Monitoring versus Blunting Styles of Coping with Cancer Influence the Information Patients Want and Need about Their Disease

Implications for Cancer Screening and Management

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Background. **Two main psychologic coping styles for dealing with cancer and other health threats have been identified: *monitoring* (attending to) or *blunting* (avoiding) potentially threatening information. This article reviews results and implications from this research relevant to cancer screening and management.**

Methods. **The Monitor-Blunter Style Scale has been used extensively to assess and categorize patients with regard to these coping styles to predict their differential responses to various cancer-related screening and management regimens.**

Results. **Patients characterized by a monitoring coping style generally are more concerned and distressed about their cancer risk, experience greater treatment side effects, are more knowledgeable about their medical situation, and are less satisfied with and more demanding about the psychosocial aspects of their care. They also prefer a more passive role in clinical decision making, are more adherent to medical recommendations, and manifest greater psychologic morbidity in response to cancer-related threats.**

Conclusions. **Patients fare better (psychologically, behaviorally, and physiologically) when the information they receive about their medical condition is tailored to their own coping styles: generally those with a monitoring style tend to do better when given more information, and those with a blunting style do better with less information. However, patients with a monitoring style who are pessimistic about their future or who face long term, intensely threatening, and uncontrollable medical situations may require not just more information, but also, more emotional support to help them deal with their disease.** ***Cancer*** **1995;76:167–77.**

Key words: review article, coping styles, health information, cancer screening and management.

Physicians concerned with their patients' adherence to cancer self-screening regimens and to diagnostic and medical procedures relevant to cancer detection and management face a difficult but unavoidable question: what should they tell the patient? Although there are no simple answers to the intrinsically complex problems raised by this question—problems that involve ethical, medical, social, and psychologic issues—recent research has helped to identify patient characteristics that physicians need to consider in communicating information to those who face high cancer risks or who have cancer.

This review focuses on the impact of health information on the psychologic well being of different types of patients and on their objective health responses to medical procedures relevant to cancer. In particular, stable individual differences have been found in patients' tendencies either to seek or to avoid potentially stressful information about cancer and other threatening medical conditions.[1,2] The studies reviewed here address the influence of this characteristic tendency on patients' reactions and adherence to routine cancer screening (such as annual mammography), to preventive self-care and self-screening (such as breast self-examination [BSE]), and to disease treatment and management.

The research indicates that although some patients try to avoid or minimize obtaining stressful medical information, others seem to search for it and are highly

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sensitive to it. In the research on these processes, two basic modes of coping with medical stressors need to be considered.[3–6] The first mode, *monitoring* (attention to, scanning for, and amplification of threatening cues), involves the extent to which individuals are alert for and sensitized to the negative, potentially painful, or dangerous aspects of information and experience. The second mode, *blunting* (avoidance of threatening cues), involves the extent to which individuals distract themselves from such information.

Specifically, this article reviews recent findings and theory on: (1) the effects of monitoring versus blunting coping styles on cancer-related distress and health behavior; and (2) the types and amounts of information about cancer that seem to be best for patients with these two coping styles–that is, the specific *interaction* between the patient's style and the information.[7–11] The current findings raise issues physicians may need to consider in their decisions about what to tell particular patients at various junctures in cancer prevention, detection, treatment, and management efforts.

Table 1. Comparison of Responses of High and Low Monitors*

Variable	No at all/ minimal (%)	Moderate (%)	Quite/ extreme (%)
Perceived seriousness of condition			
High monitors	17	44	39
Low monitors	55	39	6
Concern about undergoing procedure			
High monitors	0	11	89
Low monitors	28	22	50
Self-blame over onset of condition			
High monitors	50	6	44
Low monitors	94	6	0
Responsibility for course of condition			
High monitors	0	0	100
Low monitors	22	17	61

* Adapted from Miller S, Roussi P, Altman D, Helm W, Steinberg A. The effects of coping style on psychological reactions to colposcopy among low-income minority women. *J Reprod Med* 1994;39:711–8.

Identifying "Monitors" and "Blunters": The Monitor-Blunter Style Scale

To identify the "monitors" (those who attend to threatening information) and the "blunters" (those who avoid it), the Monitor-Blunter Style Scale (MBSS) was developed and validated.[12] It consists of four hypothetical stress-evoking scenes of a largely uncontrollable nature. One example of such a scene is illustrated in the following sentence: "Imagine that you are afraid of flying and have to go somewhere by plane." Each scene is followed by eight statements representing different ways of coping with the situation. Half of the statements accompanying each scene are of a monitoring variety (e.g., in the airplane situation: "I would listen carefully to the engines for unusual noises and would watch the crew to see if their behavior was out of the ordinary," or "I would read and reread the safety instruction booklet"). The other half of the statements are of a blunting variety (e.g., "I would watch the in-flight movie even if I had seen it before"). The patient is asked to simply mark all the statements after each scene that might apply to him or her.

The MBSS has been found to have adequate test/retest reliability (in the 0.70 to 0.80 range[12]), and scores on the scale are not generally related to age, education, race, or medical background variables.[13–17] In laboratory situations, the scale has been shown to predict accurately whether individuals actually attend to or avoid information under threat in vivo, in response to physically threatening (i.e., electric shock to the finger) and ego-threatening (i.e., a challenging cognitive task) stressors.[12] It also predicts the extent to which individuals focus on and ruminate about threatening stimuli[18,19] and their ability to control these threat-related cognitions, although their overt behavior may not differ.[20]

With the MBSS scale, studies have been conducted in a variety of cancer-related settings with populations such as gynecologic patients with precancerous cervical disease,[14,17] women at familial risk for breast and ovarian cancer,[21–23] patients with cancer,[15,24–26] and healthy women undertaking self-screening cancer regimens.[27] It has also been used in a number of other threatening medical contexts and populations,[12,13,16,18–20,28–48] relevant to cancer-related issues and quality of life.[49–51]

Overall Differences in Monitors' and Blunters' Response to Medical Stress

Differences in Concerns and Distress

Previous findings have shown that a significant subset of women experience adverse psychologic consequences of positive cytologic cervical screening,[52,53] and these effects appear to be most severe and global among monitors. For example, a study of low-income, inner-city minority women[14] explored the nature and types of concerns that patients express with respect to having to undergo diagnostic follow-up (colposcopy) for an abnormal Pap smear as a function of coping style (Table 1).

