



*Karl Landsteiner Institute  
for Neurorehabilitation  
and Space Neurology*

### **Modern Neurology and the Hippocratic Principles**

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**42<sup>nd</sup> Danube Symposium for Neurological Sciences  
and Continuing Education  
October 21-23, 2010  
Zagreb, Croatia**

### **Hippocratic Oath**

(first part of original version)

I SWEAR by Apollo, the physician, and Aesculapius and Hygiea and Panacea and all the gods and goddesses, that, according to my ability and judgment, I will keep this oath and this stipulation. To recognize him, who taught me this art, equally dear to me as my parents, to share my subsistence with him and relieve his necessities if required; to look upon his offspring in the same way as my own brothers, and to teach them this art, if they shall wish to learn it, without fee or stipulation; and that by precept, lecture, and every other mode of instruction, I will impart a knowledge of the Art to my own sons, and those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine, but to none others. ...

### **Hippocratic Oath**

Obligation to heal  
 Not do anything to harm the patient  
 No continuation of therapy in untreatable disease  
 No therapy in advanced physical and mental destruction  
 No continuation of life prolongation for hours or days  
 No prolongation of suffering during dying  
 Not to tell anyone the details of patients  
 No admitting of lethal poison, even as advice

Will to respect the teacher like own parents, sharing one life support with the teacher and his successors, treated as own brothers  
 Teaching medicine to own sons and the sons of the teacher or to pupils bound on physicians rules and oath

### **Hippocrates of Kos**

- Born ca. 460 BCE in Kos, Greece
- Died ca. 377 BCE in Larissa, Greece
- Greek physician and teacher in the golden age of Pericles
- Referred as "Western father" of medicine
- Very little knowledge about his work, thoughts, writings

### Status quo of Greek medicine during the period of Hippocrates

- No knowledge about anatomy and physiology, dissection of humans forbidden
- 2 „schools of medicine“
  - Knidian school of medicine
    - Focused on diagnosis
  - Koan school of medicine
    - Focused on patient care and prognosis, not on diagnosis
    - Great experience in clinical practice

### Hippocratic philosophy

- Division of medicine and religion
- Diseases are not a punishment of gods
- Diseases are the product of environmental factors, diet and living habits
- Diseases are no mystical illness
- Development of “Corpus Hippocraticus”

### Theory of illness Development of Hippocratic school

- Humourism
  - Imbalance of the four humors in the body, fluids which naturally equal in proportion in health
- Four fluids
  - Blood, black bile, yellow bile, phlegm
- Diseases: bad mixture of the four fluids
- Hippocratic therapy directed towards restoring balance of the four fluids
- Therapy: “Bed rest” and immobilization of main importance
- Healing: power of nature

### Corpus Hippocraticum - 1

- Authors: Hippocrates, his pupils and followers
- Collection of around 70 medical papers, written in Ionic Greek, contains text books, lectures, research papers, notes, philosophical essays and various subjects in medicine
- Papers assigned Hippocrates: Epidemics I, III, VII; Prognostikon, possibly “About The Sacred Disease” and “About the environment”

## **Corpus Hippocraticum - 2**

- Written for specialists and laymen
- Notable treatises:
  - The Hippocratic Oath
  - The Book of Prognostics
  - On Regimen in Acute diseases
  - Aphorisms
  - On Airs, Waters and Places
  - Instruments Of Reduction
  - On the Sacred Disease

## **Medicine after the Hippocratic Period I**

- The practice of Corpus Hippocraticum died out after the death of Hippocrates
- Galen (129-200 AD) continued Hippocratic medicine
- Hunayn-Ibn-Is'Haq translated Greek medical articles to Arabian language (approx. 800 AD)

## **Hippocratism Definition**

- Hippocratism is a combination of scientific thinking with great medical experience based on high quality observations and deep criticism
- Hippocrates defined medicine as an art with high medical ethics – Hippocratic principles

## **Medicine after the Hippocratic Period II**

- In mediaeval times the Islamic medicine was leading
- In succession, Arabian medical articles have been translated to Latin language with several mistranscriptions (Constantinus Africanus, ~1080 AD)
- Crusaders inspired by the hospitals in Middle East spread Arabic Medicine to Europe

### Hippocratic Oath

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support of successors of the teacher, treated as own brothers  
Medical teaching to own sons and the sons of the teacher  
or to pupils bound on physicians rules and oath

### Oath of Asaph and Yohanan

- Dated the 6th century CE
- Content differs to Hippocratic oath, focused on 10 commandments and Thora
- God's influence of humans life

### Oath of the Hindu physicians

- Dated the 15<sup>th</sup> century BCE
- Similar to the Hippocratic Oath, the *vaidya's* oath entreats physicians not to harm their patients and be solely devoted to their care, even if this put their lives in danger.

