按摩
是否能幫助早產兒體重增加

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引言人：曾琬淳 護理師

單位：新生兒加護病房

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背景

- 早產兒的體重增加影響著後續的生理發展，也是其是否能即早出院的重要指標。

- 不少早產兒發展相關文獻指出給予「撫觸」能作為協助早產兒發展上的刺激，按摩療法也逐漸被發展出來。

- 目前本院新生兒加護病房暫未將按摩療法作為 常規之護理處置，故希望藉此機會深入了解，並做為臨床上照護之重要依據。

本院常規護理介紹-1

- **新生兒個別化發展性照護** (Neonatal Individualized Developmental Care, NIDCAP)，1986年由Dr. Als提出。目的是建構一個優質的照護環境，穩定早產兒之生命徵象；提供適當發展的時機，引導早產兒或急重症嬰兒之發展統合與健康成長，減少嬰兒因住院經驗所造成的合併症。

- 優點
    - 穩定早產兒的生理功能。
    - 促進神經功能發展。
    - 同時可減輕父母的壓力與焦慮。
    - 藉肌膚間親密之接觸促進親子關係的連結。

本院常規護理介紹-2

使用小毛巾及捲軸等方式，提供類似子宮內的舒適臥位。

雙手屈曲靠近頭、嘴巴、前胸

頭部維持中央位置

肩膀彎曲內收無外展

圍巢有支托早產兒身體

雙足有支托無懸空

膝關節彎曲靠近身體

DR. TIFFANY FIELD

- 美國邁阿密大學**Dr. Tiffany Field**在1982年成立了觸覺研究所(The Touch Research Institute ;TRI)，她認為 "嬰兒按摩教會父母如何給予和接受愛。1986年美國小兒科期刊發表，對早產兒每天進行三次15分鐘的按摩，體重增加47 %。並持續致力於按摩療法相關研究。

按摩作用機轉

迷走神經活動↑ → 腸胃蠕動↑

按摩

IGF-1(類胰島素生長因子)分泌↑

體重↑

- Field(2011)的研究指出，按摩治療可以增加**迷走神經**的活動，迷走神經能增加促進食物吸收之胰島素的釋放及**增加腸胃蠕動**。此外，按摩也可增加**類胰島素生長因子IGF-1**的分泌，而IGF-1能增加身體新陳代謝率並**使體重增加**。

DR. TIFFANY FIELD
按摩方式

按摩治療內容包括 (Field_2006) ：

- **撫觸、按摩**與**運動感覺**三個階段的刺激。
- 每次約 15 分鐘。
- 每個階段為 5 分鐘。
- 每天執行 3-4 次。
- 整個按摩治療持續約 10 天。

按摩能 有效 增加早產兒體重？

Massage therapy for weight gain in preterm neonates: A systematic review and meta-analysis of randomized controlled trials

作者	Lu, L. C., Lan, S. H., Hsieh, Y. P., Lin, L. Y., Chen, J. C., & Lan, S. J.
年代	2020
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Impact Factor	1.77

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Complementary Therapies in
CLINICAL PRACTICE

AN INTERNATIONAL JOURNAL

Indexed in **Medline**

Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence

Question	Step 1 (Level 1*)	Step 2 (Level 2*)	Step 3 (Level 3*)	Step 4 (Level 4*)	Step 5 (Level 5)
How common is the problem?	Local and current random sample surveys (or censuses)	Systematic review of surveys that allow matching to local circumstances**	Local non-random sample**	Case-series**	n/a
Is this diagnostic or monitoring test accurate? (Diagnosis)	Systematic review of cross sectional studies with consistently applied reference standard and blinding	Individual cross sectional studies with consistently applied reference standard and blinding	Non-consecutive studies, or studies without consistently applied reference standards**	Case-control studies, or "poor or non-independent reference standard**	Mechanism-based reasoning
What will happen if we do not add a therapy? (Prognosis)	Systematic review of inception cohort studies	Inception cohort studies	Cohort study or control arm of randomized trial*	Case-series or case-control studies, or poor quality prognostic cohort study**	n/a
Does this intervention help? (Treatment Benefits)	Systematic review of randomized trials or n-of-1 trials	Randomized trial or observational study with dramatic effect	Non-randomized controlled cohort/follow-up study**	Case-series, case-control studies, or historically controlled studies**	Mechanism-based reasoning
What are the COMMON harms? (Treatment Harms)	Systematic review of randomized trials, systematic review of nested case-control studies, n-of-1 trial with the patient you are raising the question about, or observational study with dramatic effect	Individual randomized trial or (exceptionally) observational study with dramatic effect	Non-randomized controlled cohort/follow-up study (post-marketing surveillance) provided there are sufficient numbers to rule out a common harm. (For long-term harms the duration of follow-up must be sufficient.)**	Case-series, case-control, or historically controlled studies**	Mechanism-based reasoning
What are the RARE harms? (Treatment Harms)	Systematic review of randomized trials or n-of-1 trial	Randomized trial or (exceptionally) observational study with dramatic effect			
Is this (early detection) test worthwhile? (Screening)	Systematic review of randomized trials	Randomized trial	Non-randomized controlled cohort/follow-up study**	Case-series, case-control, or historically controlled studies**	Mechanism-based reasoning

* Level may be graded down on the basis of study quality, imprecision, indirectness (study PICO does not match questions PICO), because of inconsistency between studies, or because the absolute effect size is very small; Level may be graded up if there is a large or very large effect size.

** As always, a systematic review is generally better than an individual study.

步驟 1:系統性文獻回顧探討的問題為何?

Population	Preterm, Low birth weight, Premature
Intervention	Touch, Tactile, sham, Acupressure
Comparison	Standard care
Outcomes	Body weight gain

步驟 2:系統性文獻回顧的品質如何?(FAITH)

F-研究是否找到 (Find) 所有的相關證據?

