

# STRESS AND STRESS MANAGEMENT IN DENTAL PRACTICE

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*Dental Psychology lecture*

2020. February 17.

Institute of Behavioural Sciences

## Learning objectives

- Understand how stress can effect your health
- Symptoms related to chronic stress
- Dental anxiety and it's management
- Strategies to cope with stress
- Understand the stages of change model

"Stress is the state manifested by a specific syndrome which consists of all the nonspecifically induced changes within a biologic system."

(Selye 1956)



single, nonspecific reaction of the body to a demand ...

eustress                  distress  
                                  ↔

**Hans Selye (1907-1982)**  
Stress without distress  
1976, 24-25. pages

- Stressor: the stimulus causing, triggering the stress reaction
- Stress: the physiological state of the body triggered by a stimulus

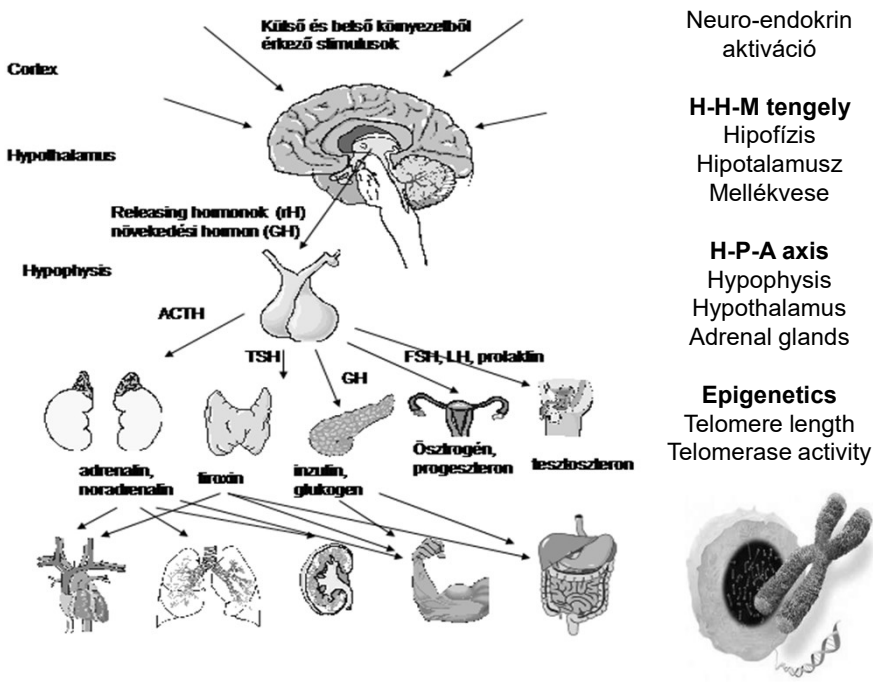
**Cannon: Alarm reaction**  
**Fight or flight or freeze**

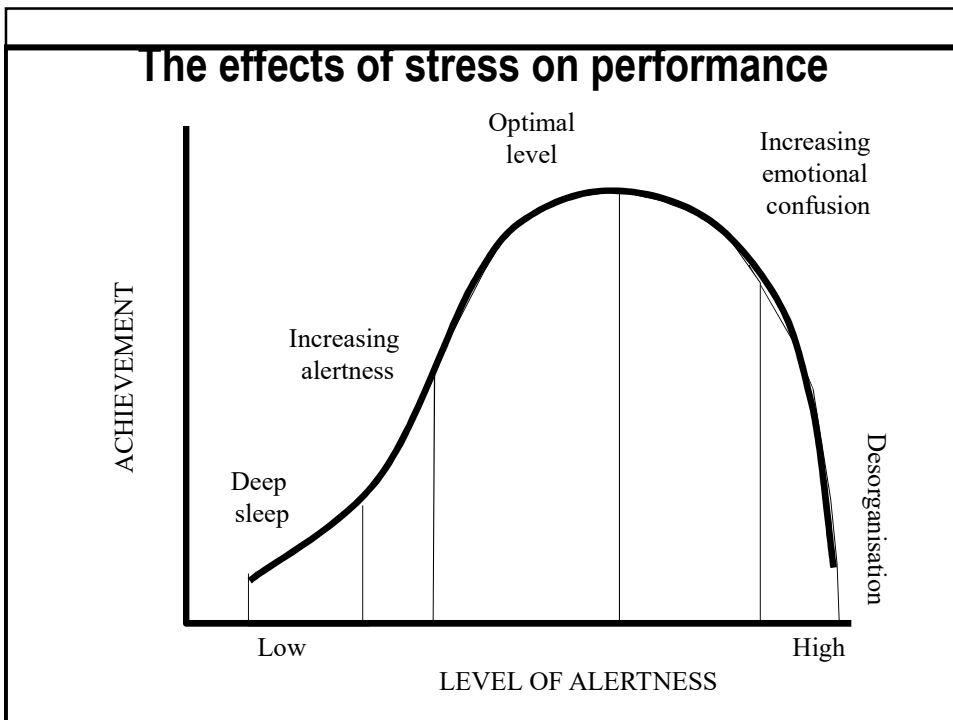
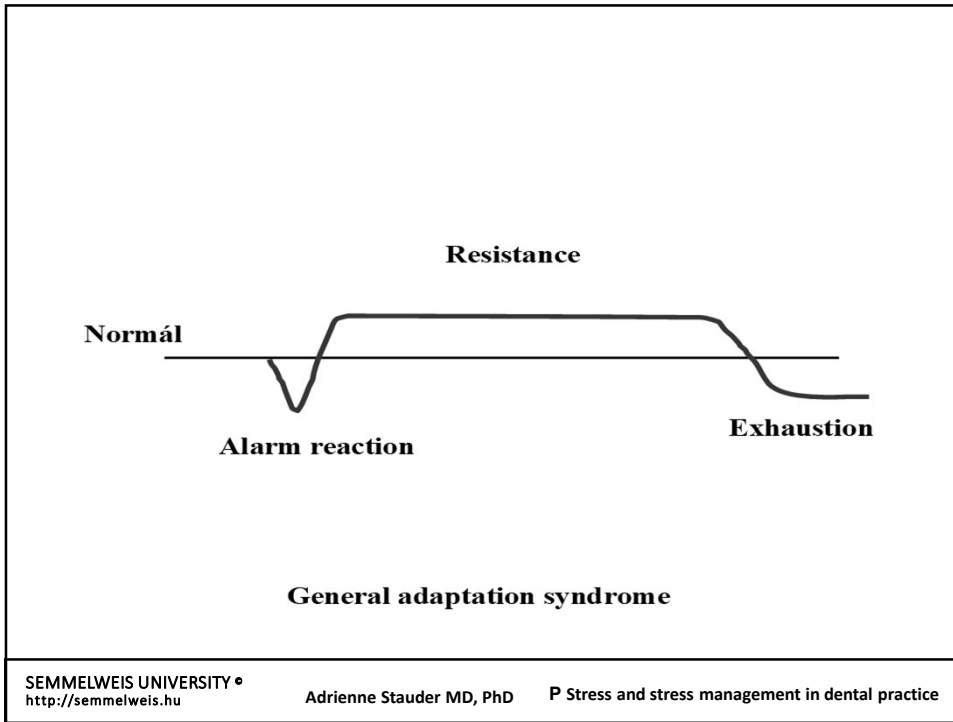


