

Table B. Full details of the characteristics of the included trials, including all information about methods, patients, interventions, and outcomes collected* [posted as supplied by author]

Study	Benson ^{w1}
Methods	<p>Details of randomization: The study text described the randomization only as follows: “Patients (n=258) who had been scheduled for embryo transfer (ET), signed informed consent and were randomly assigned to one of 5 study treatment regimens...” [Sequence for treatment group assignment was generated as follows: A computer program generated a random numbers table in blocks of five.] [Patients in the study were assigned to treatment groups as follows: An open master list, generated ahead of time, kept in house and referred to when someone entered the study. Only the research nurse could allocate a patient to a study group.]</p> <p>Blinding: No (There was a sham laser group, [and the patient and acupuncturist were both blinded to whether patients were getting true laser or sham] but we did not consider this sham laser control to be an adequate blinded control for the needle acupuncture intervention group. The sham laser control was intended to be a blinded control for a laser acupuncture intervention group, which we excluded from the meta-analysis (see below).)</p> <p>Exclusions during the trial: Assume none</p> <p>Losses to follow-up: Assume none, but not explicitly stated as none [No women were lost to follow-up]</p> <p>Type of analysis reported: Intention to treat (This was assumed, based on context, for 2 reasons: 1) treatment only on day of embryo transfer, and in similar such trials, randomization occurred after it was sure that embryo transfer would take place and there were no withdrawals or exclusions; 2) the proportion pregnant in each group (carried to three digits) multiplied by the number randomized to each group resulted in whole numbers, suggesting that for calculating proportions pregnant for each group, the number randomized was used as the denominator (i.e. ITT was used))</p> <p>Important imbalances in prognostic factors: Comparison of groups at baseline not reported. Only reported that “No differences in terms of cycle type, day of embryo transfer, or physician performing transfer were found between treatment groups. Neither day of transfer (p=0.079) or egg number (P= 0.082) were significant independent predictors of implantation or conception.” Also no baseline differences in mean oocyte age and mean number of embryos transferred.</p>
Participants	<p>Country of study: Morristown, New Jersey, United States</p> <p>Setting (including # centers): 1 fertility clinic (assumed from context)</p> <p>Total number of patients randomized: 258</p> <p>Mean age (+/-SD or Range): Not reported</p> <p>Recruitment method: Women undergoing IVF at the clinic</p> <p>Mean duration of infertility (SD) years: Not reported</p> <p>Minimal duration of infertility: Not reported</p> <p>Number of previous IVF cycles, and were there differences between groups: Not reported</p> <p>Causes of infertility, and were there differences between groups: Not reported</p> <p>Were women with a history of acupuncture treatment excluded: Not reported</p> <p>Proportion of women with previous acupuncture treatment (if applicable): NA</p> <p>Other important inclusion criteria: Not reported [All patients were eligible to enter the trial.]</p> <p>Important exclusion criteria: Not reported</p> <p>Both IVF and ICSI included?: Not reported [“ICSI was certainly used in this study since all patients undergoing IVF were included and we probably use ICSI in 40% or more.”]</p>
Interventions	<p>TEST GROUP INTERVENTION: Acupuncture (This study also included a laser acupuncture group (n=53), which we excluded from the meta-analysis because we only considered needle acupuncture interventions. The laser acupuncture group had clinical pregnancy rates that were lower than the needle acupuncture group, but slightly higher than the rates of any of the 3 inactive control groups.)</p> <p>N allocated to acupuncture: 53</p> <p>Style of acupuncture: Not reported</p> <p>Point selection: Not reported</p>

Points stimulated: Not reported
Number of sessions target (mean): 2, one beginning 25 minutes before embryo transfer and one beginning immediately after embryo transfer
Insertion depth: Not reported
Was De qi reportedly sought?: Not reported
Duration (mins): 25 minutes, for each session
Method of stimulation: Not reported
Number of acupuncturists: Not reported
Description of acupuncturist(s) qualifications: Not reported

CONTROL GROUP (if sham, describe sham procedures used): There were three different inactive control groups: sham laser acupuncture (N=52); relaxation (n=50); no intervention treatment (n=50). We considered the sham laser, relaxation, and no intervention control groups to all be equally inactive, and combined their results into a single control group. (We could not classify the laser acupuncture group as an inactive control because it may have some effects.)

N allocated to control group: 152 total for three control groups pooled
Style of acupuncture: NA
Point selection: Not reported (for laser sham)
Points stimulated: Not reported (for laser sham)
Number of sessions target (mean): Same as for true acupuncture for all groups
Insertion depth: NA
Was De qi reportedly sought?: Not reported
Duration (mins): Same as for true acupuncture for all groups
Method of stimulation: Not reported
Number of acupuncturists: Not reported
Description of acupuncturist(s) qualifications: Not reported

Timing of acupuncture/sham administration in relation to the in vitro fertilization protocol: Acupuncture administered immediately before and then again immediately after embryo transfer
Any co-interventions in all groups? Assumed none

The clinical pregnancy rates were the following, among each of the five randomized groups included in this trial:

Needle acupuncture: 29/53
Laser acupuncture: 25/53
Sham laser acupuncture: 24/52
Relaxation: 21/50
No intervention treatment: 22/50

