


Études  
portant sur  
l'utilisation de l'acupuncture et de l'herbologie chinoise  
dans  
le traitement de l'infertilité

(version anglaise tirée du site <http://www.acupunctureivf.com.au/>)

## Acupuncture and embryo transfer, published in Fertility and Sterility

1.  *Fertility and Sterility*, the official publication of the *American Society for Reproductive Medicine* publishes juried original articles of scientific excellence in clinical and laboratory research relevant to reproductive endocrinology and physiology. The studies below have all appeared in the journal *Fertility and Sterility*. Eleven of them found that acupuncture performed close to the time of embryo transfer improved chances of pregnancy. Four reported no effect, and one found a negative effect.

Other journals (see below) have also reported the positive effects of acupuncture at the time or embryo transfer (and other times). More studies are underway to investigate the mechanism behind the effect of acupuncture on implantation of the embryo.

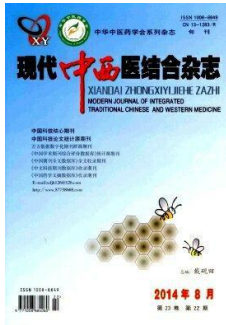
If any provisional conclusions are to be drawn at this stage, it is that acupuncture appears to confer an advantage to clinical trial groups which have an expected pregnancy rate of around 35% or less. Where chance of pregnancy is 50 - 60% then acupuncture applied at the time of embryo transfer may not offer so much benefit.

ACUPUNCTURE AND EMBRYO TRANSFER STUDIES	
Authors and references	Effect of acupuncture on pregnancy rate
Paulus W et al, <i>Fertil Steril</i> 2002 Vol 77, pg 721-724	Positive effect
Smith C et al, <i>Fertil Steril</i> 2006 Vol 85, pg 1352-1358	Positive effect
Westergaard L et al, <i>Fertil Steril</i> 2006 Vol 85, pg 1341-1346	Positive effect
Dieterle S et al, <i>Fertil Steril</i> 2006 Vol 85, pg 1347-1351	Positive effect
Benson M. R. et al, <i>Fertil Steril</i> 2006 Vol 86, Suppl 1, pg S135	Positive effect
Udoff L. C. et al, <i>Fertil Steril</i> 2007 Vol 86, Suppl 1, pg S145	Positive effect
Teshima D.R.K et al, <i>Fertil Steril</i> 2007 Vol 88, Suppl 1,pg S330	Positive effect
Magarelli P,Cridennda D, <i>Fertil Steril</i> 2004Vol 81,Suppl 3,pgS20	Positive effect
Quintero R et al, <i>Fertil Steril</i> 2004 Vol 81 Suppl 3, pg S11-12	Positive effect
Youran D et al, <i>Fertil Steril</i> 2008 Vol 90 Suppl 1, pg S240	Positive effect
Zhang R et al, <i>Fertil Steril</i> 2011 Vol 96 No 4, pg 912 - 916	Positive effect
Domar A et al, <i>Fertil Steril</i> 2006 Vol 86 Suppl 2, pg S379	No effect
Domar A et al <i>Fertil Steril</i> 2009 Vol 91 pg 723 - 6	No effect
Fratterelli JL et al <i>Fertil Steril</i> 2008 Vol 90 Suppl 1, pg S105	No effect
Moy I et al <i>Fertil Steril</i> 2011 Vol 95 pg 583-587	No effect
Craig L. B et al, <i>Fertil Steril</i> 2007 Vol 88, Suppl 1, pg S40	Negative effect

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## Acupuncture and blocked tubes

2.



### Clinical study on the treatment of fallopian tube obstructive infertility with acupuncture and Chinese medicine.

Ding li et al, Mod J Int Trad Chin Western Medicine 17 (2014): 1828-1829. Modern Journal of Integrated Traditional Chinese and Western Medicine

Infertility caused by blocked Fallopian tubes is usually very effectively treated with IVF. However Chinese clinics treat such blockages with acupuncture and with herbs taken both orally and as an enema.

## Acupuncture, herbs and IVF (other publications)

3.

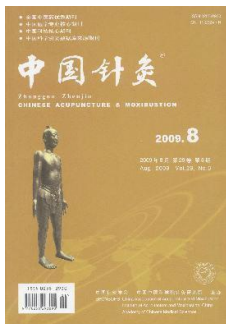


### Use of Acupuncture before and after embryo transfer

Dalton- Brewer N et al, Hum Fert 2010 Vol 12 No 4 212 - 255 Human Fertility (abstracts from UK Fertility Societies Conference 2009)

This report describes outcomes for all patients who attended the The London Bridge Fertility, Gynaecology and Genetics Centre in London over a 2 year period and who had acupuncture. In the acupuncture group positive pregnancy rates/ET were 44.6% comparing favourably with the non-acupuncture historic control group. When they analysed outcomes in different age groups they discovered that acupuncture intervention was particularly effective in woman in the 35 - 39 and the over 40 group.

4.



### Effect of acupuncture on the pregnancy rate in embryo transfer and mechanisms: A randomized and controlled study

Zhang M et al, Chin Acup and Moxabustion 2003, Jan 23 (1): 3 - 5 Chinese Acupuncture and Moxabustion

210 IVF patients were randomly placed in groups that received real acupuncture or placebo or no treatment on the day of embryo transfer. The pregnancy rate was significantly higher in the group who received real acupuncture. Additionally this trial showed that the women who received real acupuncture had fewer uterine contractions after the transfer.

5.



**A randomized double blind comparison of real and placebo acupuncture in IVF treatment.**

So et al, Hum Reprod. 2009 Feb;24(2):341- 8. Human Reproduction

Researchers in Hong Kong found no significant difference between the effects of placebo and regular acupuncture in clinical or ongoing pregnancy rates however on initial hCG testing the placebo group had more positive tests.

Both placebo and regular acupuncture significantly reduced vascularity of the uterus, reduced stress hormones and anxiety levels. These findings lead the researchers to suggest that placebo acupuncture is in fact not inert. Placebo acupuncture needles prick the skin at the acupuncture point but do not penetrate the skin. Many Japanese acupuncturists (who routinely use minimal stimulation of acupuncture points) would argue strongly that this is not an inert placebo procedure but a therapeutic one. Unfortunately there was no control group in this trial which received no acupuncture.

6.

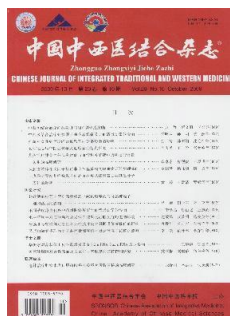


**The relationship between perceived stress, acupuncture, and pregnancy rates among IVF patients: A pilot study**

Balk J et al, Compl Therapies in Clinical Practice 2010,16,154–157 Complementary Therapies in Clinical Practice

These researchers at a university IVF clinic in Pittsburgh were interested to investigate the relationship between acupuncture, stress and pregnancy rates. The patients who received acupuncture on the day of embryo of transfer had a pregnancy rate of 55.6% compared with the control group pregnancy rate of 35.5%.

7.



**Influence of Acupuncture on Infertility in Rats with Polycystic Ovarian Syndrome**

Zhang Wei Yi et al, Chinese Jnl Integrated Traditional and Western Med 2009 Nov (8), 973 Chinese Journal of Integrated Traditional and Western Medicine

This research carried out in Wuhan, China examined the effect of acupuncture administered to rats on various fertility measures including the implantation rate of blastocysts. Acupuncture was used on the abdomen and limbs. This significantly increased ovarian and uterine development and the rate of implantation of embryos compared to the control group of rats which did not have acupuncture.

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8.



**Effect of acupuncture on assisted reproduction treatment outcomes**

Madaschi C et al, *Acupunct Med* 2010;28:180-184 Acupuncture in Medicine (BMJ)

This trial conducted in Brazil looked at the effect of acupuncture administered before and after embryo transfer on a large group of women undergoing IVF (208 women in both the acupuncture and the control group). They found an increase in implantation rate, and a significant increase in pregnancy rates where there was no known issue with egg or sperm quality in the acupuncture group. However analysis of all cases together showed no impact of acupuncture on pregnancy rates.

9.



**Acupuncture on the day of embryo transfer: a randomized controlled trial of 635 patients**

Andersen D et al, *Reproductive BioMedicine Online*, 2010, 21, 3, 366-372 *Reproductive BioMedicine Online*

This trial conducted in Denmark found no difference in pregnancy rates in IVF patients given acupuncture on the day of embryo transfer with a real acupuncture needle or a placebo one which just pricked the point rather than penetrated it. As with other trials mentioned above there is an understanding now that such a placebo is not inert, and trials such as this one need a control group of women who have no acupuncture.