良好的文獻搜尋至少應包括二個主要的資料庫(如:Medline, Cochrane 考科藍實證醫學資料庫,EMBASE 等),並且加上文獻引用檢索(參考文獻中相關研究、Web of Science, Scopus 或 Google Scholar)、試驗登錄資料等。文獻搜尋應不只限於英文,並且應同時使用 MeSH 字串及一般檢索詞彙(text words)。

1. Databases included Web of Science, Ovid- Medline, CINAHL, ProQuest, and PubMed (up to July 24, 2018).

2. Case studies without control groups were excluded.

3. Searches included the following terms: "Small for gestational age" or "Light for gestational age" or "Low birth weight", combined with "Touch" or "Massage" or "Acupressure" or "Tactile" or "Sham."

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步驟 2:系統性文獻回顧的品質如何?(FAITH)

F-研究是否找到 (Find) 所有的相關證據?

P4

4. Studies were included for analysis based on the following criteria: (a) study design must be that of a randomized controlled trial or quasi- experimental design; (b) preterm neonates with low birth weight be-tween 1500 and 2500 g; (c) preterm neonates with very low birth weight between 500 and 1500 g.

5. The exclusion criteria were as follows: (a) non-peer reviewed research; (b) study participants were not preterm infants categorized as very low birth weight or low birth weight; (c) study outcomes did not involve adequate weight information, such as the mean and standard deviation; (d) non-full-text articles; and (e) articles published in languages other than English.

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Database:

Pubmed: 102,

Web of science: 178,

Ovid: 95,

CINAHL: 40,

WILEY: 0,

Proquest: 156

9 of additional records identified through other sources.

322 of records after duplicates removed.

258 of records screened.

227 of records excluded at abstract and title.

P2

12 of full-text articles excluded, with reasons

研究是否找到所有的相關證據?

☑是　　　□否　　　□不清楚

15 of studies included in quantitative synthesis (meta-analysis)

Fig. 1. Flowchart of search results and article retrieval. In total, 580 aritcles were identified; 19 full texts articles were included in the final review, and 15 of these studies were included in the meta-analysis.

A-文獻是否經過嚴格評讀 (Appraisal)?

應根據不同臨床問題的文章類型,選擇適合的評讀工具,並說明每篇研究的品質(如針對治療型的臨床問題,選用隨機分配、盲法、及完整追蹤的研究類型)。

1. Study design must be that of a randomized controlled trial or quasi- experimental design.

P4

2. Two investigators independently reviewed the title and ew

文獻是否經過嚴格評讀?

☑是　　☐否　　☐不清楚

3. The quality of each study was evaluated using guidelines developed by Higgins et al.

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步驟 2:系統性文獻回顧的品質如何?(FAITH)

I-是否只納入 (included) 具良好效度的文章?

僅進行文獻判讀是不足夠,系統性文獻回顧需納入至少要有一項研究結果是極小偏誤的試驗。

P5

Results:

The included studies had a low to moderate risk of bias.

是否只納入具良好效度的文章？

□是　　□否　　☑不清楚

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Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI
1.1.1 low birth weight								
Abdallah 2013	4.7	9.07	27	6.03	12.16	23	4.6%	-1.33 [-7.36, 4.70]
Ferber 2002	29.13	9.55	21	22.55	10.97	9	3.9%	6.58 [-1.67, 14.83]
Ferber 2002-2	31.14	8.65	17	22.55	10.97	10	4.0%	8.59 [0.64, 16.54]
Kumar 2013-2	17.03	1.71	25	11.96	1.66	23	5.7%	5.07 [4.12, 6.02]
Lahat 2007	17	3.7	5	15	3	5	5.1%	2.00 [-2.18, 6.18]
Rangey 2014	9.06	4.42	15	8.2	5.97	15	5.2%	0.86 [-2.90, 4.62]
Saeadi 2015	15	0.19	40	-7.71	0.19	20	5.8%	22.71 [22.61, 22.81]
Saeadi 2015-2	7.43	0.01	40	-7.71	0.19	21	5.8%	15.14 [15.06, 15.22]
Subtotal (95% CI)			190			126	40.2%	7.96 [3.83, 12.09]

Heterogeneity: Tau² = 30.13; Chi² = 13839.28, df = 7 (P < 0.00001); I² = 100%
Test for overall effect: Z = 3.78 (P = 0.0002)

Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI
1.1.2 very low birth weight								
Arora 2005	10.9	4.4	20	8.3	4.9	11	5.3%	2.60 [-0.88, 6.08]
Arora 2005-2	8.7	4.6	19	8.3	4.9	12	5.3%	0.40 [-3.06, 3.86]
Diego 2005	19.6	3.96	16	15.5	3.68	8	5.4%	4.10 [0.90, 7.30]
Diego 2005-2	16.2	3.86	16	15.5	3.68	8	5.4%	0.70 [-2.47, 3.87]
Diego 2014	29.493	13.24	15	26.38	15.55	15	3.3%	3.11 [-7.22, 13.45]
Dieter 2003	6.03	12.16	16	4.7	9.07	16	4.2%	1.33 [-6.10, 8.76]
Field 1986	25	6	20	17	6.7	20	5.2%	8.00 [4.06, 11.94]
Gonzalez 2009	29.2	5.3	30	20.9	7.6	30	5.4%	8.30 [4.98, 11.62]
Ho 2010	36.4	11	10	32.6	6.1	10	4.0%	3.80 [-4.00, 11.60]
Massaro 2009	30	1.2	20	28.9	1	10	5.7%	1.10 [0.29, 1.91]
Massaro 2009-2	27.1	1.4	19	28.9	1	10	5.7%	-1.80 [-2.68, -0.92]
Wheeden 1993	33	7.3	15	25.7	7	15	4.9%	7.30 [2.18, 12.42]
Subtotal (95% CI)			216			165	59.8%	2.94 [0.97, 4.91]