Outcomes	<p>Relevant outcomes reported: Clinical pregnancy is the only relevant outcome reported</p> <p>How was clinical pregnancy defined: Not reported [clinical pregnancy defined as ultrasonography performed 5-6 weeks after embryo transfer for gestational sac visualization and fetal heart beat detection]</p> <p>How was ongoing pregnancy defined: NA</p> <p>Was number of oocytes retrieved; fertilization rate; and number of embryos transferred similar in each group?: Only reported that no differences between groups in mean number of embryos transferred</p> <p>Was the quality of embryos transferred similar in each group (if reported?): Not reported, only reported that there was “transfer of embryos of varying quality” and there were no differences between groups in the mean oocyte age (i.e. donor oocytes were used)</p> <p>Additional pregnancy-related outcomes reported in the trial but not extracted: chemical pregnancy and implantation rate</p> <p>Adverse effects: Not reported</p>
Notes	Sources of support: “Supported by: Reproductive Medicine Associates.” (This is an IVF clinic in New Jersey and New York.)
Study	Dieterle ^{w2}
Methods	<p>Details of randomization: Women randomized with sealed randomization envelopes. The random allocation was concealed from the physician performing the embryo transfer. In a related brief accompaniment[Dieterle Fertil Steril 2006;85:1370] to the RCT article, Dieterle provided the following additional detail about the random allocation concealment: “The allocation was concealed from all clinical and trial personnel and was blind to the patient.” [Sequence for treatment group assignment was generated using a table of random numbers. The sealed randomization envelopes were opaque, and sequentially numbered and distributed in the order of the sequential numbers. The person who generated the allocation sequence and the person who administered it were different.]</p> <p>Blinding: Yes, of patients and physicians performing the embryo transfer</p> <p>Exclusions during the trial: None</p> <p>Losses to follow-up: All patients completed the study, and none were lost to follow-up. [The only exception is for the live birth data, for which 2 of the 15 women in the control group could not be contacted to determine whether their ongoing pregnancy resulted in a live birth. Because at least 90% of ongoing pregnancies would be expected to result in a live birth[[Arce Hum Reprod 2005;20:1757-71; European and Israeli Study Group on Highly Purified Menotropin versus Recombinant Follicle-Stimulating Hormone Fertil Steril 2002;78:520-8]] I assumed that these 2 ongoing pregnancies in the control group resulted in a live birth.]</p> <p>Type of analysis reported: Intention to treat</p> <p>Important imbalances in prognostic factors: None</p>
Participants	<p>Country of study: Dortmund, Germany</p> <p>Setting (including # centers): 1 university fertility clinic (assumed based on context)</p> <p>Total number of patients randomized: 225</p> <p>Mean age (+/-SD or Range): ~35 (3.9)</p> <p>Recruitment method: Not reported</p> <p>Mean duration of infertility (SD) years: ~5.4(3.2)</p> <p>Minimal duration of infertility: Not reported</p> <p>Number of previous IVF cycles, and were there differences between groups: 0-6 (mode: 2), with no statistically significant differences between groups</p> <p>Causes of infertility, and were there differences between groups: Six causes with primary infertility most common, and no statistically significant differences between groups</p> <p>Were women with a history of acupuncture treatment excluded: Not reported</p> <p>Proportion of women with previous acupuncture treatment (if applicable): Not reported</p> <p>Other important inclusion criteria: Written, informed consent [The criteria stated in the publication text were the only inclusion/exclusion criteria.]</p> <p>Important exclusion criteria: Not reported</p> <p>Both IVF and ICSI included?: Yes (Only describes that “All patients underwent IVF or ICSI and participated only once.” so it’s not clear if ICSI</p>

only used for male factor subfertility patients)	
Interventions	<p>TEST GROUP INTERVENTION: Acupuncture</p> <p>N allocated to acupuncture: 116 Style of acupuncture: Chinese Point selection: Formula Points stimulated: Immediately after embryo transfer, the following acupoints were used: Guanyuan (ren [RN]4), Qihai (RN6), Guilai (stomach [ST]29), Neiguan (pericardium [PC]6), Xuehai (spleen [SP]10), and Diji (SP8). At the same time, a special Chinese medical drug (the seed of Caryophyllaceae) was placed on the patient's ear. The following points were used: ear point 55 (Shenmen), ear point 58 (Zigong), ear point 22 (Neifenmi), and ear point 33 (Pizhixia). The seeds remained in place for 2 days and were pressed twice daily for 10 minutes. Three days after ET, all patients received a second acupuncture treatment. The following locations were used: Hegu (large intestine [LI]14), Sanyinjiao (SP6), Zusanli (ST36), Taixi (kidney [KI]3), Taichong (liver [LR]3). In addition, the same ear points were pressed at the opposite ear twice daily. The seeds were removed after 2 days. Number of sessions target (mean): 2 Insertion depth: 15-30 mm, depending on the region of the body Was De qi reportedly sought?: Yes Duration (mins): 30 Method of stimulation: Needles were rotated at the start and after 15 minutes, to evoke the de qi sensation Number of acupuncturists: 1 Description of acupuncturist(s) qualifications: Not reported</p> <p>CONTROL GROUP (if sham, describe sham procedures used): Chinese acupuncture points designed not to influence fertility. N allocated to control group: 109 Style of acupuncture: Stimulation of Chinese acupuncture points, but designed not to influence fertility Point selection: Formula Points stimulated: After ET and again 3 days later, the following acupoints were used: San Jiao [SJ]9 (Sidu), SJ12 (Xiaoluo), gallbladder (GB)31 Fengshi, GB32 (Zhongdu), and GB34 (Yang ling qua). At the same time, the following ear points were used: ear point 17 (Shangzhi), ear point 14 (Feng si), ear point 8 (Sisheng), and ear point 53 (Jian). Number of sessions target (mean): 2 Insertion depth: 15-30 mm, depending on the region of the body Was De qi reportedly sought?: Not clear Duration (mins): 30 Method of stimulation: Not clear (It is unclear whether the text describing the de qi and the needle rotation was intended to describe only the test acupuncture intervention, or also the acupuncture control.) Number of acupuncturists: Not reported Description of acupuncturist(s) qualifications: Not reported</p> <p>Timing of acupuncture/sham administration in relation to the in vitro fertilization protocol: In both the treatment and control acupuncture groups, acupuncture was applied for 30 minutes immediately after embryo transfer and again 3 days later. Any co-interventions in all groups? None Credibility of sham assessed?: Not reported</p>
Outcomes	<p>Relevant outcomes reported: Clinical pregnancy and ongoing pregnancy per woman [live birth outcome data obtained from investigator] How was clinical pregnancy defined: Transvaginal ultrasound 4 – 6 weeks after embryo transfer demonstrating at least one gestational sac How was ongoing pregnancy defined: Not reported [Positive heart beat beyond 12 weeks gestation]</p>

