC, at one of the regular Trans Time dinners held in this area. My impression was of a pleasant young man interested in cryonics who -- in exchange for a ten dollar donation -- made me an associate member of CSC, and therefore entitled to receive whatever publications might be forthcoming. What this entitlement might bring was rather uncertain -- the organization itself being rather small by cryonics standards -- but having my name appear in a press release was not something I had considered. How and when I was promoted to the scientific advisory board of CSC is a complete mystery to me -- it is an honor I neither sought nor even knew about.

Your readers might be interested to know that Quinn recently wrote two articles for the ACS NOTEBOOK: The Newsletter of the American Cryonics Society (Vol. 4, No. 7, Nov. 1987) entitled "Creation of the Cryonics Society of Canada" and "The Implications of Parapsychology for Cryonicists". To quote from the latter article: "the most obvious application as far as cryonics goes, would be to use psychokinesis (the manipulation of matter by psi) to repair the damage caused by freezing on both a gross and a cellular level."

While this is certainly an optimistic viewpoint, it is not justified by any evidence of which I am aware. Whether or not support for cryonics for reasons that are so clearly rejected by the great majority of scientists is beneficial or detrimental is an interesting question, though I certainly find more mundane approaches (that confine themselves to the known laws of physics) much more persuasive.

Yours Truly,
Ralph Merkle, Ph.D.
Sunnyvale, CA

Mike Darwin replies to Dr. Merkle,

Your name certainly appeared on the press release that was sent out by Mr. Quinn. Promoting you to the "scientific advisory board" may have been an error I made, based on a phone conversation with Mr. Quinn a week or so before we went to press with our article on CSC.

Mr. Quinn called to inform me that he was sending around a press release and article for submission to CRYONICS, and, as I recall the conversation, mentioned to me that he had formed an advisory board to CSC and that its members were listed at the end of his article. He indicated that I might want to delete this list from his article since he knew I did not "approve" of some of his advisors since they were "mostly Northern California people." I told Doug that that was unlikely to be a problem in news coverage of his article and that in fact that the **existence** of such a board was the problem, as opposed to its **disclosure** either in the pages of CRYONICS or elsewhere for that matter. Mr. Quinn seemed not to understand that distinction.

I may have erred in assuming that the list of people at the end of his press release/article was equivalent to his scientific advisory board. If this is the case, my apologies to both you and to Mr. Quinn.

In any event, widespread distribution of the names of members of a cryonics organization without their prior consent is inconsistent with Alcor's policies and in our opinion is a serious breach of etiquette as well. Mr. Quinn also disclosed the name and location of a Canadian Alcor Suspension Member which he was in a privileged position to know about without the member's permission and without prior consultation (the member found out about it when he received a request from a radio station for an interview).

The article by Mr. Quinn on Parapsychology as it relates to cryonics was rejected by CRYONICS some months before it appeared in ACS NOTEBOOK. It is, in my opinion (and the opinion of the rest of the CRYONICS staff as well) unfortunate that such an article should appear in any cryonics publication. -- MD/HH

Dear Editors,

As per your request in CRYONICS, I am responding to let you know that I enjoy the fiction and poetry. I would not recommend extremely long pieces, however.

I especially liked Cath Woof's article and was glad to see some other people want to explore the duplicate issue.

I enjoyed your article on "Nongs Smoking Dope". I had a very unsatisfactory feeling about a certain person at the convention and was planning to write an article to submit. At the end I got cold feet and thought it was silly, so I put the draft away. Now I think that the person in my proposed article was the same one you mentioned, Mr. Barnes. In any case, I have rummaged around and found the draft I started and thought I might send it to you to let you know my gut feeling about the guy was the same as your assessment. Keep in mind that I had never seen, or heard, of this guy and wrote the piece from the one-time encounter. I would be interested to find our if it is this same Mr. Barnes.

Thanks for doing a good job of protecting our interests.

David Pizer
Phoenix, AZ

To the Editors:

In response to the September article "Women in Cryonics", I would like to address the female readers of CRYONICS. I would like to meet and become acquainted with the people I'll be reviving with. Knowing someone personally often prevents misunderstandings and helps develop the sense of belonging.

Not all of us can fly to California yearly to meet the other ALCOR members, and maybe writing a letter to the editor isn't how you want to express yourself. However we can communicate in other ways.

If you like to meet people, write letters, and talk on the phone; and if you are interested in getting acquainted with other cryonicists and think a support group is a positive idea, drop me a line or give me a call.

Angalee Shepherd
1208 Charleston E. Dr.
Indianapolis, IN 46219
Tel: 317-357-9910

Dear Editors,

I would like to add a couple of points to "How Not to Die Like That" by Mike Darwin and Steve Harris in the October, 1987 issue of CRYONICS. First, on the issue of automobile safety.

Whether or not you believe that rear seat belts protect the rear passenger, it is important to the driver that all passengers wear them. An unbelted rear passenger during a collision can fly over the front seat and

injure the driver. An unbelted front seat passenger can cause similar injuries. Either passenger if unbelted can actually cause a collision by sliding into contact with the driver during emergency maneuvering. If you have ever driven with children you know how distracting they can be. Unrestrained children can be fatal to everyone in the car.

Another widely overlooked way to reduce your chance of injury or death in an automobile accident is simply the proper placement of the headrest. It is not there for you to "rest your head." The headrest is intended to prevent whiplash injuries, which it will do very well -- if it is extended. Most drivers leave it all the way down. If a car is rear-ended (perhaps the most common form of collision), the driver's head will be thrown back over the seat with a violent snap, resulting in torn neck muscles, cracked vertebrae, and possible permanent damage, including paralysis. In a more violent collision, such an injury could contribute to death. Why take such a chance?! Just raise the headrest so it lines up behind the "bump" on the back of your head -- and insist your passengers do also.

My other comments have to do with a more controversial issue -- the advisability of owning a handgun (page 35-36). Mike and I have discussed this on many occasions, and I am well aware that Mike and several other ALCOR members believe that the ability to blow holes in other people somehow makes this a safer society. Our opinions differ strongly on this. In any case, before you decide to join the millions of other people who use a gun for protection, carefully consider your own situation.

About 25,000 people a year in the United States are killed by firearms. About half of those are murders; the rest are accidents and suicides. Of the murders, over half are what Mike and Steve refer to as "friendly murders" -- crimes of passion by friends or family. If you are in domestic or business situations where violence is possible, DO NOT have firearms easily available. They will be used. Also, several hundred children a year are killed in firearms accidents. Any child who watches television is attracted to a gun, but television does not prepare a child for the fact that "blowing away" little brother is usually irreversible. DO NOT KEEP LOADED GUNS AROUND CHILDREN.

In any case, keeping a gun around the house may do little to protect you in a burglary or violent attack. Unless you keep a loaded gun on you at all times, an attacker is unlikely to give you the time to get to your weapon. If you do carry the gun with you and you tend to be a bit jumpy, you run a very great risk of accidentally shooting yourself or someone you love in a panic situation. And because 90% of all burglaries occur when no one is home, the handgun bought for protection is very often stolen, adding another weapon to the millions already in criminal hands.

If you do choose to purchase a weapon, buy it from a reputable dealer to reduce the risk of it exploding in your face when you try to use it. And please, please get proper training in how to handle it. Don't think that because it looks easy on "Hill Street Blues", you can just pick up a gun and use it safely or effectively. "Deadly weapon" means just what it says.

Steve Bridge
Indianapolis, IN

Dear Editors,

As an "incipient" Alcor member I am taking the liberty of commenting on the November, 1987 issue of ACS NOTEBOOK.

The Australian and Canadian activities are worth knowing about. The debate with Rifkin (I feel he is an enemy of rational thought) sounded interesting and I hope to witness the debate in St. Paul in January. I look forward to reporting my impressions to you.

"Talking Technology" by Paul Segall: Trans Time Medical Products seems to be a case of amateurs attempting to do what large pharmaceutical companies will end up doing better. They may be providing similar products already. The most interesting items in this article are the credentials added after the author's names. Is Paul Segall a medical researcher or practitioner at Berkeley in Physiology and Anatomy? Or is that where he received his degree? He appears to be trying to add credibility beyond that which the contents of the article can support.

"The President's Desk" by H. Jackson Zinn: Is the code of ethics governing cryonics organization relationships any more than some plan to protect ACS from losing prospective members to Alcor?

"The Implications of Parapsychology for Cryonicists" by Douglas Quinn This article seems counterproductive to me if it causes cryonics people to waste time trying to find non-physical (as mankind now understands the physical universe) means to do what can (and WILL) be done without the need to break any laws of physics.