**Stress hormones: epinephrin, cortisol**

Muscle tension increasing  
 Heart rate, respiratory rate increasing  
 Blood pressure elevating  
 Blood glucose and fatty acids increasing  
 Alertness increased, attention focused

Gastrointestinal functions decreased  
 Immune functions: increased than decreased  
 Reproductive system: decreased functions





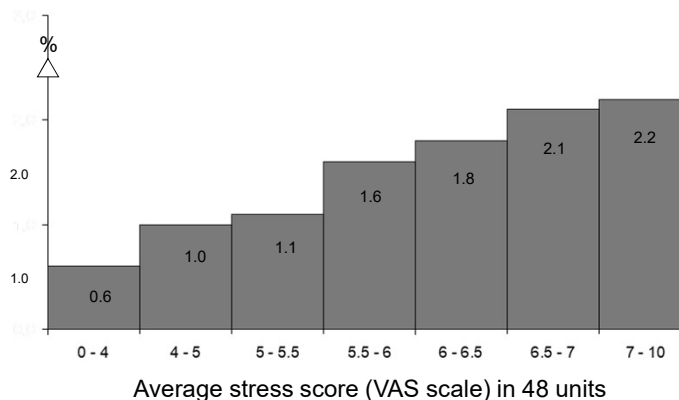
## Psychological reactions to stress: „positive stress“

- Increased attention and alertness, vitality
- Thinking is faster
- Creativity
- Successful problem solving
- Evolutionary purposes, adaptation („stress immunity“, coping mechanisms) !

## Stress levels among nurses and critical incidents

A study of 293 nurses during 3 months

Critical incidents  
(falls, medication errors, other errors)



Dugan et al. J Nurs Care Qual 1996;10:46-58

Somatic,  
 psychological  
 and behavioral  
 symptoms of  
 chronic stress

## Salt of Life or Kiss of death?



### Somatic, psychological and behavioral symptoms of chronic stress

Somatic symptoms	Psychological symptoms	Behavioral symptoms
Headache	Anxiety	Loss of appetite
Chest pain	Tension	Bursts of anger
Palpitations	Irritability	Substance dependency
High blood pressure	Depression	Alcohol abuse
Dyspnea	Sadness	Smoking
Muscle pain	Anger	Social withdrawal
Back pain	Mood shifts	Crying spells
Bruxism	Dissatisfaction	Conflict seeking
Diarrhae	Unsteadiness	Decreased performance
Obstipation	Confusion	Loss of responsibility
Stomachache	Burnout	
Perspiration	Memory problems	
Tiredness	Feeling offended	
Sleep problems	Feelings of guilt	
Weight problems	Difficulty concentrating	
Sexual problems	Negative attitudes	
Skin rushes		

## Oral symptoms of stress

- Routine dental examinations and cleanings, dentists are able to detect:
- orofacial pain,
- bruxism,
- temporomandibular disorders (TMD),
- mouth sores
- gum disease.

## Bruxism

- Grinding teeth and clenching jaws
- Associated with sleep disorders
- abnormal bite or missing teeth
- Stress, anxiety, nervous tension, anger

Signs of bruxism include:

- Tips of the teeth appear flat
- Tooth enamel is rubbed off, causing extreme sensitivity
- Tongue indentations

## Stressors



Traumas, disasters - PTSD Posttraumatic stress disorder

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## Important life events



### Holmes and Rahe Life Event Scale

Death of a spouse 100  
Divorce 73  
Marital separation 65  
Imprisonment 63  
Death of a close family member 63  
Personal injury or illness 53  
Marriage 50  
Dismissal from work 47  
Marital reconciliation 45  
Retirement 45  
...  
...  
Change in eating habits 15  
Vacation 13  
Christmas 12  
Minor violation of law 11  
Score of 300+: At risk of illness

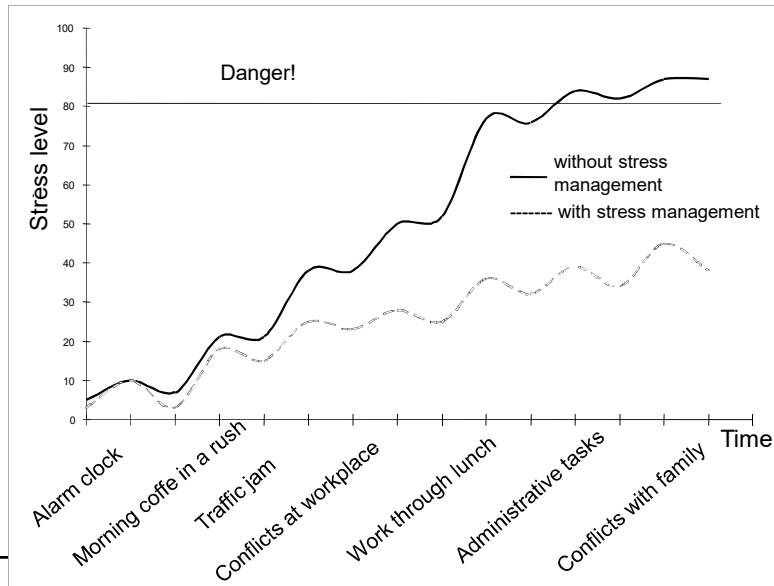
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## Chronic daily stressors



