



## Facilitator Manual



## Introduction

It is important to realise that optimal health and wellness encompasses more than just physical well being--it includes social, spiritual, behavioural, and intellectual health. Based on over 20 years of research, the results of the StressScan provide an individual scorecard of important health resources and health risks shown to be associated with job burnout, physical illness, depression, anxiety, absenteeism and psychological well-being in recent published research. The StressScan questions are based on the Stress Profile (Nowack, 1994) currently published by Western Psychological Services (WPS).

## WHAT STRESSSCAN MEASURES

StressScan consists of 123 questions and provides an overview of 15 important factors associated with optimal health and wellness. These scales include: 1) Stress; 2) Health Habits (including exercise/physical activity, sleep/relaxation, eating/nutrition, preventive practices and substance use); 3) Social Support Network; 4) Type A Behaviour; 5) Cognitive Hardiness; 6) Coping Style (including positive appraisal, negative appraisal, threat minimization, and problem focused coping); 7) Psychological well-being; and 8) Response Distortion Index.

## WHAT STRESSSCAN CAN BE USED FOR

- Lifestyle coaching
- Employee wellness/health promotion programs
- Stress Management workshops
- Employee assistance programs
- Career/life balance workshops
- Research

## HOW THE STRESSSCAN REPORT IS ORGANISED

The StressScan report is organised into several sections to facilitate understanding and interpretation of the results including:

- Graphic summary of the 15 StressScan Factors
- Interpretation of Results
- Wellness Risks and Resources Summary
- StressScan Action Plan



## INTERPRETING THE STRESSSCAN REPORT

StressScan results are graphically compared to behaviours of others in a large normative database of working adults using standardised t-scores. StressScan norms are based on a large ethnically and culturally diverse international sample of 1,111 men and women, ages 20 to 68, from diverse occupational industries and settings including government and non-profit.

The t-score is a standardised score allowing the respondent to compare his/her own scores to a large international normative database of working adults being used for this instrument. The t-score, for each StressScan scale, is the distance and direction from the average expressed in units of standard deviation. A t-score is sometimes called a 'standardised score' with 50 representing the average.

A t-score that is higher than 70, represents two standard deviations above the average and corresponds to the top 2 percent of all people scoring on that scale (in other words, in the 98th percentile. Such a score is considered very high). If a self-rating on a particular scale is higher than 50, the score is considered above average. If the self-rating on a particular scale is lower than 50, the score is considered below average.

It is important to remember that for some of the StressScan scales, a high score represents a health resource and a low score suggests a potential health risk. On other scales, the opposite is true—a high score suggests the possible presence of a health risk, and a low score represents a health resource (e.g., Stress, Type A Behaviour, Negative Appraisal).

To further understand the StressScan results, the following scores can be interpreted as follows:

Very High	t-score above 70 (about 98% of the people who took StressScan got a lower score on this scale)
High	t-score above 60 (about 84% of the people who took StressScan got a lower score on this scale)
Moderately High	t-score above 55 (about 69% of the people who took StressScan got a lower score on this scale)
Average	t-score equal to 50 (about 31% of the people who took StressScan got a higher score on this scale and about 31% got a lower score)
Moderately Low	t-score below 45 (about 69% of the people who took StressScan got a higher score on this scale)



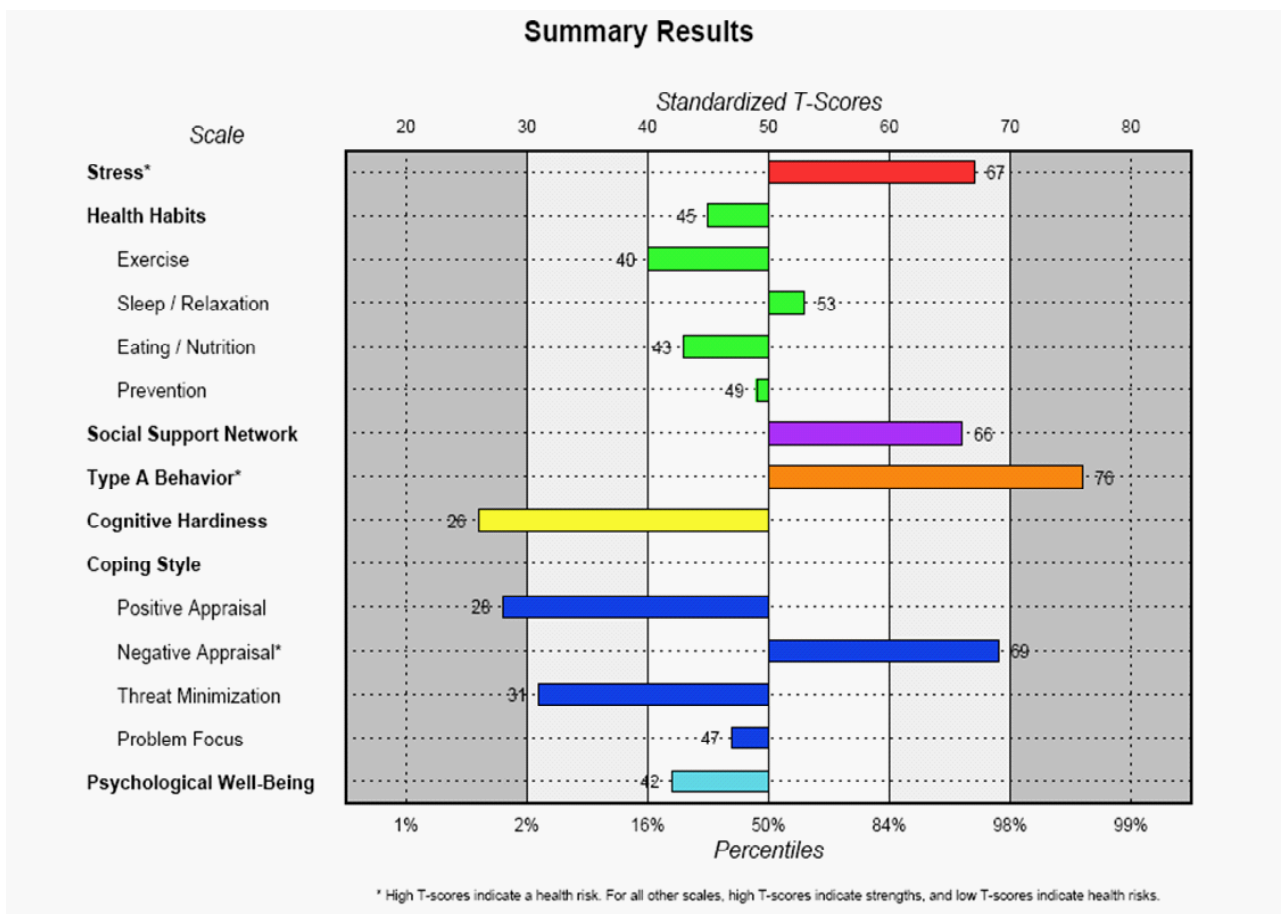
Low t-score below 40 (about 84% of the people who took StressScan got a higher score on this scale)