	<p>Was number of oocytes retrieved; fertilization rate; and number of embryos transferred similar in each group?: Yes</p> <p>Was the quality of embryos transferred similar in each group (if reported)?: Not reported (but no selection of embryos (for either group) because this is not allowed in Germany; also for both groups, a maximum of three embryos can be transferred according to German law)</p> <p>Additional pregnancy-related outcomes reported in the trial but not extracted: Biochemical pregnancies, as diagnosed by serum hCG measurement 2 weeks after ET; implantation rate; clinical pregnancy rates and implantation rates after each treatment cycle</p> <p>Adverse effects: None -- reported that "All acupuncture treatments were well tolerated."</p>
Notes	Sources of support: [Private fertility clinic support]
Study	Domar ^{w3}
Methods	<p>Details of randomization: Described in abstract as a "randomized, controlled, prospective, single blind design". Poster only states that "Of 577 eligible patients, 150 (26%) agreed to participate...and were then randomized ". [Sequence for treatment group assignment was generated using a table of random numbers. The patients in the study were assigned to treatment groups using sealed and opaque envelopes that had been sequentially numbered.]</p> <p>Blinding: The abstract described this study as using a "single-blind design." The methods also state that "All IVF staff remained blind to subject assignment." We were not clear what "single-blind" meant in this context (i.e. whether the outcomes assessors, the acupuncturists, the physicians performing the embryo transfer, or all three (or all except acupuncturists), were blinded). We e-mailed the author to request clarification on who was blinded to treatment assignment in this context (i.e. the outcomes assessors, the acupuncturists, or the physicians performing the embryo transfer). The author replied that "the patients and acupuncturists were not blind; all physicians, nurses, and PACU staff were blinded." and also informed us that "the personnel who administered, read, and interpreted the ultrasounds were completely different personnel than the PACU staff and in fact, would not have known that the patient was in any study at all, let alone whether or not they received acupuncture or not."</p> <p>Exclusions during the trial: Not reported in abstract. Poster reports that 3 subjects were excluded because they did not have embryos to transfer, but does not indicate how many of the 3 were from each of the 2 randomized groups. [This was clarified somewhat by the investigators, in their response to our e-mail requesting a clarification on numbers randomized to each group. In their e-mail response to our questions, the investigators indicated that, among the 150 patients randomized, 79 patients were randomized to the acupuncture group and 67 patients were randomized to the control group. The investigators could not provide the treatment assignment for the 4 remaining randomized patients, none of whom completed the treatment.] For our main analysis, we imputed 2 of these patients as randomized to the acupuncture group and 2 to the no adjuvant treatment group. In a post-hoc sensitivity analysis, we assumed all 4 patients were randomized to the acupuncture group. For this trial, there was a notable imbalance in the numbers randomized, although compatible with chance (p=.18).</p> <p>Losses to follow-up: Poster states that 3 subjects "decided to withdraw from the study", but does not indicate how many of the 3 were from each of the two randomized groups. Investigators provided some clarification (see directly above, under section "Exclusions during the trial").</p> <p>Type of analysis reported: In their original analysis of the trial, the investigators seem to have included only the patients who completed the treatment, so the original analysis was not by intention to treat. For our meta-analysis, all randomized patients were included in the analysis; however, to allow all randomized patients to be included, we needed to impute the treatment assignment for 4 randomized patients.</p> <p>Because the report of this trial did not include the number of women randomized to each group and because the necessary information could not be obtained from the investigators, we considered excluding this trial from the meta-analysis, which would be the approach suggested by the Cochrane Menstrual Disorders and Subfertility Group. However, because this was the only trial that did not show any positive effect of acupuncture, we eventually decided to include it, as the more conservative approach.</p> <p>Important imbalances in prognostic factors: No differences in age -- other factors not reported</p>
Participants	<p>Country of study: Boston, Massachusetts, United States</p> <p>Setting (including # centers): Not reported (assumed only 1 -- Boston IVF, which was the affiliation of the authors, as listed in the poster)</p> <p>Total number of patients randomized: [The investigators indicated that, among the 150 patients randomized, 79 patients were randomized to the acupuncture group and 67 patients were randomized to the control group. The investigators could not provide the treatment assignment for the 4 remaining randomized patients, none of whom completed the treatment.] For our main analysis, we imputed 2 of these patients as randomized to the acupuncture group and 2 to the no adjuvant treatment group. In a post-hoc sensitivity analysis, we assumed all 4 patients were randomized to</p>

the acupuncture group.]