Heterogeneity: Tau² = 7.77; Chi² = 77.33, df = 11 (P < 0.00001); I² = 86%
Test for overall effect: Z = 2.93 (P = 0.003)

| **Total (95% CI)** | | | 406 | | | 291 | 100.0% | 5.07 [2.19, 7.94] |

Heterogeneity: Tau² = 37.26; Chi² = 17857.09, df = 19 (P < 0.00001); I² = 100%
Test for overall effect: Z = 3.46 (P = 0.0005)
Test for subgroup differences: Chi² = 4.62, df = 1 (P = 0.03), I² = 78.4%
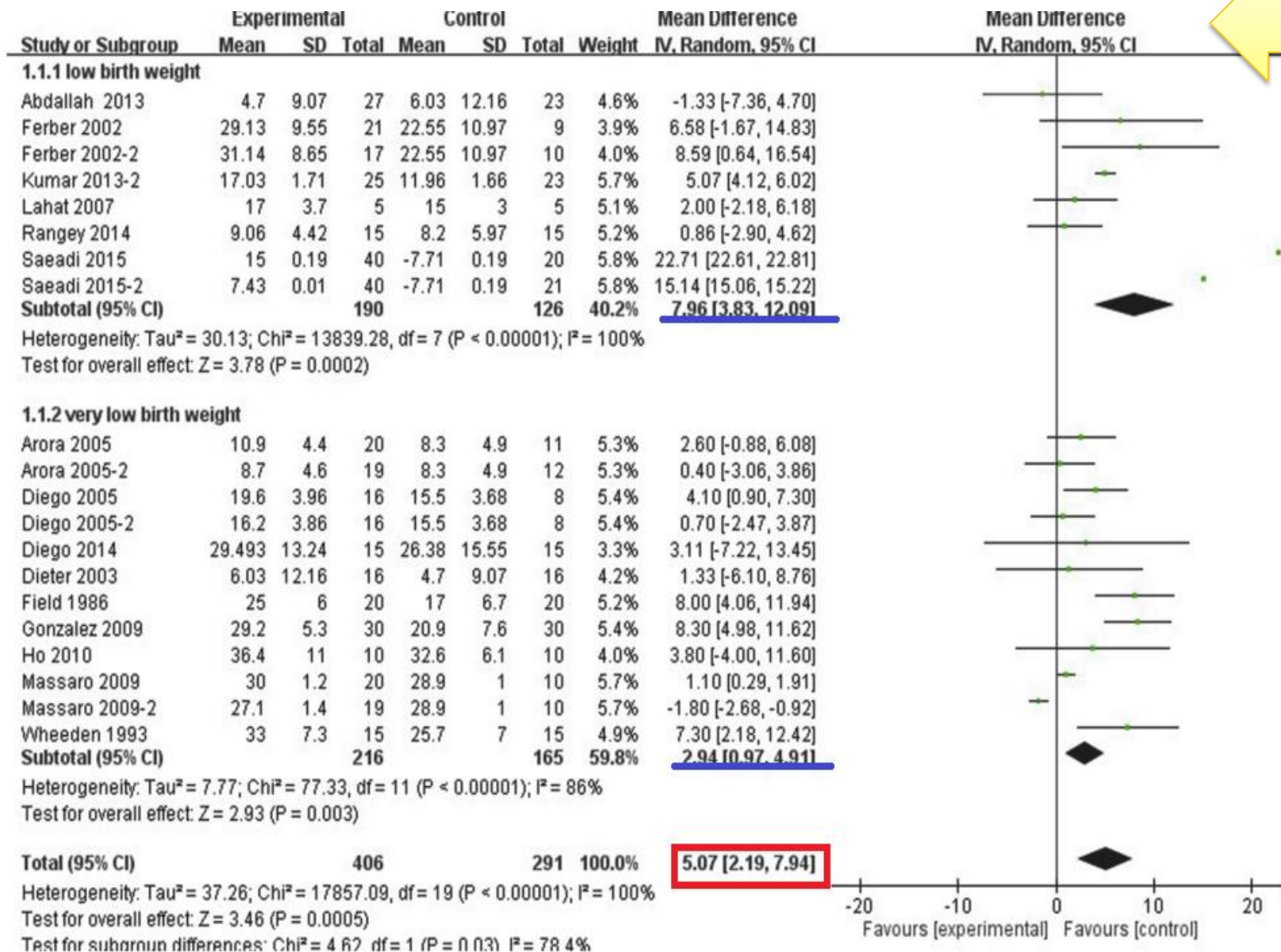
Favours [experimental]   Favours [control]

