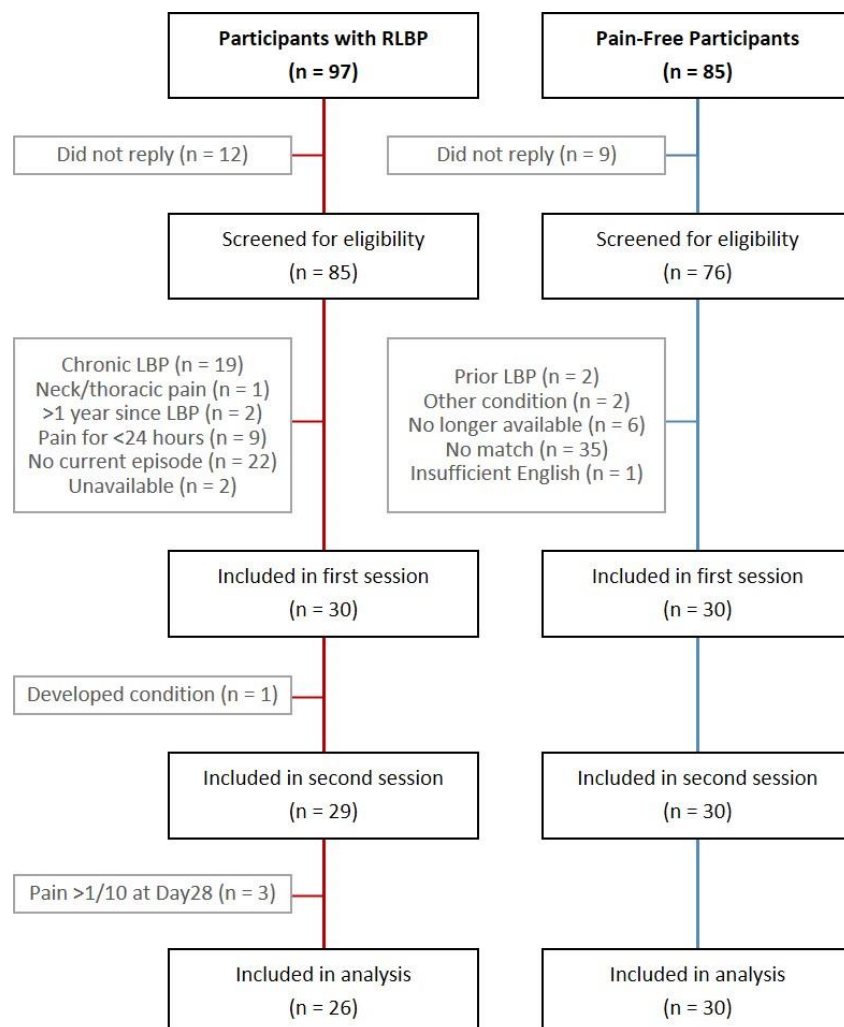


Supplementary material for:

RECURRENT LOW BACK PAIN PATIENTS DEMONSTRATE FACILITATED PRO-NOCICEPTIVE MECHANISMS WHEN IN PAIN, AND IMPAIRED ANTINOCICEPTIVE MECHANISMS WITH AND WITHOUT PAIN

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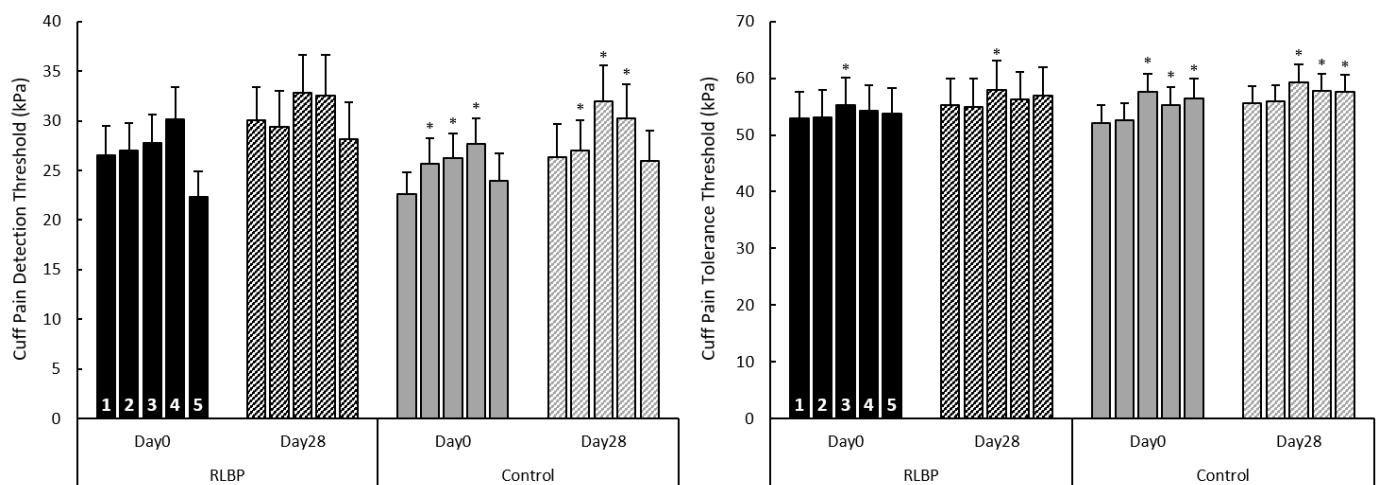
Supplementary Figure 1: Recruitment flowchart for both participants with recurrent low back pain (RLBP) and pain-free participants

Further analysis of conditioned pain modulation

In light of group differences in CPM-effects, a further supplementary analysis of raw data was conducted within each group to elucidate if significant inhibition of the test stimulus was present during conditioning.