Mean age (+/-SD or Range): ~36 years (according to abstract -- not reported in poster PowerPoint file)

Recruitment method: From among clinic population

Mean duration of infertility (SD) years: Not reported

Minimal duration of infertility: Not reported

Number of previous IVF cycles, and were there differences between groups: Not reported

Causes of infertility, and were there differences between groups: Not reported

Were women with a history of acupuncture treatment excluded: Not reported

Proportion of women with previous acupuncture treatment (if applicable): NA

Other important inclusion criteria: Women needed to be scheduled to have a fresh embryo transfer using embryos derived from their own eggs (this requirement described in poster -- inclusion criteria not reported in abstract, other than stating that "all ET patients were eligible, not just patients with good embryo quality")

Important exclusion criteria: Not reported

Both IVF and ICSI included?: Not reported

Interventions TEST GROUP INTERVENTION: Acupuncture

N allocated to acupuncture: [79]

Style of acupuncture: Only reported that "Acupuncture subjects received the protocol first described by Paulus et al, 2002, which included 22 needles..."

Point selection: Not reported

Points stimulated: Not reported

Number of sessions target (mean): 2, one beginning 25 minutes before embryo transfer and one beginning immediately after embryo transfer

Insertion depth: Not reported

Was De qi reportedly sought?: Not reported [corresponding author indicated "I don't know what this is. We used the exact Paulus protocol."]

Duration (mins): 25 minutes, for each session (assumed based on context)

Method of stimulation: Not reported

Number of acupuncturists: Not reported

Description of acupuncturist(s) qualifications: Not reported

CONTROL GROUP (if sham, describe sham procedures used): No treatment i.e. subjects lay quietly for the same amount of time that intervention group received acupuncture

N allocated to control group: [67]

Style of acupuncture: NA

Point selection: NA

Points stimulated: NA

Number of sessions target (mean): NA

Insertion depth: NA

Was De qi reportedly sought?: NA

Duration (mins): 25 minutes before embryo transfer and 25 minutes after embryo transfer

Method of stimulation: NA

Number of acupuncturists: NA

Description of acupuncturist(s) qualifications: NA

Timing of acupuncture/sham administration in relation to the in vitro fertilization protocol: Acupuncture administered immediately before and then again immediately after embryo transfer

	Any co-interventions in all groups? None reported, so assume none
Outcomes	<p>Relevant outcomes reported: Clinical pregnancy (from poster only) is the only relevant outcome reported. How was clinical pregnancy defined: Positive fetal heart beat (according to poster) [confirmed by transvaginal ultrasound] How was ongoing pregnancy defined: NA</p> <p>Was number of oocytes retrieved; fertilization rate; and number of embryos transferred similar in each group?: According to abstract, mean number of embryos transferred in each group were similar, but no information reported about the other factors. (No additional relevant information reported in the poster.) Was the quality of embryos transferred similar in each group (if reported)?: Not reported, only reported in abstract that all patients having fresh non-donor embryos for transfer were eligible (i.e. not just patients with embryos of good quality). (No additional relevant information reported in the poster.) Additional pregnancy-related outcomes reported in the trial but not extracted: Biochemical pregnancy Adverse effects: Not reported</p>
Notes	Sources of support: "This study was made possible through an unrestricted educational grant from Organon USA." Organon USA is a pharmaceutical company that manufactures fertility drugs (http://www.organon-usa.com/authfiles/index.asp)
Study	Paulus 2002 ^{w4}
Methods	<p>Details of randomization: Patients were assigned into either group using a "computerized randomization method" [Patients were assigned to the treatment groups by calling a central office unaware of patient characteristics, once a person was deemed eligible. The randomization was done on the same day as the embryo transfer.] Blinding: Patients were not blinded (but physician performing the oocyte retrieval and embryo transfer was blinded) [The person who assessed whether or not pregnancy was present was also not aware of the treatment group assignment (i.e. was also blinded).] Exclusions during the trial: Assume none [None] Losses to follow-up: Assume none, but not explicitly stated as none in publication [No women were lost to follow-up.] Type of analysis reported: Intention to treat Important imbalances in prognostic factors: None</p>
Participants	<p>Country of study: Ulm, Germany Setting (including # centers): 1 fertility clinic Total number of patients randomized: 160 Mean age (+/-SD or Range): 32.5 +/- 4.0 (Range 21-43) Recruitment method: Women undergoing IVF or ICSI at the clinic Mean duration of infertility (SD) years: Not reported Minimal duration of infertility: Not reported Number of previous IVF cycles, and were there differences between groups: Mean 2 (+/- 2) for both groups, and no significant differences between groups Causes of infertility, and were there differences between groups: Similar causes between groups (no statistically significant differences) Were women with a history of acupuncture treatment excluded: Not reported Proportion of women with previous acupuncture treatment (if applicable): NA Other important inclusion criteria: good embryo quality Important exclusion criteria: Not reported Both IVF and ICSI included?: Yes ("In cases of severe male subfertility, ICSI was preferred...")</p>
Interventions	<p>TEST GROUP INTERVENTION: Acupuncture</p> <p>N allocated to acupuncture: 80 Style of acupuncture: Chinese Point selection: Formula</p>

Points stimulated: 5 points before embryo transfer, 4 points immediately after embryo transfer, and 4 auricular points; 5 points stimulated before embryo transfer: Cx6 (Neiguan), Sp8 (Diji), Liv3 (Taichong), Gv20 (Baihui), and S29 (Guilai); 4 points stimulated after embryo transfer: S36 (Zusanli), Sp6 (Sanyinjiao), Sp10 (Xuehai), and Li4 (Hegu); 4 ear points stimulated: ear point 55 (Shenmen), ear point 58 (Zhigong), ear point 22 (Neifenmi), and ear point 34 (Naodian). For the ear acupuncture, 2 needles were inserted in left ear, and 2 in right ear, and kept there for the 25 minute duration of the body acupuncture sessions. For the post-embryo transfer acupuncture session, the 2 points stimulated in the right and left ears were reversed.

