

## Overview:

The goal of this elective class at Stritch is to provide you with experience of the Transcendental Meditation (TM) technique as a tool for wellness and transformation as you complete your studies and begin your life as a physician.

380 peer reviewed studies suggest TM can dramatically reduce stress and burnout and improves focus, learning, and resiliency, among other outcomes.

This elective will give you an opportunity to start the twice-daily practice and validate your experience through critical inquiry, presentations by distinguished physicians and researchers, and explore bringing TM into your practice as a tool for patient well-being.

We invite you to explore the results described by students and Vice Dean for Education Gregory Gruener MD in an article published by the Chicago Medical Society, <http://www.researchuse.org/CMArticles.pdf> (click) and reported on by WTTW11, Chicago Tonight: <http://chicagotonight.wttw.com/2016/02/25/loyola-university-offers-medical-students-meditation-combat-stress> (click).

## Two step registration:

### First & Second Year Students: Two step registration

1. First Meeting: July 25, 4:30 pm or 5:30 pm, SSOM 150 or August 3, Thursday, 5pm SSOM 460 (please RSVP if you can). You may register at this meeting or contact Claudia Kubnick, (708) 216-0468.
2. Sign up for TM instruction. Instruction begins Aug 15 or Sept 18 (or by appointment) in private, followed by 3 days instruction in a group. To make arrangements, please telephone, text, or email Dr. Brown: 641-919-9616, [cbrown@tm.org](mailto:cbrown@tm.org)

**Third and Fourth Year Students:** You may arrange to start the TM program during your research/elective or other convenient period. You may also join the course described above. Please contact Dr. Brown, 641-919-9616, [cbrown@tm.org](mailto:cbrown@tm.org)

## Feedback about the Transcendental Meditation technique:

### Stritch School of Medicine Student

*"After incorporating TM into my daily practice, I began feeling more at ease and less worried about time. I felt more refreshed and focused in the morning and throughout the day, regardless of the amount of time I slept. TM allows for me to "reset" myself and relieve my current worries. It allows for me to clear my mind and focus on the task at hand. I have noticed that since I began doing TM, I can concentrate longer and achieve tasks much more quickly."*

### Ajay Desai, M.D., Radiation Oncologist

*"Being a physician is very stressful. There are a lot of casualties of that stress. You see that in many different ways like depression, substance abuse... The most important thing I've noticed is TM increases my productivity. I feel more energetic. I'm able to deal with a lot of those time pressing issues much better."*

### Steven Rector, M.D., 25-year emergency physician, Board Certified in Emergency Medicine

*"Transcendental Meditation is so easy to learn and practice, so effortless and natural, it quickly and efficiently dissolves away accumulated crusts of exhaustion and frustration resulting from daily challenges of being a healthcare professional. Do this to become and remain the engaged, effective, compassionate professional you dreamed of becoming when medical school was only an idealistic dream in your heart."*



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National  
Institutes  
of Health



American  
Heart  
Association



American  
Medical  
Association



American  
Psychological  
Association

For more information about Transcendental Meditation

## Structure and requirements:

- Introductory Session
- Individualized Training in Transcendental Meditation (1–1.5 hours/day over 4 consecutive days: see schedule below)
- Personal Practice of Transcendental Meditation—20 minutes twice a day (Commitment to regular meditation required)
- Meet several times (2-3) during the year for meditation with instructor
- One page reflection on first month of TM practice
- Attend six Lecture Discussions throughout the elective (These will be filmed and posted on a class Web site, [www.researchuse.org/stritch/class1718](http://www.researchuse.org/stritch/class1718). You may view the lecture on-line and supply a 1-page summary)
- Attend a workshop, knowledge day, or retreat including the topic “Balancing Life in Medical School” (optional)
- Complete final reflection paper

