

Effects of pulsed Electromagnetic Field Therapy on Post-surgical Pain: a Randomized Placebo Controlled Double Blind Study in Breast Reconstruction Patients

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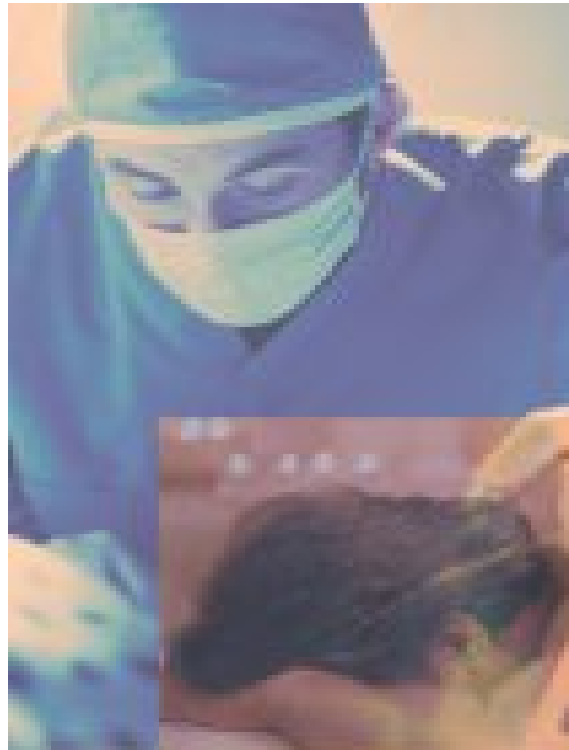
The Department of Plastic Surgery



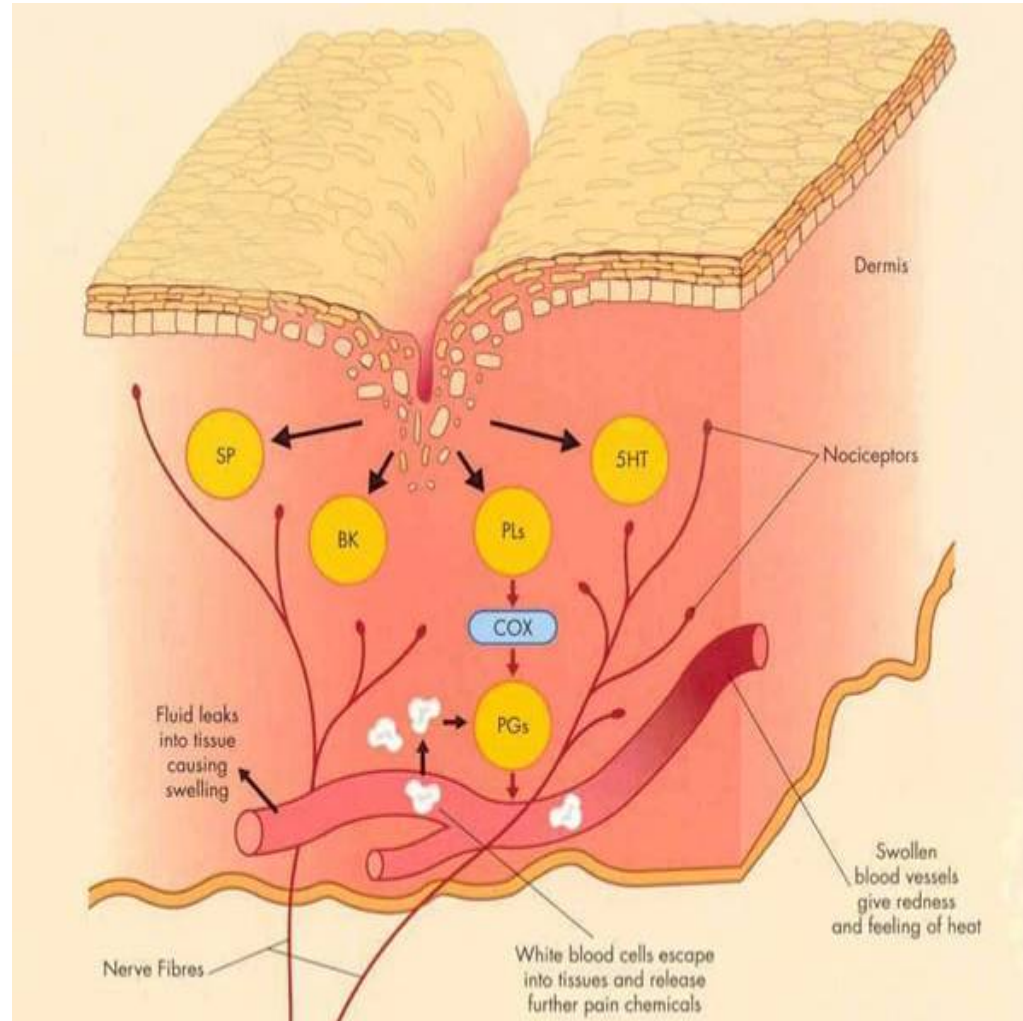
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Post-operative Complications

