

# Chapter 1 *Introductory Information for Facilitators*

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## **Background Information and Purpose of This Program**

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This intervention program was developed specifically for individuals dealing with the stress of living with human immunodeficiency virus (HIV) infection. The program combines relaxation and cognitive-behavioral techniques together into a Cognitive-Behavioral Stress Management (CBSM) intervention. The program is designed to: (a) provide individuals with information on sources of stress, the nature of human stress responses, and different coping strategies used to deal with stressors; (b) teach anxiety reduction skills, such as progressive muscle relaxation and relaxing imagery; (c) modify maladaptive cognitive appraisals using cognitive restructuring; (d) enhance interpersonal conflict resolution and communication skills via assertiveness training and anger management; and (e) increase the availability and utilization of social support networks through the use of improved interpersonal and communication skills. This specific CBSM intervention is tailored to address the issues of loss of personal control, coping demands, social isolation, and anxiety and depression—all salient for HIV-infected individuals.

This program is a 10-week structured intervention meeting once weekly for two to two-and-a-half hours. Each session begins with relaxation training, including in-session practice of relaxation exercises. The second portion of each session teaches cognitive-behavioral techniques that can be interwoven with HIV-related health information (e.g., about sexual behavior, substance use, and medication adherence). One feature that distinguishes this stress management program from others is that the program is designed to be run in groups. These groups consist of up to eight HIV-infected individuals led by one or two group leaders.

During the intervention group leaders: (a) act as coping role models along with group members (positive social comparisons, and use of social support for informational purposes); (b) encourage emotional expression and provide the opportunity to seek emotional and instrumental social support; (c) teach group members how to replace feelings of doubt with a sense of confidence (vulnerability changes); and (d) discourage the use of avoidance coping and encourage acceptance and reframing as coping responses.

## Problem Focus

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HIV, which is a retrovirus of the human T-cell leukemia/lymphoma line, is the causative agent of the acquired immunodeficiency syndrome (AIDS). HIV-infected persons are extremely vulnerable to a wide range of pathogens normally controlled by the immune system, and subsequently these individuals may contract a number of life-threatening diseases over the course of their infection. Because appropriate patient management can delay the onset of AIDS but never cure the primary infection, it is accurate to view HIV as a chronic disease.

Since there is no cure for AIDS, prevention is the major tool for limiting the spread of the disease. *Primary prevention* efforts focus on behavioral change techniques designed to avoid or decrease exposure to HIV, and include increasing availability and promoting use of condoms, and substance abuse management and treatment (Schneiderman, Antoni, Ironson et al., 1992). *Secondary prevention* efforts are designed to facilitate disease management once a person has been infected. These focus on treatments to manage HIV spectrum disease, optimize quality of life, and slow disease progression. The CBSM program described in this guide is a secondary prevention program. Other secondary prevention efforts focus on medications. During the past several years a number of pharmacologic agents have been introduced to manage symptoms and to slow HIV progression.

## Development of This Treatment Program

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We have for the past 20 years systematically examined the effects of stress management in HIV infection as well as other chronic diseases (Antoni, Schneiderman, & Penedo, 2007). A major reason for developing stress management interventions for HIV-infected persons comes from our conceptualization of HIV infection as a chronic disease whose clinical course may be affected by multiple behavioral and biological factors. HIV-infected people who go on to develop AIDS are those whose immune systems have been compromised to the point that they develop complications such as acute life-threatening infections and rapidly progressing cancers. We have examined ways in which psychosocial influences such as CBSM intervention can be used to modulate psychosocial and behavioral factors known to affect the immune system in this population. From the point of view of a chronic disease model, to the extent that CBSM modifies things such as emotional distress, maladaptive coping strategies, and social isolation, it might also modulate biological factors such as certain immune system components. By diminishing the impact of psychosocial and behavioral factors on the immune system, CBSM might retard the onset of disease complications by maintaining an individual's immunologic status (e.g., T-helper cell counts) within a certain range necessary to defend against certain pathogens.