Very Low t-score below 30 (about 98% of the people who took StressScan got a higher score on this scale)

## UNUSUAL RESPONSE PATTERNS

The Response Bias Index helps identify unusual patterns of answers that should be taken into consideration when thinking about the StressScan results. If this section of the feedback report suggests an unusual response pattern, it typically means the individual had trouble understanding the questions or did not feel comfortable answering truthfully. As a result, the StressScan scores and interpretation may not be an accurate representation of the respondent's actual behaviours and feelings. The facilitator should explore the respondent's reaction to the StressScan questions and whether they were hurried, anxious or uncomfortable completing the questionnaire. In some cases taking StressScan again might be recommended.

## SAMPLE STRESSSCAN GRAPH



# Interpreting the StressScan Scales

## WORK/LIFE STRESS

### MEASUREMENT

Stress is conceptualised as the experience of major and minor irritants, annoyances, and frustrations (hassles) of daily living over a three-month period. This brief measure of work/life stress was based upon factor analytic research of the original Hassles scale (Lazarus). StressScan measures the extent to which respondents experience daily hassles in six distinct factor areas including: 1) Health; 2) Work; 3) Personal Finances; 4) Family; 5) Social Obligations; and 6) Environmental and World concerns (6 items).

### KEY POINTS

- The stress scale is meant to be a brief global measure of work and life stressors (not a specific occupational stress scale)
- Short-lived or infrequent episodes of work/life stress pose little risk. But when stressful situations go unresolved, the body is kept in a constant state of mental and physical activation, which increases the rate of wear and tear to biological systems. Ultimately, fatigue or damage results, and the ability of the body to heal and defend itself can become seriously compromised. As a result, the risk of injury, accident or disease increases.

### WHAT A HIGH SCORE MEANS

High scores suggest higher self-perceived work and life stress over the last 3 months compared to other working adults.

### IMPLICATIONS

Decreases in self-reported stress have been shown to be associated with less absenteeism, positive immune change, less physical illness and better health outcomes (Nowack, 1992).



## LIFESTYLE PRACTICES/HEALTH HABITS

### MEASUREMENT

StressScan measures specific lifestyle practices/health habits based on targeted self-reported behavioural questions in the following areas as well as providing for an Overall Health Habits score (24 items)

1. Exercise/Physical Activity
2. Sleep/Rest
3. Eating/Nutrition
4. Preventive Practices
5. Smoking and substance use

### KEY POINTS

- The overall Health Habits score is the most useful one for getting an idea of how the respondent compares to others in general.
- It is important to keep in mind that specific health practices and lifestyle behaviours might require attention even if the overall health score is above average (e.g., if the respondent is a smoker, engages in little or no physical activity on a regular basis or practices poor eating and nutritional habits).
- It is estimated that 40% of the factors that influence individual health are largely behavioural and lifestyle under one's direct control. Each day, everyone has an opportunity to put into practice specific lifestyle practices and behaviours that can significantly affect one's moods, performance, long-term health and longevity.

### WHAT A HIGH SCORE MEANS

High scores suggest higher levels of daily physical activities and exercise compared to other working adults.

### IMPLICATIONS

Physical activity affects many aspects of health including protection against premature mortality, CHD, hypertension, cancer, depression and anxiety.



## EXERCISE/PHYSICAL ACTIVITY

### MEASUREMENT

StressScan measures 3 aspects of physical activity including: aerobic, anaerobic (flexibility and weight training) and active leisure (3 items).

### KEY POINTS

- A large number of research studies have concluded that those who exercise vigorously several times a week or more have a 25% lower death rate than those whom are more sedentary or who engage in 'non-vigorous' activities. Regular physical activity has also been shown to be associated with specific diseases and emotional health such as:
  - » Heart disease and stroke: The risk of developing cardiovascular disease is reduced by about a third in people who exercise compared to those who do no exercise.
  - » Weight Management: Regular exercise combined with a healthy diet is the best way of losing excess weight, and to maintain a healthy body weight.
  - » Osteoporosis: Regular exercise helps to prevent osteoporosis (thinning of the bones). The pulling and tugging on the bones by the muscles helps to stimulate bone-making cells which strengthens the bones.
  - » Cancer: Regular exercise roughly halves the chance of developing cancer of the colon (bowel cancer). There is also strong evidence that breast cancer is less common in women who exercise regularly.
  - » Mental health: Exercise has been shown to decrease anxiety and mild depression. It has also been demonstrated to be associated with better quality sleep at night.



## EXERCISE/PHYSICAL ACTIVITY CONTINUED

### WHAT A HIGH SCORE MEANS

High scores suggest higher levels of daily physical activities and exercise compared to other working adults.

### IMPLICATIONS

Physical activity affects many aspects of health including protection against premature mortality, CHD, hypertension, cancer, depression and anxiety.

## SLEEP/RELAXATION

### MEASUREMENT

StressScan measures aspects of quality, quantity of sleep as well as taking the time to relax, either physically or mentally (5 items).

### KEY POINTS

- Sleep is a vital physiological function with most adults, on average, requiring 7 to 8 hours of sleep at night. Younger individuals require more total sleep and this amount decreases to that needed by adults. The quality of sleep also changes with age (e.g., less deep sleep, more awakenings in older adults and elderly). Quantity and quality of sleep has been shown to be significant contributors to performance, mood and overall well-being.
- People who don't get enough sleep may lack energy, be depressed or irritable, have trouble remembering everyday things, and get sick more often than people who get enough sleep. They seem to age faster and they may have problems concentrating at work or school. Some scientists believe a lack of sleep may have a role in diabetes, high blood pressure, heart disease, and even obesity.



