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Seemingly or Partially Negative Prefixes in Medical English.

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Abstract

In this article we will try to find out if the prefixes anti-, contra-, counter-, de-, dys-, ex-, extra-, mal- can negate the words they combine with (Ref. 9). Full Text (Free, PDF) www.bmj.sk.

Key words: negative prefixes, reversative prefixes, partial negation.

This article is a continuation of the previous article about negative affixes in medical English. The combining words *anti-*, *contra-*, *counter-*, *de-*, *dys-*, *ex-*, *extra-*, *mal-* are put to negative prefixes by some English language users. Here we will to ask if they are really able to negate in some way the words they connect with. To find this out, we have decided to arrange them into an independent group and to define them independently from the main negative prefixes (*a-*, *dis-*, *in-*, *non-*, *un-*). They are arranged in alphabetic order.

The first one is the *prefix anti-*. It goes back to Old Greek *anti* meaning “counter, opposite, instead” found in loans such as *antipodes*, *antiphon*, *antithesis*, *antidote*, etc., which came into English either directly from Greek or indirectly through Latin. The Old Greek prefix was used with verbs and deverbal nouns, a usage that has not been imitated in English. The Greek word *antichristos*, which passed into English as *antichrist*, is considered to be the first *anti-* word in English and has become the archetype for the whole group of words belonging to the religious sphere and denoting the rival candidate of the opposite party: *antipope*, *anti-creator*, *anti-Messiah*, *antigod*, *anti-apostle*, *anti-religion*, *anti-priest* etc. Later the prefix *anti-* was also used with other words e.g. *anti-duke*, *anti-creation*, *anti-music*, *anti-poison*, *anti-hero*, where the implication is that of “spurious” or “of the reverse kind”. Many of these words are no longer in use. (Marchand, 1960).

Nowadays *anti-* means “opposed to a particular system or practice or to a particular group of people or their policies, culture, or power”. It expresses for example someone’s negative *anti-American*, *anti-British*, *ant clerical*, *anti-capitalist*, *anticommunist*, *antidemocratic*, *antifascist(ic)*, *anti-governmental*, *anti-racist*, *anti-religious*, *anti-social*, *anti-war* attitude.

In medical English it means “intended to prevent something from happening” or “to destroy something harmful”, e.g. *anti-*

cancer, *anti-infection*, *anti-seasickness*, *antibacterial*, *antifungal*, *anti-nuclear* etc (*The American Heritager Book of English Usage*).

It is added to nouns, adjectives. In the majority of words the prefix *anti-* is written with a hyphen. Those words, which have already become a part of specialized terminology, are written without a hyphen such as *antialbumin*, *antianemic*, *antiapoplectic*, *antiarrhythmic*, *antiarthritic*, *antiasthematic*, *antibiotics*, *antibody*, *anticarcinogen(ic)*, *antigen*, *antiseptic*, *antitoxin* in medicine; *antielectron*, *antineutron*, *antiparticle*, *antiproton*, *antimatter* in nuclear physics; *antifunction* in mathematics; *antipole* in geography and electricity. While in medicine it has meaning *against*, in other sciences it means “opposite”, e.g. *antielectron* is an electron with opposite charge; *antifunction* is an inverse function, and *antipole* means an opposite pole (southern to northern in geography, or positive to negative in electricity).

Beside the political sphere (*anti-administration*, *anti-immigration*, *anti-labor*, *anti-slavery*, *anti-war*), the prefix is used in chemical and medical terms with the meaning “counteractive, neutralizing, preventive of...” *anti-catarral*, *antifebrile*, *antihypnotics*, *anti-hysterical*, *anti-sudorific*, *anti-pleuretic*, *antipyretic*, *anti-convulsive*, *anti-hydropic*, *anti-bacterial*, *anti-diphtheritic*, *anti-neuritic*, *anti-pestilential*, *antirachitic* etc. (Marchand, 1960:95).