10.



**Pilot study: acupuncture may improve results of IVF**

Jancin B, 2010, *Elsevier News Elsevier Global Medical News*

This trial was presented at the Annual Society for Reproductive Medicine meeting by Dr Omedei from Italy, and was reported by Elsevier and *ObGyn News*. It has not yet been published in a journal. They found that women who acupuncture at the time of embryo transfer had had a 45% pregnancy rate (determined by ultrasound) compared with women in the control group (no acupuncture) who had a pregnancy rate of 28%. The acupuncture-treated women reported a sense of well-being while the controls generally reported feeling emotionally stressed and fatigued.

11.

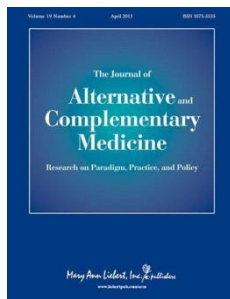


**Influence of acupuncture on the outcomes of in vitro fertilisation when embryo implantation has failed: a prospective randomised controlled clinical trial.**

di Villahermosa D et al, *Acupunct Med.* 2013 Vol 31, 2, p 157  
*Acupuncture in Medicine (BMJ)*

A group of researchers in Brazil gave acupuncture and moxibustion to patients who had not achieved a pregnancy after 2 IVF cycles. Treatment was administered during the stimulation phase of the 3rd IVF cycle and after embryo transfer. Significantly more women in the acupuncture group conceived compared to the control groups.

12.

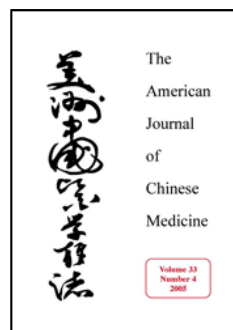


**Effects of Chinese Medicines for Tonifying the Kidney on DNMT1 Protein Expression in Endometrium of Infertile Women During Implantation Period**

Lian Fang et al *Jnl Alt Compl Med*, 2013, Vol 19, 4, 353–359  
*The Journal of Alternative and Complementary Medicine*

In this country (Australia) it is preferred by IVF clinics that their patients do not take Chinese herbs. However in China it is more accepted and herbs are used during IVF cycles in some clinics. A recent study showed that taking herbs for three months prior to and during the IVF cycle improved egg quality and pregnancy rate with lower doses of FSH.

13.



**Clinical efficacy of macrophage-activating Chinese mixed herbs (MACH) in improvement of embryo qualities in women with long-term infertility of unknown etiology.**

Ushiroyama T et al, *Am J Chin Med.* 2012;40(1):1-10.  
*American Journal of Chinese Medicine.*

A pilot study in Japan, gave IVF patients with a history of cycle failure a Chinese herb formula designed to regulate the immune system. They found that use of the herbs was associated with significant improvement in the quality of the blastocysts.

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14.



**The role of acupuncture in patients at unfavourable reproductive prognosis in IVF: a prospective randomised study**

Arnoldi, M et al, Hum Reprod 2010; 25(Suppl. 1):i257 Human Reproduction

Only women with a poor prognosis, ie they had a history of IVF failure, or they had endometriosis or high FSH were included in this trial, in which individualised acupuncture was administered through out the IVF cycle and on the day of embryo transfer. The group of women who had acupuncture had a 22% pregnancy rate compared to 10% in the group of women who didn't. Although the number of women was small in this trial, it does agree with a trend that we have noticed since the early days of this sort of research. Namely that women with a lower chance of success with IVF are more likely to benefit from adjuvant acupuncture than those who have a higher chance of success.

15.



**Acupuncture and in vitro fertilization: a retrospective chart review.**

Hullender R et al J Altern Complement Med. 2013 Jul;19(7):637- 43.Jnl Alternative and Complementary Medicine

In this interesting observational study, women receiving embryos from donor eggs, were given acupuncture on the day of transfer, and live birth rates were compared with a similar control group. 87% of the women who had acupuncture had a baby compared with 66% in the group that did not have acupuncture.



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## Acupuncture and blood flow to uterus and ovaries

In addition to the acupuncture and embryo transfer studies there have been other clinical trials carried out which reveal information relevant to reproductive outcomes:

16.



### **Reduction of blood flow impedance in the uterine arteries of infertile women with electro- acupuncture.**

Stener-Victorin E, et al Hum Reprod 1996; 11:1314-1317.  
Human Reproduction

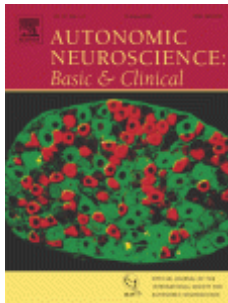
Previous studies have shown that reduced blood flow in the uterine arteries is associated with a decreased pregnancy rate following IVF- embryo transfer. This study reported in Human Reproduction (the official journal of the European Society of Human Reproduction and Embryology) shows that after 8 acupuncture treatments blood flow to the uterus were markedly increased. Research carried out by one group of IVF clinics in California has shown that using this protocol to increase blood flow to the uterus, combined with acupuncture on the day of transfer has resulted in a significant improvement in pregnancy rates.

See also:

[Acupuncture & IVF Poor Responders: A Cure?](#)

[Acupuncture and IVF: State of the ART of Integrative Research](#)

17.



### **Ovarian blood flow responses to electro- acupuncture stimulation at different frequencies and intensities in anaesthetized rats**

Stener-Victorin E et al Autonomic Neuroscience 2003, Vol 108, Issues 1-2, Pg 50-55 Autonomic Neuroscience

The blood flow to the ovaries has also been shown to be enhanced by acupuncture by the same researchers. This study was done on anaesthetized rats, however we can assume a similar mechanism will operate in women.



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18.



### **A Pilot Study Evaluating the Combination of Acupuncture with Sildenafil on Endometrial Thickness**

Yu W et.al. Presented at the Pacific Coast Reproductive Society Annual Conference 2007

This small pilot study examined the effect of Viagra and acupuncture on the uterine linings of women who had a history of thin linings (<8mm) in previous IVF cycles (including patients who had previously used Viagra alone). They used the above mentioned protocols which improve blood flow to the ovaries and uterus. The researchers found that after acupuncture treatment the thickness of the lining improved to 10 mm or more in all participating patients.

19.



### **Acupuncture & IVF Poor Responders: A Cure?**

Magarelli P, Cridennda D. Fertil Steril, 2004;81(Supplement 3):S20 Fertility and Sterility

This clinical trial combined the acupuncture protocol used on the day of embryo transfer with the acupuncture treatment protocol designed to increase blood flow to the uterus. The authors report that “Significant increases in pregnancy outcomes were confirmed by this study which demonstrated that both acupuncture treatment protocols could be used together with a synergistic effect.” They add that “this study is the first to demonstrate that the use of acupuncture in patients with poor prognoses (elevated Peak FSH, longer history of infertility, poor sperm morphology) can achieve similar pregnancy rates to normal prognosis patients.”

20.



### **A randomized, controlled, double blind, cross-over study evaluating acupuncture as an adjunct to IVF.**

Quintero R et al, Fertil Steril, 2004;81(Supplement 3):S11-12 Fertility and Sterility

This pilot study showed that a significantly lower amount of gonadotropins (IVF drugs) was used when IVF was combined with standard acupuncture, ie the acupuncture appeared to make the ovaries more responsive to the drugs possibly due to increased blood supply to the ovaries. Increased ovarian responsiveness could be a useful effect for women who produce small numbers of eggs. This trial needs to be repeated with larger numbers of patients.

21.

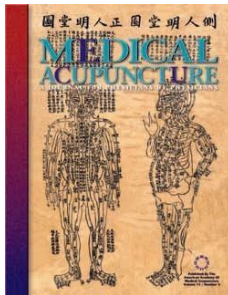


**Changes in serum cortisol and prolactin associated with acupuncture during controlled ovarian hyperstimulation in women undergoing in vitro fertilization–embryo transfer treatment**

Magarelli, PC, D Cridennda, M Cohen. Fertil Steril. 2009 Dec;92(6):1870-9 Fertility and Sterility

A number of women going through IVF were given acupuncture to increase blood flow through the uterine arteries in the immediate weeks before egg collection. The researchers found that the women who had acupuncture showed beneficial changes in serum levels of stress hormones compared to the control group of women who did not have acupuncture. The acupuncture treatments appear to normalize levels of cortisol and prolactin which have been artificially depressed by the IVF drugs. This may have implications for both egg quality and implantation. In addition the pregnancy and live birth rate was significantly higher in the acupuncture group.

22.



