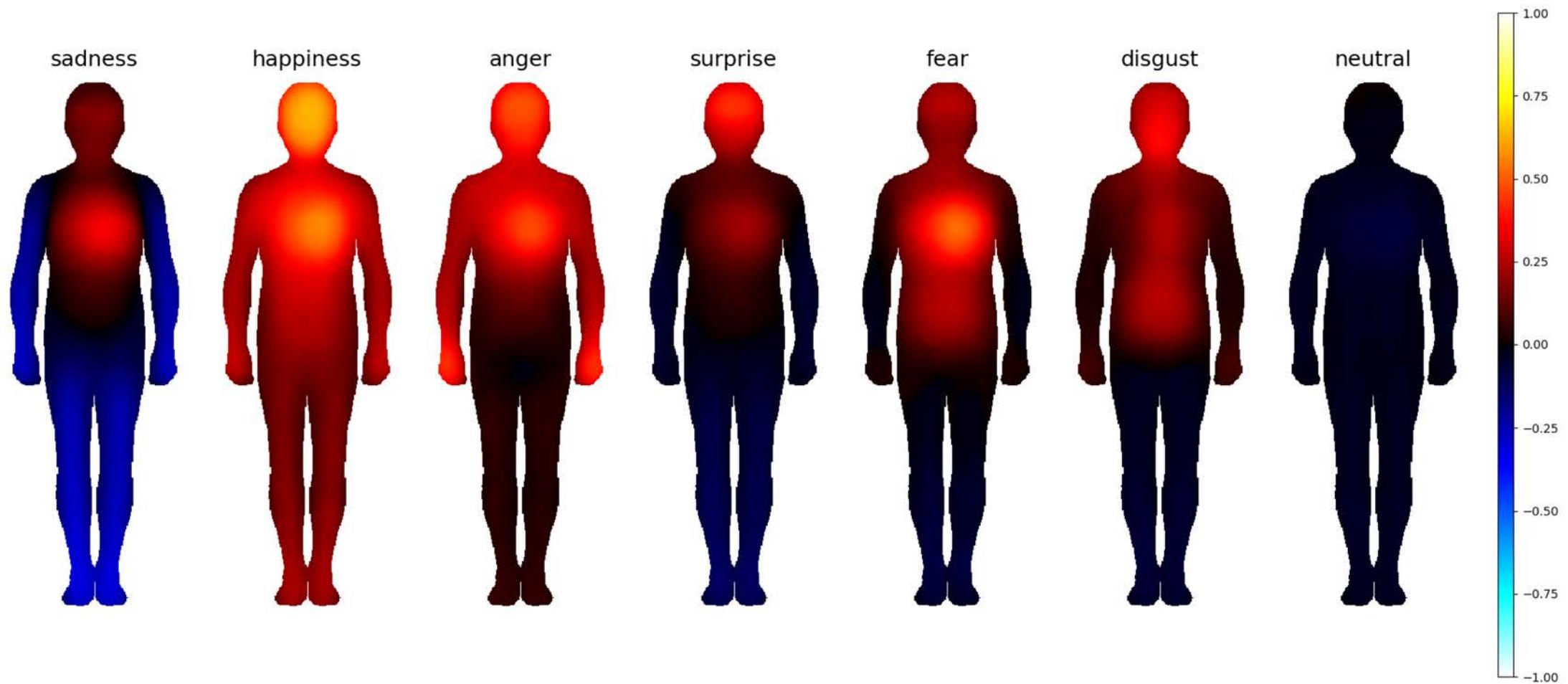


Kipupotilaat ja kivuttomat verrokkit

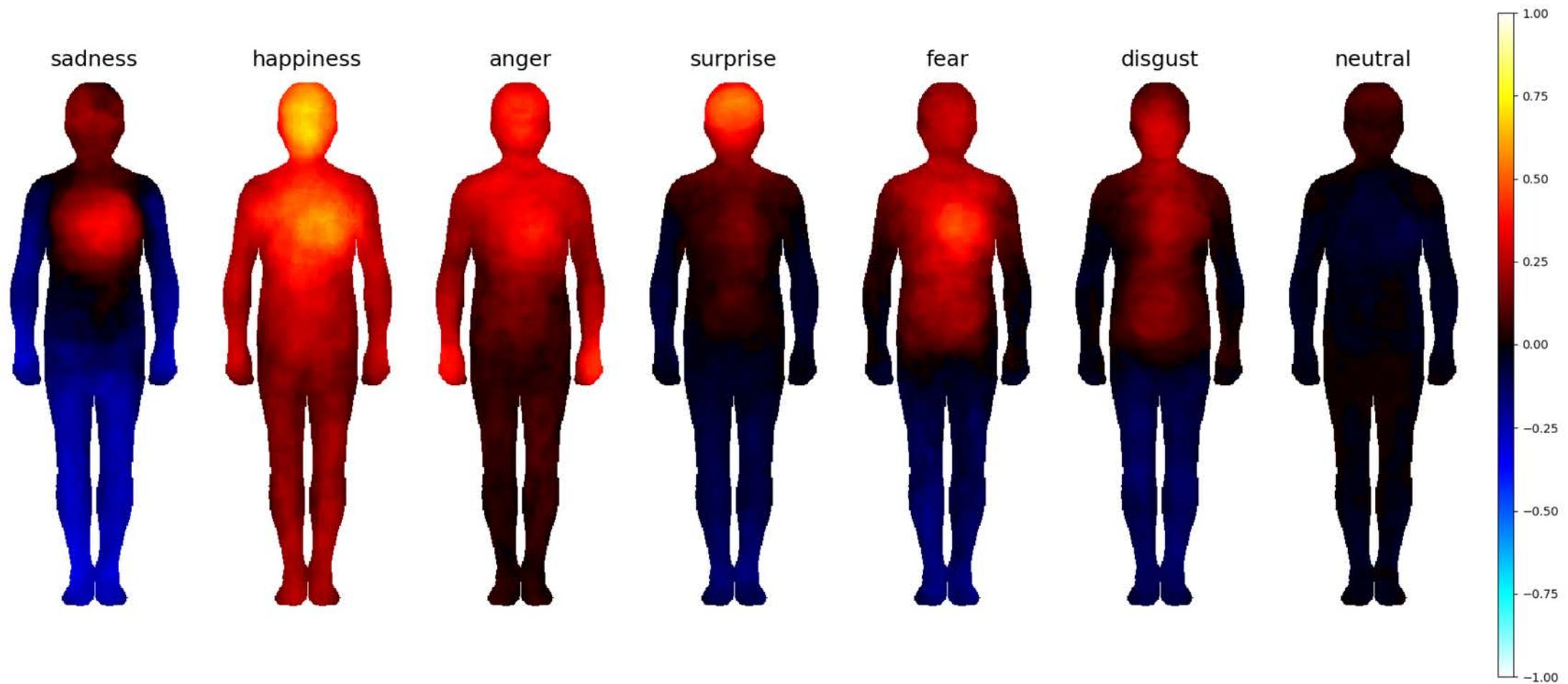
Alustavia tuloksia 8.11.2019

Juulia Suvilehto

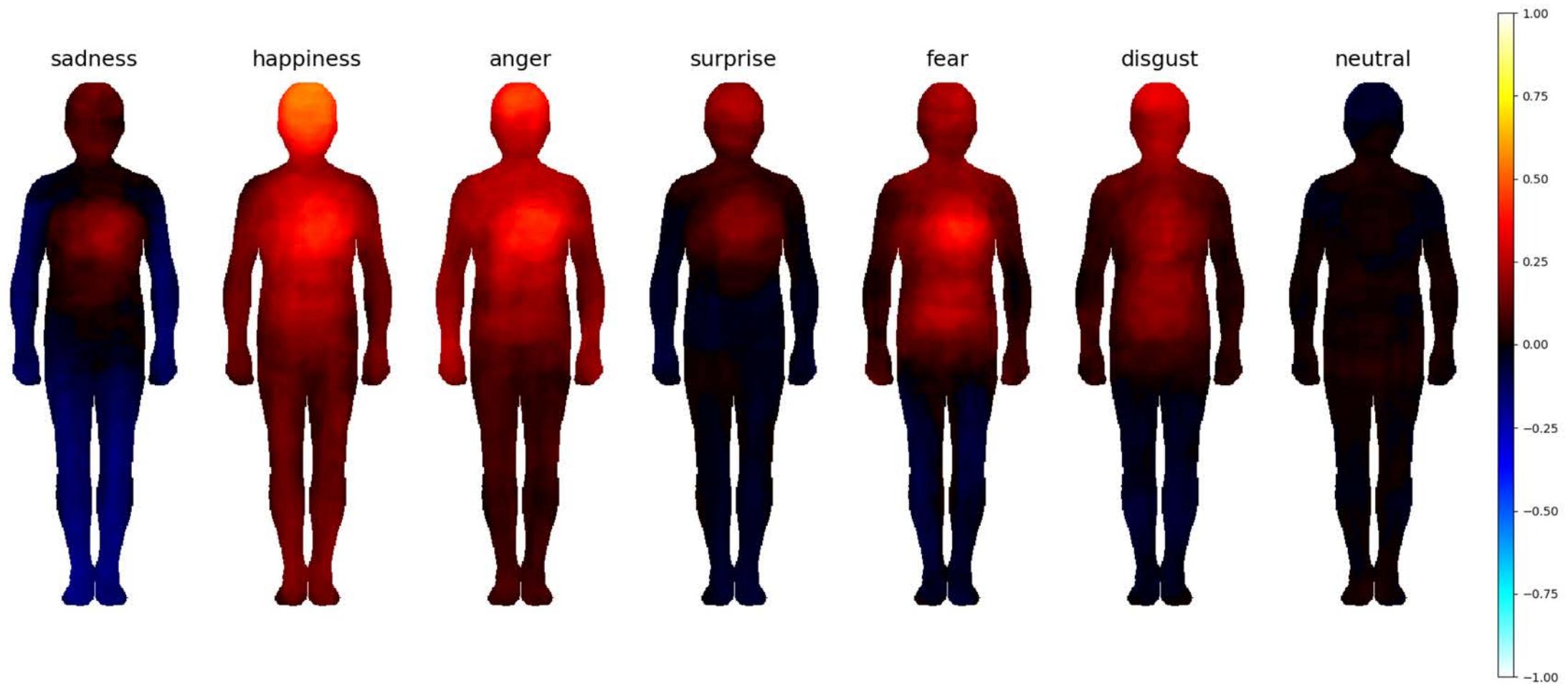
Average emotions, all controls



Average emotions, matched controls

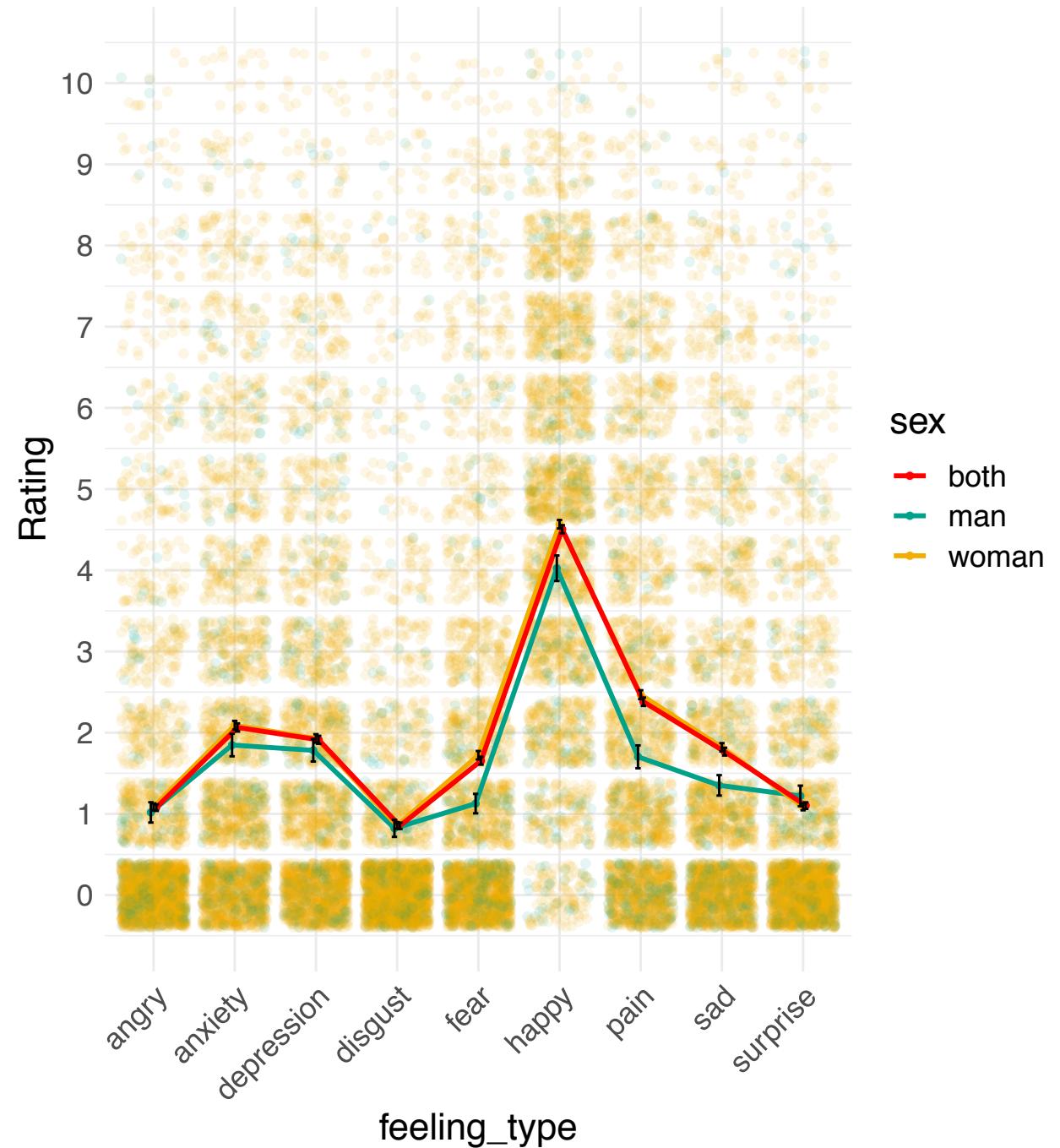


Average emotions, all pain patients



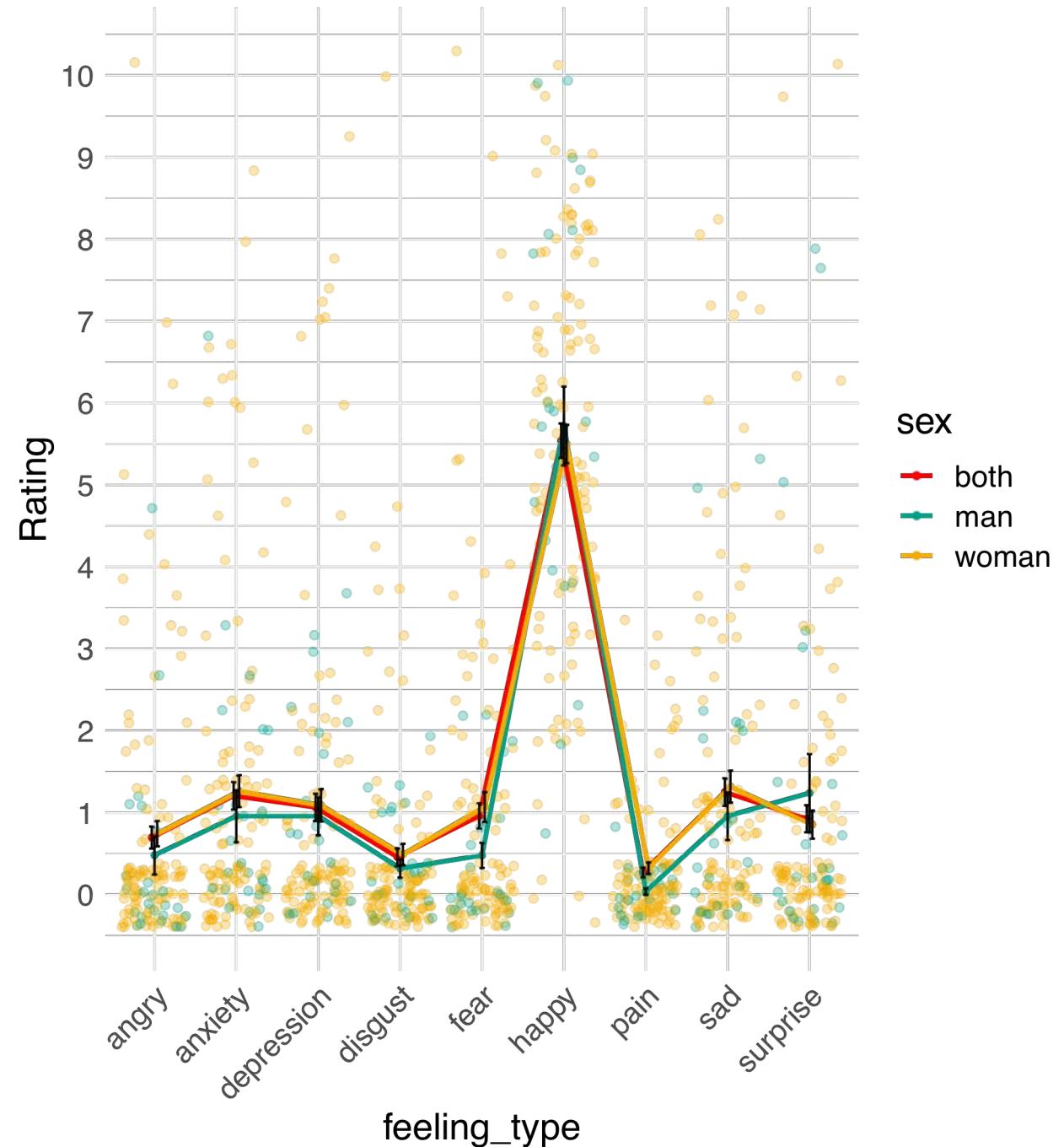
Kuinka paljon tunnet tunnetta X juuri nyt

Kaikki verrokit, keskiarvot + se esitettyynä erikseen naisille (n=2157), miehille (n=276) ja molemmille yhdessä (n=2433)



