

# 實證醫學競賽

## 探討

三軍總醫院護理部

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# 團隊介紹

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W35護理師

# 臨床情境

- 72歲的盧媽媽，確診骨關節炎(osteoarthritis)，
- 接受左側全膝關節置換術(total knee arthroplasty，TKA)。
- 盧媽媽的女兒問說:我媽媽昨天才剛手術，傷口這麼大，而且還很痛，真的需要現在就做嗎?等恢復好一點，回家再開始做，可以嗎?
- 我媽媽開完刀後回到病房就疑質很痛，她年紀大了，怕止痛藥物傷身體，可以用電針(electro-acupuncture)或生理回饋等方式止痛嗎?。
- 另外，她非常關心母親術後照護及復健，詢問:需不需要租一台關節活動的機器，回家做運動?
- 盧媽媽也問說我之前有吃維骨力，要繼續吃嗎?還可以吃什麼保健關節?

# 背景知識

- 依據內政部戶政司統計，至2017年底，台灣65歲以上的老年人口佔全國人口的13.86%，膝部關節炎是困擾老年人的健康問題(Wang et al., 2014)。
- 國際骨關節炎研究協會(OARSI)指出膝部骨關節炎患者在非藥物治療與藥物治療後仍無法緩解疼痛應考慮膝關節置換手術。