High monitors were significantly more likely to re-

port that they worried about the seriousness of their problem. More than one-third of the high monitors reported that they were extremely worried about their condition, compared with only 6% of the low monitors. High monitors also expressed greater concern about undergoing colposcopy. That is, they worried more about what the physician would do and about feeling pain, discomfort, or embarrassment. Virtually all of the high monitors expressed extreme concern about the procedure compared with only one-half of the low monitors and, strikingly, they were far more likely to blame themselves for the onset of their condition: 44% of high monitors expressed extreme self-blame, whereas 94% of the low monitors expressed no or minimal self-blame. But this self-blame had a positive feature: high monitors also believed that they had more responsibility for the course of their condition and their health in this setting than did low monitors. These beliefs are relevant for adherence to screening and other cancer regimens.

Monitors and blunters also differed during the colposcopy itself, in which the physicians, who, of course, were blind to the patients' coping style (i.e., they did not know how the patients scored on the MBSS), rated the monitors to be significantly more agitated than the blunters.[17] This was indexed by various overt signs of distress, such as muscular tension and tightness in the vaginal area, which was greater in the monitors. In addition to these differences on the day of the procedure, monitors expressed more pain and discomfort than did blunters during the 5 days after the procedure.[17] As Figure 1 shows, blunters showed a steady decrease in the amount of discomfort expressed. Monitors, conversely, actually showed an incubation effect and a more gradual decline in pain and discomfort and did not feel significantly better, even at the third day.

Consistent with these findings, among cancer patients undergoing chemotherapy, monitors and blunters also display extensive differences in distress. For example, nausea and vomiting are common, albeit, unpleasant, side effects of chemotherapy.[54–56] One study[15] found that a significantly higher percentage of the monitors experienced nausea compared with the blunters (75% versus 41%). In addition, monitors experienced significantly longer periods of nausea than did blunters, whose nausea lasted on average only 4.21 hours after chemotherapy, whereas, for monitors, it persisted four times longer, as long as 16 hours. Ninety percent of the patients who experienced episodes of nausea for longer than 12 hours were monitors.

These results were obtained despite the finding that a significantly greater number of the monitors (87%) than blunters (45%) received antiemetic medication to reduce the severity of these side effects. The two groups

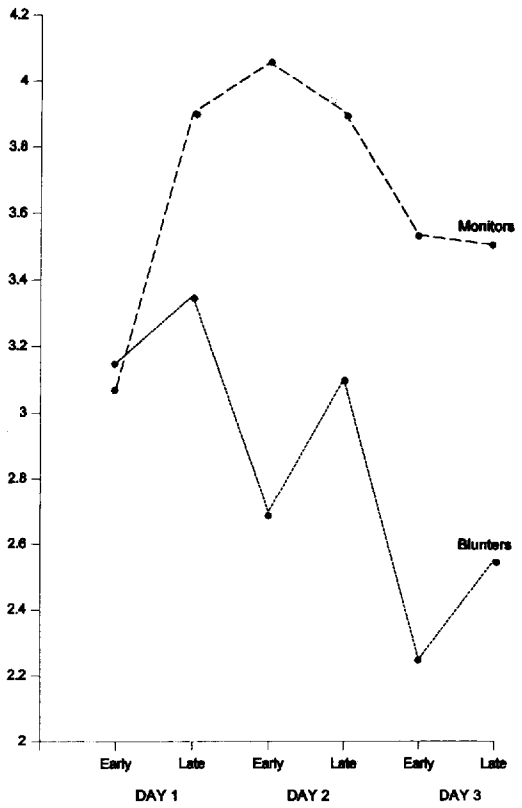

Figure 1. Mean pain/discomfort ratings of monitors and blunters (on a scale of 1–7, in which 1 = I do not feel any pain/discomfort and 7 = I feel extreme pain/discomfort) for 3 days after the procedure (adapted from Miller SM, Mangan CE. Interacting effects of information and coping style in adapting to gynecologic stress: should the doctor tell all? *J Pers Soc Psychol* 1983;45:223–36).

did not differ with regard to variables that may have affected their chemotherapy experience, such as age, number of previous chemotherapy sessions, or general health. Likewise, another study of patients with cancer found that monitors experienced more anxiety and nausea than blunters before chemotherapy administration and greater nausea during the procedure.[24]

These differences between the two coping styles are consistent, indicating that monitors typically attend to and scan for threat-relevant information about aversive medical events and rehearse and amplify them cognitively, whereas blunters typically cope with aversive medical events by distracting themselves from threat-relevant information and psychologically attenuating it. Indeed, blunters in the extreme tend to encode personal risks by denying the existence of such risks and avoid threat-relevant information from the outset.[57] Hence, anxiety is less likely to be aroused and blunters may, therefore, fail to engage in adherence.[34,58]

Differences in Patient Demands

Monitors are also more demanding as patients, that is, they desire more things from the physician, perhaps as

a way to reduce their uncertainty and to promote feelings of reassurance.[6–9,59] For example, in a study within a primary care setting,[13] although all patients wanted to be examined, high monitors were more likely to want tests to be performed and to want a new prescription, despite the fact that their presenting medical problems were less severe (as rated by the physician). They also were far more concerned about being treated with kindness and respect than were low monitors and were more likely to want help and advice on how to deal with stress in conjunction with their medical conditions. Likewise, the majority of patients wanted to know their diagnosis. But high monitors also wanted to know the details about the cause of their medical problems, how healthy they were in general, what to do to prevent future problems, and possible medication side effects.

Differences in Informational Preferences and Satisfaction

Consistently, monitors desired more voluminous information in cancer-related and other medical contexts. For example, after undergoing follow-up screening (colposcopy) for an abnormal Pap smear,[17] blunters reported that they were satisfied with the amount of information they received, but monitors would have preferred to know more. Furthermore, among patients with breast cancer who were about to undergo postoperative therapy, blunters reported fewer communication problems with the medical team.[25] Similarly, among patients with metastatic cancer,[26] those who reported complete satisfaction with information provided about their medical condition and care had significantly lower monitoring scores (Fig. 2). The fact that monitors were generally less satisfied with the standard amount of information and attention provided in their health care also has been demonstrated in other medical contexts.[13,31,34]

These patients desire more information, despite the fact that when voluminous supplemental information was not provided explicitly, monitors were found to have significantly more factual knowledge about an upcoming medical procedure (i.e., gynecologic surgery).[34] Furthermore, among monitors and blunters, fewer of the patients who reported a high level of understanding about what was going to happen during surgery desired additional information. However, blunters' satisfaction with their understanding may not have been a function of genuine knowledge but may have reflected their reluctance to know any more.

