

# Manual treatment for neck pain; how strong is the evidence?

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# Evidence

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Strongest evidence

Study level data

Systematic reviews (SRs)

Randomized controlled trials (RCTs)

Observational studies  
Clinical experience  
Expert opinion

Weakest evidence

Patient level data

# Manual therapy

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## Included:

- Manipulation
- Mobilization
- Massage
- Traction
- Stretching
- Myofascial therapy

## Excluded:

- Not given by hand
- Not applied to the spine
- Multiple therapies not given to control group

# Neck pain

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## Included:

- Non-specific neck pain without radiculopathy
- Acute (<3 months)
- Chronic (>3 months)
- Other duration

## Excluded:

- Radiculopathy
- Whiplash
- Cervicogenic headache
- Shoulder pain
- Multiple complaints

# Summarizing evidence

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Level	RCTs
Strong	3 high quality
Moderate	2 high quality or 4 low quality
Limited	1 high quality
Conflicting	Results too different to combine

# RCT quality

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## Criteria:

1. Allocation concealment
2. Withdrawal rate
3. Co-interventions
4. Intention-to-treat
5. Compliance
6. Baseline characteristics
7. Randomization

## Scoring:

Unclear/inadequate = 0

Adequate = 1

Maximum 7

Low quality: 0-4

High quality: 5-7

# Results

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## **Outcomes:**

### **Pain:**

- VAS
- NPRS
- McGill
- Million

### *Function:*

- *NDI*

## **Comparisons:**

### **Between groups:**

- At follow-up

### *Within groups:*

- *Baseline to follow-up*

# Results



Source	RCTs found	RCTs included
2 Cochrane SRs*	74	16
Medline search 2008	144	10
Other	3	3
<b>Total</b>	<b>218</b>	<b>29</b>

\* Massage for mechanical neck disorders, 2006  
 Manipulation and mobilization for mechanical neck disorders, 2004



# Results

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Type	RCTs
Acute neck pain (<3 months)	4
Chronic neck pain (>3 months)	10
<i>Other duration neck pain</i>	<i>15</i>
<i>High quality</i>	<i>17</i>
<i>Low quality</i>	<i>12</i>

# Results

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## Manual therapies:

- C/S HVLA SMT
- C/S mobilization
- Instrument thrust
- Joint mobilization
- Massage
- Muscle energy technique
- Osteopathic mobilization
- Soft tissue mobilization
- T/S HVLA SMT
- T/S mobilization
- TCM massage

## Manual therapists:

- Acupuncturist
- Bone setter
- Chiropractor
- Manual medicine physician
- Manual physical therapist
- Massage therapist
- Osteopath
- Physical therapist

# Follow-up

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Category	Length
Very short term	<1 month
Short term	1-3 months
Medium term	3-6 months
Long term	>6 months

# Acute neck pain – Very short term

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<b>Evidence</b>	<b>Intervention</b>	<b>Control</b>	<b>Results</b>
1 low quality RCT Nordemar et al, 1981	mobilization Massage Heat Traction exercise Education Neck collar Medication	1. Neck collar Medication TENS Education 2. Medication Neck collar Education	Intervention superior to control
1 low quality RCT Pikula et al, 1999	Manipulation (ipsilateral)	1. Manipulation (contralateral) 2. Detuned US	Intervention superior to control

# Acute neck pain – Very short term

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## Limited evidence – Manual therapy superior

- 3x30 mins/wk for 2 wks mobilization, massage, heat, traction, exercise, education, neck collar versus:
  1. 3x30 mins/wk for 2 wks neck collar, medication, education, TENS
- single HVLA SMT ipsilateral to pain versus:
  1. single HVLA SMT contralateral to pain
  2. detuned US

# Acute neck pain – Short term

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<b>Evidence</b>	<b>Intervention</b>	<b>Control</b>	<b>Results</b>
1 low quality RCT McKinney et al, 1989	mobilization Traction Heat/ice Diathermy exercise	Education Rest Medication	Intervention superior to control