# 背景知識

- 然而膝關節置換手術後將面臨許多健康問題：

- ✓ 神經性損傷

- ✓ 血栓栓篩

- ✓ 感染

- ✓ 傷口照護

- ✓ 持續的疼痛與

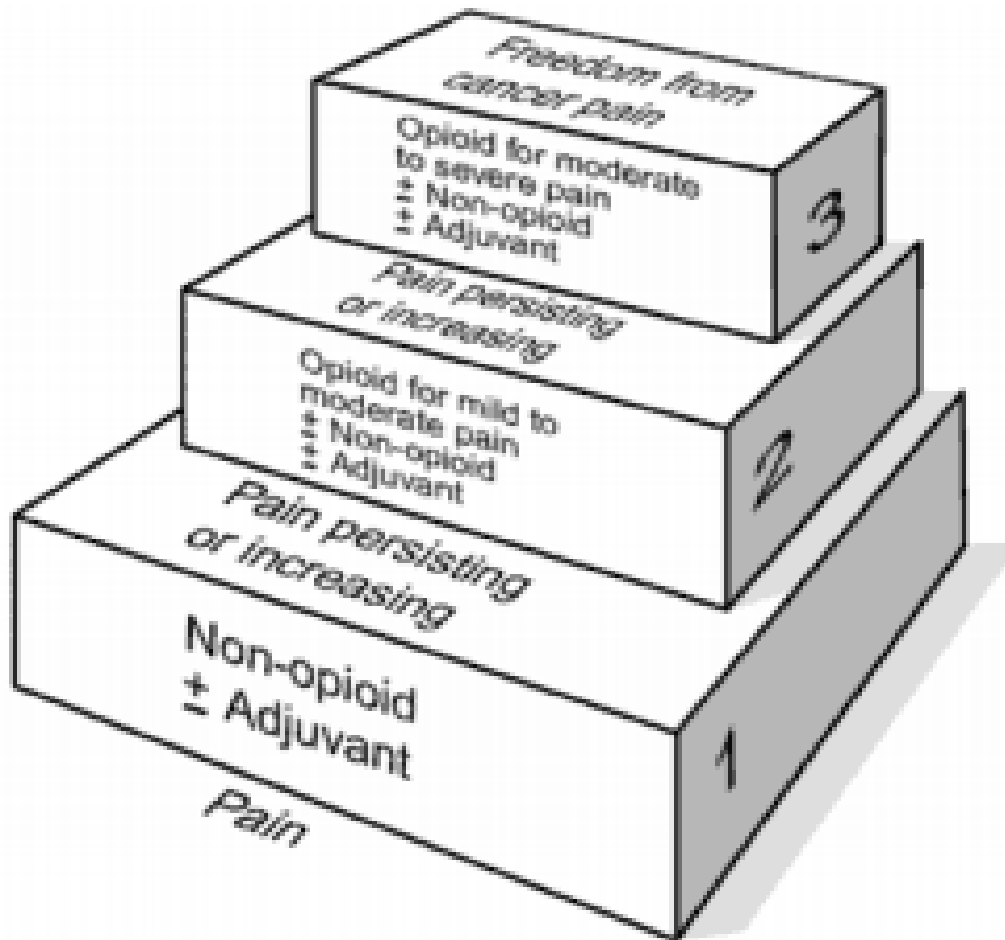
- ✓ 僵硬

在一偏高品質之SR研究中指出，接近**20%**的病人表示術後經歷**中度~重度的疼痛**

(Beswick, Wylde, Gooberman-Hill, Blom, & Dieppe, 2012) °

# 背景知識

## WHO 三階段式的疼痛治療方案<sup>1</sup>



# 背景知識

- 手術後非藥物治療改善疼痛之建議：
  - starting rehabilitation within 24 hours of primary total knee arthroplasty may reduce pain and length of hospital stay
  - use of transcutaneous electrical nerve stimulation (TENS) after total knee arthroplasty **may reduce** pain and opioid consumption within first 48 hours (level 2 [mid-level] evidence)
  - addition of transcutaneous electrical nerve stimulation to rehabilitation may not improve pain or function in patients having primary unilateral total knee arthroplasty (level 2 [mid-level] evidence)

# 根據臨床問題形成一個PICO-1

	英文關鍵字	中文關鍵字
<b>P</b>	<ul style="list-style-type: none"><li>• Total knee arthroplasty</li></ul>	<ul style="list-style-type: none"><li>• 全膝關節置換</li></ul>
<b>I</b>	<ul style="list-style-type: none"><li>• Electro-acupuncture</li><li>• Usually care</li></ul>	<ul style="list-style-type: none"><li>• 電針+常規治療</li></ul>
<b>C</b>	<ul style="list-style-type: none"><li>• Usually care</li></ul>	<ul style="list-style-type: none"><li>• 常規治療</li></ul>
<b>O</b>	<ul style="list-style-type: none"><li>• pain</li></ul>	<ul style="list-style-type: none"><li>• 疼痛情形</li></ul>

治療/預防型問題 診斷行問題 預後型問題 傷害/病因型問題



# 根據臨床問題形成一個PICO-2

	英文關鍵字	中文關鍵字
<b>P</b>	<ul style="list-style-type: none"><li>Total knee arthroplasty</li></ul>	<ul style="list-style-type: none"><li>全膝關節置換</li></ul>
<b>I</b>	<ul style="list-style-type: none"><li>Biofeedback + Usually care</li></ul>	<ul style="list-style-type: none"><li>生物回饋+常規治療</li></ul>
<b>C</b>	<ul style="list-style-type: none"><li>Usually care</li></ul>	<ul style="list-style-type: none"><li>常規治療</li></ul>
<b>O</b>	<ul style="list-style-type: none"><li>pain</li></ul>	<ul style="list-style-type: none"><li>疼痛情形</li></ul>




治療/預防型問題 診斷行問題 預後型問題 傷害/病因型問題

# 檢索策略-提升檢索效率

P	AND	I	AND	C	AND	O
Total knee arthroplasty/全膝 關節置換 OR Total knee replacement OR		electroacupuntur e OR Transcutaneous electric nerve stimulation OR Electric Stimulation therapy		Usually care/常規 治療		Pain/疼痛

限定搜尋範圍	全文
限定研究類型	Systematic review、Meta-analysis
限定語言地區	英文

# 各資料庫收納結果

來源	標題	年份
	Effect of transcutaneous electrical nerve stimulation for pain control after total knee arthroplasty: a systematic review and meta-analysis	2017
	Transcutaneous electrical nerve stimulation for postoperative pain control after total knee arthroplasty: a meta-analysis of randomized controlled trials	2017
	Transcutaneous electrical nerve stimulation for acute pain	2015

# 納入排除理由

- 納入
- 五年內文獻，實證證據等級較高，文獻收納品質較高，收納文章篇數較多
- 排除
- 族群非特定為全膝關節置換
- 文獻與第一篇統合分析重複，且文章篇數較少。

# 嚴格評讀之文章及評讀工具

Medicine®

Systematic Review and Meta-Analysis

OPEN

## Transcutaneous electrical nerve stimulation for postoperative pain control after total knee arthroplasty

A meta-analysis of randomized controlled trials

Jifeng Li, MM\*, Yuze Song, MM

CASP

Systematic Review checklists(2018)





# Validity

1. 是否問了一個清楚、明確的臨床問題？

# 評讀結果

## 2.2. Inclusion and exclusion criteria

1. Participants: only published articles enrolling **adult** participants that with a diagnosis of end-stage of knee osteoarthritis and prepared for unilateral TKA.
2. Interventions: the intervention group received transcutaneous electrical nerve stimulation for postoperative pain management after TKA.
3. Comparisons: the control group was received a nonfunctional placebo TENS that seemed to work but provided no stimulus.
4. Outcomes: visual analogue scale (VAS) scores in different periods, opioids consumption, length of stay, and postoperative complications.