"Achieving Infinite Pleasure" by Art Quaife: This is simply filler with no value that I can find.

My purpose in writing is to give another person's reactions to ACS' efforts. If only the people on ACS' mailing list could receive a copy of CRYONICS for comparison!

Hank Lederer
Wayzata, MN

The Editors reply,

Thank you for your letter. To answer your questions:

We suggest you establish Dr. Segall's credentials, qualifications and affiliations with the University of California, Berkeley (UCB) by contacting UCB and asking to speak with the Chairmen of the Physiology Department and the Vice President in charge of faculty. Share your questions and concerns with them as they will be best able to discuss Dr. Segall's credentials, reputation, and current relationship with the University. We'd be interested to know what you find out ourselves!

As to the code of ethics -- we can only wait and see. Alcor's opinion about the behavior and standards of both the American Cryonics Society and the Cryonics Institute has been well characterized in the pages of CRYONICS in the past.

And finally, Yes, we wish the readers of both ACS NOTEBOOK and THE IMMORTALIST could see a few issues of CRYONICS too. The pity is, a lot of them don't even know what they are missing -- or that we even exist! --MD/HH

Dear Editors,

I puzzled over Michael Perry's article "Identity and Resurrection" (CRYONICS, Sept, 1987) for a long time because his two main topics "asymptotic identity" and "resurrection of identity" both seemed very curious to me.

His model of asymptotic identity did not make sense to me until I read:

> "In the asymptotic model we do not single out particular features that are "essential" to survival and others that are "expendable", but simply assert that the personal identity is composed of those features, whatever their nature, that are destined to become established, eventually, and to persist throughout eternity."

If the above (quoted) statement is what he is really driving at, I think that the robot model and most of the formalism of the asymptotic model actually confuse more than enlighten the reader. For example, my first impression of the asymptotic model was that it is a model of an extremely boring person, who does fewer and fewer new things as time goes on. The caveats for imperfect memory, slow convergence, etc. work around that problem but I wonder why Perry bothers building up so much formalism only to have to fudge it a great deal to make it realistic.

I suggest another approach that gets to the same result much easier.

Perry's formalism highly weights the oldest memories to ensure that those memories "that are destined to become established" get highly weighted. Instead, highly weight those memories that are most recently and frequently used. Note that these memories may be very old memories, very new memories, or anything in-between. (I also want to point out that these memories may be values, habits, emotions, etc. rather than strictly encyclopedia-style data items.) In each case, however, the recently and frequently used memories tend to be the memories that are most useful and therefore most likely to become eventually established. This "use it or lose it" weighting of memories not only achieves Perry's goal (quoted above) without that confusing robot model, it also corresponds more closely to how our memories already work anyway, because, I suggest, it has a lot of survival value.

The section on resurrection of identity also seemed curious to me. Frankly, I don't see the point. Yes, he's right that we can theoretically reconstruct a person by generating all the possibilities, but so what? Suppose that I accidentally deleted a computer file that I valued and all I remembered about it was its size. I could certainly recreate it by generating all possible files of that size, but no information would be gained by doing that, because I have no way of distinguishing the correct file from all the others. (Besides, I just wasted a lot of disk space and now have a lot more files to take care of.) The same type of argument follows for randomly regenerating humans and I expect people of the far future (that Perry is depending on to regenerate every person) to come to the same conclusion.

Kevin Brown
Stanhope, NJ

Dear Editors,

I would like to respond to the Letter to the Editor by David Pizer in the October issue of CRYONICS.

Mr. Pizer discusses the concept of personal identity and states his belief that an exact copy of a person is not and cannot be the original. He concludes that the activation of an exact copy of you upon your death will not therefore continue your own personal existence.

I agree, and would like to proffer a possible implication of his position -- indirect proof of the existence of God or, at least, the existence of soul. If you and your copy are exact duplicates of each other, in every physical way you are the same, and yet you are not the same, then the only way you can be different is in some way other than that which is physical. If there is a part of you that is not physical, could we not call this a soul?

Arthur Emens
Orlando, FL

Mike Perry replies [to KQB and AE]:

In my article "Identity and Resurrection" (CRYONICS, Sept. '87) I introduce a notion of "convergence" to handle the slippery problem of what personal identity should mean, given that memories, etc., could be acquired or lost. In essence we hope that some building blocks of our personality (a growing body of them, in fact) will persist forever, this being necessary, in my estimation, for any reasonable claim that the individual as a whole persists forever. In the article I considered the idea that memories relating to earlier experiences deserve a greater weight in defining the individual, but I no longer think this essential. Instead I accept the criticism of Kevin Brown and others and hereby abandon the position that memories need to be ordered on some basis of "importance". I would not go so far, though, as to allow an arbitrary loss of "unimportant" memories, as Brown appears to do. Something definite has to persist in an unaltered form for a reasonable claim that the individual survives.

On the issue of resurrection I don't feel that it should be necessary for others to "know" who you are to justify the claim that you have been brought back. **You** will "know" who you are, and that should suffice. (However, there is a remarkable line of argument, largely based on the many worlds interpretation of quantum mechanics, that seems to allow a resurrection without the exhaustive enumeration of similar persons -- see my article.)

As for the argument of Arthur Emens, I don't feel that distinct but identical objects must be distinguished by a mystical essence such as the "soul". Two electrons are not distinguished this way, for example. However, I don't think this would pose a problem in any likely future scenario, because two duplicate people, when they begin to think, will also begin to diverge.

Getting Ready

by Arthur McCombs
Alcor Suspension Arangements Coordinator

During part of this year I have been conducting, at the request of the Alcor Board of Directors, a review of all members' paperwork and funding arrangements to insure that everyone is as well protected as possible. I have already met with about 30% of Alcor's membership to assist them in upgrading their paperwork, and will be meeting with and writing to the rest in the coming months. During this work, I have made several observations which I would like to pass along to all Alcor members (and potential members) through this article.

Because we live in a world where the right to control one's own life is not respected, a wide variety of threats to being placed into cryonic suspension exist. The paperwork that Alcor requires and requests its members to execute was designed to deal with these threats in the best way currently possible.

The Importance of "Optional" Paperwork

Basically there are two types of Alcor suspension paperwork: the "core documents" which Alcor requires before it will issue suspension coverage, and "optional" documents which Alcor strongly recommends the member complete.

However, in reality, the optional paperwork isn't really that optional. The more of it Alcor has, the better is your chance to be placed into cryonic suspension should the need arise.

For example, many people think their relatives should have no say in what happens to their remains after death, and given strained relations with those relatives they don't push them to sign the Relative's Affidavit (an optional form). While they may be philosophically correct, the unfortunate fact is that most governments and states give relatives great authority in this area, so when you lie freshly "dead" (and remember, as far as the state is concerned it's just plain **dead**) in a hospital emergency room and Alcor representatives show up (so far, this is an optimistic scenario) with a Cryonic Suspension Agreement and an Authorization of Anatomical Donation that you signed while alive, the hospital

officials are still very likely to want to know what your relatives will have to say about it all; and so if Alcor has Relative's Affidavits from your closest relatives, much time could be saved.

As suspensions occur and new laws are passed we learn more; just during this year we have realized the need for two new paperwork additions and several modifications to existing paperwork to address potential problems and threats, and eventually we will be asking all members to execute these. In general, I estimate that members should be prepared to re-execute an entire set of paperwork every five to ten years. I realize that this is a dreary and wasteful burden, but that's the way it is: nobody ever said living forever was going to be easy. If you (yes, **you**!) would like to spend the millions of dollars and years of your life lobbying for national or state "enabling legislation" to make cryonics arrangements a recognized part of law, then please go for it. In the meantime, if you know of paperwork deficiencies in your arrangements, if you've been "meaning to get that pile of stuff into Alcor", please take care of them **today**! When I get in touch with you by mail and send you forms, please take a little extra time to complete them without mistakes (it helps reduce mistakes if you actually **read** these forms), and get them back to me so I don't have to nag. Please, please, please help make my insanity-producing job a little easier!

Term Insurance

A surprising number of members have provided for funding through term, rather than whole life insurance. In my opinion, unless this is either combined with a personal savings program that will accumulate the required funding minimums (which may increase over the long time periods needed to save) by the time the term insurance expires or one has a virtual certain expectation of acquiring substantial wealth at a future date prior to the term insurance expiring, this is extremely foolish. Cryonicists are, in general, a healthy and careful bunch of folks, and probably most of us (barring nuclear war, etc.) will live well past the age when insurance companies stop offering term protection (and even if they still would, premiums become prohibitively expensive past a certain age). **Now, today, while you are reading this, is the time to do something about this if you have term insurance and don't expect to die before it expires.** With each passing day the odds increase that you will become uninsurable, so if you want to change to whole or universal life insurance, call your agent or insurance company today.

