Consumer summary:
The effect of acupuncture-point stimulation for chemotherapy-induced nausea or vomiting

A review of the effect of acupuncture-point stimulation for chemotherapy-induced nausea or vomiting was conducted by researchers in the Cochrane Collaboration. After searching for all relevant studies, they found 11 studies. Their findings are summarised below.

What is chemotherapy-induced nausea or vomiting and why acupuncture-point stimulation?

Nausea and vomiting are common reactions to chemotherapy and can cause considerable distress and discomfort to patients undergoing treatment. Vomiting is known medically as emesis and the feeling that one is about to vomit is called nausea.

An antiemetic is a drug that is effective against vomiting and nausea. Several classes of antiemetic agents exist to combat these side effects, though the 5-HT_3-receptor antagonists have become the first-line treatment choice for many cancer patients and are considered the "gold standard" in antiemetic therapy. Compared with the older generation antiemetic drugs, 5-HT_3-receptor antagonists are effective, well tolerated, and associated with few side effects.

However, many patients still experience these symptoms and the need for additional relief has led to an interest in additional non-pharmacological treatments or therapies. One that has gained increasing popularity is the use of acupuncture. Acupuncture is part of traditional Chinese medicine and involves the placing of thin needles in specific points on your body.

The acupuncture point used to control nausea and vomiting is P6, Pericardum 6 (also called Neiguan). It is located on the anterior surface of the underarm, usually measured as three finger breaths from the wrist.

P6 as other acupuncture points can be stimulated by various methods. The most well known technique is stimulation by insertion and manual rotation of a very fine needle (manual acupuncture). Other techniques include acupuncture applied with electricity through the inserted needle (electroacupuncture), stimulation of the acupuncture point by pressing on the points, usually with fingertip (acupressure), or by electrical stimulation via electrodes on the skin surface (noninvasive electrostimulation).

What does the research say?

Not all research provides the same quality of evidence. The higher the quality, the more certain we are about what the research says about an effect. The words *will* (high quality evidence), *probably* (moderate quality evidence) or *may* (low quality evidence) describe how certain we are about the effect. The word *slightly* means that the effect is small.

The studies showed that for patients receiving chemotherapy and experiencing nausea or vomiting, **manual acupuncture-point stimulation**

- May improve proportion vomiting in first 24 hours slightly
- May not improve mean nausea severity in first 24 hours
- Mean number of vomiting episodes and mean nausea severity day 2 to 7 are not reported in the review
- Side effects are not reported in the review

Table of results

What was measured	Non invasive placebo acupuncture	Manual acupuncture-point stimulation	Quality of evidence
Proportion vomiting in first 24 hours	**18 per 100**	**10 per 100 (3 to 31 per 100[1])**	⊕⊕◯◯ **Low**
Mean number of vomiting episodes day 2 to 7	Not reported in the review		
Mean nausea severity in first 24 hours	The mean nausea severity in first 24 hours in the control group was **0.59**	The mean nausea severity in first 24 hours in the intervention group was **0.02 standard deviations higher** (0.42 lower to 0.46 higher[1])	⊕⊕◯◯ **Low**
Mean nausea severity day 2 to 7	Not reported in the review		
Side effects	Not reported in the review		

[1]The numbers in the brackets show the range in which the actual effect could be.

The studies showed that for patients receiving chemotherapy and experiencing nausea or vomiting, **electroacupuncture and antiemetics**

- Probably improves proportion vomiting in first 24 hours
- Mean number of vomiting episodes day 2 to 7 are not reported in the review
- Mean nausea severity in first 24 hours and day 2 to 7 are not reported in the review
- Side effects are not reported in the review

Table of results

What was measured	Sham acupuncture and antiemetics	Electroacupunc-ture and antiemetics	Quality of evidence
Proportion vomiting in first 24 hours	**80 per 100**	**57 per 100 (49 to 78 per 100[1])**	⊕⊕⊕◯ **Moderate**
Mean number of vomiting episodes day 2 to 7	Not reported in the review		
Mean nausea severity in first 24 hours	Not reported in the review		
Mean nausea severity day 2 to 7	Not reported in the review		
Side effects	Not reported in the review		

[1]The numbers in the brackets show the range in which the actual effect could be.