- There are many causes of sleep deprivation leading to excessive daytime sleepiness or complaints of insomnia. Some of these causes include: 1) Not allowing enough time for sleep; 2) sleep disorders; 3) excessive worry ; 4) depression; repeated awakenings from noise; 5) shift work, working at night and travel across time zones; 6) medications; and 7) medical illness causing pain, difficulty in breathing, etc.
- Even a small loss of sleep can decrease waking performance and alertness. Research indicates that, for most people, one night with 2 hours less sleep than is usually required is sufficient to affect subsequent waking performance and alertness significantly. Lack of sleep also can increase the likelihood of accidents, particularly at work.

## WHAT A HIGH SCORE MEANS

High scores suggest higher levels of rest, relaxation and sleep quality/quantity

## IMPLICATIONS

- Loss of sleep is associated with increased stress, cortisol and immune suppression
- Loss of sleep can decrease waking performance and alertness—a single night lost affects cognitive and physical functioning comparable to being legally impaired with alcohol
- Getting only 2 hours less than normal sleep results in (Rosekind 2005):
  - » Degrading critical judgments and decision making by 50%
  - » Diminishing memory by 20%
  - » Interfering with communication skills by 30%
  - » Affecting mood by 100% as positive affect decreases and negative affect increases



## EATING/NUTRITION

### MEASUREMENT

StressScan measures eating and nutritional practices supporting the reduction of cardiovascular risk such as limiting fats, calories, eating breakfast, minimizing unhealthy 'junk' food and focusing on a balanced overall approach to diet (5 items).

### KEY POINTS

- Nutritional balance and controlling excessive weight (obesity) are essential to maintain long term health and central to preventing major diseases, importantly diabetes, coronary heart disease, stroke and some kinds of cancer.
- Healthy eating and nutritional practices also can play an important role in memory, fatigue, concentration, emotions, moods and alertness during the day.
- A healthy diet can affect longevity—research suggests that regular consumption of a high variety of healthy foods is associated with a longer life span and lower death rates specifically from cardiovascular disease and cancer.
- From a long term health perspective, it appears more important to increase the number of healthy foods regularly consumed than to just reduce the number of less healthy foods regularly consumed.
- Healthy eating and nutrition involves the following eight components: 1) high monounsaturated fats found in many nuts and olive oils and low saturated fats found in most meat/dairy products; 2) moderate alcohol consumption; 3) high consumption of vegetables; 4) high consumption of cereals, grains and fibre; 5) high consumption of fruits; 6) high consumption of legumes; 7) low consumption of meat; and 8) low consumption of dairy products.

### WHAT A HIGH SCORE MEANS

High scores mean the daily practice of healthier eating and nutritional practices.

### IMPLICATIONS

Eating and nutrition affects many aspects of health including protection against premature mortality, CHD, hypertension, cancer, energy and mood.



## PREVENTION

### MEASUREMENT

StressScan measures important preventive practices to ensure optimal well-being including practicing safe sex, taking medications prescribed, engaging in preventive behaviours including regular physical checkups, conducting monthly self-breast exams, maintaining oral hygiene, minimizing intimate contact around others who are sick or infected, not smoking, excessively drinking or abusing other substances (6 items).

### KEY POINTS

- The prevention questions on the Health Habits scale ask how regularly the respondent utilises common sense health and hygiene practices, and how often he/she uses substances that may increase health risk.
- The excessive use of substances such as caffeine or alcohol or habitual or excessive recreational use of prescription or non-prescription drugs are associated with an overall greater risk of experiencing health problems in general and stress-related illness in particular. In fact, over reliance on substances is often the first clear sign that some source of work or life stress is beginning to undermine one's physical health and psychological well-being.
- Some recent studies suggest that moderate use of alcohol several times a week may have some limited protective effects on the cardiovascular system. In general, for healthy people, one drink per day for women and no more than two drinks per day for men would be the maximum amount of alcohol consumption to be considered as ('healthy people' refers to non-pregnant women, individuals not addicted to alcohol, and people without pre-existing medical conditions).
- It is important to emphasise that any protective affects of alcohol in relation to cardiovascular disease are more a function of the frequency of drinking than the amount consumed—small amounts consumed several times a week are more beneficial than the same amount consumed over fewer occasions. Higher levels of alcohol consumption have been conclusively linked to more serious illnesses, accidents and adverse health outcomes.

### WHAT A HIGH SCORE MEANS

High scores mean the daily practice of preventive practices and behaviours known to be protective of long-term health and well-being.



## IMPLICATIONS

Preventing long-term health conditions is a sound strategy to maximise life satisfaction, physical health and psychological well-being.

## SOCIAL SUPPORT

### MEASUREMENT

StressScan measures three important aspects of social support including:

- 1) Perceived availability of one's social support network at work, home and within the community;
- 2) Utility or use of that perceived social support system
- 3) Overall satisfaction with use of one's social support network.

The StressScan social support scales assess one's availability, utility and satisfaction with each of five support sources including: immediate boss/supervisor, other people at work, spouse/partner, family member/relative and friends (15 items).

### KEY POINTS

- Social support has been shown to be a very important factor directly and indirectly influencing longevity, mental health and physical well-being. Indirectly, social support likely operates to eliminate or reduce stress by enabling reappraisal.
- The importance of supportive social relations in respect to health has been demonstrated by a number of large-scale studies suggesting that the role of social support is comparable to the effect of such standard health behaviour risk factors as smoking and cholesterol levels.
- Social support in the form of marriage, frequent daily contact with others, expression of feelings, and the presence of a confidant may all have protective value and directly enhance psychological well being, mood, confidence and quality of life.