The prefix *anti-* is very well recognizable and its meaning is so clear that it is frequently used to make up new words. For

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example, the meaning of words such as *anti-abortion*, *anticrime*, and *antipollution* is easy to guess. In most cases the words with prefix *anti-* have also their positive counterparts - *abortion*, *crime*, *pollution*. Sometimes, when followed by a vowel, *anti-* is reduced into *ant-*: *antacid* (substance that prevents or reduces acidity in stomach); *Antarctic*; *antonym* (a word with the opposite meaning of another word > *anti* + *onoma name*); *antalkali* (any substance that counteracts an alkali); *antagonist* (an opponent or adversary), and all words derived from it: *antagonistic*, *antagonistically*, *antagonism*, *antagonize*, *antagonization*.

The prefix *anti-* is in some words synonymic with the *prefix counter-*. They both have the meaning of *opposed to*. *Anti-* suggests an attitude of opposition: *anti-war literature*, *the anti-nuclear campaign*; while *counter-* refers to an action taken to prevent or respond to something, e.g. *counter-espionage activities*, *counter-revolution*, *counter-reformation*, *countermeasure* (in Slovak in these expressions we use both prefixes - *proti-* and *kontra-* e.g. *kontrašpionážna činnosť*, *kontrarevolúcia*, *proti-reformácia*, *protiopatrenie*).

In technical terminology we can find the prefixes *counter-* and *contra-* with very similar, sometimes even synonymic meaning. According to *The American Heritage Book of English Usage* (1996) the prefix *contra-* means primarily “against, opposite”, and *counter-* means “contrary, opposite”. Thus *contraposition of planes* (in Slovak language - *protiľahlosť rovin*) means their mutual opposite position. Similarly *contraflow*, or *counterflow* of electric current = *countercurrent*, means “a current flowing in an opposite direction”. There are many technical terms meaning “opposite” or “reverse” to the meaning of their non-prefixed counterparts, e.g. piston – *counterpiston*, regulation – *counterregulation*, measure – *countermeasure*, movement – *countermovement*, balance – *counterbalance*, or *weight* – *counterweight* (protizávažie). Some technical procedures or operations can be performed in a *contra-clockwise* or *counter-clockwise*, or even *anti-clockwise* way.

Both prefixes *contra-* and *counter-* originate from Latin preposition *contra*, meaning “against”, but they were taken over into English language from two different sources. The prefix *contra-* was taken over directly from Latin and the prefix *counter-* came into English from Old French, and has a wider scale of usage in science and technology than the prefix *contra-*.

The prefix *contra-*, meaning “against”, can be found in medicine in the following words: *contraindicate*, *contraindication* (indication against the use of a particular substance or treatment), *contraceptive*, *contraception* (against *conception* – substance or process preventing the pregnancy). In these cases the prefix *contra-* is synonymic with the above-mentioned prefix *anti-*. (In Slovak *contraceptives* are called *antikoncepcia*).

The prefix *contra-*, which can be found in words like *contradict* (deny or express the opposite of statement), *contrast* (compare by showing the striking differences), *contrary* (opposed in nature or tendency), can have also meaning “opposite, contrasting” as in words *contradistinction*, *contrafactual*, *contraflow* (Quirk, 1985).

The prefix *contra-* can have three possible forms: *con-* as in the word-connection: *pros and cons* (usually used in plural, meaning reasons or considerations for and against a proposition); *con-* *tra-* as in words *contravene* (infringe a law), *contraband* (prohibited trade, smuggling), *contrabandist*; *contralateral* (of opposite side); *contraposition* (opposition or contrast), *contrapositive* in logics. In words starting with voiceless consonant “v”, there is used the allomorph *contro-* as in *controvert*, *controvery*, *controversial*, *controversialist*, *controversially*. We can usually find the prefix *contra-* in nouns and adjectives. There are very few verbs (*contraflow*, *contraindicate*, *contrast*, *contradict*) and still fewer adverbs *contra-clockwise* and *contraversally*.

As for the origin of the *prefix de-* as a derivative morpheme, some older Oxford dictionaries explain it by “the free adoption” of French verbs such as *décentraliser*, *débrutaliser*, *défroquer*. Although French had enormous influence on English and many French words found their way into English, Marchand (1960:105) expresses the idea that English adopted the derivational pattern of *de-* not words. Jespersen derives the prefix from Latin *de-* (or exceptionally from French *des-* Latin *dis-* as in *defy* (refuse to obey)).