A two-way ANOVA of cPDT for Ramps 1-5 in the CPM series within the RLBP group revealed a main effect of *Stimulus* ($F_{4,100}=7.49$, $P<0.001$, $\eta^2=0.231$, Fig. 8), but no significant differences were observed on post-hoc contrasts ($P>0.07$). For cPDT within the Control group, there was also a main effect of *Stimulus* ($F_{2,3,68.0}=5.96$, $P=0.003$, $\eta^2=0.170$), with post-hoc contrasts showing an increase in cPDT from the first stimulus to the second ($P=0.028$), third (during conditioning, $P=0.024$) and fourth (immediately post conditioning, $P<0.001$) stimuli.

A two-way ANOVA to assess the presence of inhibition on cPTT within the RLBP group demonstrated a main effect of *Stimulus* ($F_{3,0,75.7}=4.54$, $P=0.005$, $\eta^2=0.154$), with post-hoc contrasts showing only an increase from the first to the third stimulus (during conditioning, $P=0.007$). For the Control group, there was also a main effect of *Stimulus* ($F_{3,2,93.8}=14.15$, $P<0.001$, $\eta^2=0.328$), with post-hoc contrasts showing an increase in cPTT from the first stimulus to the third (during conditioning, $P<0.001$), fourth (immediately post conditioning, $P=0.003$) and fifth (5 min post conditioning, $P=0.002$) stimuli.



Supplementary Figure 2: Mean (+SEM) cuff pain detection (cPDT, left) and tolerance (cPTT, right) thresholds for test stimuli in the CPM paradigm (1st & 2nd pre-conditioning, 3rd during conditioning, 4th immediately post conditioning, 5th 5 min post conditioning) for participants with RLBP (black) and control participants (grey), across sessions (Day0, full colour, and Day28, striped). Significant difference from 1st Ramp within-group across sessions (*, Main Effect, $P<0.036$) indicated.

Further analysis of psychophysical measure reliability

Supplementary Table 1: Intra-class correlation coefficients (ICC (3, k)) for repeated psychophysical testing within-sessions in RLBP participants and within- and between-sessions in controls

Measure	RLBP Participants		Controls		
	Within-session 1 ICC [95% CI]	Within-session 2 ICC [95% CI]	Within-session 1 ICC [95% CI]	Within-session 2 ICC [95% CI]	Between-session ICC [95% CI]
PPT – ECR	0.958 [0.926, 0.979]*	0.939 [0.893, 0.969]*	0.969 [0.948, 0.984]*	0.970 [0.950, 0.984]*	0.849 [0.682, 0.928]*
PPT – UT	0.973 [0.952, 0.986]*	0.968 [0.945, 0.984]*	0.977 [0.962, 0.988]*	0.979 [0.964, 0.989]*	0.864 [0.714, 0.935]*
PPT – L1	0.953 [0.918, 0.976]*	0.983 [0.970, 0.991]*	0.971 [0.951, 0.984]*	0.985 [0.975, 0.992]*	0.863 [0.712, 0.935]*
PPT – L5	0.984 [0.972, 0.992]*	0.978 [0.962, 0.989]*	0.979 [0.965, 0.989]*	0.987 [0.979, 0.993]*	0.891 [0.771, 0.948]*
PPT - GAS	0.989 [0.981, 0.994]*	0.988 [0.979, 0.994]*	0.985 [0.975, 0.992]*	0.987 [0.978, 0.993]*	0.876 [0.740, 0.941]*
cPDT	0.961 [0.933, 0.981]*	0.966 [0.940, 0.983]*	0.946 [0.909, 0.971]*	0.975 [0.958, 0.987]*	0.716 [0.403, 0.865]*
cPTT	0.988 [0.979, 0.994]*	0.986 [0.976, 0.993]*	0.980 [0.966, 0.989]*	0.989 [0.981, 0.994]*	0.865 [0.716, 0.936]*
eVAS@cPTT	0.984 [0.971, 0.992]*	0.984 [0.973, 0.992]*	0.973 [0.955, 0.986]*	0.964 [0.940, 0.981]*	0.722 [0.416, 0.868]*
Supra-threshold Ratings (eVAS)	0.925 [0.856, 0.964]*	0.974 [0.953, 0.987]*	0.952 [0.913, 0.976]*	0.945 [0.894, 0.973]*	0.616 [0.194, 0.817]*
TSP	-	-	-	-	0.652 [0.268, 0.834]*
CPM	-	-	-	-	0.567 [0.091, 0.794]*
Post-CPM	-	-	-	-	0.605 [0.170, 0.812]*

Note: * $P < 0.05$