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CONCURRENT: Emotional Factors in Cancer Progression

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P R O C E E D I N G S

MR. DREHER: We're going to have three presentations today, and we're going to save the questions for the end, which will give us about at least 20 minutes time for questions. I should introduce myself first. I'm Henry Dreher, I'm a health and medical writer specialized in complementary care for cancer. I'm also an integrative cancer guide, working with cancer patients on their therapeutic options.

I have spent a lot of time writing and thinking about psychosocial factors and emotional factors in cancer. A quick comment, a personal comment, I just was informed that one of the great pioneers in this field of psychoimmunology and cancer and other diseases passed away a couple days ago. He was a dear friend of mine and some would say the Godfather of psychoimmunology, I think that's a fair statement. His name was George Soloman, a psychiatrist at UCLA. Some of you may be aware of his work.

This is a man who did mind-body, serious mind- body scientific research in the early '60's at Stanford, and then later at UCLA, when the idea of a psychiatrist working with an immunologist was considered absolutely crazy, and he managed to get funding to do the first important animal studies and the first important human research in this country on the role of the mind and immunity.

I think he really was the pioneer before our time, before anyone else's time. And it took -- it took the scientific community probably a solid decade before that was recognized. So I just wanted to pay honor to George. He informs a lot of the work that you'll be hearing about today and forms the scientific foundation for it and I just wanted to honor George and his memory.

I'm really excited about this panel. This is three of the most engaging and important scientific minds in the field of psychosocial factors in cancer who have done some of the most interesting and important work. We have John Astin from the University of Maryland, we have David Spiegel from Stanford, and we have Dr. Lydia Temoshok from the University of Maryland, as well. And I think you're going to be very intrigued by the research and the theories that we hear about today on emotional factors in cancer progression.

Let me first introduce Dr. Astin. John Astin, PhD, Assistant Professor in the Department of Family Medicine, Complementary Medicine Program at the University of Maryland School of Medicine. From 1997 to '99, he was a research fellow in a complementary and alternative medicine program at the Stanford University School of Medicine.

In February of 2000, John joined the complementary medicine program at the University of Maryland School of Medicine as faculty member and director of mind-body research. His research has appeared in such journals *as Archives of Internal Medicine, Journal of the American Medical Association*, and the *Annals of Internal Medicine*.

He is co-author with Dean Shapiro of the book, "*Control Therapy, An Integrated Approach to Psychotherapy, Health, and Healing*." Dr. Astin will be sharing with us some of his most recent research and theoretical contributions to the -- to understanding and delineating in full complexity and with tremendous subtlety and nuance what it -- what healthy coping is for cancer patients, what is fighting spirit, how we really understand what -- what it means to have a fighting spirit. And -- and he's developed some methods that really take this field to another level. So it's my great pleasure to introduce Dr. John Astin.

DR. ASTIN: Thank you very much. It's a real pleasure to be here. The title of my talk says a lot about what I want to speak to you about today. The courage to change and the serenity to accept comes, of course, from a very old prayer that's used a lot today in the 12 step programs. And my colleagues and I published a paper in *Advances*, I guess it was last year, not too long ago, and it came out of our own thinking and writing about the concept of control.

Well, my colleague, Dean Shapiro, has really formulated a lot of the theories that I'm going to present to you today, and I have him to thank. He's been a really terrific colleague and friend over the years.

The -- the article that we wrote in *Advances* really came out of some thinking that we did when we read the results of the most recent large study that looked at trying to understand the relationship between this concept of fighting spirit, which I'll talk about in a moment, and outcomes in breast cancer patients. And -- and we -- we felt that it was an opportunity to talk about our -- our model of control, in a way to try to help understand what might be going on here in terms of what continues to be a controversial area and an area which we see conflicting findings in the research.

And even the researchers themselves who have been doing the work in fighting spirit can't quite agree on what the findings mean. In fact, a little tidbit to share, in the *Lancet* paper that got published, where they failed to find in a large covert breast cancer patients, any relationship between this fighting spirit construct and breast cancer.

One of the authors on that paper, Steven Greer, who published one of the earlier papers, the seminal paper, is looking at that construct, actually wrote a letter to the *Lancet* saying that he didn't agree with what was written in that article that he appeared on as an author. So suffice it to say it's a rather controversial field. I won't go into all the story behind why he wrote that letter, but -- because I don't understand all of it myself.

Briefly, what I want to do in the short time that I have is, I really want to stimulate your thinking about a few things, so that's really the bottom line. I like to do that in general in my life, to get all of us to think a little bit outside of the box. Talk about this construct of fighting spirit. How many people are -- have heard that term and have some familiarity with it? Okay, great. You probably know more about it than I do.

Look at this construct and briefly examine its relationship to outcomes in -- in cancer. We'll talk about some of what we consider to be theoretical limitations of this construct. Because if you're talking about its relationship to something as important as whether people survive cancer, you really have to look at the construct and see how much sense does it make theoretically, conceptually, and -- and particularly how it's measured, otherwise, your data doesn't mean all that much.

And then I'm going to introduce you to this model of control and the modes of control that we've developed, and -- and talk about it, discuss it as an alternative potential way of explaining some of these conflicting findings in this literature with fighting spirit.

The original fighting spirit study was based on -- what Greer did was based on data from a clinical interview, actually a single item. Subsequent to that, a scale was developed called the MAC, mental

adjustment to cancer scale. And the most recent study that appeared in *Lancet* used that scale to measure the fighting spirit construct. It measured several constructs, fighting spirit, helplessness, hopelessness, fatalism, what they formerly termed stoic acceptance, anxious preoccupation.

There's another construct that they termed denial, but it's only one item, so it's not -- it's difficult to consider it a construct based on this one single item, so it wasn't included in the research paper by Watson.

Let's look for a moment at this fighting spirit construct and from the mental adjustment to cancer scale and see what some of the items are. I will fight the disease, I firmly believe that I will get better, I believe that my positive attitude will benefit my health, I have plans for the future.

Let me -- let me stop for a moment and say, I think it's -- it's sort of evident that it's simplistic right off the bat to suggest that somehow there's a direct causation between having an attitude like I just showed you and whether or not you're going to survive breast cancer. You can't think that simplistically about it, at least in my own mind. And that any disease, cancer included, has a complex array of factors that are playing some role. I happen to believe as a psychologist doing work in research in mind-body medicine that people's attitudes, beliefs, thoughts, feelings, undoubtedly play some significant role in effecting how they handle the disease, how they cope with it, and potentially what happens physiologically in terms of the progression of the disease, and that continues to be an area that research is trying to unravel, to what extent and how, in fact, might psychological factors actually impact how the disease progresses physiologically.