### Sun Simiao - 孙思邈

- Important Chinese Physician, 581-682
- A great Physician should not pay attention to status, wealth or age; neither should he question whether the particular person is attractive or unattractive, whether he is an enemy or friend, whether he is a Chinese or a foreigner, or finally, whether he is uneducated or educated. He should meet everyone on equal grounds. He should always act as if he were thinking of his close relatives.

**Definition of Ethics  
After the European Philosophy**

- **Ethics:** Part of philosophy dealing with morality
- **Moral** is search for an inner standard
- **Highest Principle:**  
→ **Kant's Categorical Imperative**  
The individual shall act in a way that this action can be regarded as general law

**Development of European Ethics  
Occidental Ethics**

Western ethical thinking, "Christian Ethics"

- **Founders:**
  - Socrates, Plato, Aristoteles
  - Greek philosophy: moral virtue - values are natural rather than conventional ethics as science
- **Christian influence:**
  - Saint Augustinus, Thomas Aquinas
  - Greek ethics incorporated in Christian doctrine
  - God given natural order

**Ethics  
European Definition**

- Altruism
- Sense of Honour
- Justness
- Respect for others
- Solidarity
- Ability to forgive

**Christian Ethical Principles**

Categorical imperative:

*"The individual shall act in a way, that his action can be regarded as general law."*

### Modern Ethical Schools

- Value ethics
- Existentialistic ethics
- American bioethics
- Marxian ethics
- Theological ethics

### Human Rights

- 1948: Universal Declaration of Human Rights (UDHR)
  - International reaction after the 2<sup>nd</sup> World War and medical experiments with human beings
  - Adopted by the United Nations General Assembly

### “Non Western” Ethics

- Ethical rules in Mosaic religion
- Ethical rules in Islamic religion
- Ethical rules in Confucianism
  - appreciation of well being of the community above the well being of the individual
- Ethical rules in Buddhism
  - end of rebirth, Nirvana
- Ethical rules of natural religions
  - African religious communities, Massai civilization, Schamanism

### Human Rights Article 25

Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.

...



### **Bioethical principles**

Medical conduct, physicians obligations  
(Belmont Criteria, 1979)

- Autonomy of the patient
- Beneficence
- Non-maleficency
- Justice
- Trust

### **World Medical Association, Helsinki Declaration, 1964 Medical Research Involving Human Subjects Ethical Principles**

- International Code of Medical Ethics :  
A physician shall act only in patient's interest when providing medical care which might have the effect of weakening the physical and mental condition of the patient
- Ethical Principles to provide guidance for physicians and other participants in medical research involving human subjects  
Including identifiable material or identifiable data

### **World Medical Association, Helsinki Declaration, 1964 Medical Research Involving Human Subjects Ethical Principles**

- Medical progress is based on research which ultimately must rest in part on experimentation involving human subjects
- In medical research on human subject, considerations related to the well-being of the human subject should take precedence over the interest of science and society

### **UNESCO Bioethics Declaration on Human Rights - 1 Paris, September 2005 Aims – Article 2**

- Universal framework of principles and procedures to guide States in bioethics
- to guide the actions from individuals as well as communities, public and private
- to promote respect for human dignity and protect human rights

**UNESCO Bioethics Declaration on**

**Human Rights - 2**

Paris, September 2005

Aims – Article 2

- to recognize the importance of freedom in scientific research
- to foster multidisciplinary and pluralistic dialogue
- to promote equitable access to medical, scientific and technological development
- to safeguard and promote the interest of the present and future generations
- to underline the importance of biodiversity

**Informed consent**

**generally**

... is necessary for each human being (patient and healthy volunteer) involved in:

- any preventive, diagnostic and/or therapeutic medical intervention
- scientific research (basic research, clinical studies) according to
  - ICH-GCP (Good Clinical Practice)
  - GMP (Good manufacturing practice)
  - Clinical trial for new diagnostic and therapeutic methods