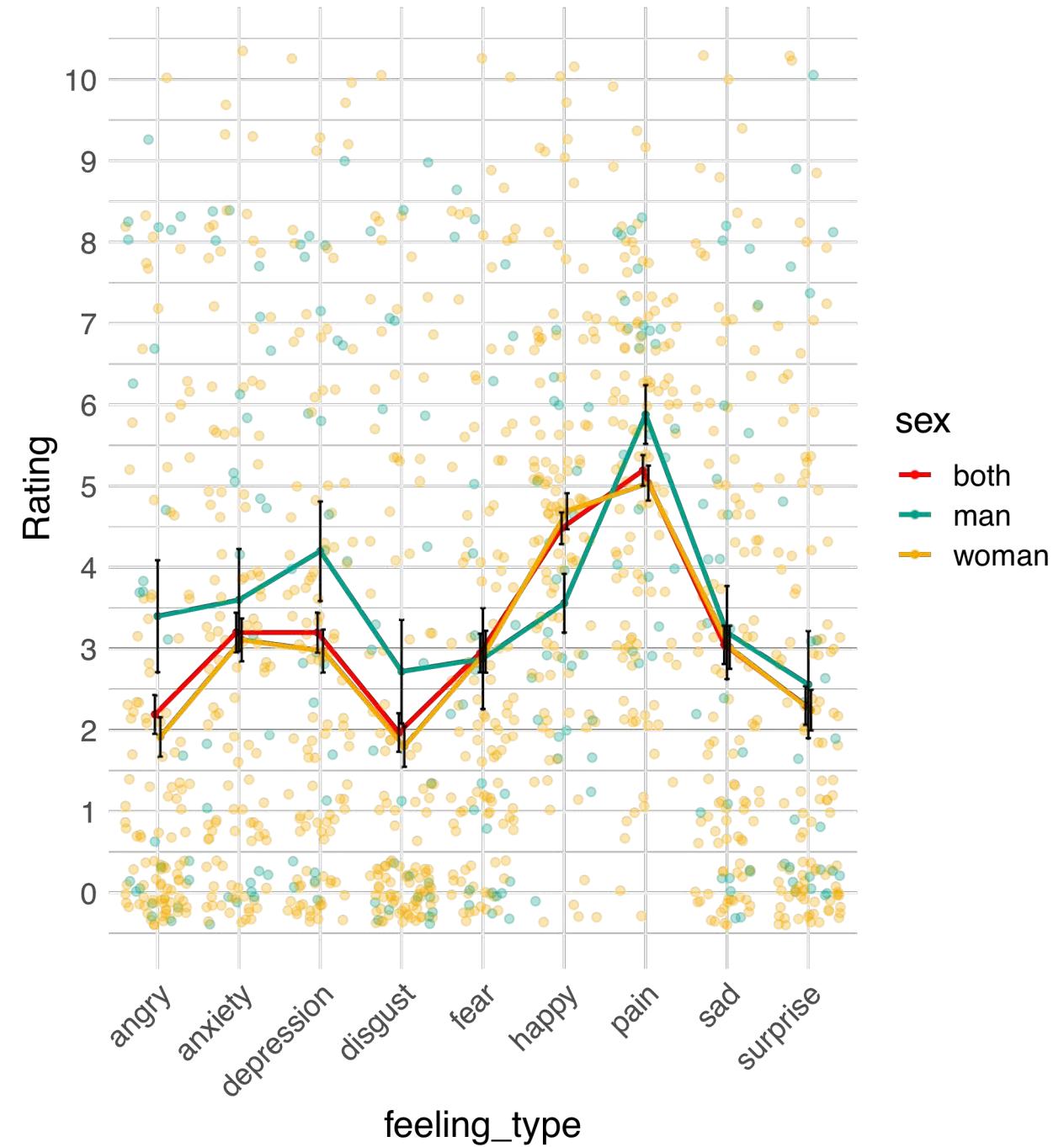
Kuinka paljon tunnet tunnetta X juuri nyt

Kaikki verrokit, keskiarvot + se esitettyvä erikseen naisille (n=110), miehille (n=25) ja molemmille yhdessä (n=135)



Kuinka paljon tunnet tunnetta X juuri nyt

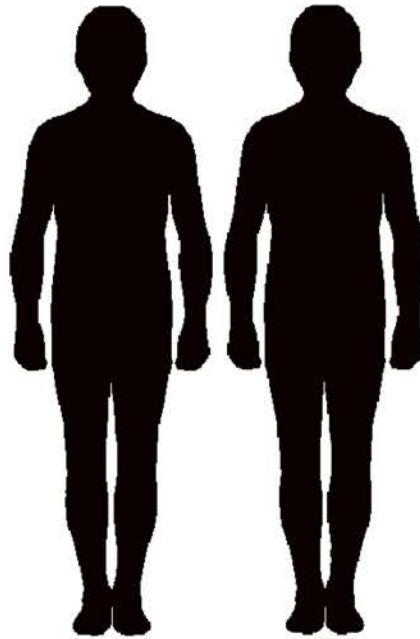
Kaikki verrokkit, keskiarvot + se esitettyvä erikseen naisille (n=110), miehille (n=25) ja molemmille yhdessä (n=135)



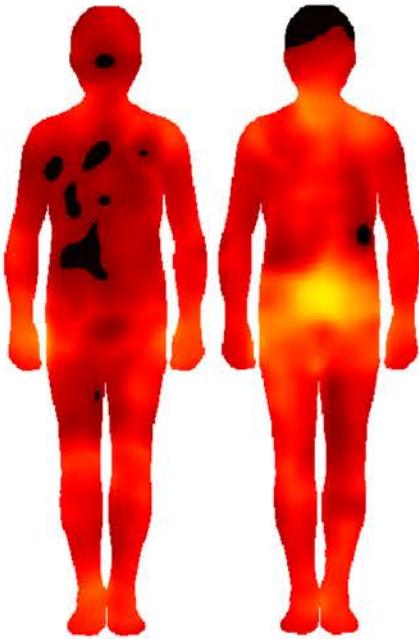
Age and sex matched controls vs pain clinic patients (all)

N=270 (135 patients, 135 controls)

Healthy controls

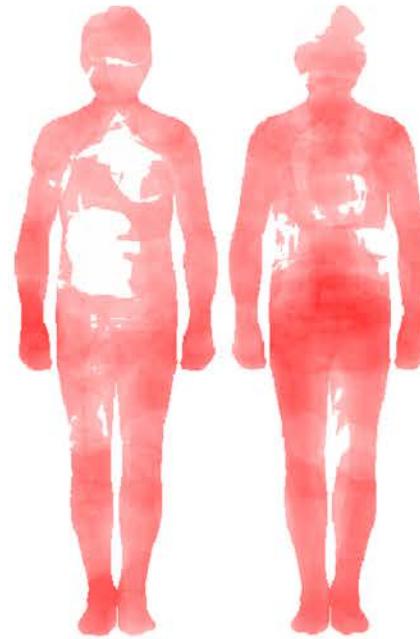


All pain patients

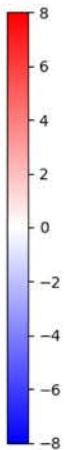
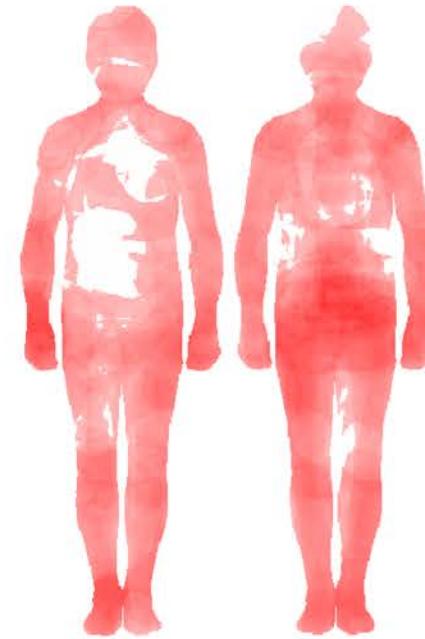


Current pain

Difference



Difference, no FDR

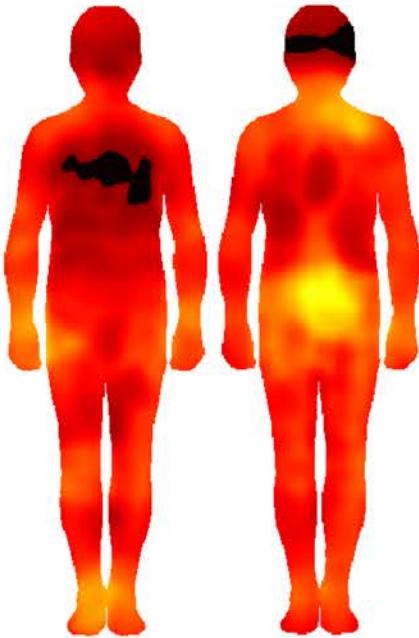


chonic_pain

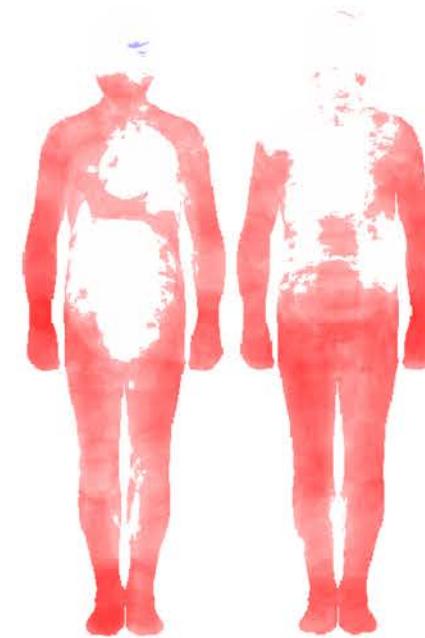
Healthy controls



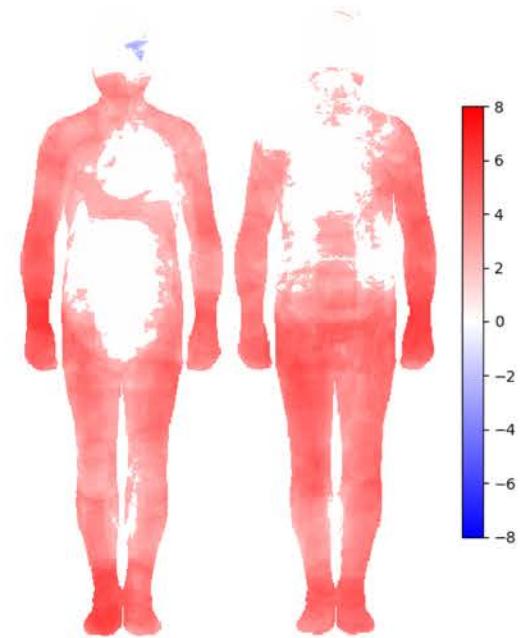
All pain patients

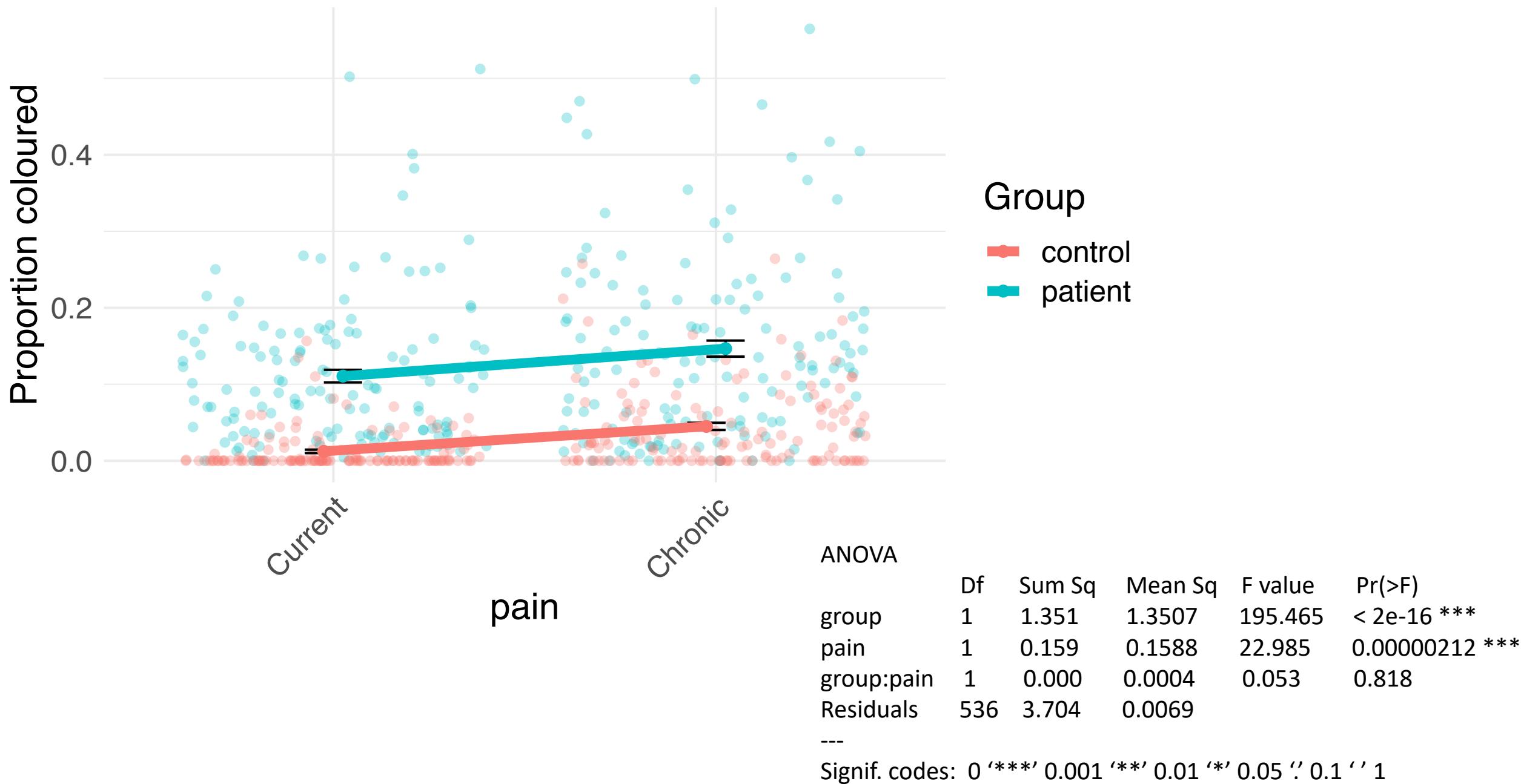


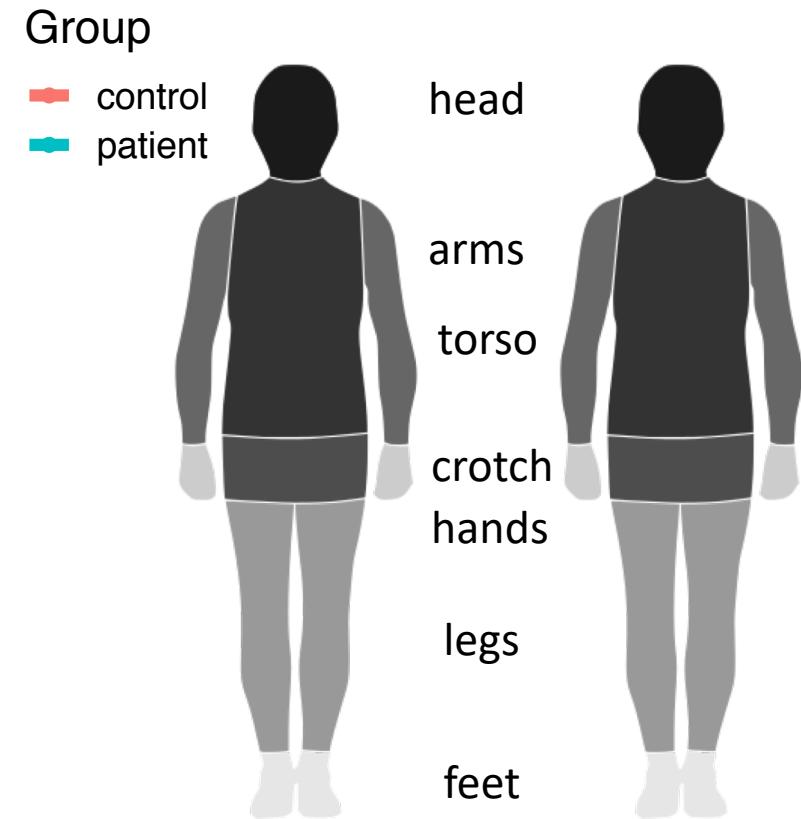
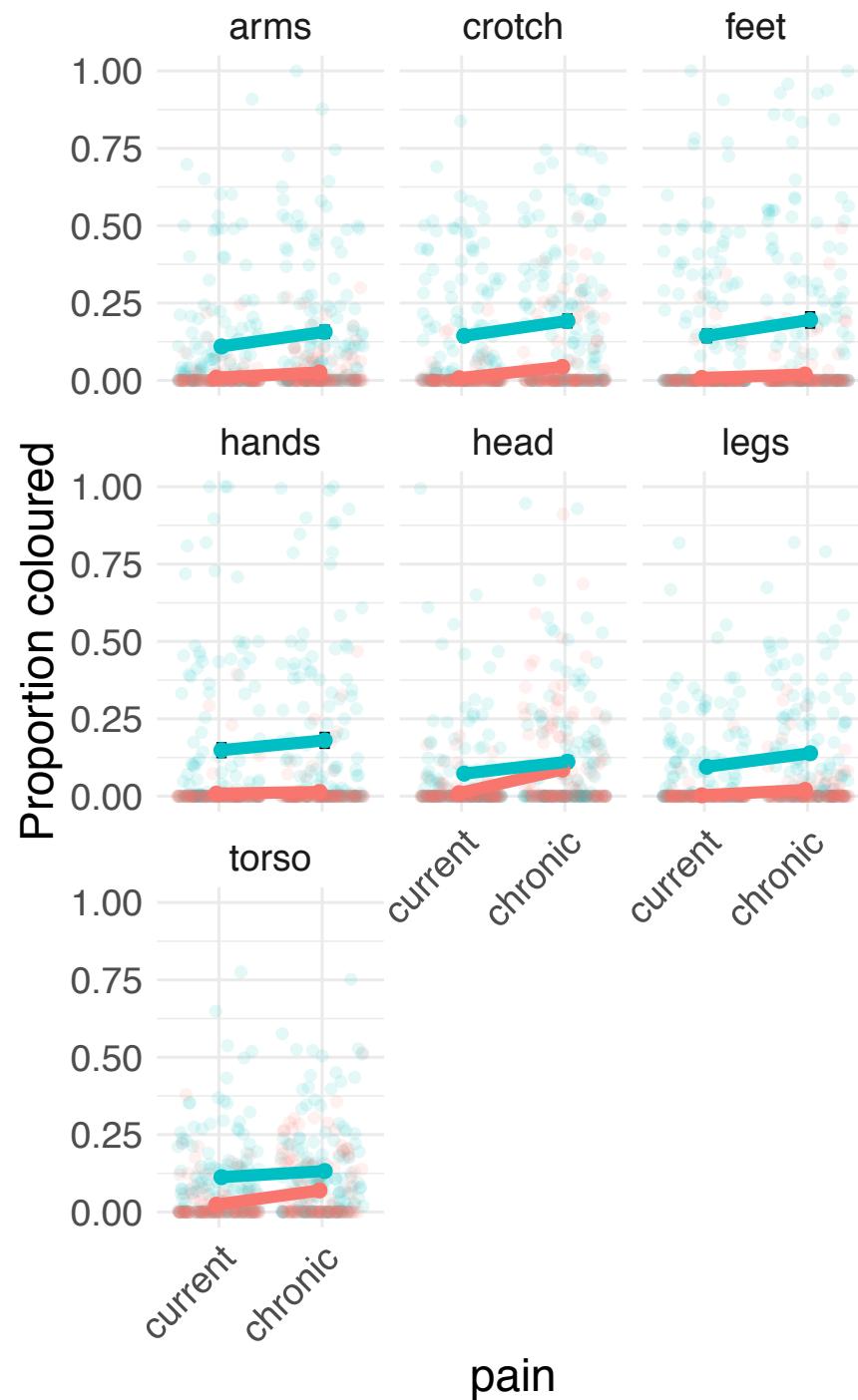
Difference