Number of sessions target (mean): 2, one beginning 25 minutes before embryo transfer and one beginning immediately after embryo transfer

Insertion depth: 10-20mm

Was De qi reportedly sought?: Yes, both at initial insertion and after 10 minutes, when the needles were rotated

Duration (mins): 25 minutes, for each session

Method of stimulation: Rotating needles to maintain de qi sensation, 10 minutes after insertion (needles rotated for body acupuncture points, but not for ear acupuncture points)

Number of acupuncturists: one

Description of acupuncturist(s) qualifications: only states that acupuncturist is “well-trained” [Doctor in charge at the Department of Traditional Chinese Medicine, Tongji Medical University, Wuhan, People’s Republic of China]

CONTROL GROUP (if sham, describe sham procedures used): No treatment (patients in the control group remained lying still after embryo transfer, for 25 minutes (i.e. for the same duration of time that patients in the test group received acupuncture))

N allocated to control group: 80

Style of acupuncture: NA

Point selection: NA

Points stimulated: NA

Number of sessions target (mean): NA

Insertion depth: NA

Was De qi reportedly sought?: NA

Duration (mins): NA

Method of stimulation: NA

Number of acupuncturists: NA

Description of acupuncturist(s) qualifications: NA

Timing of acupuncture administration in relation to the in vitro fertilization protocol: Acupuncture administered both immediately before and then again immediately after embryo transfer

Any co-interventions in all groups? None reported, so assume none

Outcomes Relevant outcomes reported: Clinical pregnancy rate per woman [ongoing pregnancy and live birth outcome data obtained from investigator]
How was clinical pregnancy defined: Clinical pregnancy was defined, in the abstract only, as the presence of a fetal sac during an ultrasound examination, 6 weeks after embryo transfer
How was ongoing pregnancy defined: Not reported, but all ongoing pregnancies resulted in live births, so assumed that ongoing pregnancies was likely at or beyond our criteria of at least 12 weeks of gestation

Was number of oocytes retrieved; fertilization rate; and number of embryos transferred similar in each group?: Yes, there were no significant differences between groups on these endpoints

Was the quality of embryos transferred similar in each group (if reported?): Yes, and only good quality embryos transferred (i.e. scores of 1 or 2 out of 4)

Additional pregnancy-related outcomes reported in the trial but not extracted: None (biochemical pregnancy not reported)

Adverse effects: Not reported

Notes	Sources of support: Not reported for 2002 publication but assumed to be IVF clinic, based on reporting in 2001 abstract for this study, which stated “Supported By: Christian-Lauritzen-Institut.” (According to the website, this institute is a clinic offering many treatments, including IVF treatments.)
Study	Paulus 2003 ^{w5}
Methods	<p>Details of randomization: In the ‘Materials and Methods’ section, the study was described as a “prospective, randomized, placebo controlled trial”, but then the allocation was described as follows: “They were divided into two groups by random selection:..”. [A computerized program was used to generate the sequence for treatment group assignment. Patients were assigned to the treatment groups by calling a central office unaware of patient characteristics, once a person was deemed eligible. The randomization was done on the same day as the embryo transfer.]</p> <p>Blinding: Patients were blinded by use of placebo needle. [There was also blinding of the physicians performing the embryo transfer, as well as blinding of the person who assessed whether or not pregnancy was present (i.e. the outcomes assessors).]</p> <p>Exclusions during the trial: Assume none [None]</p> <p>Losses to follow-up: Assume none, but not explicitly stated as none in publication [No women were lost to follow-up.]</p> <p>Type of analysis reported: Intention to treat</p> <p>Important imbalances in prognostic factors: Not reported [There were no statistically significant differences between the 2 groups in baseline characteristics.]</p>
Participants	<p>Country of study: Ulm, Germany (assumed from context)</p> <p>Setting (including # centers): 1 fertility clinic (assumed from context)</p> <p>Total number of patients randomized: 200</p> <p>Mean age (+/-SD or Range): Not reported [acupuncture group 32.6 ± 5.2; control group 32.5 ± 3.7 (n.s.)]</p> <p>Recruitment method: Women undergoing IVF or ICSI at the clinic</p> <p>Mean duration of infertility (SD) years: Not reported</p> <p>Minimal duration of infertility: Not reported</p> <p>Number of previous IVF cycles, and were there differences between groups: Not reported [(mean ± SD): acupuncture group 2.1 ± 2.4 vs control group 1.7 ± 1.7 (n.s.)]</p> <p>Causes of infertility, and were there differences between groups: Not reported [Similar causes between groups (no statistically significant differences)]</p> <p>Were women with a history of acupuncture treatment excluded: Not reported</p> <p>Proportion of women with previous acupuncture treatment (if applicable): NA</p> <p>Other important inclusion criteria: good embryo quality</p> <p>Important exclusion criteria: Not reported</p> <p>Both IVF and ICSI included?: Yes</p>
Interventions	<p>TEST GROUP INTERVENTION: Acupuncture</p> <p>N allocated to acupuncture: 100</p> <p>Style of acupuncture: Chinese</p> <p>Point selection: Formula</p> <p>Points stimulated: 5 points stimulated before embryo transfer: Cx6 (Neiguan), Sp8 (Diji), Liv3 (Taichong), Gv20 (Baihui), and S29 (Guilai); 4 points stimulated after embryo transfer: S36 (Zusanli), Sp6 (Sanyinjiao), Sp10 (Xuehai), and Li4 (Hegu). The same ear acupuncture supplement used in the 2002 trial was also used in the 2003 trial.</p> <p>Number of sessions target (mean): 2, one beginning 25 minutes before embryo transfer and one beginning immediately after embryo transfer</p> <p>Insertion depth: Not reported</p> <p>Was De qi reportedly sought?: Yes (assumed to be ‘yes’ because text states that “After 10 min the needles were rotated.”, and the reason for rotating needles is to cause the de qi sensation)</p> <p>Duration (mins): 25 minutes, for each session</p> <p>Method of stimulation: Needles were rotated after 10 minutes</p>

