

Medical Language & Medical Terminology

English for Medical Profession
(499508)

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5th January 2015

History of medical language

- Read this article:

"The language of medicine" โดย Henrik R. Wulff
from *J R Soc Med*, 97, April 2004: page 187-188.

Medical Language

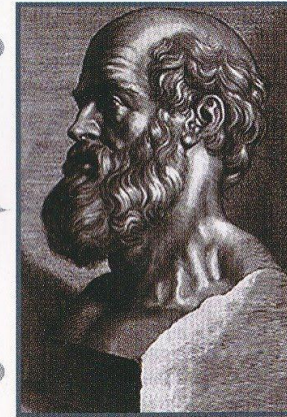


- The Greek Era
- Medical Latin
- National Medical Languages
- Medical English

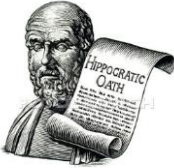
<http://www.med.umich.edu/oprn/newspage/images/Thom-Hippocrates.jpg>

Hippocrates

(460-370 BC)




http://4.bp.blogspot.com/_sd7HgpLNG0k/TU4_Sg1ZevI/AAAAAAAAAM8/rapdvua4fnac/s1600/hippocrates.jpg



ΟΡΚΟΣ

"Ὀμνυμι Ἀπόλλωνα ἰητρὸν καὶ Ἀσκληπιὸν καὶ Ὑγίειαν καὶ Πανάκειαν καὶ θεοὺς πάντας τε καὶ πάσας, ἱστορας ποφύμενος, ἐπιτελέα ποιήσῃσι κατὰ δύναμιν καὶ κρίσιν ἐμήν ὄρκον τόνδε καὶ συγγραφὴν τήνδε· ἠγήσεσθαι μὲν τὸν διδάξαντά με τὴν τέχνην ταύτην ἴσα γενέτησιν ἐμοῖς, καὶ βίου κοινώσεσθαι, καὶ χρεῶν χρηρίζοντι μετ' αὐτοῖσιν ποιήσεσθαι, καὶ γένος τὸ ἐξ αὐτοῦ ἄδε λφοῖς ἴσον ἐπικρινεῖν ἄρρεσι, καὶ διδάξειν 10 τὴν τέχνην ταύτην, ἣν χρηρίζωσι μανθ' ἀνεῖν, ἀνευ μισθοῦ καὶ συγγραφῆς, παραγγελίης τε καὶ ἀκροήσιος καὶ τῆς λοίπης ἀπάσης μαθήσιος μετ' αὐτοῖσιν ποιήσεσθαι υἱοῖς τε ἐμοῖς καὶ τοῖς τοῦ ἐμὲ διδάξαντος, καὶ μαθητῆσι συγγεγραμμένοις τε καὶ ὠρκοῖσιν νόμῳ ἰητρικῷ, ἄλλως δὲ οὐδενὶ· 15 διαιτήμασί τε χρῆσθαι ἐπ' ὠφελείῃ καμνόντων κατὰ δύναμιν καὶ κρίσιν ἐμήν, ἐπὶ δὴγήσει δὲ καὶ ἀδικίῃ εἰρξείν· οὐ δώσω δὲ οὐδὲ φάρμακον οὐδενὶ αἰτηθεὶς θανάσιμον, οὐδὲ ὑψηγήσομαι συμβουλίην τοῖσι νόσοι· ὁμοίως δὲ οὐδὲ γυναῖκί πεισθόν 20