## 2017-18: Requirements for starting the TM technique and possible schedules:

1. <b>Introductory Meeting</b>	July 25, 2017 4:30 PM or 5:30 PM SSOM 150 August 3, 2017 5:00 PM SSOM 460 or August 24, 2017 5:00 PM SSOM (TBA) Other times by appointment	
2. <b>Four consecutive days</b> of instruction, about 1.5 hours/day First meeting in private and second through fourth meeting with the group. (Choose a course)	<b>Course I:</b> August 15, 2017 <b>Private instruction</b> by appointment August 16, 17, 18 <b>Group meetings</b> , 5:30 PM Wed and Thurs and 4 PM Fri ( <i>rooms to be announced</i> ) <b>Course II:</b> September 18, 2017 <b>Private instruction</b> by appointment September 19, 20, 21 <b>Group meetings</b> , 5:30 PM Thurs and Fri and 10 AM Sat ( <i>rooms to be announced</i> )	
3. <b>Fee</b>	\$200.00	\$480.00 is normally charged graduate students for TM instruction and a lifetime support program. \$280 is being provided by generous donors. <b>Further scholarship assistance is available:</b> please contact Dr. Sunny Nakae.

## 2017-18 Schedule Overview:

<b>ALL FOUR YEARS AND ENTIRE STRITCH SCHOOL OF MEDICINE COMMUNITY INVITED*:</b> *Each meeting is preceded at 6:00 with a group meditation for those practicing the Transcendental Meditation technique. Following the presentation, refreshments will be served,		
<b>August 23</b> (6:30-8:30 PM/SSOM 460)	I.	<i>What does 45 years of research tell us about the Transcendental Meditation technique?</i> Special guest, David Orme-Johnson Ph.D., prolific researcher and widely cited presenter on the Transcendental Meditation technique and advanced programs, has reviewed research on the effects of meditation (on chronic pain and insomnia) for the National Institutes of Health Office of Alternative Medicine and for the NIH Agency for Health Research and Quality (AHRQ) and Johns Hopkins University.
<b>October 18</b> (6:30-8:30 PM/SSOM 360)	II.	<i>Measurement of brain functions: What differing modalities show during TM practice and afterward?</i> Special guest, Fred Travis, Ph.D., Director, Brain, Consciousness and Cognition Lab; Maharishi University of Management.
<b>November 15</b> (6:30-8:30 PM/SSOM 360)	III.	<i>The effects of the Transcendental Meditation on Gene Expression.</i> Special guest, John Fagan, Ph.D., Dean, College of Sustainability and Professor of Molecular Biology; Maharishi University of Management.
<b>February 7</b> (6:30-8:30 PM/SSOM 360)	IV.	<i>The Transcendental Meditation Technique for You and Your Medical Practice.</i> Richard Carroll MD, ScM, FACC, board certified cardiologist and Regional Vice President for Quality/Co-Chief Medical Officer, Adventist Health System, Midwest Region.
<b>April 4</b> (6:30-8:30 PM/SSOM 360)	V.	<i>The Role of the Transcendental Meditation Program in Reducing Medical Costs.</i> Special guest, Robert Herron, Director of the Center for Health Systems Analysis in Fairfield, Iowa. He has conducted extensive research on how to improve medical system effectiveness and reduce national and corporate medical expenditures.
<b>April 18</b> (6:30-8:30 PM/SSOM 360)	VI.	<i>Evidence for Preventive Medicine, Developing Resilience, and Reversing the Impact of Posttraumatic Stress.</i> Special guest, COL Brian Rees MD, veteran of five tours in Iraq and Afghanistan, former VA physician, civilian MD. He has published research about promotion of soldier resilience and resolution of PTS, most recently as lead author of two published studies about the effects of Transcendental Meditation practice in resolving posttraumatic stress in Congolese refugees.

## Lecture Discussions throughout the Elective:

### Lecture I: What does 45 years of research tell us about the Transcendental Meditation technique?

**Special guest:** David Orme-Johnson Ph.D., researcher and widely cited presenter on the Transcendental Meditation technique.

This presentation gives an overview of the effects of the Transcendental Meditation technique during and outside of meditation, from the 1970s to present. Early research found that TM produces a "wakeful hypermetabolic state," characterized by frontal dominant alpha waves indicative of quiet awareness together with reduced activity of the sympathetic nervous system. Recent neural imaging studies have provided further insights into the frontal and brainstem areas associated with this state. This state of deep rest along with inner awareness is said to provide an ideal situation for intrinsic homeostatic repair mechanisms to heal the body and mind.