Alternatively, find out when your term insurance expires and calculate how much you would have to save monthly to accumulate the **expected** funding minimums at the time of policy expiration (current minimums are $35,000 for Neuropreservation and $100,000 for Whole Body Suspension; these are certain to

rise at least in pace with the Consumer Price Index and probably due to technological advances as well), then start saving. But remember, if you end up in a nursing home (and even young people can end up there due to accident/paralysis...) all your savings will be rapidly eaten up by government mandate. In fact, if you require chronic care and expect the government to pay for it, you must have no more than $2000 in assets of any kind! Try getting frozen on that! Unless you have the money to do comprehensive trust and estate planning (in other words to hire **good** lawyers), **stick with insurance and make sure it is some kind of whole life or universal life plan!**

It would be extremely sad if, after a lifetime commitment to cryonics and paying premiums for decades, you do not get suspended, when with a little bit of careful planning and probably for not much greater cost, this objective could have been achieved. Especially disturbing are those who have term policies for amounts well in excess of current funding minimums, when for the same or less amount of money in premiums they could have fixed premium whole or universal policies for the (lower) required funding minimums and have the security of those types of policies.

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On the subject of funding and funding minimums, Alcor encourages all members to provide as much funding above the minimums as they are willing and able to do, to improve their own chances for suspension and revival as well as to strengthen Alcor, their chosen vehicle for (possibly) travelling to the future. If a member provides only the recommended minimum at the time they join through insurance, and those minimums are raised later, perhaps when the member is no longer insurable and thus unable to provide further funding to meet the new minimums (at least through insurance), there is no guarantee that Alcor will not give notice to cancel that member's Cryonic Suspension Agreement (as outlined in the Agreement). **However**, it is my strong hope and belief that, unless some technological innovation so stunning and yet expensive makes this impossible, Alcor will "grandfather" all those members who find themselves in the above situation before raising the minimums. I am personally committed to seeing that this is done.

Provide Us With Identification

I encourage all members to send us a set of their fingerprints and a recent photograph (updated every five years) for their files, so that if they

should die under circumstances that could make identification of their remains more difficult (and thus time consuming) without these tools, we will have them. If you have had a Panorex or other full mouth X-ray procedure done please send us the film for our files. Additionally, consider having a copy of your dental charts sent to us -- or at very least the name and phone number of your dentist. Having these kinds of records in our possession might also help demonstrate to potentially problem-causing authorities the level of your commitment to cryonics and Alcor's professionalism.

Health Insurance--Get It Now

I have learned from those members who have sent in the "Alcor Emergency Medical Information Form" that some of you do not have health insurance. I **strongly** recommend that you get some: it need not be expensive and it can **save your life!** The following advice applies to those under 65; I know next to nothing about Medicare, but in general, my advice would be the same: for a life-extensionist, health insurance should be a priority: suffer and sacrifice if need be, **but get it.** The extra five years of life you gain by going to a decent cancer specialist instead of the county hospital hack could see you through to a major cryonics advance that could mean having it really work -- not to mention just getting to live another five years.

For those who haven't noticed, this is the 80's, meaning there are all sorts of neat but very expensive life extending therapies being developed, and also meaning Reagan budget cuts, hospitals closing, escalating government health costs due to those neat but expensive therapies, AIDS, illegal aliens, homeless persons, and a general increase in the number of poor uninsured persons seeking health care. Regardless of your political perspective on these issues, the reality is that there are and will be increasing calls to limit health care expenditures by limiting health care and who gets it. If you don't have the freedom to choose your own physician that a private health insurance policy offers, as well as the ability to seek and obtain expensive and life-saving treatments, you could wind up in big trouble. That's the bad news.

The good news is that a good health insurance policy does not need to be expensive; the key to affordability is in having a high deductible (i.e. the highest a given company will offer, usually $2,000 or $2,500). It might not be easy, but most folks can afford to shell out $2,500 a year for health care costs if they have to (which they usually won't). And you aren't buying health insurance for all the various little, non life-threatening problems that crop up from time to time. And even if these do wind up costing

you $2,500 in a given year, so what? You virtually always cut a deal with your doctor and pay it on time, or give up the vacation to the Bahamas or the new VCR, or if you really are broke, then go ahead and let the county pay for it -- they usually do a pretty good job on non-essential-but-irritating-if-you-don't-get-them-fixed kinds of things.

As an example: when I was once broke and got ringworm from a stray kitten I rescued, the county paid for what I needed to cure the ringworm (Mine, not the kitten's, though I eventually got him cured too, and found him a good home.) Ringworm wouldn't have killed me, but I didn't want to live with it, and the treatment was so simple that not even the government doctors could have screwed it up.

Keep in mind that you're buying health insurance so that when that troubling little bump you just noticed turns out to be the big "C", someone on your side will be there to pay the $30,000 chemotherapy bill. Or so that when your motorbike slams into a semi, someone on your side will be there to help put the pieces back together, rather than say: "Gee, that's too bad, here's a couple of aspirin and a wheelchair."

If catastrophic medical problems do happen to you, the least of your worries will be a $2,000 deductible (at that point, even if you can't afford it, the doctors and hospitals are making so much money off you they will often just let the deductible slide). I also recommend avoiding "preferred provider" plans or Health Maintenance Organizations (HMOs) that limit your choice of physicians (in the latter case, severely). The more freedom you have to select physicians and therapies, the more likely it will be you can find those best suited to your needs and best able to further your survival. HMOs and preferred provider plans will usually try to lure people in by offering apparently attractive rates, but then you are stuck with the physicians **they** choose for you.

What happens if you have a heart attack and need intensive care and insist that Alcor be on the scene in case you die and your HMO physician says "No way those cryonics people are coming in here!"? You can then try to find a county doctor who will cooperate with Alcor (not likely), at the possible cost of better quality care, or run the risk of dying and losing precious time while the doctor-you-didn't-choose takes his/her sweet time about pronouncing death, or you can pull out of the situation altogether and greatly increase your chance of dying. With a private policy with full freedom to choose your physician, you could instead find a competent physician to treat your problem, one who will cooperate with Alcor, and transfer your care over to him/her and have the insurer pay for it.

For Californians, I recommend the Blue Shield "Coronet Major Benefits" Plan with a $2,000 deductible, which I have. This gives me complete freedom to choose my own physician and costs only $112.45 per quarter for persons 30 to 44. I can now walk normally, as opposed to limping, because of this policy. Last year while skateboarding, I broke my ankle in three places and dislocated it; people looking at the x-rays were not impressed with my chances for regaining full agility. Had I been forced to seek treatment with the county, I would almost certainly today be walking with a limp. But because I was able to get two outstanding doctors to work on it, today, some three operations and $12,000 later, I can walk, run and bicycle just as before; and even skateboard should I be dumb enough to want to do so.

A Sharp Way To Solve Your Insurance Problems

If you live in the Southern California area and don't know any insurance agents, Alcor has substantial experience with (and I personally recommend) a competent and thorough professional: Jim Sharp at 545 West Commonwealth Avenue, Suite C in Fullerton, California 92632 (phone: 714-738-6200). He has sold many of our members policies with the Jackson National Life Insurance Company, which has very competitive rates, and sells policies with other companies as well, including health insurance through Blue Shield and Blue Cross.

Alcor Life Insurance Requirements

In the August 1987 CRYONICS, Alcor's new requirements regarding members' insurance policies were discussed in the article "Some Changes in Requirements for Suspension Coverage"; specifically Alcor now requires either ownership of a member's policy or that the member execute a "collateral agreement". Although you were then encouraged to "avoid the rush" and take care of this without having to be individually contacted, the response has been minimal. It will make my work **much** easier if you, the members, do this **now.** I have put in hundreds of volunteer work hours on this project; can't you please take the hour or so needed to do this? Specifically, these options work as follows:

A. **OWNERSHIP**-Ask your insurance agent or a company representative for a change of ownership form, then you should **not** fill it out but do sign it, then send it to Alcor so an officer of Alcor can sign it as the proposed new owner, and I can fill in the appropriate policy and address information. Do let us know at what address you wish to receive your premium billing, and please try to make it an address with some prospect for longevity. This is important because it will help minimize the number of times we'll have to be requesting address changes from the company (if you move around a lot, you might consider renting a private mailbox or a P.O. Box to receive all your mail; this has certain security advantages as well). We will then forward it to your company and they will send us an acknowledged copy.