**Acupuncture Treatment For Infertile Women Undergoing Intracytoplasmic Sperm injection**

Emmons S and Patton P, Medical Acupuncture 2000, 12 (2) 18-20 Medical Acupuncture

This pilot studied is included here because it is the first of many studies which followed in subsequent years examining the effects of acupuncture on IVF patients. In this case several women were referred for acupuncture as a last resort after very poor response to high doses of FSH. More eggs were collected and more pregnancies were recorded in the acupuncture cycles compared to the non acupuncture cycles, possibly due to increased blood supply to the ovaries.

23.



**A randomized double blind comparison of real and placebo acupuncture in IVF treatment.**

So et al, Hum Reprod. 2009 Feb;24(2):341-8. Human Reproduction

While certain electroacupuncture protocols appear to increase blood flow to the uterus, the points (and no electroacupuncture) used at the time of embryo transfer have a different effect. This study showed that when these points were needled (either penetrating or pricking the acupuncture points) the vascularity of the lining of the uterus was reduced. The authors point out that a slightly hypoxic uterine environment may be beneficial for the embryo and its implantation.

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24.



### **Electroacupuncture Reduces Uterine Artery Blood Flow Impedance in Infertile Women**

Ming H et al, 2009 Vol 48, Issue 2, Pages 148-151 Taiwanese Journal of Obstetrics and Gynecology

A recent study of blood flow to the uterus examined the effect of electroacupuncture during the drug stimulation phase of an IVF cycle. The blood flow in the uterine artery was increased in the group of women who had acupuncture but not in the control group. More women in the acupuncture group responded to the IVF drugs than in the control group, however the pregnancy rates were not significantly different between the 2 groups.

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## Acupuncture and sperm

25.



### **Quantitative evaluation of spermatozoa ultrastructure after acupuncture treatment for idiopathic male infertility.**

Pei J et al Fertil Steril. 2005 Jul;84(1):141-7 Fertility and Sterility.

A group of infertile men who had pathological semen analyses according to WHO criteria, were treated with acupuncture twice a week for 5 weeks. A statistically significant increase after acupuncture in the percentage and number of sperm with no structural defects was demonstrated compared to the control group of patients who received no treatment. They concluded that male infertility patients could benefit from having acupuncture. A general improvement of sperm quality, specifically in the ultrastructural integrity of spermatozoa, was seen after acupuncture.

26.



### **Effect of acupuncture on sperm parameters of males suffering from subfertility related to low sperm quality.**

Siterman S et al Arch Androl. 1997 Sep- Oct;39(2):155-61 Archives of Andrology

A group of infertile men with abnormal semen analysis were randomly divided into 2 groups; one group was given 10 acupuncture treatments over 5 weeks, and the other group, no treatment. Significant improvements ( $p < 0.05$ ) were demonstrated in the acupuncture group compared to the control group, in particular improved motility and morphology.

27.

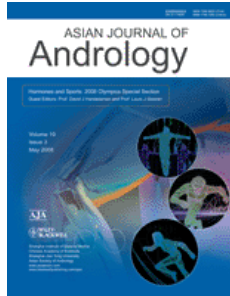


### **Does acupuncture treatment affect sperm density in males with very low sperm count? A pilot study.**

Siterman S et al Andrologia. 2000 Jan;32(1):31-9. Andrologia

This pilot study once again showed a positive effect of acupuncture on sperm count - but this time on men with such low sperm counts (or no sperm) that they would usually require a testicular biopsy to extract sperm for use in an IVF cycle. Seven of the 15 men with no sperm at all produced sperm detectable by the light microscope after a course of 10 acupuncture treatments ( $p < 0.01$ ) ie enough sperm could be produced for ICSI to be performed without recourse to testicular biopsy. The control group with similar semen analysis had no treatment and showed no change after 3 months.

28.



**Effects of acupuncture and moxa treatment in patients with semen abnormalities.**

Gurfinkel E et al Asian J Androl. 2003 Dec;5(4):345-8. Asian Journal of Andrology

In a prospective, controlled and blind study, a group of infertile men (married for 3 - 11 years without children) were randomized into two groups, the treatment group receiving 10 acupuncture treatments and the control group receiving sham acupuncture treatments. The patients in the acupuncture group demonstrated a significant increase in the percentage of normal forms compared to the control group.

29.



**Influence of acupuncture on idiopathic male infertility in assisted reproductive technology.**

Zhang M et al JHuazhong Univ Sci Tech Med Sci.2002;22(3):228-30 Journal of Huazhong University ( Abstract in Chinese)

This trial looks at sperm behaviour in an IVF setting. It was a “before and after” study involving 82 infertile men with pathological semen abnormalities and who’s sperm achieved a poor fertilization rate in at least 2 IVF/ICSI cycles. They were given acupuncture twice a week over 8 weeks and the IVF/ICSI cycles were repeated. The fertilization rates after acupuncture (66.2%) were significantly higher than that before treatment (40.2%) (P < 0.01).

30.



**A prospective randomized placebo-controlled study of the effect of acupuncture in infertile patients with severe oligoasthenozoospermia**

Dieterle et al Fertil Steril 2009 Oct; 92 (4): 1340–3 Fertility and Sterility

This recent small clinical trial randomised 57 patients who had extremely low sperm counts, to acupuncture and placebo acupuncture groups. After receiving acupuncture twice weekly for 6 weeks motility of sperm (but not overall count) was found to increase significantly. The authors conclude that the results of the present study support the significance of acupuncture in male patients with severe oligoasthenozoospermia. More evidence with larger trials needs to be accumulated before the efficacy and effectiveness of acupuncture in male infertility can be evaluated.

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31.



**Point- and frequency- specific response of the testicular artery to abdominal electroacupuncture in humans**

Cakmak Y et al, Fertil Steril 2008;90:1732–8 Fertility and Sterility

Just as electroacupuncture can increase blood flow to the ovaries and uterus (see reports above) so it can to the testicles. These authors demonstrate that particular frequencies applied for just 5 minutes are effective in increasing blood flow in the testes, and suggest that such a stimulus may address the damaged microcirculation associated with varicoceles, and with aging. They note that decreased testicular arterial blood flow may result in impaired spermatogenesis from defective metabolism in the microcirculatory bed and suggest that further research is needed to discover if electroacupuncture can improve sperm manufacture in this instance.

32.



**Significant reduction of sperm disomy in six men: effect of traditional Chinese medicine?**

Tempest HG et al, Asian J Androl. 2005 Vol 7(4):419-25. Asian Journal of Andrology.

This is a small study carried out in the UK, but one of the few (outside of China) to look at the effect of Chinese herbs on sperm quality. The incidence of chromosomal abnormality in all the patients who took the herbs was significantly reduced.

33.



**Success of acupuncture treatment in patients with initially low sperm output is associated with a decrease in scrotal skin temperature.**

Siterman S et al, Asian J Androl 2009 Vol 11(2):200-8 Asian Journal of Andrology.

This rather unusual study discovered that the success of acupuncture in improving sperm quality was associated with a drop in temperature of the testes.

34.



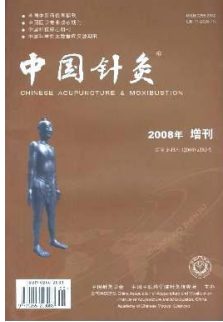
**Clinical study on the treatment of male immune infertility**

by Huzhangdanshenyin Lu TK et al, Zhonghua Nan Ke Xue. 2006 Aug;12(8):750-5. National Journal of Andrology

Studies in Xiamen, China have found that herbal formulas have a better effect on anti-sperm antibodies than does prednisone, and provide an effective way to treat male factor immune infertility.

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35.



**Clinical observation on electroacupuncture and Chinese drug for treatment of oligospermia and asthenospermia of the male infertility patient**

Wang Z et al, Zhongguo Zhen Jiu. 2008 Nov;28(11):805-7.  
Zhongguo Zhen Jiu

This interesting study examined the effect of electroacupuncture, chinese herbs or a combination of both on the sperm quality of infertile men. While sperm count and vitality improved in all groups, the effect was significantly better in the group who had acupuncture and took Chinese herbs.



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## Acupuncture, stress and fertility

36.



### **The Impact of Acupuncture on in Vitro Fertilization Outcome.**

Domar A et al Fertil Steril 2009 Vol 91 Issue 3 pg 723 – 6  
Fertility and Sterility

One of the trials that investigated the effect of acupuncture on IVF pregnancy rates also collected data on the subjective experience of these women. The authors write “Acupuncture patients reported significantly less anxiety post-transfer and reported feeling more optimistic about their cycle and enjoyed their sessions more than the control subjects”. Nobody knows how exactly acupuncture might boost IVF success, Domar said, although she suggests that it has something to do with a woman's mental state at the time of embryo transfer.

37.