	<p>Number of acupuncturists: Not reported [one] Description of acupuncturist(s) qualifications: Not reported [Doctor in charge at the Department of Traditional Chinese Medicine, Tongji Medical University, Wuhan, People's Republic of China]</p> <p>CONTROL GROUP (if sham, describe sham procedures used): A placebo needle that did not penetrate the skin N allocated to control group: 100 Style of acupuncture: NA Point selection: Formula Points stimulated: Same points as those used in true acupuncture group Number of sessions target (mean): Most likely same as true acupuncture group, since sham group reported to use "same acupoints and after the same scheme" as true acupuncture group Insertion depth: Not inserted Was De qi reportedly sought?: Not reported Duration (mins): Most likely same as true acupuncture group Method of stimulation: Not reported Number of acupuncturists: Not reported [one] Description of acupuncturist(s) qualifications: Not reported [Doctor in charge at the Department of Traditional Chinese Medicine, Tongji Medical University, Wuhan, People's Republic of China]</p> <p>Timing of acupuncture/sham administration in relation to the in vitro fertilization protocol: Acupuncture/sham administered both immediately before and then again immediately after embryo transfer Any co-interventions in all groups? Assumed none Credibility of sham assessed?: Not reported</p>
Outcomes	<p>Relevant outcomes reported: Clinical pregnancy rate per woman is the only outcome reported [ongoing pregnancy and live birth outcome data obtained from investigator] How was clinical pregnancy defined: presence of a fetal sac at ultrasound examination 6 weeks after embryo transfer How was ongoing pregnancy defined: Not reported, but all ongoing pregnancies resulted in live births, so assumed that ongoing pregnancies was likely at or beyond our criteria of at least 12 weeks of gestation</p> <p>Was number of oocytes retrieved; fertilization rate; and number of embryos transferred similar in each group?: Not reported [There were no statistically significant differences between the two groups in the number of embryos transferred. Transferred embryos (mean \pm SD): acupuncture group 2.2 ± 0.5 vs control group 2.2 ± 0.4.] Was the quality of embryos transferred similar in each group (if reported?): Yes, only good quality embryos transferred Additional pregnancy-related outcomes reported in the trial but not extracted: None (biochemical pregnancy not reported) Adverse effects: Not reported</p>
Notes	Sources of support: Not reported
Study	Smith ^{w6}
Methods	<p>Details of randomization: Subjects were randomly allocated to acupuncture or sham using sealed, sequentially numbered envelopes. Randomization was stratified by number of previous treatment cycles and maternal age. Randomization prepared by researcher not involved in the trial. [Sequence for treatment group assignment contained in the envelopes was generated by a computer program. The sealed envelopes were opaque.] Blinding: Yes, blinding of patients only (i.e. single-blind) (This was the only trials to ask subjects their treatment assignment, in order to evaluate the credibility of the sham.) Exclusions during the trial: 3/110 in acupuncture group and 4/118 in sham group did not have pregnancy outcomes available [These were women for whom there was no egg collection or possibly hyper stimulation, and who did not proceed to embryo transfer. All women</p>