This possibility was explored by comparing factual knowledge (what they actually knew) with reported understanding (what they claimed they knew). The results showed that monitors who claimed to have better

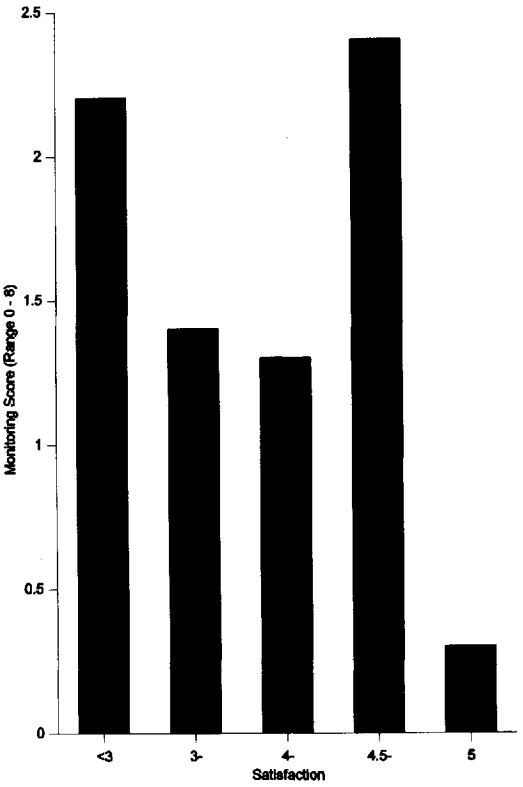

Figure 2. Mean levels of monitoring coping scores (maximum 8, minimum 0) of patients allocated to five categories of satisfaction with information (adapted from Steptoe A, Sutcliffe I, Allen B, Coombes C. Satisfaction with communication, medical knowledge, and coping style in patients with metastatic cancer. *Soc Sci Med* 1991;32:627–32).

levels of understanding actually gave more correct answers. In contrast, factual knowledge was low and was unrelated to reported understanding among blunters. Thus, even though blunters had more minimal knowledge, nonetheless, they reported that their knowledge was sufficient because they did not wish to receive any further information.

Interaction of Information and Control Preferences

Informational preferences and control preferences may be closely related.[60,61] For example, monitors may be motivated by the desire to play an active role in decisions about their treatment. That is, they may seek medical information to control their own care. To the extent that monitors are characterized by a tendency not only to seek information about their internal states but to use this information to execute instrumental actions, they may show greater preferences to play an active role in decisions about their medical care than do blunters. Conversely, if monitors primarily are concerned with issues such as reducing uncertainty, then they may not

Table 2. Frequency of Pap Smears*

Coping style	Never or once (%)	Twice, every 3 years, every 5 years (%)	More than every 3 years (%)
Monitors	17.85	46.42	35.71
Blunters	25.58	67.44	6.97

* Data from Steptoe A, O'Sullivan J. Monitoring and blunting coping styles in women prior to surgery. *Br. J Clin Psychol* 1986;25:143–4.

necessarily show increased desires for control in this context. If it has any impact at all, the patient's playing a more active role by making more decisions may interfere with the patient's ability to obtain symptom-relevant (reassuring) information from the physician.[6]

In fact, high monitors in a primary care setting generally desired to play a less active role in decisions about their medical care than did low monitors,[13] illustrating the discriminative nature of this coping style and suggesting that high monitors are not simply characterized by a desire for more of everything. High monitors are more—not less—inclined to yield control to another, more competent individual (in this case the physician). Although they listen more attentively to the physician and desire more information, they do not wish to play a major role in determining what should be done.

However, monitors appear to be better able to implement the physician's recommendations. Thus, they are more likely to engage in screening health-care behaviors[34] (such as performing BSE and obtaining routine Pap smears, as noted in Table 2) and express more preventive attitudes toward diseases such as acquired immune deficiency syndrome.[58] The effect of monitoring with regard to health-care behaviors is illustrated further in a study of patients with end-stage renal disease.[32] For patients undergoing continuous ambulatory peritoneal dialysis (for which there are considerable self-care requirements, in terms of the knowledge base the patient is required to master and the behavioral demands of the treatment regimen), monitors were found to exhibit superior adherence to dietary guidelines compared with blunters. The opposite pattern emerged among patients undergoing a more staff-controlled modality (in-center hemodialysis), with monitors exhibiting poorer dietary adherence than blunters. Thus, monitors fare better than blunters when they are given more responsibility in their own disease management (as long as the nature and demands of the disease management regimen are made explicit).

Discriminant Validity

It is possible that monitors are overly sensitive to internal bodily cues because they experience more distress in their lives compared with blunters.[62] Although they also may be more generally anxious, depressed, or neurotic,[63] the available research suggests that this coping style is not simply another manifestation of such alternative factors or dispositions. For example, a monitoring coping style generally has been found to be independent of depression, trait anxiety, and desire for control.[12,16,17,34,41,44] Even when the effects of these variables are controlled statistically, coping style differences in response to health threats and other stressors remain constant.[13,40,48,64–67] Overall, then, monitors are not just more generally anxious or suffering from greater amounts of negative affectivity than are blunters.