### **Understanding Women's views towards the use of Acupuncture while undergoing IVF treatment.**

Smith C and De Lacey S, 2008 In press FSA conference 2008

This qualitative study found that most women who had acupuncture as an adjunct to IVF treatment reported increased well being, reduced anxiety and an increase in capacity to cope with the stresses of IVF and infertility treatments.

38.

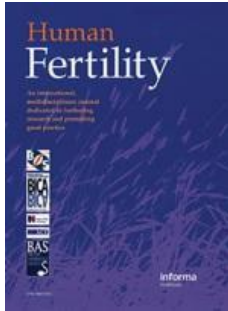


### **Building resilience: An exploration of women's perceptions of the use of acupuncture as an adjunct to IVF**

De Lacey S, Smith C and Paterson C, BMC Complementary and Alternative Medicine 2009, 9:50 BioMed Central

Resilience is an interesting and important concept when applied to couples doing IVF. Studies of acupuncture involving women dealing with chronic health issues have shown that women experienced relief of presenting symptoms but also increases in energy, increase in relaxation and calmness, reduction in the reliance of prescription drugs (such as analgesics), quicker healing from surgery and increased self awareness and well being. Such effects indicate a reduction of stress that in turn may diminish the number of treatment cycles needed for pregnancy to occur. But further, reducing the number of cycles a woman must undertake to reach her goal of motherhood reduces the overall cost of IVF.

39.



**An assessment of the demand and importance of acupuncture to patients of a fertility clinic during investigations and treatment**

Hinks J and Coulson C, Hum Fert 2010 Vol 13, S1 Pg 3-21 Human Fertility

These authors working in a fertility clinic in the UK surveyed 200 patients who attended the clinic in August 2009. They discovered that there was a clear demand for acupuncture and that acupuncture may be valuable to improve the general wellbeing of women during infertility investigations and treatments. They also felt that patient resilience may be increased by the use of acupuncture alongside their IVF treatment such that patients would persevere with increased numbers of ART(Assisted Reproductive Technologies) cycles, thereby increasing their ultimate chance of a successful pregnancy.

40.



**A randomized double blind comparison of real and placebo acupuncture in IVF treatment.**

So et al, Hum Reprod. 2009 Feb;24(2):341- 8. Human Reproduction

This paper which was included above amongst those describing the Embryo transfer trials, also investigated cortisol and anxiety levels before and after acupuncture was administered at precise points with either needles which penetrate the skin or "placebo" needles which prick the points but do not penetrate. No matter how the acupuncture was administered cortisol and perceived anxiety were significantly reduced after the treatment.

41.



**The relationship between perceived stress, acupuncture, and pregnancy rates among IVF patients: A pilot study**

Balk J et al, Complement Ther Clin Pract. 2010 Aug;16(3):154-7). Complementary Therapies in Clinical Practice

These investigators aimed to determine if acupuncture affects the levels of perceived stress at the time of embryo transfer, and whether either acupuncture or changes in stress levels play a role in the success rate in IVF. The patients who received acupuncture in this study had both higher rates of pregnancy, and lower levels of stress both before and after embryo transfer. They postulated that reducing stress at the time of embryo transfer could result in less vasoconstriction and improved uterine receptivity.

42.



**Stress reduces conception probabilities across the fertile window: evidence in support of relaxation.**

Buck Louis GM et al, Fertil Steril. 2011, 95,7, pg 2184 – 2189  
Fertility and Sterility

While this study did not involve IVF patients its conclusions nevertheless have relevance to women trying to fall pregnant with IVF. The study showed a clear relationship with higher stress levels and reduced conception rates. This may be one of the ways that acupuncture, which reduces stress hormones, can improve fertility.

43.



**Stressful Life Events are Associated with a Poor In-vitro Fertilization (IVF) Outcome: A Prospective Study**

Ebbesen S.M.S. Hum Reprod 2009;24(9):2173-2182. Human Reproduction

This study examined the outcomes of IVF cycles for 800 women and found that the chance of success was related to chronic stress levels. They surmised that chronic stress levels may have a negative effect on follicle development in an IVF cycle. Since acupuncture has been shown to reduce stress hormones this may be the mechanism behind its benefit for IVF patients.

44.



**Effectiveness of psychosocial group intervention for reducing anxiety in women undergoing in vitro fertilization: a randomized controlled study.**

Chan CH et al, Fertil Steril. 2006 Feb;85(2):339-46. Fertility and Sterility

A group of researchers from Hong Kong hypothesized that women who received certain interventions would experience a lower level of anxiety during the IVF treatment and therefore have better mental adjustment and psychosocial functioning during IVF. This programme includes instruction on principles of Chinese medicine emphasizing body-mind harmony and stress reduction techniques including Tai qi and meditation. However it did not include acupuncture. They found that anxiety was significantly reduced in the women who followed the programme.

45.

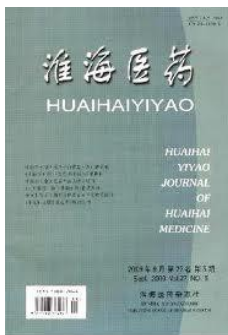


**The effect of medical clowning on pregnancy rates after in vitro fertilization and embryo transfer Friedler S et al, Fertility and Sterility**

2011, Vol 95, Issue 6 , Pg 2127 Fertility and Sterility

Dr. Friedler and colleagues tracked 219 women undergoing IVF treatment and, over a period of a year, treated half of them to a medical clown's 15-minute routine of jokes, magic tricks and other clowning immediately after their embryos were implanted. Those women who's stress was relieved with a good laugh after their transfer fell pregnant more often than did the control group.

46.

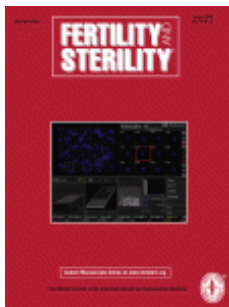


**The Relationship between Mental Work and Threatened Abortion**

Huang Zhi Ying, 2002 Jnl Huaihai Medicine, Issue 1 Journal of Huaihai Medicine

Although some fine detail may have been lost in translation, this trial indicates that stress (mental work) increases the risk of miscarriage.

47.



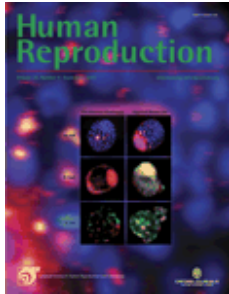
**Immunological changes and stress are associated with different implantation rates in patients undergoing in vitro fertilization-embryo transfer**

Gallinelli A et al, 2001 Fertil Steril 76, 1, 85 Fertility and Sterility

This study examines the effect of stress on embryo transfer and explores its impact via the immune system. The researchers conclude that stress is associated with high amounts of activated T cells in the peripheral blood which is in turn associated with a reduced implantation rate in women undergoing IVF-ET. The subject of regulation of T cells by acupuncture is something we are examining currently and is one of the hypothesized mechanisms by which acupuncture may increase implantation in some women.

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48.



**Glutathione and free sulphhydryl content of seminal plasma in healthy medical students during and after exam stress**

S.Eskioca et al, Human Reproduction 2005, Vol.20, No.9 pp. 2595–2600.Human Reproduction

It is not only women's fertility which is affected by stress. This study examines the effect of stress on certain antioxidants present in semen, and concludes that this effect may explain the deleterious effect of stress on sperm. Further studies need to be done to examine the mechanism whereby acupuncture, with its well known reputation in reducing stress, improves sperm quality. One study, see below, has found that a Chinese herb can beneficially affect these antioxidants.

49.



**Relationship between psychological stress and semen quality among in- vitro fertilization patients**

Clarke RN et al, Human Reproduction vol.14 no.3 pp.753–758, 1999 Human Reproduction

Stress affects men doing IVF perhaps not as much as women, but enough for it to have a negative impact on sperm quality. For this reason we would suggest that acupuncture is a useful adjunct to the IVF treatment for men as well as women.

50.



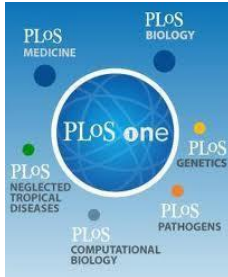
**Effect of Acupuncture on Symptoms of Anxiety in Women Undergoing In Vitro Fertilisation**

Isoyama D et al, Acupunct Med.2012 Jun;30(2):85-8. Acupuncture in Medicine (BMJ)

Using acupuncture points that specifically reduce stress, significantly lowered anxiety levels of women undergoing IVF (as measured on the Hamilton Anxiety Rating Scale) when they were treated once a week before and during the IVF cycle. Other women who were also treated with acupuncture once a week but with non acupuncture points did not experience the same benefit.