**UNESCO Bioethics Declaration  
on Human Rights**

Paris, September 2005

- Art. 3: Human dignity and human rights
  - Fundamental freedoms: fully respect
- Art. 4: Benefit and harm
  - Applying and advancing scientific knowledge, medical practice and associated technologies, direct and indirect benefits to patients including research participants
- Art. 5: Autonomy and individual responsibility
  - Persons to make decisions while taking responsibility for those decisions and respecting the autonomy of others
- Art. 6: Consent

**Informed consent**

patient able to consent

- Content of written information
  - Aims
  - Expected benefits for the subjects and/or others
  - References treatment/placebo
  - Risks and inconveniences
  - If applicable, an explanation of alternative standard medical therapy
- Consent must be documented by either the subject's dated signature or by the signature of an independent witness
- The signature confirms that the consent is based on information, that has been understood and that the subject has voluntarily chosen to participate the treatment program



### Informed consent

#### patient incapable of consenting included in a clinical trial according to Declaration of Paris, 2005

- If the subject is incapable of giving personal consent (e.g. unconsciousness), the inclusion of such patients may be acceptable if
  - The Independent Ethics Committee (IEC) is in principle in agreement
  - Participation will promote the welfare and interest of the subject
  - If possible, written consent of a legally valid representative
- Consent in a non-therapeutic study the legal representative always has to be informed
- Any information becoming available during the trial which might be of relevance for the subject must be made known to the legal representative

### Declaration of Paris, 2005

#### Article 7

#### Persons without capacity to consent - II

- b) **Research** should only be carried out for the patient's direct health benefit, subject to the authorization and the protective conditions prescribed by law, and if there is no research alternative of comparable effectiveness with research participants able to consent.

### Declaration of Paris, 2005

#### Article 7

#### Persons without capacity to consent - I

In accordance with domestic law, special protections are to be given to persons who do not have the capacity to consent:

- a) authorization for **research and medical practice** should be obtained in accordance with the best interest of the person concerned and in accordance with domestic law. However, the person concerned should be involved to the greatest extent possible in the decision-making process of consent, as well as that of withdrawing consent.

### Patients unable to consent

#### Decision making on behalf of patients

- Presumed consent in emergency situations
- Proxy consent by an authorised person (legal representative)
- Living will
  - Advanced directives
  - Previously expressed wishes

### **Patient-Doctor Relationship**

- Expectation of personal attention
- Trust
- Individualized treatment
- Best available and best care
- Best benefit to risk/ratio

### **Rights and responsibilities physician and patient II**

- Patient's right to accept or to refuse the recommendation of a treatment program.
- Patient's right is to interrupt a running treatment program
- The physician's obligation is to inform the patient about danger for his health if refusing or interrupting a treatment program.

### **Rights and responsibilities physician and patient I**

- The treating physician has the individual responsibility for his patient. Highest level of his education and training is essential and necessary.
- The treating physician is guided by ethical principles, medical guidelines, declaration, domestic and international law and human rights law.
- The personal responsibility of the physician to his patient can't be replaced.

### **Main demands of patient's care generally**

- To preserve the life of a patient with best nursing and medical care
- To beware of needless pain
- To preserve the personal identity
- To preserve social contacts
- To improve the quality of life
- To provide all necessary resources:
  - structural
  - personal
  - financial

### **Quality of medical care**

Three factors will determine the quality of medical care:

- individual clinical expertise
- Individual clinical experience
- scientific evidence

### **Best available medical care & quality of scientific evidence – II**

Sound scientific evidence is the basis for modern medicine

- prevention
- diagnosis
- treatment
- rehabilitation
- but also for regulatory approval

### **Best available medical care & quality of scientific evidence - I**

Providing the best possible medical care of an individual patient depends of the responsible physician

- ability and willingness to
  - integrate individual clinical expertise
  - and the best external evidence
  - (true evidence-based medicine)

### **Best available medical care & quality of scientific evidence – III**

- The practice of contemporary medicine depends crucially on the quality of scientific evidence
- Experience based medicine has to be taken in consideration even without EBM background

### **Demands in untreatable conditions**

- Best medical and nursing care
- Availability of all methods of life support
- Beware of needless pain
- Preserve social contacts
- Improvement of quality life
- No economic, personal and structural restrictions
- No discussion about financial resources
- No discussion of end of life decision

### **Regulations for patients with severe defects, without prospect of further remission**

- Care in special nursing home, transfer only after medical decision (council)
- Continuation of basic medication
- Continuation of nursing care
- Long term activating program
- Renunciation of maximal therapy in case of severe complications possible