- » Acutely: pain
 - ~ Increases length of stay
- » Short term: edema
 - ~ Prolongs recovery
- » Long term
 - ~ Scarring



Inflammatory Pathway



Pulsed Electromagnetic Field Therapy (PEMF)

- »Increases Nitric Oxide in tissues
- »Reduces inflammation
- »Reduces pain
- »Increases wound healing
- »No known adverse effects



Potential Clinical Applications

- » Non-invasive modality for analgesia
- » Minimize post-operative edema
- » Enhance wound healing
- » Easily integrated into wound care



Purpose

- » This study was undertaken to determine if PEMF could provide pain control after breast reconstruction



Patient Selection

- » 14 patients undergoing bilateral mastectomies and immediate reconstruction with tissue expanders

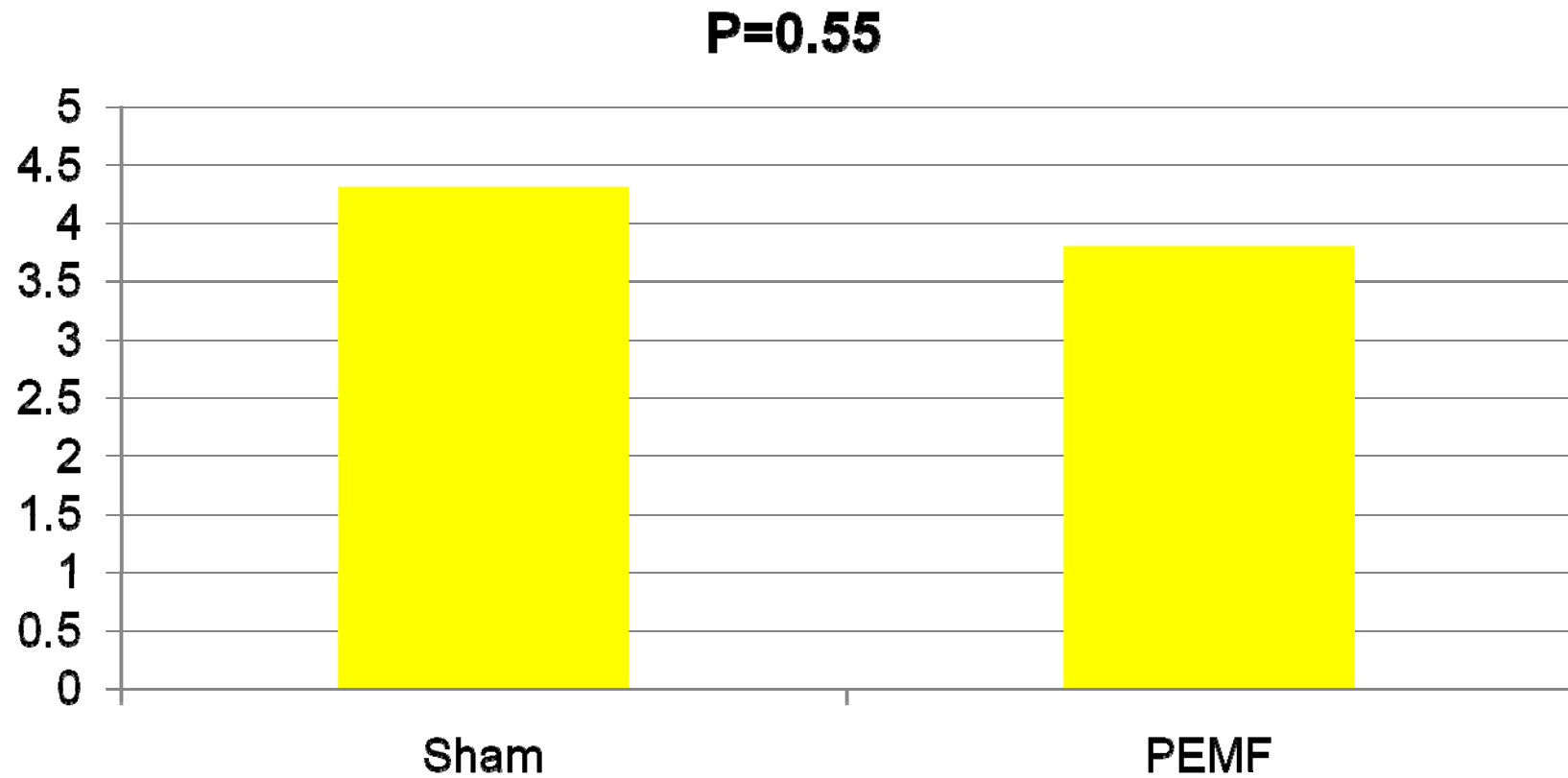


Treatment and Data Collection

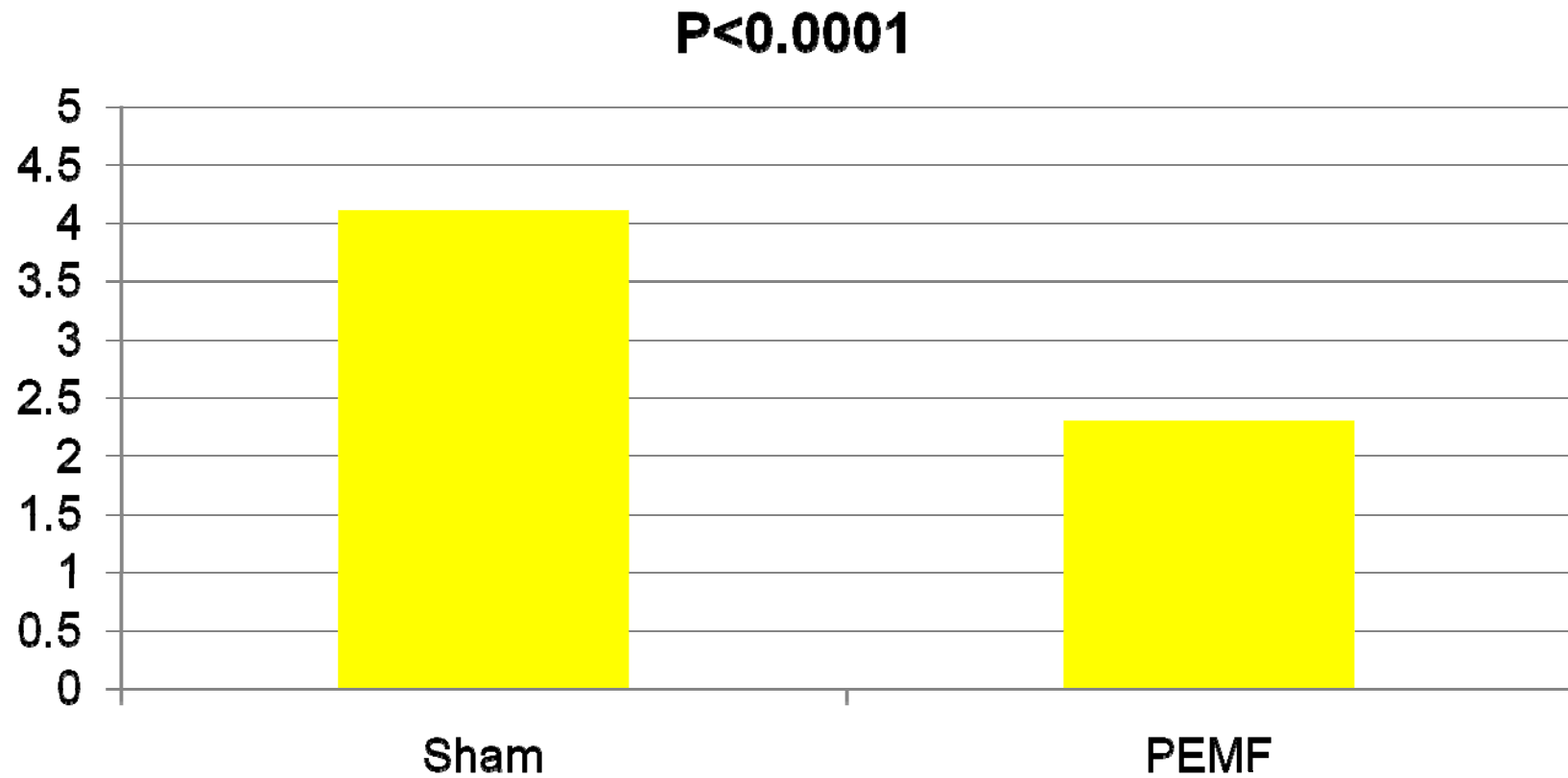
- » Randomly assigned: bilateral PEMF or bilateral sham device
- » Pain data recorded twice daily to POD 7