<http://utilis.net/hippo.htm#eng>



φθόριον δώσω· ἀγνώως δὲ καὶ ὁσίως διατηρήσω βίον τὸν ἐμὸν καὶ τέχνην τὴν ἐμήν· οὐ τεμέω δὲ οὐδὲ μὴν λιθιῶντας², ἐκκωρήσω δὲ ἐργάτησιν ἀνδράσι πρηξίσιος τῆσδε· ἐς οἰκίας δὲ ὀκόσας ἀν 25 ἑσώω, ἐσελεύσομαι ἐπ' ὠφελείῃ καμνόντων, ἐκτὸς ἑώων πάσης ἀδικίης ἐκούσιης καὶ φθορίης, τῆς τε ἄλλης καὶ ἀφροδισίων ἔργων ἐπὶ τε γυναικείων σωμαμάτων καὶ ἀνδρῶων, ἐλευθέρων τε καὶ δούλων· ἂ δ' ἀν ἐν θεραπειῇ ἦ ἴσω ἢ ἀκούσω, ἢ καὶ ἀνευ 30 θεραπειῆς κατὰ βίον ἀνθρώπων, ἂ μὴ χρή ποτε ἐκλαλεῖσθαι ἕξω, σιγήσομαι, ἄρρητα ἠγεύμενος εἶναι τὰ τοιαῦτα· ὄρκον μὲν οὖν μοι τόνδε ἐπιτελέα ποιέοντι, καὶ μὴ συγχέοντι, εἴη ἐπαύρασθαι καὶ βίου καὶ τέχνης δοξαζομένω παρὰ πᾶσιν 35 ἀνθρώποις ἐς τὸν αἰεὶ χρόνον· παραβαίνοντι δὲ καὶ ἐπιόρκέοντι, τάναντία τούτων·


² Littre: αἰτέοντας; Reinhold: οὐδὲ μὴ ἐν ἡλικίῃ ἐόντας.

<http://utilis.net/hippo.htm>

α	A	alpha	a	fāther
β	B	beta	b	bīg
γ	Γ	gamma	g, n	God, ānkle
δ	Δ	delta	d	dōor
ε	E	epsilon	e	mēt
ζ	Z	zeta	z, dz	zeal, kudzu
η	H	eta	ē	obey
θ	Θ	theta	th	thīng
ι	I	iota	i	pīt, polīce
κ	K	kappa	k	kēep
λ	Λ	lambda	l	law
μ	M	mu	m	mōther
ν	N	nu	n	nūmber
ξ	Ξ	xi (ksee)	x	fox
ο	O	omicron	o	nōt
π	Π	pi	p	pōor
ρ	P	rho	r, rh	rōd
σ	Σ	sigma	s	sāve
τ	T	tau	t	tīme
υ	Υ	upsilon	u, y	German ū
φ	Φ	phi	ph	phōne
χ	Χ	chi	ch	German ich
ψ	Ψ	psi	ps	tīpsy
ω	Ω	omega	ō	vōte

Greek alphabets and Diphthongs

αι is pronounced "i" as in aisle
 ει is pronounced "a" as in freight
 οι is pronounced "oi" as in boil
 υι is pronounced "e" as in suite
 αυ is pronounced "au" as in sauerkraut
 ευ, ηυ are pronounced "u" as in feud
 ου is pronounced "ou" as in soup



The Hippocratic Oath

I swear by Apollo Physician and Asclepius and Hygieia and Panacea and all the gods and goddesses, making them my witnesses, that I will fulfill according to my ability and judgment this oath and this covenant:

To hold him who has taught me this art as equal to my parents and to live my life in partnership with him, and if he is in need of money to give him a share of mine, and to regard his offspring as equal to my brothers in male lineage and to teach them this art — if they desire to learn it — without fee and covenant; to give a share of precepts and oral instruction and all the other learning to my sons and to the sons of him who has instructed me and to pupils who have signed the covenant and have taken an oath according to the medical law, but to no one else.

I will apply dietetic measures for the benefit of the sick according to my ability and judgment; I will keep them from harm and injustice.

I will neither give a deadly drug to anybody if asked for it, nor will I make a suggestion to this effect. Similarly I will not give to a woman an abortive remedy. In purity and holiness I will guard my life and my art.

I will not use the knife, not even on sufferers from stone, but will withdraw in favor of such men as are engaged in this work.

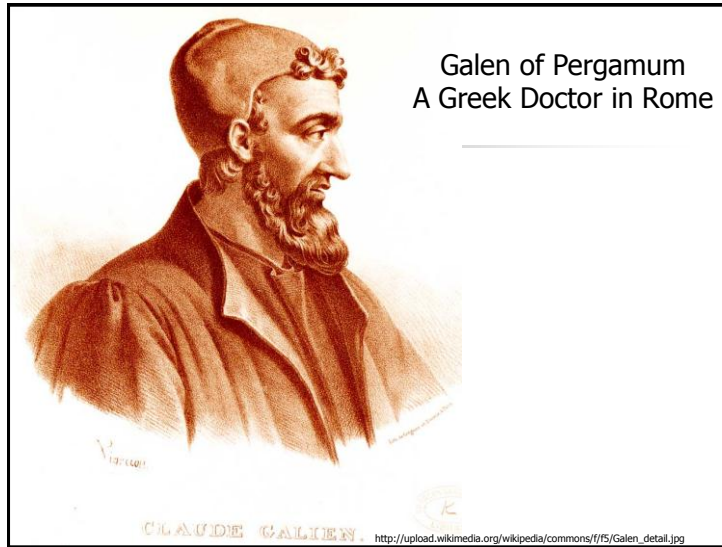
Whatever houses I may visit, I will come for the benefit of the sick, remaining free of all intentional injustice, of all mischief and in particular of sexual relations with both female and male persons, be they free or slaves.