The TM program is the regular alternation of twice a day meditation with normal daily activity. This cycle of meditation and activity is said to habituate the system to maintain some of the qualities of restful alertness during activity. Early research in the 1970s found that TM improves stress reactivity and increases autonomic stability, which is been confirmed by recent research on stress reactivity of the cardiovascular system and on cortisol reactivity. More recent neural imaging research has shown that TM improves the reactivity of the brain pain matrix to pain stimulation.

A series of studies on medical care utilization, medical care costs, and a randomized controlled study on heart disease indicate that TM practice reduces medical problems on the order of 50% over a five-year period.

**To be reviewed in class:** Barnes VA, Orme-Johnson DW. Prevention and treatment of cardiovascular disease in adolescents and adults through the Transcendental Meditation Program: a research review update. *Current Hypertension Reviews* 2012 8:227-242 410.

Orme-Johnson DW, Barnes VA. Effects of the Transcendental Meditation Technique on trait anxiety: a meta-analysis of randomized controlled trials. *Journal of Alternative and Complementary Medicine* 2013 19:1-12

Rosenthal, Norman E. M.D., *Transcendence: Healing and Transformation through Transcendental Meditation*, 2012: New York. Jeremy Tarcher /Penguin. Chapter 1 "A Return to the Self: Aspects of Meditation, pp 13-30. Chapter 2 "The mind within the mind: What is Transcendence?" pp 31-55.

#### Resources for further reference (not required):

List Orme-Johnson DW. Autonomic stability and Transcendental Meditation. *Psychosomatic Medicine* 1973 35(4):341-349

Orme-Johnson, DW. Prison rehabilitation and crime prevention through the Transcendental Meditation and TM-Sidhi program. In LH Hippchen (ed.), *Holistic Approaches to Offender Rehabilitation* (Chapter 19). Springfield, Illinois: Charles C Thomas Press, 1981

Orme-Johnson DW. Medical care utilization and the Transcendental Meditation program. *Psychosomatic Medicine* 1987 49(1):493-507

Orme-Johnson DW. Transcendental Meditation as an epidemiological approach to drug and alcohol abuse: theory, research, and financial impact evaluation. *Alcoholism Treatment Quarterly* 1994 11(1/2):119-168

Orme-Johnson DW. Evidence that the Transcendental Meditation program prevents or decreases diseases of the nervous system and is specifically beneficial for epilepsy. *Medical Hypotheses* 2006 67:240-246



Dr. David Orme Johnson is one of the first and most prolific researchers on meditation, with over 100 scientific papers in the field. He was the first researcher to provide scientific evidence that meditation of any kind could alter how we react physiologically to stress. He was the first to do research on meditation of any kind in prisons, showing that TM increases autonomic stability. He was also the first to show that the EEG signature of the Transcendental Meditation technique (alpha 1 coherence) was correlated with creativity, intelligence and higher states of consciousness.

Dr. Orme-Johnson is one of the principal researchers on the Maharishi Effect, the phenomenon of decreased stress and improved quality of life in the larger society through the practice of the Transcendental Meditation and TM- Sidhi techniques. He has published 23 research and review papers in

this field. He was a co-author on the first published paper on the Maharishi Effect, which showed that when a threshold of 1% of the population of a city learned TM that the crime rate decreased that year and in subsequent years. He was also the first to show that group practice of the TM and TM-sidhi program can reduce war and terrorism, regionally and worldwide, being the lead author on papers published in the prestigious *Journal of Conflict Resolution*.

Dr. Orme-Johnson was the first to conduct an fMRI neuroimaging study on TM, showing that it reduces how the brain responds to pain. He has directed numerous major field studies, including two health care utilization studies involving 2,600 participants, and he was a consultant for four years on an NIMH grant to study stress reduction and hypertension in black adults.