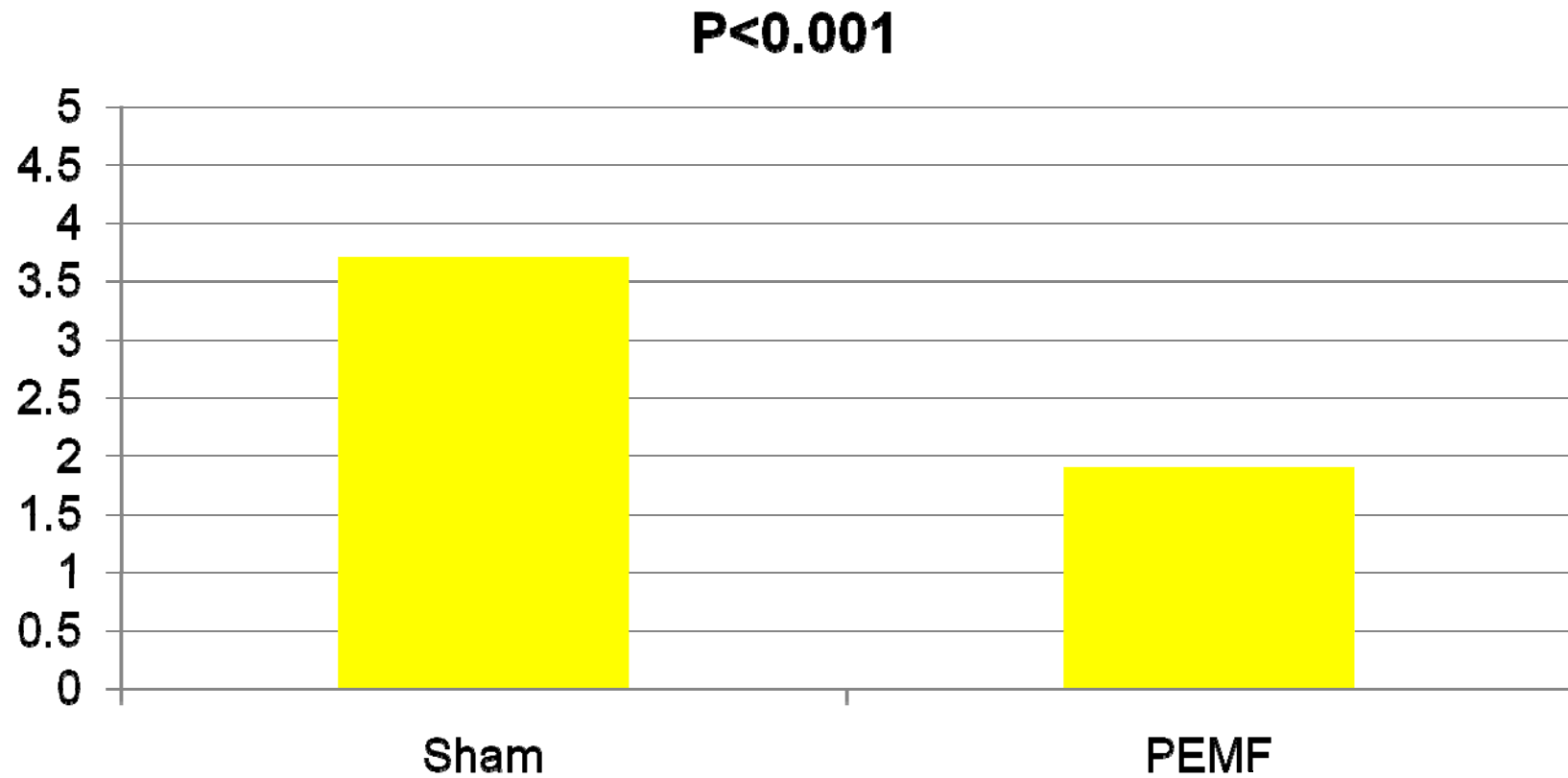
VAS Score First Night



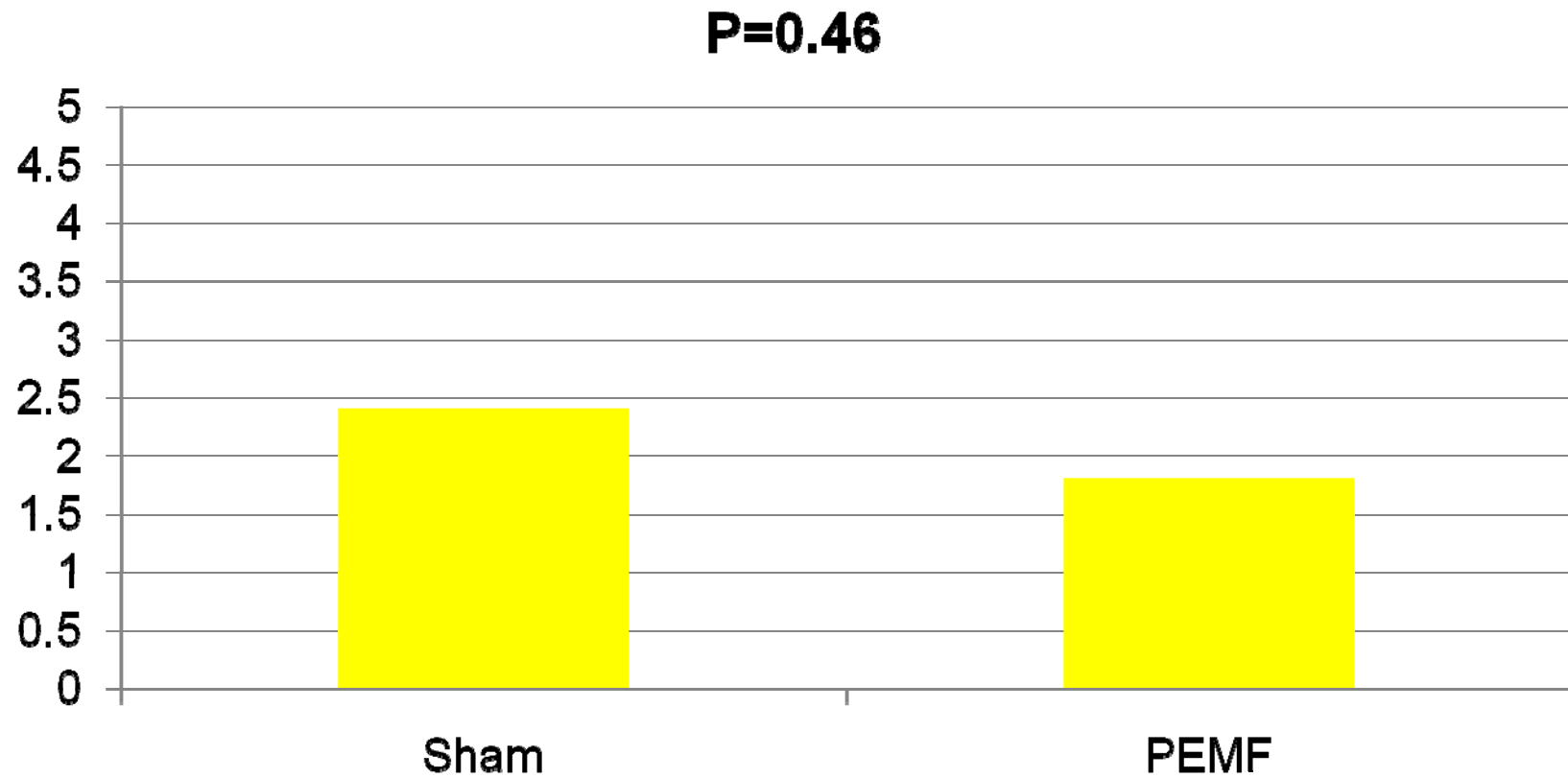