Based on the empirical observations in biobehavioral studies of cohorts of HIV-infected persons studied over several years (e.g., Leserman, 2003) we have constructed a model for behavioral intervention in HIV infection. The model specifies relationships based upon our observations that a CBSM intervention: (a) enhances adaptive coping strategies (active-involvement strategies) and decreases maladaptive coping strategies (denial, disengagement, giving up) and social isolation following an HIV+ diagnosis; (b) attenuates the distress associated with learning an HIV+ diagnosis; and (c) has a normalizing effect on adrenal hormone and immune status (Antoni, 2003a). We theorized that intervention-associated enhancement of adaptive coping strategies and social support may mediate both affective and behavioral risk changes on the one hand and immunologic changes on the other. Both behavioral (and affective) and immunologic changes may favor a normalization effect upon latent

herpesvirus reactivation, which may reduce HIV reactivation and retard clinical disease progression (Antoni et al., 1995). It is also plausible that HIV-infected persons may benefit substantially from psychosocial interventions that build self-efficacy, enhance active cognitive and interpersonal coping skills, and increase the availability and utilization of social support in a supportive group environment. Subsequent increases in self-efficacy, social support, and adaptive coping may decrease depression and distress, sexual risk behaviors, and substance use, with potential related effects on immunologic and clinical health status.

### **Evidence Base for Group-Based CBSM Intervention**

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A number of laboratories across the world have tested the effects of psychosocial interventions on psychosocial outcomes in HIV-infected persons (for review, see Antoni, 2003b). Although studies using hypnosis and biofeedback have shown some effects on health behaviors, their effects on mood and physiological outcomes remain unknown. The bulk of the evidence for biobehavioral effects of psychosocial interventions in HIV-infected persons comes from studies of group-based CBSM intervention.

Throughout the development and empirical validation of the CBSM intervention for HIV-infected individuals described in this guide, our research program has focused on specific “critical points” that HIV-infected people pass through when testing the efficacy of psychosocial interventions. The rationale underlying this approach is that HIV infection comprises not only a “spectrum” of diseases, but also a spectrum of psychosocial challenges that change over time. At least five somewhat artificial critical points can be used to characterize these challenges: (a) responding to the initial diagnosis of seropositivity; (b) adjustment to being infected during the early asymptomatic period when individuals are still healthy; (c) adjustment to the experience of HIV-related symptoms that are not life-threatening but do affect the quality of life; (d) adjustment to a diagnosis of AIDS; and (e) managing a complex antiretroviral medication regimen. In each case we conducted randomized controlled trials where the CBSM intervention was delivered in groups by interventionists with at least a master’s degree in clinical psychology. Patients recruited for these studies were required to be free of comorbid physical (e.g., can-

cer) or psychiatric conditions (e.g., psychosis) that could confound study results. Outcome and process measures included well-validated psychosocial instruments, commonly used physiological indices of stress, and immunologic and viral parameters known to reflect HIV disease status.

This empirical work has shown that HIV-infected men assigned to a 10-week CBSM intervention show decreased depressed mood and anxiety after learning of an HIV+ diagnosis (Antoni et al., 1991), mood changes that were paralleled by improved immune status (increased CD4+ T cells and CD56+ natural killer [NK] cells). Greater home practice of relaxation was related to larger psychological and immunological changes, suggesting a dose-response relationship (Antoni et al., 1991). In the weeks after learning this diagnosis, men assigned to CBSM continued to show better immune status, reflected in lower antibody concentrations against latent herpesviruses such as Epstein-Barr virus (lower antibodies indicate better immunologic control of the infection; Esterling et al., 1992). Greater increases in social support during this period were associated with greater declines in herpesvirus antibody concentrations (Antoni et al., 1996). At follow-up, distress at diagnosis, HIV-specific denial coping (five weeks after diagnosis minus before diagnosis), and low treatment adherence (attendance for either CBSM or exercise groups, frequency of relaxation practice during the 10 weeks for those in CBSM, and doing homework for those in CBSM) all predicted faster disease progression over the next two years. Furthermore, decreases in denial and a greater frequency of relaxation home practice during the 10-week intervention period were predictive of higher CD4 cell counts and greater lymphocyte proliferative responses (the ability of T cells to multiply when challenged by pathogens) at the one-year follow-up (Ironson et al., 1994). These findings suggest that those men who attended intervention sessions regularly and broke through denial during the intervention period were most likely to show longer-term immune and health benefits (Ironson, Antoni, & Lutgendorf, 1995).