In 1995, the National Institutes of Health Office of Alternative Medicine selected Dr. Orme-Johnson to review the research on the effects of meditation on chronic pain and insomnia for an NIH technology assessment conference. Again in July 2008 he was invited by the NIH National Center for Complementary and Alternative Medicine to give an overview of the research on the Transcendental Meditation technique at a conference on Meditation for Health Purposes, held in Bethesda, MD. In 2011 he was invited to be a Key Informant for a systematic review of the research on meditation sponsored by the NIH Agency for Health Research and Quality (AHRQ), which is being conducted at Johns Hopkins University.

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## Lecture Discussions throughout the Elective:

### Lecture I: What does 45 years of research tell us about the Transcendental Meditation technique?

*continued from page 4*

- Orme-Johnson DW, Barnes VA, Schneider RH. Transcendental Meditation for the Prevention of Coronary Heart Disease. In: R Allan, J Fisher (eds), *Heart & Mind: the Practice of Cardiac Psychology* (2nd edition, Chapter 18). Washington DC: *American Psychological Association* (in press; expected publication August 2011)
- Orme-Johnson DW, Dillbeck MC, Wallace RK, Landrith III GS. Intersubject EEG coherence: is consciousness a field? *International Journal of Neuroscience* 1982 16(3/4):203-209
- Orme-Johnson DW, Haynes CT. EEG phase coherence, pure consciousness, creativity, and TM-Sidhi experiences. *International Journal of Neuroscience* 1981 13(4):211-217
- Orme-Johnson DW, Herron R. An innovative approach to reducing medical care utilization and expenditures. *American Journal of Managed Care* 1997 3(1):135-144
- Orme-Johnson DW, Moore RM. First prison study using the Transcendental Meditation program: La Tuna Federal Penitentiary. *Journal of Offender Rehabilitation* 2003 36(1-4):89-96
- Orme-Johnson DW, Schneider RH, Son YD, Nidich S, Cho Z-H. Neuroimaging of meditation's effect on brain reactivity to pain. *NeuroReport* 2006 17(12):1359-1363
- Orme-Johnson DW, Walton KG. All approaches to preventing and reversing the effects of stress are not the same. *American Journal of Health Promotion* 1998 12(5):297-299

### Lecture II: Measurement of brain functions: What differing modalities show during Transcendental Meditation (TM) practice and afterward? How Effortless is TM practice?

**Special guest:** Fred Travis, Ph.D., Director, Brain, Consciousness and Cognition Lab; Maharishi University of Management, Fairfield, Iowa

Travis will discuss the state of restful alertness gained during practice of the Transcendental Meditation technique and examine implications of experiencing this state over time. During this presentation, we will explore EEG, fMRI and PET imaging research during TM practice and afterwards. This research will allow us to understand how meditation practices differ, and whether TM practice involves focused attention or effortless transcending.

**To be reviewed in class:** Travis, Fred et al (2009) Effects of Transcendental Meditation Practice on Brain Functioning and Stress Reactivity in College Students, *International Journal of Psychophysiology*, v.71 pp.170-176. (available with your UVID/password)

#### Resources for further reference (not required):

- Roger Chalmers, M.D., (16th April 2014) Summary of Scientific Research on Transcendental Meditation, (self-published).
- Dillbeck M.C. and Orme-Johnson D. W. (1987) Physiological differences between Transcendental Meditation and rest. *American Psychologist*, 42:879–881.
- Herbert et al (11/2005) Enhanced EEG alpha time-domain phase synchrony during Transcendental Meditation: Implications for cortical integration theory. *Signal Processing V. 85, #11*, pp. 2213–2232
- Jevning R., et al. (1992) The physiology of meditation: a review. A wakeful hypometabolic integrated response. *Neuroscience & Biobehavioral Reviews* 16(3):415-24.
- Sharma, H. and Chris Clark (1998) A practical application of the consciousness model: Transcendental Meditation. In *Contemporary Ayurveda: Medicine and Research in Maharishi Ayurveda*, Chapter 3, pp.17-28.
- Travis, F.T. and Arenander, A. (2006). Cross-sectional and longitudinal study of effects of the Transcendental Meditation practice on frontal power asymmetry and frontal coherence. *International Journal of Neuroscience*, 116 (12), pp. 1519-1538.
- Travis, F.T. and Shear, J. (2010) Focused attention, open monitoring and automatic self-transcending: Categories to organize meditations from Vedic, Buddhist and Chinese traditions. *Consciousness and Cognition* 19 pp. 1110–1118.
- Travis, Frederick and Wallace, R. Keith (1999) Autonomic and EEG Patterns during Eyes-Closed Rest and Transcendental Meditation (TM) Practice: The Basis for a Neural Model of TM Practice. *Consciousness and Cognition*, 8, 302–318. Article ID ccog.1999.0403, available online at <http://www.idealibrary.com>