VAS Score POD1-POD3



VAS Score POD4-POD6



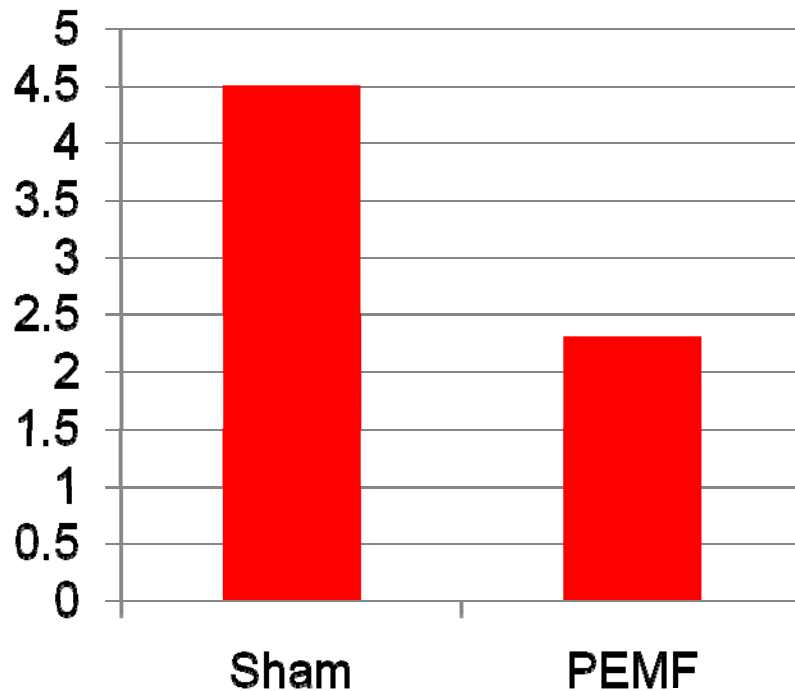
VAS Score POD7



