**Table E38. Data abstraction of randomized controlled trials of LLLT**

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| **Author, Year** | **Country Number of Centers and Setting** | **Inclusion Criteria** | **Number Randomized, Analyzed Attrition** | **Intervention** | **Study Participants** | **Duration of Pain (acute, subacute, chronic)** |
| Ay, 2010 | Turkey  Single-center | Acute of chronic low back  pain  Excluded: neurological deficit, spondylosis,  spinal stenosis, infection, malignant spinal disease, previous spinal surgery, pregnancy | Randomized: 80  Analyzed: 80  Attrition: 0% (0/80) | Acute LBP  A. GaAlAs laser, 850 nm + heat 5 times/week for 3 weeks (n=20)  B. Sham laser + heat 5 times/week for 3 weeks (n=20)  Chronic LBP  A. GaAlAs laser 850 nm + heat 5 times/week for 3 weeks (n=20)  B. Sham laser + heat 5 times/week for 3 weeks (n=20) | A vs. B: Acute LBP  Mean age 48 vs. 45 years  30% vs. 40% female  Pain, VAS: 6.7 vs. 6.15  Pain, patient global assessment: 6.45 vs. 5.0  Pain, physician global assessment: 6.6 vs. 6.15  Disability, RDQ: 13.2 vs.  12.6  Disability, Modified ODI:  19.8 vs. 20.8  A vs. B: Chronic LBP Mean age 52 vs. 55 years  55% vs. 45% female  Pain, VAS: 6.0 vs. 6.6  Pain, patient global assessment: 5.65 vs. 6.05  Pain, physician global assessment: 5.8 vs. 6.3  Disability, RDQ: 15.1 vs.  15.6  Disability, Modified ODI:  23.9 vs. 24.65 | Acute: 2 vs. 2 months  Chronic: 50 vs. 48 months |
| Djavid, 2007 | Iran  Single-center | Age 20-60 years with low  back pain for at least 12 weeks  Excluded: degenerative disc disease, herniation, fracture, spondylosis, spinal stenosis, neurologic deficits, systemic or psychiatric illness, pregnancy | Randomized: 61  Analyzed: 43  Attrition: 30% (18/61) | A. GaAlAs, 810 nm laser 2  times/week for 6 weeks  (n=16)  B. GaAlAs laser, 810 nm 2 times/week for 6 weeks + exercise (n=19)  C. Sham laser 2 times/week for 6 weeks + exercise (n=18) | A vs. B vs. C  Mean age 40 vs. 38 vs. 36 years  56% vs. 37% vs. 17%  female  Race not reported  Pain, VAS 7.3 vs. 6.2 vs. 6.3  Disability, ODI 33.0 vs. 34.0 vs. 31.8 | Chronic: mean 29 vs.  29 vs. 25 months |

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| **Author, Year** | **Duration of**  **Followup** | **Results**  **(list results for acute, subacute and chronic separately)** | **Adverse Events Including Withdrawals** | **Funding**  **Source** | **Quality**  **Rating** |
| Ay, 2010 | 3 weeks | A vs. B: Acute LBP  Pain, VAS mean change from baseline: -4.0 vs. -4.15; p=0.07  Pain, patient global assessment mean change from baseline: -3.9 vs. -4.7;  p=0.006  Pain, physician global assessment mean change from baseline: -4.1 vs. -4.2; p=-  0.71  Disability, RDQ mean change from baseline: -6.0 vs. -5.65; p=0.39  Disability, Modified ODI mean change from baseline: -8.2 vs. -8.7; p=0.15  A vs. B: Chronic LBP  Pain, VAS mean change from baseline: -3.35 vs. -3.95; p=0.03  Pain, patient global assessment mean change from baseline: -3.3 vs. -3.9;  p=0.11  Pain, physician global assessment mean change from baseline: -3.15 vs. -4.05;  p=0.01  Disability, RDQ mean change from baseline: -6.7 vs. -4.65; p=<0.0001  Disability, Modified ODI mean change from baseline: -9.6 vs. -6.2; p; p<0.0001 | Not reported | Not  reported | Good |
| Djavid, 2007 | 12 weeks | A vs. B vs. C  Pain, VAS: 4.4 vs. 2.4 vs. 4.3; A vs. B, p=0.002; A vs. C, p=0.87; B vs. C, p=0.0005; mean change from baseline -2.9 vs. -3.8 vs. -2.0  Disability, ODI: 20.8 vs. 16.8 vs. 24.1; A vs. B, p=0.006; A vs. C, p=0.06; B vs. C, p=0.0001 | No adverse events in  any group (data not shown) | Not  reported | Fair |