# Acute neck pain – Short term

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## Limited evidence – Manual therapy superior

- 3x40 mins/wk for 6 wks with mobilization, traction, heat/ice, diathermy, and exercise versus:
  1. single session education, rest, and medication

# Chronic neck pain – Very short term

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<b>Evidence</b>	<b>Intervention</b>	<b>Control</b>	<b>Results</b>
1 high quality RCT Jordan et al, 1998	Manipulation Manual traction Massage Exercise	1. Massage US mobilization Exercise Heat  2. Exercise Stretching	Intervention equivalent to control



# Chronic neck pain – Very short term

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## Limited evidence – Manual therapy equivalent

- 2x20 mins/wk for 6 wks with HVLA SMT, manual traction, myofascial therapy, and home exercise versus:
  1. 2x75 mins/wk for 6 wks of stretching and strengthening exercises
  2. 2x30 mins/wk for 6 wks of heat, massage, manual traction, mobilization, PNF, home exercise

# Chronic neck pain – Short term

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<b>Evidence</b>	<b>Intervention</b>	<b>Control</b>	<b>Results</b>
1 low quality RCT Hakkinen et al, 2007 1 high quality RCT Ylinen et al, 2007	mobilization Massage Stretching	Education Stretching exercise	Intervention equivalent to control
1 high quality RCT Bronfort et al, 2001	Manipulation Massage Exercise Stretching	1. Stretching Exercise 2. Manipulation Massage	Intervention equivalent to control
1 high quality RCT Giles et al, 2003	Manipulation	1. Acupuncture 2. Medication	Intervention superior to control
1 low quality RCT Cen et al, 2003	Massage	1. Exercise Stretching Heat 2. No treatment	Intervention superior to control
1 low quality RCT Allison et al, 2002	mobilization Massage +/- exercise	T/S mobilization Exercise	Intervention superior to control

# Chronic neck pain – Short term

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## Limited evidence – Manual therapy equivalent

- 2x30 mins/wk for 4 wks of mobilization, massage, and stretching versus:
  1. education and daily home stretching
- 2x60 mins/wk for 11 wks HVLA SMT to C/S and T/S, massage, and strengthening/stretching exercises versus:
  1. 2x60 mins/wk for 11 wks HVLA SMT to C/S and T/S, massage
  2. 2x60 mins/wk for 11 wks strengthening/stretching exercises

# Chronic neck pain – Short term

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## Limited evidence – Manual therapy superior

- 2x20 mins/wk for 9 wks **HVLA SMT** to C/S versus:
  1. 9 wks **medication**
  2. 2x20 mins/wk for 9 wks **acupuncture**
- 3x30 mins/wk for 6 wks **TCM massage** versus:
  1. 1/wk heat, stretching, home **exercise**
- 8 wks **soft tissue and joint mobilization**, home exercise versus:
  1. **T/S mobilization** and home exercise
  2. **no treatment**

# Chronic neck pain – Medium term

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<b>Evidence</b>	<b>Intervention</b>	<b>Control</b>	<b>Results</b>
1 high quality RCT Bronfort et al, 2001	Manipulation Massage Exercise Stretching	1. Stretching Exercise 2. Manipulation Massage	Intervention equivalent to control
1 low quality RCT Hakkinen et al, 2007 1 high quality RCT Ylinen et al, 2007	mobilization Massage Stretching	1. Stretching Exercise 2. Exercise	Intervention equivalent to control
1 high quality RCT Jordan et al, 1998	Manipulation Manual traction Massage Exercise	1. Massage US mobilization Exercise Heat 2. Exercise Stretching	Intervention equivalent to control
1 low quality RCT Allison et al, 2002	mobilization Massage Exercise	No treatment	Intervention superior to control

# Chronic neck pain – Medium term

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## Limited evidence – Manual therapy equivalent