What I may see or hear in the course of the treatment or even outside of the treatment in regard to the life of men, which on no account one must spread abroad, I will keep to myself holding such things shameful to be spoken about.

If I fulfill this oath and do not violate it, may it be granted to me to enjoy life and art, being honored with fame among all men for all time to come; if I transgress it and swear falsely, may the opposite of all this be my lot.

Translated from the Greek by Edzinar.

<http://lina1504.wordpress.com/>



Medical Language

- **Dyspnea (or dyspnoea)**
 - **Greek:** *δύσπνοια, dýspnoia*
 - **Latin:** *dyspnoea*
 - **shortness of breath (SOB), or air hunger**, is the subjective symptom of *breathlessness*.
- **Diarrhea (or diarrhoea)**
 - **Greek:** *διάρροια*, from *δια dia* "through" + *ρέω rheo* "flow" meaning "flowing through"

Greek Medicine

- Greek Medicine from the Gods to Galen
 - <http://www.nlm.nih.gov/hmd/greek/index.html>
- Greek Words in the Modern English Medical Vocabulary
 - http://www.nlm.nih.gov/hmd/greek/greek_words.html

ANDREAE VESALII
BRUXELLENSIS. DE HVMANI CORPO-
RIS FABRICA LIBER SEPTIMVS, CEREBRO AN-
malis facultatis facti & fenitum organis dedicatus, & mox in initio omnes
propemodum ipsius figuras, uti & duo proximè præceden-
tes libri, commonstrans.

PRIMA SEPTIMI LIBRI FIGVRA.

Medical Latin

- Classical
- Medieval
- Renaissance

http://upload.wikimedia.org/wikipedia/commons/2/2f/Vesalius_605c.png

Classical Latin alphabet contains 21 letters

Archaic A B C D E F G H I K L M N O P Q R S T V X
 Classical A B C D E F G H I K L M N O P Q R S T V X
 Translit. a b c d e f g h i k l m n o p q r s t u x
 Phonetic [a] [b] [k] [d] [e] [f] [g] [h] [i,v] [k] [l] [m] [n] [o] [p] [kʰ] [r] [s] [t] [u,w] [ks]

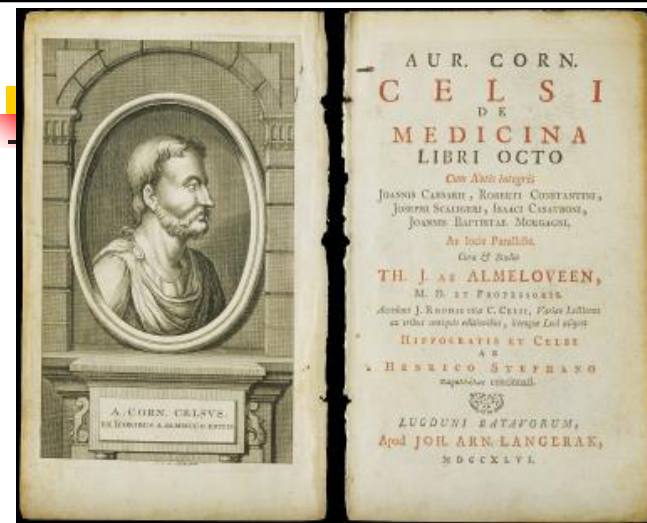
Letters: J, U, W, Y, Z have been added later