### **Active, assisted, passive euthanasia Forced euthanasia (Zwangseuthanasie)**

- Regulated by crime law in civilized countries
- Euthanasia in each form bioethically not acceptable
- Euthanasia not conform to Helsinki Declaration (1964), Declaration of Paris (2005)
- Principally incompatible with the Hippocratic Oath

### **Address of Pope John Paul II (2004) - I**

"Life-sustaining treatments and VS: Scientific advances and ethical dilemmas"  
NeuroRehabil 19, 273-275

*Quotation: I wrote in the Encyclical Evangelium Vitae, making it clear that*

*„by euthanasia in the true and proper sense must be understood an action or omission which by its very nature and intention brings about death, with the purpose of eliminating all pain“; such an act is always „a serious violation of the law of God, since it is the deliberate and morally unacceptable killing of a human person“ (n.65).*

Source: K. v. Wild

### Address of Pope John Paul II (2004) – II

"Life-sustaining treatments and VS: Scientific advances and ethical dilemmas"  
NeuroRehabil 19, 273-275

Considerations about „quality of life“, often actually dictated by psychological, social and economic pressure, cannot take precedence over general principles. Moreover, to admit that decision regarding man's life can be based on the external acknowledgement of its quality, is the same as acknowledgement that increasing and decreasing levels of quality of life, and therefore of human dignity, can be attributed from external perspective to any subject, thus introducing into social relations a discriminatory and eugenic principle.

Source: K. v. Wild

### Hippocratic Oath -1

Commitments for the modern physician

- The curative demand is the obligation of the physician, recommendations have to be given to the benefit of the patient, according to the best knowledge and possibilities, damages and unjustness of the patient have to be avoid.
- Besides the curative element the physician has to minimize harm.

### Address of Pope John Paul II (2004) - III

"Life-sustaining treatments and VS: Scientific advances and ethical dilemmas"  
NeuroRehabil 19, 273-275

We can state that medical science, up to now, is still unable to predict with certainty who among the patients in this condition will recover and who will not.

The sick person in VS, awaiting recovery or a natural end, still has the right to basic health care (nutrition, hydration, cleanliness, warmth etc.) and to prevention of complications related to this confinement to bed.

He also has the right to appropriate rehabilitative care and to be monitored for clinical signs of eventual recovery.

Source: K. v. Wild

### Hippocratic Oath - 2

Commitments for the modern physician

- It is the prohibition for the physician to apply poison as well as to give recommendation in such a direction.
- A prolongation of suffering during dying has to be avoided.
- The decision about end of life must not be the responsibility of the physician.
- The basic obligation of the physician is to preserve life.



#### Summarizing the Hippocratic Principle on Modern Demands I

- Every human being has the right to live (Paris Declaration, 2005).
- Every human being has the right for most modern medical treatment and best nursing care (Paris Declaration, 2005).
- A patient has to be cared according to the base right, basic human rights and the medical principles.

#### Summarizing the Hippocratic Principle on Modern Demands III

- In severe defect states of neurological patients without hope of any improvement in upcoming severe complications maximal therapy can be discontinued.
- The renunciation of maximal therapy is acceptable according to the Hippocratic principles.

#### Summarizing the Hippocratic Principle on Modern Demands II

- Economic consideration is not acceptable in treatment and life decision (Hippocratic principles and Universal Declaration on Human Rights (December 10<sup>th</sup>, 1948 ).
- According to Hippocratic principles patients have to be treated in dignity but not to be "over-medicated" by all modern possibilities.

#### Summarizing the Hippocratic Principle on Modern Demands IV

- According to medical rules a decision for end of life, also by legal institutions (Supreme court, etc.) is not acceptable.
- Such decision must not be realized by a physician, even when it is legal (danger to be accused for active euthanasia).



**The 42<sup>nd</sup> International Danube Neurology Symposium** (by Professor Vida Demarin)

**Date:** 21-23 October, 2010

**Place:** The Regent Esplanade Hotel, Zagreb, Croatia

**Wednesday, October 20, 2010**

19:00 Opening Ceremony and welcome reception

**Thursday, October 21, 2010**

Main Theme: Stroke

(Convenors: Vida Demarin, Zagreb, Ana Czlonkowska, Warsaw)