One study included a measure of how well patients learned the information they received.[17] No differences emerged between monitors and blunters with regard to this measure. Thus, blunters are not simply less able to process health-relevant information if it is imposed on them. Rather, the groups differ in their selective attention, so that blunters spontaneously prefer not to scan for threat-relevant information and not to know more.[18] Conversely, monitors scan for, focus on, and amplify health-relevant information and potential threats and want to know more.[64,68]

Diagnostic Situations to Assess Monitoring-Blunting Coping Styles: High Cancer Threat

High monitors become particularly aroused in the face of danger, which activates their tendency to scan for threatening cues. Thus, the difference between high and low monitors is likely to become especially visible in high threat health situations. Within the context of cancer, such situations range from decisions about undergoing cancer screening procedures in the face of ambiguous data,[69] to dealing with high genetic risk for cancer,[70] to undergoing difficult cancer treatment regimens.[71]

To illustrate, Wardle and colleagues[23] studied a high risk group of women in a screening program to detect early familial ovarian cancer by ovarian ultrasound scan, using transabdominal ultrasonography and transvaginal ultrasonography with color Doppler imaging to detect persistent ovarian lesions and changes in volume. Women were informed of any abnormality immediately, although none of the patients were found to have ovarian cancer. Distress was measured before and after the screening. As can be observed in Figure 3, before the scan, all groups showed equivalent distress as measured by the General Health Questionnaire. After the scan, high monitors were more adversely affected by positive results compared with low monitors receiving positive results and compared with those receiving negative results.

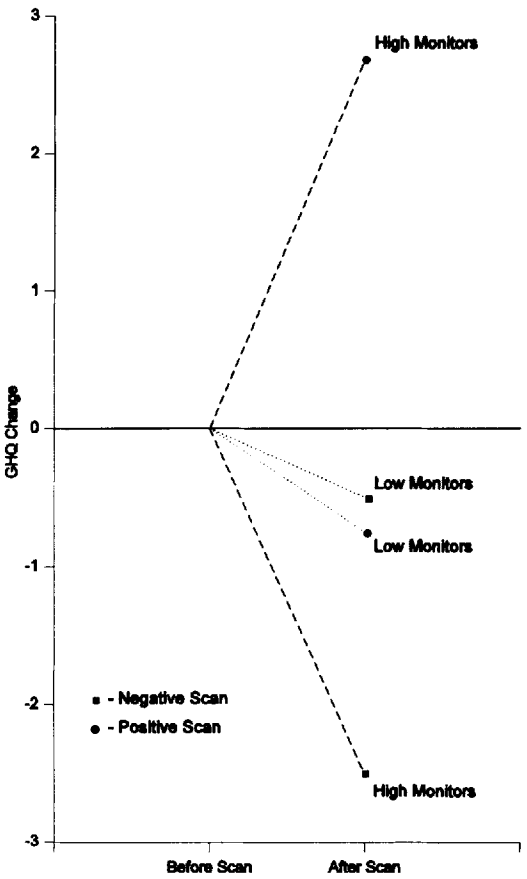

Figure 3. Changes in scores on the General Health Questionnaire adjusted for age and socioeconomic status from before to after the first ultrasound scan in relation to positive or negative results and baseline scores of high and low monitors (adapted from Wardle F, Collins W, Pernet A, Whitehead M, Bourne T, Campbell S. Psychological impact of screening for familial ovarian cancer. *J Natl Cancer Inst* 1993;85:653–7).

Among those undergoing follow-up scans for positive results, high monitors who again tested positive showed a greater increase in anxiety than other women. Similar results have been obtained with other medically at-risk populations[37,38] and with individuals who are threatened in the laboratory.[12,19] High monitors who are at increased genetic risk for breast–ovarian cancer are also more likely to believe that genetic testing will make them distressed and will take a psychologic toll on them.[21]

In general, the studies reviewed showed that monitors are more physiologically, behaviorally, and subjectively aroused than blunters, but these differences occur primarily under conditions of threat of the sort found when cancer risk or diagnosis is at issue. As indicated above, monitors are more likely to perceive health threats pervasively and to scan for them, attending intently to bodily "symptoms" and other potentially ominous cues and news. They tend to encode neutral or ambiguous information as threatening and to exaggerate its significance and their personal risk.[13,41,59,68,72]

Tailoring Information

Effects of Matching Information to Coping Style

Given that monitors become extremely upset, particularly by ambiguous, threatening, negative health information, whereas blunters seem much less sensitive to such information, the physician may be inclined to give less information to the monitor so that this type of patient does not become too distressed, and more to the blunter so that this type of patient at least hears the message. The research suggests, however, that this strategy sometimes may be the opposite of what is optimal as will be discussed below.

For example, in one study, patients were undergoing an initial colposcopy after an abnormal Pap smear.[17] Before the colposcopy, patients in the high information group were given a 20-minute audiovisual preparatory communication, detailing the forthcoming examination procedure and the sensations that would be experienced. This information was designed to reduce any uncertainty or misconceptions on the patients' part. Conversely, patients in the low information group were given the standard (minimal) preparation, equated for time and attention.

Interactions were found between the patient's coping style and the amount of information made available. This was reflected in measures of psychophysiologic arousal, specifically pertaining to pulse rate. As can be observed in Figure 4, there were initially no differences between the groups. The only group to show a decrease in pulse rate immediately before the procedure were blunters given low information, and they maintained this low pulse rate throughout. By the end of the procedure, monitors who were given a large amount of information also showed reduced pulse rates, but monitors with low information and blunters with high information showed sustained higher pulse rates. Thus, matching the amount of information to the patients' coping style reduced their level of stress, whereas telling patients either more or less than they wanted to know about a stressor made it more stressful.

Implications for Adherence to Cancer Regimens

These patient-by-situation interactions are also relevant to the design of interventions to promote adherence to screening regimens, particularly those that are difficult and complex to execute and need to be maintained over time.[7–11,73] For example, BSE entails fairly complex self-

regulatory skills to cue the behavior, evaluate one's performance, and strategically reinforce oneself, while also managing one's degree of focus on the threat (i.e., the potential for finding a lump) to control anxiety.[74] Thus, although monitors initially may commence a regimen such as BSE because they attend to threatening cues and the need to do it, this focus on threat ultimately may undermine adherence to reduce negative arousal.[73] Therefore, monitors may fare better with interventions that make them focus on the cue or informative aspects of performing BSE and that provide positive reinforcers for sustained practice.

In one study,[27] African-American community volunteers were taught how to perform BSE (using videotapes, participant modeling, a demonstration self-examination, and individualized feedback), and were given BSE record cards to return. For high monitors, the reported rates of adherence to BSE for a 9-month period were higher in conditions in which they periodically received either reminders (self-cueing) and/or small rewards (reinforcement condition), compared with no-intervention controls (Fig. 5). For the low monitors, the pattern essentially was reversed and resulted in less BSE (Fig. 6). A similar pattern was obtained for BSE proficiency, with high monitors more proficient in the intervention conditions and low monitors more proficient without the interventions.