Average amount of Narcotic USED: POD 1-3

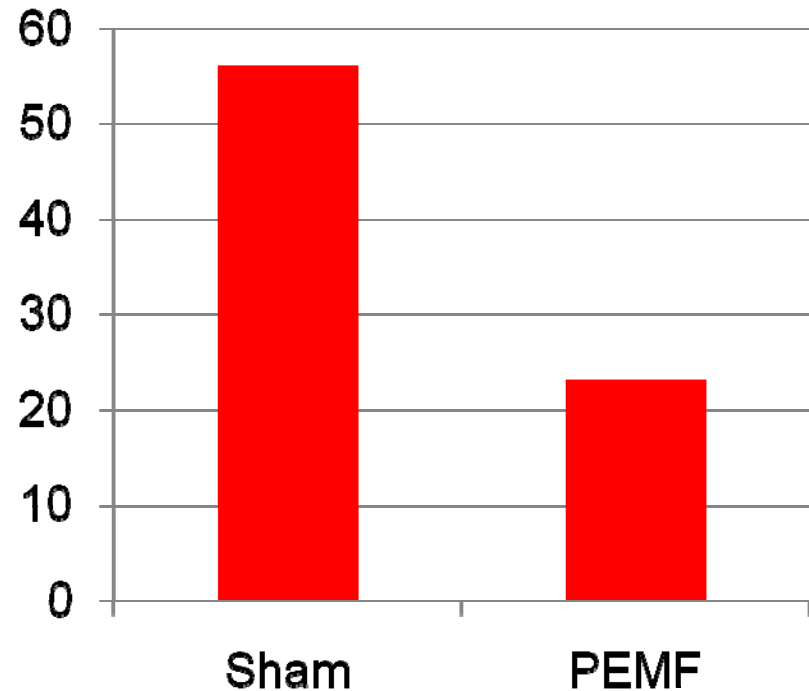
IV Dilaudid (mg)

P<0.0001



Oxydocone (mg)