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| **Author, Year** | **Country Number of Centers and Setting** | **Inclusion Criteria** | **Number Randomized, Analyzed Attrition** | **Intervention** | **Study Participants** | **Duration of Pain (acute, subacute, chronic)** |
| Hsieh, 2014 | Taiwan  Single center | 18 to 85 years of age,  nonspecific low back pain for >12 weeks  Exclude: Specific conditions (infection, inflammation, fracture, tumor); history of cancer, vertigo, stroke, or other condition that may impair postural stability, low  back surgery with implant; pregnant or plans to become pregnant | Randomized: 70 (35  vs. 35)  Analyzed: 60 (33 vs.  27)  Attrition: 14% (10/70) | A: GaAlAs, 890 nm laser with  780 mW power (total 83.2  J/cm2), 40 minutes three times a week for 2 weeks (n=33)  B: Sham laser, 40 minutes three times a week for 2 weeks (n=27) | A vs. B  Mean age 60 vs. 58 years  58% vs. 70% female Race not reported Pain, VAS 7.9 vs. 7.9  Disability, ODI 2.3 vs. 2.6  Radiation in lower limb: 70%  vs. 78% | Chronic: mean duration  not reported, >12 weeks by inclusion criteria |

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| **Author, Year** | **Duration of**  **Followup** | **Results**  **(list results for acute, subacute and chronic separately)** | **Adverse Events Including Withdrawals** | **Funding**  **Source** | **Quality**  **Rating** |
| Hsieh, 2014 | 2 weeks | A vs. B  Pain (mean, 0-10 VAS): 7.8 vs. 7.9 at baseline, mean change 0.73 vs. 0.4 at 2 weeks, difference -0.3 (95% CI -1.0 to 0.3)  ODI (mean, scale unclear): 2.3 vs. 2.6 at baseline, mean change -0.4 vs. -0.1 at  2 weeks, difference -0.3 (95% CI -0.6 to -0.1)  Frenchay Activities Index (mean, 0 to 45): 32.2 vs. 33.5 at baseline, mean change 1.9 vs. 1.5 at 2 weeks, difference -0.4 (95% CI -3.4 to 2.6) Osteoarthritis Quality of Life Questionnaire (mean, scale not reported): 3.8 vs.  5.9 at baseline, mean change -0.5 vs. -0.6 at 2 weeks, difference -0.1 (95% CI -  1.4 to 1.1)  Multidimensional Fatigue Inventory: No differences on any subscale | No systemic or local  side effects noted during or after treatment | Shin Kong  Wu Ho-Su Memorial Hospital and National Science Council, Taiwan | Fair |

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| **Author, Year** | **Country Number of Centers and Setting** | **Inclusion Criteria** | **Number Randomized, Analyzed Attrition** | **Intervention** | **Study Participants** | **Duration of Pain (acute, subacute, chronic)** |
| Jovicic, 2012 | Serbia  Single-center | Acute, clinically  diagnosed LBP (duration  <4 weeks)  Excluded: chronic low back pain or previous surgery | Randomized: 66  Analyzed: 66  Attrition: 0% (0.66) | A. 904 nm laser, 0.1 joule  per point (0.4 points/day;  n=22)  B. 904 nm laser, 1.0 joule per point (4.0 points/day; n=22)  C. 904 nm laser, 4.0 joules per point (16.0 points/day; n=22) | A vs. B vs. C  Mean age 47 vs. 44 vs. 45 years  Gender, race not reported Lumbar pain, VAS: 7 vs. 7 vs. 6.5 | Acute: mean duration  not reported; inclusion criteria required <4 weeks duration of symptoms |

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| **Author, Year** | **Duration of**  **Followup** | **Results**  **(list results for acute, subacute and chronic separately)** | **Adverse Events Including Withdrawals** | **Funding**  **Source** | **Quality**  **Rating** |
| Jovicic, 2012 | 2 weeks | A vs. B vs. C  Lumbar pain, VAS mean change (results depicted graphically): -3 vs. -3 vs. -3.5;  p>0.05  Function, Activities of Daily Life: walking, mean change from baseline in proportion able to complete activity - all outcomes A or B vs. C p=0.007  Able to walk:  Not able to walk >1 hour: 4.5% vs. 4.6% vs. 13.6% Not able to walk >30 mins: 18.2% vs. 13.6% vs. 41% Not able to walk >10 mins: -4.6% vs. -13.7% vs. -18.2%  Only able to walk a few steps: -27.3% vs. -22.8% vs. -31.8% Not able to walk at all: -4.5% vs. -4.5% vs. -9.1%  Function, Activities of Daily Living: sitting, mean change from baseline in proportion able to complete activity - all outcomes A or B vs. C p=0.005  Able to sit: 4.6% vs. 4.5% vs. 4.5%  Not able to sit >1 hour: 27.3% vs. 0% vs. 31.9% Not able to sit >30 mins: 13.7% vs. 50% vs. 0%  Not able to sit > a few mins: -40.9% vs. -31.9% vs. -36.4% Not able to sit at all: -4.5% vs. -22.8% vs. -13.6%  Function, Activities of Daily Living: standing, mean change from baseline in proportion able to complete activity - all outcomes A or B vs. C p=0.013  Able to stand: 9.1% vs. 0% vs. 13.6%  Able to stand with pain: 4.6% vs. 22.7% vs. 22.8%  Not able to stand >1 hour: 13.6% vs. 13.6% vs. 36.4% Not able to stand >30 mins: 27.3 vs. 18.2% vs. 9.1%  Not able to stand >10 mins: -31.8% vs. -18.2% vs. -31.8% Not able to stand at all: -22.8% vs. -36.4% vs. -31.8% | No systemic or local  side effects reported  (data not shown) | Not  reported | Fair |