Aulus Cornelius Celsus

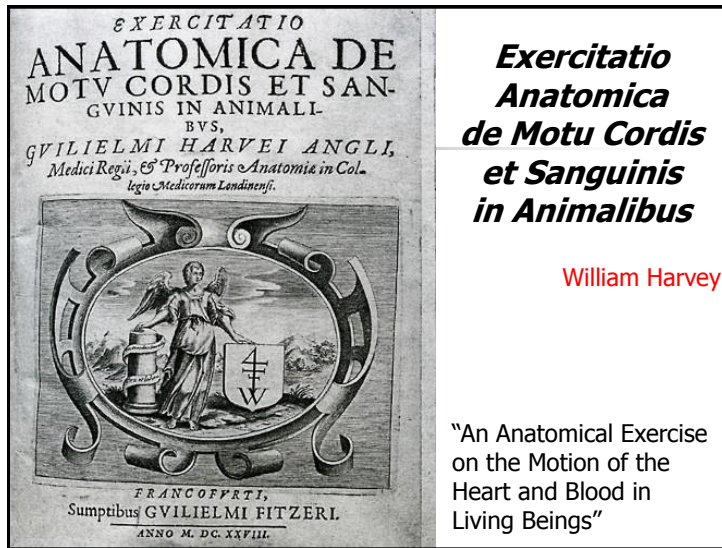
- A Roman writer
- *De medicina octo libri*
- The first translation of Greek medical terms into Latin
 - Imported a few Greek terms directly
 - Latinized Greek words
 - Translated Greek terms into Latin
- The Eight Books of Medicine

Example

- πυλωρός (*pyloros*); **pylōros** = pylorus
- εἰλεός (*eileos*) = **ileus** = ileus (bowel)
- **stomachus** = stomach
- **brachium** = upper arm
- Κυνόδοντες (*kynodontes*) (dog teeth); **dentes canini** = canines
- Τυφλὸν (*typhlon*) (blind); **caecum** = cecum or caecum



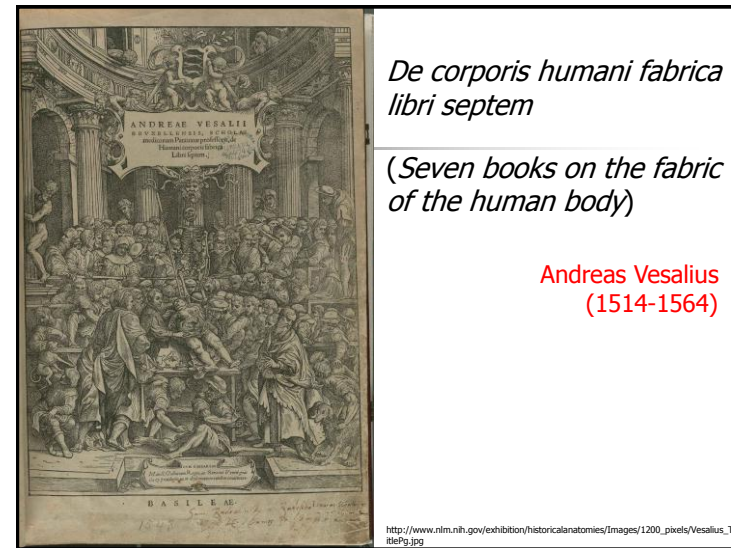
<http://www.sciencemuseum.org.uk/broughttoife/people/auluscorneliuscelsus.aspx>



***Exercitatio
Anatomica
de Motu Cordis
et Sanguinis
in Animalibus***

William Harvey

"An Anatomical Exercise
on the Motion of the
Heart and Blood in
Living Beings"

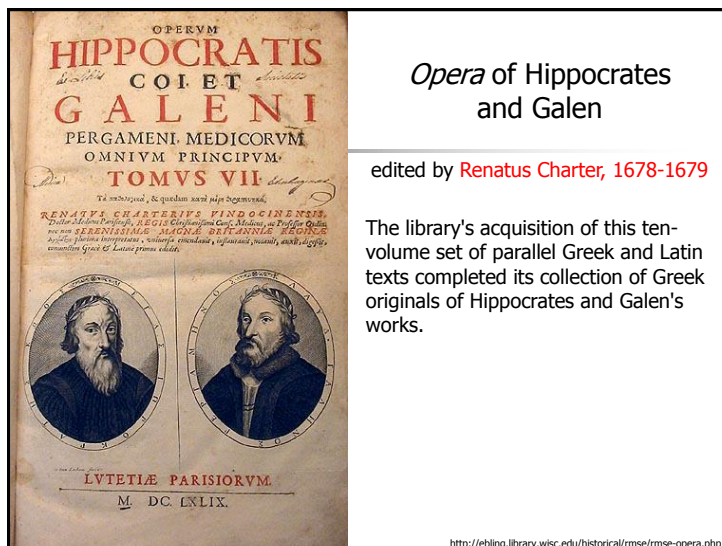


***De corporis humani fabrica
libri septem***

(Seven books on the fabric
of the human body)