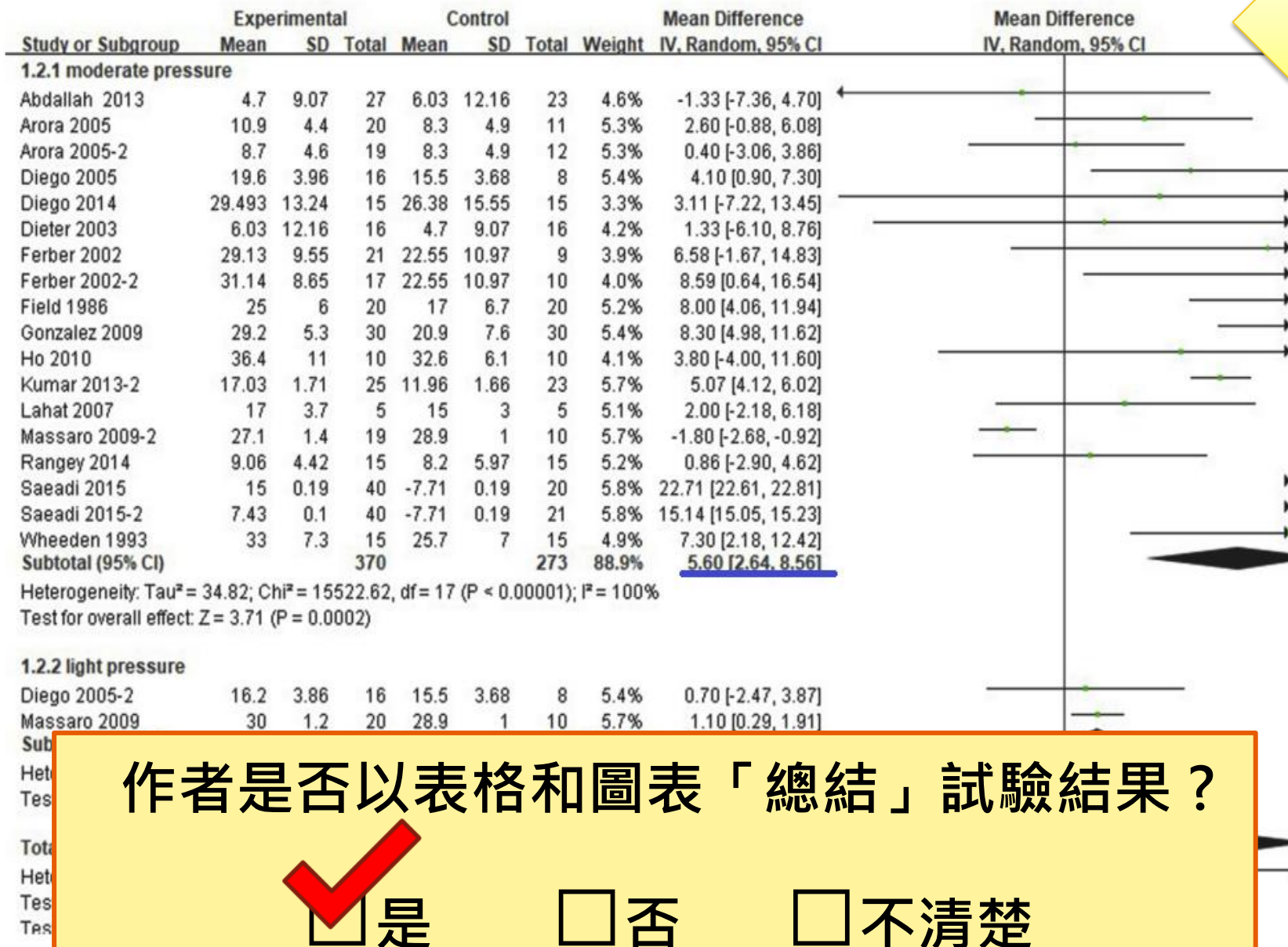**Fig. 2.** Forest plot of difference in weight change. The weight of preterm neonates who received massage intervention increased their weight daily by an average of 5.07 g, a significant increase (95% CI: 2.19–7.94, p = 0.0005). These effects were observed in both the low-birth-weight group and the very-low-birth-weight group: 7.96 g/day (95% CI 3.83–12.09, p = 0.0002) and 2.94 g/day (95% CI 0.97–4.91, p = 0.003).

Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	Mean Difference IV, Random, 95% CI
1.2.1 moderate pressure									
Abdallah 2013	4.7	9.07	27	6.03	12.16	23	4.6%	-1.33 [-7.36, 4.70]	
Arora 2005	10.9	4.4	20	8.3	4.9	11	5.3%	2.60 [-0.88, 6.08]	
Arora 2005-2	8.7	4.6	19	8.3	4.9	12	5.3%	0.40 [-3.06, 3.86]	
Diego 2005	19.6	3.96	16	15.5	3.68	8	5.4%	4.10 [0.90, 7.30]	
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Wheeden 1993	33	7.3	15	25.7	7	15	4.9%	7.30 [2.18, 12.42]	
Subtotal (95% CI)			370			273	88.9%	5.60 [2.64, 8.56]	

Heterogeneity: Tau² = 34.82; Chi² = 15522.62, df = 17 (P < 0.00001); I² = 100%
Test for overall effect: Z = 3.71 (P = 0.0002)

1.2.2 light pressure									
Diego 2005-2	16.2	3.86	16	15.5	3.68	8	5.4%	0.70 [-2.47, 3.87]	
Massaro 2009	30	1.2	20	28.9	1	10	5.7%	1.10 [0.29, 1.91]	