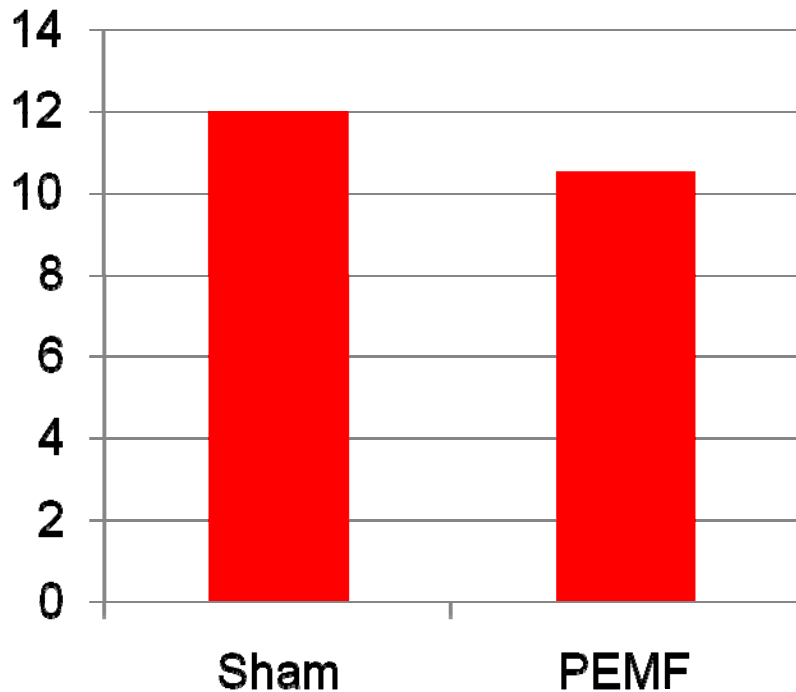
P<0.0001



Average amount of Narcotic USED: POD 1-3

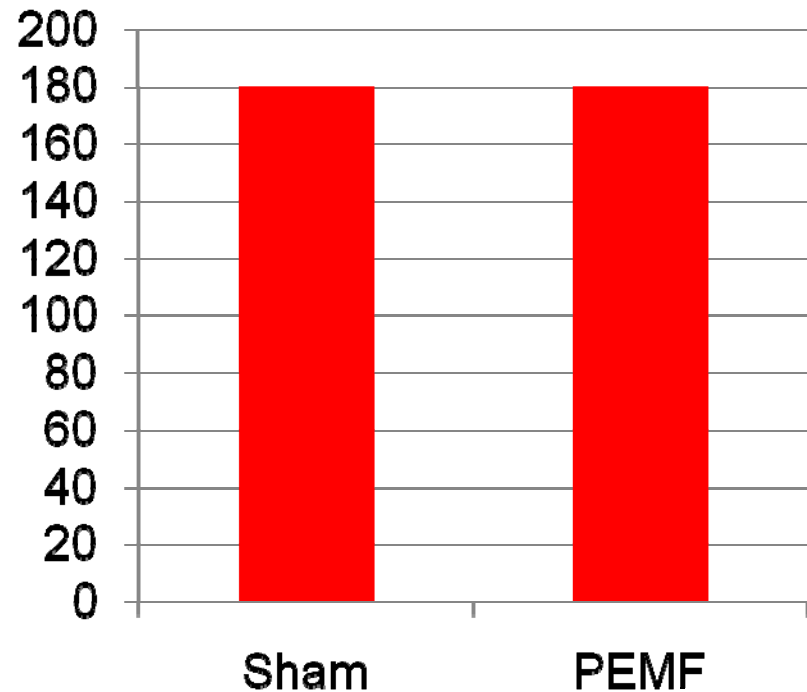
Valium (mg)

P=0.68



IV NSAIDS (mg)