Andreas Vesalius
(1514-1564)

http://www.nlm.nih.gov/exhibition/historicalanatomies/Images/1200_pixels/Vesalius_TitlePg.jpg

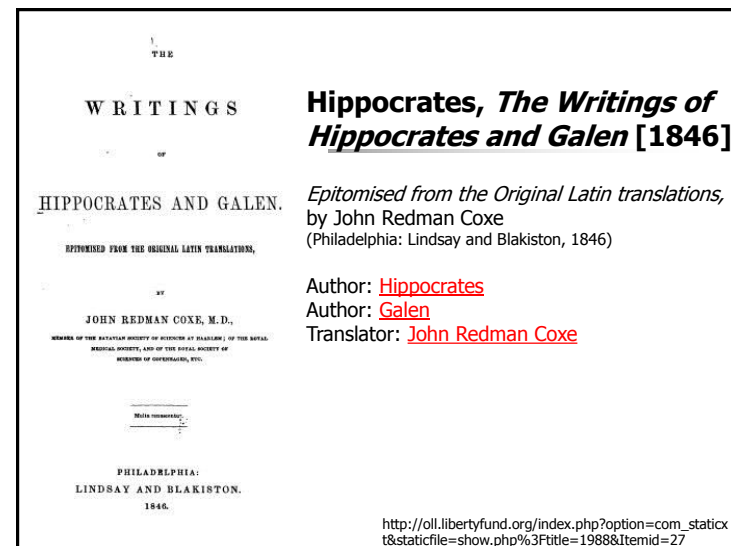


***Opera of Hippocrates
and Galen***

edited by [Renatus Charter](#), 1678-1679

The library's acquisition of this ten-volume set of parallel Greek and Latin texts completed its collection of Greek originals of Hippocrates and Galen's works.

<http://ebling.library.wisc.edu/historical/rmse/rmse-opera.php>



***Hippocrates, The Writings of
Hippocrates and Galen [1846]***

THE WRITINGS OF
HIPPOCRATES AND GALEN.

EDITED FROM THE ORIGINAL LATIN TRANSLATIONS,

*Epitomised from the Original Latin translations,
by John Redman Coxe
(Philadelphia: Lindsay and Blakiston, 1846)*

Author: [Hippocrates](#)

Author: [Galen](#)

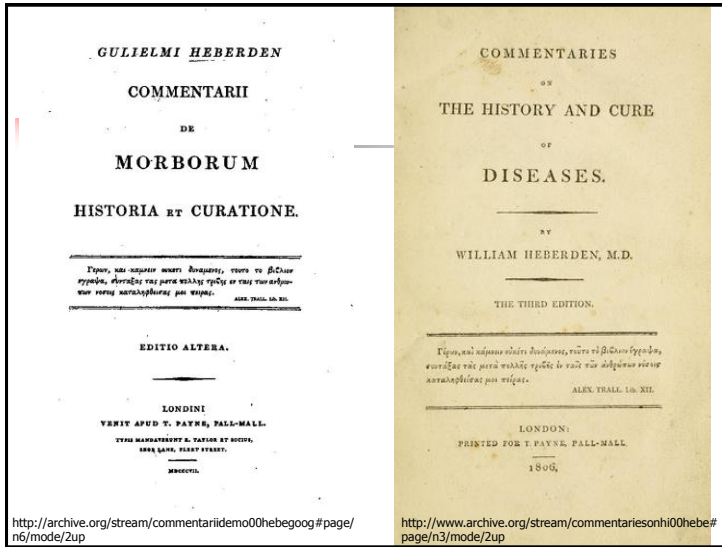
Translator: [John Redman Coxe](#)

BY
JOHN REDMAN COXE, M.D.,

MEMBER OF THE ACADEMY OF MEDICINE AT PHILADELPHIA, OF THE ROYAL
MEDICAL SOCIETY, AND OF THE ROYAL SOCIETY OF
EDINBURGH, ETC.