In another validation study in a cohort of HIV-infected men who had been diagnosed at least six months prior, we found that those assigned to a 10-week CBSM intervention showed decreased anxiety and depressed mood, increased use of acceptance and positive reframing coping, increased social support, and decreased antibody concentrations against herpes simplex-type 2 (HSV-2) virus (genital herpes) (Lutgendorf et al.,

1997, 1998). Greater use of acceptance and reframing and increases in reported social support explained the effects of CBSM on depressed mood, and depressed mood decreases ran in parallel with decreases in HSV-2 antibody titers. HIV-infected men in CBSM also showed decreases in the adrenal “stress” hormones cortisol and norepinephrine in 24-hour urine samples over the 10-week intervention (Antoni et al., 2000a,b) that paralleled mood changes over this period. When this cohort was followed over time we found that men assigned to CBSM showed greater indicators of immune system reconstitution (recovery) at the 12-month follow-up, as indicated by increased naïve T-helper cells (Antoni et al., 2002) and T-cytotoxic (killer) cells (Antoni et al., 2000b). Importantly, increases in each of these immune cell subpopulations were predicted by decreases in negative mood and adrenal stress hormones during the initial 10-week intervention: anxiety and norepinephrine decreases, reflecting decreases sympathetic nervous system activity, predicted greater numbers of killer T cells at follow-up (Antoni et al., 2000b), while decreases in depressed mood and the stress hormone cortisol predicted greater naïve T cells at follow-up (Antoni et al., 2005).

In a more recent trial, we tested the effects of CBSM on HIV-infected men being administered highly active antiretroviral therapy (HAART) (Antoni, Carrico, et al., 2006). We assigned men to either a pharmacist-led medication adherence condition or this same condition plus the 10-week CBSM program. Men assigned to the CBSM-plus-pharmacist condition showed greater decreases in HIV viral load (concentration of HIV RNA in the peripheral blood) over a 15-month follow-up compared to those in the pharmacist-only condition. These decreases in viral load were explained in part by the decreased depressed mood experienced by men in the CBSM-plus-pharmacist condition (Antoni et al., 2006). Depression reduction was related to the reduced use of denial coping after the CBSM intervention was completed (Carrico et al., 2006). This suggests that CBSM decreases nonproductive coping strategies such as denial to improve depressed mood and may, in turn, affect disease activity over longer periods (Antoni et al., 2006). Throughout this program of research we have found consistent evidence that this 10-week group-based CBSM intervention can modulate psychological adjustment to HIV infection and that improvements in psychosocial and neuroendocrine “stress” processes are related to alterations in immune and viral parameters that may affect health outcomes in HIV-infected

men. More recent work has shown that CBSM intervention can also improve psychological functioning in HIV-infected women (Lechner et al., 2003). Ongoing work is examining the effects of CBSM on health outcomes in HIV-infected women at risk for certain opportunistic diseases, in men and women who are Spanish speakers, and among heterosexual men with HIV infection.