## WHAT A HIGH SCORE MEANS

High scores suggest great availability, use and satisfaction with ones overall social support network

## IMPLICATIONS

- Social support can significantly reduce the severity of stress and psychological experience of it
- Low social support is associated with increased mortality and morbidity
- Positive changes in social support have been found to influence coping behaviours and immune function
- Social relations at work have been shown to boost employee satisfaction by 50%, those who have close relationships with their boss are more than twice as likely to be satisfied with their jobs and people who have a best friend at work are seven times more likely to be engaged in their work (Roth, 2006)



## TYPE A BEHAVIOUR

### MEASUREMENT

StressScan measures achievement striving, cynical mistrust, anger/hostility, impatience, competition, fatigue suppression, and rapid speech behaviours theoretically derived from the Framingham Type A behaviour scale (10 items).

### KEY POINTS

- The Type A Behaviour pattern is typically characterised by excessive competitive achievement striving, an exaggerated sense of time urgency, impatience, aggressive behaviours, hostility, and observable behaviours such as muscle tenseness and accelerated rates of speech (e.g., push elevator buttons even if they are lit up, practice 'sign language' when others cut them off on the freeway, eat/drive rapidly, count and check on the number of items in a person's basket at the food store when they are in the '10 items and less line').
- Type A individuals tend to strive to achieve as much as they can in the least amount of time (e.g., multi-task), to self-impose an overload of work, and to suppress feelings of fatigue.
- High Type A Behaviour individuals tend to be very critical of themselves, tend to set high expectations for themselves and may believe others have these same high expectations of them as well.
- The Type A Behaviour components of expressed anger and hostility seem to be the most important factors shown to be consistently associated with cardiovascular disease and blood pressure in the most recent research.
- StressScan measures three important components of Type A Behaviour including:
  - » Expressions of irritation, impatience and annoyance
  - » Cynicism and mistrust of others who are slow or incompetent
  - » Hard driving, competitive and achievement oriented



## WHAT A HIGH SCORE MEANS

High scores suggest more frequent reactions to work/life stress with competitive, hostile, angry and impatient behaviours, thoughts and feelings.

## IMPLICATIONS

Research shows a relationship between the hostile and cynical behaviours, rather than achievement striving behaviours of Type A Behaviours and heart disease.



## COGNITIVE HARDINESS

### MEASUREMENT

StressScan is a dispositional measure of specific attitudes and behaviours based on the theoretical constructs underlying personality hardiness (Kobasa) including (30 Items):

- 1) Viewing change as a challenge, rather than, a threat
- 2) Feeling an internal, rather than, external locus of control
- 3) Feeling committed, rather than, alienated to work/life activities
- 4) Feeling optimistic and having high self-efficacy/self-esteem

### KEY POINTS

- Cognitive Hardiness refers to a set of interrelated attitudes or beliefs about work and life that are relatively enduring from day-to-day. These include a sense of commitment and strong interest toward work, family, hobbies or projects that one is involved in on a day-to-day basis and having things one looks forward to doing.
- When Cognitive Hardiness is present, daily life changes and events are perceived to be challenging rather than being experienced as threatening. This keeps the individual open to trying new experiences and helps the individual to recognise that change affords new opportunities rather than hindrances to work and life satisfaction.
- Cognitive Hardiness also includes the belief that one has strong influence and control over life, that what one does is directly related to what one achieves and that success in work and life is a result of individual behaviour (rather than, luck, fate, or chance).
- This disposition appears to help buffer the potentially damaging impact of stress on well-being and directly generates effective coping behaviours. Individuals who score high on Cognitive Hardiness tend to cope with stress by direct problem-solving, rather than, by avoiding or ignoring the situation. They also tend to interact with others by giving and getting assistance and encouragement, rather than, by striking out or being overprotective. Thus, high Cognitive Hardiness scores suggest the possession of the kind of generally hardy outlook on life that is associated with a lowered risk of job burnout, physical illness and psychological distress.



## WHAT A HIGH SCORE MEANS

High scores suggest a general optimistic attitude and sense of resilience compared to those with low scores.

## IMPLICATIONS

Hardy individuals who experience stress report significantly less illness, job burnout, and psychological distress.



## COPING STYLE

### MEASUREMENT

StressScan measures four dispositional approaches to emotion based and problem solving based coping conceptually derived from the Ways of Coping Checklist (Lazarus) including (20 items):

- 1) Positive appraisal
- 2) Negative appraisal
- 3) Threat Minimization
- 4) Problem Focused Coping.

This trait measure of coping asks respondents how often individuals typically utilise specific behaviours, attitudes and cognitive appraisals in the face of work and life stressors, irritants, annoyances and challenges (20 items).

### KEY POINTS

- Coping style is defined as the most common and typical way one deals with work and life threats, pressures and challenges. There is no overall coping style score. An individual can have high or low scores on all of these scales which are independent of each other.
- High scores suggest that the respondent utilises a specific approach to coping in most situations that one might perceive as challenging or threatening.
- Positive appraisal and threat minimization coping may help the individual cope with daily work and life stress by minimizing defeating self talk or emphasizing the positive side of things (positive appraisal), and acknowledging/addressing the stressor directly without ruminating or dwelling on it excessively (threat minimization).
- Problem-focused strategies may assist the individual in directly modifying his/her own environment or behaviour.
- High Negative Appraisal is usually counterproductive and has been shown to be correlated with anxiety and depression. High scores on Threat minimization have been shown to be a productive coping style associated with lower physical illness, job burnout and distress in longitudinal studies.



## WHAT A HIGH SCORE MEANS

High scores on positive appraisal, threat minimization and problem focused coping are desirable and suggest more frequent use of these types of coping. High scores on negative appraisal suggest frequent use of self-critical and self-blaming cognitions and are not desirable.

## IMPLICATIONS

- High scores on Threat Minimization predicted lower levels of physical illness and absenteeism (Nowack 1994)
- High scores on Negative Appraisal are associated with increase risk for depression



## PSYCHOLOGICAL WELL-BEING

### MEASUREMENT

StressScan measures overall work and life satisfaction and positive affect in a scale called Psychological Well-Being over a three-month period (12 items). This global measure of work/life satisfaction is highly correlated (negatively) with psychological distress, depression, and anxiety.

### KEY POINTS

- The Psychological Well-Being scale is a measure of life satisfaction in general.
- A high score indicates that the respondent is satisfied with one's self and is able to relax and enjoy life. Those with high scores feel happy with their families, work, interpersonal relationships, successes and achievements.
- In general, people with a strong sense of psychological well-being report fewer stress-related illnesses than those without such a strong sense.