The studies showed that for patients receiving chemotherapy and experiencing nausea or vomiting, **acupressure and antiemetics**

- May not improve proportion vomiting in first 24 hours
- Probably will not improve mean number of vomiting epoisodes day 2 to 7
- Probably improves mean nausea severity in first 24 hours
- Probably will not improve mean nausea severity day 2 to 7
- Side effects are not reported in the review

Table of results

What was measured	Antiemetics alone	Acupressure and antiemetics	Quality of evidence
Proportion vomiting in first 24 hours	**20 per 100**	**17 per 100 (12 to 23 per 100[1])**	⊕⊕◯◯ **Low**
Mean number of vomiting episodes day 2 to 7	The mean number of vomiting episodes day 2 to 7 in the control group was **0.38**	The mean number of vomiting episodes day 2 to 7 in intervention group was **0.07 lower** (0.25 lower to 0.11 higher[1])	⊕⊕⊕◯ **Moderate**
Mean nausea severity in first 24 hours	The mean nausea severity in first 24 hours in the control group was **2.5**	The mean nausea severity in first 24 hours in intervention group **was 0.19 standard deviations lower** (0.38 to 0.01 lower[1])	⊕⊕⊕◯ **Moderate**
Mean nausea severity day 2 to 7	The mean nausea severity day 2 to 7 in the control group was **2.95**	The mean nausea severity day 2 to 7 in the intervention group was **0.05 standard deviations lower** (0.23 lower to 0.13 higher[1])	⊕⊕⊕◯ **Moderate**
Side effects	Not reported in the review		

[1]The numbers in the brackets show the range in which the actual effect could be.

The studies showed that for patients receiving chemotherapy and experiencing nausea or vomiting, **electrostimulation (TENS) to acupuncture points and antiemetics**

- May not improve proportion vomiting in first 24 hours
- May not improve mean number of vomiting episodes day 2 to 7
- May not improve mean nausea severity in first 24 hours
- May not improve mean nausea severity day 2 to 7
- Side effects are not reported in the review

Table of results

What was measured	Sham TENS and antiemetics	TENS to acupuncture points and antiemetics	Quality of evidence
Proportion vomiting in first 24 hours	**24 per 100**	**22 per 100 (16 to 29 per 100[1])**	⊕⊕◯◯ **Low**
Mean number of vomiting episodes day 2 to 7	The mean number of vomiting episodes day 2 to 7 in the control group was **0.52**	The mean number of vomiting episodes day 2 to 7 in the intervention group was **0.06 higher** (0.11 lower to 0.22 higher[1])	⊕⊕◯◯ **Low**
Mean nausea severity in first 24 hours	The mean nausea severity in first 24 hours in the control group was **2.00**	The mean nausea severity in first 24 hours in the intervention group was **0.07 standard deviations lower** (0.23 lower to 0.1 higher[1])	⊕⊕◯◯ **Low**
Mean nausea severity day 2 to 7	The mean nausea severity day 2 to 7 in the control group was **2.64**	The mean nausea severity day 2 to 7 in the intervention group was **0.03 standard deviations higher** (0.14 lower to 0.19 higher[1])	
Side effects	Not reported in the review		

[1]The numbers in the brackets show the range in which the actual effect could be.

Where does this information come from?

The Cochrane Collaboration is an independent global network of volunteers, dedicated to summarizing research about health care.

This information is taken from this Cochrane Review: Ezzo J, Richardson MA, Vickers A, Allen C, Dibble S, Issell BF, Lao L, Pearl M, Ramirez G, Roscoe JA, Shen J, Shivnan JC, Streitberger K, Treish I, Zhang G. Acupuncture-point stimulation for chemotherapy-induced nausea or vomiting. *Cochrane Database of Systematic Reviews* 2006, Issue 2. Art. No.: CD002285. DOI: 10.1002/14651858.CD002285.pub2. Edited (no change to conclusions), published in Issue 1, 2010.

This summary was prepared by

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electroacupuncture + antiemetics compared to sham acupunctur + antiemetics for chemotherapy-induced nausea or vomiting

Patient or population: patients with chemotherapy-induced nausea or vomiting
Settings: hospitals
Intervention: electroacupuncture + antiemetics
Comparison: sham acupuncture + antiemetics[1]

Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk **sham acupunctur + antiemetics**	Corresponding risk **electroacupuncture + antiemetics**				
Proportion vomiting in first 24 hours	**80 per 100**	**62 per 100** (49 to 78)	**RR 0.77** (0.61 to 0.97)	134 (3 studies[4])	⊕⊕⊕⊖ **moderate**[2,3]	
Mean number of vomiting episodes day 2 to 7	See comment	See comment	Not estimable	0 (0)	See comment	Not reported in the review
Mean nausea severity in first 24 hours	See comment	See comment	Not estimable	0 (0)	See comment	Not reported in the review
Mean nausea severity day 2 to 7	See comment	See comment	Not estimable	0 (0)	See comment	Not reported in the review
Side effects	See comment	See comment	Not estimable	0 (0)	See comment	Not reported in the review

*The basis for the **assumed risk** (e.g. the median control group risk across studies) is provided in footnotes. The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; **RR:** Risk ratio;

GRADE Working Group grades of evidence
High quality: Further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: We are very uncertain about the estimate.