The helplessness, hopelessness scale, these are some of the items, I feel that life is hopeless, I feel there's nothing I can do to help myself, I feel like giving up. The fatalism construct, I should say that this -- the way they developed these scales from this instrument was through a technical factor analysis, where they looked to see how items clustered together statistically.

“I feel that nothing I can do will make a difference, I feel fatalistic about, I -- I've had a good life, what's left is a bonus, I've put myself in the hands of God”, and these were grouped together and defined as -- as fatalism, representing fatalism. You may disagree with whether these represent fatalism, and that's exactly what I'm going to talk about in a moment. “At the moment, I take one day at a time”. I'm going to briefly just touch on the two major studies that have looked at this, the original Greer.

This was in a small cohort of women, where Greer and colleagues found that those who evidenced this fighting spirit, which, again, came out of data based on a clinical interview, they were twice as likely to survive as those who were perceived as being hopeless or helpless in their coping response.

One of the principal criticisms of this was that the researchers could not control for a lymph node status, which we know to be very important in looking at relationships between psychological variables and -- and actual disease outcomes.

The most recent study that was done by Watson followed a very large cohort of women for five years, is what they reported on in the *Lancet* and they were able to control for these various prognostic factors that the previous study could not control for.

They failed to report any relationship or find any relationship between this fighting spirit construct as measured by the map and morbidity mortality. It did find a relationship between the hopelessness, helplessness construct, where the patients who evidenced this coping response were significantly more -- had an increased risk of death. It was interesting, if you think about sort of the interpretation of research, which is something that is very crucial, particularly in terms of how media picks up on things, and this is something that in the commentaries that appeared in *Advances*, one that Henry wrote, as well, talked about in that the researchers in their write-up really played up the notion that there was no relationship between fighting spirit and sort of played down the fact that those who were helpless or hopeless in their

response actually were at increased risk for cancer, controlling for prognostic factors, which is a very significant finding that probably should not have been underplayed as much as it had been.

How do we make sense of the fact that these two studies found very different relationship between fighting spirit and breast cancer outcome? Apparently it was the design of the study, that might have been a significant reason.

All -- all in sense that we put forth in this *Advances* paper is that it may have something to do with the construct that the mental adjustment to cancer scale is purportedly measuring and some theoretical problems we have with it, and I'm going to kind of go into that at this point. We've argued in -- in a series of papers and in a book that -- that Dean Shapiro and I wrote that typical western psychological notions of control and sense of control, if you think for a moment of how one responds to a cancer diagnosis or any significant life stressor, one can frame that in control terms, which we -- we frame a lot of things in control terms in our work.

But to think about that -- that in -- in dealing with that kind of event, one is going to attempt to regain some sense of control in the face of a very out of control situation. So how people choose to do that is going to be quite variable.

We've argued in -- in our work that in western culture and western psychology in particular, there has been what we call a real cultural bias in how control is viewed, and that is that it tends to be viewed as a continuum running from -- either you have active control in the case of fighting spirit, you're -- you're actively engaged in trying to effect the course of the disease in some way, and -- and that -- either -- either you're exhibiting that or you're fatalistic or helpless, and the continuum runs in this kind of a way. And what we talked about is that this is a very limited, I think overly simplistic way of thinking about how people regain a sense of control. In that notion of -- of how control works and its continuum, there's several assumptions that we've challenged; one is that a sense of control -- of control, I should say, is good, and the more, the merrier. The second one is that lack of control is bad or unhealthy. And the problem with -- with these assumptions that it fails to consider that there are potentially negative consequences to exercising too much control in the face of life stressors, and conversely, it fails to consider the positive dimensions of letting go and accepting one's lack of control.

And this particular bias is really reflected in measures like the MAC, and as you'll see in a moment, it really completely misses those two dimensions of coping, in our opinion.

So let's look at the fighting spirit construct again. We would argue that -- that these -- the following did seem to represent what one might consider the positive dimensions of fighting spirit. " I believe that my positive attitude will benefit my health", this seems like a potentially positive response. " I see my illness as a challenge", we know from the research on heartiness that this is an adaptive coping response in the face of life stresses. "I try to keep a sense of humor about it." However, there's another -- several other questions that make up the fighting spirit construct, and we would question whether these are always adapted. "I will fight the disease, I keep quite busy so I don't have time to think about it". Just consider as you look at these whether or not these are necessarily always adaptive. And part of the challenge of this is obviously that we're talking about very complex human emotional and cognitive responses, interior responses to something like a cancer diagnosis and having a disease like cancer, and that -- that even though I use measures like the MAC, I don't use the MAC, per se, to try to capture complex human emotions, they're very limited in many respects, because they often fail to capture the subtlety and the complexity of -- of human -- of human experience. So keep that in mind, as well.

Let's look at the fatalism construct of the MAC. These, we would argue, seem to represent the construct. I feel that nothing I can do will make a difference, I feel fatalistic about it. But do these really constitute fatalism? I've had a good life, what's left is a bonus, I've put myself in the hands of God. Maybe those represent fatalism, maybe they don't. At the moment, I take one day at a time.

You can see the problem from a -- even just from a statistical standpoint. If you have a construct that's, we would argue, has items that conflict potentially conceptually, for example, they're made up of -- of an item like at the moment, I take one day at a time, which might be a very adaptive and very healthy response, coupled with, I feel that there's nothing I can do, which probably isn't very adaptive in any situation in life, that if you put those together in a construct, while it may not be a surprise that you're going to have conflicting findings whether or not that construct matches up with some outcome like survival for breast cancer, if they're conceptually not consistent with one another.

We'll try to get a little bit more of a handle on -- on where I'm going with this. I'm going to talk about our control model for a moment. And this has really been an effort really on Dean Shapiro's part as he developed this over many, many years and has developed a wonderful instrument called the Shapiro Control Inventory to measure this construct.

This was really an effort to try to broaden this notion of control and really came out of a lot of his own study of -- of eastern Dallas in particular and some of the perspectives of control from other cultures.

We argue that in response to loss of control, there's four characteristic modes that -- that human beings employ to regain a sense of control; one is what we call positive assertive control, and this sort of matches up somewhat with the fighting spirit construct in its, what I would call healthy component, that is what we call an altering mode of control, where one focuses on changing oneself or the environment in some way, and that's how one regains a sense of control. So you feel your weight is out of control, so you take active steps to exercise, to change your diet, that's what we would call positive assertive control.

Positive yield and control is where one's sense of control comes from actually accepting things as they are rather than trying to change them, and this is -- represents the key dimension that is missing from an instrument like the MAC.