51.



### **Acupuncture and Counselling for Depression in Primary Care: A Randomised Controlled Trial**

MacPherson H et al, DOI: 10.1371/journal.pmed.1001518  
PLOS Medicine

Women (and men) who are preparing themselves to have a baby, often wish to avoid taking medication, including antidepressants. A trial in the UK found that ten sessions of acupuncture alongside usual care, showed a significant reduction of depression 3 months later compared to those who did not have acupuncture. They found that counselling added a similar benefit. Such results give patients who wish to withdraw off medication, the confidence to use a tool like acupuncture.

52.



### **Perceptions among infertile couples of lifestyle behaviors and in vitro fertilization (IVF) success**

Hawkins LK et al, J Assist Repro Genet (2014) 31: 255-260.  
Journal of Assisted Reproduction and Genetics

Acupuncture was one of several factors was investigated in the surveys that 200 IVF patients in the USA completed recently. 63% of them considered that acupuncture was helpful for women having IVF.

53.



### **Preconception stress increases the risk of infertility: results from a couple-based prospective cohort study—the LIFE study**

Lynch CD et al, Hum. Reprod. (2014) 29 (5):1067-1075. Human Reproduction

When 400 women who were trying to conceive offered samples of saliva for stress marker analysis (alpha amylase) over a period of a year, it was found that those with the highest levels were twice as likely as those with the lowest levels to experience infertility. It is not clear exactly how stress reduces fertility but this study was able to show that it was not reduced sexual intercourse or interference with ovulation. However it is possible that there may be stress induced alterations in gamete transport or the development of an autoimmune state unfavourable for implantation. Higher levels of alpha amylase occur when there is elevated adrenalin in the blood stream.

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54.



### **Acupuncture for the Mental and Emotional Health of Women Undergoing IVF Treatment: A Comprehensive Review**

Grant LE, Cochran e S, AJACM 2014, vol 9 Issue 1, pg 5  
Australian Journal of Acupuncture and Chinese medicine

This comprehensive review indicates the acupuncture helps to reduce the anxiety and stress experienced by IVF patients and improves the way that IVF cycles are managed, and that better outcomes may be a result.



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## Acupuncture, herbs and miscarriage

Early miscarriage, or implantation failure is something that is difficult to study in human trials. We know that regular "checking in" at the clinic and allaying anxiety reduces miscarriage rates. Thus acupuncture is often applied regularly from the time of ovulation in women who have a history of miscarriage or implantation failure. Research done in animals indicates that acupuncture can improve the immune environment of the uterus such that implantation and the development of the placenta is more likely to be successful.

55.



### **Effect of Gutai Decoction on the Abortion Rate of in vitro Fertilization and Embryo Transfer**

Liu Ying and Wu Jing-zhi Chin J Integr Med 2006, 12(3) : 189-193 Chinese Journal of Integrated Medicine

A group of women undergoing IVF were given a well known Chinese herb formula known to help prevent miscarriage and stabilise early pregnancy, from 2 days after their embryo transfer (combined with progesterone) up until 9 weeks of pregnancy if they conceived. The control group used progesterone support only. They found that 13% of the women who conceived while taking the Chinese herb formula miscarried, while 23% of the women in the control group miscarried. There were no adverse effects on liver or kidney function in the treated group, and no birth defects in the treated group (one case of harelip in the untreated group).

56.



### **Effect of Chinese herbal treatment on Th1- and Th2-type cytokines, progesterone and beta-human chorionic gonadotropin in early pregnant women of threatened abortion**

Liu F, Luo SP, Chin J Integr Med. 2009 Oct;15(5):353-8 Chinese Journal of Integrated Medicine

In this study the mechanism of a well known formula for preventing miscarriage was examined. After taking the formula for 4 weeks in early pregnancy, the levels of certain immune factors were shown to be more favourable to a successful pregnancy outcome than they were before taking the herbs.

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57.

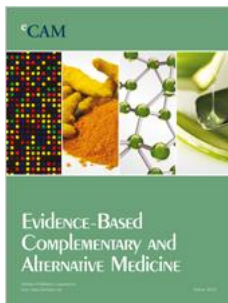


### **Effects of Acupuncture on LIF and IL-12 in Rats of Implantation Failure**

Gui J et al, Am J Reprod Immunol, 2012; 67:383–390 American Journal of Reproductive Immunology

Five interesting papers looking at the effect of acupuncture on implantation and miscarriage have been published by a group in Wuhan, China. Earlier papers showed that acupuncture improves implantation and pregnancy rates significantly in rats. The latest trial looks at the mechanism for this improvement. They examined the effect of acupuncture on the immune environment of rat uteri which had been treated with Mifepristone (a progesterone receptor antagonist used to cause abortion, and commonly known as the drug RU486). When these rats were given acupuncture the immune factors important for implantation improved remarkably, to the levels of the control rats that did not have the abortion drug treatment, indicating an important role for acupuncture in supporting the ideal environment for implantation and the development of the placenta.

58.



### **Systematic Review of Chinese Medicine for Miscarriage during Early Pregnancy**

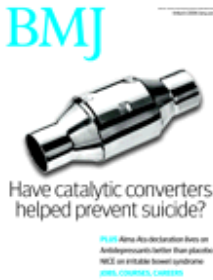
Lu Li et al, Volume 2014 (2014), Article ID 753856 Evidence-Based Complementary and Alternative Medicine

Chinese data bases were screened for published studies on the effect of chinese herbal medicine on threatened miscarriage. While more than 300,000 papers were found, the trials generally did not meet the clinical research standards that would be required in the west. That said, it is not always easy or ethical to carry out placebo controlled randomised trials with pregnant women who are worried aboutmiscarrying. Meta-analysis of some of the clinical trials indicated that Chinese medicines alone or Chinese medicines combined with Western medicines were more effective than Western medicines alone to treat threatened miscarriage in relieving the clinical signs, including vaginal bleeding, low back pain, and abdominal pains.

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## Meta analyses and recent reviews

59.



### Effects of acupuncture on rates of pregnancy and live birth among women undergoing in vitro fertilisation: systematic review and meta-analysis.

Manheimer E et al. BMJ 2008;336 pg 545-549 British Medical Journal

In early 2008 The British Medical journal published a meta analysis of 7 of the trials looking at the effect of acupuncture on day of transfer; they chose only those which met strict research criteria. They said that 10 patients would need to be treated with acupuncture to bring about one additional clinical pregnancy.

When they analysed the 4 trials that measured live births in addition to pregnancy rates, they found that acupuncture increased the odds by 91% and that the number of patients who would need to be treated to bring about an additional pregnancy dropped to 9. The accompanying editorial in the BMJ makes the comment that adding acupuncture to IVF improved pregnancy rates more than any other recent improvement or advance in IVF technology.

Future metaanalyses have included more studies, with different conclusions.

60.



### Acupuncture and Assisted Conception

Cheong Y et al Cochrane Database of Systematic Reviews 2008 Issue4 Cochrane Review

Another group of researchers have analysed updated clinical trial data and have come to the same conclusion as those who published the BMJ meta analysis, namely acupuncture is a useful addition to IVF. It has been published as a Cochrane Review. The Cochrane Collaboration is an international and independent organization dedicated to making up-to-date, accurate information about the effects of healthcare readily available worldwide.

61.



**A Systematic Review and Meta-analysis of the effect of Acupuncture on Outcome of in Vitro Fertilisation Treatment**

El-Toukhy T et al BJOG 2008 115 (10); 1203 -13 British Journal of Obstetrics and Gynaecology

Another meta analysis also reported at an annual fertility conference indicated that in the trials they chose to include they found no effect of acupuncture on IVF treatment. This meta analysis included a trial which had been excluded from the previous analysis because it employed different methodology and therefore introduced a degree of heterogeneity which reduces the validity of this meta analysis.

62.



**Traditional Chinese medicine and infertility.**

Huang, S T and Chen, A P C, Current Opinion in Obstetrics & Gynecology. 2008, 2(3):211-215. Current Opinion in Obstetrics & Gynecology

A recent review of current medical literature carried out by researchers in Taiwan noted that “traditional Chinese medicine could regulate the gonadotropin-releasing hormone to induce ovulation and improve the uterus blood flow and menstrual changes of endometrium. In addition, it also has impacts on patients with infertility resulting from polycystic ovarian syndrome, anxiety, stress and immunological disorders.” Their review concludes “Integrating the principles and knowledge from well characterized approaches and quality control of both traditional Chinese medicine and Western medical approaches should become a trend in existing clinical practice and serve as a better methodology for treating infertility.”

63.