## **What Is CBSM?**

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The CBSM program described in this guide combines multiple types of relaxation (Bernstein & Borkovec, 1973), imagery, and other anxiety reduction techniques with commonly used cognitive-behavioral approaches such as cognitive restructuring (Beck & Emory, 1979), coping effectiveness training (Folkman et al., 1991), assertiveness training, and anger management (Ironson et al., 1989). These are all packaged in a group-based program comprising 10 weekly modules that use contemporary stressors in the lives of HIV-infected persons to enact these well-proven techniques for managing stress.

## **Alternative Treatments**

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### **Other Relaxation Techniques**

As a result of the literature relating relaxation to anxiety reduction and improvement in immune measures (e.g., Kiecolt-Glaser et al., 1985, 1986), and because frequency of relaxation home practice was related to better immunological functioning and slower disease progression in our prior studies of HIV-infected men (Antoni et al., 1991; Ironson et al., 1994), it is worth noting that there are alternate ways of inducing relaxation. One of these is massage therapy. Ironson and colleagues (Ironson, Field, Scafidi et al., 1995) demonstrated in a nonrandomized design that HIV-infected men offered daily massage for 20 days showed a significant increase in NK cell and T-killer cells and decreases in anxiety and 24-hour urinary cortisol output, compared to men's values during the no-massage period.

## Individual Treatment

The CBSM interventions evaluated by us in different cohorts of HIV-infected gay men all employed groups of up to eight participants facilitated by two group leaders. The sessions were conducted in comfortable rooms, ran about two-and-a-half hours in duration, and met on a weekly basis over a 10-week period. While there was some variability in terms of the duration of group programs for HIV-infected persons evaluated by other research groups (range = 8–12 weeks), the number of participants, group leaders, session length, and frequency were quite similar across studies (Antoni, 2003b). Because these sessions were conducted in a group format, less is known about the effects of these sorts of techniques with HIV-infected persons when delivered as individual-based psychotherapy sessions or self-help approaches. Given the expense involved in running clinical trials of psychotherapy on an individual basis, it is likely that individual-based empirical research will not proceed until the effects of group-based programs are well established.

## Other Treatment Orientations

The role of treatment orientation in psychosocial interventions for HIV-infected persons has been addressed in only a few studies. Studies comparing different 15-week group interventions using a cognitive-behavioral versus an existential/experiential orientation in asymptomatic HIV-infected gay men found that both of the psychosocial intervention conditions decreased mood disturbance and depression symptoms compared to wait-list controls (Mulder, Emmelkamp, Antoni et al., 1994). It is important to note that despite the differences in theoretical orientation both interventions were designed to reduce stress, improve coping, build social support, and encourage emotional expression. Those intervention group participants with larger decreases in a distress/depression composite between the beginning of either intervention and nine months later showed significantly less decline in T-helper cell counts over a two-year follow-up period from the beginning of the intervention (Mulder, Antoni et al., 1995). These findings suggest that while theoretical orientation may not contribute to the psychological improvements experienced by HIV-infected men participating in group-based psychosocial inter-

ventions, the magnitude of treatment-related reductions in distress (perhaps related to a greater commitment to the intervention guidelines) may predict longer-term health benefits. This interpretation seems to be in line with the findings reviewed previously (Antoni et al., 1991, for short-term effects and Ironson et al., 1994, for longer-term effects).

## Outline of this Treatment Program

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The overall aims, general strategies, and specific techniques of the 10-week group program are summarized in table 1.1.

The five sets of stress management techniques used in this program are cognitive restructuring, coping skills training, assertion training, anger management, and social support building. We spend one to three weeks training participants in the use of each of these techniques. Each topic is introduced with background information and exercises designed first to increase participants' awareness of subtle stress response processes that are addressed by the technique being taught. This step is followed by an

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**Table 1.1 Aims, Strategies and Techniques for CBSM Intervention**