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| **Author, Year** | **Country Number of Centers and Setting** | **Inclusion Criteria** | **Number Randomized, Analyzed Attrition** | **Intervention** | **Study Participants** | **Duration of Pain (acute, subacute, chronic)** |
| Konstantinovic, 2010 | Serbia  Single-center | Acute LBP (symptomatic  <4 weeks) and unilateral radiculopathy  Excluded: Use of oral or injected corticosteroids within month preceding study entry or previous surgery | Randomized: 546  Analyzed: 546  Attrition: 0% (0/546) | A. 904 nm laser 5  times/week for 3 weeks + nimesulide 200 mg/day (n=182)  B. Sham laser 5 times/week for 3 weeks + nimesulide 200 mg/day (n=182)  C. Nimesulide 200 mg/day  (n=182) | A vs. B vs. C  Mean age 44 vs. 42 vs. 45 years  59% vs. 58% vs. 57%  female  Race not reported  Lumbar pain, VAS: 66 vs. 65 vs. 67  Disability, ODI: 32 vs. 32 vs.  31  Quality of life, SF-36 PCS:  10 vs. 10 vs. 10  Quality of life, SF-36 MCS:  12 vs. 12 vs. 12 | Acute: mean 15 vs. 18  vs. 16 days |
| Vallone, 2014 | Italy  Single center | Nonspecific low back pain  >6 months duration, age  >18 years  Excluded: Nerve root systems, systemic disease and specific conditions, medication for psychological problems, pregnant | Randomized: 100  (50 vs. 50) Analyzed: Unclear Attrition: Unclear | A: GaAlAs, 980 nm laser, 1  minute per spot, total 1200 J  per spot for 1 month at each spot 3 times a week for 3 weeks, applied to 6 spots + exercise (stretching, strengthening) (n=50)  B: Sham laser as above +  exercise (n=50) | A vs. B  Mean age 68 years overall  57% female overall  Race not reported  Pain (0-10 VAS): 6.64 vs.  6.36  Function: Not reported | Chronic: mean not  reported, all >6 months by inclusion criteria |

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| **Author, Year** | **Duration of**  **Followup** | **Results**  **(list results for acute, subacute and chronic separately)** | **Adverse Events Including Withdrawals** | **Funding**  **Source** | **Quality**  **Rating** |
| Konstantinovic, 2010 | 3 weeks | A vs. B vs. C  Lumbar pain, VAS mean change: -30 vs. -15.7 vs. -20.8; p<0.01 for all comparisons  Disability, ODI mean change: -12 vs. -6.5 vs. -10; p<0.01 for all comparisons Disability, ODI proportion improved (defined as change from moderate to minimal disability category): 72% (151/182) vs. 54% (98/182) vs. 18% (33/182); A vs. B, RR 1.54 (95% CI 1.33 to 1.79); A vs. C, RR 4.58 (95% CI 3.34 to 6.27); B vs. C, RR 2.97 (95% CI 2.12 to 4.16)  Quality of life, SF-36 PCS: -4 vs. -2 vs. -3; A vs. B, A vs. C p<0.01; B vs. C  p=0.06  Quality of life, SF-36 MCS: -6 vs. -3 vs. -4; p<0.01 for all comparisons | Two withdrawals due  to worsening pain; intervention group(s) not reported | Not  reported | Good |
| Vallone, 2014 | 3 weeks | A vs. B  Pain (mean, 0-10 VAS): 6.64 vs. 6.36 at baseline, 2.68 vs. 4.08 at 3 w, change from baseline 3.96 vs. 2.32 (p<0.01)  Complete pain relief: 10% (5/50) vs. 2.0% (1/50), RR 5.0 (95% CI 0.61 to 41.3) | Not reported | None  reported | Fair |

**Please see Appendix C. Included Studies for full study references.**