On the other side of positive assertive control is what we would argue, efforts of control, of active control become maladaptive when one particularly attempts to control things that are outside of one's active control. So -- so in other words, it's an effort to gain active control in a situation that can't be changed. And one can think of this as over-controlling.

An example, and I gave you the example of weight, one feels one's weight is out of control, the example of negative assertive control is developing an eating disorder in response to that. The other side of positive yielding or positive acceptance is negative yielding, which really captures the helplessness, hopelessness, fatalism components of the MAC, where one gives up control, lets go of control in situations that actually are calling for more active control, termed negative yielding.

So if you look for a minute, I just touched on this, looking at the MAC and how this matches onto our control constructs, in this positive assertive, you would see the fighting spirit construct. In negative yielding, you'd see the fatalism, hopelessness, helplessness constructs reflected.

However, the MAC doesn't assess positive yielding in -- in our estimation, nor does it assess negative assertive control. So it fails to examine under what conditions does fighting spirit represent a maladaptive response to something like cancer or another stressor. And under what situations does placing it in the hands of God, to give that example, excuse me, actually represent a healthy response?

We have not to date looked at this in terms of mortality morbidity from the disease, but we have looked at it in a small study with -- looked at quality of life among cancer patients, breast cancer patients. We published this in behavioral medicine a couple of years ago. We had a small -- relatively small cohort of 58 women, and it was -- it was actually -- it was -- this was the first sort of empirical test of this theory, and it was amazing to see, for me, as -- as a person that's been doing this analysis, to see what ended up happening. We actually measured their modes of control, and we found that those who exercised this active assertive, positive assertive mode, who also exhibited the positive yielding mode and were able to

let go of control and -- and evidence an accepting mode of control, those people showed the best adjustment overall in terms of the quality of life, and both depression and anxiety.

Conversely, when people were high in assertive control, but were unable to have acceptance, as well, or were unable to balance that with an accepting mode of control, those people actually evidenced the worst adjustment to the disease.

You see the same pattern here with desire for control, which our measure also captures, that those women who expressed a high desire to have a sense of control, high desire for control, in the absence of an ability to let go of control, those people showed far poorer psychological adjustment to the disease. However, when you had a high desire for control, but you were also able to let go of control, in other words, this balance between active and assertive and yielding control, those women evidenced the -- actually the best of psychological adjustment to the disease. We're now in the process of doing -- enough time has passed, which is kind of a horrible thing to say, to be able to actually look at mortality data with a small cohort.

It may end up being too small to actually see to what extent this pattern that we observed with the -- this -- what appears to be an optimal response psychologically in terms of balancing these two modes of control, whether or not that actually shows up in terms of an effect on morbidity and mortality in these women, and we're going to begin at those data in the next few months.

DR. ASTIN: So high assertive is quadrant one, positive assertive, okay. When that is coupled with positive yielding control, quadrant two, in this study at least, the women fared far better psychologically in terms of quality of life, depression, anxiety. When -- when this positive yielding mode was low in those women who had a low positive yielding mode of control, their -- their assertive control appeared to -- to produce, or -- or at least was associated with far more depression and anxiety. So the sense is, I'll read on that, is that -- that a high desire for control and efforts to gain control in the absence of an ability to also let go and accept appears to -- or at least in this study was associated with poor adjustment. So the question is, from the standpoint of cancer progression and -- and disease outcome, does that potentially have any effect on the disease progression itself.

We're -- we're actually very excited because we now have an agreement with Maggie Watson's group in England to reanalyze their data that was published in the *Lancet* and it hasn't happened yet, but it's going to, we hope, in the next couple of months.

And the -- the challenge will be that the MAC, mental adjustment to cancer scale, didn't assess these positive yielding quadrants nor the negative assertive. In fact, there really are no items on the MAC that clearly map onto negative assertive control, so we're not going to be able to look at that quadrant. But there were a number of items, and we actually did our own factor analysis and looked at it, and in fact, there's a cluster of items that, I think it's six items on the MAC that do fall into this positive yielding mode. So we're going to be able to look, for example, at statistically, is there an interaction such that women who have a fighting spirit, if you will, who are also able to say that I take one day at a time, and I -- I recognize that what's left of my life is a blessing, to use those two items as an example, and at the same time the willing to -- to see this as a challenge and take active steps to address what they can in the disease, do those women fair better in terms of disease outcomes, and we'll be able to test that with this data set of -- of Watson's.

So I think I will leave you with that. And -- and then, as I said, we'll have time at the end to take questions. So if you can, maybe jot them down and just hold them in your mind and I'll be happy to -- to address them.

MR. DREHER: I want to thank Dr. Astin for his presentation. I think what you're beginning to see with his work is an attempt to really define what is emotional health in the face of a cancer diagnosis. And to answer that question in a way that really addresses how cancer patients live, how they feel, and how

they think, and the complexity of the responses that patients have, and -- and of the sort of simplistic measures that have been employed are like very blunt instruments. Being used in the past, these questionnaires, including the MAC, and what Dr. Astin is on the forefront of doing is trying to use a very fine scalpel to make an incision into a very complex body of -- of what is the mind of a cancer patient. So that mixed metaphor aside, let me move on to introduce our next speaker.

Dr. David Spiegel is Professor of Psychiatry and Behavior Sciences at Stanford University School of Medicine, where he's been a member of the faculty since 1975, and is Director of the Psychosocial Treatment Laboratory.

In addition, in 1997, he was appointed Medical Director of the Complementary Medicine Clinic at Stanford, which is one of the best such programs in the country. Dr. Spiegel's latest book, Group Therapy for Cancer Patients, presents the rationale, methods, and results of intensive supportive care for those with cancer.

Dr. Spiegel is a member of the editorial board of the Journal of Psychosocial Oncology, Psycho-oncology, and Health Oncology. In 1995, he was awarded the Edward A. Strecker award from the Institute of Pennsylvania Hospital and Jefferson Medical College for significant contributions to American Psychiatry. A couple of other comments about Dr. Spiegel, he also wrote an excellent popular book called Living Beyond Limits, based on the work he's done with cancer patients. And he's -- many of you, perhaps most of you know that he is the lead researcher of the landmark study published in the *Lancet* in 1989, showing that breast -- metastatic breast cancer patients who -- who participated in his support of expressive therapy lived twice as long as though who did not participate.

This was clearly a watershed turning point in the field of psychosocial interventions for cancer patients. And a lot of what's happening today in this field of psychosocial interventions for cancer stands on the shoulders of Dr. Spiegel and the work he's done over the last 15 years. So it's my great, great pleasure to introduce Dr. David Spiegel.