作者是否以表格和圖表「總結」試驗結果？

✔是　　□否　　□不清楚

Fig. 3. Forest plot of difference in massage pressure force. Preterm neonates who received moderate pressure and light pressure massages when both compare with control group exhibited daily weight gain (5.60 g/day, 95% CI 2.64–8.56, p = 0.0002; 1.08 g/day, 95% CI 0.29–1.86, p = 0.0007).
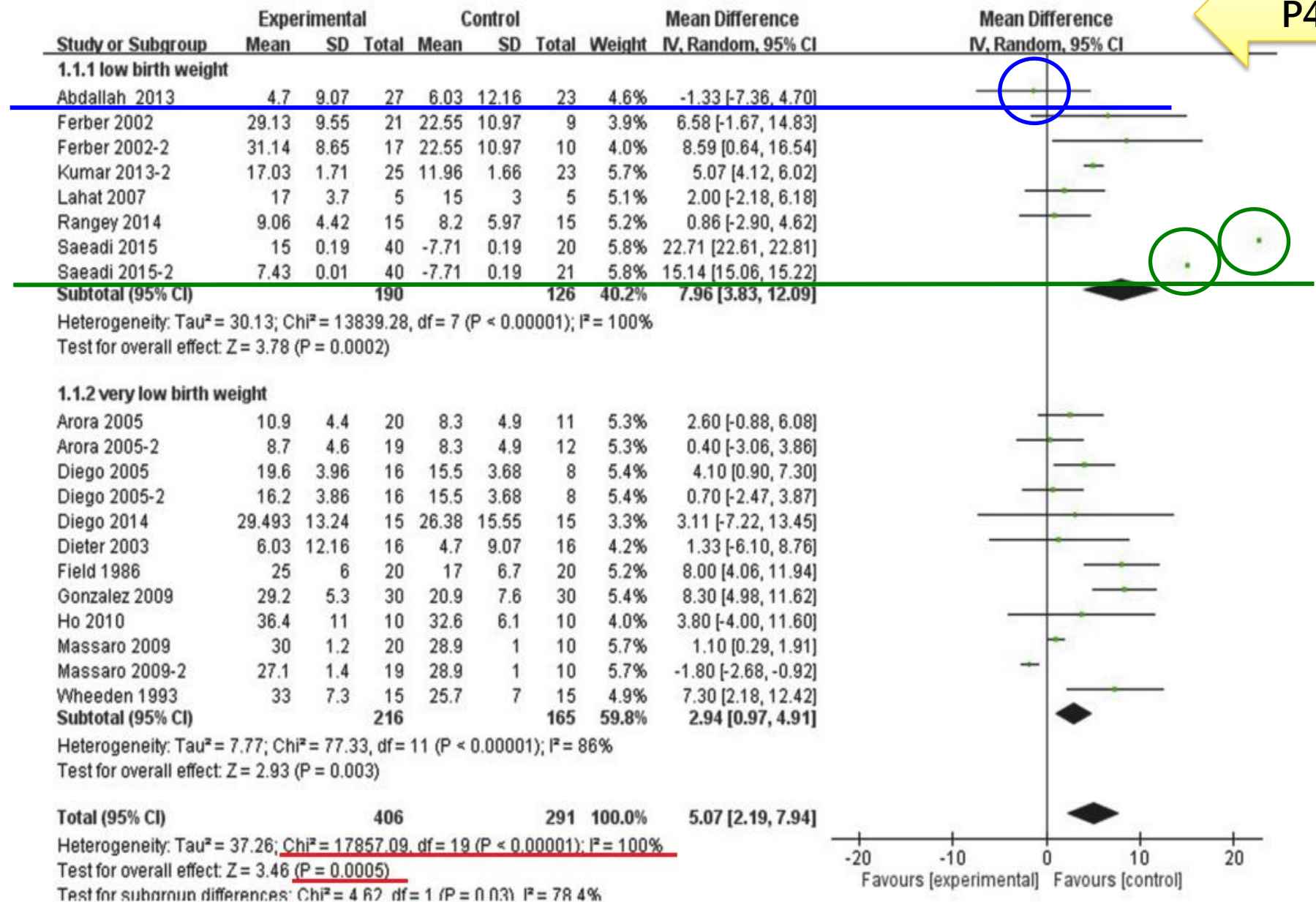
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Favours [experimental]   Favours [control]

Fig. 2. Forest plot of difference in weight change. The weight of preterm neonates who received massage intervention increased their weight daily by an average of 5.07 g, a significant increase (95% CI: 2.19–7.94, p = 0.0005). These effects were observed in both the low-birth-weight group and the very-low-birth-weight group: 7.96 g/day (95% CI 3.83–12.09, p = 0.0002) and 2.94 g/day (95% CI 0.97–4.91, p = 0.003).

Table 2

Study characteristics.

Very Low-Birth Weight Author	Year	Country	Design	Intervention; Number of cases	Baseline Gestational	Birth Weight
Low-Birth Weight						
Abdallah [16]	2013	Lebanon	RCT	Massage:27	32.2 ± 1.9	1747 ± 389
				Control:23	32.6 ± 2.6	1684 ± 446
Akhavan Karbasi [17]	2013	Iran	RCT	Massage:20	34.5 ± 1.26	1721 ± 123
				Control:20	34.6 ± 1.35	1539 ± 513
Aliabadi [18]	2013	Iran	RCT	Tactile:20	33.64 ± 2.06	1978.50 ± 317.46
				Control:20	33.67 ± 1.91	2051.50 ± 305.96
Ferber [19]	2002	Israel	RCT	Mothers:21	30.90 ± 1.94	1318 ± 333.81
				Staff:17	31.88 ± 1.93	1527 ± 34.63
				Control:19	31.52 ± 2.22	1375 ± 370.66
Field [6]	2006	USA	RCT	moderate: light pressure:	Mean GA = 30	Mean BWT = 1292 g
Kumar [20]	2013	India	RCT	Oil Massage:25	32.9 ± 1.4	1466.4 ± 226.8
				Control:23	32.6 ± 1.4	1416.6 ± 229.9
Lahat [21]	2007	ISRAEL	RCT Cross-over	Massage:5 Control:5	32 ± 1.7	1384 ± 441
Rangey [22]	2014	India	Quasi-experiment	Massage:15 Control:15	<37	
Saeadi [23]	2015	Iran	RCT	oil massage:40 massage:40 control:41	30.8 ± 2.4 yrs 31.6 ± 2.7	

A B S T R A C T

Purpose: Premature infants lack the tactile stimulation they would have otherwise experienced in the womb. Infant massage is a developmentally supportive intervention that has been documented for several decades to have a positive effect on both full term and preterm infants. The purpose of this study was to assess the short and long term benefits of massage on stable preterm infants.