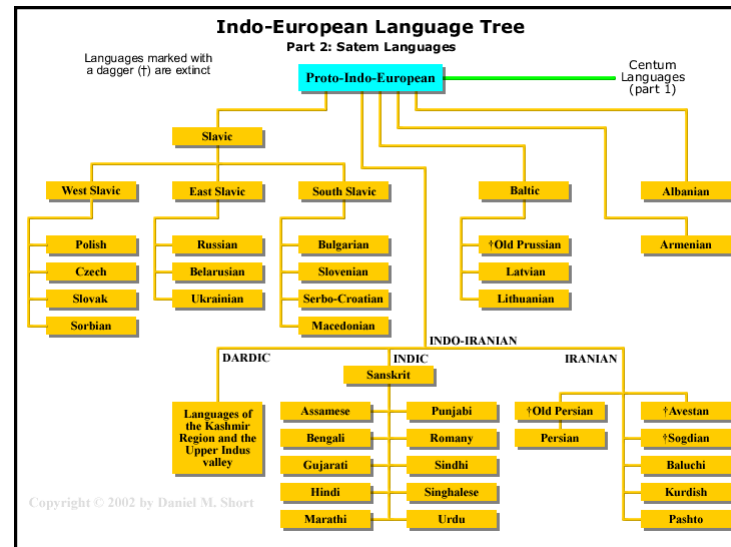
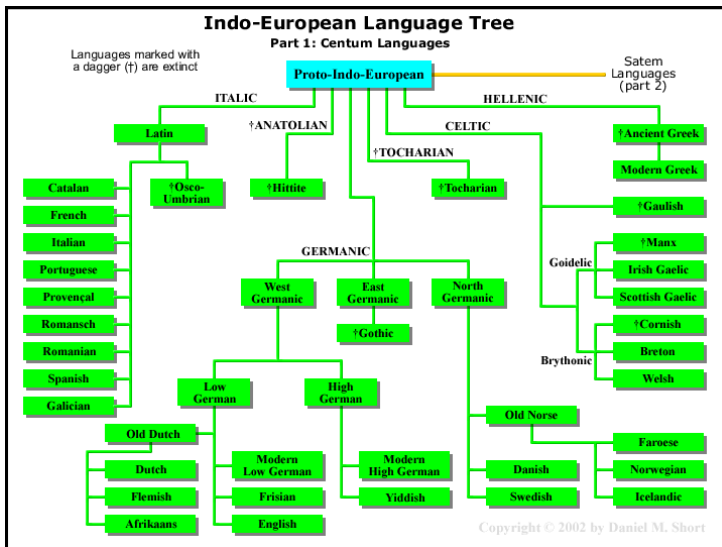
PHILADELPHIA:
LINDSAY AND BLAKISTON.
1846.

http://oll.libertyfund.org/index.php?option=com_static&tstaticfile=show.php%3Ftitle=1988&Itemid=27



Historical Root of Languages

- Proto-Indo-European
 - Germanic
 - West Germanic → English, German, Dutch
 - Italic (Romance)
 - Latin → French, Italian, Spanish, Portuguese



Historical Root of Languages

- ภาษาไทย อยู่ในตระกูลภาษาไท-กะได (เป็นคำโดดและมีวรรณยุกต์) และมีคำที่มีรากศัพท์มาจากภาษาบาลี และสันสกฤตด้วย
- Indo-Iranian
 - Indo-Aryan → Sanscrit, Pali



National Medical Languages

- Especially French, German, English used for international communication
- Most derived from Medical Latin
- **Germanic languages** (German, Dutch, Scandinavian): often imported directly with correct Latin endings
 - nervus musculocutaneus* *ulcus ventriculi*
- **Romance languages** (French, Italian): usually “naturalized”
 - le nerf musculo-cutané* *l’ulcère gastrique*
- **English** (Germanic language): tends to follow the Romance pattern except in placing the adjective before the noun
 - the musculocutaneous nerve* *gastric ulcer*
 - abilis* = -able; *-ivus* = -ive; *-osus* = -ous; *-orius* = ory

Exceptions

- English direct-loaned words from Latin
 - Medulla oblongata
 - Diabetes mellitus
- German: from naturalized Latin terms
 - Die Koronararterien (*Arteriae coronariae*)
- German: from translated Latin terms
 - Koronar- oder Herzkranzgefäß (coronary vessel)
 - Magengeschwür (*ulcus ventriculi*, gastric ulcer)

Medical English



<http://www.myhealthprofessionskit.com/images/crossword.png>

English Medical Terminology

- Terms built from Greek and Latin word parts
 - prefix (อุปสรรค, คำเสริมหน้า)
 - suffix (อาคม, ปัจจัย, คำต่อท้าย)
 - word root and combining form
- Terms **NOT** built from Greek and Latin word parts:
 - English modern language, acronyms, eponyms, and other languages

Prefixes

- ab-
- ad-
- anti-, contra-, counter-
- brady-, tachy-
- neo-
- hyper-, hypo-
- intra-, extra-, inter-, para-, peri-, juxta-
- super-, supra-, epi-, infra-, sub-
- poly- etc.