Difference, no FDR







sadness

Healthy controls

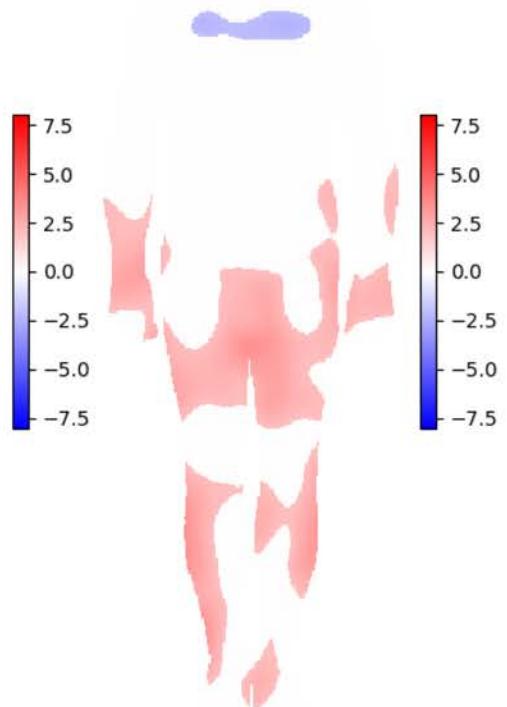


All pain patients



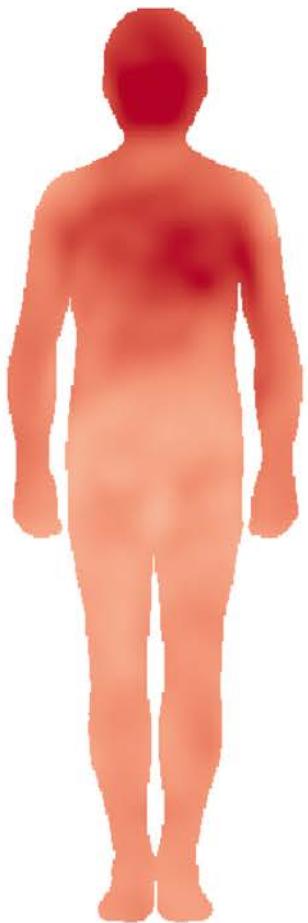
Difference

Difference, no FDR

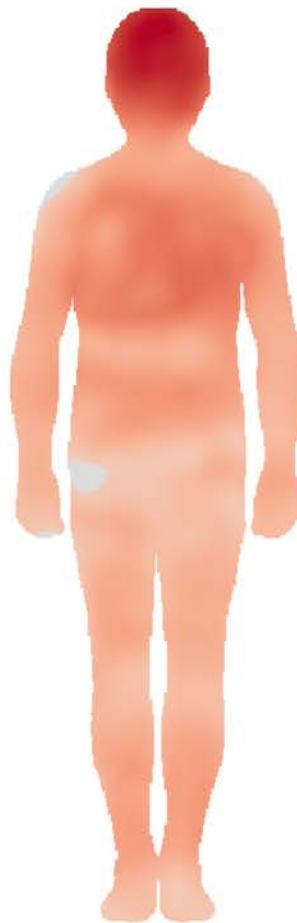


happiness

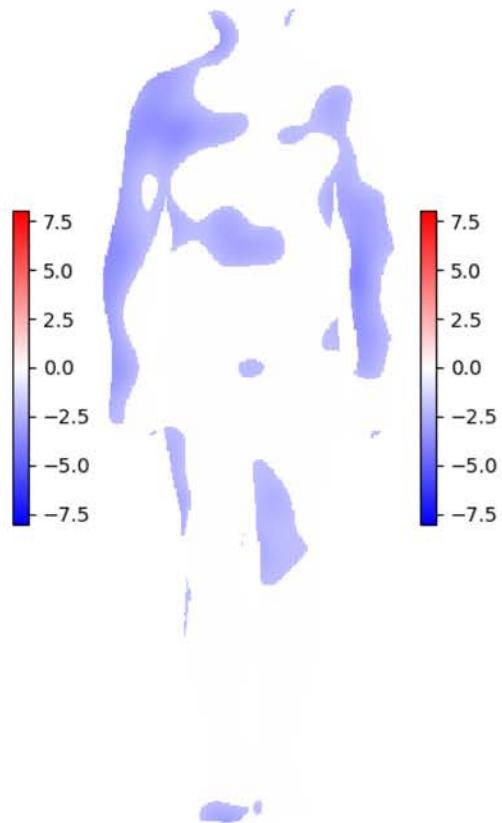
Healthy controls



All pain patients



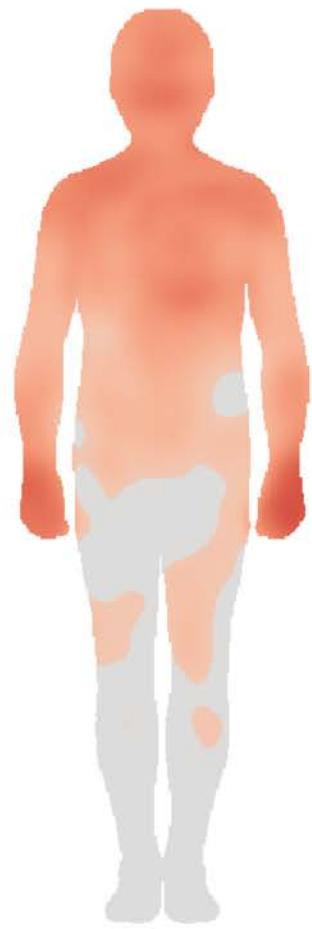
Difference



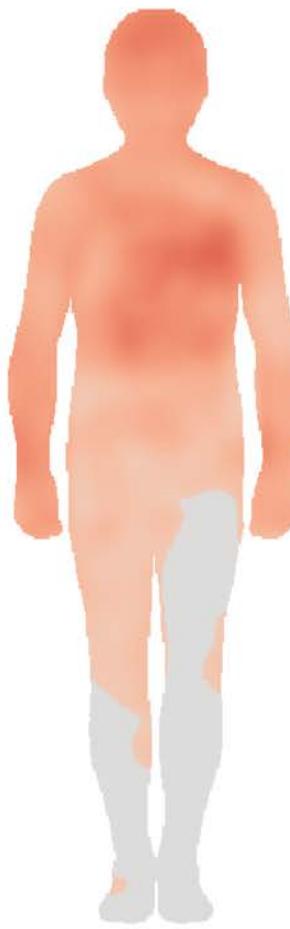
Difference, no FDR

anger

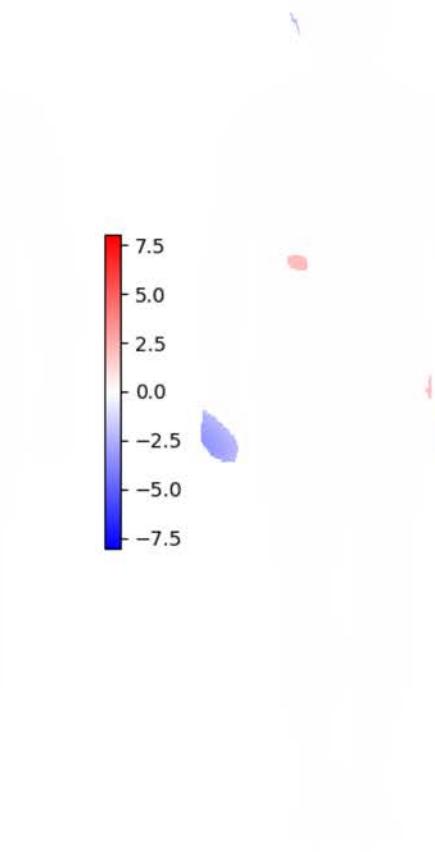
Healthy controls



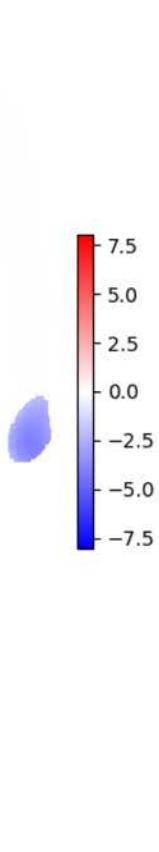
All pain patients



Difference

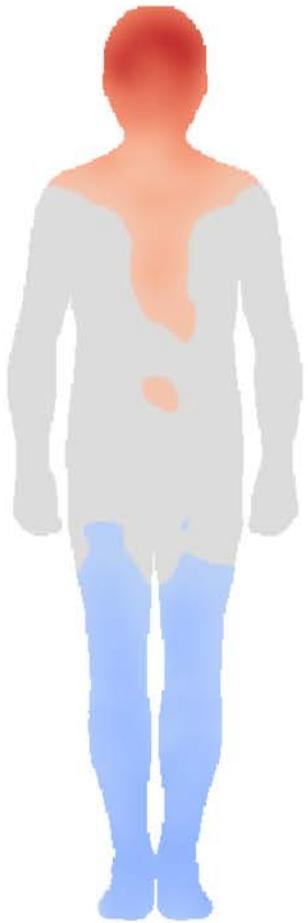


Difference, no FDR

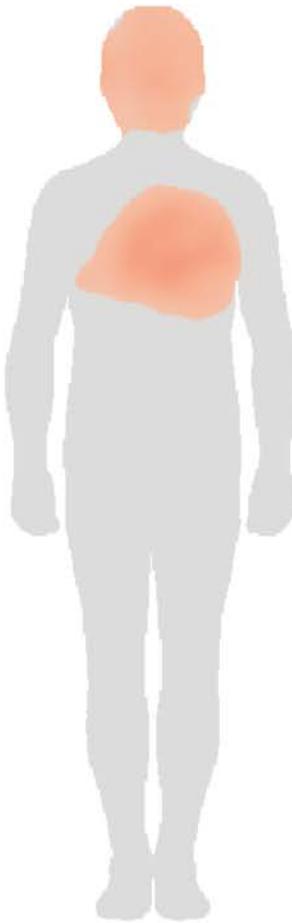


surprise

Healthy controls



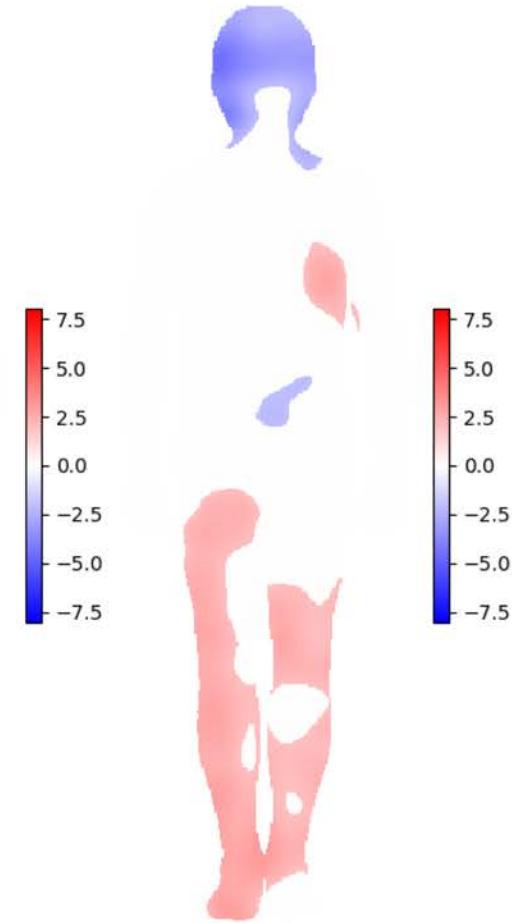
All pain patients



Difference

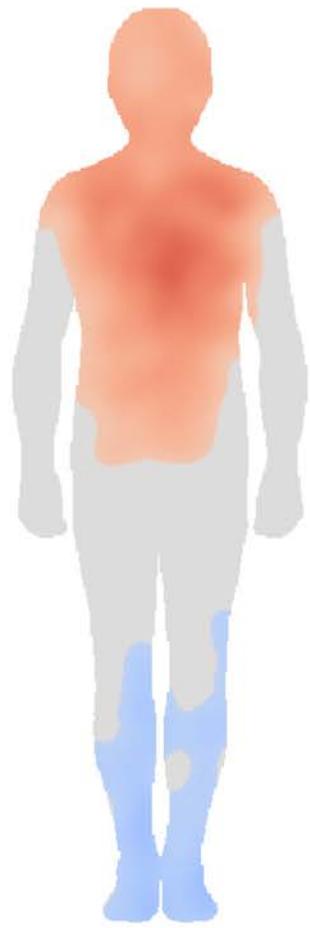


Difference, no FDR

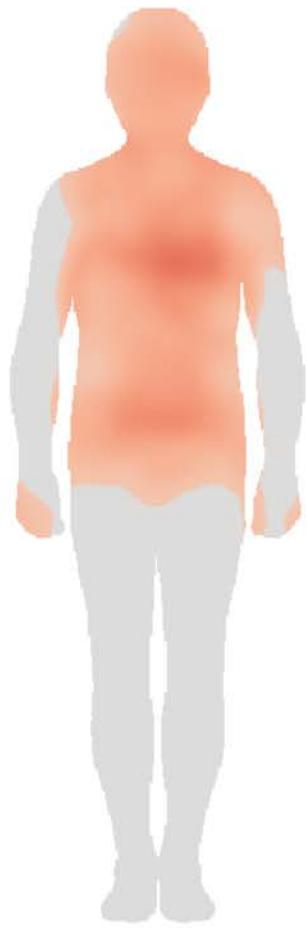


fear

Healthy controls

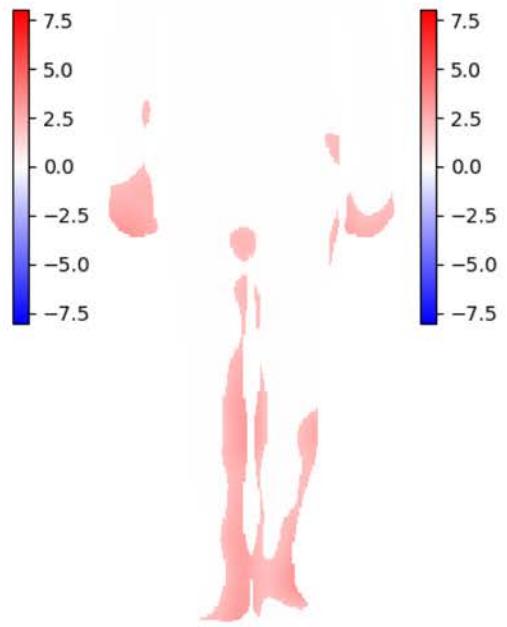


All pain patients



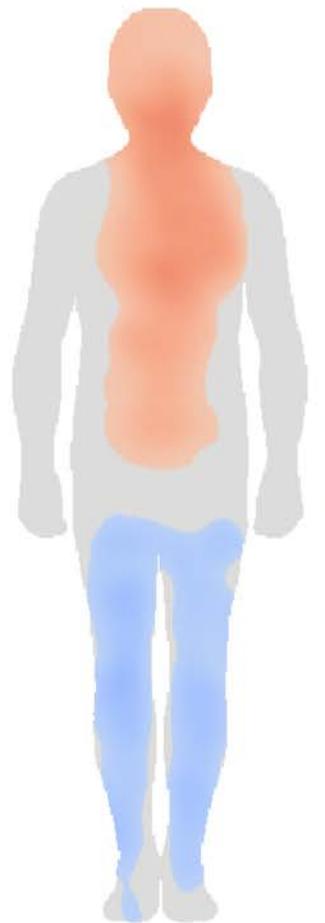
Difference

Difference, no FDR

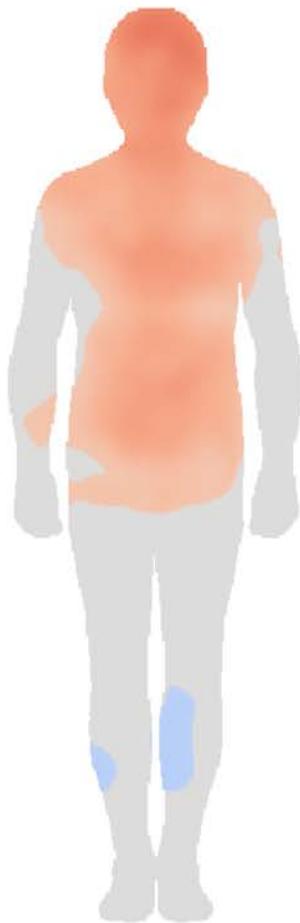


disgust

Healthy controls

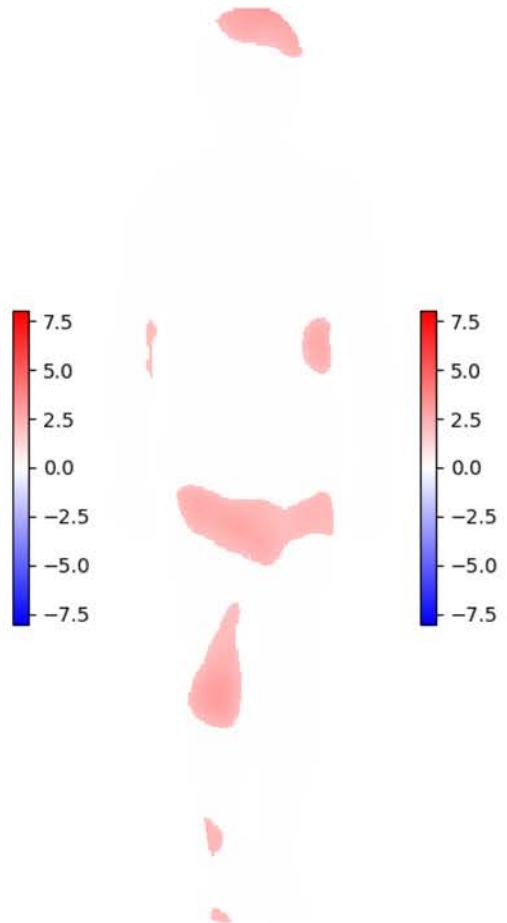


All pain patients



Difference

Difference, no FDR



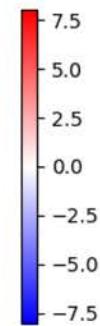
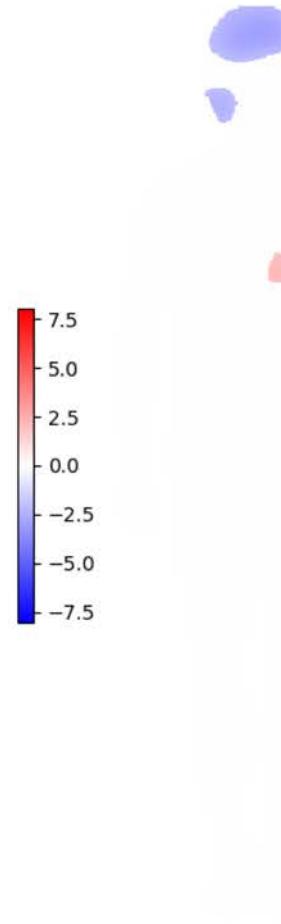
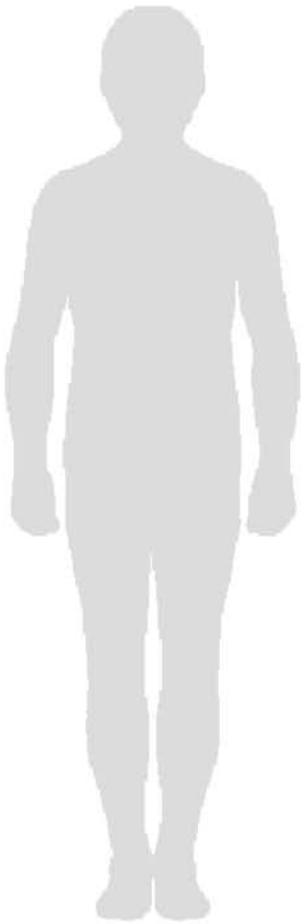
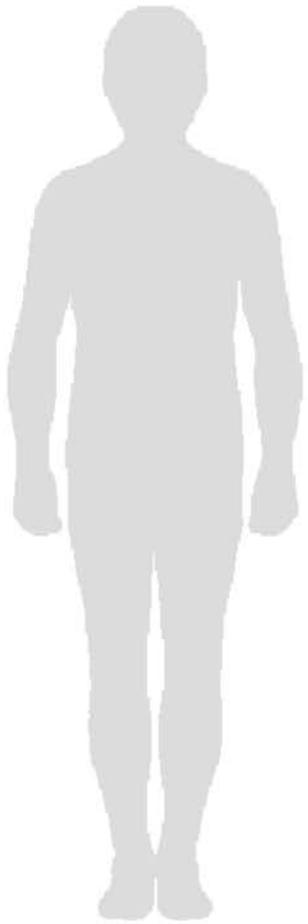
neutral