Methods: A quasi experimental design was used, 66 infants were recruited from two university hospitals with tertiary level NICUs; 32 infants received the massage therapy by their mothers. Data collection by a researcher blind to the infants' group assignments included weight at discharge, pain responses on the PIPP scale at discharge, length of stay in hospital, neuro-developmental outcome (Bayley scores) and breastfeeding duration at 12 months corrected age.

Results: Infants who were massaged had significantly lower scores on the PIPP after a heelstick compared to before the massage and had lower PIPP scores at discharge compared to the control group. Massaged infants had higher cognitive scores at 12 months corrected age. Weight gain, length of stay, breastfeeding duration and motor scores did not differ between groups.

Conclusion: Stable preterm infants benefit from massage therapy given by their mothers and may be a culturally acceptable form of intervention to improve the outcomes of preterm infants.

Table 2
Outcome variables excluding the lost to follow up and the deceased at 12 months corrected age.

Variable	Control (N=23) Mean ± SD	Intervention (N=27) Mean ± SD	p value	ES[a]	CI[b]
Average weight gain during NICU stay	1772.14 ± 143.65	1842.84 ± 174.34	0.15	−0.44	(−0.13, 0.99)
Average daily weight gain	6.03 ± 12.16	4.70 ± 9.07	0.68	−0.13	(−0.68, 0.43)
Weight at discharge	1903.81 ± 212.37	1950.21 ± 180.85	0.62	−0.24	(−0.32, 0.80)
LOS	25.04 ± 18.54	27.21 ± 18.67	0.16	−0.11	(−0.45, 0.67)
PIPP on discharge	10.90 ± 2.41	8.07 ± 2.25	0.01	−1.23	(−1.84, −0.62)
Breastfeeding duration	69.52 ± 146.86	50.92 ± 68.18	0.58	−0.16	(−0.72, 0.40)
Mental scores	106.25 ± 11.76	120.43 ± 15.73	0.004	1.02	(0.4, 1.61)
Motor scores	95.38 ± 14.26	99.26 ± 13.11	0.77	−0.53	(−1.09, 0.04)

[a] ES = effect sizes.
[b] CI = confidence interval.
Significance is set at P value < 0.05.

THE EFFICACY OF MASSAGE ON SHORT AND LONG TERM OUTCOMES IN PRETERM INFANTS

3. Discussion

This study suggests that the mother's participation in providing massage therapy with olive oil for healthy preterm infants had a positive effect on their pain scores before and after the massage, on their pain responses at discharge and on their mental development at 12 months. While some of the findings in this study are consistent with previous research others are not. The massaged group did not have a better average weight gain or more weight at discharge which is inconsistent with most earlier studies (Dieter, Field, & Emory, 2003; Fucile and Gisel, 2010; Scafidi et al., 1990). This could be attributed to three factors. First massage was done without kinesthetic stimulation once per day for 10 min; whereas with most earlier studies massage was done with kinesthetic stimulation (passive limb movement) for two or three 15-min periods per day. Second infants in both hospitals are often discharged when they reach a certain weight irrespective of their physiologic stability or ability to suck. Third as seen from Table 1 the intervention group had higher SNAPPE II scores indicating that they were sicker, albeit not a significant difference. Nevertheless, this may have placed them at a disadvantage in terms of LOS and weight gain (Table 2).

Abstract- Prematurity and poor weight gaining are important causes for neonatal hospitalization. The present study aimed to investigate the role of medium-chain triglyceride (MCT) oil via massage therapy as a supplementary nutritional method on the weight gain of Neonatal Intensive Care Units (NICU)-hospitalized neonates. This randomized clinical trial performed among 121 stable premature neonates hospitalized in the NICU of Qaem Educational Hospital, Mashhad, Iran. They were randomly divided into three groups: oil-massage, massage alone and control groups. These groups were compared on the basis of weight gain during a one-week interval. The three groups were matched for sex, mean gestational age, birth weight, head circumference, delivery, and feeding type ($P>0.05$). The mean weight gain on the 7th day in the oil massage group was 105 ± 1.3gr and 52 ± 0.1gr in the massage group; whereas 54 ± 1.3gr weight loss was observed in the control group. Significant differences were observed between the oil-massage group and the other two groups, respectively ($P=0.002$ and $P=0.000$). The findings of this study suggest that transcutaneous feeding with MCT oil massage therapy in premature neonates can result in accelerated weight gain in this age group with no risk of NEC.

Table 1. Comparing the mean neonatal weight (gr) in three groups

Group	Day 1 M	Day 1 SD	Day 2 M	Day 2 SD	Day 3 M	Day 3 SD	Day 4 M	Day 4 SD	Day 5 M	Day 5 SD	Day 6 M	Day 6 SD	Day 7 M	Day 7 SD
MCT	1434	3.5	1444	3.4	1472	3.4	1493	3.4	144	2.9	1505	2.8	1539	2.8
Massage	1763	5.9	1756	5.8	1755	5.8	1772	5.9	1767	5.8	1778	5.8	1815	5.8
Control	1564	3.9	1977	2.7	1556	3.4	1528	4.2	1576	3.4	1533	2.8	1510	2.6
P-value	0.975		0.937		0.011		0.010		0.0010		0.000		0.000	
F	1		2		2		2		2		2		2	
df	0.01		0.9		4.6		4.7		10.2		15.1		9.7	