P

Adult participants that with a diagnosis of end-stage of knee osteoarthritis and prepared for unilateral TKA.

I

received transcutaneous electrical nerve stimulation

C

Placebo

O

visual analogue scale (VAS) scores



YES



NO



Unclear



# Validity

2. 作者是否尋找適當研究型態的文獻？



# 評讀結果

## 2.2. Inclusion and exclusion criteria

1. Participants: only published articles enrolling **adult** participants that with a diagnosis of end-stage of knee osteoarthritis and prepared for unilateral TKA.
2. Interventions: the intervention group received transcutaneous electrical nerve stimulation for postoperative pain management after TKA.
3. Comparisons: the control group was received a nonfunctional placebo TENS that seemed to work but provided no stimulus.
4. Outcomes: visual analogue scale (VAS) scores in different periods, opioids consumption, length of stay, and postoperative complications.
5. Study design: only clinical RCTs were regarded as eligible in our study. →

- 收錄符合治療性問題的RCT文章
- 清楚定義了納入條件
- 清楚定義了排除條件

YES       NO       Unclear



# Validity

3. 所有重要且相關的研究都被納入？

# 評讀結果

## 2.1. Search strategy

Potentially relevant studies were identified from electronic databases including Medline (1966 to June 2017), PubMed (1966 to June 2017), Embase (1980 to June 2017), ScienceDirect (1985 to June 2017), and the Cochrane Library. Searches included literature dated from database origin to June, 2017. The following key words were used on combination with Boolean operators AND or OR: “total knee replacement OR arthro-

plasty,” “transcutaneous electrical nerve stimulation,” and “pain control.” No restrictions were imposed on language. The bibliographies of retrieved trials and other relevant publications were cross-referenced to identify additional articles. The search process was performed as presented in Fig. 1.

## 優點

1. 作者搜尋了四種資料庫
2. 並使用Mesh term、布林邏輯

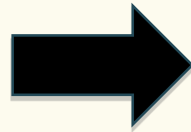
## 缺點

1. 並未提到手動搜尋相關作者姓名，以確保搜尋到所有發表及未發表文章

YES

NO

Unclear



+	+	+	+	+	+	+
?	?	+	+	+	+	+
?	?	-	-	+	+	+
?	?	+	+	?	?	?
+	+	+	+	+	+	+
?	+	+	+	+	+	+

Validity

4. 作者是否評估所納入研究文獻的品質？

# 評讀結果

## 2.5. Quality assessment

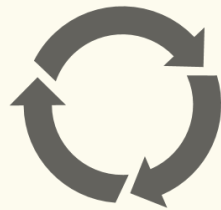
Quality assessment of the included RCTs was assessed by 2 authors independently who used the Cochrane Collaboration's tool. We conducted "risk of bias" table including the following key points: random sequence generation, allocation concealment, blinding, incomplete outcome data, free of selective reporting and other bias, each item was recorded by "Yes," "No," or "Unclear." Each risk of bias item was presented as a percentage across all the included studies. The percentage indicated the proportion of different levels of risk of bias for each item.

The quality of the evidence for the main outcomes in present meta-analysis was evaluated using the Recommendations Assessment, Development and Evaluation (GRADE) system including the following items: risk of bias, inconsistency, indirectness, imprecision, and publication bias. The recommendation level of evidence is classified into the following categories: high, which means that further research is unlikely to change confidence in the effect estimate; moderate, which means that further research is likely to significantly change confidence in the effect estimate but may change the estimate; low, which means that further research is likely to significantly change confidence in the effect estimate and to change the estimate; and very low, which means that any effect estimate is uncertain.