A. Aims	B. Strategies	C. Techniques
1. Increase awareness	1. Provide information (stress responses, risk behavior) and experiences	1. Didactic and written information information, self-monitoring exercises
2. Teach anxiety reduction skills	2. Relaxation	2. Progressive Muscle Relaxation, guided imagery, Autogenics, meditation, diaphragmatic breathing
3. Modify cognitive appraisals	3. Cognitive-behavioral stress management techniques	3. Cognitive restructuring, rational thought replacement
4. Build interpersonal coping skills and increase emotional expression	4. Address interpersonal conflicts and expression facilitate disclosure to group	4. Coping skills training, assertiveness training, anger management
5. Reduce social isolation	5. Build social support network	5. Provide group support; techniques to raise awareness of social network components

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introduction to the rationale for the technique and the steps for implementing it. The balance of the session is spent applying the technique to examples of ongoing stressors in the lives of the participants. Here we employ role-playing and breakaways into dyads wherever possible to increase the interactive nature of the experience. Weekly homework assignments reinforce the techniques learned in session.

Relaxation techniques include progressive muscle relaxation (PMR), guided imagery, autogenic training, diaphragmatic breathing techniques, and various forms of meditation. Many of the relaxation scripts used in this guide are simplified versions of widely used and validated methods. Facilitators can review the full-length versions of many of these procedures in *The Relaxation & Stress Reduction Workbook* (Davis, Eshelman, & McKay, 1988) and *Guide to Stress Reduction* (Mason, 1986). Each session introduces a new technique or a more complex version of a previously introduced technique. Group leaders review the rationale and steps for implementing each of these techniques with the group. Participants spend the bulk of the relaxation portion of the session practicing relaxation exercises, which they will then repeat at home on a daily basis. By the end of the 10-week program our goal is to have provided participants a sufficient number of techniques to allow them to choose those that they are most comfortable in using.

## Using a Group Format

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We developed the program to be a closed, structured group intervention meeting once weekly for two hours over a 10-week period in groups of up to eight persons facilitated by two group leaders. See chapter 2 for more information on the logistics of running the group program. The group format allows participants the opportunity to access and benefit from certain processes that would not be available in individual psychotherapy. The most important of these are the opportunity to use group members and group leaders as coping role models (positive social comparisons), the chance to demonstrate in vivo use of social support for informational purposes, an optimal atmosphere for encouraging emotional expression, and an opportunity to seek emotional and instrumental social support from the other group members in a semipublic yet safe

and confidential environment. In so doing, the true efficiency of the group format can be maximized for the purpose of modeling as well as teaching all of the previously noted components in our conceptual model for intervening with the HIV-infected individual.

## Use of the Client Workbook

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The workbook is designed to provide group members with an overview of the CBSM program and will aid facilitators in delivering this intervention. It contains detailed summaries of the rationale for and content of each of the 10 meetings making up the treatment. Each workbook session includes psychoeducational information about stress management techniques and basic instructions for relaxation exercises. It provides forms and worksheets for completing in-session activities designed to raise participants' level of awareness of subtle stress response processes and to practice applying stress management techniques to examples of stressors. In addition to these in-session activities, each workbook session contains a take-home activity designed to help individuals practice applying their newly learned CBSM techniques to stressors and events that occur in their everyday lives. Participants complete monitoring forms during the week and discuss their progress with relaxation practice and stress management techniques during each weekly meeting. Most forms can be photocopied from the workbook or downloaded from the Treatments *That Work*<sup>TM</sup> Web site at [www.oup.com/us/ttw](http://www.oup.com/us/ttw).

The workbook is divided into chapters that coincide with the 10 weekly sessions that make up the program. The workbook has been designed to continually dovetail with the *Facilitator Guide* such that the training manual contains several “toggle” points at which group leaders are instructed to incorporate actual workbook pages into the activities conducted in the group sessions. As such, all participants are instructed to bring their workbooks to every session.

Together, the *Facilitator Guide* and the *Cognitive-Behavioral Stress Management Workbook* make up the backbone of the program and should be used together in implementing the program with HIV-infected individuals.