

# Homeopathy: Fact or fiction?

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## Introduction



Homeopathy is a system of alternative medicine that uses highly diluted substances that cause the same symptoms as those to be treated.

Its founder was Christian Friedrich Samuel Hahnemann (1755 – 1843). His greater work is called *Organon der rationellen Heilkunde* and his theory was based on the principle of *similia similibus curantur*.

However, it was James Tyler Kent (1849 - 1916) who spread the homeopathic practice worldwide with his work *Repertory of the Homoeopathic Materia Medica*.

Classic homeopathy is based on 4 principles:

- **Principle of Similarity:** to treat a symptom give a substance that mimics that symptom.
- **Principle of Singularity:** each disorder must be treated with a single remedy.
- **Principle of Minimal Dose:** give the minimal dose available of the remedy.
- **Principle of Individualization:** each patient must be studied individually in the 3 planes of organisms (physical, emotional and mental) to detect the causal agent (known as miasma) that is disrupting his inner energy.

Potency	Meaning	Dilution
D or X	5D	5 consecutive 1:10 dilutions
	30D	30 consecutive 1:10 dilutions
	100D	100 consecutive 1:10 dilutions
C or CH	15C	15 consecutive 1:100 dilutions
	30C	30 consecutive 1:100 dilutions
	200C	200 consecutive 1:100 dilutions
M or LM	6M	6 consecutive 1:50000 dilutions
	30M	30 consecutive 1:50000 dilutions
	200M	200 consecutive 1:50000 dilutions

**Table 1. Nomenclature of homeopathic remedies.** A different letter is assigned to each potency. The following number indicates the quantity of consecutive dilutions that have been done. Several examples, with their actual final dilution, can be seen in the table.

## Bibliographic review of homeopathic treatments

### Methods

Search in *Pubmed*, *ScienceDirect* and *The Cochrane Library* during November and December 2012.

The search parameters were:

Homeopath\*.  
Homeopath\* AND Clinical Trial.  
Homeopath\* NOT Homeopathy(Journal)

	Disease/Disorder	Trial design	Results (homeopathic treatment)	P
Ref. 1	Acute otitis media*	R PC OB	↑ symptoms	P=0.002
Ref. 2	Acute maxillary sinusitis	R PC 2B MC	↑ self-perception of the disease ↑ look of lesions in radiography at 8 weeks	P<0.0001 P<0.0001
Ref. 3	Vertigo	OB	↑ microcirculation in the inner ear ↑ severity of the disease ↑ self-perception of the symptoms	P not shown P not shown P not shown
Ref. 4	Hemophilia	PC 1B CO	↓ bleeding frequency and duration ↓ blood transfusions needed ↓ pain self-score	P<0.0001 P<0.0001 P<0.0001
Ref. 5	ADHD*	R PC 2B CO	↑ visual detection of details, impulsivity and divided attention ↑ children behavior	P<0.0001 P=0.0479
Ref. 6	Acute stress	R PC 2B	↓ plasmatic norepinephrine ↑ sleep quality	P<0.001 P=0.02
Ref. 7	Insomnia	R PC 2B	↓ sleep quality ↓ sleep impairment	P=0.036 P<0.0001
Ref. 8	Neuropathic pain	R PC 2B CO	↓ pain scores	P<0.05
Ref. 9	Minor aphthous ulcer	R PC 1B	↓ pain scores ↓ ulcer size	P<0.05 P<0.05
Ref. 10	CLRS	R PC 2B	↓ knee swelling diameter	P=0.02

**Table 2. Reviewed clinical trials, both favoring (left) and disfavoring (right) homeopathy.** ADHD=Attention Deficit Hyperactivity Disorder. CLRS=Cruciate Ligament Reconstruction Surgery. URTI=Upper Respiratory Tract Infections. \*trial in children. R=randomized. PC=placebo-controlled. B=blinding. 3A=3-armed. MC=multicenter. CO=crossover. ↑=improvement. ↓=decrease. =no significant difference.

