

# Role of Health Technology Assessment

– A European perspective

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**Technology means**

**APPLIED SCIENCE**

# Health Technology

The equipment, devices and drugs, and the medical and surgical procedures used in prevention, diagnosis, treatment, and rehabilitation.



# Health Technology Assessment

HTA



# The process of HTA

- A systematic review of the scientific literature
- Cost-effectiveness analysis
- Ethical and social considerations
- Policy options



## Countries with agencies/institutions for HTA

- Australia
- Austria
- Canada
- Chile
- Cuba
- Denmark
- Finland
- France
- Germany
- Hungary
- Israel
- Latvia
- Lithuania
- New Zealand
- Norway
- Poland
- Spain
- Sweden
- Switzerland
- The Netherlands
- United Kingdom
- United States



# A selection of completed assessments by SBU

- Back pain
- Alcohol and drug abuse
- Preoperative routines
- Bone density measurement
- Prostate cancer screening
- Urinary incontinence
- Asthma and COL
- Radiotherapy in cancer treatment
- Patient–doctor relationship
- Hypertension
- Stroke
- Routine ultrasound in pregnancy
- Oestrogen Treatment
- Stomach ulcer
- Smoking cessation
- Prevention by antioxidants
- Prevention by life-style changes



# Working days lost due to

## Strikes/lockouts

1980	4.478.500
1985	504.200
1990	770.400
1995	926.100
1999	78.700





## Working days lost due to

	<b>Strikes/lockouts</b>	<b>Sickness absence</b>
1980	4.478.500	96.167.000
1985	504.200	93.656.000
1990	770.400	113.513.000
1995	926.100	57.000.000
1999	78.700	72.000.000



## Methods used in treatment of back pain

Acupuncture	Electromagnetic therapy	Neck support
Antidepressants	Health resorts	Paracetamol
Back exercises	Heat	Patient education
Back School	Infrared light	Physical exercise
Behavioral therapy	Injections in facet joints	Rest/bed-rest
Biofeedback	Injections in ligaments	Shortwave diathermy
Colchicine	Injections in triggerpoints	Steroid injections
Cold	Laser therapy	Surgical procedures
Cold spray and stretching	Manual therapy	TENS
Continued activity	Massage	Traction
Corsets	Multidisciplinary treatment	Ultrasound
Cortisone	NSAIDs	



## Number of studies on back pain

Total	22 000
Thereof RCT:s	1 000
Studies examined by SBU	2 000



# Grading of evidence

***Strong evidence*** – consistent findings in two or several scientific studies of high quality.

***Moderate evidence*** – consistent findings in two or several scientific studies of acceptable quality.

***Limited evidence*** – only one study available or inconsistent findings in several studies.

***No evidence*** – no study of acceptable scientific quality available.



## Low Back Pain

		<b>Acute</b>		<b>Chronic</b>
Rest/bed-rest	A	Strong evidence against		
Traction	C	Limited evidence for	A	Strong evidence against
Antidepressants	D	No evidence	B	Moderate evidence against
Biofeedback	D	No evidence	B	Moderate evidence against
Epidural steroid injections no nerve root pain	D	No evidence	B	Moderate evidence against
Cold	D	No evidence	D	No evidence
Heat	D	No evidence	D	No evidence
Injections in triggerpoints	D	No evidence	D	No evidence
Injections in ligaments	D	No evidence	D	No evidence
Massage	D	No evidence	D	No evidence
Shortwave diathermy	D	No evidence	D	No evidence
Ultrasound	D	No evidence	D	No evidence
Acupuncture	D	No evidence	C	Limited evidence
Corsets	D	No evidence	C	Limited evidence
Back exercises	A	Strong evidence, not more effective than other treatments	A	Strong evidence for