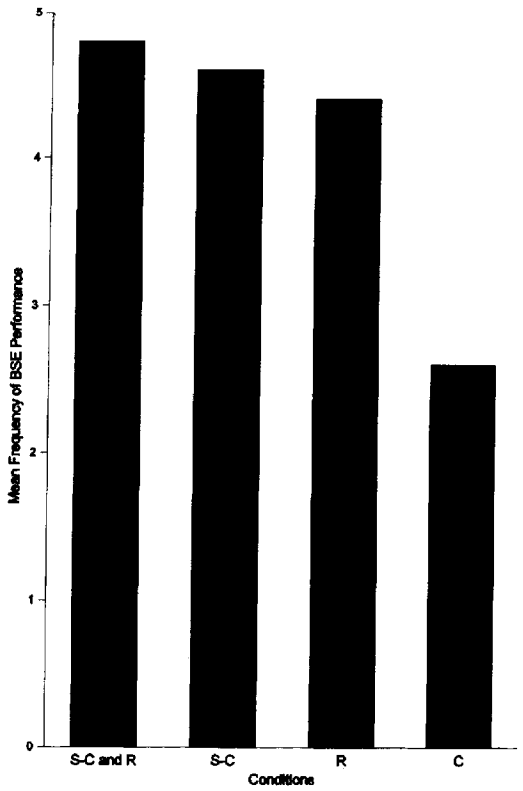

Figure 5. Mean frequency of breast self-examination performed over a 9-month period by high monitors in the Self-Cueing plus Reinforcement (S-C + R), Self-Cueing (S-C), Reinforcement (R), and Control (C) conditions, adjusted for history of benign breast disease (adapted from Jacob TC, Penn NE, Kulik TA, Spieth LE. Effects of cognitive style and maintenance strategies on breast self-examination (BSE) practice by African American women. *J Behav Med* 1992;15:589–609).

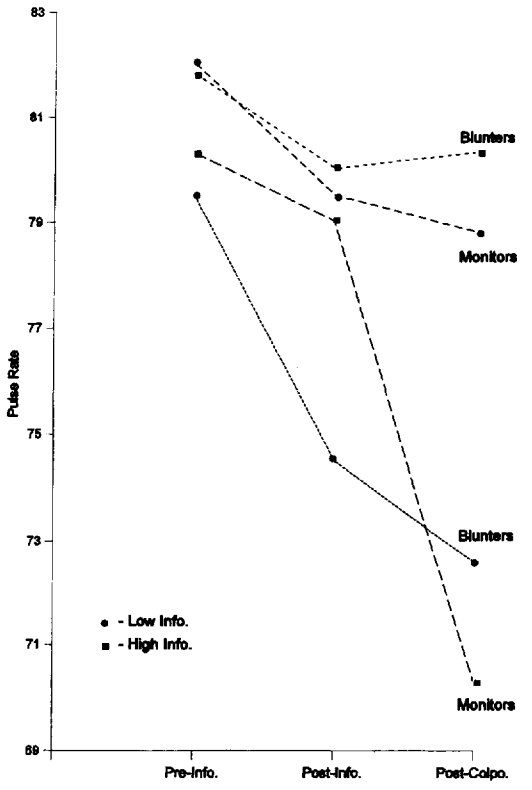

Figure 4. Mean pulse rate readings of monitors and blunters before information (on arrival at the clinic), after information (precolposcopy), and after the procedure (postcolposcopy; adapted from Miller SM, Mangan CE. Interacting effects of information and coping style in adapting to gynecologic stress: should the doctor tell all? *J Pers Soc Psychol* 1983;45:223–36).

Overview of Interactions between Information and Coping Style

Thus, how well patients cope is affected by the fit of their characteristic style to the individual situation. Interactions between the effects of type of information and type of coping style also have been shown in a variety of other medical populations and contexts and help to clarify why and when health-relevant information is likely to have beneficial or detrimental effects on different types of patients.[16,24,30,31,33,35,75]

Generally, for blunters, there is less stress when voluminous information and threat-focused interventions are not imposed on them. They prefer to deal with

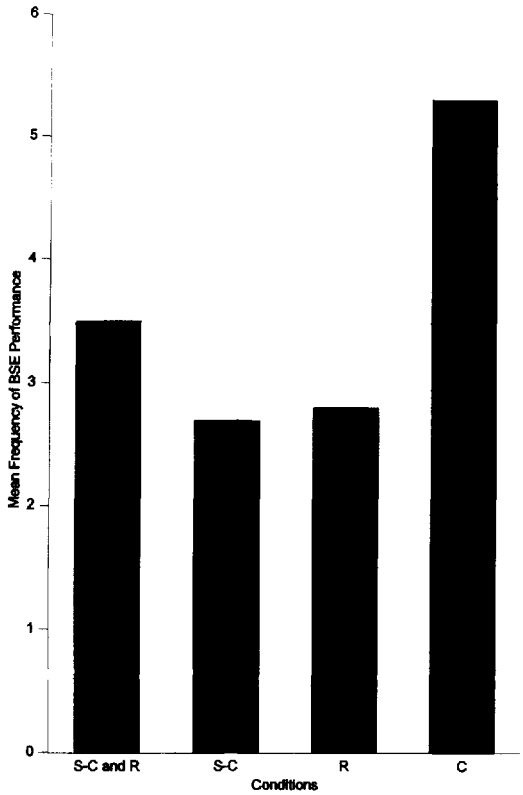

Figure 6. Mean frequency of breast self-examination performed over a 9-month period by low monitors in the Self-Cueing plus Reinforcement (S-C + R), Self-Cueing (S-C), Reinforcement (R), and Control (C) conditions, adjusted for history of benign breast disease (adapted from Jacob TC, Penn NE, Kulik TA, Spieth LE. Effects of cognitive style and maintenance strategies on breast self-examination (BSE) practice by African American women. *J Behav Med* 1992; 15:589–609).

threat by not dealing with it, so they tend to show reduced arousal with less threat-relevant information but become more aroused with increased information, which interferes with self-distraction and forces them to face the event.[3–5,76–79] Conversely, monitors derive some benefit by being exposed to voluminous preparatory information and comprehensive self-regulatory interventions that are consistent with their coping style preference. Information can provide monitors with increased certainty and safety cues, help them to attach appropriate meaning to their experience,[6–9] and enable them to emotionally rehearse, process, or "work it through."[80,81]