DR. SPIEGEL: Thank you, Henry. I'm honored to be here. George Soloman was a friend of mine and was, indeed, well ahead of his time in the work that he did. And I'm also proud to say that -- that Dr. Astin -- Dr. Soloman started his career at Stanford, an institution that did not always treat George as well as he deserved. But I think his efforts in part made it possible for me to do the work that I've been doing at Stanford, so I want to express my appreciation to him. I'm glad to say in the spirit of this morning's plenary that we have renamed our center The Center for Integrative Medicine at Stanford, and we feel very fortunate that we've now been functioning for four years.

I want to also add my acknowledgement regarding the terrible losses that we have all suffered in the past months, it has been a terrible time for all of us. One of my breast cancer patients in the group said that she had an image of her body being hit by cancer in the way that the building was hit by the airplane.

Our psychosocial treatment lab at Stanford has been working around the clock since then. We have a web site up now in which we're assessing people's coping responses to the terrorist attacks. We went online on September 28th, as of last night we had 4,100 responses.

I would welcome your participation and your spreading the word about the site because we hope to be able to document the nature of people's stress responses, and along the lines of Professor Astin's -- what are the factors that enable people to cope better or worse with the cancer -- with the -- with the attack on the country on September 11th and the ensuing attacks.

The web site is coping.Stanford.edu. You don't need www, it's the http://, and then just coping.Stanford.edu. I would like to comment primarily on the emotional aspects of coping with cancer. Henry Dreher set me up with quite a task. But I -- we have done some research on the emotions

associated with advancing cancer. And in particular, it's a concern I think for the complementary alternative medicine world, because there's a widespread belief that positive emotion all by itself is a healing factor, and that somehow losing hope or giving into one's fears about cancer is -- will have negative psychological and even negative medical outcome.

In this talk, I'm not going to talk very much about medical outcome. I will tomorrow in my plenary address. I want to focus on the aspects of emotion and emotional expression that we think are most helpful to cancer patients.

Clearly, they suffer extraordinarily. This is a depiction by a Dutch cancer patient, of her despair about her illness. And one of the most remarkable things about this sculpture is not only what it expresses, but it's also the only work of art she ever did in her life. It's really remarkable.

There is evidence that emotion does have to do with not only cancer, but with cancer incidents and progression. One of the most impressive studies was done by Penninx published in JNCI in '98, a huge prospective cohort showing that women and men who were diagnosed with major depression at three separate times, so that is -- they had both intense and extensive depressive symptomatology, had an almost two-fold relative risk of getting cancer. And so there is evidence that -- that major effective disregulation seems to elevate risk of cancer incidents, and then plausibly, cancer progression.

And I agree with -- with Dr. Astin that the fact that the Watson group underplayed the relationship between depression and hopelessness in breast cancer progression in that study is unfortunate, because it's a very important finding.

On the other hand, there is this popular notion that laughing, humor, being upbeat in a sort of simplistic way will somehow effect the course of disease. This was a very interesting review just published in Psychological Bulletin by Martin, and it showed that humor, per se, just being upbeat, did not seem to have much in the way of health effect of any kind, cancer or other illness.

So dealing with emotion is a complex and important issue, but the answers about it are not simple. Finally, however, there is something to emotional positivity, and this study, I think, is the -- is an intriguing and terrific one. It's published in Journal of Personality and Social Psychology this year. Positive emotional content in 180 early life autobiographies written by Catholic nuns in their 20's was strongly associated with longevity six decades later.

So there may be something about emotional resilience, not -- not some simplistic, just laugh away your illness, but some personality trait of being resilient and being able to distinguish, in Dr. Astin's terms, you know, those parts of life and disease that one can control and at the same time relinquish those parts that one can't. It may, in fact, have some effect on health outcome.

Our intervention -- there are a variety of interventions to help people with these emotional reactions. And this slide, which actually comes from Sandy Sefton who's here in the audience, she's at the University of Louisville now and is a former post-doc in our laboratory, illustrates the range of individual and group interventions.

I'm going to focus in the limited time on supportive expressive, and on the expressive portion in particular, because I think one of the things that distinguishes supportive expressive from many of the other interventions, including the prevailing cognitive behavior models, is that we don't treat emotion as a problem, we treat it as an opportunity. And I think one of the problems in both mainstream medicine, and mainstream medicine, we treat crying as if it were bleeding, you know what to do if a patient is bleeding, you apply direct pressure until it stops, and -- and that's pretty much the way we treat emotion in medicine.

On the other hand, in alternative medicine and in popular psychology, there's often been an idea that there's a problem with -- is there something wrong? What is it?

DR. SPIEGEL: There's -- there's been a sense that being anything less than upbeat is -------- to giving into your disease. One of my patients started crying, and her husband said don't cry, you'll make the cancer spread. My group called that the prison of positive thinking. And so I think we have tended to constrain patients from their own natural emotional reactions to a life threatening situation. There are seven themes in supportive expressive group therapy, building a new network of social support, emotional expression, which I'm going to concentrate on, facing and detoxifying fears of dying and death, reordering priorities in life, strengthening family relationships, clarifying communications with Dr.s and symptom management. We do all of those things. I'm going to focus on emotional expression in the short time we have.

We think it's very important to face feelings, all feelings that patients have directly, restructure them -- yeah, sure -- facing feelings directly, restructuring feelings in a supportive, social context.

And I think we've all had the experience in the last month of how important it has been for us to share emotions in a social context. And what it does is two things at once, it validates the feeling, it says other people are feeling as anxious and scared and angry and upset as I am, but it also moderates the emotion by -- by having a different context, feeling supported and cared about at the time that you're expressing these other distressing feelings, which helps to moderate them. Thirdly, the expression of emotion becomes a source of closeness rather than isolation. We can all remember moments when we've shared intense emotions with others, and so it's a way of solidifying existing social bonds and creating new ones. And we think they're important components of what we do in these groups.

Many people feel, as I mentioned, that they have to keep on a happy face. It's an old notion of being upbeat all the time. Cheryl Cootman in our lab used another scale related to emotional suppression, not the MAC, but the Courtauld Emotional Control Scale, and we examined the relationship between emotional control and distress, and what we found was that the patient's high and emotional control, the green bars, were more anxious and depressed than those low in emotional control, despite their tendency to suppress their emotional reaction.

So trying to suppress it just plain doesn't work, the more you try, the worse you feel. This is another way of expressing that, about a correlation between point three, between anger control and total mood disturbance, so it simply doesn't work.

(Tape interruption).

-- speak very angry -------- Mark Twain, who we've heard from today, said when angry, count to four, when very angry, swear. We're -- we're more on the Mark Twain side of that equation. And we find, of course, that one has to do this. And having patients talk about dying and death, it is inevitable that painful emotions will come up; in fact, it would be strange if they didn't.