### WHAT A HIGH SCORE MEANS

High scores are associated with increase happiness and psychological well-being compared to other working adults.

### IMPLICATIONS

High scores are negatively associated with diverse measures of psychological distress such as depression and positively associated with physical health and well-being.



## SUMMARY OF WELLNESS RISKS AND RESOURCES SECTION

The StressScan profile provides respondents with feedback about important wellness factors that may affect their ability to cope with stress and maintain a level of both physical and psychological well-being. This information can be useful in helping your clients to begin to clarify specific behaviour change goals.

Each of the relevant StressScan scales will be shown as either Wellness Resource areas or Wellness Risks (see example table below). If none are listed, it suggests that scale scores on StressScan are all within a 'moderate range' compared to others who have taken this assessment.

### WELLNESS RISK AREAS

Work/Life Stress  
Physical Activity/Exercise  
Type A Behaviour  
Sleep/Rest

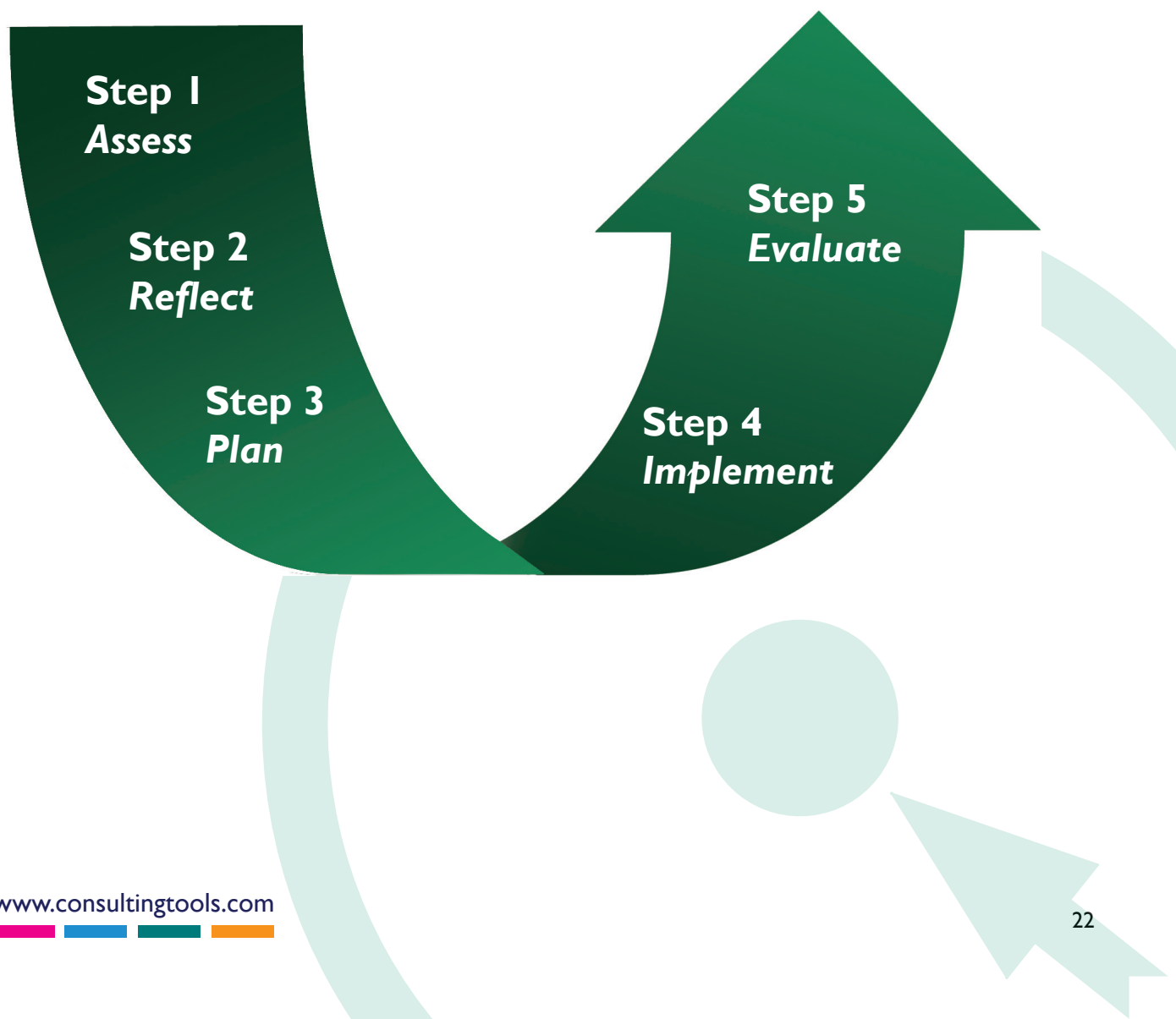
### WELLNESS RESOURCES

Eating/Nutrition  
Non-Smoker  
Problem Focused Coping



## Using the StressScan Behaviour Change Model to Optimise Your Client's Wellness

The StressScan report provides your client with information on 15 wellness factors that can affect their ability to cope with stress and maintain a high level of physical health and psychological well-being. Initiating and maintaining new behaviour is often challenging—particularly when their level of motivation and level of confidence about being successful are low. The behavioural change model behind the StressScan Action Plan is shown below. In the StressScan report, each of the steps below is outlined with specific suggestions and exercises to assist your client in optimizing his/her overall wellness.



# Using the StressScan Report to Optimise Your Client's Wellness

## STEP 1: ASSESS

In this step, respondents are asked to review their StressScan summary graph and Wellness Risks/Wellness Resources section. They are provided a summary page listing each of the StressScan scales and asked to place a check () in the Wellness Priorities column next to all the factors they are interested in changing. In the last column, they are asked to place a (+) next to all the factors they are most motivated and confident he/she can successfully change. Finally, each respondent is asked to identify his/her top two Wellness Priorities to focus on.

## STEP 2: REFLECT

Once the client has selected one or two specific StressScan factors to focus on they are then asked to answer the following reflective questions (see below) before creating a detailed StressScan Action Plan.

