Stress and the Heart: Practical, Evidence-Based Approaches to Lower CVD Risk

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Disclosure

I have no financial interest in any product or service to be discussed in this presentation.

How Happy Are You?

Not at all 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 Very
Mr. Glenn: “I don’t know.”
Mr. Bonadonna: “Me neither.”
How Happy Are You?

Not at all 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 Very

Respect the Contexts

Does Stress Matter?
**When Do Heart Attacks Strike?**


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<th>Mon</th>
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% of MI

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**Does Stress Matter?**

>50% MI Pts. Claim Stress or Emotional Upset Shortly Before Hospital Admission


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**Does Stress Matter?**

Post “Extremely Undesirable Event”

MI Risk ↑ x10, for 24 hrs

The Challenge?

Toxic Stress
High Demand
Low Control
Low Support

Stress and the Heart

- Short-term
- Long-term
- Inflammation

Robert Sapolsky

Stress and the Heart: The Short Term

- Glucocorticoids (GCs)
  - + Sympathetic N.S.
  - - Parasympathetic N.S.
- Epinephrine
  - ↑ HR
  - ↑ BP
  - ↑ Platelets
  - ↑ Clotting
Stress and the Heart: **The Short Term**

- ↑ Anti-Diuretic Hormone
- ↑ Kidney ≈ Fluid Retention
- ↑ Blood Volume

Stress and the Heart: **The Long Term**

- Too Much Sympathetic N.S. Action
  - Damages Vessels – esp. at bifurcations and ↑BP
- Long-Term Culprit:
  - Too Little Parasympathetic Tone
  - Heart Rate Variability
  - Sympathetic/Parasympathetic Dance

Stress and the Heart: **The Long Term**

- Chronic Hypertension
  - Blood Vessels.. → Distend
  - Rigidify
- Diminished HR Variability
- ↑ Heart Failure
  - Blood Pumped w More Force
  - “Slams” Back into L Ventricle
  - LV Gets Wobbly ≈ HR Irregularities
**Do Not Fear Stress!**

Stress is Not Dangerous; Strain Is


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**The Stress Response**

[Diagram showing the stress response with stress levels and time intervals marked]

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**The Stress Response**

**THE REAL KILLERS**

• Chronic Worry
• Depression
• Anger/Hostility
• Isolation
• Conflict

[Diagram showing the effects of stress on various conditions]

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www.sotile.com
The Slippery Slope
Unchecked Stress
Chronic Hypertension
High Fat Diet → ↑Body Fat →
↑Inflammation → ↑Damage –
↑ Inflammation → ↑Clotting–
↑ Force-Thrombosis….
Wanders.. MI? Stroke? →
Psychosocial Struggle → More Stress

What Happens Post-Dx?

• 70%
  Bouts of Coping Problems

• 30% - 40%
  Long-Term Problems


The Lethal Quartet

• Overactive Sympathetic N.S.
• Under-Active Parasympathetic N.S.
• Poor Health Behaviors
• Unchecked Psychosocial Struggles
**Thriving, Not Just Surviving**

The Crucial Relationship

*Daily Hassles* & *Daily Uplifts*

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**Positive Emotions and CV Functioning**

+ Emotions

↓ Salivary cortisol

↓ HR

↓ SBP

↑ CV recovery

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**Keys to Resilience**

Believe in Something Bigger than Yourself!
**Positivity. B. Fredrickson (2009)**

- Flip Side of Flight/Fight/Freeze?
- + Emotions
  - Broaden… perspectives
  - Build………social relations

**Positivity. B. Fredrickson (2009)**

- Hope
- Interest
- Inspiration
- Amusement
- Serenity
- Awe
- Gratitude
- Pride
- Love

*The Magical Ratio*

3:1

**Positivity. B. Fredrickson (2009)**

- Special Challenge
- Type D Personality
Type D Personality

- Combination of 2 traits:
  - 1. Negative Affectivity
    “gloomy” view across time and situations
  - 2. Social Inhibition
    inhibited expression of emotions due to concern about how others will react


Effects of Type D Personality

- ↑Mortality
- ↑Morbidity
- ↑Emotional distress
- ↑ICD-related concerns
- ↓Decreased quality of life
  - Independent of sex, age, CAD and shocks


Who Needs Help?
The STOP-D (Screening Tool for Psychological Distress)
Young G.R. J Cardiovascular Nursing. 2007;22(6):525-34

Over the past 2 weeks, how much have you been bothered by:
1. Feeling sad, down or uninterested in life? 4
2. Feeling anxious or nervous? 4
3. Feeling stressed? 5
4. Feeling angry 5
5. Not having the social support you feel you need? 5

Cutoff Scores

What Helps?

Crisis Intervention
Group Therapy 30% - 40%
Stress Management Training ▶️ Cardiac Events
Transcendental Meditation ▶️ Cardiac Mortality
Cognitive Behavioral Therapy ▶️ Clinical Outcomes
Relaxation Training
Telephone Counseling
Exercise
SSRIs

What Do **You** Have to Give that’s Worth Getting?

What Matters Most when Treating Heart Patients’ Psychosocial Issues?


- ↓ in both anxiety & depression ~
  - ↓ recurrent MI and ↓ death

**Most Powerful Factor?**
What Do **You** Have to Give that’s Worth Getting?

A hero is someone who creates safe spaces for other people

---Thriving with Heart Disease. Sotile WM, 2004

What are Your Stress Symptoms?
What are Your Stress Symptoms?

- Body symptoms
- Emotions
- Thinking
- Behaviors
- Interpersonal

Contrast is an Antidote

Attitude Matters… A Lot!

Promote
Realistic Optimism

Self-Rated Health

Alameda County, California (N = 7,000)

**Male health pessimists:**
2.3 x ↑ death rates

**Female health pessimists:**
5.0 x ↑ death rates
**Letting Go...**

**Practice Realistic Optimism**
- Got-It-Done Journal
- Gratitude Journal
- Anonymous Blessings
- Counter Stress Thinking

Seligman MEP, Authentic Happiness (2002)
Seligman MEP, Learned Optimism (1992)

**Challenge Stress Thinking**

**Stress Thinking**
- All-or-Nothing
- Jumping to Scary Conclusions
- Focusing on the Negative
- Exaggerating Bothersome Ideas
- Blaming Yourself
- Blaming Another

**Keys to Resilience**

Remember the 3 C’s:
- Challenge
- Commitment
- Control

Effective Support

Normalize
Reassure

Effective Support

Allow Venting
Support
Be Patient

Effective Support

Teach Philosophies that Help

“You Can’t Always Control the Event.
You Can Control Your Reactions.”
Beware the False Hope Syndrome
• Don’t Overestimate the Benefits
• Don’t Underestimate the Effort

Ten Guidelines for Shaping Resilient Patients
1. Emphasize the Dangers of Mismanaged Psychosocial Risk Factors
2. Boost Perceived Control and Support
3. Give “Coping Roadmaps”
4. Be Compassionate about Special Risks
5. Offer Hope and Realistic Optimism
6. Emphasize that Emotional Uplifts are Key
7. Calm Fears of Stress
8. Offer Practical Coping Tips
9. Think “Family”
10. Respect the Psychology of Changing

Thank You!
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