And yet we find that there's a tremendous opportunity in groups to -- to do this, even in dealing with things as difficult as dying and death. And it is striking to me that as painful as it is, I think when people suppress their effect about these illnesses, they tend to make a devil's bargain, they suppress all effect, they try not to let themselves get too sad or frightened, but they don't let themselves get very happy, and we find the opposite, when there's been a period of real sadness, there's often a period of genuine humor afterwards.

In one group, we were talking about -- one woman said she was trying to arrange for her remains to be buried, and she called Skylawn Park to get an estimate on what it would cost to be buried there so her husband wouldn't have to do it, and they quoted her some astronomical amount of money, real estate in the bay area is very expensive, and she said, well, you know, I represent a group of women who are

looking for a place to be buried, and there was a long pause, and this woman said Skylawn Park does not offer group discounts, and you know, they all had a good laugh about it. This is a room -- a room full of women with metastatic breast cancer who are all dying and they had a laugh about a bargain rated cemetery.

So this is from work that Janine Davis is doing in our lab, actually doing content analysis of our groups compared with other groups, including the wellness community with whom we're collaborating, the cancer support community also collaborating, and other cancer groups. And what you see is that we tend to focus more on expressing true feelings, and particularly the educational lecture discussion groups and self-help groups do a lot less of that than we do.

And I think it's not accidental. This is hard work to do and you need well trained therapists to keep the focus on it, to have people who make themselves vulnerable feel accepted and understood rather than rejected when they do it.

And so we have evidence that we are, in fact, doing what we claim to do. Shakespeare and Macbeth said, give sorrow words to greet that does not speak, whispers of the fraught heart and bids it break. For those who want to learn more about supportive expressive group therapy, our book, Group Therapy for Cancer Patients, a research based handbook of psychosocial care, is available from Basic Books. Catherine Clauson co-authored that book with me.

Now, I want to turn to evidence we have of the effects of supportive expressive group therapy, on patient's tendencies to suppress emotion, because that is -- we have claimed for years that it's a major component of our work, and we have some new evidence about the effects of the groups on emotional control. And these -- this is based on data that was gathered by Janine -------- Davis and other members of our laboratory, supported by NIMH grant from NCI and NIMH on -- NIMH and NCI on the effects of group therapy on cancer survival.

There is evidence, as I mentioned, of greater cancer incidents and faster progression, and Dr. Astin has referred to this, too, if effect is suppressed, the old Greer and Morris work, repressed, and Lydia Temoshok has done some of that work, as well, you'll be hearing from her.

We are engaged in a replication trial of the *Lancet* study that was mentioned a few minutes ago, and this data are from that study. We applied supportive expressive group therapy to half of a random -- to a random half of a sample of 125 women with metastatic breast cancer -- breast cancer, and we're asking the question about whether we have changed the way in which people regulate their emotion. We hypothesized that we would reduce suppression of emotion by increasing expression of anger, sadness, and fear, and the measures Courtauld Emotional Control Scale, that we would increase restraint of hostile behavior, distinguishing benign anger from aggression, increase emotional self- efficacy, and we developed an emotional self-efficacy scale, people's sense that they are confident in managing their own emotional reactions, and reduced repressive defensiveness, which is a more instinctual pendency not to even be aware of how distressed you are, we used Weinberger Adjustment Inventory.

This is the portion of the sample that was involved in the study. It's about 100 women. The randomized samples were roughly equivalent, and they were comparable in terms of their prognostic variables. I won't go into that in great detail.

The Courtauld Emotional Control Scale has measures like when I'm angry I bottle things up, I smother my feelings. The Weinberger Adjustment Inventory involves restraint, consideration of others, I often go out of my way to do things for people, what's been called social desirability, doing things because people expect you to, and the self-efficacy scale has items like, I asked for the emotional support I need from my spouse, partner, or close friends, as well as ability to focus on the present, and to confront death and dying, those are the three components of the self-efficacy scale.

The Weinberger Adjustment Inventory has items also, this is a little out of order, that I can remember a time when I was so angry I felt like hurting them, once in a while I'd break a promise I had made. So let's look at the effects of participating for a year in supportive suppressive group therapy, and first of all, in overall distress.

We found a significantly greater reduction in the Impact of Event Scale, which is a measure of post- traumatic stress symptoms applied to cancer patients. Over the initial year, in the intervention sample, that's the yellow line down here then in the control group, and these findings were published in Archives of General Psychiatry earlier this year.

We also found that when you control for the increase in distress that happens in everyone just prior to death, we had a significant effect on the profile of mood states, which measures anxiety, depression, fatigue, confusion. So we, as have a number of others, have found that being in these groups reduces distress. And I want to emphasize this because we do something that is very different from what many other people recommend in dealing with cancer, which is, this is not about positive imagery, we don't do any positive visualization, people watch others in the group die, and they grieve their losses, and yet they come out of this less anxious and depressed, with less intrusive thinking, less avoidance than control patients who don't have it.

Now, what's new, and I want to emphasize in this talk, is that we've also now got some data on emotional control. And Janine -------- Davis has written this article which will be coming out in "The Journal of Consulting and Clinical Psychology." We looked at scores on the Courtauld Emotional Control Scale in the intervention and control group, and you can see the yellow line here, that there was a significant reduction in tendency to emotional control in the intervention sample compared to the control group.

So we have evidence for the first time now that we're doing what we had hoped to do, which is teaching people to be less suppressive of their emotional reactions in response to cancer. This is a complex diagram, but I'll tell you that what it basically says is, that there's a relationship between the tendency to reduce your emotional suppression and over time your -- your emotional distress on the impact of event scale. So as people reduce their distress, they also reduce their suppression of emotion, they also reduce their distress. We found a difference in restraint of hostilities. Hostility is sort of sniping at people, it's not expressing anger in a way that it can be worked through. And we found that there was an increase in restraint of hostility in the intervention group and a decrease in restraint of hostility in the control group. So while we're increasing emotional expression, we're reducing this tendency to snipe at one another.

We also found an improvement in self-efficacy in the intervention sample compared to the control group. So patients felt that they were more competent in managing their emotional reactions in the intervention sample than in the control group.

However, we did not have an effect on repressive defensiveness. So we seem to be able to help people who are aware of their tendency to suppress emotion and get them to change it, but people who are so over controlled that -- that they're not even aware when they're distressed, they will say they're fine even when they have reason to be anxious or sad, we were not able to effect that very much. So we seem to be effecting conscious strategies rather than unconscious defense mechanisms, which is not all that surprising. So what does this allow us to conclude? Supportive expressive group therapy may modulate emotion by decreasing the suppression of emotion, especially reducing the control of expression of anger and sadness. It increases restraint of hostile or aggressive behavior, it seems to halt decline in emotional self- efficacy that happens in control patients, and it doesn't seem to have much effect on repressive defensiveness.