Fred Travis, Ph.D. is Director of the Brain, Consciousness and Cognition Lab at Maharishi University of Management, Iowa. An internationally renowned neuroscientist, Dr. Travis has published over 70 scientific papers including a ten-week study finding significant increase in functional brain integration among college students practicing the TM technique compared with non-meditating controls.

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## Lecture Discussions throughout the Elective:

### Lecture II: What Measurement of brain functions: What differing modalities show during Transcendental Meditation (TM) practice and afterward? How Effortless is TM practice?

*continued from page 5*

Travis et al (2009) Effects of Transcendental Meditation Practice on Brain Functioning and Stress Reactivity in College Students.

*International Journal of Psychophysiology*, 71 pp. 170–176

Walton, KG and DK Levitsky (2003) Effects of the transcendental meditation program on neuroendocrine abnormalities associated with aggression and crime. *Journal of Offender Rehabilitation*, pp. 67-87.

Walton, K.G., & Levitsky, D.K (1994). A Neuroendocrine Mechanism for the Reduction of Drug Use and Addictions by Transcendental Meditation. *Alcoholism Treatment Quarterly*, 11 (1/2), 89-117.

### Lecture III: The effects of the Transcendental Meditation on Gene Expression

**Special guest:** John Fagan, Ph.D.

Extensive research over a period of more than 45 years has demonstrated a wide range of beneficial effects of the Transcendental Meditation technique on physical, mental and emotional well-being. Consistent with these studies, research has also demonstrated that TM is a useful therapeutic intervention in acute PTSD, depression, and cardiovascular disease, and that health care utilization is reduced in populations that practice TM regularly.

Physiological and neurophysiological studies have also demonstrated that TM brings about physiological and neurophysiological states observed uniquely in practitioners of this technique. The physiological and neurophysiological processes by which TM exerts these effects have also been studied, showing that TM has profound effects on the hypothalamic-pituitary-adrenal (HPA) axis and on other regulatory networks.

The recent emergence of new biomolecular methods open up a new frontier making it possible to understand the molecular processes underlying the observed effects of TM. It is now possible to identify and characterize the transcriptomic, epigenetic, proteomic and metabolomic changes resulting from practice of this technique. The results of this research provide a foundation for understanding the molecular biological correlates of the physical, mental and emotional changes that take place when an individual practices the TM technique and the biomolecular correlates of higher states of consciousness. .

**Resources for further reference (not required) to be announced:**

As Dean of the College of Sustainability and Professor of Molecular Biology at Maharishi University of Management, USA, ([www.mum.edu](http://www.mum.edu)), Dr. Fagan uses transcriptomics and metabolomics to research the molecular biology of higher states of consciousness and the health and physiological effects of Transcendental Meditation.

Dr. John Fagan is a leading authority on food and agricultural sustainability, and a successful entrepreneur, having founded, built and sold a biotechnology company that pioneered innovative genetic tools that have advanced food sustainability, and helped define the global regulatory and commercial landscape for GMOs. He has shared his expertise globally through hundreds of presentations to government and industry leaders, scientists, and the public.

He serves on the boards of several organizations, including, (1) Chairman of the social venture, Global Family Farms ([www.globalfamilyfarms.com](http://www.globalfamilyfarms.com)), which improves farmer livelihoods and well-being in the developing world, providing training in regenerative organic agriculture and access to international markets; and (2) Chairman, Health Research Institute ([www.hrilibs.org](http://www.hrilibs.org)), which investigates the links between (a) regenerative agricultural practices, (b) crop nutritional value, and (c) consumer health and well-being. HRI collaborates widely to catalyze large-scale regeneration of the agricultural and food system.