It is important for you to know that I will add a request to this form, or a subsequent one once Alcor owns the policy, to the effect that you (the member) will receive **only** the first premium billing notice, and that Alcor will receive all other correspondence pertaining to the policy, including **late** premium billing notices so we know when there is a problem and can notify you. Once Alcor owns the policy, only Alcor can request a change in the premium

billing address, thus it is **vital** that you **promptly** notify us of any address changes (otherwise you won't get the premium billing and we won't be able to find you and your policy could lapse).

A possible alternative if you are so organized that you pay your premiums ahead of receiving the billings (as I do) and so don't really care whether or not you ever see the billing notices, is to just have Alcor receive all the premium billing notices (we will forward the notice to you anyway, but only if you pay your premiums on an annual basis). This option may seem more complicated than the collateral agreement, but it does have certain advantages: by transferring ownership to Alcor, the policy used to fund your suspension cannot be taken away from you to pay for debts incurred during a terminal illness, or by legal action taken against you, even if by the government (i.e., the IRS can take your life insurance policy from you or take its proceeds if you are dead!)

B. **COLLATERAL AGREEMENT**-Ask your insurance agent or a company representative for their company's "Assignment of Policy as Collateral" form (this goes by different names, and some companies won't offer it, but they will know what you mean); then you fill it out with Alcor as the "Assignee" and sign it and certify it (witnesses or a notary, depending on the company) and mail it to the company along with a letter asking that Alcor receive from them an acknowledged copy and a letter stating that it is their company's policy to notify the assignee if the insured defaults on premium payments. If this is not their company's policy or they refuse to issue such a letter, then Alcor will need ownership of the policy instead.

To Summarize

Please don't set this article aside with some vague notions about "getting around to those things some day". If you don't:

1) Have your "optional" paperwork in place, get it in place NOW!

2) Have adequate whole-life cryonics insurance protection, purchase it TODAY!

3) Have health insurance, start moving to purchase some WITHOUT DELAY!

4) Have Alcor as owner of your life insurance policy (or a collateral agreement), arrange the change IMMEDIATELY!

Reducing Your Risk Of Autopsy

Part II:
The Problem of Atherosclerosis

by Michael G. Darwin and Steven B. Harris, M.D.

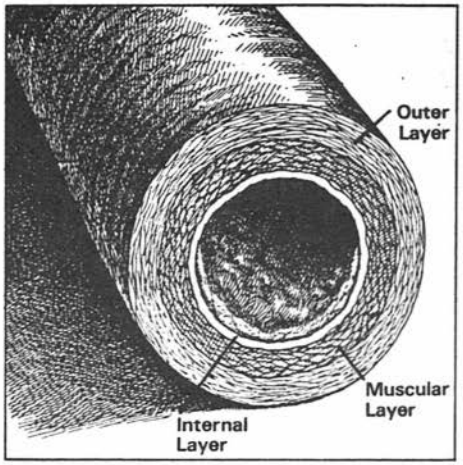
Much of the information contained in this article was gleaned from a very excellent series of articles entitled "Nutritional Management of Diet-Induced Hyperlipidemias and Atherosclerosis" which appeared in INTERNAL MEDICINE FOR THE SPECIALIST beginning with volume 8, number 3 (March, 1987).

The first part of this article, which appeared in the October issue of CRYONICS, defined the problem of sudden death as it relates to cryonicists and dealt with some of the low and moderate risk modes of sudden death: homicide, suicide, and accidents.

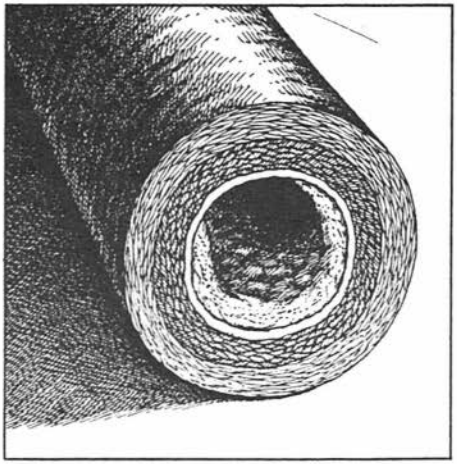
This part of the article will discuss in detail the leading cause of sudden death which exposes cryonicists to the risk of autopsy (or at very least, too long a delay between the time of onset of ametabolic coma and the beginning of cryonic suspension). This cause of death is atherosclerotic disease in the form of heart attack and stroke.

Atherosclerotic disease, as many readers know, is a disease of arteries in which the muscular wall of these blood vessels develops tumorous muscular growths which eventually fill in their centers with a soupy mixture of fat and cholesterol. These hollow growths, or "plaques," can bulge into the inside of the vessel, blocking blood flow partially. Often, a plaque is responsible for a spasm in the vessel, or the formation of a vessel clot, either of which can interrupt the flow of blood suddenly, completely, and permanently. When this happens in the arteries supplying the heart, part of the heart muscle which relies on blood from the vessel often is destroyed, resulting in a "myocardial infarction (MI)" or heart attack. When the same process happens in the brain, the result is destruction of a section of the brain, known as stroke.

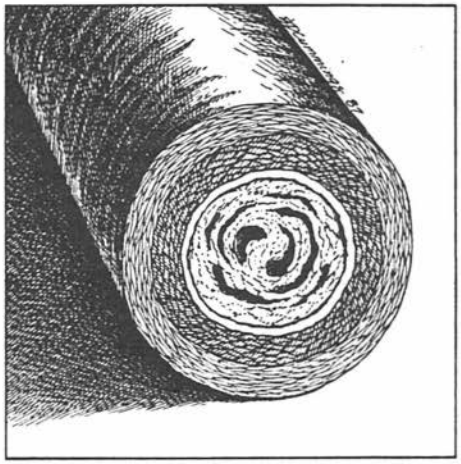
Atherosclerotic disease is not only the leading cause of the sudden sort of death which cryonicists fear, but in fact it is also the leading cause of death in America from any cause. In America, the disease starts in children, and is already well advanced in men by young adulthood, as autopsies of our soldiers in Korea (Enos, 1953) and Vietnam (McNamara, 1971) showed. The good news is that is atherosclerosis is not universal: autopsies on enemy soldiers in the aforementioned wars showed that they didn't have it, and indeed atherosclerosis is relatively rare in some countries. It is an environmentally produced disease, and thus, in theory, preventable. In fact, there have been tremendous strides in our understanding of atherosclerotic disease in recent years, and these advances have been rapidly translated into preventive and therapeutic approaches which offer the prospect of all but eliminating atherosclerotic disease.



Atherosclerosis in the early stages: cholesterol begins to accumulate inside the artery.



Large desposits of cholesterol accumulate in tumorous growths as the disease progresses, narrowing the bore of the artery and restricting vital blood flow.



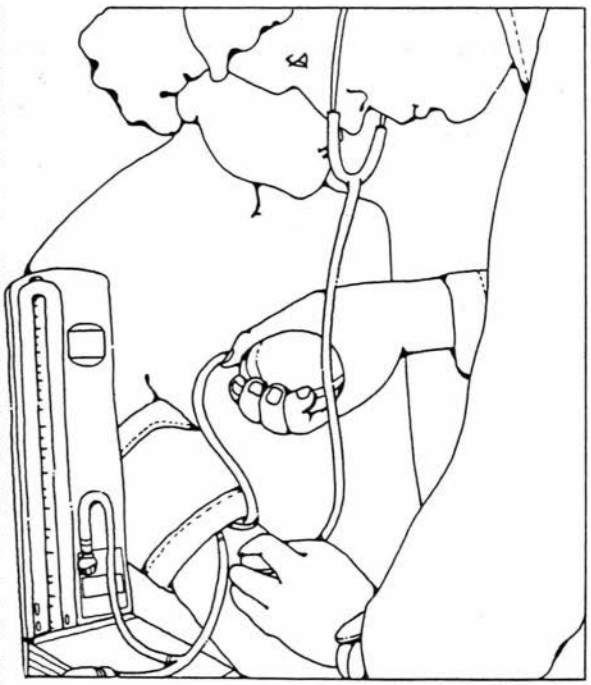
Finally, the artery diameter becomes so restricted that a spasm results or it becomes choked off with a clot and the result is a heart attack or stroke.

But the solution is not as simple as it would at first glance seem. By far the worst and most significant barrier to implementation of appropriate dietary and medical strategies to greatly reduce the risk of atherosclerotic disease by cryonicists is ignorance and active misinformation (myths). These have resulted in unreasonable prejudices and expectations which actively block receptivity to rational, workable approaches. Unfortunately, these myths and prejudices, rather than being an isolated problem, are representative of beliefs held by a broad cross section of both Alcor's membership and the health-conscious public at large. What follows will be an attempt to address these myths and to provide information which will be of maximum utility, if not maximum comfort, to those who have grown complacent about this dangerous disease which most of us have.