So we think that increasing the intensity of effective expression in therapy within a supportive cognitive framework may help people enhance their own skills at emotion regulation, help them

understand the difference among strong negative effects, and also get to an act of coping stance, where if they're feeling angry or sad, they can also being to figure out what they can do about whatever it is that is triggering that emotion, to find the kind of realistic coping and control that Dr. Astin talked about, teach an ability given receive support during intense and effective moments that can generalize from the group to families and friends, and increase their sense of empathy.

And this is a different approach, for example, than some of the cognitive behavioral approaches which have been used very effectively with depression, but in that situation, depression is the problem, the emotion is the problem, and you're trying to alter the tendency of depression to influence cognition and have people selectively view negative aspects of their life. Here, we view the depression or the anger or the -- or the sadness as a problem, we view it as going -- as a natural adaptive reaction to the illness and we want to help people manage that better. So we encourage people to express and work through their emotions rather than suppress them.

I want to acknowledge my many collaborators in the laboratory, they're a terrific group of people at the lab who -- who worked night and day with the -- and I want to acknowledge also the patients who have been extremely giving of their time and efforts here. This is Janine -------- Davis who was first author on the emotion control paper.

Shakespeare said, when we are better, see bearing our woes, we scarcely think our miseries are foes, the mind must suffer or skip when -------- and bearing fellowship. Thank you for your attention.

MR. DREHER: I want to thank Dr. Spiegel, I think for just a wonderful, wonderful talk. One of the things, you know, to wonder about is his 1989 study did show a survival advantage for patients in his -- his program. He's clearly demonstrated today that the program can make a significant impact on people's capacity to express difficult emotions. And the question now arises whether that, in fact, is part of why his -- his intervention appears to have been successful in approving outcome for cancer patients. We'll learn more about this when we get the results from his currently ongoing replications, NCI supported, with both metastatic breast cancer patients and with early stage breast cancer patients. So it's a pleasure to have had Dr. Spiegel speak.

I'm now going to introduce our third speaker, Dr. Lydia Temoshok. Lydia Temoshok directs the Behavior Medicine Program in the Institute of Human Virology and is a Professor of Psychiatry in the University of Maryland School of Medicine in Baltimore.

Before coming to IHV in 1998, Dr. Temoshok served as senior scientist with the world health organization in Geneva and directed HIV behavioral research for the US Military. While on the faculty at the University of California School of Medicine in San Francisco, she directed biopsychiosocial research on the role of emotion and coping in the progression of malignant melanoma. And in 1982, formed a multi-disciplinary group of scientists to study a new syndrome which would later be called AIDS. Dr. Temoshok has published ten books or monographs including The Type C Connection, The Behavioral Links to Cancer and Your Health, along with yours truly, 38 book chapters, and over 100 journal articles.

As Lydia is co-author on The Type C Connection, I have to admit some bias, but I -- I would have to say that I think that she has done some of the most visionary thinking in the field of psychosocial emotional factors in cancer progression. She's conducted some of the most methodologically rigorous studies in this area.

And she wrote what I consider the best theoretical paper trying to integrate literally a couple hundred different studies that tried to piece out and -- and tease out what are the various emotional factors in cancer progression. This -- this paper was titled, Personality Coping and Emotion In Cancer. It was in cancer surveys, it was in *The Journal of Cancer Surveys*, and it's the single best theoretical integration I've ever read on the studies in this field. So it is my absolute pleasure to introduce my friend, co-author, Dr. Lydia Temoshok.

DR. TEMOSHOK: This week was extremely difficult because I have lost two of the most significant intellectual influences on my life and career, great friends, Dr. George Freeman Soloman and Dr. Bernard Fox. I think both of them would want us to go on and celebrate their lives and work. So what I'm going to talk about today is going to integrate some of what both of these individuals have done in the field and how they have impacted what I've done.

Bernard Fox died October 9th, and I want to talk about him a little bit. This quote is from an article by Dr. Fox, and it's an illustration of his really dedicated focus on precision of terminology and critical analysis of issues both large and small, and also his predilection for understatement often cloaked in double negatives; "The contribution of mind to health has been under researched, not under estimated." Think about that. He's implying that our estimate, he says estimate now, not evidence, of the role of psychosocial factors in health and disease has exceeded our evidence from our research on this question.

On a personal note, although Bernie and I were very close friends and co-wrote a number of papers together, I once asked him, and that was the only time, to write a letter of recommendation for me, and the letter was laced with the same kind of understatement. I think he said in this letter, she is not unaccomplished for a researcher of her age. Now, I didn't really take this personally, although it was kind of distressed, as I would hope that a number of scientists whose papers have been reviewed and incisively critiqued by Bernie, were able to put aside their hurt egos and heed some of the gems of research advice Bernie would generously dispense in his multi-page, single spaced critiques that you could always recognize because they were typed on his signature manual typewriter with the light and dark letters and the -- and above the line and stuff.

What's amazing about these critiques is that he was always a gentleman, so that one felt afterwards as if one had been eviscerated by a velvet glove. Although I learned a great deal from Bernie, I have never quite been able to master his art of indirect critique, believing, as a result of my work on the Type C Connection to cancer progression, that more direct expressions somehow work better.

I did want to talk a little bit about Dr. Fox's contributions, particularly his seminal article in 1978. Pre-morbid psychological factors as related to cancer incidents, which was published in the Inaugural volume of the Journal of Behavioral Medicine. This was a book length article and was really instrumental in establishing a new field of research, which I have to call, given his precision about terminology, biopsychosocial cancer epidemiology, because he really drew into this article all of his really vast knowledge of a number of fields.

You may not know he was trained in meteorology and actually helped develop seat belts and did a whole lot of other things, on the number of factors that can effect health. So he brought in chemistry, immunology, virology, pharMACology, endocrinology, psychology, and genetics to address the question of whether and to what extent stress and other psychosocial factors may contribute to cancer risk.

Twenty years after the publication of this paper, Dr. Fox has published a very incisive critique phrased, as he always would do, as a hypothesis of Dr. Spiegel's study in 1989. As most of us know, the study found that 50 metastatic breast cancer patients randomized to a group psychosocial intervention survived an average of 18 months longer than the 36 controls.