In *The Oxford Encyclopedic English Dictionary* we can read that the prefix *de-* can be traced back through Middle English and Old French to Latin preposition *de*, meaning “from, off, apart, away, down, out”, e.g. *descend*, *decide* > *decision* > *decisive*, *declaim*, *declare*, *deduce* > *deduction* > *deductive*, *defect* > *defection* > *defective*, etc.

The prefix *de-* indicates also “removal” or “reduction”. Thus *deactivate* means “to make inactive”, *decontaminate* “to remove the contamination in e.g. soil”, *decompress* means “to remove or reduce pressure”, *decode* or *decipher* mean “to find the meaning of something written in code”. In many cases the change of meaning is accompanied with change of grammar category, e.g. noun *frost* – verb *defrost* means “to remove ice or frost from something”, noun *throne* – verb *dethrone* (to remove a ruler from the throne), noun *louse* – verb *delouse* (remove the lice from sb/sth).

De- is a prefix that occurs very frequently in English and may give a bad or negative sense of the word, e.g. *deformed* (ill/badly formed), *defoliate* (remove the leaves), *destroy* (build down). It is called also reversative prefix (Quirk, 1985) because it means reversing the process described by the original word, e.g. *decentralise*, *declassify*, *decolonise*, *deindustrialise*, *depopulate*, *deregulate*, *desensitize*, etc.

Although the prefix *de-* connects mainly with verbs, there are some deverbative nouns and adjectives formed by means of the prefix *de-*, e.g. *deactivate* > *deactivation*, *deactivated*; *declassify* > *declassification*, *declassified*; *decentralise* >, *decentralisation*, *decentralised*; *dehydrate* > *dehydration*, *dehydrated*; *deossify* > *deossification*; *destabilise* > *destabilisation*, *destabilised*, etc.

It is worth noting that early coinages with *de-* are all matched by Latinizing verbs in *-ize*, partly *-ate* as in *decolonize*, *decolorate*. The pattern is weak with verbs in *-ify*, e.g. *decalcify*, *deelectrify*, *deossify* (Marchand, 1960).

For the last hundred years, there have been quite a number of coinages and in recent years the derivative pattern has become firmly established, though many words are purely scientific or technical, e.g. *decipher*; *decode*, *degrease*, *dehair*; *degerm*, *degas*, *dewax*, etc.

In medical English doctors sometimes use words as *dysentery* to describe a painful disease of bowels causing severe diarrhoea with blood and mucus, or *dyspepsia* a difficulty to break down the food in the stomach, or *dyslexia* an abnormal difficulty in reading and spelling caused by a condition of the brain, or *dystrophy* a dysfunction of muscles due to impaired nutrition. All these medical terms were negated by means of *prefix dys-*. We have consulted several sources to find out what this *dys-* in fact means – if it is a negative prefix as it was classified by Jeff March et al. (2003), František Šimon (1999), several German *Duden dictionaries*, *Slovak Dictionary of Foreign Words*; or if it is just a combining form as it is defined in *The English Encyclopedic Dictionary* (1999) and *Dorland's Illustrated Medical Dictionary* (1988). On mature consideration we have decided to accept the classification of the two latter dictionaries. “*Dys-* is a combining form signifying “difficult, painful, bad, disordered, or abnormal”. It has developed from Greek *dus* – meaning *bad* and as a prefix it occurs first of all in medical terms expressing something “bad”, such as in *dysgraphia* (an acquired inability to write, although the strength and coordination of the hand remain normal), *dysmenorrhoea* (a painful or difficult menstruation), *dysphasia* (lack of coordination in speech owing to brain damage), *dysphoria* (a state of unease or mental discomfort), *dysplasia* (abnormal growth of tissues etc), *dyspnoea* (difficult or laboured breathing), *dystocia* (difficult or prolonged childbirth), *dysuria* (painful or difficult urination). In general English the prefix *dys-* is used very rarely. It can combine with nouns and adjectives derived directly of these nouns, i.e. *dysentery* – *dysenteric*, *dysfunction* – *dysfunctional*, *dyspepsia* – *dyspeptic*, *dyslexia* – *dyslexic/dyslectic*, *dystrophy* – *dystrophic*, *dysgraphia* – *dysgraphic*, etc. (Dorland's Illustrated Medical Dictionary, 1988).