The Importance of Hypertension

But first, before embarking on the more "controversial" strategies to avoid atherosclerotic disease, let us touch upon one stratagem about which almost everyone seems agreed. Perhaps the most powerful factor in producing atherosclerotic disease is high blood pressure, or hypertension (Garraway and

Whisnant, 1987). Any program to reduce sudden death from heart attack and stroke should thus start with evaluation of blood pressure and its thoughtful control. There is plenty of evidence from a broad range of studies that even modest hypertension is worth treating.



Thus, the first step in avoiding sudden death (or death, period!) from atherosclerotic disease is to have your blood pressure measured regularly and reliably. If it is high, undertake aggressive action to treat it. This should consist of a thorough initial workup to rule out serious underlying disease such as kidney disease, tumor, or malformation of the major artery (the aorta) that supplies blood to the body (coarctation of the aorta) and should be followed by appropriate changes in diet and the addition of exercise and medications as necessary to reduce the diastolic blood pressure to under 90 mmHg and the systolic pressure to no more than 130 mmHg. In other words your resting blood pressure should never be greater than 130/88.

A Word of Caution

A word of therapeutic caution needs to be sounded here. If you are elderly and already suffering from advanced atherosclerotic disease, there may be sharp limits on how far your blood pressure can safely be reduced. Some clinicians are reporting that attempts to aggressively reduce blood pressure in elderly patients with severely narrowed and noncompliant arteries has resulted in inadequate blood flow to critical organs such as the heart, brain, and kidneys. This can actually precipitate rather than prevent heart attack or stroke. However, for the average middle-aged or even older patient, good control of blood pressure is a critical first step in avoiding the development and progression of atherosclerotic disease.

There have been tremendous strides recently in the understanding of hypertension and in its treatment. A wide range of new drugs is available with minimal side effects and proven life-extending capability when diet and exercise fail to eliminate hypertension.

Smoking

Don't smoke. Don't smoke. Don't smoke. We can't say it plainer. If you

smoke, quit; if you don't smoke, don't start. Smoking greatly increases your risk of sudden death from arteriosclerotic disease and neither of us will waste the time or space trying to prove that to you. Suffice to say that heart attacks from smoking account for several times the number of deaths that lung cancer does. The difference is that lung cancer usually results in a good quality cryonic suspension, while heart attack may very well not. In any case, if you haven't figured out that smoking is terrible for you by now, you probably aren't worth saving anyway!

We realize that quitting smoking is quite different from realizing that it's bad for you. We also understand how difficult kicking the habit can be. But, strategies for quitting the cigarette habit are beyond the scope of this article. All we can say here is: you should make every effort to stop and if you can't, don't give up trying till you quit!

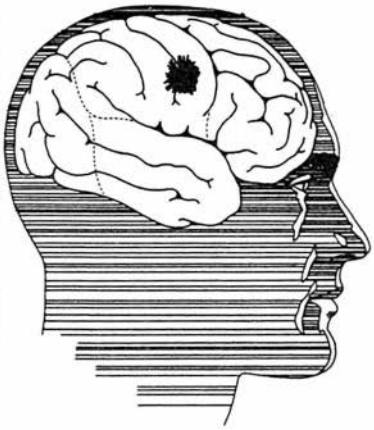
The Cholesterol Controversy

The next most important factor in preventing atherosclerotic disease is serum cholesterol concentration. Perhaps no other area of medicine has such solid evidence and such heated debate. Nor are cryonicists exempt from such debates. In the past one of us (Mike Darwin) has received a steady stream of promotional literature, books, and articles from more than half a dozen Alcor members which purport to blame atherosclerosis on everything from pasteurized milk and refined sugar to lack of egg intake, and offer as treatment everything from chelation therapy to acupuncture.

Both of the authors have often heard the argument that lowering serum cholesterol will result in death from cancer and that low serum cholesterol and cancer death are directly related. Other common myths both authors have repeatedly heard given as gospel are that regular vigorous aerobic exercise is completely protective of atherosclerotic disease, as are high serum concentrations of high density lipoproteins (HDLs), or so called "good cholesterol". The worst part about most of the above statements is that there is grain of truth in them which lends them an undeserved degree of plausibility.

Such misinformation is tragic. One individual from whom one of us (Darwin) has received such information in the past recently indicated that a stress test had demonstrated evidence of single vessel atherosclerotic disease. He proposed to treat such disease with chelation therapy and soy lecithin on the basis of references and "scientific" works published by the likes of Rodale Press (the PREVENTION MAGAZINE people). While cryonics itself is hardly regarded by most as conservative medicine, it is the only approach left open to a patient who has exhausted all other therapeutic possibilities. Such is not

the case with recommendations for chelatión therapy and the indiscriminate consumption of eggs. These recommendations are based upon testimonial "evidence" and flawed, uncontrolled, and/or poorly designed studies. This is to be contrasted with large scale, case controlled or randomized studies backed up by the extensive understanding of the fundamental biochemical mechanisms of atherosclerotic disease which conventional medicine has yielded. Much of what follows will be aimed at convincing you of that, and of discussing a very public case history which points up the hazards of misinterpreting the "cholesterol controversy" and of believing in various "myths of invulnerability".



A Little History

One of the first large-scale epidemiological studies of the connection between cholesterol and heart disease was conducted in 1967. It indicated that death rates from atherosclerotic heart disease were greatest in Finland (serum cholesterol 275 mg/dL), intermediate in European countries (225-250 mg/dL) and lowest in Japan (200 mg/dL). In 19 countries, 45% of the interpopulation difference in coronary artery disease in males was found to be related to serum cholesterol levels (Simons, 1986). In the U.S., similar studies confirmed this relationship (Pooling Project Group, 1978). The now classic Framingham study demonstrated an almost linear increase in the incidence of coronary heart disease with the increase of serum cholesterol levels at all ages, with increased risk being most pronounced in those less than 65 years of age (Gordon, 1977). Since the time of these studies a wide range of other epidemiological investigations has yielded similar results (Keys, 1958; Dauber, 1961; Keys, 1971).

What Kind of Cholesterol?

In 1912 Anitschkow in Germany fed cholesterol to rabbits and produced aortic atherosclerosis (Anitschkow, 1913), a disease to which rabbits on their normal diets are immune. Follow-up research in the United States often failed to reproduce these results, leading to an investigation of the details of Anitschkow's method. It was subsequently demonstrated that the cholesterol used in Anitschkow's study was oxidized. When oxidized cholesterol was used in subsequent follow-up studies, atherosclerosis was produced (Imai, 1976). The results of the "failed" follow-up studies are often incorrectly and naively cited by "health food" researchers as being evidence that cholesterol intake does not correlate with atherosclerotic disease. While it is true that feeding large amounts of pure, unoxidized cholesterol does not result in atherosclerotic disease (Seifter, 1956), the unfortunate fact is that unoxidized cholesterol is almost completely absent from the average high cholesterol diet!

Improperly stored or prepared cholesterol contains an estimated 32 auto-oxidation products, some of which have been shown to be extremely damaging and atherogenic in minuscule doses (Taylor, 1979). At least 72 known oxidation

products of cholesterol have been demonstrated in atherosclerotic plaques removed from human aortas (Taylor, 1979).

Unfortunately, high-cholesterol foods like eggs, cheeses, and pasteurized and powdered whole milk are very high in such oxidation products (Taylor, 1979). And while raw egg yolk does not contain significant amounts of oxidized cholesterol, (and indeed modest egg consumption does not raise serum cholesterol (Slater, 1976; Flynn, 1979; Porter, 1979), cooking egg yolks converts large amounts of the cholesterol in them to the oxidized form. Fried or hard boiled eggs are very effective at raising serum cholesterol in rabbits, and raw or soft boiled eggs are the least effective (Pollack, 1958), suggesting that the oxidation products of cholesterol have a direct role in raising serum cholesterols. In fact, Anitschkow used egg yolk as the cholesterol source in his study to produce atherosclerotic disease. The message here is that eggs, if they must be eaten, should be eaten raw (as in eggnog), or with the yolks very soft. Eggs in processed foods or in powdered forms where the cholesterol in them has had ample time to oxidize should be avoided completely.