**The Role of Acupuncture in the Management of Subfertility**

Ng E H et al Fertil Steril.2008 Jul;90(1):1-13.Fertility and Sterility

Another review of the literature from a group in Hong Kong concludes that the positive effect of acupuncture in the treatment of subfertility may be related to the central sympathetic inhibition by the endorphin system, the change in uterine blood flow and motility, and stress reduction.

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64.



### **Acupuncture and assisted conception**

Cheong Y et al Cochrane Database of Systematic Reviews 2009 Issue1Cochrane Database

A newer version of this data base by the same authors as the one listed above concluded that there is an increase in live birth rate when acupuncture is performed on day of embryo transfer.

65.



### **Acupuncture and herbal medicine in in vitro fertilisation: a review of the evidence for clinical practice**

Cheong Y et al, Hum Fert 2010, Vol.13, No. 1, Pg 3-12. Human Fertility

A further analysis by the authors of the previously published Cochrane databases included more trials in their analysis of the benefit of acupuncture at embryo transfer. They included a trial which had previously been excluded due to the fact that its methodology introduced too much heterogeneity - this plus the inclusion of another trial which controversially used placebo acupuncture reduced the measurable benefits of acupuncture to IVF patients in this analysis.

66.



### **Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials**

Smith, GCS and J Pell BMJ 2003; 327, 1459 British Medical Journal

A tongue in cheek analysis of meta-analyses, randomised, placebo controlled trials and evidence based medicine. These authors very cleverly make a strong case for the fact that some interventions do NOT lend themselves to randomised blinded trials. But can still have a place in medicine simply because they have been seen to work. While not for a minute purporting to compare an acupuncture treatment to the life saving action of a parachute, we nevertheless would like to point out that there are some aspects of a discipline like acupuncture which will never be able to be squeezed into the confines of a double blind randomised trial, without losing something of its essence. Other aspects of acupuncture, like some of its known physiological effects, can be measured in a trial setting - however the results of these trials should never be taken to be telling the WHOLE story!

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67.



**Efficacy of Traditional Chinese Herbal Medicine in the management of female infertility: A systematic review.**

Ried K, Stuart K Complement Ther Med. 2011Dec;19(6):319-31  
Complementary Therapies in Medicine

This review, from researchers in Adelaide, Australia presents a meta analysis of trials and cohort studies, and compares pregnancy rates achieved with the Chinese medicine compared with assisted reproduction techniques including IVF. The researchers found that Chinese herbal medicine can improve pregnancy rates 2 fold within a 4 month period compared with fertility drug treatment or IVF.

68.



**Effects of acupuncture on pregnancy rates in women undergoing in vitro fertilization: a systematic review and meta-analysis**

Zheng CH et al, 2012 Fert Steril, Vol. 97, Issue 3, 599-611  
Fertility and Sterility

Researchers from China have analysed results of nearly 6000 women participating in trials examining the effect of acupuncture during IVF. They found that pregnancy rates and birth rates were improved by acupuncture when compared to women having no acupuncture (but not when compared to women having placebo acupuncture with a blunt needle).

69.



**Chinese Herbal Medicine for Infertility with Anovulation: A Systematic Review**

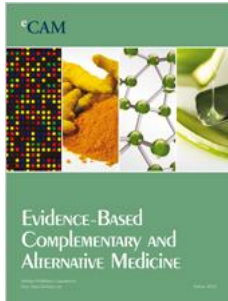
Li Tan et al, The Journal of Alternative and Complementary Medicine, 2012, 18(12):1087-1100  
The Journal of Alternative and Complementary Medicine

A metaanalysis of studies done in China involving 1659 women, reports that Chinese medicine significantly increases frequency of ovulation in women with anovulatory infertility compared to treatment with Clomiphene (Clomid). They observe that pregnancy rates are increased and miscarriage rates reduced in women who use Chinese medicine compared with those who use Clomid.



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70.



### **The Role of Acupuncture in Assisted Reproductive Technology**

Zheng CH et al, Evid Based Complement Alternat Med.2012; vol 2012: 543924. Evidence Based Complementary and Alternat Medicine

This review is another analysis by the same team who published their results in Fertility and Sterility above. In this review they emphasise that the effects of administering individualised acupuncture treatments throughout the IVF cycle rather than just at the time of embryo transfer, produces higher pregnancy rates.

71.



### **The effects of acupuncture on rates of clinical pregnancy among women undergoing in vitro fertilization: a systematic review and meta-analysis**

Manheimer E et al, Hum. Reprod. update (2013) online doi:10.1093/humupd/dmt026 Human Reproduction Update

The latest metaanalysis confirms the suspicion emerging from the last few years of research into the effect of acupuncture applied on the day of embryo transfer, that it confers an advantage particularly for those patients whose chance of success with IVF is not high.

72.



### **Acupuncture and women's health: an overview of the role of acupuncture and its clinical management in women's reproductive health**

Cochrane S et al, March 2014 Volume 2014:6 Pages 313—325 International Journal of Women's Health

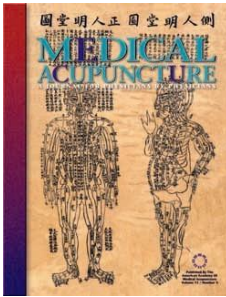
In one of the most thorough and balanced reviews to date, a team of researchers from Australia analyse acupuncture and fertility trials from more than 100 reports from around the world. They note that while many trials have looked at acupuncture performed on the day of embryo transfer in IVF cycles, few have looked at how Chinese medicine is usually practiced, and has been practiced for many hundreds of years, in the treatment of infertility in general. They point out that the majority of trials on IVF patients using acupuncture (that did not use sham needling as a control) report increased pregnancy and/or live birth rates. There is also good evidence of the effect of acupuncture on menstrual health in general, but more needs to be done examining the treatment of infertility with individualised Chinese medicine protocols.



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## Acupuncture and pregnancy

73.



### **Acupuncture For Prebirth Treatment: An Observational Study Of Its Use In Midwifery Practice**

Betts D and Lennox S, Med Acup 2006, 17, (3) 16 – 19 Medical Acupuncture

This survey conducted in New Zealand revealed that women who had acupuncture in the last 4 weeks of their pregnancy had a third less the number of medical inductions, epidurals and emergency caesarians compare to local population rates.

74.



### **Acupuncture for Depression During Pregnancy: A Randomized Controlled Trial**

Manber R et al, Obst and Gynec 2010, 115 (3) 511-520 Obstetrics and Gynecology

Since there is evidence that the use of antidepressants increases the risk of miscarriage and may have adverse effects on the fetus, there has been much interest in the use of acupuncture to treat depression which occurs in pregnancy. A number of trials and systematic reviews of the effectiveness of acupuncture in the treatment of depression have been published over the last 5 years and a meta-analysis of these trials concluded that acupuncture is an effective treatment for depression. This trial looked specifically at depression in pregnancy and found that acupuncture was as effective as other standard treatments and worked more quickly.

75.



### **Effects of acupuncture and stabilising exercises as adjunct to standard treatment in pregnant women with pelvic girdle pain: randomised single blind controlled trial.**

Elden H et al 2005 Jul 30;331 (7511):249-50. British Medical Journal

This 6 week trial indicated that acupuncture treatment of pelvic girdle pain in pregnancy was more effective than other treatment options.

76.



**Acupuncture for pelvic and back pain in pregnancy: a systematic review.**

Ee CC et al, 2008 Am J Obstet Gynecol Mar;198(3):254-9. American Jnl Obstetrics and Gynecology

This review of 3 trials examining treatment of back and pelvic pain in pregnancy concludes that acupuncture, as an adjunct to standard treatment, is superior to standard treatment alone and physiotherapy.

77.



**Cost-effectiveness of breech version by acupuncture-type interventions on BL 67, including moxibustion, for women with a breech fetus at 33 weeks gestation: a modelling approach**

Van den Berg I et al, Complement Ther Med. 2010 Apr;18 (2):67-77. Complementary therapies in medicine

The use of acupuncture and moxabustion on women presenting with breech babies at week 33 was assessed in this large retrospective Dutch study. Acupuncture was shown to reduce the number of breech presentations at term, thus reducing the number of caesarean sections.

78.



**Influence of acupuncture on Doppler ultrasound in pregnant women**

Zeisler H et al, Ultrasound Obstet Gyn 2001 Volume 17, Issue 3, pages 229–232, Ultrasound in Obstetrics & Gynecology

This study showed that acupuncture performed on pregnant women close to term had a beneficial effect on blood flow in the umbilical artery, leading some researchers to suggest that acupuncture provides an alternative method of preventing preeclampsia or intrauterine growth restriction in high-risk women.

79.