## Lecture IV: The Transcendental Meditation Technique for You and Your Medical Practice

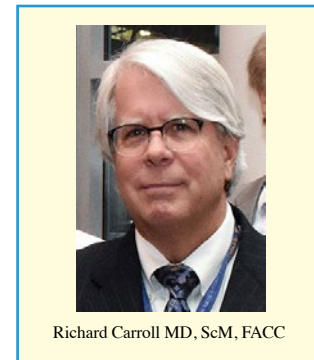
**Special guest:** Richard Carroll MD, ScM, FACC,

Dr. Carroll will review practical aspects of the Transcendental Meditation literature as relates to your medical education and practice, as well as positive benefits for your patients.

For example, over the past 20 years, the National Institutes of Health have funded more than \$30 million of research on the effects of the TM technique on heart health. Students will discuss recent research on the effects of the TM technique, including:

### Resources for further reference (not required):

- Anderson JW, Liu C, Kryscio RJ. (2008) Blood pressure response to Transcendental Meditation a meta-analysis. *Am J Hypertens*. Vol. 21: pp.310–316.
- Barnes VA, Orme-Johnson DW. (2012) Prevention and treatment of cardiovascular disease in adolescents and adults through the Transcendental Meditation Program: a research review update. *Current Hypertension Reviews*, Vol. 8:227–242 410.
- “Blood Pressure and the Transcendental Meditation Technique” <http://doctorsontm.org/high-blood-pressure>
- Brook et al. (April 22, 2013) Beyond Medications and Diet: Alternative Approaches to Lowering Blood Pressure: A Scientific Statement From the American Heart Association Hypertension. Published online <http://hyper.ahajournals.org/content/early/2013/04/22/HYP.0b013e318293645f.full.pdf>
- Carroll MD, SCM, FACC, RJ (2007) Complementary and Alternative Medicine; History, Definitions and What Is It Today? From Snyder, Lois, *Complementary and Alternative Medicine: Biomedical Ethics Reviews*, Humana Press, pp. 7–44.
- Castillo-Richmond A, Schneider RH, Alexander CN, et al. (2000) Effects of stress reduction on carotid atherosclerosis in hypertensive African Americans. *Stroke*; Vol.31:568–573.
- Mainquist, L. (2013). New American Heart Association Report Informs Doctors TM Lowers Blood Pressure. Transcendental Meditation Blog. <http://www.tm.org/blog/research/american-heart-association-informs-doctors-tm-lowers-blood-pressure/>
- Nidich, S., Rainforth, M., Haaga, D., et al. (2009). A randomized controlled trial on effects of the Transcendental Meditation Program on blood pressure, psychological distress, and coping in young adults. *American Journal of Hypertension*, Vol.22 (12), 1326–1331.
- Nidich, S. I., Fields, J. Z., Rainforth, M. V., et al. (2009). A randomized controlled trial of the effects of Transcendental Meditation on quality of life in older breast cancer patients. *Integrative Cancer Therapies*, Vol 8, 3, pp.228–234. NIH-Funded Scientific Research on the Transcendental Meditation Technique” <http://doctorsontm.org/national-institutes-of-health>
- Orme-Johnson DW, Barnes VA. (2013) Effects of the Transcendental Meditation Technique on trait anxiety: a meta-analysis of randomized controlled trials. *Journal of Alternative and Complementary Medicine*, Vol.19: pp.1–12
- Paul-Labrador M, Polk D, Dwyer JH, Velasquez I, Nidich S, Rainforth M, Schneider R, Merz CN. (2006) Effects of a randomized controlled trial of Transcendental Meditation on components of the metabolic syndrome in subjects with coronary heart disease. *Arch Intern Med.*; Vol. 166: pp.1218–1224.
- Rainforth MV, Schneider RH, Nidich SI, Gaylord-King C, Salerno JW, Anderson JW. Stress reduction programs in patients with elevated blood pressure: a systematic review and meta-analysis. *Curr Hypertens Rep.* 2007; Vol.9: pp.520–528.
- Schneider RH, Alexander CN, Stagers F, Rainforth M, Salerno JW, Hartz A, Arndt S, Barnes VA, Nidich SI. (2005) Long-term effects of stress reduction on mortality in persons > or = 55 years of age with systemic hypertension. *American Journal of Cardiology*; Vol. 95: pp.1060–1064.
- Schneider, RH. Grim, CE et al, (2012) Stress Reduction in the Secondary Prevention of Cardiovascular Disease: Randomized, Controlled Trial of Transcendental Meditation and Health Education in Blacks Circulation: Cardiovascular Quality and Outcomes; V. 5: pp. 750–758
- Walton KG, Schneider RH, Nidich S.( 2004) Review of controlled research on the Transcendental Meditation program and cardiovascular disease. Risk factors, morbidity, and mortality. *Cardiology Review*; V. 12: pp. 262–266. Video Excerpt: Dr. Robert Schneider on TM and the Heart Health Research (WMV Video (158 MB, 26 min.; Microsoft Windows Media Format)
- Zamarra, MD JW, Schneider MD, RH. et al. (1996) Usefulness of the transcendental meditation program in the treatment of patients with coronary artery disease. *The American Journal of Cardiology*, Vol 77, I 10, 15 pp. 867–870.