Saturated and Unsaturated Fats

Numerous animal studies have demonstrated that saturated fat intake from either animal or vegetable sources can raise serum cholesterol and produce atherosclerotic disease (Steiner and Dayton, 1956; Aftergood, 1957; Malmros and Wigand, 1959). Human studies have demonstrated a close correlation between saturated fat intake and serum cholesterol levels. Bantu, Indian, and European serum cholesterols were 105, 205, and 235 mg/dL, respectively, with corresponding increases in saturated fat intake (Bronte-Stewart, 1955). Studies of other populations have demonstrated the same effect (Morrison, 1960; Brown, 1966; Dayton, 1969; Kannel and Gordon, 1970).

Early on it was demonstrated that feeding polyunsaturated fats was effective in reducing serum cholesterol (Brown, 1966). Several studies have shown a marked reduction in atherosclerotic deaths when polyunsaturates are substituted for some or most of the fat in the diet (Morrison, 1960; Dayton, 1969; Leren, 1970; Lewis, 1970; Miettinen, 1972; Gleuck, 1977; Robertson, 1977; Heady, 1980; Hutchison, 1983; Arntzenius, 1985). To the extent that soy lecithin works to reduce serum cholesterol, it does so because it is a rich source of polyunsaturated fat. But it is no more effective than other polyunsaturated fats such as soy, corn, or safflower oil in reducing cholesterol. There is nothing magic about soy lecithin, since it apparently acts primarily by the same mechanism as other polyunsaturates, by increasing the fecal excretion of cholesterol and other sterols and serving as a source for linoleic acid (Simons, 1977; Salia, 1978).

The Polyunsaturate Penalty

Unfortunately, there is a penalty to be paid for substituting polyunsaturates for saturates: an increased cancer death rate. Several studies have demonstrated a profound reduction in death from atherosclerotic disease with substitution of

polyunsaturates, but they have shown no overall increase in survival, due to a corresponding increase in death from cancers, especially of the gut and lung (Pearce, 1971; Turpenien, 1979). This has led to uninformed pronouncements by laymen, and even by health care professionals (such as the prominent cardiologist Dr. Eliot Corday of the University of California, Los Angeles) to the effect that low serum cholesterols are directly associated with cancer deaths and that serum cholesterols below 200 are "cancerous" (Clark, 1987)). Also adding to his myth is the fact that cancer patients often have unusually low cholesterol level AS A RESULT of cancer (rather than the other way around), and this fall can even occur a year or two BEFORE the victim knows he has cancer. Thus, groups of people with very low cholesterol levels always contain a certain number of unknowing people who are already cancer victims. The proof that low cholesterol does not cause cancer comes from the fact that low cholesterol levels are NOT a risk factor for any cancer that is first detected more than a couple of years from the date of the cholesterol test.

In view of these facts, it is not surprising that studies of native populations with low cholesterols and very low overall fat intakes (including polyunsaturates) have demonstrated very low death rates from virtually all Western degenerative diseases including cancer (Clegy, 1972). The Tarahumara Indians are one such population, and were largely responsible for providing the evidence which lead to the generation of Nathan Pritikin's program for treatment and prevention of atherosclerotic disease; a program which emphasizes profound reduction of both saturated and unsaturated fats and emphasizes consumption of unprocessed foods rich in natural antioxidants and fiber -- both

of which have been shown in numerous laboratory and epidemiological studies to minimize cancer risk.

The Problem With Polyunsaturates

Most cryonicists will be familiar with the fact that polyunsaturates are rich sources of free radicals in the body. Their intake correlates very well with the occurrence of some cancers (Pearce, 1971; Vitale, 1981). Perhaps less well known is the effect of polyunsaturates on immune function. They have a proven ability to suppress immunity (Chandra, 1983) and their immunosuppressive effect is powerful enough that feeding them can even prolong rejection time in humans (Newberne, 1981)!

Clearly the answer to reducing serum cholesterol levels is not increasing the intake of polyunsaturated fats. But more on this later.

Other Factors

Fat and cholesterol intake are not the only factors associated with atherosclerotic disease. Sugar intake also contributes to increased risk, and both Vitamin C intake (Willis, 1957), and selenium intake (Moore, 1984) have been associated with decreased risk of atherosclerotic disease.

Sugar intake is sometimes blamed as the primary cause of atherosclerosis. Increasing sugar intake usually results in increasing concentrations of triglycerides. Triglycerides do correlate with atherosclerotic disease, but not very well -- and only in women (Schreibman, 1969; Gordon, 1977b). While high triglycerides are not the most desirable thing in the world (because they often indicate a high calorie/refined sugars diet, and thus the other undesirable risks of tooth decay and obesity!) they are not the cause for deep concern that a high serum cholesterol is.

HDL Levels: What Do They Mean?

Cholesterol transported for nutritional reasons in the blood is carried entirely in microscopic globules of fat, cholesterol and protein called "lipoproteins." The proportion of these three ingredients differs with each kind of lipoprotein, and each lipoprotein type apparently has a different function in the body. One kind of lipoprotein is called "high density lipoprotein," or "HDL," because its globules are higher in cholesterol and thus more dense than other kinds of lipoproteins.

In 1965 the Framingham study reported on the connection between concentrations of HDL in the serum, and the risk of coronary disease (Castelli, 1975). It was found that individuals with high concentrations of HDL were, on a statistical basis, somewhat protected from heart disease, even though (as noted) HDL is full of cholesterol. Subsequent research confirmed and extended the understanding of the protective effects of this HDL cholesterol. In particular, a good correlation was found with the ratio of total serum cholesterol to HDL cholesterol (thus the higher the cholesterol and the lower the HDL, the greater the risk of coronary artery disease) (Gordon, 1977b). Citizens of the USA, who have a high incidence of atherosclerotic disease, have

an average total cholesterol/HDL cholesterol ratio of about 5. Americans with a ratio of 3 have about half the risk of heart disease. Animals such as dogs, which normally have an almost nonexistant incidence of arteriosclerotic disease, have very good cholesterol/HDL ratios: 1.3 being typical.

HDL acts to decrease atherosclerotic disease by a number of mechanisms. First, it acts as a cholesterol scavenger by removing cholesterol from arteriosclerotic lesions and transporting it to the liver, where it is ultimately converted into bile and excreted into the gut (where it can either be excreted in the stool or reabsorbed) (Miller, 1975; Blum, 1985). Secondly, HDL prevents the uptake of LDL cholesterol (so called "bad" cholesterol, and the kind normally measured in a standard cholesterol test) by the cells lining the arteries (Carew, 1976).

So what do HDL levels mean? If you have a good cholesterol/HDL ratio can you "forget" about dying of atherosclerotic disease? Ahhhh -- if it were only that simple!

Unfortunately atherosclerotic disease is a multifactorial disease. Hypertension, smoking, stress, alcohol intake, sex, heredity, diet, and (most importantly) age, all interact to determine risk. No one factor is going to be completely predictive of trouble or immunity from trouble. HDL levels do have substantial statistical correlation with protection from heart disease, but they are far from absolute, as the case of the long distance runner Jim Fixx sadly points out.

High HDL Levels Lose A Round: The Jim Fixx Story

Early on in this article there was mention of the "myths of invulnerability". The myths that "being in shape" (i.e., able to run a marathon), or that high HDLs or soy lecithin will protect against heart disease, are but a few. All such myths share several common features. First and foremost they attempt to dispose of a complex, multifactorial problem in a simple "easy" way. "Just do this," they say, "it's simple." The second thing such myths have in common is that they confer a sense of invulnerability. The aerobics expert Kenneth Cooper, M.D. discusses the various myths of invulnerability as they relate to exercise in great detail in his book **Running Without Fear** (1985). Dr. Cooper uses Jim Fixx as the classic case of the man suffering from the myths of invulnerability. Unfortunately, in Jim Fixx's case, he had a lot of help from others in the medical and "health" community.

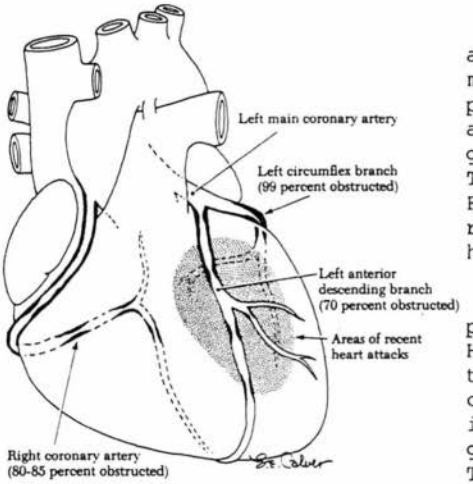
Jim Fixx was the guru of long distance running for health and fitness. His classic **The Complete Book Of Running** (1977) quickly rose to the top of the bestseller list and was probably in large part responsible for the tremendous increase in enthusiasm for and participation in running seen in the United States over the next few years.