Bernie's critique of this study drew upon his considerable statistical and epidemiological expertise. He was very struck by the finding that when you transformed the survival curves into the life table format, the curves of the control group were exceptionally steep, they dropped off very -- very steeply after 20 months, unlike the survival curves of any other cancer population. In fact, when you compared it to a population from the same region, and again, this is an epidemiological analysis that I would never do, and most people in the field wouldn't do, but he did because he had that knowledge, and again, you say neither group had the intervention, the control group didn't have the intervention, and the

comparison of metastatic breast cancer people from that area in California, the survival curves were virtually identical for a year, but differed strikingly after 20 months.

This led Dr. Fox to hypothesize that the cancer control patients who survived for more than 20 months were an extremely aberrant sample, subject to the influence of possible confounders not measured or accounted for in the study, that randomization of the groups, which was done excellently and wonderfully in the study, can help reduce the possibility that there are effects of confounders, but it doesn't eliminate it or guarantee that you have eliminated, and that was what Dr. Fox was emphasizing in his critiques.

A corollary to Dr. Fox's hypothesis is that the intervention had no effect, that the intervention curve of survival was, in fact, equivalent to a control curve with mild sampling departures from the regional population, so that he would hypothesize that any repetition of this study would not yield confirmation of the 1989 study. David Spiegel threw back a challenge to Bernie Fox, as we do in this field, we have to do, to name the factors that might have contributed to the control group's precipitous and unexpectedly steep decline.

Logistically, of course, this challenge is irrelevant to Bernie's epidemiological hypothesis, and he was really under no obligation to name those factors. If he could to that, of course, this would -- he would have the answer to the really complex question of which of the myriad prognostic indicators and other markers really caused the premature death of some early stage cancer patients or the extended survival of some later stage cancer patients. We haven't answered that, nobody can answer that yet, it's very complex.

Being more characterologically inclined to speculate than Dr. Fox, although taking to heart his admonition, to label these as a hypotheses, I'd like to segue into a discussion of possible factors that might be involved. I think it's clear now, in 2001, that a number of intended replications of Spiegel's landmark study have not succeeded in finding the same results about the effects of an intervention. In fact, a ten year follow-up of Fawzy Fawzy's UCLA study of a group of intervention from melanoma patients failed to find any significant effects for group assignment when analyzed by appropriate multiple regression techniques.

Alastair Cunningham, who is unfortunately in a concurrent session which I would dearly love to attend, published a very interesting paper in *Advances* recently looking at the effects of involvement in a self-regulation intervention.

What Dr. Cunningham found was that patients who demonstrated involvement in the intervention, which was psychological self-regulation, that means involvement, they took the intervention very seriously, they went home, they did their homework, that this involvement, higher involvement, was associated with longer survival.

With great insight, Dr. Cunningham has really shifted the focus of inquiry from the presence or the absence of an intervention to really what patients do behaviorally with that intervention, and I would say it's almost a -------- shift of focus and very important. I would like to shift the focus still further, or really almost take another stance to look at who the patients are in the study, and specifically how they cope, by hypothesizing that Dr. Cunningham's study of involvement effects on survival has little or nothing to do with the intervention at all.

After all, in intervention, no matter how vivid or compelling, constitutes, at best, an hour a week if you have -- for a year say. So if you assume that we have 18 hours of waking, good time during the day, that's 126 -- a fraction of your time is taken up with this intervention. And, of course, this minuscule proportion becomes even more deluded when the intervention ends, when you have the years of follow-up, so that basically we're dealing with a homeopathic effect, you know, by the time you're ten years out of this intervention.

So I don't think it's any surprise that interventions, per se, do not work. They may push someone to cope and perhaps change because someone is at that point involved in that motivation and involved in that intervention. But what I would like to suggest, that what Dr. Cunningham did in his study is, he tapped into a critical coping construct of involvement, which is strikingly reminiscent of the commitment subscale of the -------- heartiness scale. And I -- I really have appreciated that scale, even though people have made a lot of critiques over the years about its reliability or construct validity. But she's tapped into kind of a vital dimension on which people have healthier or less healthy or adaptive psychological and I think physiological coping. So that I would say that what Dr. Cunningham has found is, he's demonstrated that dedicated involvement is associated with longer survival.

He's really taken a very good sampling of a person's coping style during the group. He's had -- he's had the group, he's -- he's seen what do people do when they have an intervention, that's important. The people who are more involved who do their homework, he's captured that, he's -- and he's measured that. So he's captured a critical variable.

People who are more vitally involved in the intervention, in their work, in their love life, with their children, they do better in all aspects of life, including living longer and with more health. And I would say, as an example, George Soloman was pretty much the prime example of this, of someone who was critically involved in everything he did, whether it was work, whether it was skiing, whether it was partying, everything that he could possibly do, he did to the max, and was very involved, and I think far surpassed anyone's estimates as to how long one could survive with a chronic, usually deadly disease. Okay. Finally, I want to make -- I want to talk about a comment about stress as a contributing factor. But first I want to talk about coping. I think this is the model that first got me into this area after reading Dr. Fox's 1978 study, and it's the well known Weineberger, Schwartz, and Davidson study, doing the four quadrant division that Dr. Astin was also talking about.

The problem with this, even though I think it's very interesting and brilliant, is that they're still using self-report scales, which are kind of pallid indicators of what a person is really like. But nevertheless, these turned out to be pretty predictive of things, so that the people who were high on defensiveness, as measured by the Marla Crown Social Desirability scale and low on reported anxiety would be the repressor group.

And most emphasis has been placed upon repressors as having a poorer health outcome, whether it's with cancer or with other -- other health issues. But we -- we found, and actually in a study with Bernard Fox that published in 1988, that the defensive, high anxious group was actually, and this is a study of malignant melanoma, the patients who had defensive, high anxiety had the poorest prognosis in melanoma, and this is very reminiscent of what Dr. Spiegel was also saying in his finding regarding emotional control scale of the MAC, vis- a-vis, depression, that if you tried to suppress your depression -- depressive feelings, this takes a great deal of energy, and it's probably worse for your health in the long run.

So when we evolved the idea of the type C coping style, I used the kind of model of this four quadrant system, and tried to say that there's a -- if we look at the difference between emotional expression, whether you're expressing it and -- and actually feeling it, that the types could be differentiated as the Type B, the kind of healthy person for whom anger is expressed and then it rolls off their back, as in the upper left-hand quadrant, the Type C individual maybe feeling, and this is the question, whether they feel it conscientiously or whether it's more buried, that Type C would never express emotion, particularly anger.

