In an adult population undergoing primary total knee replacement (TKR) does the addition of Transcutaneous Electrical Nerve Stimulation (TENS) to usual care improve pain management & as a result improve range of movement (ROM) within 3 months post-operatively

**Clinical Bottom Line**

The studies provide mixed but largely positive findings, however due to their low methodological quality further studies are required to confirm a definite response.

**Criteria for Critically Appraised Topic**

**Population:**
Adults (18 years and over) who have undergone primary Total Knee Replacement (TKR) surgery

**Intervention:**
TENS in addition to usual care

**Comparison:**
Usual care (other forms of analgesia and advice)

**Outcomes:**

- **Primary Outcomes:**
  Pain

- **Secondary outcomes:**
  Range of movement
  Function

**Inclusions:**
Defined groups of Primary TKR through open surgery
English
Assessed postoperatively for pain using VAS, VRS or NRS
Or analgesic consumption

**Exclusions:**
TKR revisions
Mixed surgery (fractures or other joints e.g. hip)
Search Terms used

Databases Searched:

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<th>Cochrane</th>
<th>Pedro</th>
<th>Sportsdiscuss</th>
<th>Medline</th>
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<tbody>
<tr>
<td>pubmed</td>
<td>Bandolier</td>
<td>NELH</td>
<td>NHS evidence</td>
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<tr>
<td>OT seeker</td>
<td>NICE</td>
<td>HTA</td>
<td>DARE01/CRD</td>
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<td>AMED</td>
<td>CINAHL</td>
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Types of study included:
Systematic reviews
Randomised Controlled Trials (RCTs)
Quasi Experimental designs (e.g Cohort, N=1)
Controlled trials

Key words searched:
Knee replacement, TKR, Knee arthroplasty, TKA
Postoperative pain, analgesia, TENS, Transcutaneous electrical nerve stimulation,
Lower limb surgery, VAS, VRS, NRS

Time Frame:
Literature from last 35 years (prior to this TENS units were insufficiently developed)
## Available Evidence

<table>
<thead>
<tr>
<th>Database Searched (Specific to CAT)</th>
<th>Number of abstracts</th>
<th>Number of Relevant Abstracts</th>
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### Results:
11 abstracts were assessed by the group & 5 articles answered the clinical question

### Articles assessed:


Wang N. 2001 Can pre-emptive and continued transcutaneous electrical nerve stimulation (TENS) improve the management of post-operative knee pain? PhD Thesis

**Implications for practice**

Further trials are required as the available evidence suggests TENS has a positive analgesic effect.