Discussion: Implications for Cancer Screening and Management

In sum, results are beginning to provide a framework to tailor more sensitively information about cancer to fit the preferred attentional coping style of the patient and to meet the demands and requirements of the specific situation and the medical options. It is generally reasonable to match the amount of information and the type of psychosocial intervention given to the patient's coping style, giving monitors more and blunters less.[16,17,24,31,33,35,75] The onocologist, however, also needs to consider how this general conclusion may have to be modified depending on other patient characteristics known to influence how health-relevant information impacts on disease outcomes and quality of life,[49–51] particularly in onocologic contexts marked by sustained and intense levels of high threat.[82–84]

In particular, those monitors who also tend to be basically pessimistic and to expect negative health outcomes may be especially vulnerable when coping with sustained severe health threats in the onocologic context.[85–87] For these patients, the oncologist needs to be careful about merely communicating threatening medical information in greater detail and to recognize that although they may press for more news of danger, it may not help them cope. These negativistic monitors would be characterized not only by the tendency to scan for and amplify their health threats and dangers, but also to expect the worst (even in the face of minimal evidence) and to have little confidence in their own ability to cope effectively and little faith in their future. Therefore, they soon face an insoluble dilemma: they continue to monitor for more threatening information, but are increasingly upset by what they find, amplifying the threat and expecting and envisioning terrible consequences.[88,89] To defend against this potentially intolerable situation for sustained periods of high stress in coping with cancer threats, they may readily resort to more severe denial attempts that are bound to be penetrated by intrusive ideation, in a cycle of progressively more maladaptive coping.[80,81,90]

Thus, monitoring may be a viable strategy for coping with cancer when individuals have positive self-efficacy and outcome expectations and/or when the information they monitor can be used to adaptively change their health-protective behavior. Conversely, high levels of monitoring may be self-defeating and merely anxiety-producing when individuals believe their situation is unchangeable or hopeless, or when it is, in fact, long term, intensely threatening, and uncontrollable, as when exposed to information indicating that they are at high genetic risk for cancer.[91–93] In these contexts, monitors may require not only more information, but also emotional support to help them process the information they receive and accomodate to their medical situation.

References

1. Miller SM. Monitoring and blunting in the face of threat: implications for adaptation and health. In: Montada L, Filip S, Ler-