The prefix *dys-* is in its meaning synonymous with a combining word *cac(o)-* (coming from Greek *kakos* – bad) as in *cacography* (bad handwriting), *cacology* (bad choice of words), *cacophony* (dissonance), *cacorhythmic* (marked by irregularity of rhythm), *cacogenesis* (defective development), *cocomorphosis* (malformation); and negative prefix *a-* as in *aepsia*, *apnoea*. While *dyspepsia* and *dyspnoea* mean serious diseases or disorders, *aepsia* and *apnoea* are just temporary symptoms of a disease. Normal breathing, i.e. antonym of *dyspnoea* is *eupnoea*. *Dysfunction* (disorder) has also its synonymic “twin” in *malfunction* meaning *bad function* (Dorland's Illustrated Medical Dictionary, 1988).

Susan Christensen (2000) from Swarthmore College USA has classified the prefixes *ex-* and *extra-* in French as negative ones. Both prefixes come from Latin but it does not seem probable that they are negative in French and in English they would have lost their negative meaning completely. No other author has put them among negative prefixes. Let us have a brief look at both of them.

The combining form *ex-* comes from Latin *ex-*, *e-*, meaning “out of, from”. It usually occurs with word roots that come from Latin verbs. Thus combining *ex-* with the Latin verb *tendere*, “to stretch”, gives us *extend*, “to stretch out”. Similarly, in *express*, *ex-* combines with the root *press*, which comes from the verb *premere*, “to squeeze”. So when we *express* ourselves, we “squeeze out” our thoughts. When followed by *f*, *ex-* becomes *ef-*, as in *efface* (rub or wipe out). Sometimes *ex-* takes the form of *e-*, as in *emit* (from Latin *mittere*, “to send”) (The American Heritage Book of English Usage).

In technical terms *ex-* means: 1. *out of, from*, as in *effusion* (pouring out esp. of liquid), *efflux* (discharge), *excavate*, *excavator*, *extractor*, *ejector*; 2. *outside position*, as in *extradius* (outside radius), *eccentric* (device changing rotatory motion into backward-and-forward motion); 3. *change of dimensions*, as in *elongation*, *extension*, *expansion*. In most of these examples the prefix *ex-* corresponds with Slovak prefix *vy-*, e.g. *exchange* (vymeniť), *heat exchanger* (výmenník tepla), *evaporate* (vyparovať sa), *exsiccate* (vysušiť). None of these terms has primarily negative meaning.

In general English *ex-* only forms new words when it means “previous, former”, and it is always written with hyphen, e.g. *ex-minister*, *ex-president*, *ex-wife*, *ex-husband*, disregarding to someone's positive or negative attitude to these persons.

Similarly the combining form *extra-/extro-* means 1. “lying or existing outside, beyond”, e.g. *extra-axial*, *extranuclear electron*, *extraterrestrial*, *extragalactic*, *extra-marital relations*, *extra-curricular activities*, etc., or 2. “very, to an exceptional degree, beyond the scope”, e.g. *extraordinary*, *extra-thin*, *extra-sensitive*, *extra-red* (infrared), *extraviolet* (ultraviolet).

Similar situation is with the *prefix mal-*. It is considered by some linguists to be negative prefix, by others a combining word or a negative root coming from Latin adjective *malus* meaning *ill*, frequently occurring in French and Spanish words that have already penetrated into medical English: *grand mal epilepsy*, *petit mal* (absence of epilepsy), *mal de mer* (seasickness), *maladie* written also *malady* (disease), *mal rouge* (red sickness), *mal de caderas* (Spanish “illness of the hips”). Besides these terms we can find the prefix *mal-* in words as *malabsorption* (impaired intestinal absorption of nutrients), *maladjustment* (failure to fit one's inner needs to the environment), *maldevelopment* (abnormal growth or development), *maldigestion* (impaired digestion), *maleruption* (faulty eruption of a tooth), *malformation* (defect of an organ or larger region of the body), *malnutrition* (any disorder of nutrition), *malposition* (abnormal or anomalous position of a foetus), *malpractice* (improper or injurious practice), *malpresentation* (a faulty or abnormal foetal presentation), etc. (Dorland's Illustrated Medical Dictionary, 1988).