# Low Back Pain

		<b>Acute</b>		<b>Chronic</b>
Health resorts	D	No evidence	A	Strong evidence for
Multidisciplinary treatment	D	No evidence	A	Strong evidence for
All forms of surgery				
– Except for herniated disc	D	No evidence for	D	No evidence for
Back school	C	Limited evidence for	C	Limited evidence for
TENS	C	Limited evidence for	C	Limited evidence for
Epidural steroid injections				
nerve root pain	C	Limited evidence for	C	Limited evidence for
Colchicine	C	Limited evidence for		
Cortison	C	Limited evidence for		
Behavioral therapy	C	Limited evidence for	B	Limited evidence for
Manual therapy	B	Moderate evidence for	A	Strong evidence for
Paracetamol	B	Moderate evidence for	C	Limited evidence for
NSAIDs	A	Strong evidence for	C	Limited evidence for
Continued activities	A	Strong evidence for		
Surgery for herniated disc	D	No evidence	A	Strong evidence for

# Technologies used in the diagnosis of back and neck pain

- Physical examination
- Mobility and muscle tests
- X-ray
- MRI
- CT-scanning
- Neurophysiologic tests  
incl EMG
- Facet blocks
- Stress radiography
- Discography
- Nerve root infiltration
- Bone scintigraphy
- Thermography
- Ultrasound



## Economic impact of evidence-based treatment for back pain

	In millions of dollars per million population
Investment	- 7
Reduced sick-leave	+ 64
Reduced early retirement	+ 18
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Net savings	75





# Alcohol and drug abuse

- The evidence shows:
  - Many treatment methods available are effective
  - Several treatment methods used are ineffective
  - There are effective measures available for prevention, however, these are under-used.



## **Methods used in the treatment of alcohol- and drug abuse with no support of scientific evidence**

### **Non-manual based therapies:**

- Environment therapy
- Self image therapy
- Drama therapy
- Self identity therapy
- Confrontative interventions
- Self help courses
- Psychodynamic insight therapy
- General support therapy
- Therapeutic society model
- Acupuncture
- Relaxation therapy
- Biofeedback



# Preoperative routines

There is no evidence of benefit to the patient, nor to the surgeon or the anaesthesiologist, to perform routine examinations before elective surgery on otherwise healthy patients.



# Bone density measurement

There are no scientific basis for recommending bone density measurement in mass screening, selective screening, or as an extra component in health check-ups of asymptomatic individuals (opportunistic screening).

## ***Instead:***

The problems of low bone density is a question of prevention:

- Smoking
- Low physical activity
- Lack of oestrogen / calcium



# Screening for prostate cancer

The scientific evidence shows that there are no compelling reasons to recommend neither mass screening nor opportunistic screening for prostate cancer



# A selection of current SBU-projects

- Prevention and treatment of obesity
- Prevention and treatment of osteoporosis
- Prevention of caries
- Treatment of depression
- Anxiety
- Dementia
- Chronic pain
- Venous thrombosis
- Hearing impairment
- Treatment by sick-leave
- Prevention of disease by physical activity



# **SBU Alert**

A programme for identification and  
early assessment of new health  
care technologies



## **A selection among >50 assessments of emerging technologies**

- Antiplatelet agents – clopidogrel
- Brachytherapy for prostate cancer
- BNCT – Radiotherapy with neutrons for brain tumors
- Bupropion in smoking cessation
- Cardiac Pumps in treating chronic heart failure
- Gene therapy
- Growth hormone in children with idiopathic short status
- Implantable defibrillators
- Screening for colorectal cancer
- Testosterone therapy in men with age-related hormone deficiency