[1] One of three trials (Dundee 1988) compares with antiemetics only.
[2] Dundee 1987 and 1988: Uncertainty of randomisation procedure and allocation concealment. Dundee 1987 not stated blinding of outcome assesor. Not downgraded for this, since the two studies only account for abround 20% of the results.
[3] Only three small trials with a total of 134 participants.
[4] Analysis 3.1: Dundee 1987, Dundee 1988, Shen 2000.

acupressure + antiemetics compared to antiemetics alone for chemotherapy-induced nausea or vomiting

Patient or population: patients with chemotherapy-induced nausea or vomiting
Settings: hospital
Intervention: acupressure + antiemetics
Comparison: antiemetics alone[1]

Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk **antiemetics alone**	Corresponding risk **acupressure + antiemetics**				
Proportion vomiting in first 24 hours	**20 per 100**	**17 per 100** (12 to 23)	**RR 0.83** (0.6 to 1.16)	620 (2 studies[4])	⊕⊕⊖⊖ **low**[2,3]	
Mean number of vomiting episodes day 2 to 7	The mean mean number of vomiting episodes day 2 to 7 in the control groups was **0.38**	The mean Mean number of vomiting episodes day 2 to 7 in the intervention groups was **0.07 lower** (0.25 lower to 0.11 higher)		463 (1 study[7])	⊕⊕⊕⊖ **moderate**[5,6]	
Mean nausea severity in first 24 hours	The mean mean nausea severity in first 24 hours in the control groups was **2.5**	The mean Mean nausea severity in first 24 hours in the intervention groups was **0.19 standard deviations lower** (0.38 to 0.01 lower)		474 (2 studies[9])	⊕⊕⊕⊖ **moderate**[5,8]	
Mean nausea severity day 2 to 7	The mean mean nausea severity day 2 to 7 in the control groups was **2.95**	The mean Mean nausea severity day 2 to 7 in the intervention groups was **0.05 standard deviations lower** (0.23 lower to 0.13 higher)		485 (2 studies[11])	⊕⊕⊕⊖ **moderate**[5,10]	
Side effects	See comment	See comment	Not estimable	0 (0)	See comment	Not reported in the review

*The basis for the **assumed risk** (e.g. the median control group risk across studies) is provided in footnotes. The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; **RR:** Risk ratio;

GRADE Working Group grades of evidence
High quality: Further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: We are very uncertain about the estimate.

[1] One study (Noga 2002) used sham acupressure + antiemetics as control intervention.
[2] Noga 2002: Inadequate allocation concealment and no blinding of assessor. Roscoe 2003: Uncertainty of allocation concealment.
[3] CI crosses no difference and limits for precision. Only two small studies with a total of 620 participants.
[4] Analysis 5.1: Noga 2002, Roscoe 2003.
[5] Roscoe 2003: Uncertainty of allocation concealment. Not downgraded for this.
[6] Only one trial with a total of 463 participants
[7] Analysis 5.3: Roscoe 2003.
[8] Only two small studies with a total of 474 participants.
[9] Analysis 5.2: Dibble 2000, Roscoe 2003.
[10] Only two small studies with a total of 485 participants.
[11] Analysis 5.4: Dibble 2000, Roscoe 2003.

manual acupuncture compared to noninvasive placebo acupuncture for chemotherpy-induced nausea or vomiting

Patient or population: patients with chemotherpy-induced nausea or vomiting
Settings: hospital
Intervention: manual acupuncture
Comparison: noninvasive placebo acupuncture

Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk **noninvasive placebo acupuncture**	Corresponding risk **manual acupuncture**				
Proportion vomiting in first 24 hours	**18 per 100**	**10 per 100** (3 to 31)	**RR 0.54** (0.17 to 1.71)	80 (1 study[2])	⊕⊕⊖⊖ **low**[1]	
Mean nausea severity in first 24 hours	The mean mean nausea severity in first 24 hours in the control groups was **0.59**	The mean Mean nausea severity in first 24 hours in the intervention groups was **0.02 standard deviations higher** (0.42 lower to 0.46 higher)		80 (1 study[3])	⊕⊕⊖⊖ **low**[1]	
Mean number of vomiting episodes day 2 to 7	See comment	See comment	Not estimable	0 (0)	See comment	Not reported in the review
Mean nausea severiy day 2 to 7	See comment	See comment	Not estimable	0 (0)	See comment	Not reported in the review
Side effects	See comment	See comment	Not estimable	0 (0)	See comment	Not reported in the review

*The basis for the **assumed risk** (e.g. the median control group risk across studies) is provided in footnotes. The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; **RR:** Risk ratio;

GRADE Working Group grades of evidence
High quality: Further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: We are very uncertain about the estimate.

[1] CI crosses no difference and limits of precision. Only one small trial with a total of 80 participants.
[2] Analysis 4.1: Streitberger 2003.
[3] Analysis 4.2: Streitberger 2003.

electrostimulation (TENS) to acupuncture points + antiemetics compared to sham stimulation + antiemetics or antiemedics only for chemotherapy-induced nausea or vomiting

Patient or population: patients with chemotherapy-induced nausea or vomiting
Settings: hospital
Intervention: electrostimulation (TENS) to acupuncture points + antiemetics
Comparison: sham stimulation + antiemetics or antiemedics only

Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk **sham stimulation + antiemetics or antiemedics only**	Corresponding risk **electrostimulation (TENS) to acupuncture points + antiemetics**				
Proportion vomiting in first 24 hours	**24 per 100**	**22 per 100** (16 to 29)	**RR 0.90** (0.67 to 1.19)	629 (4 studies[4])	⊕⊕⊖⊖ **low**[1,2,3]	
Mean number of vomiting episodes day 2 to 7	The mean mean number of vomiting episodes day 2 to 7 in the control groups was **0.52**	The mean Mean number of vomiting episodes day 2 to 7 in the intervention groups was **0.06 higher** (0.11 lower to 0.22 higher)		527 (3 studies[6])	⊕⊕⊖⊖ **low**[1,2,5]	
Mean nausea severity in first 24 hours	The mean mean nausea severity in first 24 hours in the control groups was **2.00**	The mean Mean nausea severity in first 24 hours in the intervention groups was **0.07 standard deviations lower** (0.23 lower to 0.1 higher)		568 (5 studies[9])	⊕⊕⊖⊖ **low**[2,7,8]	
Mean nausea severity day 2 to 7	The mean mean nausea severity day 2 to 7 in the control groups was **2.64**	The mean Mean nausea severity day 2 to 7 in the intervention groups was **0.03 standard deviations higher** (0.14 lower to 0.19 higher)		569 (4 studies[11])	⊕⊕⊖⊖ **low**[1,2,10]	
Side effects	See comment	See comment	Not estimable	0 (0)	See comment	Not reported in the review

*The basis for the **assumed risk** (e.g. the median control group risk across studies) is provided in footnotes. The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; **RR:** Risk ratio;

GRADE Working Group grades of evidence
High quality: Further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: We are very uncertain about the estimate.

[1] Pearl 1999: Crossover design, inadequate allocation concealment, Roscoe 2002: Crossover design, Roscoe 2003: Uncertainty of allocation concealment, Treish 2003: Inadequate allocation concealment.
[2] Som uncertainty of directness because of included cross over trials. Not downgraded for this.
[3] CI crosses limitations for precision.
[4] Analysis 6.1. Pearl 1999, Roscoe 2002, Roscoe 2003, Treish 2003.
[5] Two out of three are small trials with a total of 68 participants.
[6] Analysis 6.3: Pearl 1999, Roscoe 2003, Treish 2003.
[7] McMillan 1991: Crossover design, uncertainty of allocation concealment, Pearl 1999: Crossover design, inadequate allocation concealment, Roscoe 2002: Crossover design, Roscoe 2003: Uncertainty of allocation concealment, Treish 2003: Inadequate allocation concealment.
[8] Four out of five trials are very small with a total of 122 particpants.
[9] Analysis 6.2: McMillan 1991, Pearl 1999, Roscoe 2002, Roscoe 2003, Treish 2003.
[10] Three of four trials are very small with a total of 106 participants.
[11] Analysis 6.4: Pearl 1999, Roscoe 2002, Roscoe 2003, Treish 2003.