09:00 - 09:30	Ana Czlonkowska:	TIA as an Emergency
09:30 - 10:00	Natan Bomstein:	Management of Hypertension and Hyperglycemia in Acute Ischemic Stroke
10:00 - 10:30	Nadežda Sternić:	Diabetes and Stroke
10:30 - 11:00	Break	
11:00 - 11:30	Kurt Niederkorn:	Neurosonology in Acute Stroke
11:30 - 12:00	Vida Demarin:	Recent Concept of Stroke Prevention
12:30 - 13:00	Dafin Muresanu:	The Impact of Co-morbidities and Neuroprotective Treatments in Stroke Recovery

13:00 Lunch symposium: Approach to aging brain  
(Convenors: Danilo Hodoba, Zagreb, Zvezdan Pirtošek, Ljubljana)

15:00 - 17:00	Workshop:	Diagnosis of Brain Death
16:00 - 17:00	Franz Gerstenbrand:	The off-line Brain - is there such a thing?

15:00 - 17:00	Teaching course:	Fabry Disease and Enzyme Replacement Therapy in Neurology
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(Convenors: Vida Demarin, Zagreb, Vanja Bašić Kes, Zagreb)

15:00 - 17:00 Society for the Study of Neuroprotection and Neuroplasticity (SSIMIM) Panel  
(Convenor: Dafin Muresanu, Cluj)

17:00 - 18:00	Franz Gerstenbrand:	Modern neurology and the Hippocratic principles
17:00 - 19:00	Posters	

**Friday, October 22, 2010**

Main Theme: Movement Disorders - Non-Motor Symptoms in Parkinson's Disease  
(Convenors: Maja Relja, Zagreb, Zvezdan Pirtošek, Ljubljana)

09:00 - 09:30	Werner Poewe:	Continuous dopaminergic stimulation in Parkinson's disease
09:30 - 10:00	Maja Relja:	Non-motor symptoms in Parkinson's disease
10:00 - 10:30	Vladimir Kostić:	Depression in Parkinson's disease
10:30 - 11:00	Break	
11:00 - 11:30	Zvezdan Pirtošek:	Cognition in Parkinson's disease
11:30 - 12:00	David Vodušek:	Urogenital symptoms in differential diagnosis of Parkinsonism

Joint Meeting of Danube Society for Neurological Sciences and Continuing Education with  
Central and Eastern European Stroke Society (CEESS) and Croatian Stroke Society:  
Stroke Management

09:00 - 09:30 Ana Czlonkowska: Thrombolysis in the Region  
09:30 - 10:00 Ljiljana Bumbaširević: Stroke Unit - Secondary Prevention Center  
10:00 - 10:30 Vida Demarin: Carotid Disease  
10:30 - 11:00 Bojana Žvan: Management of subarachnoidal hemorrhage  
11:00 - 11:30 Osman Sinanović: Post-stroke aphasia

09:00 - 17:00 Cochrane European Association Young Neurologists and Trainees (EAYNT)  
Workshop

15:00 - 17:00 Experimental Pain and Therapy  
(Convenors: Claudia Sommer, Wuerzburg, Zdravko Lacković, Zagreb)

Claudia Sommer: Therapy of neuropathic pain  
Lidia Bach-Rojecky: Experimental model of pain  
Zdravko Lacković: Central effects of botulinum toxin-type A  
Alfredo Berardelli: The impact of botulinum toxin treatment on cortical excitability  
Maja Relja: Botulinum toxin in migraine treatment

17:00 - 19:00 Teaching Course: Dystonia: Diagnosis and Treatment

17:00 - 18:00 Franz Gerstenbrand: Space Neurology and the use of astronaut/cosmonauts  
equipments in neurorehabilitation

17:00 - 19:00 Posters

**Saturday, October 23, 2010**

Main Theme: Headache and Pain  
(Convenors: Laszlo Vecsei, Szeged, Zdravko Lacković, Zagreb)

09:00 - 09:30 Laszlo Vecsei: The Role of Kynurenate Derivate in Nociception  
09:30 - 10:00 Zdravko Lacković: Experimental Model of Migraine  
10:30 - 11:00 Vanja Bašić Kes: Migraine and Stroke Connection  
11:00 - 11:30 Ivo Lušić: Central Post-stroke Pain  
12:00 Closing ceremony

All participants are most welcome to participate in all social and scientific activities

Deadline for abstract submission: June 1, 2010.

Congress venue: REGENT ESPLANADE HOTEL

Mihanovićeve 1

10000 Zagreb, Croatia

[www.regenthotels.com](http://www.regenthotels.com)

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All abstracts will be available on CD and via CROSBI, editor Vida Demarin.



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