M: mean, SD: standard deviation

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THE EFFECT OF MASSAGE WITH MEDIUM-CHAIN TRIGLYCERIDE OIL ON WEIGHT GAIN IN PREMATURE NEONATES
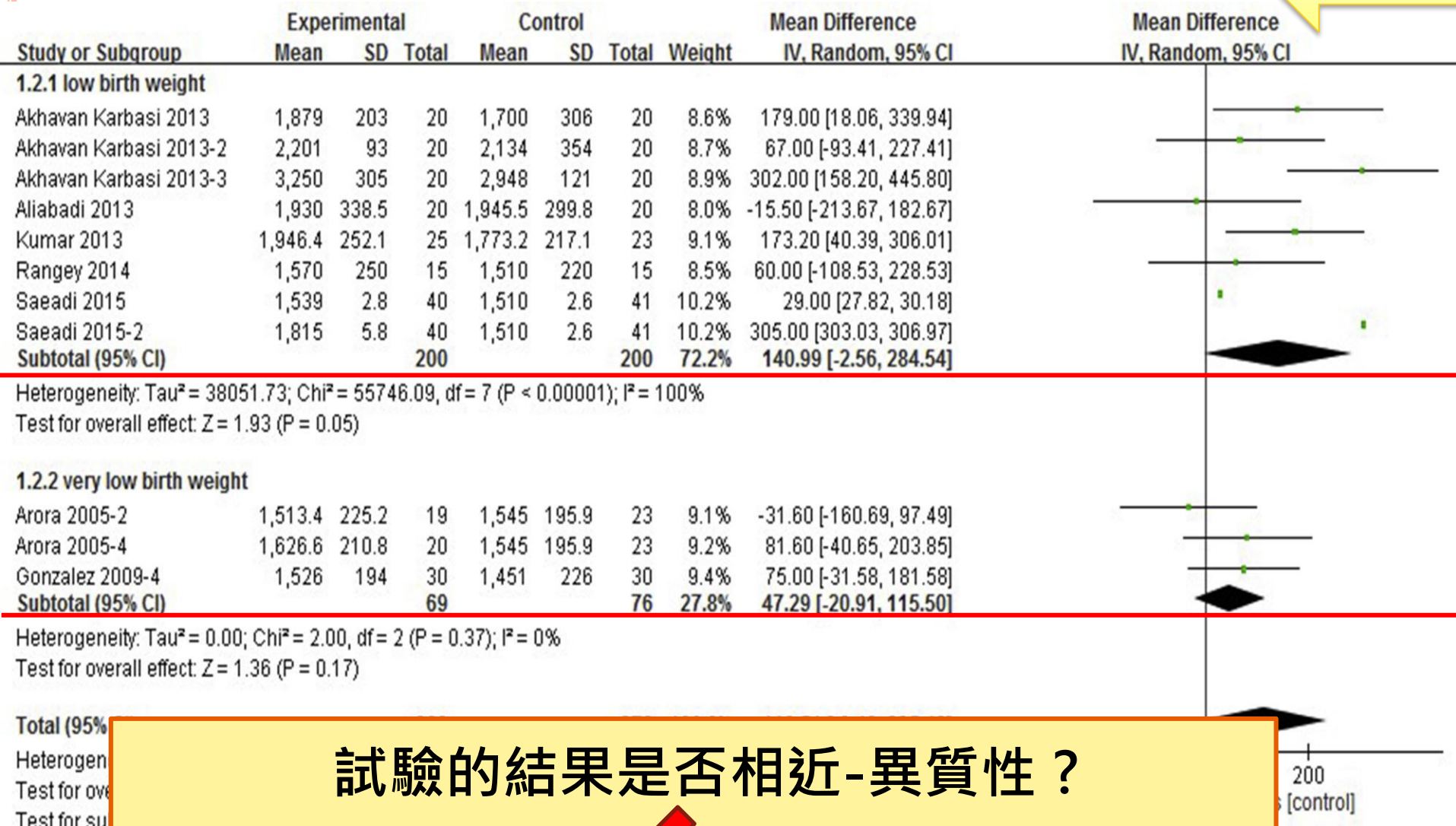
Materials and Methods

This clinical trial study was conducted (in the NICU ward of Qaem Educational Hospital, Mashhad, Iran. Participants of this study were all the neonates under 28 days with a gestational age less than 37 weeks hospitalized in the stable condition at NICU. Neonates with a skin disease, major congenital anomaly, and total parental nutrition requiring mechanical ventilation or receiving supplementary O_2 therapy were excluded from the study. All the newborns, that entered the study, received an equal or over 120cc per day feeding regimen. The sample size was calculated with a 95% confidence interval and a power of 80% as 40 for the two study groups and 41 for the control group; in total 121 participants. The study protocol was fully explained to the parents, and an informed consent was obtained from the parents.

The sampling method was simple and non-probability type. All the neonates hospitalized in the NICU having the inclusion criteria were randomly divided into three groups: 1) MCT oil massage group, 2)

In the first group (MCT oil massage group), the neonates received massage therapy by an expert nurse for four times a day (each time five minutes) during one week. The massage was performed on the whole body (below the neck) with 10cc/kg/d of MCT oil In case of oral feeding, each turn of massage was performed one-hour post-feeding. During massage, the neonates were placed completely naked on a plastic cover under the warmer. The neonates' weight was measured naked with a digital scale with ± 5gr accuracy at 8 o'clock every morning, by a single observer. The reliability of the scale was previously confirmed by standard weights.

In the massage group, the neonates received whole body massage therapy four times daily, five minutes each and for a period of one week without using oil (with the same massage technique as the first group and by the same massager).

Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	Mean Difference IV, Random, 95% CI
1.2.1 low birth weight									
Akhavan Karbasi 2013	1,879	203	20	1,700	306	20	8.6%	179.00 [18.06, 339.94]	
Akhavan Karbasi 2013-2	2,201	93	20	2,134	354	20	8.7%	67.00 [-93.41, 227.41]	
Akhavan Karbasi 2013-3	3,250	305	20	2,948	121	20	8.9%	302.00 [158.20, 445.80]	
Aliabadi 2013	1,930	338.5	20	1,945.5	299.8	20	8.0%	-15.50 [-213.67, 182.67]	
Kumar 2013	1,946.4	252.1	25	1,773.2	217.1	23	9.1%	173.20 [40.39, 306.01]	
Rangey 2014	1,570	250	15	1,510	220	15	8.5%	60.00 [-108.53, 228.53]	
Saeadi 2015	1,539	2.8	40	1,510	2.6	41	10.2%	29.00 [27.82, 30.18]	
Saeadi 2015-2	1,815	5.8	40	1,510	2.6	41	10.2%	305.00 [303.03, 306.97]	
Subtotal (95% CI)			200			200	72.2%	140.99 [-2.56, 284.54]	

Heterogeneity: Tau² = 38051.73; Chi² = 55746.09, df = 7 (P < 0.00001); I² = 100%

Test for overall effect: Z = 1.93 (P = 0.05)

Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI	
1.2.2 very low birth weight									
Arora 2005-2	1,513.4	225.2	19	1,545	195.9	23	9.1%	-31.60 [-160.69, 97.49]	
Arora 2005-4	1,626.6	210.8	20	1,545	195.9	23	9.2%	81.60 [-40.65, 203.85]	
Gonzalez 2009-4	1,526	194	30	1,451	226	30	9.4%	75.00 [-31.58, 181.58]	
Subtotal (95% CI)			69			76	27.8%	47.29 [-20.91, 115.50]	

Heterogeneity: Tau² = 0.00; Chi² = 2.00, df = 2 (P = 0.37); I² = 0%

Test for overall effect: Z = 1.36 (P = 0.17)

Total (95%

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試驗的結果是否相近-異質性？

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LIMITATION

- The studies included in this meta-analysis had different massage protocols and data collection methods.

- In some studies, other critical variables, such as gestational age and length of hospital stay, were not controlled.

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CONCLUSIONS

- The results of this meta-analysis demonstrate that massage therapy significantly increases daily weight gain in preterm neonates, including low birth weight neonates and very low birth weight neonates.

- In addition, moderate pressure massage therapy versus light pressure massage therapy is found to greater daily weight gain in preterm neonates.

Phase 1

- 第一階段：執行按摩者每次手部的移動是緩慢的撫觸與按摩，分成**5個部位**，每個部位按摩1分鐘，每次按摩動作持續約5 秒，每個部位重複 12次。

- **步驟**： (1) 從**頭**的頂端到**脖子**並來回。
  (2) 從**脖子**橫越**肩膀**並來回。
  (3) 從**背部**上方到**腰部**並來回。
  (4) 從一側**臀部**到**腳**再回到臀部，然後再到另一隻腳並來回。
  (5) 從**肩膀**到**手**再回到肩膀，然後再到另一側手臂並來回。

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Phase 2

- 第二階段：運動感覺刺激：
- 將早產兒採仰臥姿勢進行運動感覺的刺激，共持續5分鐘。
- 此部分包括**6個被動的肢體收縮/伸展的活動**，每個部位持續 10 秒鐘，類似踩腳踏車的動作，來回的收縮與伸展，依序從一隻手臂、另一隻手臂、一隻腳、另一隻腳、兩隻手一起做動作，最後兩隻腳一起做動作。

Phase 3

- 第三階段：**重複第一階段步驟再執行一次**。
- 但過程中當早產兒病情轉變，生理狀態呈現不穩定時則暫停，直到穩定後評估決定是否繼續，倘若當次按摩過程中出現過度哭鬧、拱背等抗拒行為，則停止當次按摩活動，延至下次餵食後進行。

如何執行按摩
【早產兒基金會】

- **按摩前的準備**

  -準備室溫約28度的房間和一個**舒適的平面**來按摩。

  -可播放**溫和的音樂**幫助寶寶和您都放鬆。

  -準備「**寶寶按摩油**」，最好選擇天然無色無味，或香氣溫和的，寶寶才不會受不喜歡的香氣影響情緒。

  -按摩者須**注意指甲修剪**，避免刮傷嬰兒皮膚。

- **按摩的時間**

  -最好在**飯後2小時、沐浴前後或入睡前**。

  -避免在**寶寶肚子餓、 身體不舒服、哭鬧或精神不佳**的時候執行。

如何執行按摩-2
【早產兒基金會】

- **按摩順序**

  -從**臉部**依序至**胸部**、**腹部**、**上肢**和**下肢**與**背**部。

  -剛開始可以隔著毛巾給寶寶**觸覺刺激**，讓寶寶可以慢慢適應如此的接觸。

  -可依專家建議**每天做三次**，一次約**10至15分鐘**，最好**不要超過20分鐘**，如果寶寶情緒反應較激烈時，則需可以休息暫停按摩。

台灣國際嬰兒按摩協會

- **台灣國際嬰兒按摩協會** (International Association of Infant Massage, IAIM)
- 創辦人：薇蔓拉·麥可羅
- 由國際代表大會所選出的國際委員會成員來發展與支持。國際教育委員會的責任同時包括培訓師 (IAIM Trainer) 和講師 (Certified Infant Massage Instructor-CIMI)的專業標準以及IAIM課程的高品質。
- CIMI證書：由國際嬰幼兒按摩協會授證。完成4天的訓練，同時也針對家庭做了教學實習並成功完成考試與評量。

DISCUSSION

按摩是否能幫助早產兒體重增加？

(綠牌)同意：7位
(紅牌)不同意：0位
(黃牌)待評估：13位

感謝
　聆聽