Suffixes

- -algia, -algnesia
- -itis
- -oma
- -logy, -iatrics, -iatry, -logist, -ian
- -ase
- -ectomy, -tomy
- -emia, -hemia
- -plasty, -rhaphy, -stomy
- -scope, -scopy, -graphy, -gram etc.

Word roots – combining forms

- Adenocarcinoma
 - Aden/o + carcin/o + -oma
- Choledocholithiasis
 - Choledoch/o +lith + -iasis
- Erythrocyte
 - Erythr/o + -cyte
- Pathology
 - Path/o + -logy
- Pediatrics, pediatrician
 - Ped/o + -iatrics ; -ian
- Podiatry, podiatric medicine, podiatrist
 - Pod/o + -iatry ; -ic ; -ist

To coin a new medical term

- Most of terms composed of Greek rather than Latin roots
 - Nephrectomy – *excisio renis*
 - Ophthalmoscopy – *insectio oculorum*
 - Erythrocyte – *Cellula rubra*
- Prefix – Suffix
 - Hyper- [Greek **ὑπέρ**] & Super- [Latin] = over
 - -itis [Greek **-ιτις**]; -oma [Greek **-ωμα**]
- Greek – Latin hybrid
 - Hypertension: "Hyper" + "tension"
 - Ancient Greek **ὑπέρ** (huper, "over").
 - From Middle French *tension*, from Latin *tensionem* (stretching)

English modern language

- Contemporary, ordinary words
 - Bypass operation, clearance, screening, scanning
- Advance in science and technology for diagnosis and treatment
 - PET scan
 - LASER, laser
- New drugs, generic name and trade name
 - Epinephrine – Adrenalin® (Parke-Davis)

English modern language

- Contemporary, ordinary words
 - Bypass operation, clearance, screening, scanning
- Advance in science and technology for diagnosis and treatment
 - Positron emission tomography (PET scan)
 - Light amplification by stimulated emission of radiation (LASER, laser)
- New drugs, generic name and trade name
 - Epinephrine – Adrenalin® (Parke-Davis)

Eponyms

- Synonym: namegiver
- Possessive form ending with 's is becoming less common
- Down syndrome
 - John Langdon Down, English physician
- Parkinson syndrome
 - James Parkinson, English physician
- Alzheimer's disease
 - Alois Alzheimer, German psychiatrist & neuropathologist
- Babinski sign
 - Joseph Babinski, French neurologist of Polish origin

Acronyms, Abbreviations

- Appear both with and without periods
- AIDS = acquired immunodeficiency syndrome
- AML = acute myelogenous leukemia
- CT = computed tomography
- ERCP = endoscopic retrograde cholangiopancreatography
- PTCA = percutaneous transluminal coronary angioplasty
- In prescription: Rx
 - Vitamin B 1 tab. p.o. t.i.d p.c. & h.s.
 - = *Recipe 1 tabella per os, ter in die, post cibos et hora somni*
 - = Take 1 tablet of Vitamin B by mouth three times per day after meals and at bedtime.

Key words

- ถูกต้อง (correct, accurate)
 - ตัวสะกด การอ่านออกเสียง ความหมาย คำจำกัดความ
- ตรงกัน (relevant, consistent)
 - ความเข้าใจ การสื่อความหมายระหว่างกัน
- เป็นสากล (universal)
 - นานาชาติ ต่างประเทศ ต่างภาษาเข้าใจได้เช่นกัน

Homework

- Exercise : Medical language and terminology
 - English → Thai
 - Thai → English
 - Meaning and pronunciation
- Understanding medical words MedlinePlus:
 - <http://www.nlm.nih.gov/medlineplus/medicalwords.html>
- Free online medical dictionary:
 - <http://www.dictionary.com>