1. What will be the positive outcomes of changing my behaviour in the StressScan area(s) I have selected?
2. How can I make my behavioural change goal realistic and achievable?
3. How can I track and monitor my progress on my behavioural change goal?
4. What are some possible barriers to successfully changing my behaviour?
5. What actions and steps can I take to anticipate and prevent these barriers from interfering with my successful behaviour change effort?
6. How can family members, friends, or co-workers assist me to successfully change my behaviour?
7. How will I reward myself for successfully maintaining my behaviour change goal for 30 days?
8. What can I do to continue to motivate myself to keep a high level of commitment to my wellness goal, even if I temporarily slip back into my old habits?



### STEP 3: PLAN

Clients are asked to create specific StressScan Action Plan using SMART goals (specific, measurable, action oriented, realistic and time bounded) in this step.

StressScan Factor:

Specific Behavioural Change Goal/Activities:

Target Dates:

How I Will Track and Measure My Behavioural Change Goal Success:

Results/Outcomes:



## STEPS 4 AND 5: IMPLEMENT AND EVALUATE

Clients are now asked to begin implementing and then evaluating the efforts of their StressScan Action Plan. They are asked to explore how to utilise the following strategies to prevent relapse and ensure long-term success of their action plan.

- Practice coping with unavoidable high-risk situations
  - » Think about what you could say and do when faced with temptation.
  - » Use relaxation and other stress management techniques to handle strong emotions (e.g., anxiety).
  - » Get advice and watch others.
  - » Develop a set of self-instructions that will help you in high-risk situations.
  - » Test your coping skills in actual high-risk-of-relapse situations (e.g., a smoker could interact with other smokers without smoking; a dieter could go out with friends having fast food and just have a healthy choice; a business traveller could schedule some light exercise into his/her busy day; a student studying during final exams can go to bed early enough to get adequate sleep, etc.).
  
- Prepare in advance for a lapse (to avoid a relapse)
  - » Attempt to limit the loss of control and reduce the feeling that you have failed. Instead, if you slip, just admit that you have made a mistake.
  - » Make an agreement to limit the slip (e.g., one dessert, one day without exercise).
  - » Make an agreement to use family and friends to help you succeed.
  - » Learn from this experience. Learn your weaknesses and plan how to overcome them.
  - » Recommit yourself to your StressScan Action Plan.



## StressScan Research

StressScan is based on the Stress Profile items published by Western Psychological Services (WPS). A full technical and validity manual is available and can be ordered directly from WPS at 800-648-8857.

### NORMS

StressScan scoring was derived on a diverse adult working population that is part of an international and growing data base. It is diverse with respect to age, gender, ethnicity and job level making the report useful for employee and corporate wellness/health promotion, coaching and stress management programs.

### RELIABILITY

StressScan has established adequate internal consistency reliability of each of its scales ranging from .66 to .90 (Cronbach's alpha) in published research. Test re-test reliabilities have also been established over a two week period ranging between .66 and .94. Factor analytic studies support the internal structure of the StressScan scales. Several published and unpublished studies have analysed specific scales (e.g., Cognitive Hardiness) with consistent findings supporting the uni-dimensional nature of these scales.

### VALIDITY

StressScan has shown discriminant, convergent and criterion related validity with diverse psychological, organizational medical and physical outcomes in both published and non-published studies to date. For example, StressScan scales have shown significant associations with organizational outcomes (e.g., productivity, absenteeism, job burnout) and individual outcomes (e.g., anxiety, depression, immune response, physical illness, negative affectivity, fatigue, psychological distress and well-being) in numerous studies.

The StressScan scales have also been shown to be sensitive to interventions aimed at enhancing quality of life for patients with chronic illness (e.g., multiple sclerosis) and cardiovascular disease.

Additional studies are currently being planned with StressScan scales. Those interested in conducting research using StressScan scales are encouraged to contact us at: [support@envisialearning.com](mailto:support@envisialearning.com)

StressScan Research Continued



## StressScan and Depression

Employees who experience depression are at risk for both increased absenteeism and decreased productivity. It has been estimated that 5 to 12% of men and 10 to 25% of women experience depression at some point in their lives.

Langlieb and Kahn (2005) examined more than 100 published studies on how mental illness affects the workplace. They found that employees with anxiety and depressive disorders work fewer hours, are more likely to end up on disability, and are less productive than their counterpart employees. They also found that anxiety and/or depression complicate physical medical conditions, and typically become more disabling than the physical conditions themselves. A depressed worker also has a ripple effect by creating low morale among co-workers and a higher turnover rate. With respect to direct costs, a 2002 study by Goetzl et al. of more than 46,000 employees estimated that each employee with depression generated \$3,189 annually in health-care costs compared with \$1,679 annually for non-mental health illnesses.

If the depressed employees were also under high stress, then the cost skyrocketed -- 147 percent more was spent on health-care costs for those with depression and stress than on those with depression alone. Existing research shows that the indirect cost of depression to American business was \$83.1 billion in 2000, and the indirect cost of anxiety was \$63.1 billion in 1998. These numbers do not even include the enormously costly effects of reduced productivity and increased presenteeism (emotional distraction while at work).

Recent StressScan research has explored the relationship between specific scales and depression. Regression analyses with data from a recent study with newly diagnosed employees with multiple sclerosis (Giesser et al., 2005) suggests that three StressScan scales predict depression (Profile of Mood States) accounting for a total of over 62% of variance in this outcome (multiple R of .62). Psychological Well-being was entered first (beta = -.56) followed by Eating/Nutrition (beta = -.21, rsq change .04,  $p < .001$ ) and then Negative Appraisal (beta = .19, rsq change .03,  $p < .001$ ) were the best predictors of depression. Specifically, respondents reporting low Psychological Well-Being are likely to be considered as possibly experiencing depression with greater confidence of this diagnosis if Eating/Nutrition scores are also low and Negative Appraisal scores are simultaneously high. However, caution is urged in this interpretative profile of depression based on individuals with a diagnosis of chronic illness (multiple sclerosis). It does provide some evidence that particular StressScan profiles might indicate an association with depressive symptoms in clients