## 優點

1. 由兩位作者獨立評讀
2. 使用Cochrane Collaboration's tool 作為評估工具
3. 運用GRADE評定建議等級。

YES       NO       Unclear



Validity

5. 作者將研究結果進行合併，這樣的合併是否合理？

# 評讀結果

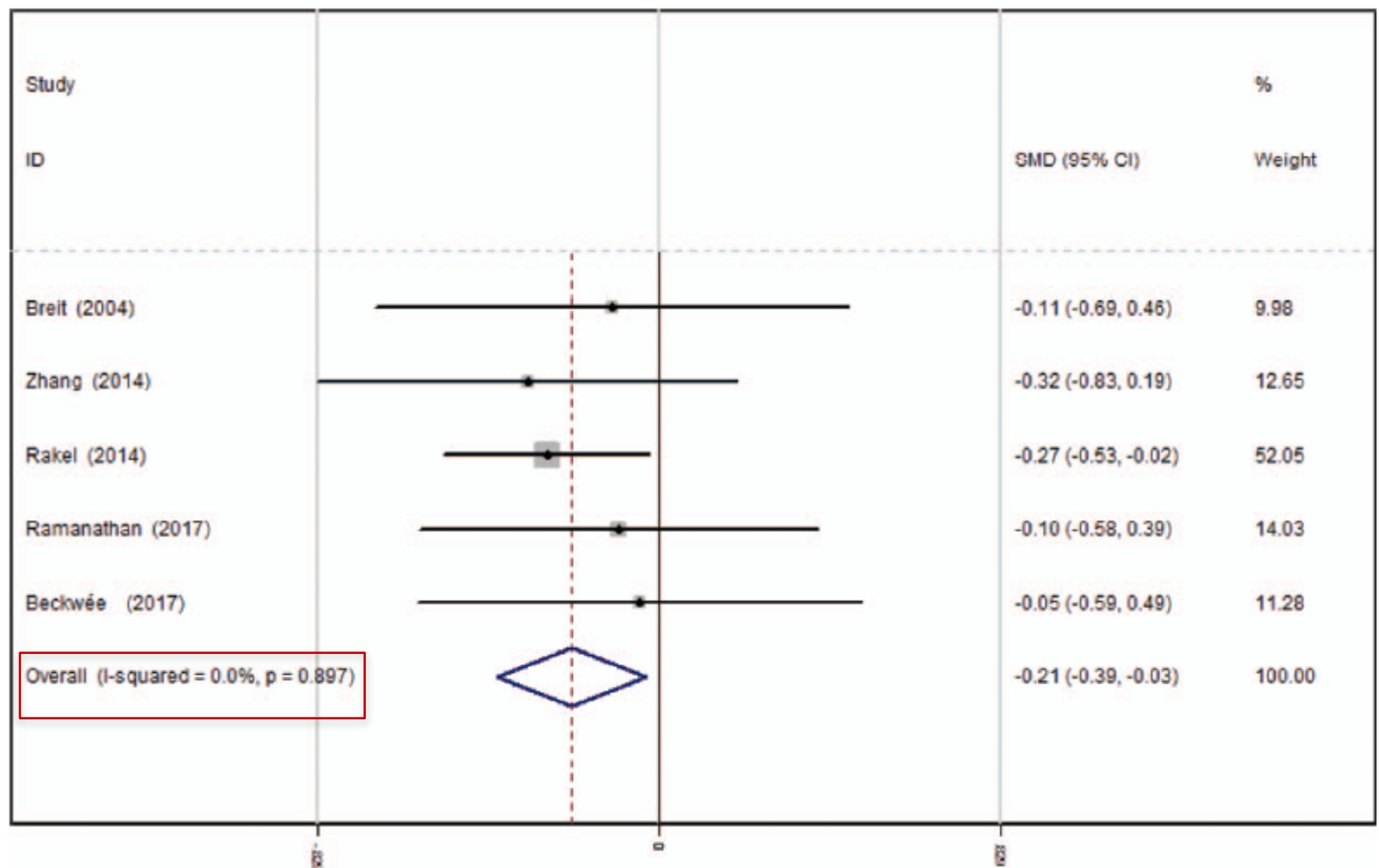


Figure 4. Forest plot diagram showing VAS scores at 48hours following TKA. TKA = total knee arthroplasty, VAS = visual analogue scale.