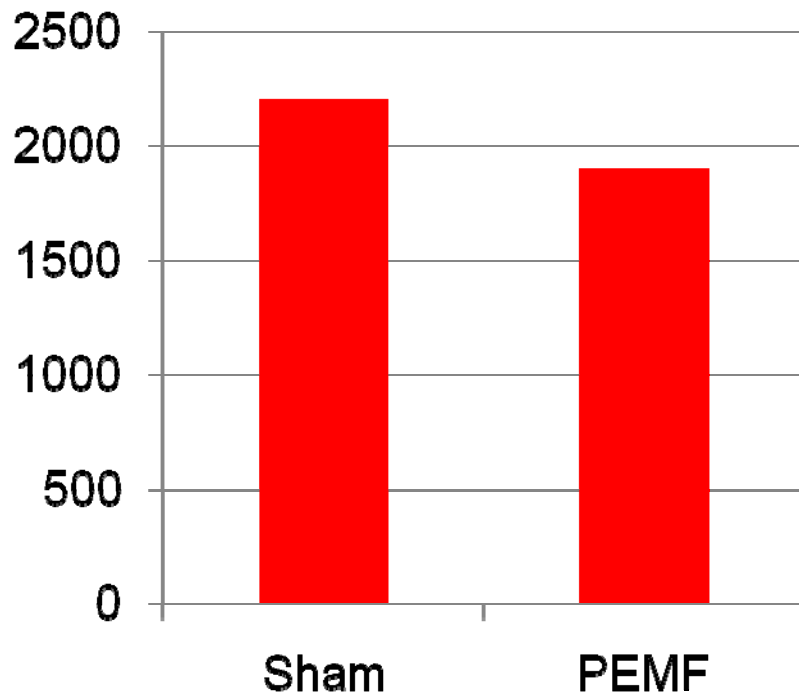
P=0.79



Average amount of Narcotic USED: POD 4-6

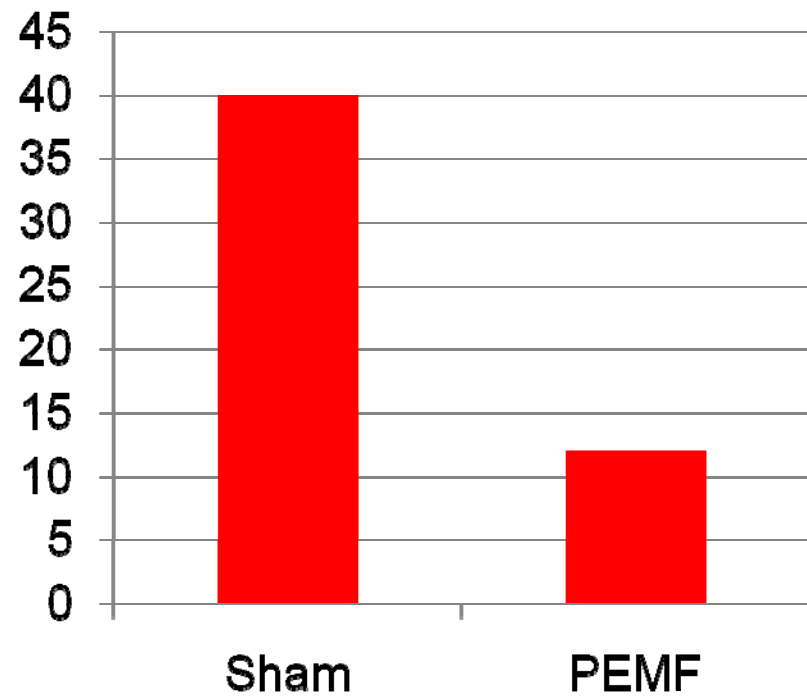
PO NSAIDS (mg)

P=0.23



Oxycodone (mg)

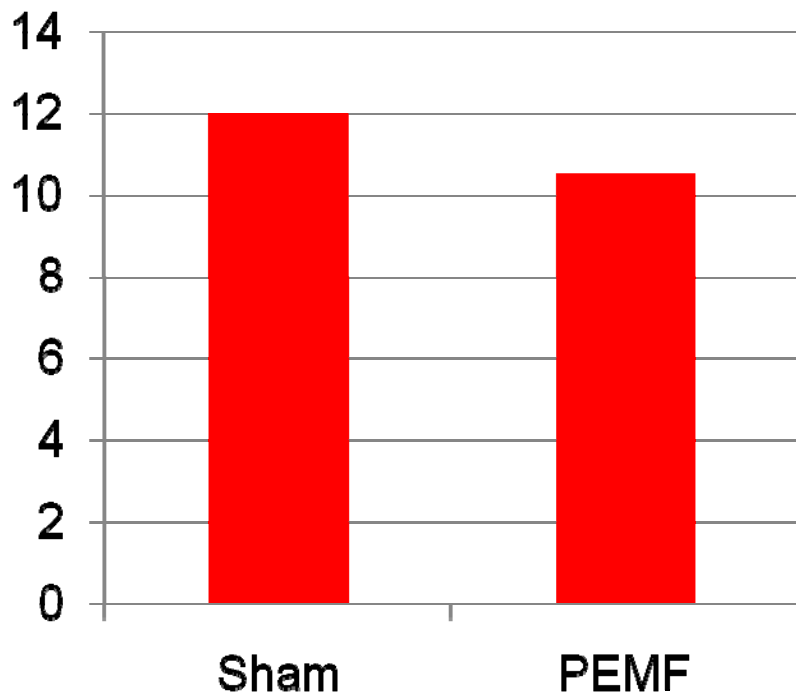
P<0.0001



Average amount of Narcotic USED: POD 4-6

Valium (mg)

P=0.68



Conclusions

- » Pulsed electromagnetic field therapy is a non-invasive modality for pain control after breast reconstruction surgery



Thank You



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