ner M, editors. Life crises and loss in the adult years. Hillsdale, N.J.: Lawrence Erlbaum, 1992:225–73.
2. Miller SM. Monitoring and blunting of threatening information: cognitive interference and facilitation in the coping process. In: Sarason I, Sarason B, Pierce G, editors. Cognitive interference: theories, methods, and findings. Hillside (NJ): Erlbaum. In press.
3. Miller SM, Combs C, Stoddard E. Information coping and control in patients undergoing surgery and stressful medical procedures. In: Steptoe A, Appels A, editor. Stress, personal control and health. Chichester, England: John Wiley & Sons, 1989:107–30.
4. Miller SM. Cognitive informational styles in the process of coping with threat and frustration. *Adv Behav Res Ther* 1989;11: 223–34.
5. Miller SM. To see or not to see: cognitive informational styles in the coping process. In: Rosenbaum M, editor. Learned resourcefulness: on coping skills, self-regulation and adaptive behavior. New York: Springer Press, 1990:95–126.
6. Miller SM, Combs C, Kruus L. Tuning in and tuning out: confronting the effects of confrontation. In: Krohne HW, editor. Attention and avoidance: strategies in coping with aversiveness. Seattle: Hogrefe & Huber, 1993:51–69.
7. Leventhal H, Diefenbach M, Leventhal E. Illness cognition: using common sense to understand treatment adherence and affect cognition interaction. *Cog Ther Res* 1992;16:143–63.
8. Leventhal H. Emotional and behavioral processes in the study of stress during medical procedures. In: Johnston M, Wallace L, editors. Stress and medical procedures. Oxford: Oxford Science and Medical Publications, 1989:3–35.
9. Leventhal H. Behavioral medicine: psychology in health care. In: Mechanic D, editor. Handbook of health, health care, and the health professions. New York: Free Press, 1983:709–43.
10. Mischel W, Shoda Y, Rodriguez ML. Delay of gratification in children. *Science* 1989;244:933–8.
11. Mischel W, Shoda Y. A cognitive-affective system theory of personality: reconceptualizing the invariances in personality and the role of situations. *Psychol Rev.* 1995;102:246–68..
12. Miller SM. Monitoring and blunting: validation of a questionnaire to assess styles of information-seeking under threat. *J Pers Soc Psychol* 1987;52:345–53.
13. Miller S, Brody D, Summerton J. Styles of coping with threat: implications for health. *J Pers Soc Psychol* 1988;54:142–8.
14. Miller S, Roussi P, Altman D, Helm W, Steinberg A. The effects of coping style on psychological reactions to colposcopy among low-income minority women. *J Reprod Med* 1994;39:711–8.
15. Gard D, Edwards PW, Harris J, McCormack G. Sensitizing effects of pretreatment measures on cancer chemotherapy nausea and vomiting. *J Consult Clin Psychol* 1988;56:80–4.
16. Ludwick-Rosenthal R, Neufeld RJ. Preparation for undergoing an invasive medical procedure: interacting effects of information and coping style. *J Consult Clin Psychol* 1993;61:156–64.
17. Miller SM, Mangan CE. Interacting effects of information and coping style in adapting to gynecologic stress: should the doctor tell all? *J Pers Soc Psychol* 1983;45:223–36.
18. Zuuren F van, Muris P. Coping under experimental threat: observable and cognitive correlates of dispositional monitoring and blunting. *Eur J Pers* 1993;7:245–53.
19. Sparks GG, Spirek MM. Individual differences in coping with stressful mass media: an activation-arousal view. *Hum Comm Res* 1988;15:191–216.
20. Muris P, Jong P de, Zuuren FJ van, Horst G ter. Coping style, anxiety, cognitions, and cognitive control in dental phobia. *Pers Individ Diff.* 1994;17:549–66.
21. Lerman C, Daly M, Masny A, Balshem A. Attitudes about genetic testing for breast-ovarian cancer susceptibility. *J Clin Oncol* 1994;12:843–50.
22. Schwartz M, Lerman C, Miller SM, Daly M, Masny A. Coping disposition, perceived risk, and psychological distress among women at increased risk for ovarian cancer. *Health Psychol* In press.
23. Wardle F, Collins W, Pernet A, Whitehead M, Bourne T, Campbell S. Psychological impact of screening for familial ovarian cancer. *J Natl Cancer Inst* 1993;85:653–7.
24. Lerman C, Rimer B, Blumberg B, Cristinzio S, Engstrom PF, MacElwee N, et al. Effects of coping style and relaxation on cancer chemotherapy side effects and emotional responses. *Cancer Nurs* 1990;13:308–15.
25. Lerman C, Daly M, Walsh W, Resch N, Seay J, Barsevick A, et al. Communication between patients with breast cancer and health care providers: determinants and implications. *Cancer* 1993;72: 2612–20.
26. Steptoe A, Sutcliffe I, Allen B, Coombes C. Satisfaction with communication, medical knowledge, and coping style in patients with metastatic cancer. *Soc Sci Med* 1991;32:627–32.
27. Jacob TC, Penn NE, Kulik TA, Spieth LE. Effects of cognitive style and maintenance strategies on breast self-examination (BSE) practice by African American women. *J Behav Med* 1992;15:589–609.
28. Muris P, Schouten E. Monitoring and blunting: a factor analysis of the Miller Behavioural Style Scale. *Pers Individ Diff.* In press.
29. Muris P, Zuuren FJ van, Vries S de. Monitoring, blunting and situational anxiety: a laboratory study on coping with a quasi-medical stressor. *Pers Individ Diff* 1994;16:365–72.
30. Davis T, Maguire T, Haraophongse M, Schaumberger M. Preparing adult patients for cardiac catheterization: informational treatment and coping style interactions. *Heart Lung* 1994;23: 130–9.
31. Watkins LO, Weaver L, Odegaard V. Preparation for cardiac catheterization: tailoring the content of instruction to coping style. *Heart Lung* 1986;15:382–9.
32. Christensen AJ, Smith TW, Turner CW, Cundick KE. Patient adaptation in renal dialysis: A person by treatment interactive approach. *J Behav Med.* In press.
33. Gattuso SM, Litt MD, Fitzgerald TE. Coping with gastrointestinal endoscopy: self-efficacy enhancement and coping style. *J Consult Clin Psychol* 1992;60:133–9.
34. Steptoe A, O'Sullivan J. Monitoring and blunting coping styles in women prior to surgery. *Br J Clin Psychol* 1986;25:143–4.
35. Litt M, Nye C, Shafer D. Distraction from information in coping with oral surgery. Presented at the International Association for Dental Research, July 1992, Glasgow, Scotland.
36. Miller SM, Roussi P, Caputo CG, Kruus L. Patterns of children's coping with an aversive dental treatment. *Health Psychol* 1995;14:236–46.
37. Phipps S, Zinn A. Psychological response to amniocentesis: II. Effects of coping style. *Am J Med Genet* 1986;25:143–8.
38. Zuuren F van. Coping style and anxiety during prenatal diagnosis. *J Reprod Infant Psychol* 1993;11:57–9.
39. Carver CS, Scheier MF, Weintraub JK. Assessing coping strategies: a theoretically based approach. *J Pers Soc Psychol* 1989;56: 267–83.
40. Efran J, Chorney RL, Ascher LM, Lukens, MD. Coping style, paradox, and the cold pressor task. *J Behav Med* 1989;12:91–103.
41. Muris P, Jong P de. Monitoring and perception of threat. *Pers Individ Diff* 1993;15:467–70.
42. Muris P, Zuuren FJ van, Merkelbach H. Preparation for a frightening picture: effects of an imposed monitoring and blunting