YES     NO     Unclear

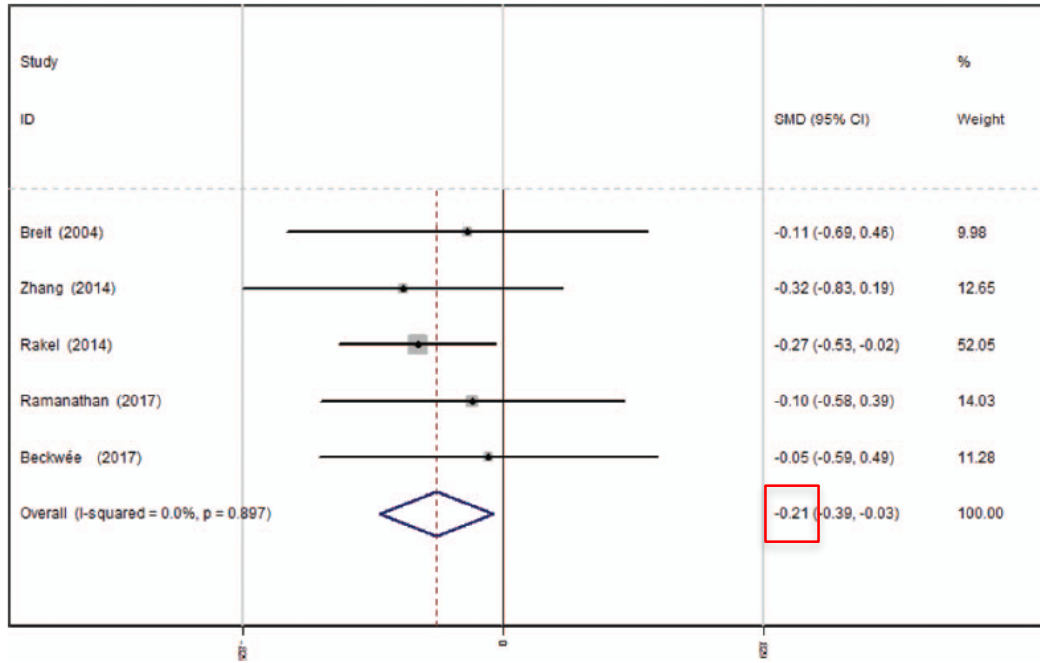


Figure 4. Forest plot diagram showing VAS scores at 48hours following TKA. TKA = total knee arthroplasty, VAS = visual analogue scale.

Importanc

e

6. 此篇系統性文獻回顧的整體結果如何？



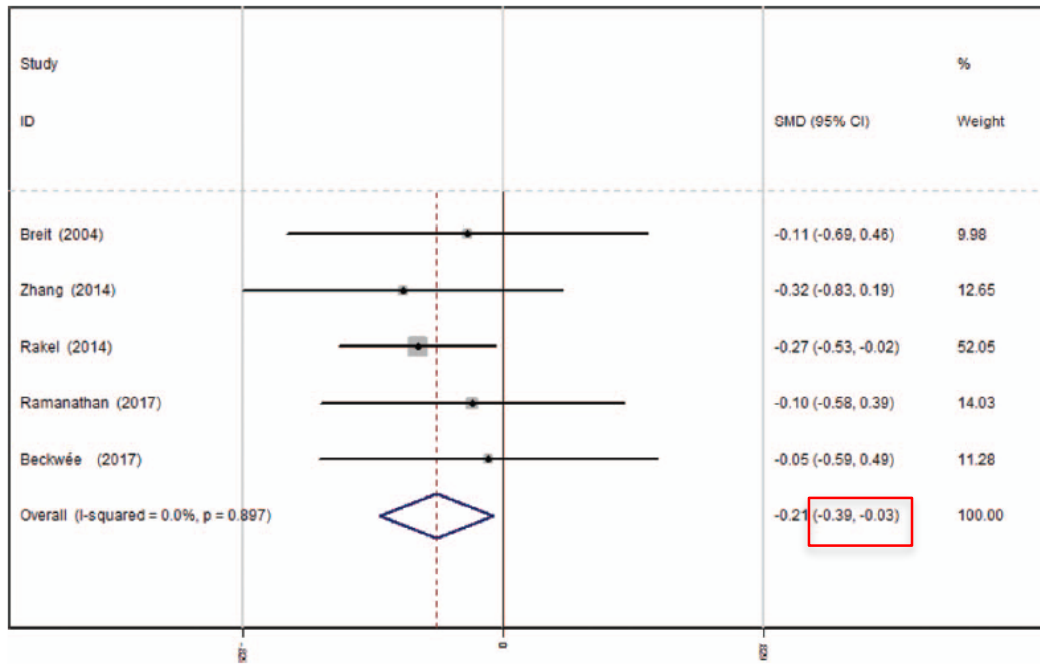


Figure 4. Forest plot diagram showing VAS scores at 48hours following TKA. TKA = total knee arthroplasty, VAS = visual analogue scale.

# Importanc

e

## 7.結果精準嗎？



Importanc

8.此研究結果是否可應用到當地的族群？<sup>e</sup>

# 評讀結果

- 總共五篇
- 一篇為亞洲族群
- 澳洲一篇
- 美國兩篇
- 比利時一篇

YES     NO     Unclear



# Importanc

9. 是否所有重要的臨床結果都有被<sup>e</sup>考量到？



Importanc

10. 付出的傷害和花費換得介入措施<sup>©</sup>所產生的益處是否值得？

# 醫病共享決策 Share Decision Making (SDM)



謝謝各位聆聽😊