	<p>randomized to the trial were accounted for, and none were lost to follow-up.] Analysis of trial by intention to treat, which assumed these 7 excluded women did not experience pregnancy outcome.</p> <p>Losses to follow-up: None</p> <p>Type of analysis reported: Main analysis by intention to treat</p> <p>Important imbalances in prognostic factors: None</p>
Participants	<p>Country of study: Adelaide, Australia</p> <p>Setting (including # centers): 1 university fertility clinic</p> <p>Total number of patients randomized: 228</p> <p>Mean age (+/-SD or Range): ~36 (+/-5)</p> <p>Recruitment method: Women undergoing IVF or ICSI [identified as being eligible by the research nurse] were recruited from the fertility clinic by a research nurse who provided them information about the study; also the trial received media coverage so some women self-referred.</p> <p>Mean duration of infertility (SD) years: Mean not reported, only stated that more than 50% of women reported a history of infertility > 2 years; there were no statistically significant differences between two groups according to categorical analysis, grouping by <2y, 2-4, and 5+ years infertility</p> <p>Minimal duration of infertility: Not reported</p> <p>Number of previous IVF cycles, and were there differences between groups: 0-5+ (mode: 1), with no statistically significant differences between groups</p> <p>Causes of infertility, and were there differences between groups: most common reasons for infertility attributed to male infertility and tubal factors, with no statistically significant differences between groups</p> <p>Were women with a history of acupuncture treatment excluded: No, but the majority (69%) had not received acupuncture previously</p> <p>Proportion of women with previous acupuncture treatment (if applicable): 31%</p> <p>Other important inclusion criteria: Women with a planned embryo transfer</p> <p>Important exclusion criteria: Women previously randomized to the trial</p> <p>Both IVF and ICSI included?: Yes (Only stated that “Women undergoing IVF or ICSI were recruited from Repromed...”)</p>
Interventions	<p>TEST GROUP INTERVENTION: Acupuncture</p> <p>N allocated to acupuncture: 110</p> <p>Style of acupuncture: Chinese</p> <p>Point selection: Flexible formula</p> <p>Points stimulated: Not fully reported. Only described as “based on the protocol by Paulus et al.” but with the following two acupuncture points used by Paulus et al excluded: Liver 4 and Governing Vessel 20. “Acupuncture was administered with point selection based on the TCM diagnosis.”...”The number of needles inserted ranged from 6 to 14 for the first treatment and were 13 and 10 in the second and third treatments, respectively.” Points were needled bilaterally. [Flexible formula, based on the TCM diagnosis, for the initial treatment at day 9 only. Formula treatment used for the two other acupuncture sessions, immediately before and after embryo transfer. Points used in treatment before embryo transfer: CV4, St 29, PC6, Sp8, Liv 3 plus the ear points used by Paulus. Points used in treatment after embryo transfer: Sp10, Sp6, St36 plus ear points.]</p> <p>Number of sessions target (mean): 3: day 9 of stimulating injections, immediately before embryo transfer, and immediately after embryo transfer</p> <p>Insertion depth: reported to be “inserted with a guide tube to tissue level”</p> <p>Was De qi reportedly sought?: Yes</p> <p>Duration (mins): 25 minutes per treatment</p> <p>Method of stimulation: Manual</p> <p>Number of acupuncturists: 2, with the majority of treatments being administered by the primary acupuncture researcher</p> <p>Description of acupuncturist(s) qualifications: Not reported [Bachelor degree by principal acupuncturist and Master qualification by secondary acupuncturist.]</p>

	<p>CONTROL GROUP (if sham, describe sham procedures used): Sham acupuncture using the non-penetrating Streitberger placebo needle (0.30 mm x 30 mm).</p> <p>N allocated to control group: 118</p> <p>Style of acupuncture: Reportedly the noninvasive sham procedure closely resembles the style of Chinese acupuncture but does not involve penetrating the skin</p> <p>Point selection: Not clear whether formula or flexible formula [Three sets of fixed control points for the three treatments]</p> <p>Points stimulated: Points close to but not on the real acupuncture points were used</p> <p>Number of sessions target (mean): 3</p> <p>Insertion depth: NA (needles not inserted)</p> <p>Was De qi reportedly sought?: Not reported [No due to non-insertion.]</p> <p>Duration (mins): 25 minutes per session</p> <p>Method of stimulation: “Needles were manually “stimulated” by lifting and thrusting the handle of the needle and by running a fingernail along the handle. The acupuncturist held the placebo needle in place with one hand while “stimulating” the needle with the other hand. Each point was stimulated bilaterally for approximately 3 minutes.”</p> <p>Number of acupuncturists: Number administering sham treatment not explicitly reported</p> <p>Description of acupuncturist(s) qualifications: Not reported [as above]</p> <p>Timing of acupuncture/sham administration in relation to the in vitro fertilization protocol:</p> <p>Any co-interventions in all groups?: Assume none [None other than the routine IVF protocol.]</p> <p>Credibility of sham assessed?: Yes</p>
Outcomes	<p>Relevant outcomes reported: clinical pregnancy and ongoing pregnancy</p> <p>How was clinical pregnancy defined: number of couples achieving a clinical pregnancy (demonstration of fetal heart activity on ultrasound scan [at 8 weeks])</p> <p>How was ongoing pregnancy defined: pregnancy rate at 18 weeks</p> <p>Was number of oocytes retrieved; fertilization rate; and number of embryos transferred similar in each group?: Yes, there were no statistically significant differences found between groups for any of these endpoints</p> <p>Was the quality of embryos transferred similar in each group (if reported?): Yes, no difference was found in the grading of embryos between groups</p> <p>Additional pregnancy-related outcomes reported in the trial but not extracted: biochemical pregnancy rate (difference between groups: RR 1.16, 95% CI 0.87 to 1.56)</p> <p>Adverse effects: Adverse effects evaluated but publication results did not state whether the groups differed on frequency of reporting adverse effects [No statistically significant differences in side effects reported after third treatment.]</p>
Notes	<p>Sources of support: “Supported by research funds from Repromed and the University of South Australia.” (Repromed is an infertility treatment center.)</p> <p>GZ, an acupuncturist, commented that “the placebo is likely to produce a subcutaneous acupressure on these points”.</p>
Study	Westergaard ^{w7}
Methods	<p>Details of randomization: Couples randomized to one of three groups by drawing of sealed envelopes on the day of oocyte retrieval. [The randomization treatment assignments were placed in sealed, opaque envelopes, which were shuffled and deposited in a cardboard box, from which each patient selected only one. This procedure has handled by an independent nurse not responsible for obtaining information about patients and enrolling them. Although the envelopes were not sequentially numbered, we considered the safeguards used in the randomization process to have provided adequate assurance of allocation concealment.]</p> <p>Blinding: No</p> <p>Exclusions during the trial: 27 exclusions, 19 due to no embryo transfer resulting from failure of fertilization or poor embryo development and 8</p>

(7 in control group) declined participation after randomization
Losses to follow-up: None, other than the exclusions. [All randomized women were followed up.]
Type of analysis reported: In the author's analysis of the trial, the pregnancy outcome analyses were conducted per embryo transfer rather than per woman randomized. However, the data was reported in adequate detail to allow for an intention to treat analysis.
Important imbalances in prognostic factors: None