	Disease/Disorder	Trial design	Results (homeopathic treatment)	P
Ref. 11	URTI*	R PC 2B	= symptom score = duration = duration of the antibiotic treatment	P=0.733 P=0.531 P=0.725
Ref. 12	Recurrent vulvovaginal candidiasis	R 3A	↓ culture-free status ↑ recurrence ↓ Treatment satisfaction	P<0.0001 P=0.002 P<0.001
Ref. 13	Knee ligament reconstruction surgery	R PC 2B MC 3A	= morphine intake = quality of life = pain scores	P=0.42 P<0.001 P<0.001
Ref. 14	Hallux valgus surgery	R PC 2B MC	= pain scores = oral analgesic intake	P=0.89 P=0.99
Ref. 15	Chronic low back pain	R PC 2B 3A	= pain severity	P=0.35
Ref. 16	Anticipatory anxiety	R PC 2B 3A	= STAI-S, VAS and EEAC ↑ mean arterial pressure and heart rate	P=0.99 P<0.001
Ref. 17	Chronic mental fatigue	R PC 3B CO	= Stroop Test Score	P=0.3
Ref. 18	Aortic valve surgery	R PC 2B	= C-reactive protein at day 7 = troponin I at 48 hours = morphine intake	P=0.54 P=0.13 P=0.11
Ref. 19	Chemotherapy-induced emesis	R PC 2B MC	= severe nausea frequency = severe vomiting frequency	P=0.62 P=0.72
Ref. 20	Allergy	R PC 2B	= FEV1 = asthma bother score = mood score	P=0.006 P=0.001 P=0.035

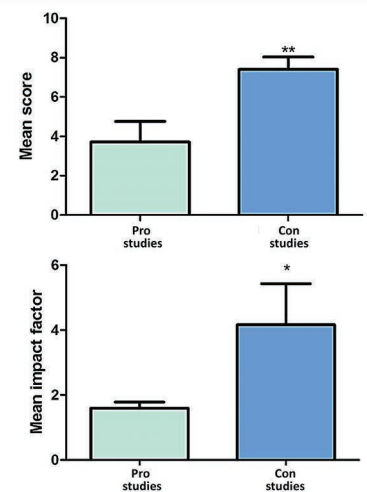
## Criticism of the observed methods

- Some authors attributed possible effectiveness of homeopathy to the consultation process. The improvement in the wellbeing would be due to a deeper interest in both patient and disease.
- Other studies have attributed the differences amongst results to the quality and veracity of the clinical trials.
- This review attempted to analyze the methodological quality of the studies included. Evaluating criteria were based on the Jadad Score system.
- To give a more quantitative view of this evaluation, arbitrary punctuations were assigned to the parameters.
- Statistical analysis was performed on both score and impact factor values.

Pro studies	Score	Con studies	Score
Ref.1	4	Ref.11	6
Ref.2	8	Ref.12	3
Ref.3	-2	Ref.13	9
Ref.4	0	Ref.14	8
Ref.5	3	Ref.15	7
Ref.6	6	Ref.16	9
Ref.7	0	Ref.17	8
Ref.8	7	Ref.18	8
Ref.9	5	Ref.19	10
Ref.10	6	Ref.20	6
Mean score	3,7	Mean score	7,4

**Table 3. Evaluation of methodological quality of the reviewed studies.** Obtained evaluation scores, with their means, for each reviewed clinical trial (top). Arbitrary punctuations assigned to the parameters in order to obtain the evaluation scores (right).

Criteria	Punctuation
Randomized	Yes +1
	No -1
Placebo-controlled	Yes +1
	No -1
Blindings	0 -1
	1 0
	2 +1
	3 +2
Branches	1 -1
	2 +1
	3 +2
Crossover	Yes +1
	No 0
Multicenter	Yes +1
	No -1
Homogeneous treatment	Yes +1
	No -1
Inclusion criteria	Yes +1
	No -1
Exclusion criteria	Yes +1
	No -1
Representative sample	Yes +1
	No -1
Objective measures	Yes +1
	No -1



**Figure 1. Mean score (top) and mean impact factor (bottom) of the reviewed clinical trials.** Results expressed as mean with SEM. \* p = 0.0483. \*\* p = 0.008 (Unpaired t test).

## Discussion and conclusions

- Homeopathy principles are completely questionable from a scientific point of view. Ultradilution beyond Avogadro's number makes the probability of finding a single molecule of the original compound tend to zero.
- Our review proved that results in bibliography are totally inconsistent, incompatible and contradictory.
- Some groups tried to give a reasonable explanation to these discrepancies by highlighting the role of the consultation process. This should not be considered as success of homeopathy but a failure of conventional medicine.
- Trials with positive results had more design inconsistencies, tended to use heterogeneous treatments, took biased and unrepresentative samples, chose influenced and subjective outcomes and were published in journals with lower impact factors.
- This review evidences the need to perform clinical trials with better designs, in order to be able to extract more consistent conclusions.

**This review suggests that homeopathy lacks both theoretical and experimental supporting data so, until proven otherwise, it should not be considered an effective alternative to conventional medicine**

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