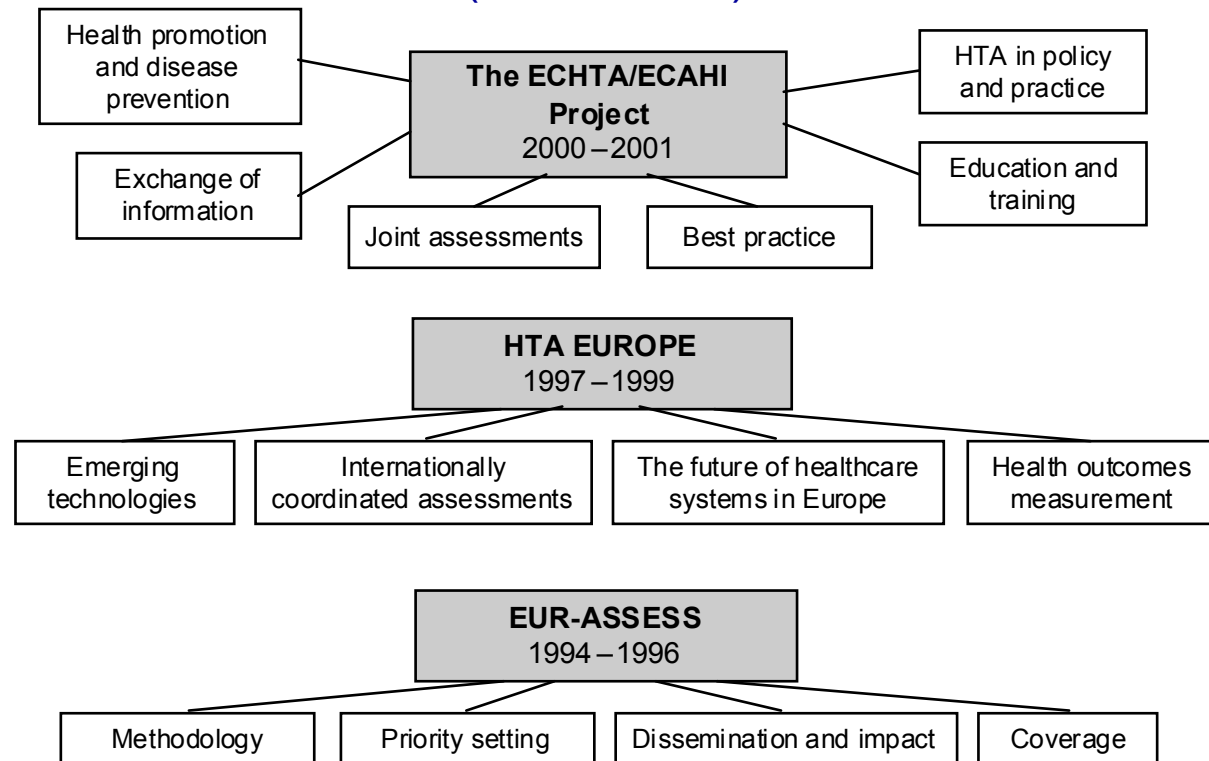


## HTA within the EU

Agencies and institutions	25
Full time working in the field	500
No. of HTA:s up to now	1300
No. of HTA:s published per year	200



## EU-Sponsored Projects in HTA (1994–2001)



# Structure

- **Steering Committee**  
(representatives and observers from  
15 EU countries + 8 non-EU countries)
- **Working Groups**  
(6 different tasks)
- **Executive Committee**  
(Sweden, Spain, The Netherlands, UK)
- **Secretariat**  
(SBU)

Totally over 100 people are involved in the project.



# Working Groups

- Health Promotion and Disease Prevention
- Exchange of Information
  - Clearinghouse function
  - Emerging technologies
- Joint Assessments
- Best Practice
- Education and Training
- HTA in Policy and Practice



# Recommendations to EU

The European Commission should put in place a sustainable and properly funded support function for a European Union-wide network on assessment of health interventions and technology.

This network should involve recognized organisations and agencies in the field of HTA, which will enable and facilitate the coordination of assessment within the European Union.

The Commission will thereby demonstrate the benefits of these activities and the risks of not implementing them in terms of quality of life, quality of care, and cost of health care.



# Challenge

Effective dissemination and impact



”I swear by Apollo, the physician,  
and invoking all the Gods and  
Goddesses to be my witnesses that  
according to my ability and judgement

**and evidence based  
information from HTA studies**

I will keep this oath and stipulation.”