## High dental anxiety

Prevalence: 1/ 6-7

Etiology:

- Perception of the dental environment
- Previous negative experience
- Comorbid psychological / mental health condition:  
fear of social evaluation, fear of germs, fear of being away from the safety of home, hopelessness

Vituous circle (40%): avoidance of dental visits -worsening of problems - more intensive and potentially traumatic treatment –reinforcement of the fear–more avoidance

JM Armfield, LJ Heaton Management of fear and anxiety in the dental

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clinic: a review. Australian Dental Journal 2013; 58: 390–407  
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**PREVIOUS NEGATIVE DENTAL EXPERIENCE**

**LACK OF CONTROL DURING DENTAL TREATMENT**

**CAUSES OF DENTAL ANXIETY**

**EXPERIENCING EXTREME PAIN AFTER TREATMENT**

**LACK OF UNDERSTANDING FROM THE DENTIST**

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## Management of high dental anxiety

- Identification and assessment
- Trusting relationship
- Realistic information, familiarisation (Tell-show-do)
- Providing the sense of control and predictability (rest breaks, signaling)
- Distraction (video, music)



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 citation: Australian Dental Journal 2013; 58: 390–407

## Management of high dental anxiety

- Cognitive-behavioural intervention (desensitization, cognitive restructuring)
- Relaxation
- Pharmacological support (nitrous oxide, oral sedation)
- Hypnosis in dentistry: watch videos on Youtube!

eg. [https://www.youtube.com/watch?v=it\\_UfJ2by4k](https://www.youtube.com/watch?v=it_UfJ2by4k)

JM Arnfield, LJ Heaton Management of fear and anxiety in the dental  
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 http://semmelweis.hu. Australian Dental Journal 2012; 58: 390-407  
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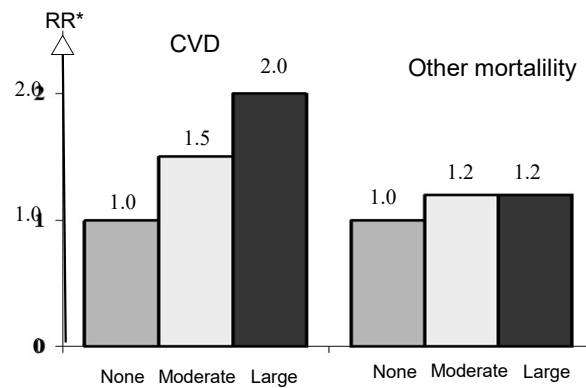
## Main stressors in the working population (Hans Selye Mental Health Program, 2009)



N=2323 Stressors	Medium or high (%)
Work	75,7
Coworkers	48,1
Couple relationship	29,7
Parent	24,6
Child	25,9
Own illness	24,6
Illness of a close relative	36,3
Finances	68,9

## Down sizing and mortality

7.5 year follow-up, 22.430 state employees, not-downsized.



\* Controlled for age, gender, SES

Downsizing

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Mag B Dent J 2004; 328:555-558

## Stress of GB dental practitioners

- Work-related factors accounted for half of the perceived stress:
- fragility of dentist-patient relationship,
- time and scheduling pressures
- staff and technical problems
- job dissatisfaction
- number of hours worked per week
- 60% tense or depressed, headache, sleep
- alcohol use was associated w work stress

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Mag B Dent J 2004; 328:555-558

# Burnout

Herbert Freudenberger 1974:

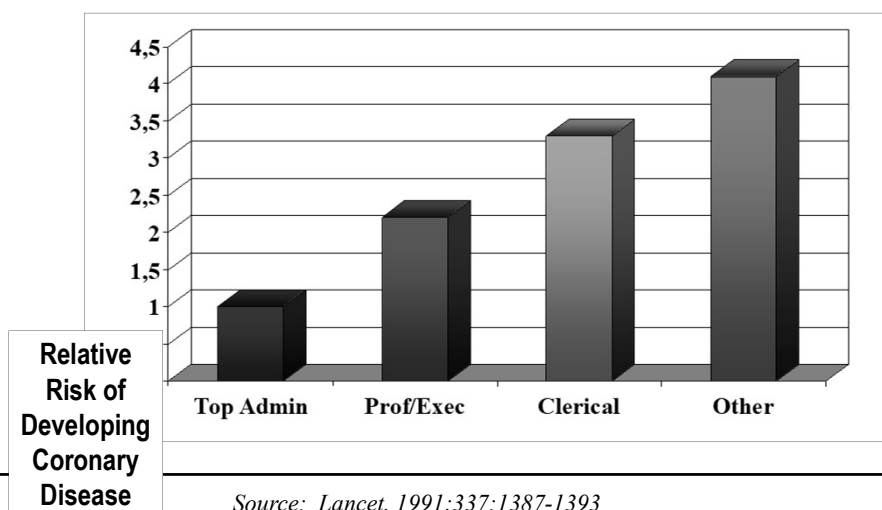
*Burnout: The High Cost of High Achievement.*

Reaction to prolonged or chronic job stress  
characterized by three main dimensions:

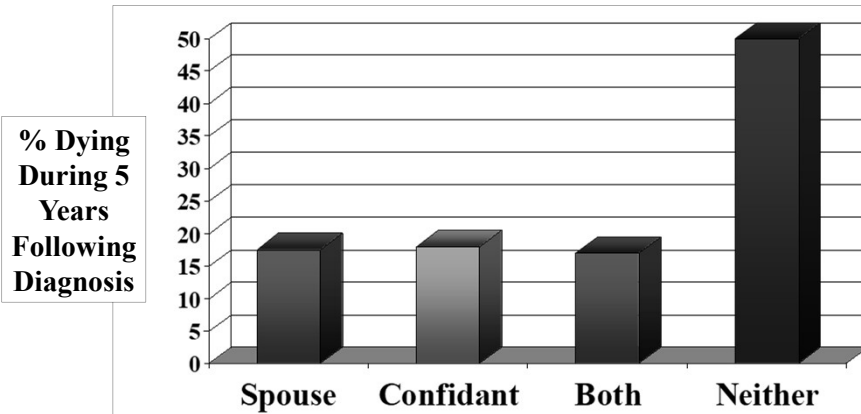
- Emotional exhaustion,
- Depersonalisation / cynicism (alienation from work and patients),
- Reduced professional performance.