Healthy controls

All pain patients

Difference

Difference, no FDR





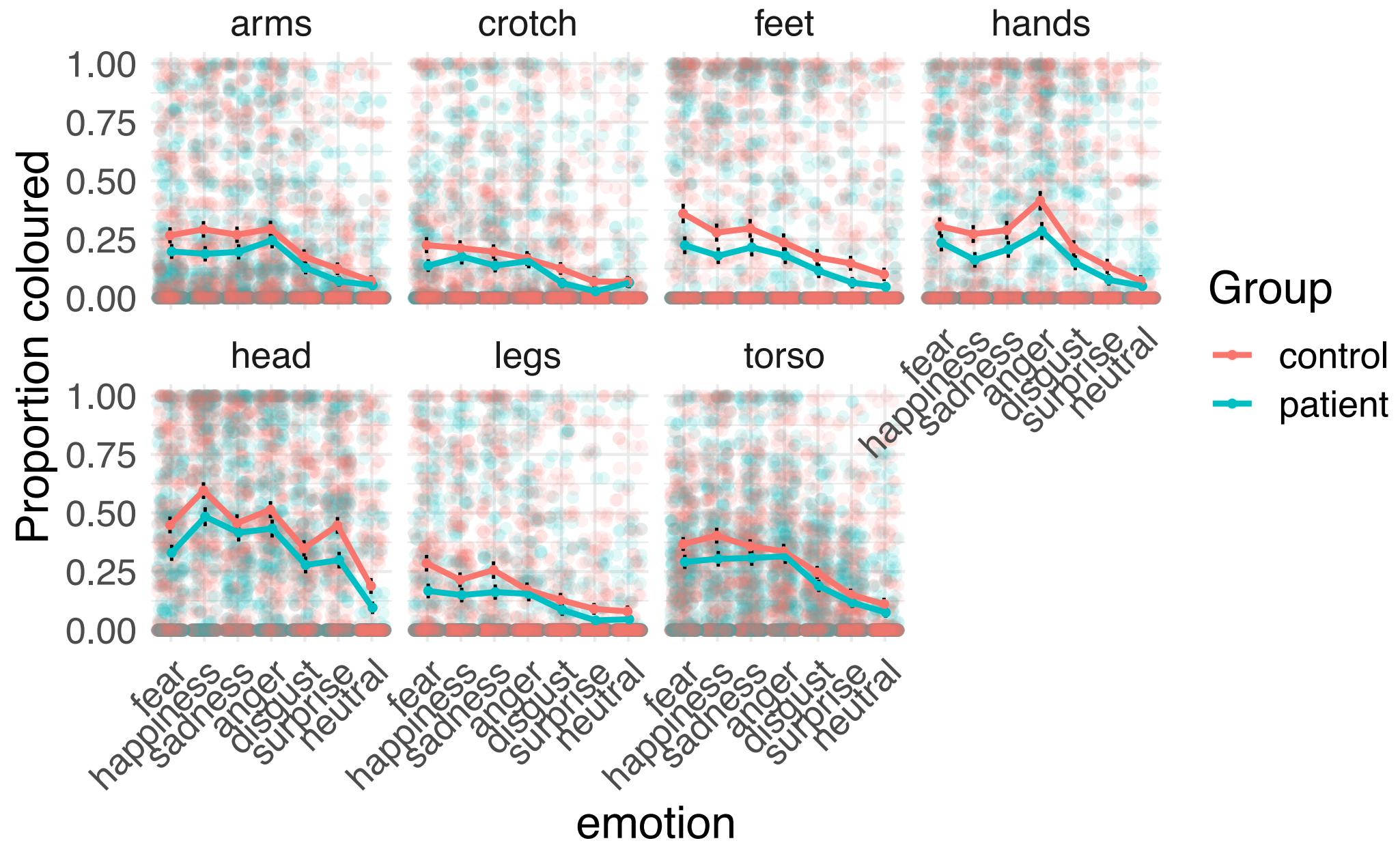
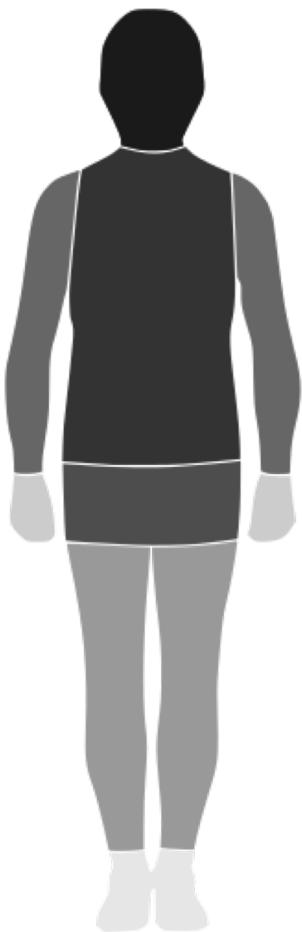
ANOVA

emotion

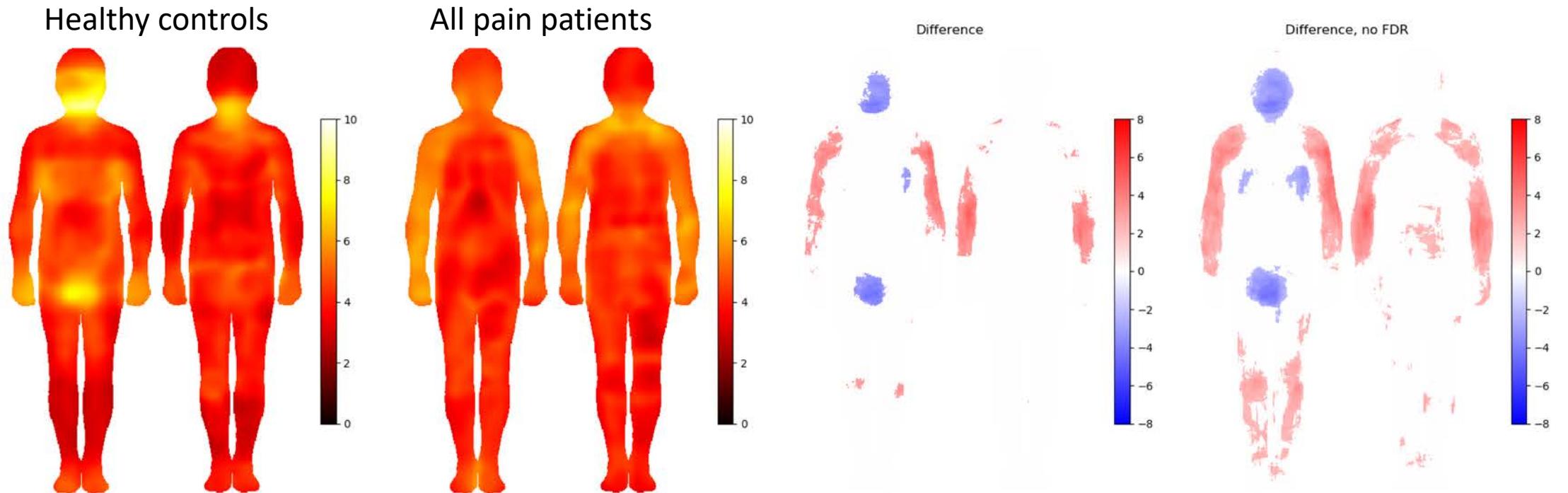
	Df	Sum Sq	Mean Sq	F value	Pr(>F)
group	1	1.66	1.6624	34.852	0.00000000421 ***
emotion	6	11.48	1.9140	40.127	< 2e-16 ***
group:emotion	6	0.21	0.0354	0.741	0.616
Residuals	1876	89.48	0.0477		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 '' 1

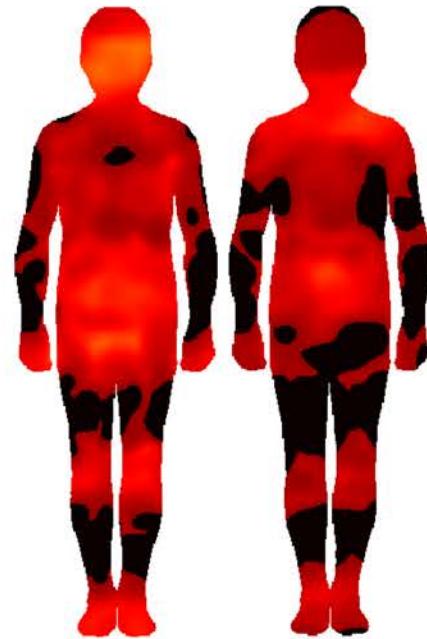
ROI-analysis for total number of coloured pixels for different emotions



tactile sensitivity



Healthy controls

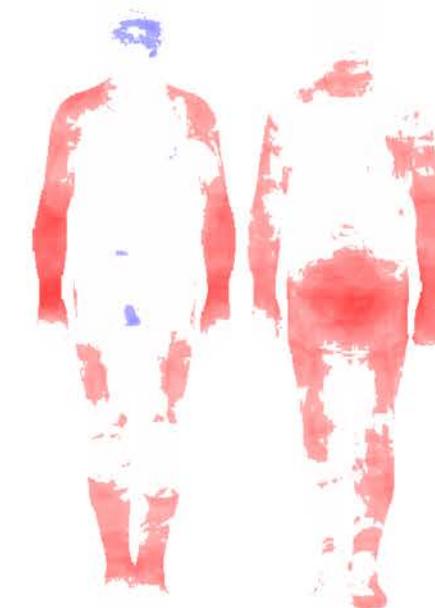


All pain patients

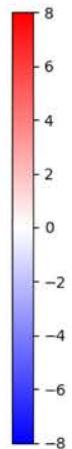
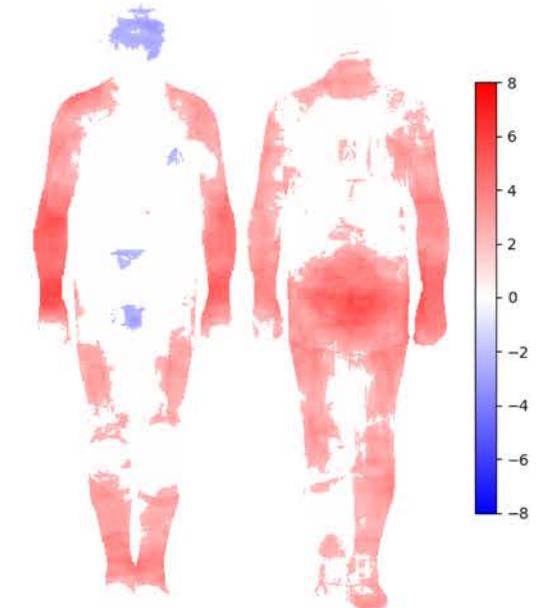


nociceptive sensitivity

Difference

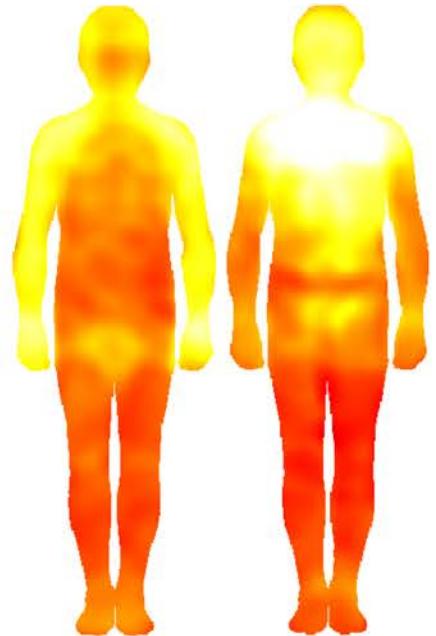


Difference, no FDR



hedonic sensitivity

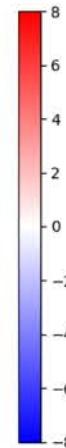
Healthy controls



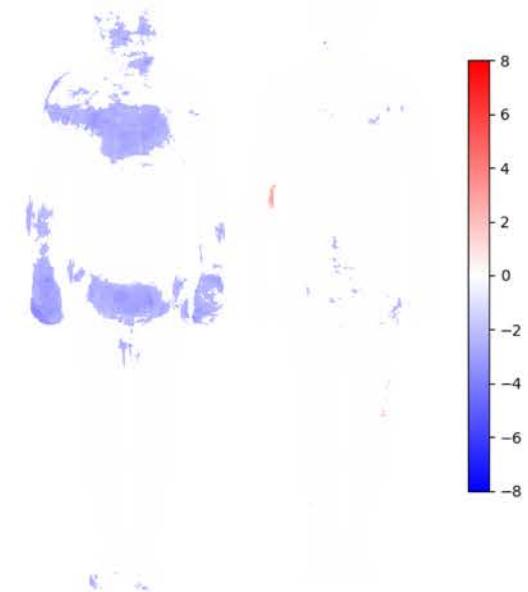
All pain patients

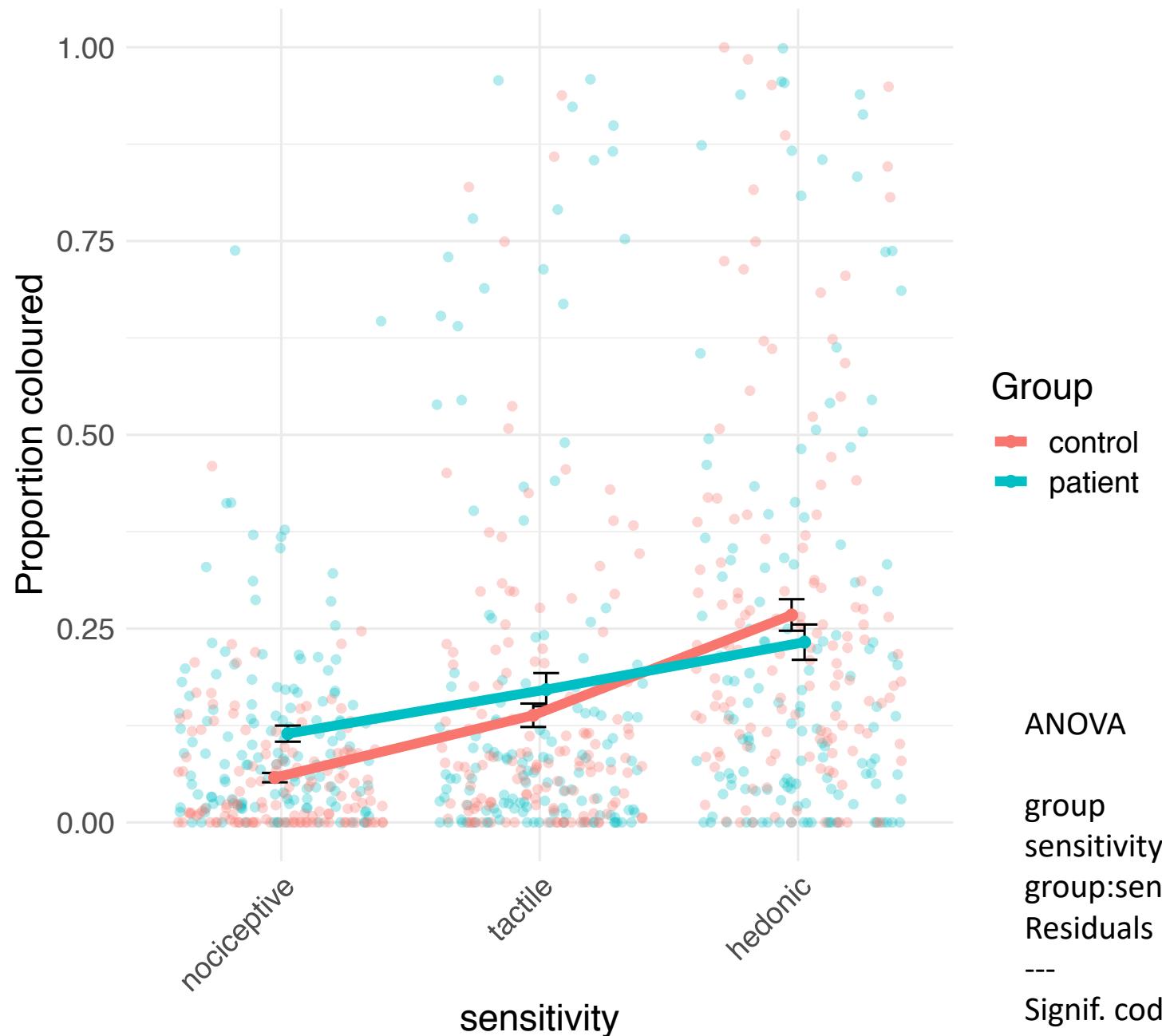


Difference



Difference, no FDR

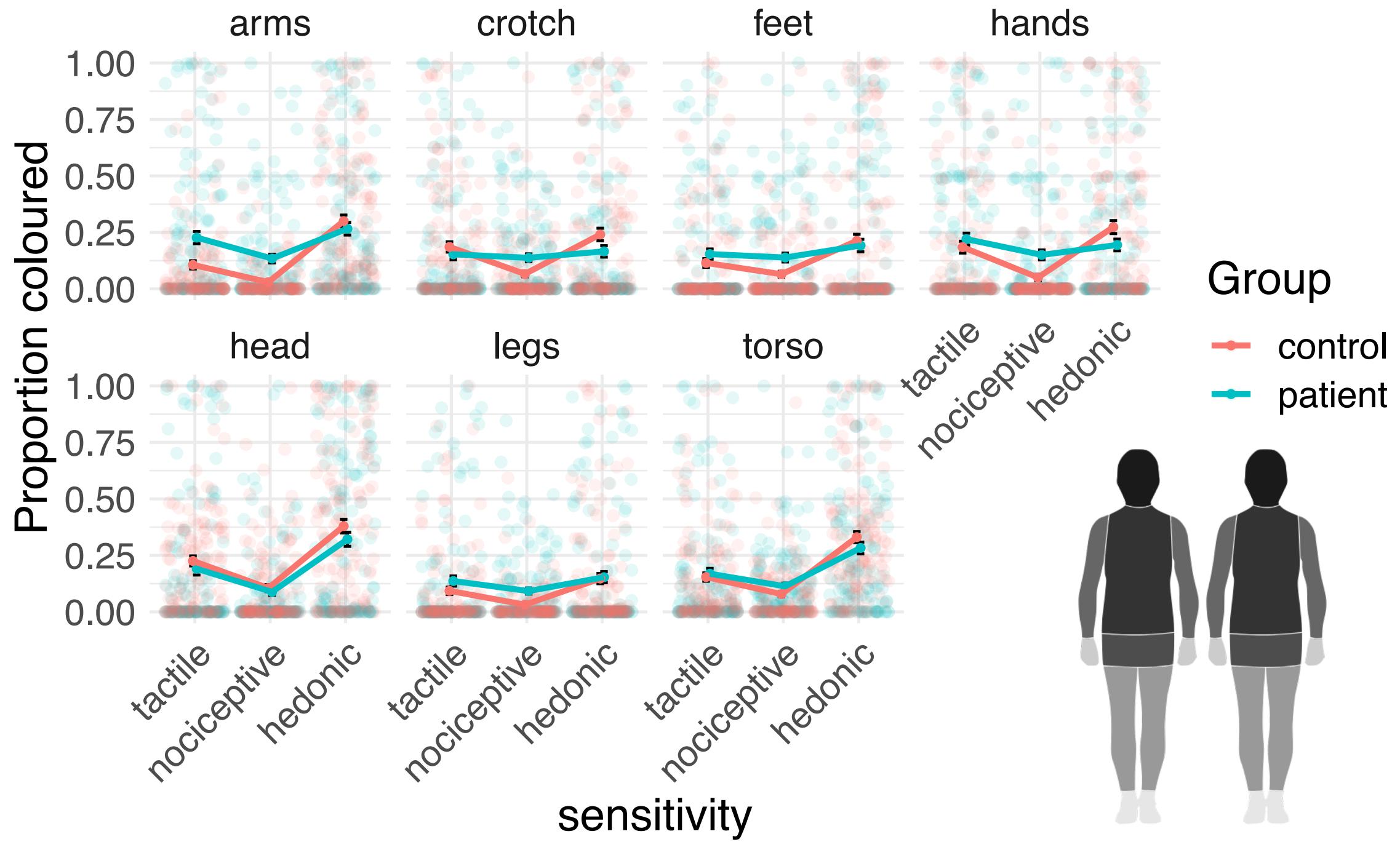




ANOVA

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
group	1	0.07	0.0674	1.700	0.1927
sensitivity	2	3.66	1.8290	46.135	<2e-16 ***
group:sensitivity	2	0.31	0.1532	3.865	0.0214 *
Residuals	804	31.87	0.0396		