Fixx certainly had the idea that running was completely protective against heart disease. In his **Second Book Of Running** (1978) he said: "Heart attacks, while not unknown in runners, are so rare as to be of negligible probability... The only thing that can kill a healthy runner other than cars and buses is heat stroke."

He was dead wrong. This statement is simply untrue. On July 20, 1984 Jim

Fixx, aged 52, suffered a heart attack and died while running on a Vermont road. At the time of his death, he was a superbly trained athlete capable of running marathons. By conventional medical criteria Fixx's cholesterol, triglycerides, and HDLs were not too bad, although his total cholesterol was a bit high. In 1980 Fixx's cholesterol was 253, and his HDL cholesterol was 87. That would have given him a total cholesterol/HDL ratio of 2.91. This ratio would, by itself, be considered by most physicians to be fairly protective against heart disease. Fixx's good ratio was due to the fact that (no doubt because of his strenuous exercise program) his HDL levels were impressively high. At autopsy Fixx's cholesterol was 254 and his HDL was 73 -- a ratio of 3.48 to 1. Again, a very respectable number.

The diagram of the coronary circulation of Jim Fixx's heart shown below is reproduced from Cooper's RUNNING WITHOUT FEAR, and represents the autopsy findings on Fixx's heart. Note that most of the arteries supplying the heart are completely or nearly completely choked with atherosclerotic plaque. What is to be concluded from this?



Blood Supply to Jim Fixx's Heart at His Death

Simply that while high HDL levels and exercise (which raises HDL levels) may confer some degree of statistical protection, such protection is hardly absolute and may not apply at all to a given individual, particularly if his TOTAL cholesterol levels are high (as Fixx's were), or if he suffers from other risk factors for atherosclerosis (Fixx had a family history of atherosclerosis).

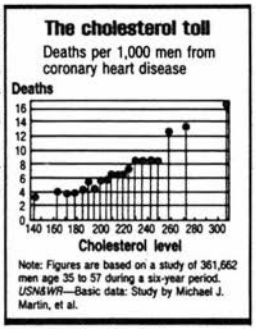
The sad thing is that Jim Fixx probably didn't need to die as he did. He had previously refused an EKG stress test with Dr. Cooper which would almost certainly have resulted in medical intervention which would have offered a good shot at a greatly extended lifespan. The point is that the "myths of invulnerability" got in his way. Jim Fixx thought he didn't need a stress test because Jim Fixx couldn't have had coronary artery disease because Jim Fixx was a runner who ate a diet largely free of saturated fat! Even when he apparently began to develop angina chest pain (a serious warning sign of heart disease and impending heart attack) Fixx apparently refused to believe that "it could happen to him".

The Message

So, the second most important message after an evaluation of blood pressure is an evaluation of your overall risk of atherosclerotic disease, with special emphasis on total serum cholesterol and cholesterol/HDL ratio.

The importance of cholesterol alone as a powerful single predictor of risk for atherosclerotic disease cannot be overemphasized. As the Framingham study has indicated, serum cholesterols below 160 are almost completely protective

against atherosclerotic heart disease, regardless of other factors. As the accompanying chart shows, people with serum cholesterols below 150 have fewer than three deaths per thousand from heart disease while those with cholesterols over 260 have in excess of 13 deaths per 1000 from heart attack! And please note that these figures do not include death from stroke, kidney disease, or other atherosclerotic-related diseases! If these are included, the death rate from high cholesterol is much higher.

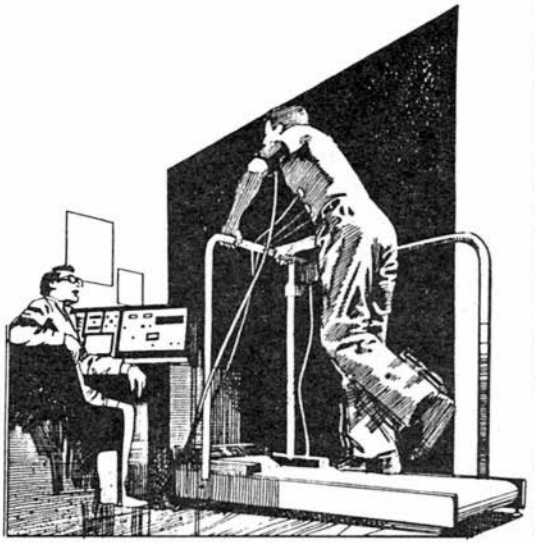


Target Your Risks

As a simple and very basic beginning we've provided a very brief test to help you evaluate your personal risk. This test, we remind you, is just a beginning. A complete laboratory evaluation of cardiovascular risk will consist of a competently administered EKG stress test and a 2-dimensional echocardiogram (2D echo, an ultrasonic "picture" of your heart), as well as laboratory evaluation of total serum cholesterol, triglycerides, and HDL level.

The cardiology departments of many of the better hospitals are now offering such tests as a standard coronary risk assessment package, often at at a surprisingly modest rate as a "loss leader" to drum up business for their practices (not hard to do in a society where the typical serum cholesterol is over 200!). We strongly urge cryonicists who wish to avoid sudden death to consider taking such a test panel. This combination of laboratory evaluations is probably better than 90% effective at disclosing increased risk of death from atherosclerotic disease. And best of all, the tests are noninvasive and carry little risk of injury as a direct result of the test procedure (the only danger, in fact, is in the treadmill test, which carries a very slight risk -- the same as any heavy exercise).

When and how often to have these tests is a very difficult question. The guidelines have not been firmly set even by the conventional medical establishment, and there is the additional factor that cryonicists have good reason to be more concerned about preventive medicine in this area than the average American. The recommendations which follow are going to be more stringent than any which the reader will get from his/her doctor for this reason. Even if one is lucky enough to find a doctor who is up on his/her preventive medicine,



such a physician will still believe that a good program of atherosclerosis prevention is saving his patient only the statistical 10-15 years of life which this disease costs the average American, and that kind of a figure argues for a less than heroic approach to the problem. But for a cryonicist, prevention of that massive atherosclerotic stroke, or that fatal heart attack on a camping trip, may mean the difference between survival in an open ended future, and flat out death. The stakes are therefore higher.

We recommend, then, that every cryonicist should have the blood tests mentioned above, no matter what his or her age. As noted earlier, atherosclerosis starts in childhood in this country, and so probably should prevention. Cryonicists with serum cholesterols below 150 who do not smoke, have high blood pressure, or have a parent or sibling with heart disease before the age of 60, need repeat blood tests only every 5 years or so, and do not have to worry about having more expensive tests until possibly age 60. Men with serum cholesterols above 200 should have a first treadmill test at age 40, and (ideally) every three years thereafter, depending upon what they can afford. Women, unless they are smokers with very high cholesterol (say, over 250), can wait until age 50 for a first treadmill test. For both sexes, an echocardiogram, if normal, need be done only once.

Those cryonicists with total cholesterols above 160, and HDL ratios greater than 3 should seriously consider a major intervention program (to be discussed in the next installment). For this purpose we recommend FREQUENT retesting of these numbers to act as very necessary feedback in this process. Serum cholesterol and HDL can be measured for less than 50 dollars at most commercial labs, and should be repeated as often as every 6 months while the program is proceeding.

Cryonicists younger than 40 or 45 may take the simple risk evaluation test below and stay tuned for the next installment of HOW TO REDUCE THE RISK OF AUTOPSY, which will contain detailed and specific information on how you can best reduce your risk of sudden death from atherosclerotic disease.

Risk Assessment Test

The following test was adapted from HEALTH RISKS by Dr. Elliott Howard ($8.95, paperback, The Body Press, Tucson, 1986). This test is intended only as a rough indicator of risk. To accurately assess your risk of death from atherosclerotic disease you need to consult a physician and have appropriate medical testing.