→ → → physical symptoms and mental health problems

## Low Status Raises Coronary Disease Risk in British Civil Servants



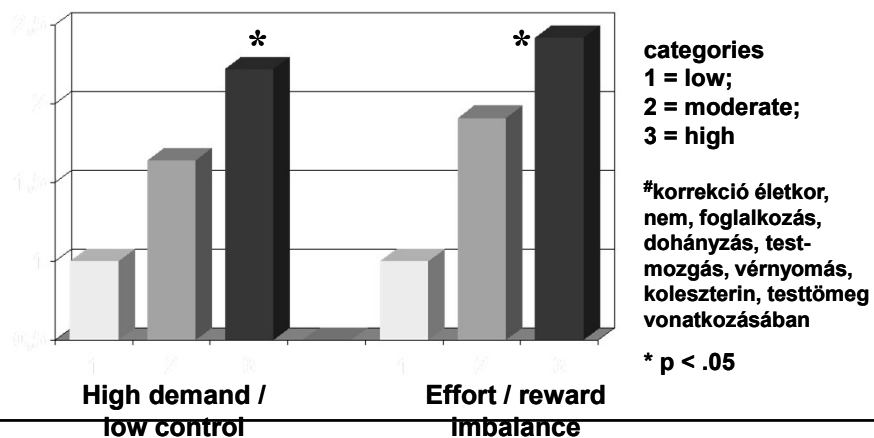
## Social Isolation Links to Higher Mortality in Coronary Heart Disease Patients



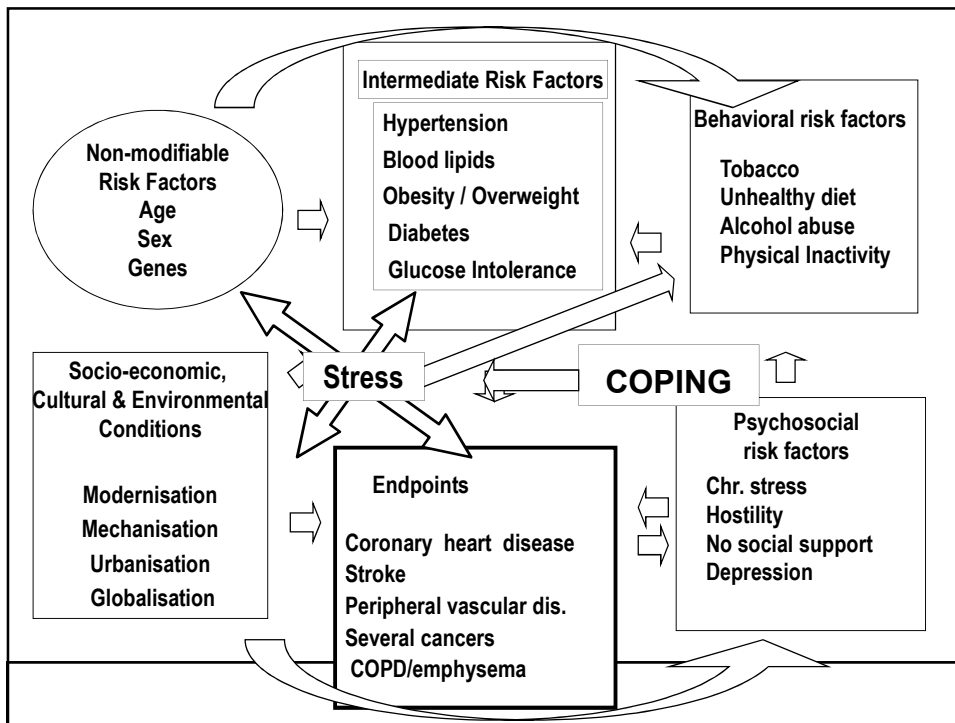
Source: *JAMA*, 1992;267:520-524

## Work stress and cardiovascular mortality (corrected\* odds ratio)

N=812 (73 deaths); mean follow-up 25,6 years

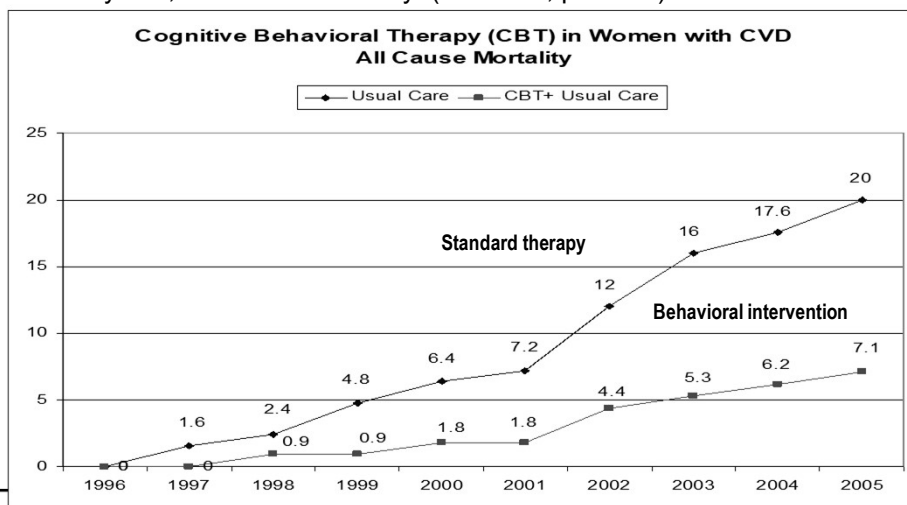


Forrás: M. Kivimäki et al. (2002), *BMJ*, 325: 857



### STOCKHOLM WOMEN'S INTERVENTION TRIAL FOR CORONARY HEART DISEASE (SWITCHD) –severe heart disease, N=235

After 7 years, 67% lower mortality (OR=0.33, p=0.007)