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

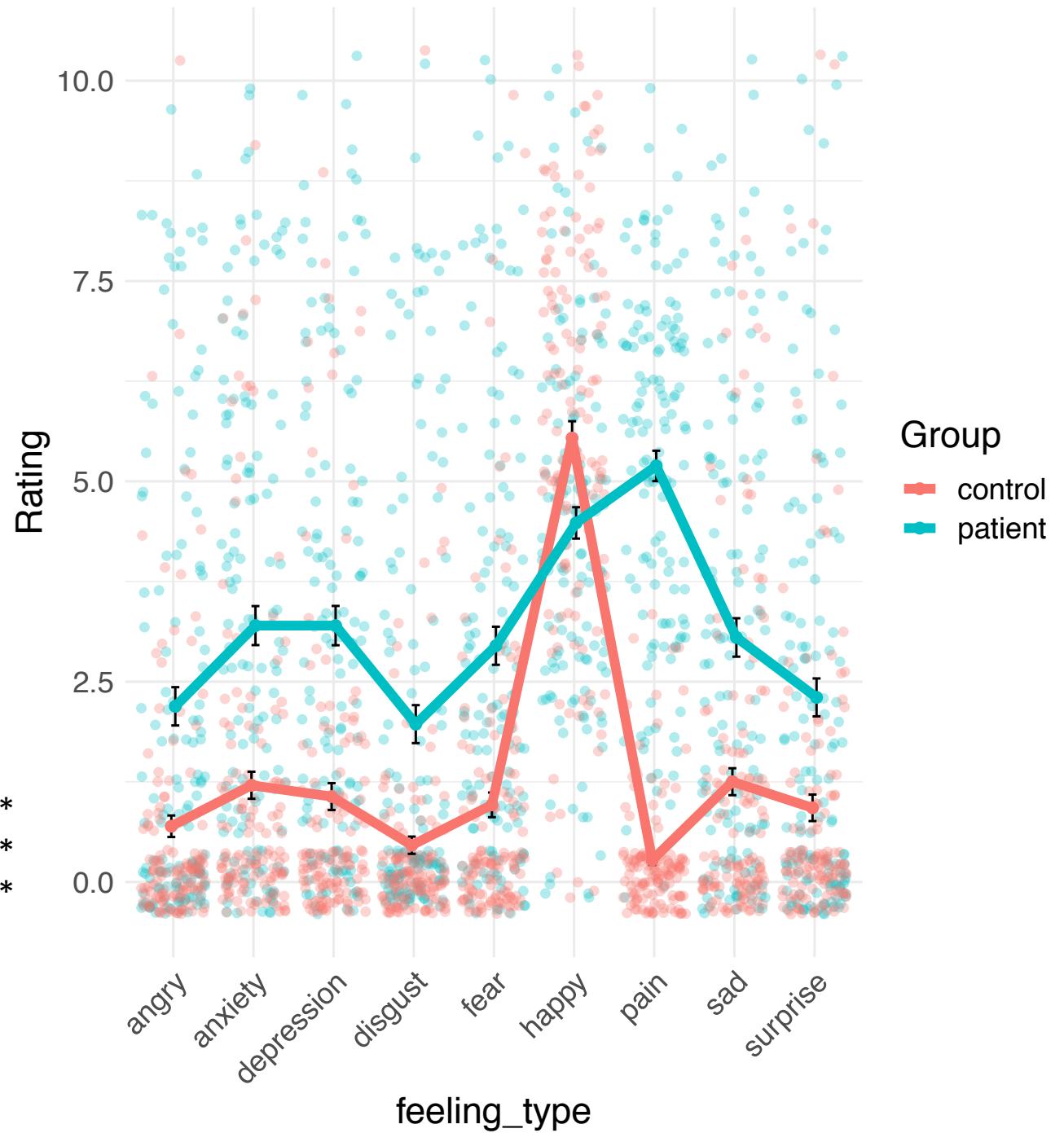


"Kuinka paljon tunnet tällä hetkellä..."
(0-10)

ANOVA tunne * ryhmä

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
group	1	1958	1957.5	378.54	<2e-16 ***
Feeling	8	2724	340.5	65.84	<2e-16 ***
group:feeling	8	1244	155.6	30.08	<2e-16 ***
Residuals	2412	12473	5.2		

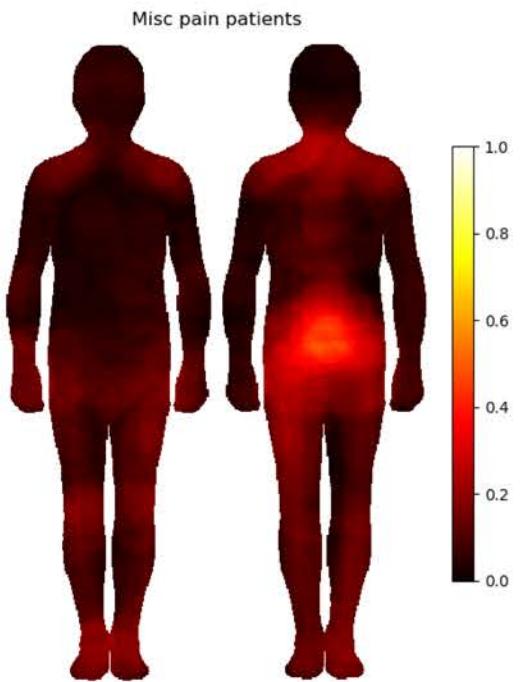
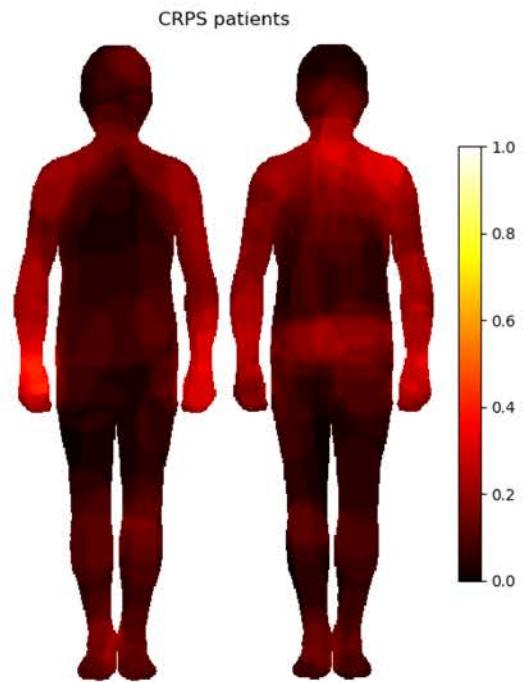
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 '' 1



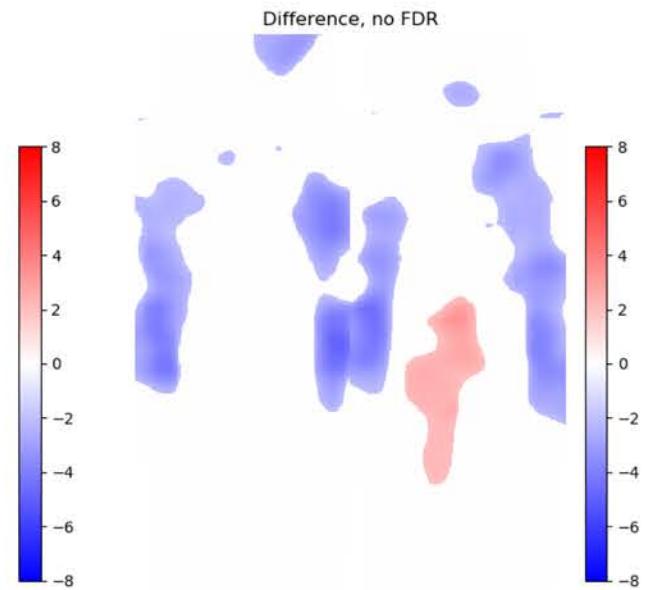
CRPS patients vs other pain patients

N = 135 (42 CRPS, 93 other pain patients)