**Using moxibustion in primary healthcare to correct non-vertex presentation: a multicentre randomised controlled trial**

Vas J et al, Acupunct Med 2013;31:31-38 Acupuncture in Medicine

Moxa applied to an acupuncture point on the foot was shown in this trial to be more effective than other treatments in correcting breech presentation between week 33 and 35 of pregnancy.

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80.

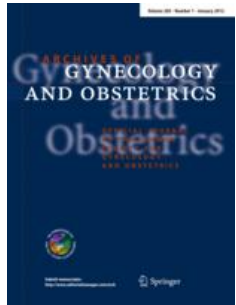


**Moxibustion for breech presentation: significant new evidence**

Smith C, *Acupunct Med* 2013;31:5-6 *Acupuncture in Medicine*

In this editorial Caroline Smith from University of Western Sydney, discusses recent findings and analysis (Cochrane Review) of treatment for breech presentation.

81.

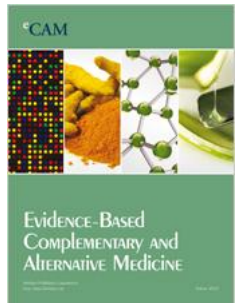


**Electroacupuncture for cervical ripening prior to labor induction: a randomized clinical trial**

Gribel G et al, *Arch Gynecol Obstet* (2011) 283:1233–1238  
*Archives Gynecology and Obstetrics*

Two groups of women had their labours induced with either electroacupuncture or with prostaglandins. In both groups labour was successfully induced however the electroacupuncture group experienced significantly fewer obstetric complications including caesarian sections.

82.



**Analyzing the Study of Using Acupuncture in Delivery in the Past Ten Years in China**

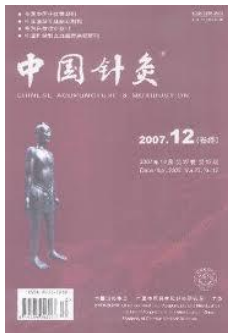
Yingru Chen et al, *ECAM*, Volume 2014 (2014), Article ID 672508 *Evidence- Based Complementary and Alternative Medicine*

This paper analyses 87 articles published in the last 10 years in China, including randomized control trials, prospective case studies, reviews and meta-analyses. The reviewers conclude that acupuncture can relieve labor pain, promote childbirth, shorten delivery and treat postpartum disorders.

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## Acupuncture, herbs and endometriosis

83.

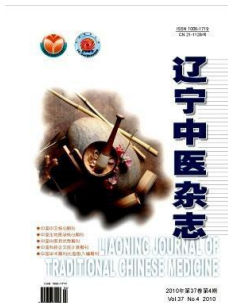


### Controlled study on Shu- Mu point combination for treatment of endometriosis

Sun YZ, Chen HL Zhongguo Zhen Jiu. 2006 Dec;26(12):863-5 Zhongguo Zhen Jiu

Acupuncture was used on back and front points in this trial which compared different sorts of point prescriptions with treatment of endometriosis with Danazol. Acupuncture was superior in relieving pain and in reducing blood markers of the disease.

84.



### Acupuncture Combined with Medicine Effects on Outcomes of Patients with Endometriosis Who Accepted IVF-ET

Yu Xiao-Li et al, Liaoning Journal of Traditional Chinese Medicine 2010 Vol 4 Liaoning Journal of Traditional Chinese Medicine

This trial carried out in north east China, looked at 180 women with endometriosis who were doing a long down regulated IVF protocol. The women who were given acupuncture alongside chinese medicine achieved significantly higher pregnancy rates than those in the other groups who did not have acupuncture.

85.



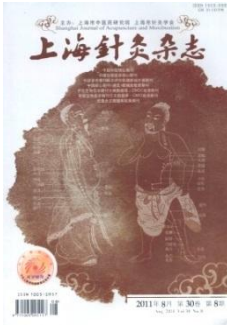
### Effect of Quyu Jiedu Granule (祛瘀解毒颗粒) on Microenvironment of Ova in Patients with Endometriosis

Lian Fang et al, Zhong Xi Yi He Xue Bao 2009 Feb;15(1):42-46 Chinese Journal of Integrated Medicine

A chinese herb formula for endometriosis was given to women with long term infertility and endometriosis before and during an IVF cycle and various ovarian parameters were compared with a group of women with endometriosis who embarked on IVF directly without taking the herbs. The group who took the herbs produced more eggs and had a higher fertilisation rate. Additionally the follicles of the women who took the herbs showed a reduced level of inflammatory cytokines compared to the women in the control group.

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86.



**Clinical Observations on the Treatment of Endometriosis by Combined Acupuncture and Herbs**

Fu Yu and Xia Tian, Shanghai Jnl Acup Moxa, 2005, Vol 3  
Shanghai Journal of Acupuncture and Moxibustion

This is just one trial of many carried out in China which looks at the clinical effectiveness of treatment of endometriosis with acupuncture and Chinese herbs. Fertility and symptoms and signs of the disease are treated effectively without side effects.

87.

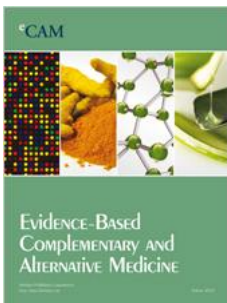


**Clinical Observation of Chinese Medicine Treatment on Secondary Dysmenorrhoea Associated with Endometriosis**

Lim CED et al, Aust J Acupunct Chin Med 2009;4(2):12-17.  
Australian Journal Acupuncture and Chinese Medicine

Those of us who have experience in treating endometriosis with Chinese medicine are familiar with the benefits it brings patients in terms of reduced pain and increased fertility. This pilot study, a collaboration between Guangzhou Medical University in China and RMIT university in Melbourne, is particularly interesting to us since it measured objective parameters such as immune factors (antigens and antibodies) shown to be abnormally raised in patients with endometriosis. A course of treatment with Chinese herbs not only improved pain but significantly reduced the levels of these immune factors. This is one way that Chinese medicine may improve fertility in endometriosis.

88.



**Complementary and Alternative Medicine for Endometriosis: A Review of Utilization and Mechanism**

Kong S et al, Volume (2014), Article ID 146383, 16 pages  
Evidence- Based Comp and Altern Med Evidence-Based  
Complementary and Alternative Medicine

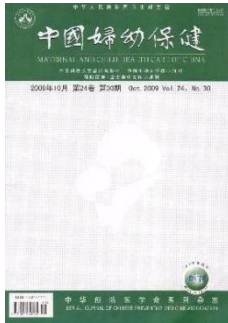
This very thorough review compares results of treatment of endometriosis with acupuncture or herbal therapies and pharmaceutical or surgical approaches. A number of therapies, including using Chinese herbs per rectum, obtained great relief for patients, but without the side effects caused by drugs or surgery.



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## Acupuncture, herbs and PCOS

89.



### **Investigation on effect of electroacupuncture intervention on in vitro fertilization and embryo transfer of patients with polycystic ovarian syndrome**

Chen Jun et al Maternal and Child Health Care of China 2009; 30 pg 28 Maternal and Child Health Care of China

A group of researchers in Shandong, China used electroacupuncture with PCOS patients doing IVF. They found that there was a significant reduction in the incidence of ovarian hyperstimulation syndrome (OHSS) if acupuncture was included. Since women with PCOS are at risk of OHSS then this finding is of great interest. Many other aspects of the IVF cycle improved however the pregnancy rate was not significantly increased by the acupuncture.

90.

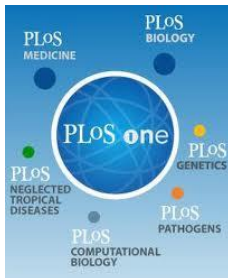


### **Effects of electro- acupuncture on anovulation in women with polycystic ovary syndrome**

Stener Victorin E et al, Acta Obstet Gynecol Scand 2000;79: 180–188 Acta Obstetrica et Gynecologica Scandinavica

This was one of the first trials to look at the effect of acupuncture on Polycystic ovarian syndrome. This and subsequent trials have shown that electroacupuncture can stimulate reluctant ovaries to ovulate more often in some women with PCOS.

91.



### **Hypothalamic Neuroendocrine Functions in Rats with Dihydrotestosterone- Induced Polycystic Ovary Syndrome: Effects of Low- Frequency Electro- Acupuncture**

Yi Feng et al, PLoS One. 2009; 4(8): e6638. PLoS One

Performing electroacupuncture 5 times a week on rats with PCOS restored ovulation and regular estrous cycles within a short period of time. The researchers measured hormone changes induced by electroacupuncture and postulate that these changes may help to explain the beneficial effects of acupuncture in women with PCOS.



92.