- 2x60 mins/wk for 11 wks HVLA SMT to C/S and T/S, massage, and strengthening/stretching exercises versus:
  1. 2x60 mins/wk for 11 wks HVLA SMT to C/S and T/S, massage
  2. 2x60 mins/wk for 11 wks strengthening/stretching exercises
- 2x30 mins/wk for 4 wks of mobilization, massage, and stretching versus:
  1. education and daily home stretching
- 2x20 mins/wk for 6 wks with HVLA SMT, manual traction, myofascial therapy, and home exercise versus:
  1. 2x75 mins/wk for 6 wks of stretching and strengthening exercises
  2. 2x30 mins/wk for 6 wks of heat, massage, manual traction, mobilization, PNF, home exercise

# Chronic neck pain – Medium term

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## Limited evidence – Manual therapy superior

- 8 wks soft tissue and joint mobilization, home exercise versus:
  1. T/S mobilization and home exercise
  2. no treatment

# Chronic neck pain – Long term

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<b>Evidence</b>	<b>Intervention</b>	<b>Control</b>	<b>Results</b>
1 high quality RCT Jordan et al, 1998	Manipulation Manual traction Massage Exercise	1. Massage mobilization Exercise Heat 2. Exercise Stretching	Intervention equivalent to control
1 high quality RCT Evans et al, 2002	Manipulation Massage Exercise Stretching	Manipulation Massage	Intervention equivalent to control
1 low quality RCT Muller et al, 2005	Manipulation	1. Acupuncture 2. Medication	Intervention equivalent to control
1 high quality RCT Bronfort et al, 2001	Manipulation Massage Exercise Stretching	Manipulation Massage	Intervention superior to control
1 high quality RCT Evans et al, 2002	Manipulation Massage	Stretching Exercise	Intervention inferior to control



# Chronic neck pain – Long term

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## Limited evidence – Manual therapy equivalent

- 2x20 mins/wk for 6 wks with HVLA SMT, manual traction, myofascial therapy, and home exercise versus:
  1. 2x75 mins/wk for 6 wks of stretching and strengthening exercises
  2. 2x30 mins/wk for 6 wks of heat, massage, manual traction, mobilization, PNF, home exercise
- 2x60 mins/wk for 11 wks HVLA SMT to C/S and T/S, massage, and strengthening/stretching exercises versus:
  1. 2x60 mins/wk for 11 wks HVLA SMT to C/S and T/S, massage
- 2x20 mins/wk for 9 wks HVLA SMT to C/S versus:
  1. 9 wks medication
  2. 2x20 mins/wk for 9 wks acupuncture

# Chronic neck pain – Long term

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## Limited evidence – Manual therapy superior

- 2x60 mins/wk for 11 wks **HVLA SMT** to C/S and T/S, massage, and strengthening/stretching **exercises** versus:
  1. 2x60 mins/wk for 11 wks **HVLA SMT** to C/S and T/S, massage

# Chronic neck pain – Long term

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## Limited evidence – **Manual therapy inferior**

- 2x60 mins/wk for 11 wks **HVLA SMT** to C/S and T/S, massage versus:
  1. 2x60 mins/wk for 11 wks strengthening/stretching **exercises**

# Summary

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- 29 RCTs were found on manual therapy for acute, chronic, and other duration neck pain
- The majority of RCTs were of high quality
- Most RCTs were too different to combine, restricting the highest potential level of evidence to “limited”
- Many different manual therapies were compared to each other and non-manual therapy controls
- Several types of health providers, including chiropractors, delivered the manual therapies
- It was not possible to compare the results of the same manual therapies given by different providers

# Summary

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- Very short, short, medium, and long term results for improvement in pain outcomes are mostly positive
- Manual therapies appear superior or equivalent to non-manual therapy controls
- No clear differences were apparent between different types of manual therapy
- Manual therapy combined with exercise appears most promising for long term results

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