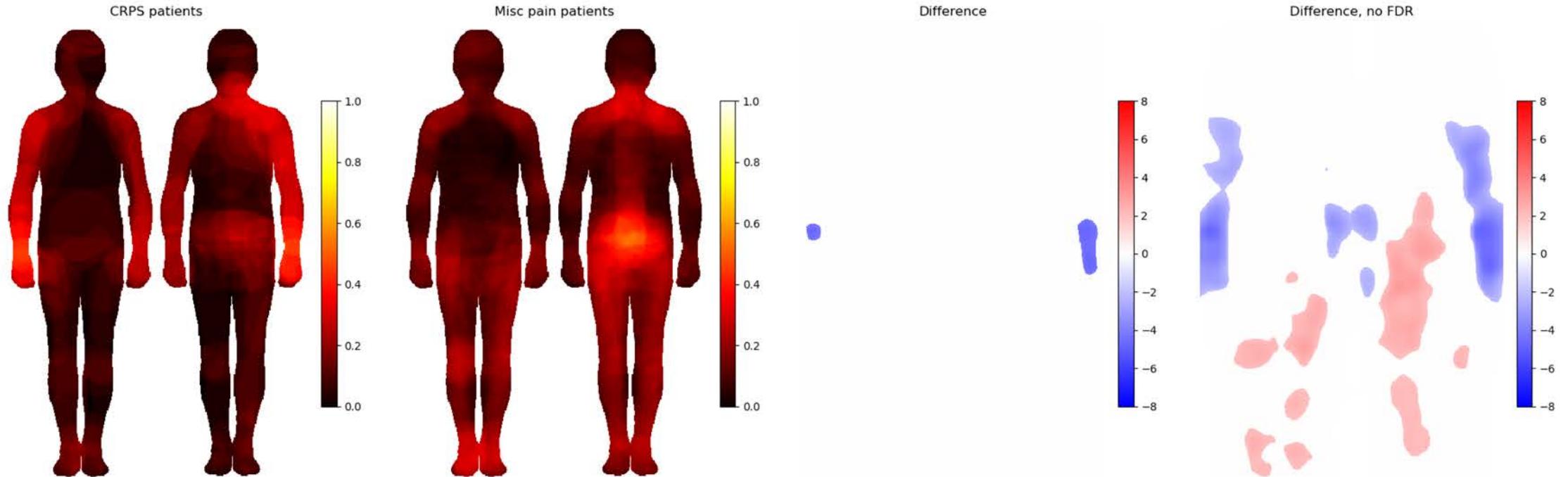
Current pain

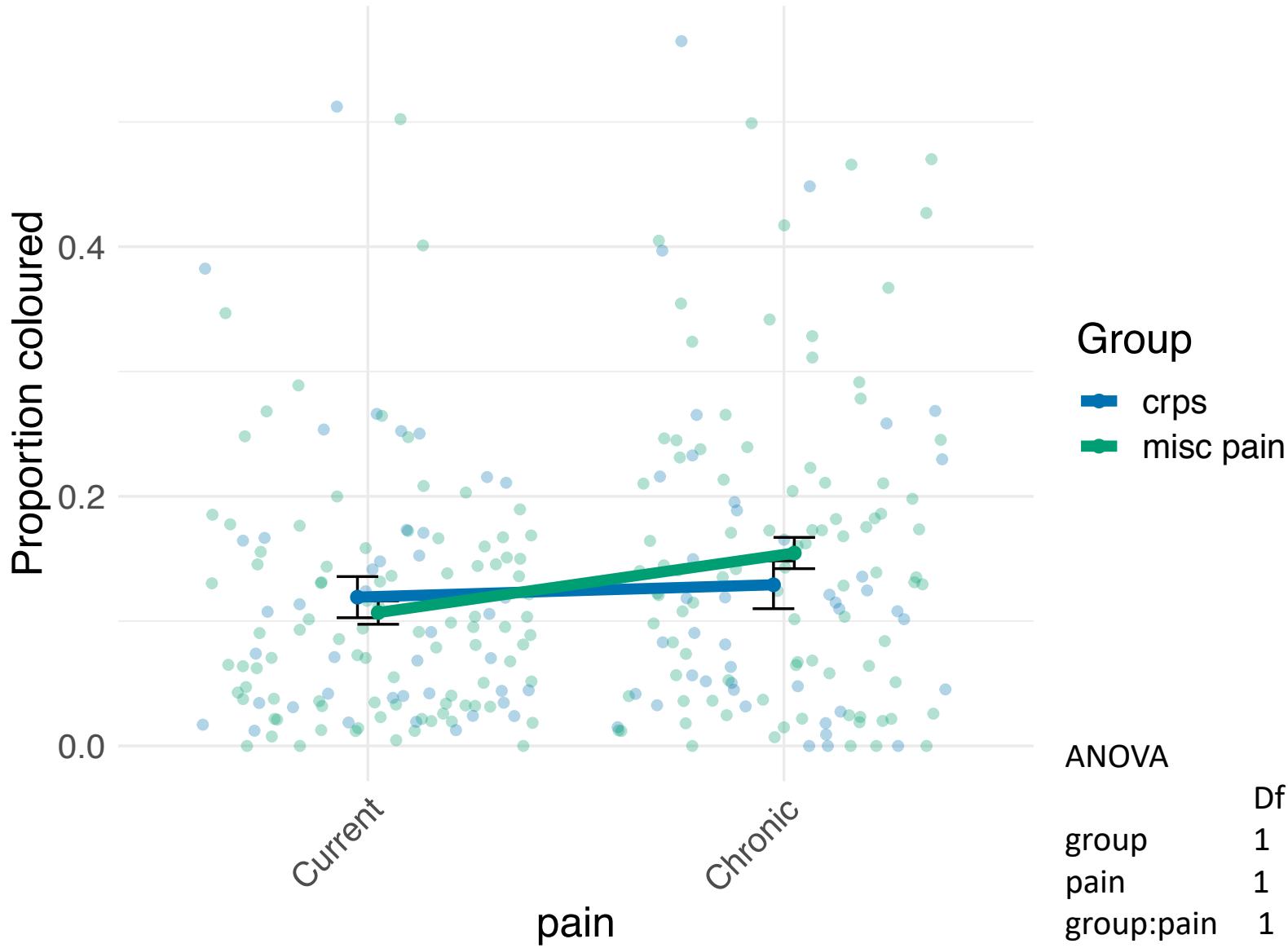


Difference



chonic_pain





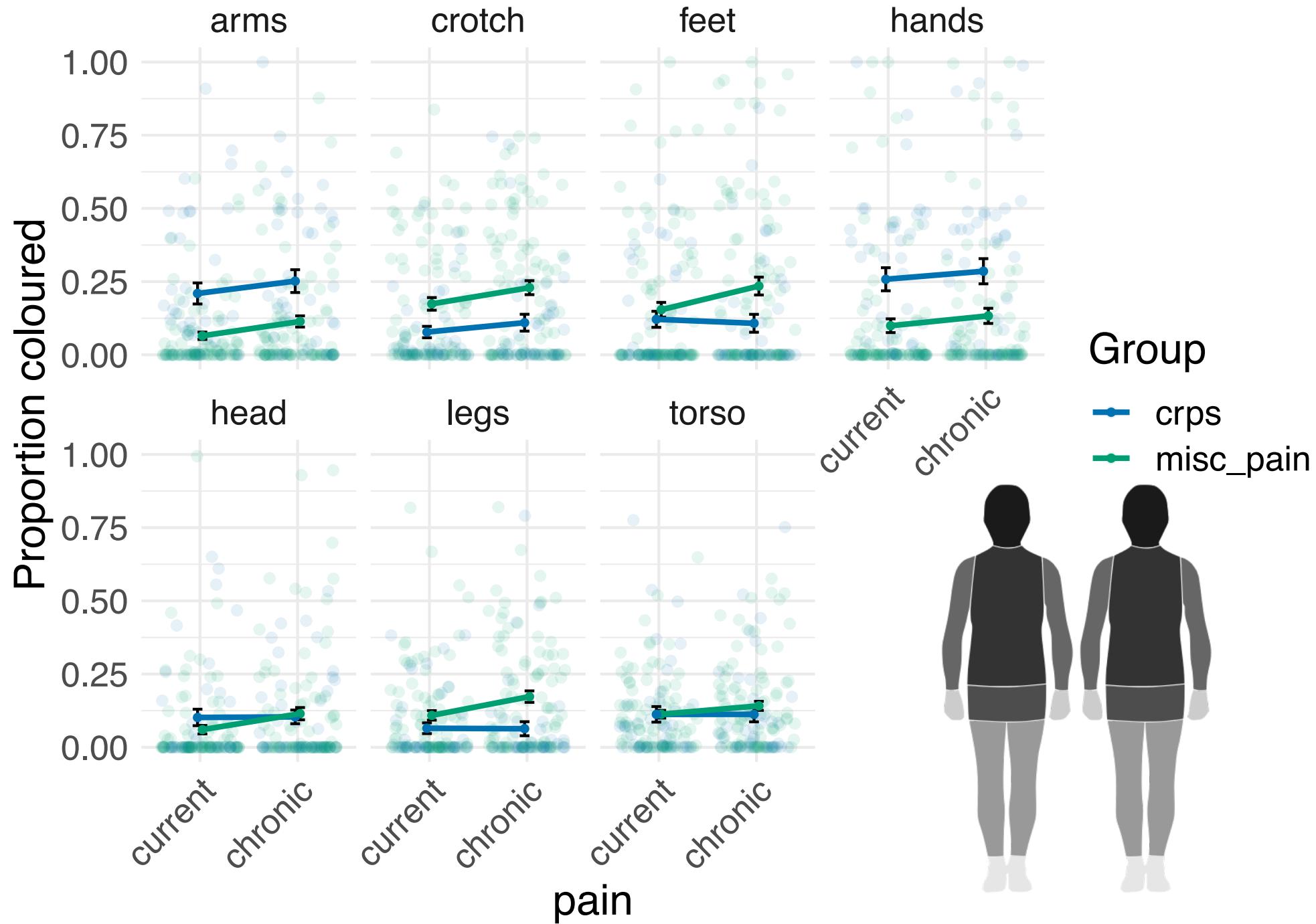
Group

- crps
- misc pain

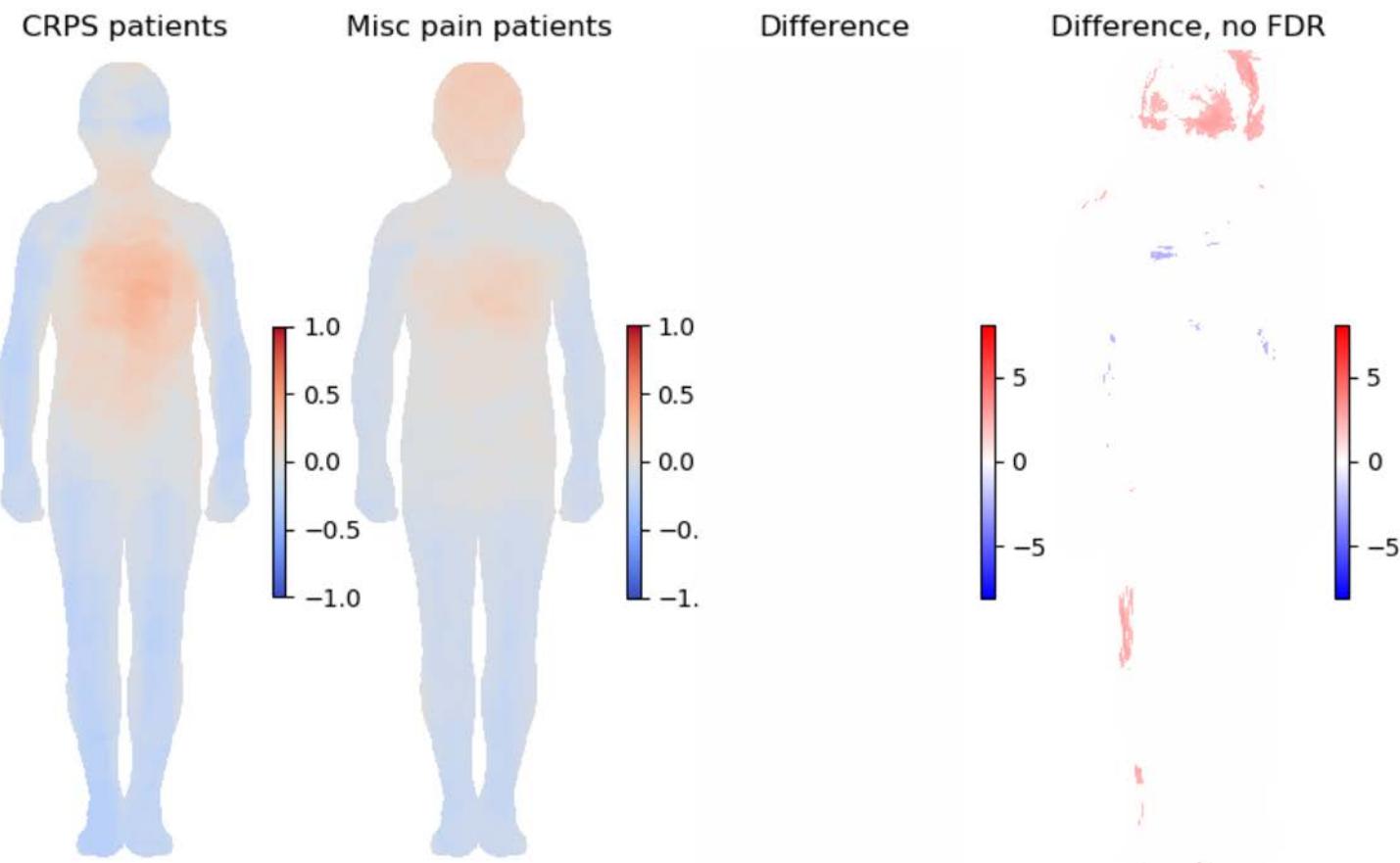
ANOVA

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
group	1	0.002	0.00247	0.206	0.65008
pain	1	0.087	0.08725	7.272	0.00745 **
group:pain	1	0.021	0.02066	1.722	0.19058
Residuals	266	3.191	0.01200		
Signif. codes:	0 '***'	0.001 '**'	0.01 '*'	0.05 '.'	0.1 '' 1

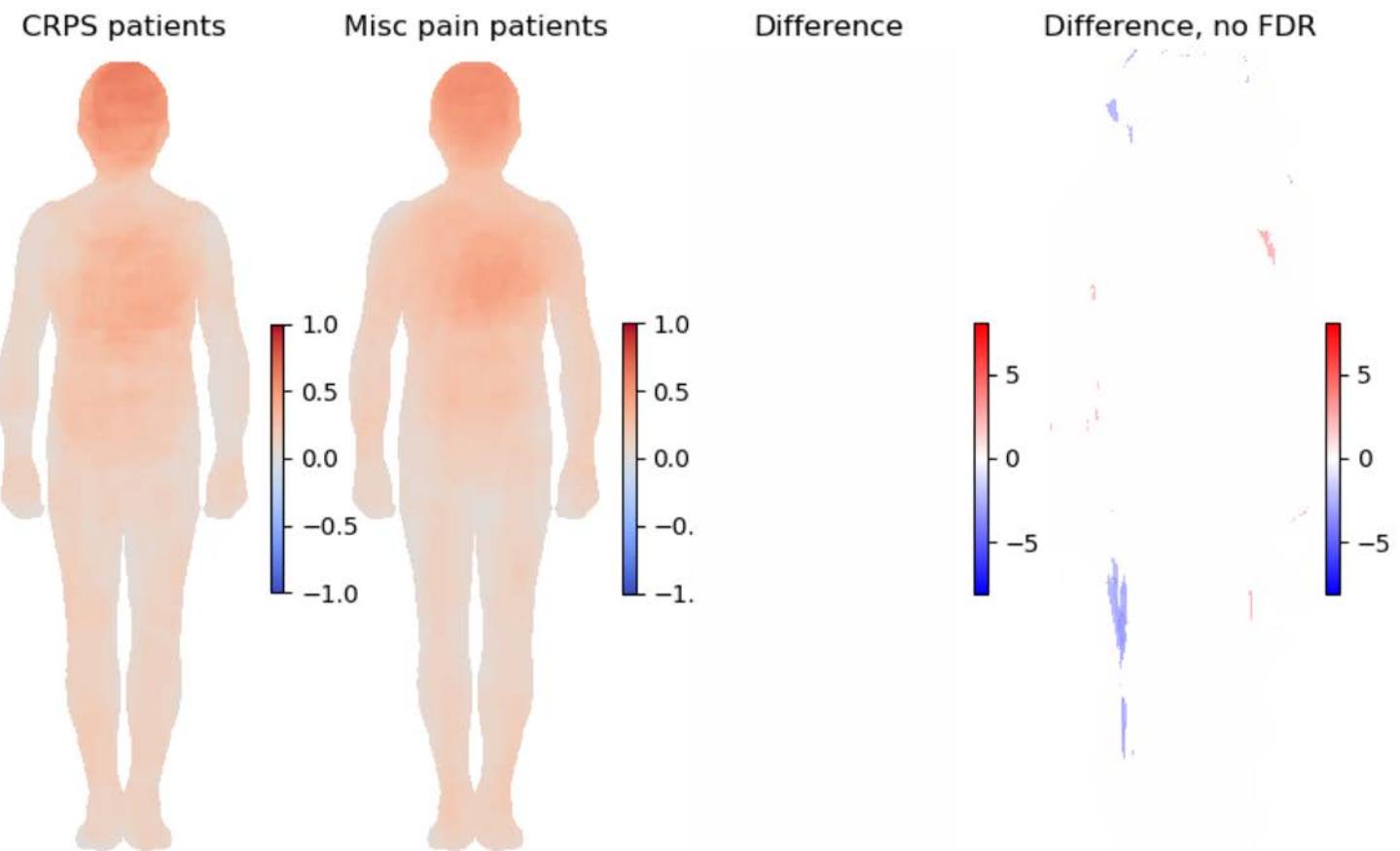
ROI-wise differences in current and chronic pain in CRPS patients vs other pain patients