strategy in relation to habitual coping style. *J Anx Disorders* 1993;7:119–27.
43. Sparks GG. Understanding emotional reactions to a suspenseful movie: the interaction between forewarning and preferred coping style. *Commun Monographs* 1989;56:325–40.
44. Steptoe A, Vogele C. Individual differences in the perception of bodily sensations: the role of trait anxiety and coping style. *Behav Res Ther* 1992;30:597–607.
45. Steketee G, Bransfield S, Miller SM, Foa E. The effect of information and coping style on the reduction of phobic anxiety. *J Anx Disorders* 1989;3:69–85.
46. Muris P, Jong P de, Merckelbach H, Zuuren F van. Monitoring coping style and exposure outcome in spider phobics. *Behav Cog Psychother* 1993;21:329–33.
47. Muris P, Jong P de, Merckelbach H, Zuuren F van. Is exposure therapy affected by a monitoring coping style? *Adv Behav Res Ther* 1993;15:291–300.
48. Soloman Z, Mikulincer M, Arad R. Monitoring and blunting: implications for combat-related post-traumatic stress disorder. *J Trauma Stress* 1991;4:209–21.
49. Schag C, Ganz P, Heinrich R. Cancer Rehabilitation Evaluation System—short form (CARES-SF): a cancer specific rehabilitation and quality of life instrument. *Cancer* 1991;68:1406–13.
50. Ganz P, Lee J, Siau J. Quality of life assessment: an independent prognostic variable for survival in lung cancer. *Cancer* 1991;67: 3131–5.
51. Ganz P. Current issues in cancer rehabilitation. *Cancer* 1990;65: 742–51.
52. Lerman C, Miller SM, Scarborough R, Hanjani P, Nolte S, Smith D. Adverse psychologic consequences of positive cytologic cervical screening. *Am J Obstet Gynecol* 1991;165:658–62.
53. Lerman C, Hanjani P, Caputo C, Miller SM, Delmoor E, Nolte S, et al. Telephone counseling improves adherence to colposcopy among lower-income women. *J Clin Oncol* 1992;10:330–3.
54. Redd WH, Jacobsen PB, Andrykowski MA. Behavioral side effects of adjuvant chemotherapy. *Recent Results Cancer Res* 1989;115:272–8.
55. Redd WH, Silberfarb PM, Anderson BL, Andrykowski MA, Bovbjerg DH, Burish TG, et al. Physiologic and psychobehavioral research in oncology. *Cancer* 1991;67:813–22.
56. Redd WH, Dadds MR, Futterman AD, Taylor KL. Nausea induced by mental images of chemotherapy. *Cancer* 1993;72:629–36.
57. Davey GCL, Tallis F, Hodgson G. The relationship between information-seeking and information-avoiding coping styles and the reporting of psychological and physical symptoms. *J Psychosom Res* 1993;37:333–44.
58. Muris P, Zuuren F van, Kindt M. Monitoring coping style, fear of AIDS, and attitudes towards AIDS prevention. *Soc Behav Pers.* In press.
59. Miller SM, Leinbach A, Brody D. Coping style in hypertensive patients: nature and consequences. *J Consult Clin Psychol* 1989;57:333–7.
60. Miller SM. Controllability and human stress: method, evidence, and theory. *Behav Res Ther* 1979;17:287–304.
61. Miller SM. Why having control reduces stress: if I can stop the roller coaster I don't want to get off? In: Garber J, Seligman M, editors. Human helplessness: theory and applications. New York: Academic Press, 1980:71–95.
62. Mechanic D. The experience and reporting of common physical complaints. *J Health Soc Behav* 1980;21:146–55.
63. Watson D, Pennebaker JW. Health complaints, stress, and distress: exploring the central role of negative affectivity. *Psychol Rev* 1989;96:234–54.
64. Davey GCL, Hampton J, Farrell J, Davidson S. Some characteristics of worrying: evidence for worrying and anxiety as separate constructs. *Pers Individ Diff* 1992;13:133–47.
65. Russell M, Davey GCL. The relationship between life event measures and anxiety and its cognitive correlates. *Pers Individ Diff* 1993;14:317–22.
66. Weisenberg M, Caspi Z. Cultural and educational influences on pain of childbirth. *J Pain Symptom Management* 1989;4:13–9.
67. Davey GCL. A comparison of three worry questionnaires. *Behav Res Ther.* In press.
68. Muris P, Zuuren F van. Monitoring, medical fears, and physical symptoms. *Br J Clin Psychol* 1992;31:360–2.
69. Mettlin CJ, Smart CR. The Canadian National Breast Screening Study: an appraisal and implications for early detection policy. *Cancer* 1993;72:1461–5.
70. Piver MS, Baker TR, Jishi MF, Sandecki AM, Tsukada Y, Natarajan N, et al. Familial ovarian cancer: a report of 658 families from the Gilda Radner Familial Ovarian Cancer Registry. *Cancer* 1983;71:582–8.
71. Hampling RE, Piver MS, Natarajan N, Baker TR, Thompson JM, Micks ML, et al. Predictive value of serum CA125 following optimal cytoreductive surgery during weekly cisplatin induction therapy for advanced ovarian cancer. *J Surg Oncol* 1993;54:38–44.
72. Zuuren F van, Wolfs H. Styles of information seeking under threat: personal and situational aspects of monitoring and blunting. *Pers Individ Diff* 1991;12:141–9.
73. Miller SM, Shoda Y, Hurley K. Applying cognitive social theory to health-protective behavior: breast self-examination in cancer screening. *Psychol Bull.* In press.
74. Meyerowitz B, Chaiken S. The effect of message framing on breast self-examination attitudes, intentions, and behavior. *J Pers Soc Psychol* 1987;52:500–10.
75. Avants SK, Margolin A, Salovey P. Stress management techniques: anxiety reduction, appeal, and individual differences. *Imagination Cog Pers* 1990;10:3–23.
76. Meichenbaum D. Changing conceptions of cognitive behavior modification: retrospect and prospect. *J Consult Clin Psychol* 1993;61:202–4.
77. Meichenbaum D, Novaco R. Stress inoculation: a preventive approach. *Issues Mental Health Nurs* 1985;7:419–35.
78. Sarason I, Sarason B, Pierce G. Anxiety, cognitive interference, and performance. *J Soc Behav Pers* 1990;5:1–18.
79. Sarason I. Anxiety, self-preoccupation and attention. *Anx Res* 1988;1:3–7.
80. Foa EB, Kozak M. Emotional processing of fear: exposure to corrective information. *Psychol Bull* 1986;99:20–35.
81. Horowitz MJ. Stress response syndromes: a review of post-traumatic and adjustment disorders. *Hosp Community Psychiatry* 1986;37:241–9.
82. Meyerowitz B. Postmastectomy coping strategies and quality of life. *Health Psychol* 1983;2:117–32.
83. Meyerowitz B, Burish T, Wallston K. Health psychology: a tradition of integration of clinical and social psychology. *J Soc Clin Psychol* 1986;4:375–92.
84. Meyerowitz B. Psychosocial correlates of breast cancer and its treatments. *Psychol Bull* 1980;87:108–31.
85. Bandura A. Social foundations of thought and action: a social cognitive theory. Englewood Cliffs, N.J.: Prentice-Hall, 1986.
86. Scheier MF, Carver CS. Optimism, coping and health: assessment and implications of generalized outcome expectancies. *Health Psychol* 1985;4:219–47.
87. Scheier MF, Carver CS. Effects of optimism on psychological and physical well-being: theoretical overview and empirical update. *Cog Ther Res* 1992;16:201–28.
88. Baum A, Cohen L, Hall M. Control and instrusive memories as

possible determinants of chronic stress. *Psychosom Med* 1993;53: 274–86.

89. Baum A. Stress, intrusive imagery, and chronic distress. *Health Psychol* 1990;9:653–75.
90. Baum A, O'Keeffe M, Davidson L. Acute stressors and chronic response: the case of traumatic stress. *J Applied Soc Psychol* 1990;20:1643–54.
91. Miller SM, Roussi P. Styles of coping with threat: implications for adaptation among HIV-positive gay males. Presented at the Annual Convention of the Society of Behavioral Medicine, March 1993, San Francisco, California.
92. Miller SM, Hurley K, Schwartz J, Schreiber P. Optimism and monitoring in infertile women. Presented at the Annual Convention of the Society of Behavioral Medicine, April 1994, Boston, Massachusetts.
93. Baum A, Fleming I, Israel A, O'Keeffe M. Symptoms of chronic stress following a natural disaster and discovery of a human-made hazard. *Environ Behav* 1992;24:347–65.