Richard Carroll MD, ScM, FACC

## Lecture V: The Role of the Transcendental Meditation Program in Reducing Medical Costs

**Special guest:** Robert E. Herron, Ph.D. Director of the Center for Health Systems Analysis in Fairfield, Iowa.

In their recent report, the trustees who oversee Medicare and Medicaid explained that these programs are unsustainable due to high and rising medical expenses. Why is this happening? Dr. Edwards Deming explained, “Every system is perfectly designed to achieve the results it gets.” Then, is our medical system “perfectly designed” to produce high health care expenditures, variable quality, too many medical errors, and negative medication side effects? How can we change the system to increase efficiency and decrease costs? We need to think creatively...what is the main driver of high medical expenses worldwide? While the financing and delivery of medical services influences total expenses, there is a deeper issue—health status. Healthy people generally have low or no medical costs.

Chronic stress harms mental and physical health and pushes medical costs higher. Stress is at epidemic levels. Because chronic stress is a leading driver of high medical expenses, if Medicare and Medicaid started covering the most effective stress-reduction method, the Transcendental Meditation (TM) technique, it would be possible to greatly reduce skyrocketing health care expenditures and rescue these programs without cutting benefits or raising taxes. Corporations could also save money with the TM technique.

More than 380 scientific studies, conducted at independent universities and institutions in 33 countries, and published in over 160 of the world’s leading peer-reviewed scientific journals have documented the wide-ranging benefits of TM practice for every aspect of life: mind, body, and behavior. These studies were conducted at many universities and research centers, including Harvard Medical School, Stanford Medical School, Yale Medical School, and UCLA Medical School. Many of these studies were randomized clinical trials and meta-analyses. Several randomized clinical trials were funded by the National Institutes of Health to examine the impact of the TM program on cardiovascular health. If the TM technique was practiced by enough people, this procedure could play a major role in decreasing national health expenditures, which are close to 20% of GDP