Kristina Orth-Gomér et al. Circulation 2009, 1:25-32



## European Guidelines on cardiovascular disease prevention in clinical practice (version 2012)

The Fifth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of nine societies and by invited experts)

Developed with the special contribution of the European Association for Cardiovascular Prevention & Rehabilitation (EACPR)<sup>†</sup>

Clinical practice/education



### Psychosocial aspects in cardiac rehabilitation: From theory to practice. A position paper from the Cardiac Rehabilitation Section of the European Association of Cardiovascular Prevention and Rehabilitation of the European Society of Cardiology

Nana Pogosova<sup>1</sup>, Hugo Saner<sup>2</sup>, Susanne S Pedersen<sup>3,4</sup>, Margaret E Cupples<sup>5</sup>, Hannah McGee<sup>6</sup>, Stefan Höfer<sup>7</sup>, Frank Doyle<sup>8</sup>, Jean-Paul Schmid<sup>9</sup> and Roland von Känel<sup>9,10</sup>, on behalf of the Cardiac Rehabilitation Section of the European Association of Cardiovascular Prevention and Rehabilitation of the European Society of Cardiology<sup>\*</sup>

European Journal of Preventive Cardiology  
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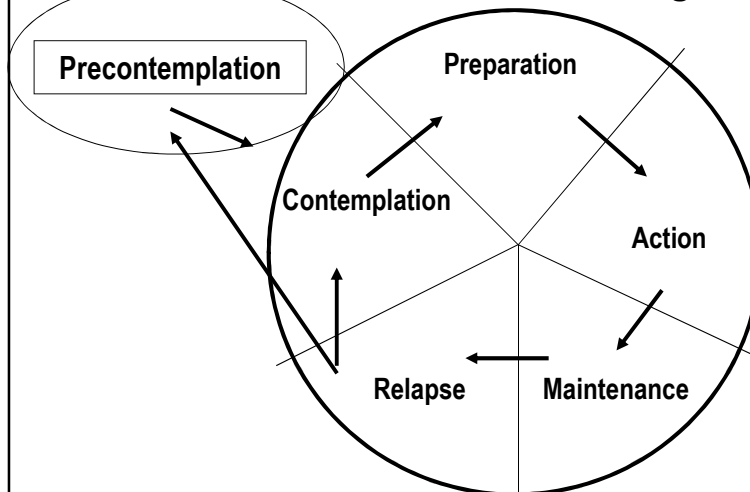
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#### Recommendations on the management of psychosocial factors

Recommendations	Class <sup>a</sup>	Level <sup>b</sup>	GRADE	Ref <sup>c</sup>
Multimodal behavioural interventions, integrating health education, physical exercise, and psychological therapy for psychosocial risk factors and coping with illness, should be prescribed.	I	A	Strong	195, 197–200
In the case of clinically significant symptoms of depression, anxiety, and hostility, psychotherapy, medication, or collaborative care should be considered. This approach can reduce mood symptoms and enhance health-related quality of life, although evidence for a definite beneficial effect on cardiac endpoints is inconclusive.	IIa	A	Strong	85, 86, 199, 200, 343–347

<sup>a</sup>Class of recommendation.  
<sup>b</sup>Level of evidence.  
<sup>c</sup>References.

## Change is a process! Transtheoretical model of the stages of change



Prochaska JD, DiClemente CC, Norcross JC. In search of how people change. Applications to addictive behaviours. Am Psychologist 1992;47:1102-1114



## Unhealthy behaviour often serves as immediate stress reduction



Stress  
management  
techniques

## Physical activity as stress reduction

Gardening  
Walk, excursion  
Bicycle, dance  
Yoga, thai-chi, chikung  
Jogging, swimming  
Aerobic, body-building  
Any sport....



Regular, not-exhausting (min. 30 minutes/day)

## Motivation



**“What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?”**

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## Coping

Conscious behavior

Its goal is to maintain or restore the physical and psychological equilibrium (homeostase) of the organism



- Problem focused
- Emotion focused
- Support seeking

Lazarus, Folkman 1984

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God, give us grace to accept with serenity  
the things that cannot be changed,  
Courage to change the things  
which should be changed,  
and the Wisdom to distinguish  
the one from the other.

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### **Williams Life Skills® (WLS) program stress management and psychosocial skills**

- Behavioral intervention, manualized, standardized
- Developed by Virginia and Redford Williams (Duke Egyetem, Durham, NC, USA)
- Based on international experiences
- Complex, structured, handouts, workbooks
- Self-help DVD + Workbook
- Scientific evidences of effectiveness for various target groups
- Hungarian translation, cultural adaptation
- Since 2004 > 4000 participants, >200 health care professional