According to Marchand (1960) *mal-* conveys the meaning “ill, evil, wrong, defective, improper”. It originated in loans from French where the prefix had partly a negative (*maladroit*, *malcontent*), partly a disqualifying character. The English prefix has always had the latter shade, e.g. *maltaent*, *maladventure* (lawless doings). It became productive in the 17th century. The words belong to the sphere of law and administration. They all denote

an improper, irregular behaviour, as *maladministration*, *malgovernment*, *malpractice*, *malexecution*, *malconduct*, *mal-institution*, *mal-publication*.

Mal- is not truly a prefix but it is a “combining form” that means either: 1. bad, badly; incorrectly (as in *malpractice* or *malodorous*); 2. abnormal (*malfunction*); 3. inadequate (*malabsorption*) (March, 1993).

Quirk et al. (1985) consider *mal-* for a pejorative prefix that means *bad*, *badly* and is added to verbs, participles, and abstract nouns, e.g. *maltreat*, *malformed*, *malodorous*, *malpractice*. The prefix has never formed adjectives in English: *maladroit* is French *maladroit*, *malodorous* is derived from *malodor*, *malformed* from *malformation* etc. (Marchand, 1960). Similarly the personal nouns *malpractitioner* (corrupt practitioner of law or medicine), *maladminister* is likewise derived from *malpractice*, *maladministration*.

In many English textbooks and by many English native speakers *mis-* is considered to be a negative prefix. Randolph Quirk et al. (1985) consider it to be a reversative prefix that is why we have put it into this group of prefixes. It means “wrongly, astray” and can be added to verbs, participles and abstract nouns, *miscall*, *miscalculate*, *misconduct*, *misfire*, *misfortune*, *mishear*, *misgovern*, *misinform*, *mislay*, *mislead/misleading*, *mistreat/mistreatment*, *misunderstand/misunderstanding*. Marchand (1960) adds: “Deverbal nouns are especially frequent. The corresponding verb is often not in existence, e.g. *misadvice*, *misapprehension*, *misarrangement*, *misbehavior*, *misbelief*, *miscarriage*, *mischoice*, *misconception*, *misconduct*, *miseducation*, *misgovernment*, *misgrowth*, *misjudgment*, *mismanagement*, *misprint*, *misrule*, *mispronunciation*.”

The Oxford Encyclopedic English Dictionary (1991) states that there at least two synonymic *mis-prefixes*. The first *mis-* prefix can be traced to Old English (Germanic origin), is added to verbs and verbal derivatives and means „amiss“, „badly“, “wrongly” (incorrectly), “unfavourably” as in examples: behave – *misbehave*, inform – *misinform*, spell – *misspell*, use – *misuse*, lead – *mislead*, shape – *misshapen*, trust – *mistrust*. Thus *misfortune* means “bad fortune” and *misbehave* means “to behave badly”. Likewise, *a misdeed* is “a wrong deed” and *misdo* means “to do wrongly”. As already mentioned, the prefix *mis-* forms compounds primarily by attaching to verbs: *misdiagnose*, *mis-handle*, *mishear*, *misremember*. *Mis-* also frequently forms compounds by attaching to nouns that come from verbs: *misbehavior*, *miscalculation*, *mismanagement*, *mispronunciation*.

The second *mis-* prefix occurs in a few words adopted from French meaning “badly”, “wrongly”, “amiss”, “ill”, or “having a negative force” as in words *misadventure* (bad luck, misfortune), *mischievous* (harm or injury caused by a person or thing), *mischance* (bad luck). This prefix comes from Old French *mes-*, ultimately from Latin *minus* that assimilated to *mis-*.

Jeff March and Marti S. Childs (2003) classify the meaning of the prefix *mis-* into these points: 1. bad (as in *mismanage*), 2. wrong or wrongly (*misconduct* or *misjudge*), and 3. opposite or lack of (*mistrust*).

Conclusion

None of the following prefixes or combining words *anti-*, *contra-*, *counter-*, *de-*, *dys-*, *ex-*, *extra-*, and *mal-* can be considered to negative ones. They can only partially express some negation in a word, they combine with.

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