PERSONAL

Your sex and age is:

0	Woman younger than 55
+1	Man younger than 55
+2	Woman 55 or older
+3	Man 55 to 65
+4	Man 65 or older

Among your close blood relatives, there have been heart attacks:

0	In no parent, grandparent, aunt, or uncle before age 60
+1	In one or more parents, grandparents, aunts, or uncles after age 60
+2	In one parent, grandparent, aunt, or uncle before age 60
+3	In two of the above relatives before age 60
+4	In more than two of the above relatives before age 60

Among your close blood relatives, the following medical conditions existed:

0	No serious high blood pressure, diabetes, or high cholesterol level
+1	Serious high blood pressure, diabetes, or high cholesterol level in only one close relative
+2	Serious high blood pressure, diabetes, or high cholesterol level in two close relatives
+3	Serious high blood pressure, diabetes, or high cholesterol level in more than two close relatives

CHOLESTEROL

Your serum cholesterol level is:

0	190 or below
+2	191 to 230
+6	231 to 289
+12	290 to 319
+16	Over 320

Your HDL cholesterol is:

-2	Over 60
0	45 to 60
+2	35 to 44
+6	29 to 34
+12	23 to 28
+16	Below 23

SMOKING

You smoke now or have in the past:

0	Never smoked, or quit more than 5 years ago
+1	Quit 2 to 4 years ago
+3	Quit about 1 year ago
+6	Quit smoking in the past year

You now smoke:

+9	½ to 1 pack a day
+12	1 to 2 packs a day
+15	More than 2 packs a day

The quality of the air you breathe is:

0	Unpolluted by smoke, exhaust, or industry at home and at work
+2	Live **or** work with smokers in an unpolluted area
+4	Live **and** work with smokers in an unpolluted area
+6	Live **or** work with smokers **and** live or work in air-polluted area
+8	Live **and** work with smokers **and** live or work in air-polluted area

BLOOD PRESSURE

Your blood pressure is:

0	120/75 or below
+2	120/75 to 140/85
+6	140/85 to 150/90
+8	150/90 to 175/100
+10	175/100 to 190/110
+12	190/110 or above

EXERCISE

Your exercise habits are:

0	Exercise vigorously 4 or 5 times a week
+2	Exercise moderately 4 or 5 times a week
+4	Exercise only on weekends
+6	Exercise occasionally
+8	Little or no exercise

WEIGHT

Your weight history is:

0	Always near or at ideal weight
+1	Now 10% overweight
+2	Now 20% overweight
+3	Now 30% or more overweight
+4	Now 20% or more overweight and have been since before age 30

STRESS

You feel overstressed:

0	Rarely at work or at home
+3	Somewhat at home b··t not at work
+5	Somewhat at work but not at home
+7	Somewhat at work **and** at home
+9	Usually, at work **or** at home
+12	Usually, at work **and** at home

DIABETES

Your diabetic history is:

0 Blood sugar always normal
+2 Blood glucose slightly high (prediabetic) or slightly low (hypoglycemic)
+4 Diabetic beginning after age 40 requiring strict dietary or insulin control
+5 Diabetic beginning after age 30 requiring strict dietary or insulin control

ALCOHOL

You drink alcoholic beverages:

0 Never or only socially, about one or twice a month, or only one 5-ounce glass of wine or 12-ounce glass of beer or 1½-ounces of hard liquor about 5 times a week
+2 Two to three 5-ounce glasses of wine or 12-ounce glasses of beer or 1½-ounce cocktails about 5 times a week
+4 More than three 1½-ounce cocktails or more than 5-ounce glasses of wine or 12-ounce glasses of beer almost every day

INTERPRETING YOUR SCORE

Add all scores and check below.

0 to 20: Low risk. Excellent family history and lifestyle habits.

21 to 50: Moderate risk. Family history or lifestyle habits put you at some risk. You might lower your risks and minimize your genetic predisposition if you change any poor habits.

51 to 74: High risk. Habits and family history indicate high risk of heart disease. Change your habits now.

Above 75: Very high risk. family history and a lifetime of poor habits put you at very high risk of heart disease. Eliminate as many of the risk factors as you can.

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Science Updates
by Thomas Donaldson

WITHHOLDING TREATMENT WHEN DEATH IS NOT IMMINENT

In the May 1987 issue of CRYONICS an article described the California HUMANE AND DIGNIFIED DEATH Initiative. This is an initiative to amend the California constitution so as to allow people not only to refuse treatment, but to actively seek treatment which will end their lives, under the proper

circumstances. It is promoted by a political action group, the Americans Against Human Suffering. Many members of this society are also members of the Hemlock Society, a well known nonprofit proponent of euthanasia.

This Initiative raises many questions, opportunities, and dangers, as the authors of the CRYONICS article themselves point out. However there are still issues of fact which need discussing. One of these issues is that of the current legal status of terminally ill patients. It's therefore very timely that in a recent issue of **GERIATRICS (42(2)**, 77-84 (1987)) Frederick Abrams presents a discussion and summary of the current legal status of **withdrawal of treatment** for patients who aren't imminently dying.

The major outcome of Abrams' review is that up to now courts have been extremely careful to protect the right of a patient to refuse treatment, for whatever reason. Refusal of treatment, moreover, can involve refusal of food and drink, not just the more extreme technological treatments such as heart-lung resuscitators.

In Lane v. Candura (376 NE 2d 1232 Appeals Court of Mass, 1978) an appeals court upheld the refusal of Mrs. Candura, an elderly woman suffering from gangrene in her leg, to allow amputation. A lower court had appointed her daughter as guardian so that the daughter could grant permission for the amputation. This was overturned on appeal. The main ground for overturning it was that Mrs. Candura was legally competent. She could therefore not have an operation without her own consent.

A second case was that of Abe Perlmutter (Satz v Perlmutter, 362 SO 2d 160, FAL CT APP, 1978). Abe Perlmutter tried to remove an endotracheal tube placed into him by his doctor. He could not do this and finally retained an attorney to authorize its removal. The Florida Attorney General argued that anyone who helped disconnect the respirator would be guilty of assisting suicide. But the district court ruled otherwise. The court argued that leaving Mr. Perlmutter on his respirator, with endotracheal tube in place, and against his expressed desire, invaded his constitutional right of privacy, freedom of choice, and self-determination. Even more interesting, the court argued that removing the endotracheal tube did NOT constitute suicide, since Abe Perlmutter's illness had not been self-inflicted.

Another case, which took place in California, involved a man, William Bartling, who was not comatose, was not terminal, and was legally competent. William Bartling refused an endotracheal tube and respirator. He did this because he didn't want the quality of life he would have on it. The California Court of Appeals argued that the right of a competent adult to refuse medical treatment could not be abridged (Bartling v. Superior Court, 209 Cal Rptr 22o CA of APP 2d Div 5, 1984).

Abrams believes, in fact, that the right to refuse medical treatment, and even to require assistance in removing feeding tubes or other equipment already in place, will be upheld in every state in the United States. He quotes from a court opinion on the case of Elizabeth Bouvier, a quadriplegic with cerebral palsy who asked for her feeding tube to be removed. Justice Beach pointed out that removing the feeding tube was a decision for Elizabeth Bouvier alone, it was not a medical question or one on which an ethics committee had any right to rule.

These cases cover some of the ground in which we are interested with the "Humane and Dignified Death Initiative". In some respects, they even go farther. In particular, the patients involved were not **immediately** terminal. Furthermore, the courts decided that not only could someone be left untreated, but it would not constitute assisting suicide if a doctor were to remove a feeding tube which was already in place.

For cryonic suspension, these cases mean that withdrawal of treatment and discharge to a cryonics facility would probably both be upheld as within the rights of the patient. In some practical cases, this could mean almost as much as allowing a doctor to suspend someone without legal declaration of death.

Still, cryonic suspension is certainly a very direct way of removing treatment. It's not likely that we could twist the law to allow it.

My own major problem with the "Humane and Dignified Death" initiative is that it could easily lead to as much or more risk of lawsuits and court delays as the present situation. A patient can choose either to try it or not. If he does not try it, he risks legal action of the same kinds as the patients Bouvier, Perlmutter, and Candura faced. If he tries it, he risks legal action on the grounds that his particular choice of dying was neither dignified nor humane. For it is certainly true that the procedures involved in a particular cryonic suspension could be seen as very inhumane. To someone who didn't know the medicine involved, the most recent suspension could seem quite inhumane.

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JANUARY MEETING CALENDAR

ALCOR meetings are usually held on the first Sunday of the month. Guests are welcome. Unless otherwise noted, meetings start at 1:00 PM. For meeting directions, or if you get lost, call ALCOR at (714) 736-1703 and page the technician on call.

ALCOR

The JANUARY meeting will be at:

(SUN, 10 JAN 1988)
(SECOND SUNDAY)

ALCOR/Cryovita Laboratories
12327 Doherty St.
Riverside, CA 92503

DIRECTIONS: Take the Riverside Freeway (State Hwy 91) east toward Riverside. Go through Corona, and get off at the McKinley St. exit. Go right (south) on McKinley. Turn left (east) on Magnolia. Go across the railroad tracks and turn left (north) on Buchanan St. Doherty is the second street on the left. Turn left on Doherty, and then turn right into the back of the industrial park. 12327 is the third building from the back, on the right.

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