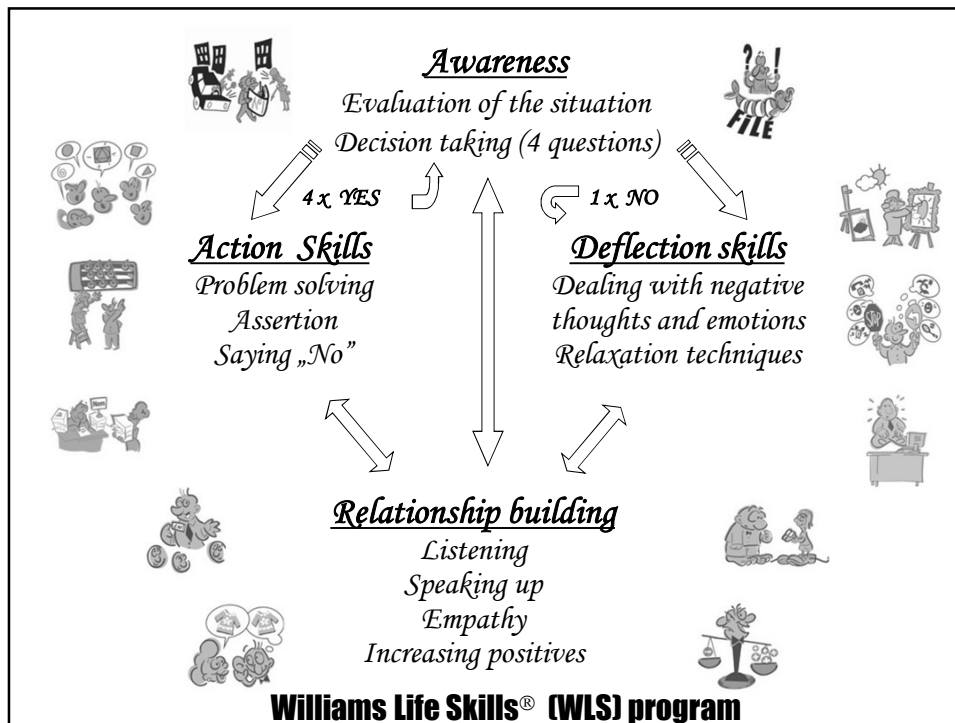


[www.williamslifeskills.com](http://www.williamslifeskills.com), [www.eletkeszsegek.hu](http://www.eletkeszsegek.hu)

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## WLS methods



- Simple cognitive behavioral therapy technics
- 16-20 hours small group skills training
- During the thematic discussions the participants own stress related problems are discussed.
- Psychoeducation (handouts!)
- Cognitive techniques (thought diary, reframing)
- Behavior therapy (role plays)
- Relaxation ( 3 short simple techniques)
- Model learning (Facilitator, peers in the group)
- Group: sharing, support, mirror, practice

## Identification of the stressors

- What is the situation that causes my stress? (FACTS) What is the worse for me in this?



- What are my THOUGHTS of the situation?
- What are my FEELINGS related to the situation?

- What do I do? What is my BEHAVIOR?
- What are the consequences?



## Evaluation and Decision taking

- Is this situation important for me?
- Are my thoughts and feelings appropriate considered the facts?
- Can I change the situation in a positive way?
- Is it worth to act, considered the point of view of others and of my own?

## The cognitive component

Human ability: Self-stressing



- Rumination
- Negative thoughts
- Cognitive distortions:
  - Catastrophising
  - Overgeneralization
  - Negative filtering
  - Black or white

## How to manage negative thoughts?

- Thought stop
- Distraction
- Meditation / mindfulness
- „Hour of worry”
- Reframing



## REFRAMING

identify cognitive distortions – find alternative,  
more realistic thoughts

### THE FREEDOM OF CHOICE



*Félig üres pohár*



*Félig teli pohár*



*A szükségesnél kétszer  
nagyobb pohár*

*Kezedben a döntés!*

## Decrease bodily tensions

- Rest
- Sleep
- **Relaxation**
- Meditation



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## One-Minute Relaxation Exercise

Picture a STOP sign, and say, "STOP," to yourself.  
Take three slow deep breaths, and say, "Relax," on each exhale.  
Inhale while **clenching fists**, then relax them on exhale.  
Inhale while **clenching toes**, then relax them on exhale.  
Inhale while **shrugging shoulders**, then relax them ...  
Inhale while **tilting head to right**, then straighten ...  
Inhale while **tilting head to left**, then straighten ....  
Final take a deep breath, and let relax your whole body...

Move your feet, your hands, open eyes, feel refreshed.

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## 3-Minute Breathing Meditation Exercise

- Find a quiet place, and sit comfortably.
- Place both feet flat on the floor, arms uncrossed.
- Focus your attention on your breathing,  
Begin counting: "Inhale...1, Inhale...2, Inhale...3, Inhale...4."
- After the fourth breath, resume counting beginning with  
"Inhale...1."
- Do not to alter or regularize your breathing.
- Observe the physical sensation of each breath as it passes  
through your nose or mouth. Does this breath feel warm, or  
cool? Is it a quick breath, or a slow one?
- If you are not sure what number of breath you are on,  
immediately begin again with "Inhale...1."
- 

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## Good communication, Assertion



Share your thoughts and feeling

Express your needs

Respect the needs of others

Increase the positives

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## Understanding others (empathy, tolerance)