### Resources for further reference (not required):

- Alexander, C.N., M.V. Rainforth, and P. Gelderloos, Transcendental Meditation, self-actualization, and psychological health: A conceptual overview and statistical meta-analysis. *Journal of Social Behavior and Personality*, 1991; 6(5): 189–248.
- Anderson DR, et al. The relationship between modifiable health risks and group-level health care expenditures. *American Journal of Health Promotion*, 2000; 15(1): 45–52.
- Herron, RE. Changes in physician costs among high cost Transcendental Meditation practitioners compared with high cost non-practitioners over 5 years. *American Journal of Health Promotion*, 2011; 26(1): 56–60.
- Herron, RE. *New Knowledge for New Results: A Comprehensive Strategy for Reducing Skyrocketing Medical Costs* (Fairfield, IA: 1st World Publishing; April, 2008).
- Herron, RE, Cavanaugh K. Can the Transcendental Meditation program reduce medical expenditures of older people? A longitudinal medical cost minimization study in Canada. *Journal of Social Behavior and Personality*, 2005; 17:415–442.
- Herron, RE, Hillis SL. The impact of the Transcendental Meditation program on government payments to physicians in Quebec: An update. *American Journal of Health Promotion*, 2000; 14:284–291.
- Orme-Johnson, DW. Medical care utilization and the Transcendental Meditation program. *Psychosomatic Medicine*, 1987; 49:493–507.
- Orme-Johnson, DW, Herron R. An innovative approach to reducing medical care utilization and expenditures. *American Journal of Managed Care*, 1997; 3(1):135–144.
- Orme-Johnson, D.W. and V.A. Barnes, Effects of the Transcendental Meditation technique on trait anxiety: A meta-analysis of randomized controlled trials. *Journal of Alternative and Complementary Medicine*, 2014; 20(5): 330–341.



Robert E. Herron, Ph.D. is Director of the Center for Health Systems Analysis in Fairfield, Iowa. He has conducted extensive research on how to improve medical system effectiveness and reduce national and corporate medical expenditures. His recent book is entitled *New Knowledge for New Results: A Comprehensive Strategy for Reducing Skyrocketing Medical Costs* (Fairfield, IA: 1st World Publishing; April, 2008).



## Lecture VI: Evidence for Preventive Medicine, Developing Resilience, and Reversing the Impact of Posttraumatic Stress

**Special guest:** COL Brian Rees MD, veteran of five tours in Iraq and Afghanistan, former VA physician, civilian MD, and published researcher.

Posttraumatic Stress (PTS) is an enormous problem for the U.S. military. Up to 20% of veterans returning from Iraq and Afghanistan suffer from some of the range of symptoms of PTS including difficulty in fitting back into American society, difficulty with self-control, substance abuse, depression, crippling anxiety and suicidal impulses. More soldiers take their lives after returning home than were lost in combat.

The military and the VA have tried to work this problem with the help of trained psychiatrists and psychologists, using gold-standard treatments such as Prolonged Exposure Therapy and Cognitive Processing Therapy. Although conventional approaches to PTS can increase one's self-confidence and sense of mastery and provide better coping mechanisms, practice of the Transcendental Meditation technique appears to provide a broader spectrum of benefits within a short time frame, including increases in ego development, executive functioning, personality integration, creativity, problem solving and intelligence-improvements well beyond disorder-specific symptom reduction.

A pilot study by Rosenthal et al showed a significant reduction in PTSD symptoms after several months of TM practice. Follow-up studies with larger sample sizes and randomized controls are under way.

Posttraumatic Stress is not only a problem for combat veterans. Many people who are victims of violence or trauma also exhibit the symptoms. For instance, refugees in Africa suffer measurable PTS symptoms. Studies published in the *Journal of Traumatic Stress* showed clinically significant reductions of PTS symptoms after a month among those who learned the TM technique, with symptoms falling below the 'non-symptomatic' level.

The Transcendental Meditation Technique shows great promise for helping those suffering from PTS. Further, by building up resilience, it also shows promise for preventing or minimizing the experience of PTS as a result of traumatic experiences.

We will review my research on the effects of the TM technique on Posttraumatic Stress symptoms among Congolese refugees. We will also examine my paper discussing the range of techniques that might help the military deal with PTS and build resilience in soldiers.

### Suggested Readings (optional):

Rees B. Overview of outcome data of potential meditation training for soldier resilience.

*Military Medicine*. 2011 Nov; 176(11):1232-42.

Rees B, Travis F, Shapiro D, Chant R., Reduction in posttraumatic stress symptoms in Congolese refugees practicing Transcendental Meditation. *Journal of Traumatic Stress*. 2013 Apr; 26(2):295-8. doi: 10.1002/jts.21790.

Rees B, Travis F, Shapiro D, Chant R. Significant reductions in posttraumatic stress symptoms in Congolese refugees within 10 days of Transcendental Meditation practice. *Journal of Traumatic Stress*. 2014 Feb; 27(1):112-5.



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