Participants Country of study: Copenhagen, Denmark
Setting (including # centers): 1 private fertility clinic
Total number of patients randomized: 300
Mean age (+/-SD or Range): 37 (range: 24 - 45)
Recruitment method: All couples admitted to the clinic for IVF/ICSI treatment were consecutively invited to participate
Mean duration of infertility (SD) years: median, 4 (range: 1 - 9)
Minimal duration of infertility: No minimal required to be eligible
Number of previous IVF cycles, and were there differences between groups: about 1/3 in each group had no previous IVF cycles, and there were no statistically significant differences between groups
Causes of infertility, and were there differences between groups: Six causes with primary infertility most common, and no statistically significant differences between groups
Were women with a history of acupuncture treatment excluded: Not reported (assumed no)
Proportion of women with previous acupuncture treatment (if applicable): NA
Other important inclusion criteria: Consent to be randomized was only inclusion criteria (i.e. by design, the study population consisted of an unselected average of couples seeking treatment in the clinic)
Important exclusion criteria: None
Both IVF and ICSI included?: Yes ("In cases of male factor or idiopathic infertility, ICSI was used for fertilization.")

Interventions TEST GROUP INTERVENTION: Acupuncture

N allocated to acupuncture: 200 total. 100 to each of two different acupuncture protocols, ACU 1 and ACU 2 groups. ACU 1 group received acupuncture on the day of embryo transfer and ACU 2 group received acupuncture on the day of embryo transfer and again two days later. We combined ACU 1 and ACU 2 groups for the meta-analysis.
Style of acupuncture: Chinese
Point selection: Formula
Points stimulated: 5 points 25 minutes before embryo transfer and 4 points immediately after embryo transfer; 5 points stimulated before embryo transfer: DU20 (Baihui), ST29, SP8, PC6, and LR3; 4 points stimulated after embryo transfer: were ST36, SP6, SP10, and LI 4. ACU 2 group had these same points immediately before and after embryo transfer and also had the following points 2 days after embryo transfer: DU20, Ren 3, ST29, SP10, SP6, ST36, and LI 4
Number of sessions target (mean): ACU 1: 2, one beginning 25 minutes before embryo transfer and one beginning immediately after embryo transfer; ACU 2: same sessions on embryo transfer day as ACU 1 but also had a third 25 minute acupuncture session 2 days after embryo transfer
Insertion depth: Not reported
Was De qi reportedly sought?: Yes
Duration (mins): 25
Method of stimulation: Needles were rotated at the start and after 10 minutes, to evoke the de qi sensation
Number of acupuncturists: 9 nurses performed the acupuncture with one of the nurses performing about one-half of all acupuncture procedures
Description of acupuncturist(s) qualifications: Nurses were instructed by two professional acupuncture practitioners, who also supervised the procedures by frequent visits throughout the study period

CONTROL GROUP (if sham, describe sham procedures used): No adjuvant treatment: patients followed the clinic's usual care procedure,

which was bed rest for one hour after the embryo transfer and before leaving the clinic

N allocated to control group: 100

Style of acupuncture: NA

Point selection: NA

Points stimulated: NA

Number of sessions target (mean): NA

Insertion depth: NA

Was De qi reportedly sought?: NA

Duration (mins): one hour

Method of stimulation: NA

Number of acupuncturists: NA

Description of acupuncturist(s) qualifications: NA

Timing of acupuncture in relation to the in vitro fertilization protocol: In both ACU 1 and ACU 2 groups, acupuncture was applied for 25 minutes immediately before and after embryo transfer and acupuncture was applied again three days later for ACU 2 group only.

Any co-interventions in all groups? Assumed none

Credibility of sham assessed?: Not reported

Outcomes

Relevant outcomes reported: Clinical pregnancy and ongoing pregnancy per embryo transfer (and numbers of women randomized to each group also reported, allowing for our meta-analyses to use the intention to treat data) [live birth outcome data obtained from investigator]

How was clinical pregnancy defined: Transvaginal ultrasound 3 weeks after positive pregnancy test, demonstrating at least one intrauterine gestational sac

How was ongoing pregnancy defined: Presence of a viable intrauterine fetus beyond 12 weeks gestation

How was live birth defined: [All the women with ongoing pregnancies beared their pregnancies to live births. The reason is that when the authors submitted the paper all but a few had already delivered. All filled in a form which was returned to the clinic detailing the outcome of the pregnancy and delivery.]

Was number of oocytes retrieved; fertilization rate; and number of embryos transferred similar in each group?: Yes, there were no statistically significant differences between the three groups

Was the quality of embryos transferred similar in each group (if reported?): Not reported

Additional pregnancy-related outcomes reported in the trial but not extracted: Biochemical pregnancies, as diagnosed by serum hCG measurement 12-13 days after ET; Early pregnancy loss, n (% of positive pregnancy tests); Implantation rate, % (no. of gestational sacs/no. of transferred embryos)

Adverse effects: Not reported

Notes

Randomization occurred on day of oocyte retrieval rather than on day of ET, so 19 patients with failure of fertilization or poor embryo development were excluded in the trial analysis -- these women were re-included for the meta-analysis, to allow for intention to treat analysis
The ACU 1 and ACU 2 groups were combined together for the meta-analysis. However, the outcomes for each group separately are presented below, as supplementary data:

Clinical pregnancy:

ACU 1: 37/100

ACU 2: 33/100

Ongoing pregnancy:

ACU 1: 34/100

ACU 2: 24/100

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*Additional data obtained from RCT authors is enclosed in brackets to allow such data to be differentiated from the data included only in the publications.