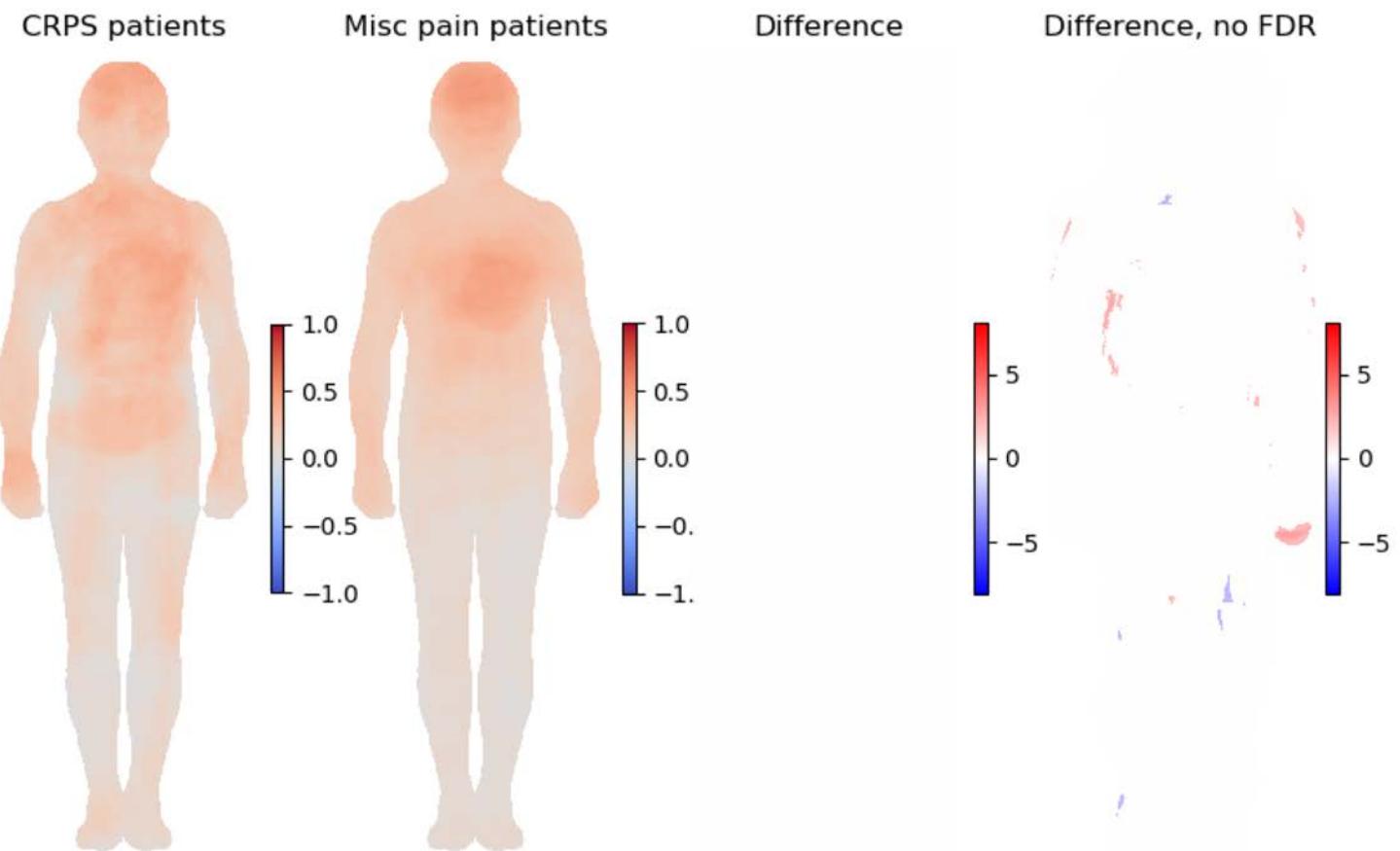
sadness



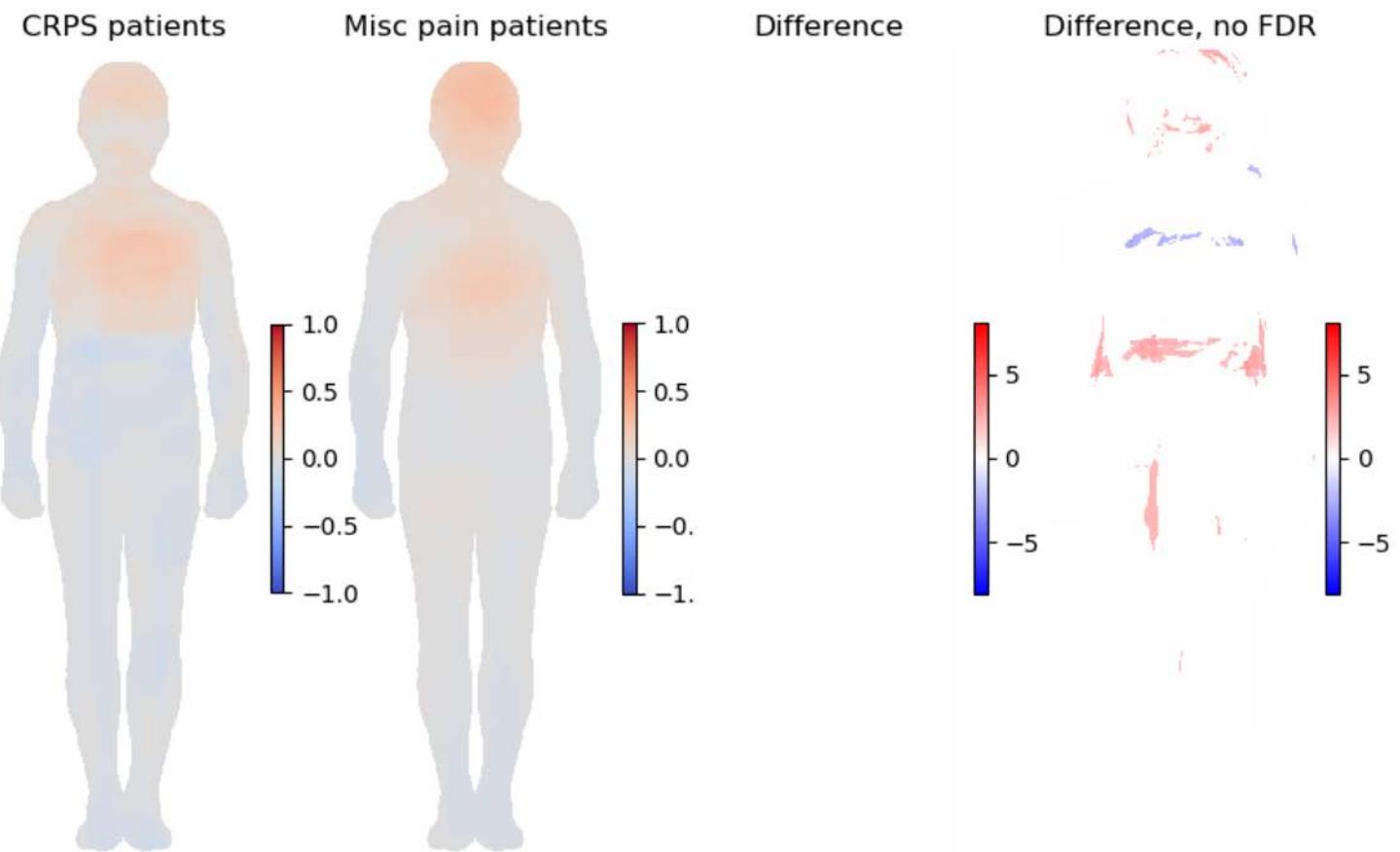
happiness



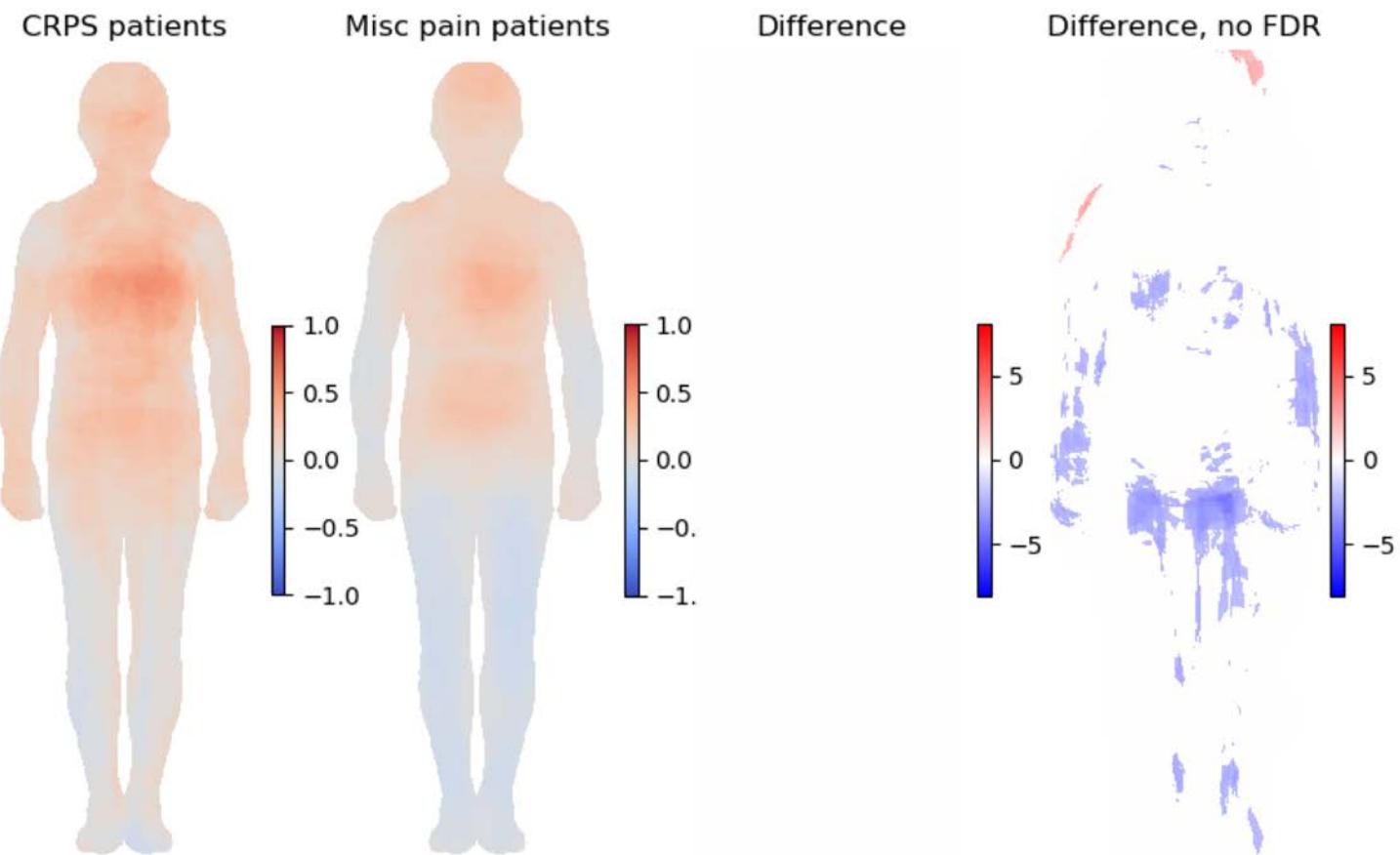
anger



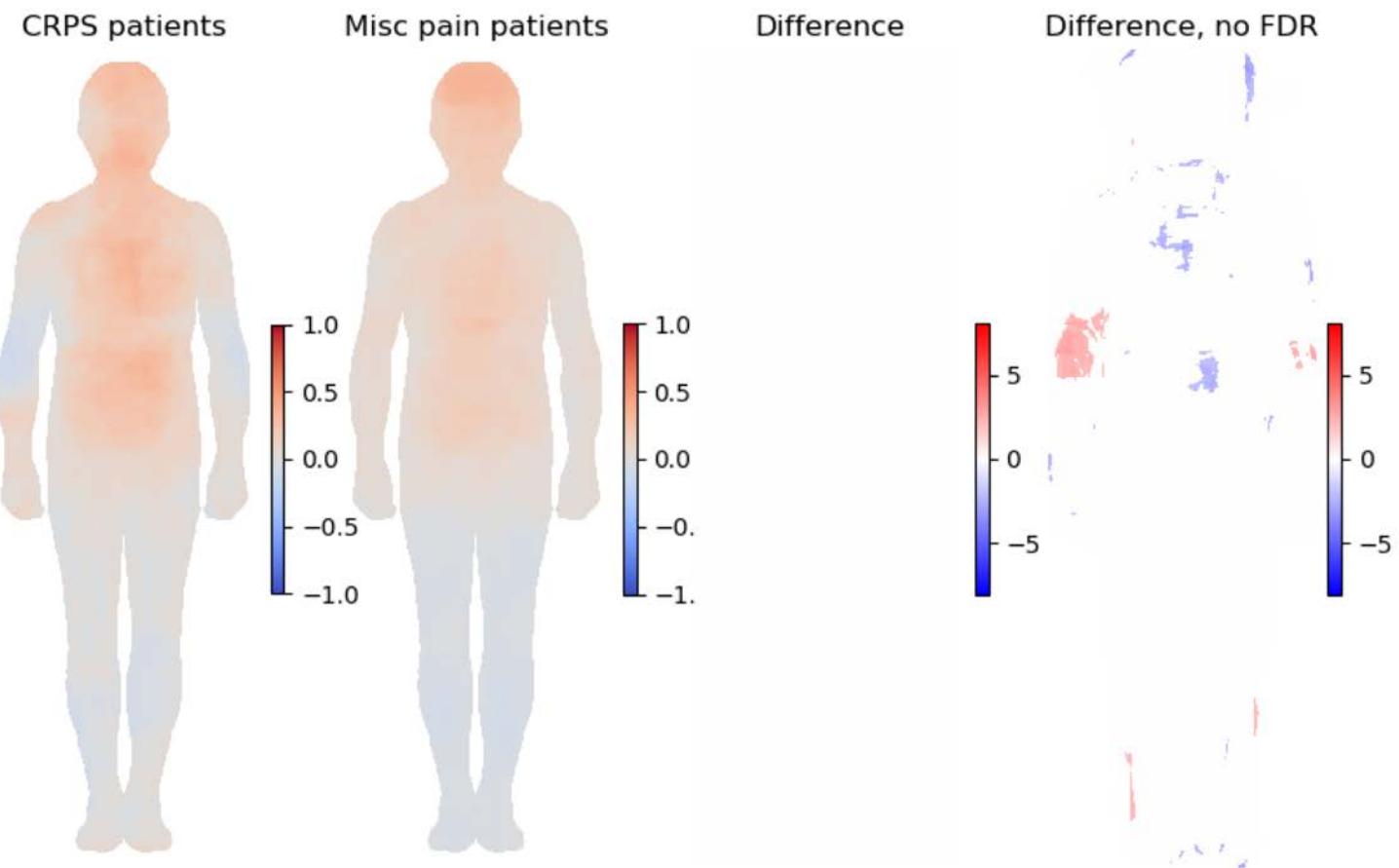
surprise



fear

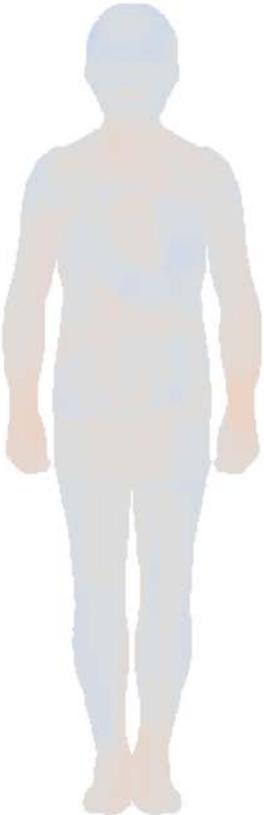


disgust

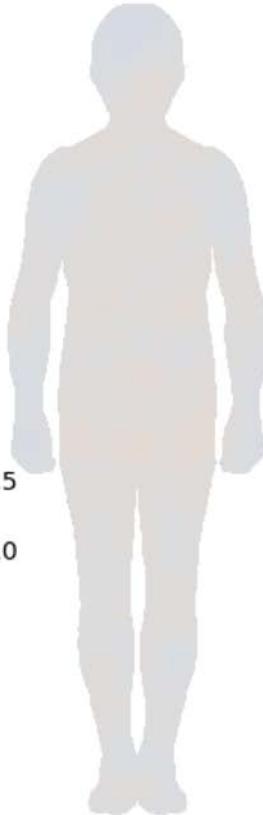


neutral

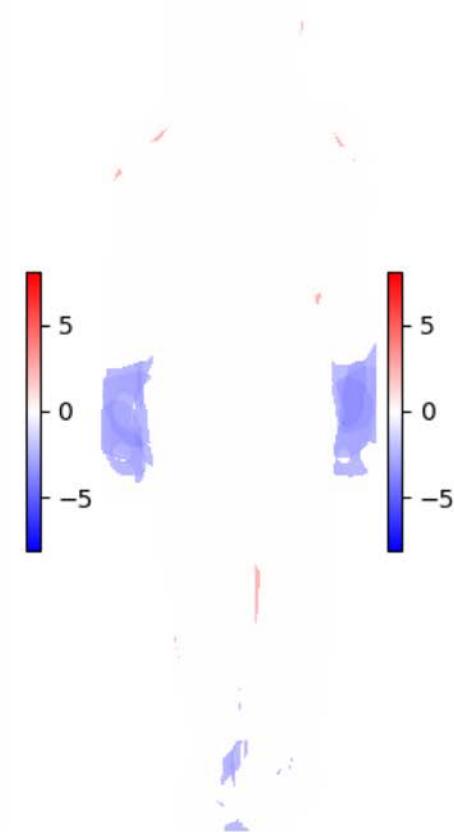
CRPS patients



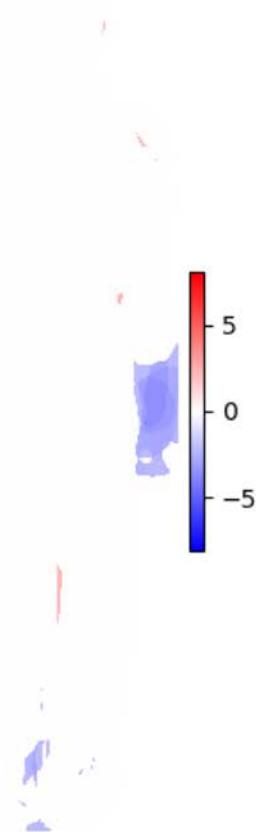
Misc pain patients

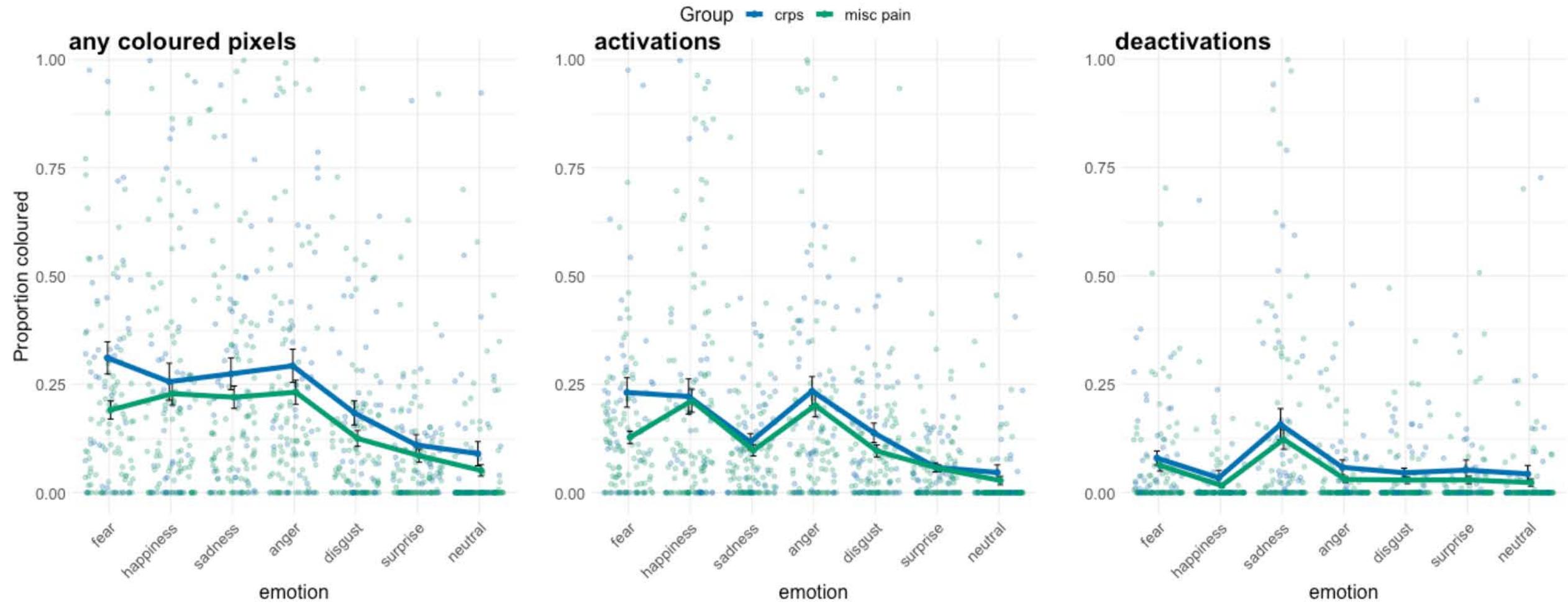


Difference



Difference, no FDR



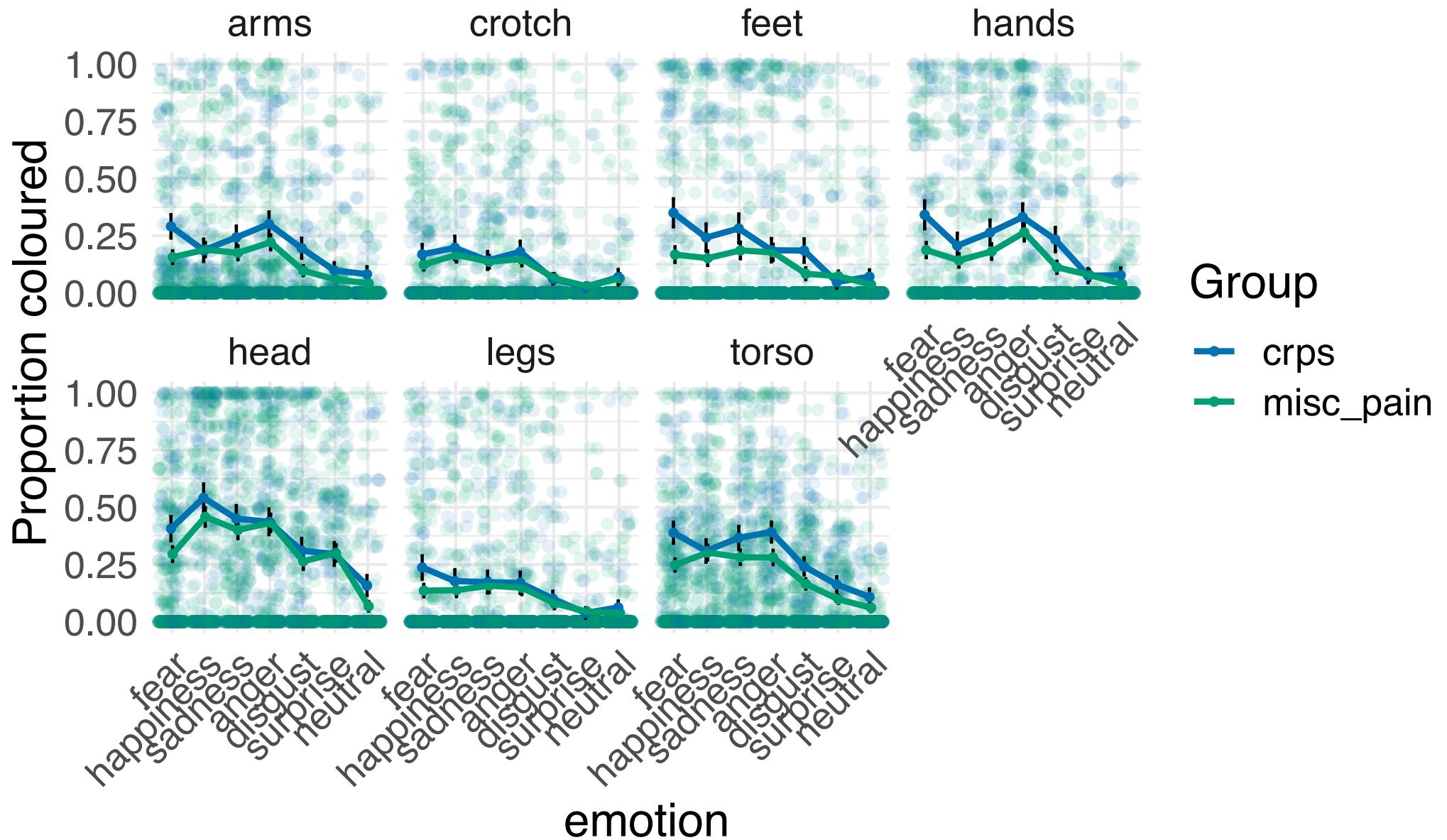
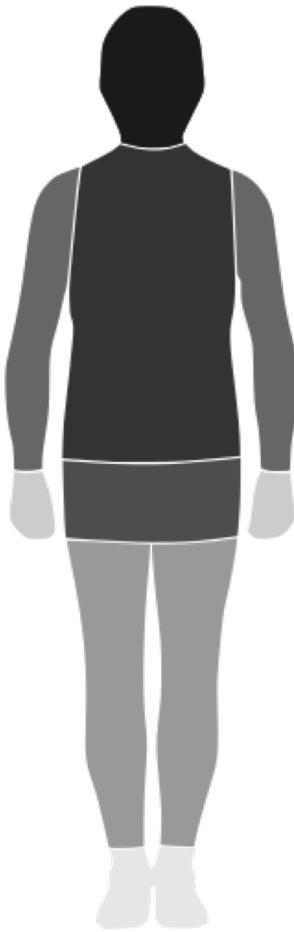


ANOVA

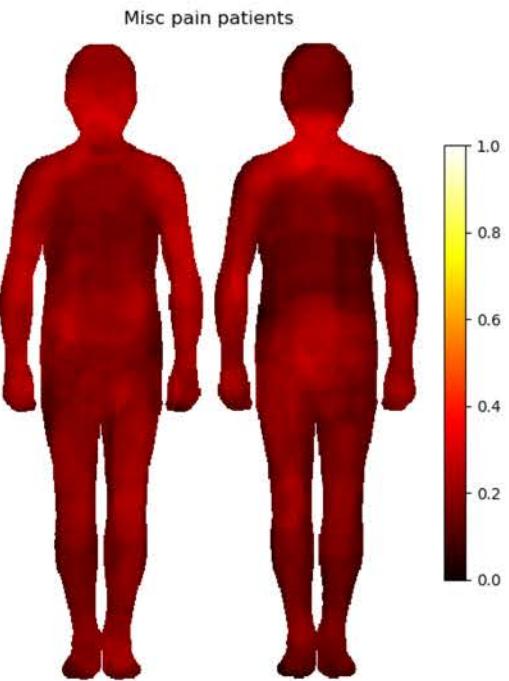
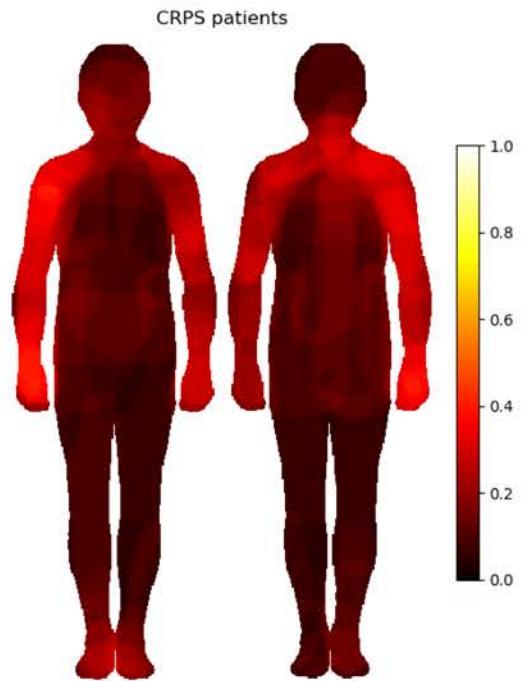
	Df	Sum Sq	Mean Sq	F value	Pr(>F)
group	1	0.217	0.2170	7.431	0.00653 **
emotion	6	4.128	0.6880	23.562	< 2e-16 ***
group:emotion	6	0.201	0.0335	1.146	0.33344
Residuals	931	27.186	0.0292		