- Change your perspective
- Active listening
- Express your understanding

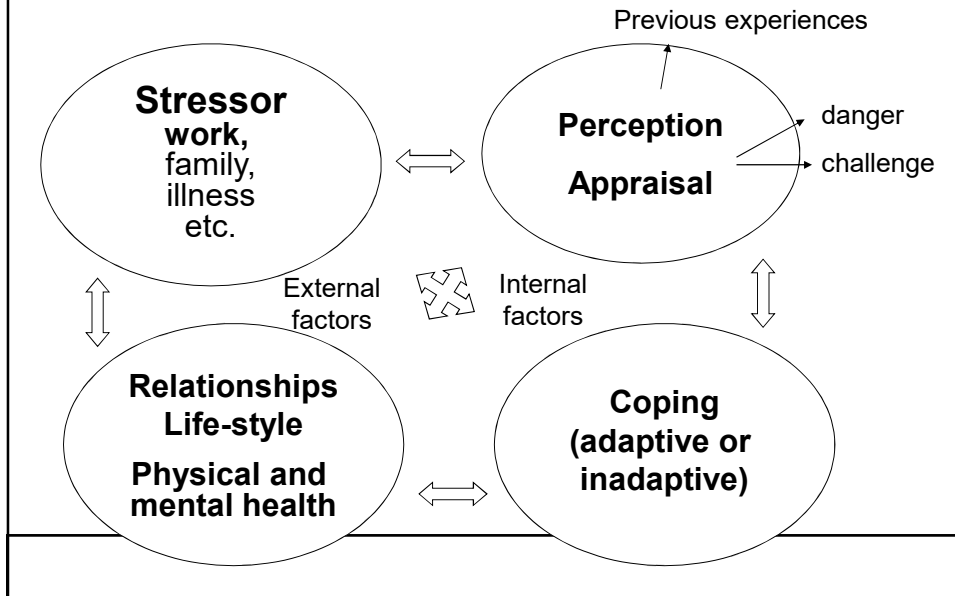
**Understanding**

≠

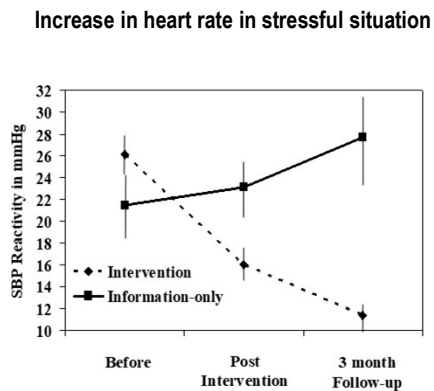
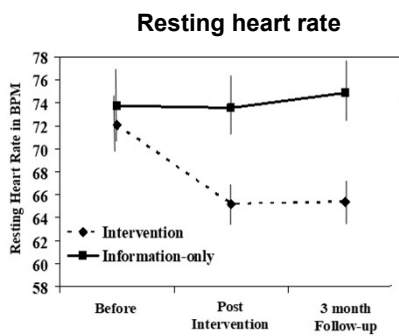
**Agreement**

!!!

## Key message: Multimodular interventions



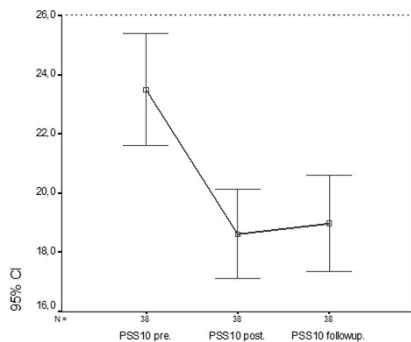
## WLS after coronary bypass



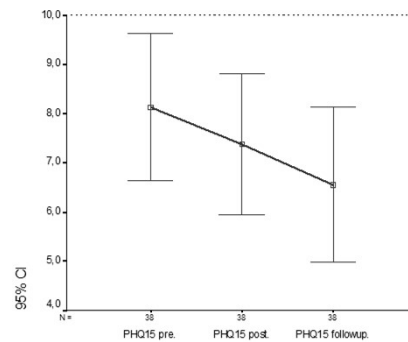
*Bishop GD és mtsai, American Heart Journal, 2005,150:602-9*

### Long term effects of Williams Lifeskills Stressmanagent training (pre, post, 6 month, N=42)

Perceived stress



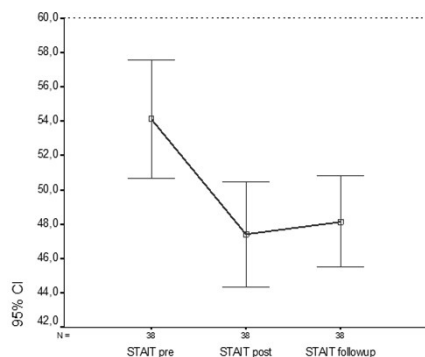
Subjective somatic symptoms



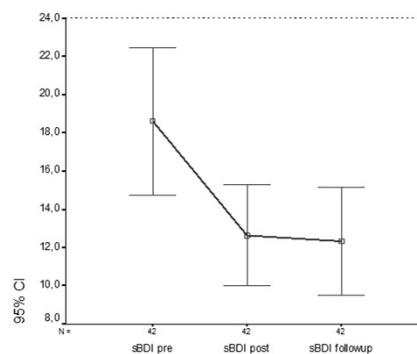
Stauder A és mtsai: Int J Behav Med. 2010;17(1):25-32.

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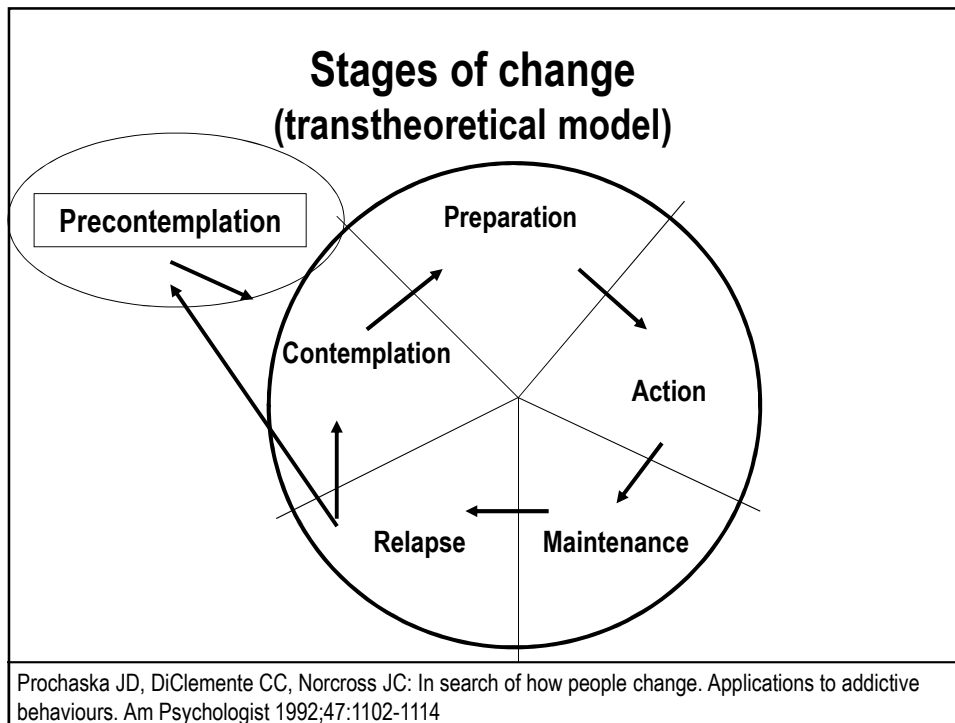
anxiety (STAIT)



Depression (BDI)



Stauder A és mtsai: Int J Behav Med. 2010;17(1):25-32.