## LONGITUDINAL STRESS RESEARCH STUDY I

### PREDICTORS OF ILLNESS, JOB SATISFACTION AND ABSENTEEISM

- In study I, measures of stress, lifestyle habits, support, cognitive hardiness, and coping style were collected for 203 employees in a large aerospace corporation. Self-reported illness, absenteeism based on personnel records and job satisfaction were collected at the end of 2 ½ years resulting in a final sample of 71.
- After controlling for relevant demographic variables (sex, age, race, education) and initial levels of physical illness and psychological well-being, exercise (Beta= -.29; RsqCh=.086, F=4.94, p < .05) and Threat Minimization coping measured at the beginning of the study (Beta= -.29; RsqCh=.077, F=4.82, p < .05) significantly contributed to predictions of physical illness.
- Cognitive hardiness was also a significant predictor of illness if initial levels of psychological well-being were controlled for (p < .01).
- After controlling for relevant demographic variables, overall lifestyle habits significantly contributed to predictions of absenteeism (measured as cumulative sick time hours over the 2½ year study period)
- Cognitive hardiness significantly contributed to predictions of job satisfaction at the end of the 2½ year period (Beta= .49; RsqCh=.226, F=15.72, p < .01) accounting for .51 of the variance

Nowack, K. (1994). Psychosocial Predictors of Health and Absenteeism: Results of Two Prospective Studies. Paper presented at the American Psychological Association Annual Convention, September 1994, Los Angeles, CA.

## LONGITUDINAL STRESS RESEARCH STUDY II

### PREDICTORS OF ABSENTEEISM

- In study 2, 109 male supervisors in a large utility company completed a comprehensive health risk appraisal (Stress Scan).
- Stepwise multiple regressions were used to explore the predictors of absenteeism (cumulative sick time hours) collected at the end of the one-year study period.



- After controlling for relevant demographic variables (sex, age, ethnicity, education) a Threat Minimization coping style (Beta= .20;  $R^2_{Ch}=.04$ ,  $F=4.44$ ,  $p < .05$ ) significantly contributed to predictions of absenteeism verified from personnel records above that of age
- Despite a restriction in range of absenteeism for this professional sample of 109 employees (49.5% reported no absenteeism due to illness over the one-year period), older employees and those utilizing a Threat Minimization coping style (i.e., frequently minimizing thinking about or obsessing about things beyond one's control; actively minimizing the importance or significance of a stressful situation or event) experienced less sick time on the job in the face of work and life stress.

Nowack, K. (1994). Psychosocial Predictors of Health and Absenteeism: Results of Two Prospective Studies. Paper presented at the American Psychological Association Annual Convention, September 1994, Los Angeles, CA.

NEO PI-R Correlations (N=65) I



## STRESSSCAN SCALE

	Emotional Stability	Conscientiousness	Extraversion	Agreeableness	Openness
Stress	.49*	-.17	-.28	-.09	-.02
Health Habits	-.46*	.17	.21	.43*	-.01
Exercise	-.40*	.18	.14	.15	-.05
Sleep/Relaxation	-.28	-.14	.09	.15	.23
Eating/Nutrition	-.36*	.30	.20	.55*	.16
Prevention	-.36*	.23	.20	.39*	-.26
Social Support	-.42*	.52*	.62*	.29	-.02
Type A	.29	.07	-.02	-.38*	-.22
Cognitive Hardiness	-.84*	.44*	.44*	.46*	-.02
Positive Appraisal	-.54*	.49*	.31	.24	-.01
Negative Appraisal	.64*	-.18	-.20	-.33	-.25
Threat Minimization	-.45*	.23	.50*	.52*	-.10
Problem Focus	-.63*	.51*	.04	.02	-.07
Psychological Well Being	-.73*	.43*	.59*	.29	-.08

Nowack, K. (2002)

\*  $p < .01$



# StressScan Resources

## STRESS MANAGEMENT WEBSITES

International Stress Management Association <http://www.stress-management-isma.org>

National Women's Health Information Centre <http://www.4woman.gov/faq/stress.htm>

## TYPE A BEHAVIOUR BOOKS/RESOURCES

Williams, R.B. and William, V.P. Anger Kills: Seventeen strategies for controlling the hostility that can harm your health New York: Harper-Collins, Spring, 1994. <http://www.amazon.com/exec/obidos/ASIN/0060976233/002-5678680-2576812>

Williams, R.B. (1998). The trusting heart: Great news about Type A behaviour. New York: Times Books <http://www.amazon.com/exec/obidos/ASIN/0812916751/inktomi-bkasin-20/002-5678680-2576812>

## HEALTH HABITS/LIFESTYLE MANAGEMENT RESOURCES

### EATING/NUTRITION WEBSITES:

American Heart Association <http://www.americanheart.org/presenter.jhtml?identifier=1200010>

American Dietetic Association <http://www.eatright.org/>

NHLBI Obesity Education Initiative Website  
[http://www.nhlbi.nih.gov/health/public/heart/obesity/lose\\_wt/index.htm](http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/index.htm)

US Department of Agriculture Food and Information Website <http://www.nal.usda.gov/fnic/>

### SUBSTANCE ABUSE WEBSITES

National Council on Alcoholism and Drug Dependence <http://www.ncadd.org>

Substance Use and Mental Health Administration <http://www.samhsa.gov>  
Alcoholics Anonymous <http://www.alcoholics-anonymous.org/>



## SLEEP BOOKS/RESOURCES

The Promise of Sleep: A Pioneer in Sleep Medicine Explains the Vital Connection Between Health, Happiness, and a Good

Night's Sleep by William C. Dement, M.D., Ph.D. <http://www.amazon.com/exec/obidos/ASIN/0385320086/104-8483172-9696752>

Sleeping Through the Night: How Infants, Toddlers, and Their Parents Can Get a Good Night's Sleep by Jodi Mindell, Ph.D. <http://www.amazon.com/exec/obidos/ASIN/0062734091/04-8483172-9696752>

No More Sleepless Nights by Peter Hauri, Shirley Linde, and Philip Westbrook <http://www.amazon.com/exec/obidos/ASIN/0471149047/104-8483172-9696752>  
From the director of the Mayo Clinic Insomnia Program, this book provides practical advice for those with sleep problems.

## SLEEP WEBSITES

SleepNet [www.sleepnet.com](http://www.sleepnet.com)

A wealth of information and links on sleep disorders, including scientific, professional, and support groups. Bills itself, "Everything you wanted to know about sleep disorders but were too tired to ask."