In fact, one of my key questions is, when is the last time you felt angry. A Type A person can answer that immediately. I do my -- I do my interviews in the medical school, and they would say, well, it was the elevator, it didn't come, I was pushing the button, you can just imagine them pushing a button, and then the receptionist didn't know where you were, these people are not organized, the -- the Type C person, you know, would say, anger, anger, huh, I -- I don't know, I don't think I've ever felt really angry, and you say, well, how about annoyed, oh, annoyed, irritated, well, there was a time maybe 20 years ago

when this person rear ended my car, it was a hit and run, and I have been, you know, I was partly paralyzed, I was in the hospital after that, and I -- and I do think I was a little irritated.

Now, the -------- person probably doesn't feel or express. But this didn't really fit. It -- the four quadrant grid didn't really fit. I think we got -- we got results from doing this, because we did have a pretty vivid measure of someone's expression. In other words, when we asked them what's the worst thing about having melanoma or about having heart disease, we would video tape their expressions and we would get an idea of how -- how much they were talking about it, we would -- we did facial expressions, so that if somebody is by the Paul Ekman facial coding system, having a -- a smile that's masking other feelings and so on.

But we -- in another study with Andrew Neer in 1984, really decided to -- to get into the physiological responses, because we really need to understand how coping can influence a cancer process, because we have to jump somehow from the mind, from a cognitive construct to how does this influence the body, how does it influence biological processes. I believe that the term coping incorporates both a physiological, biological, and psychological dimension, and so that it -- it may be able to, by combining these, give us a better response.

So that in this study, what we did was, we gave the people a stressor, which was to ask -- which was to ask them to look at a series of slides that had potentially disturbing messages, such as your mother never really loved you, there was a spider on the wall behind you, the, you know, your work is really bad, and we said none of these are true, however, just rate, please, how much this disturbs you, and then we measured at the same time their skin conductance response, and there was a disynchrony -- disynchrony for the individuals who were the Type C, who also had the worse cases of -- of melanoma, the -------- and the worse prognosis, compared to the heart patients, people who had coronary artery disease or other kinds of -- of those symptoms who tended to exaggerate their psychological response and underplay their physiological response. The Type C's would say it didn't disturb them, at the same time, simultaneously, their skin conductance were showing that it did disturb them. So this has led us to kind of develop -- I'll just go on one more thing here. And I -- I sort of had this conception as being a probably better model than the four quadrant model, and it was back in 1985. The triangle superimposed upon the more organic curve linear function that really typifies homeostasis, where adaptiveness is at the high end and less adaptiveness is at the low end.

There's similarities between the Type A individual and the Type C individual in terms of their -- their distorted expressions of emotion. The Type A is over-expressing it, the Type C is not expressing it, and the Type B is expressing it appropriately and letting it go, so that -- so that while these are opposite, they also form a function or relationship to the Type B's.

We -- at UCSF, in a study, University of California, San Francisco, in a study of long term AIDS survivors with George Soloman, we looked at the effects on survival of different ways of coping with stress. The stimulus in this case was emotional reliving of a stressful experience.

We said please tell us during the last week the time you were the most angry, and we asked the most sad, the most happy, the most fearful, and describe this. They described it for a period of one minute, they thought about it, and then we asked them to please forget about it, please just relax and let your mind go blank. What we were trying to get was that normal homeostatic function. In other words, they're thinking about something, they're rising to the occasion of thinking about it, and then letting it go, a Type B kind of response.

We saw different kinds of patterns, what we're calling maladaptive pattern one, the kind of over-the-top manic person, the hypervigilant person who's so stimulated already that anymore stimulation is not going to make a difference, they already have the ceiling effect. Maladaptive pattern two, which is really the Type A, once you get stimulated, you can't let it go, you're always angry, that receptionist, I can't get it out of my mind, she didn't treat me right, you know, didn't she know I was an important person.

The type three, maladaptive pattern three being more of the Type C, who by repressing all of these feelings or recognition really of cues, both external and internal, doesn't deal with the stimulus. And we did find, in fact, that the AIDS patients who were able to, in terms of heart rate, which was the best measure of their -------- on that dimension have a normal homeostatic function. They were able to have their heart -- heart rate go up when they talked about something that was stimulating, that was anger -- anger producing and then relax were the ones who lived longer. And this was a -- a survival study. It was a very small sample, but it was -- the statistics did hit you between the eyes, whereas the -- any of the people who filled the other patterns did much worse.

So I think that I -- in my 50 seconds remaining, would like to talk about the use of this kind of curve linear function as maybe describing a number of the constructs in our field and whether this can be a very potentially useful way of reconceptualizing how a psychological construct, a coping dimension can influence our health.

I know that Dr. Astin has made a great contribution in terms of the four quadrant model and looking at -- relooking at the control dimension. I think if -- if one superimposes that idea, using a curve linear function, we can see that, again, the assertive is -- is the most adaptive, whereas impulsive, on the one end, and over control on the other end, are equally problematic, but different. Yes.

MR. DREHER: I encourage you all. I want to thank Dr. Temoshok, first of all, for a fascinating presentation. And I encourage you all, I know we're running late, and I -- I appreciate your patience. I encourage those of you who wish to stay for another ten minutes or so so that you can ask questions and get answers from this panel.

I apologize for running late, but I think we had three really extraordinary presentations to enjoy here this morning. And so I want to take questions. If you -- Lydia, if you want to sit down and I'll pass this around or --

SPEAKER: --------

MR. DREHER: Okay. The question -- the question is whether the type of treatment you choose to pursue will influence your emotional and coping responses. In other words, if you're taking a very stressful course of chemotherapy, would this increase your levels of distress or hopelessness or fatigue versus an alternative treatment that was less toxic and difficult to endure, would that result in a more favorable set of emotional and coping responses?

DR. TEMOSHOK: Again, I don't think it's the intervention, whatever it is, that causes the stress. A person who is -- who is optimistic, let's look at this slide, a person who's -- who's realistically optimistic is going to see the glass is half full, they're going to say, yes, I'm taking a really stressful chemotherapy treatment, but by God, I mean I can feel that -- that treatment, I can feel it working, and you know, I'm going to get this really great wig and it's going to look great, and they -- they understand that the glass if half full, but the emphasis is on full.

A hopeless person who copes in general by feeling hopeless is going to feel bad no matter what, the glass is empty no matter what you're -- you're going to say. So that, again, I think that there's a -- there's synergy between a coping style and a treatment. In other words, the people who are going to feel hopeless and overwhelmed by stress, they're not going to utilize their own resources or coping support, they're not going to express that they need some help with things, are going to do badly, whether they're doing traditional medical treatments or alternative treatments, whereas the person who's more involved in their treatment may seek more complementary treatments and thereby do better.

MR. DREHER: Any other questions for our panel? Okay. I want to thank all of you for -- for hanging around, for being patient, and for being such a great audience. Thank you very much.

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