### Focused dialogue, helping questions to facilitate change

**First step: determine in which stage of change your client is**

*What do you think of your smoking / drinking / physical activity / way of learning for the exams?*

*Have you ever been thinking about changing?*

*What have you already tried in order to change?*

# 1. Precontemplation

## Characteristics:

- Lack of awareness, denial of the problem.
- The problem is identified by others.
- Show reactance when pressured.

## Strategies:

- Express concern, ask permission to discuss
- Give informations, encourage to think or read

# 2. Contemplation

## Characteristics

- Begin to consider behavior change
- Think about alternative solutions
- Ask informations

## Strategies:

- Elicit perspectives, discuss alternatives.
- Help identify pros and cons of change.
- Suggest trials.

## Personal attitudes towards smoking

Why do I like smoking?

.....  
.....  
.....

What I don't like in smoking?

.....  
.....  
.....

The patient  
„works“!

Reasons for quitting: early death, severe diseases, etc. .



Obstacles of quitting - what do you think that you would  
lose if you stop smoking?

## 3. Preparation / determination

### Characteristics:

- Understand that change is needed.
- Commitment to specific goals, methods.
- Postpone start date for change.

### Strategies:

- Discuss action plan (practical advices).
- Set start date.
- Encourage to announce publicly.

### Action plan (5+1 days)

- 5 days before quitting :

- 4 days before quitting .:

- 3 days before quitting :

- 2 days before quitting :

- 1 day before quitting :

## 4. Action

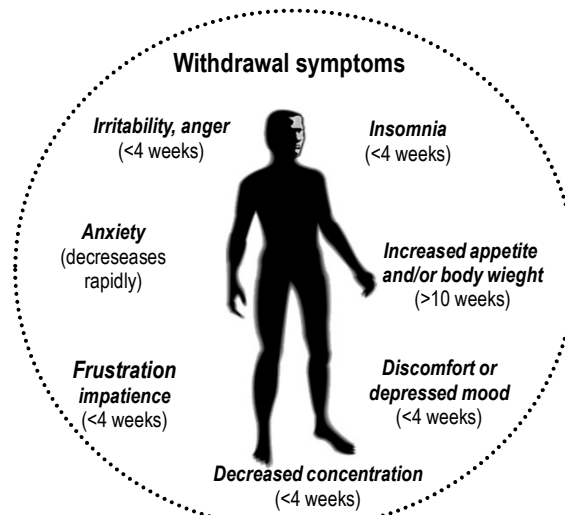
### Characteristics

- Follows plan to change
- Can describe plan in details.
- Committed to face obstacles, resist slips .
- Vulnerable to abandon effort impulsively.

### Strategies:

- Discuss the plan, help to modify if necessary.
- Discuss difference between slips and relapse.
- Help anticipate how to handle slips.
- **Emphasize pros of change.**

## Physical and psychological symptoms making behavior change difficult<sup>1,2</sup>



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Smoking Cessation. 1st ed. Oxford, United Kingdom. Health Press Limited. 2004.

## 5. Maintenance

### Characteristics

- Accomplished change.
- Had some slips already – resist or loose ground.
- Feel improvements as a result of the change
- May develop lifestyle that precludes relapse.

### Strategies:

- Show support and admiration, reinforcement.
- Ask about slips, wavering of commitment.
- Reflect long-term benefits of the new behavior.
- Help to correct eventual mistakes.

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## Relapse

### Characteristics

- Consistent return of the problem behavior.
- Begins as slips, not consistently resisted.
- May cycle back to precontemplation, contemplation

### Strategies:

- Frame relapse as normal – opportunity to learn.
- This is an experience that contribute to definitive change („when” next change attempt instead of - „if”).
- Remind the reasons for changing.
- Important to lessen time spent in this stage.

## How to deal with emerging problems?

• Expected consequences?  
(physical, mental, social)

• Withdrawal symptoms?

• Resist temptations?

• How to replace smoking?  
Other activities, social support, stress management

The patient's  
perspectives

## **Motivational interviewing**

Goals: establish rapport, elicit change talk, and establish commitment language, and mobilize the resources of the client.

Principles:

- Express empathy.
- Avoid confrontation
- Develop discrepancy.
- Roll with resistance.
- Support self-efficacy.

## **Minimal intervention: 5-step process to reduce cigarette smoking**

- (1) Asking every patient about tobacco use,
- (2) Advising all smokers to quit,
- (3) Assessing smokers' willingness to make a quit-attempt,
- (4) Assisting smokers with treatment and referrals,
- (5) Arranging follow-up contacts

By the United States Public Health Service (USPHS).

## Epigenetics

- (Reversible) changes in gene activity which are not caused by changes in the DNA sequence.
- It is the study of the regulation of gene expression, the manifestation of certain phenotypes from the genotype
- Regulation of activity of certain genes influenced by environmental factors, mainly not hereditary.
- Reversible changes in the chromatin DNS szekvencia változása nélkül

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## 2009 Nobel Prize in Medicine



The Nobel Prize in Physiology or  
Medicine 2009

"for the discovery of how chromosomes are protected by telomeres and the enzyme telomerase"



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**Elizabeth H. Blackburn**

© 1/3 of the prize

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**Jack W. Szostak**

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### Telomeres:

- 'cap-like' regions at the ends of chromosomes, play a vitally important part in preserving the integrity and stability of chromosomes during DNA replication.
- **Telomerase enzyme:**
- the 'anti-aging' or 'immortality enzyme', makes possible the
- recursive division of cells without damage.
- ensures, at least in certain cells, that chromosomal DNA is not shortened during replication.
- this enzyme also plays a part in the development of the ability of cancer cells to divide endlessly.