National Sleep Foundation [www.sleepfoundation.org](http://www.sleepfoundation.org)

A non-profit organization that promotes public understanding of sleep and sleep disorders and supports sleep-related education, research and advocacy to improve public health and safety. This site includes information on Foundation activities, on-line brochures and other publications, and links to other sleep-related organizations.

## COPING SKILLS

Coping Skills Resources <http://www.plainsense.com/Health/Stress/index.htm>

Stress Management Coping Skills <http://stress.about.com/cs/copingskills/index.htm>

## PSYCHOLOGICAL WELL-BEING

### RELAXATION TAPES

<http://www.marcschoen.com/homepage.html>



## StressScan Research Studies

Baltimore, Michael L. (1995). Expectations and beliefs in close relationships: An analysis of appraised stress, coping style, and hardiness. Dissertation Abstracts International Section A: Humanities and Social Sciences. Jun Vol 55(12-A) 3745

Beasley, M., Thompson, T. and Davidson, J. (2003). Resilience in response to life stress: the effects of coping style and cognitive hardiness. *Personality and Individual Differences*, 34, 77-95.

Boney, Virginia. (2002). Predictors of Cognitive Hardiness in Young Adult of Children of Divorce. Dissertation Abstracts International.

Chroni, S., Hatzigeorgiadis, A. and Theodorakis, Y. (2004). Coping Strategies, Hardiness, and Self-efficacy in Novice Sports Climbers. Unpublished Manuscript. Department of Physical Education and Sport Sciences. University of Thessaly, Greece

Darnell, B. (2002). The relationship between athletic identity, elite athlete self-esteem, coping, and pathology in elite athletes. Dissertation Abstracts International: Section B: The Sciences and Engineering. 2002 Jan Vol 63(6-B) 3003

Goetzel, R., Ozminkowski, R., Sederer, L. and Mark, T. (2002). The business case for quality mental health services: Why employers should care about mental health and well-being for their employers. *Journal of Occupational and Environmental Medicine*, 44, 320-330.

R. Gopal, R., J.J. Glasheen; T.J. Miyoshi; A. Prochazka (2004). Does personality hardiness protect against resident burnout? Denver VAMC, Denver, CO; University of Colorado Health Sciences Centre, Denver, CO

Giesser, B., Coleman, L., Fisher, S., Guttry, M., Herlihy, E., Nonoguch, S., Nowack, D., Roberts, C. and Nowack, K. (2005). Living Well: An integrative approach to wellness with multiple sclerosis. Paper presented at Annual Conference of The American Congress of Rehabilitation Medicine (ACRM) Board/American Society of Neurorehabilitation (ASNR), Chicago, Illinois. UCLA Department of Neurology and National Multiple Sclerosis Society, Southern California Chapter.

Nowack, K. (2000). Occupational stress management: Effective or not? In P. Schnall, K. Belkie, P. Landensbergis, and D. Baker (Eds.), *Occupational Medicine: State of the Art Reviews*, Hanley and Belfus, Inc., Philadelphia, PA., Vol 15, No. 1, pp. 231-233 .

Greene, R. and Nowack, K. (1996). Stress, hardiness and absenteeism: Results of a 3-year longitudinal study. *Work and Stress*, 9, 448-462.



Langlieb, A. and Kahn, J. (2005). How much does quality mental health care profit employers? *Journal of Occupational and Environmental Medicine*, 47, 1099-1109.

Lopez, O., Haigh, C. and Burney, S. (2004). The relationship between hardiness, and perceived stress of two generations of Latin American. *Australian Psychologist*, 39, 238-243.

Nowack, K. (1994). Psychosocial Predictors of Health and Absenteeism: Results of Two Prospective Studies. Paper presented at the American Psychological Association Annual Convention, September 1994, Los Angeles, CA.

Nowack, K. and Pentkowski, A. (1994). Lifestyle habits, substance use, and predictors of job burnout. *Work and Stress*, 8, 19-35.

Rathburn, K. (2003). Hardiness as a Career Transition Resource. Unpublished Manuscript. The University of North Dakota.

Rowe, M. Michelle (1999). Teaching health-care providers coping: Results of a two-year study. *Journal of Behavioural Medicine*. 1999 Oct Vol 22(5) 511-527

Schwartz, G.E., Schwartz, J.I., Nowack, K.M., and Eichling, P.S. (1993). The hardiness and the negative affectivity confound as a function of a defensive coping style. University of Arizona and Canyon Ranch. Unpublished manuscript.

Schwartz, G.E., Schwartz, J.I., Nowack, K.M., and Eichling, P.S. (1992). Changes in perceived stress and social support over time are related to changes in immune function. University of Arizona and Canyon Ranch. Unpublished manuscript.

Nowack, K. M. (1991). Psychosocial predictors of physical health status. *Work and Stress*, 5, 117-131.

Nowack, K. M. (1990). Initial development and validation of a stress and health risk factor instrument. *American Journal of Health Promotion*, 4, 173-180.

Nowack, K. M. (1989). Coping style, cognitive hardiness, and health status. *Journal of Behavioural Medicine*, 12, 145-158.

Nowack, K. M. (1987). Health habits, Type A behaviour, and job burnout. *Work and Stress*, 1, 135-142.

O'Neal, Marcia. (1999). Measuring Resilience. Paper presented at the Annual Meeting of the Mid-South Educational Research Association (Point Clear, AL, November 17-19, 1999).

Sharpley, C. and Yardley, P. (1999). The Relationship between cognitive hardiness, explanatory style, and depression—happiness in post retirement men and women. *Australian Psychologist*, 34, 198-203



Sharpley, Christopher F.; Dua, Jagdish K.; Reynolds, Roisin; Acosta, Alicia Sharpley, Monash U (1995). The direct and relative efficacy of cognitive hardiness, Type A behaviour pattern, coping behaviour and social support as predictors of stress and ill-health. *Scandinavian Journal of Behaviour Therapy*. Vol 24(1) 15-29

Hogan, J., Carlson, J and Dua, J. (2002). Stressors and Stress Reactions among University Personnel. *International Journal of Stress Management*. 9 (4), 289-310