### Acupuncture in Polycystic Ovary Syndrome: Current Experimental and Clinical Evidence

Stener-Victorin E et al, Journal of Neuroendocrinology 2008,20 (3) , 290–298 Journal of Neuroendocrinology

This review evaluates the place of acupuncture in the treatment of PCOS. It explains that many women with PCOS require prolonged treatment. Pharmacological approaches are effective but have adverse effects. Therefore, treatment strategies such as acupuncture need to be evaluated.

Acupuncture is reported to positively affect PCOS symptoms and markers via modulation of endogenous regulatory systems, including the sympathetic nervous system, the endocrine system and the neuroendocrine system. The changes are most likely mediated via the endogenous opioid system.

93.



### Low-frequency electroacupuncture and physical exercise decrease high muscle sympathetic nerve activity in polycystic ovary syndrome.

Stener Victorin E et al Am J Physiol 2009 Aug;297 (2):R387-95. American Journal of Physiology

This trial found that activity of the sympathetic nervous system (which is abnormally pronounced in PCOS) could be reduced with acupuncture or with exercise.

Additionally they found that acupuncture significantly reduced the level of testosterone in PCOS patients. Those women in the study who were not ovulating reported more regular menstrual cycles after acupuncture treatment.

94.

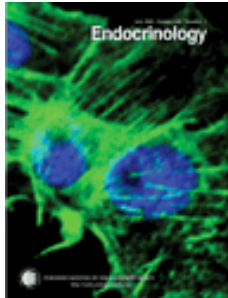


### Influence of Acupuncture on Infertility in Rats with Polycystic Ovarian Syndrome

Zhang Wei Yi et al, Zhongguo Zhong Xi Yi Jie He Za Zhi 2009 (11) 973 Chinese Journal of Integrated Traditional and Western medicine

Studies of animal models with PCOS have elucidated some of the physiological effects of acupuncture on different aspects such as Insulin resistance, hormone levels and ovulation frequency. This study measured ovulation frequency after acupuncture by counting the number of blastocysts that had implanted after acupuncture treatment compared to a control group. Acupuncture proved to be an effective treatment to increase the number of blastocysts.

95.

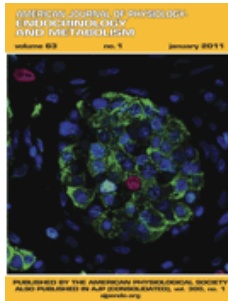


**Low-Frequency EA and Physical Exercise Improve Metabolic Disturbances and Modulate Gene Expression in Adipose Tissue in Rats with Dihydrotestosterone-Induced PCOS**

Manneras L et al 2008 Endocrinology vol. 149 (7) pg3559-3568 Endocrinology

Insulin resistance associated with PCOS was reduced by acupuncture in this animal study.

96.

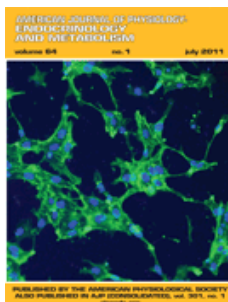


**Impact of EA and physical exercise on hyperandrogenism and oligo/amenorrhea in women with PCOS.**

Jedel E et al, Am J Physiol Endocrinol Metab 2011 300:(1) E37-E45 American Journal of Physiology

This trial found that 4 months of acupuncture effectively reduced testosterone and improved ovulation frequency in PCOS patients, and was superior to exercise in achieving these aims.

97.



**The physiological basis of complementary and alternative medicines for polycystic ovary syndrome**

Raja Khan N et al, 2011 Am J Physiol Endocrinol Metab, 301, E1 American Journal of Physiology

This review summarises research findings in traditional chinese medicine, acupuncture and dietary supplementation treatment of PCOS.

98.

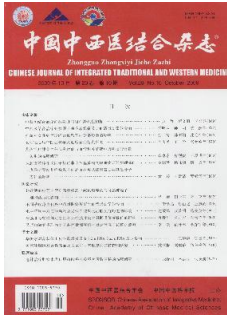


**True and Sham Acupuncture Produced Similar Frequency of Ovulation and Improved LH to FSH Ratios in Women with Polycystic Ovary Syndrome**

Pastore L et al, 2011 Jnl Clin Endocrinol Metab Aug online jc.2011-1126 The Journal of Clinical Endocrinology & Metabolism

A reduction in LH levels and an increase in ovulation frequency was found in PCOS women having acupuncture using either real needling or sham needling (which pricks rather than penetrates the acupuncture points in a manner similar to Japanese acupuncture). As we have seen in a couple of other studies reported on these pages, mild stimulation of acupuncture points without penetration is not an inert control. True acupuncture but not sham acupuncture reduced levels of testosterone and insulin in the women who ovulated.

99.



**Effects of Yangling Zhongyu Decoction on the secretion of ovarian granule cells in polycystic ovarian syndrome rat model**

Ma HX, Xie J, Lai MH Zhongguo Zhong Xi Yi Jie He Za Zhi. 2012 Jan;32(1):54-7. Chinese Journal of Integrated Traditional and Western Medicine

Chinese herbs have been found to be useful in improving ovarian function in PCOS rats, probably by reducing testosterone levels.

100.



**Acupuncture for ovulation induction in polycystic ovary syndrome: A randomized controlled trial.**

Johansson J et al, Am J Physiol Endocrinol Metab. 2013 Mar 12. [Epub ahead of print] American Journal of Physiology - Endocrinology and Metabolism

This trial showed that repeated acupuncture treatments increased ovulation frequency in PCOS patients and abnormally high ovarian and adrenal hormone levels were reduced.

101.



**Effects of acupuncture on the outcome of in vitro fertilisation and intracytoplasmic sperm injection in women with polycystic ovarian syndrome.**

Rashidi BH et al, Acupunct Med. 2013; 31(2):151-6  
Acupuncture in Medicine (BMJ)

A group of women with PCOS who were undergoing IVF were given 5 acupuncture treatments once they commenced the IVF drugs. Compared to a group who had no acupuncture they produced higher quality embryos but did not achieve a higher pregnancy rate.

In our experience PCOS patients require several months of treatment in order to make a noticeable change in hormone levels and ovary activity.

102.

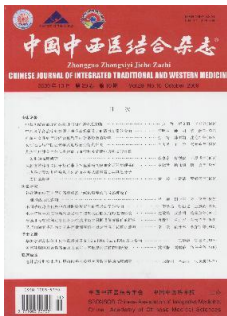


**Effectiveness of Abdominal Acupuncture for Patients with Obesity- Type Polycystic Ovary Syndrome: A Randomized Controlled Trial**

Zheng YH et al, Jnl of Alt and Comp Med, 2013 Sep;19(9):740-5. The Journal of Alternative and Complementary Medicine

When overweight PCOS patients were given acupuncture treatment twice a week for 6 months, using points on the abdomen, they responded better than those given Metformin for the same period of time, in terms of increased frequency of ovulation and weight loss.

103.



**Clinical study on effect of Bushen Huayu Qutan Recipe in treating polycystic ovarian syndrome**

Wu JH et al, Zhongguo Zhong Xi Yi Jie He Za Zhi. 2007 Oct;27(10):883-6 Chinese Journal of Integrated Traditional and Western medicine

A Kidney tonic formula was tested on PCOS patients after it had been shown to be effective in reducing testosterone and insulin and promoting ovulation in sterilised rats. PCOS patients took the formula for 6 months - it was effective in reducing obesity and acne as well as insulin and testosterone levels.

104.



**Combined therapy of Chinese medicine with in vitro fertilization and embryo transplantation for treatment of polycystic ovarian syndrome**

Fang Lian et al, Zhongguo Zhong Xi Yi Jie He Za Zhi. 2008 Nov;28 (11):977-80 Chinese Journal of Integrated Traditional and Western medicine

IVF patients in this country are generally advised not to take Chinese herbs during their IVF cycle, to avoid drug interactions, however in China they are quite happy to combine therapies if it will benefit the patient. In this study IVF patients with PCOS were given a herbal formula which supports ovarian function. The group in this study who received the herbs had significantly better uterine linings, used lower doses of FSH and had a higher success rate. Additionally the incidence of hyperstimulation was reduced in the herb group.

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105.



**A systematic review on use of Chinese medicine and acupuncture for treatment of obesity**

Sui Y et al, 2012, Vol 3, p 409–430 Obesity Reviews

PCOS patients are not always overweight but for those with insulin resistance getting on top of weight gain can be difficult. This review reports that in terms of weight loss, acupuncture and Chinese herbal medicine are better than placebo and lifestyle interventions and have similar efficacy to antiobesity drugs (including Metformin), but with fewer side effects. This review also noted that those who used acupuncture or Chinese herbal medicine to lose weight had a lower risk of relapse.