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

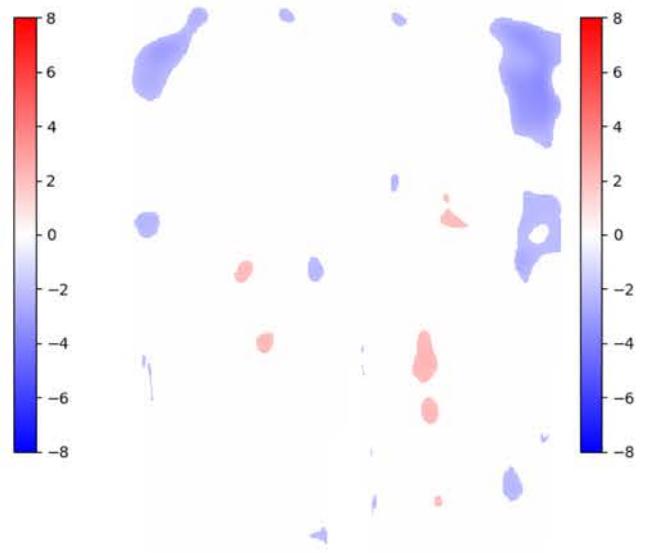
ROI-analysis for total number of coloured pixels for different emotions



tactile sensitivity

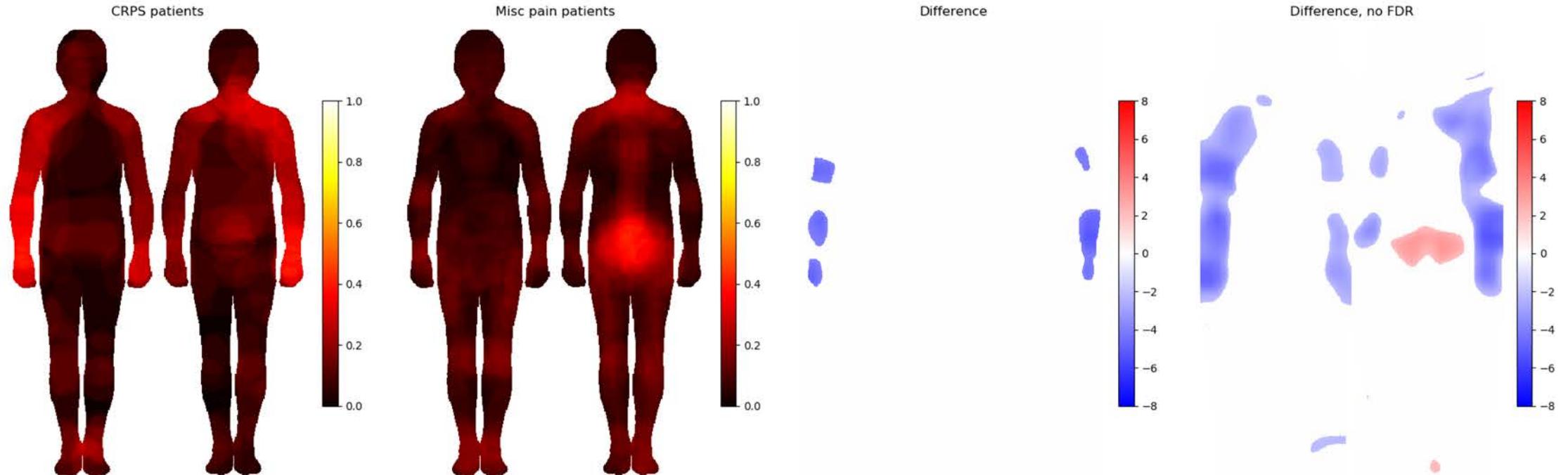


Difference

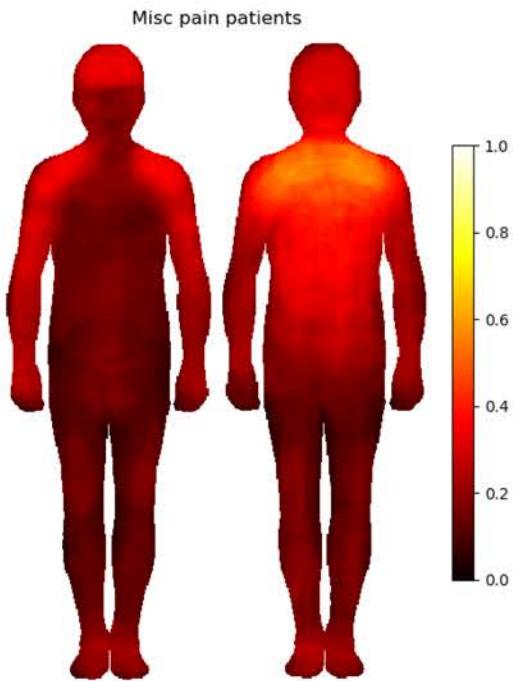
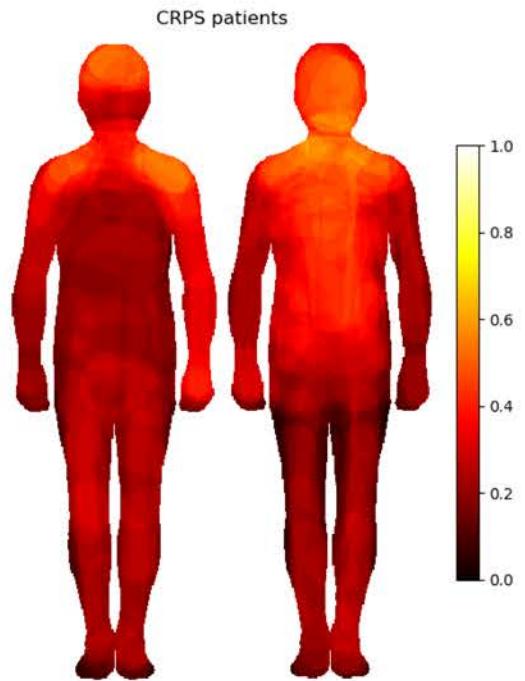


Difference, no FDR

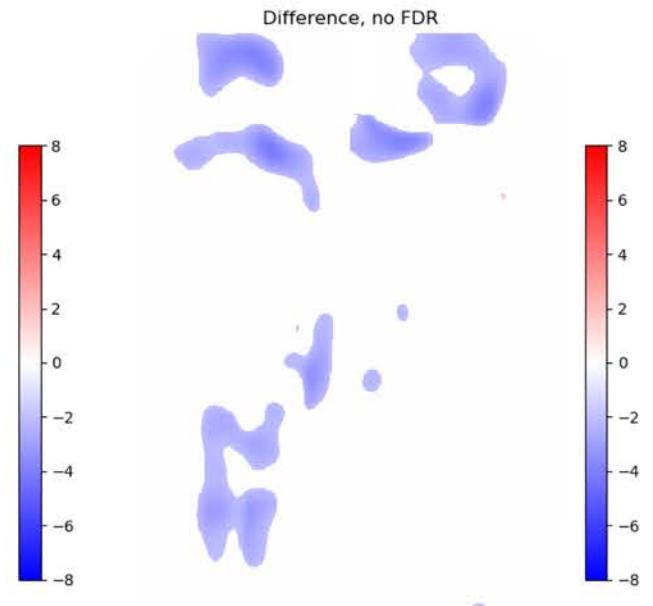
nociceptive sensitivity



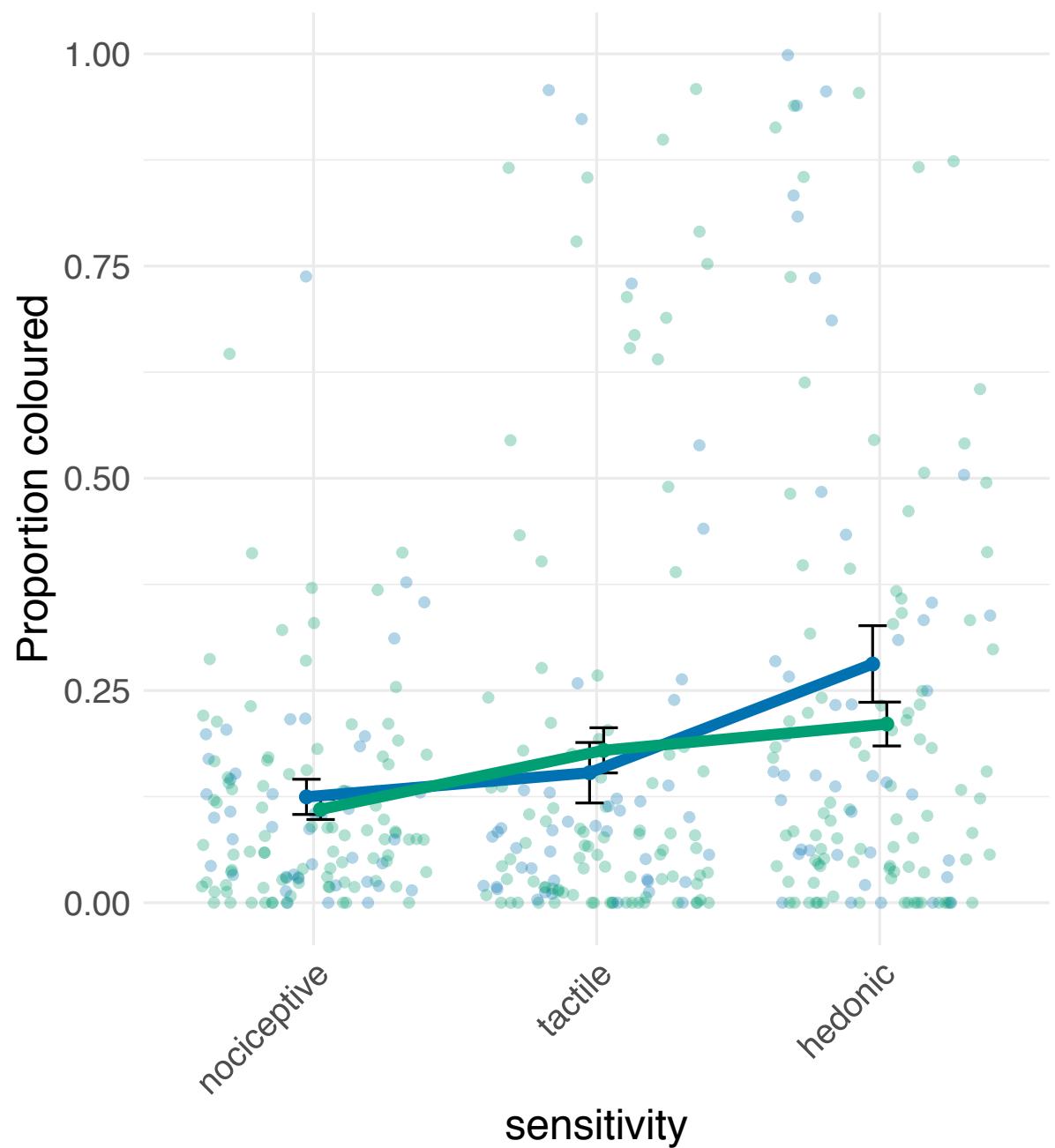
hedonic sensitivity



Difference



Difference, no FDR

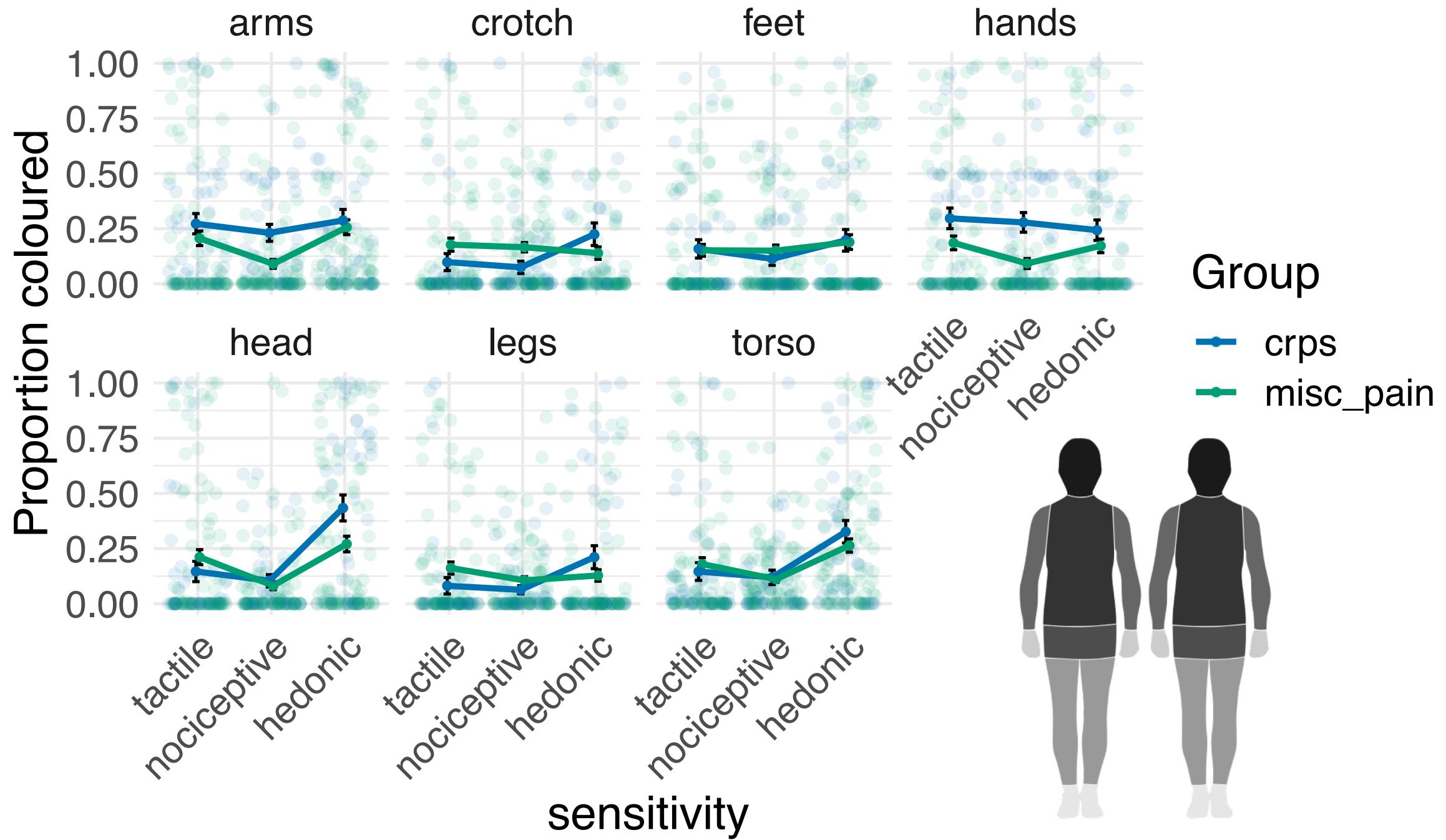


Group

- crps
- misc pain

ANOVA

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
group	1	0.034	0.0337	0.691	0.406
sensitivity	2	0.940	0.4702	9.657	0.0000803 ***
group:sensitivity	2	0.137	0.0687	1.411	0.245
Residuals	399	19.429	0.0487		
Signif. codes:	0 '***'	0.001 '**'	0.01 '*'	0.05 '.'	0.1 '' 1

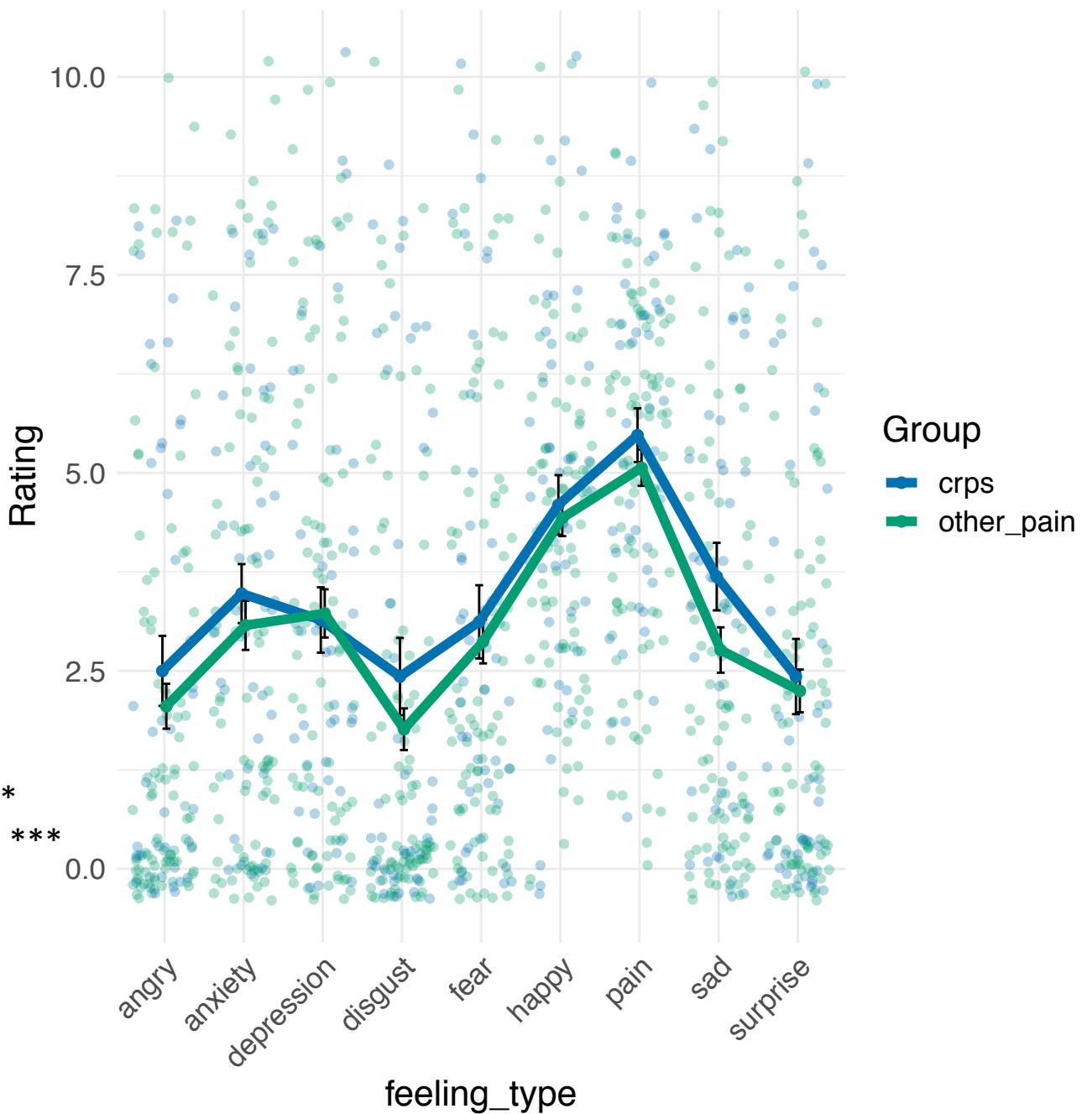


"Kuinka paljon tunnet tällä hetkellä..."
(0-10)

ANOVA tunne * ryhmä

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
pain_condition	1	36	36.35	5.081	0.0244 *
Feeling	8	1218	152.22	21.277	<2e-16 ***
Pain_cond:feeling	8	20	2.54	0.356	0.9435
Residuals	1197	8564	7.15		

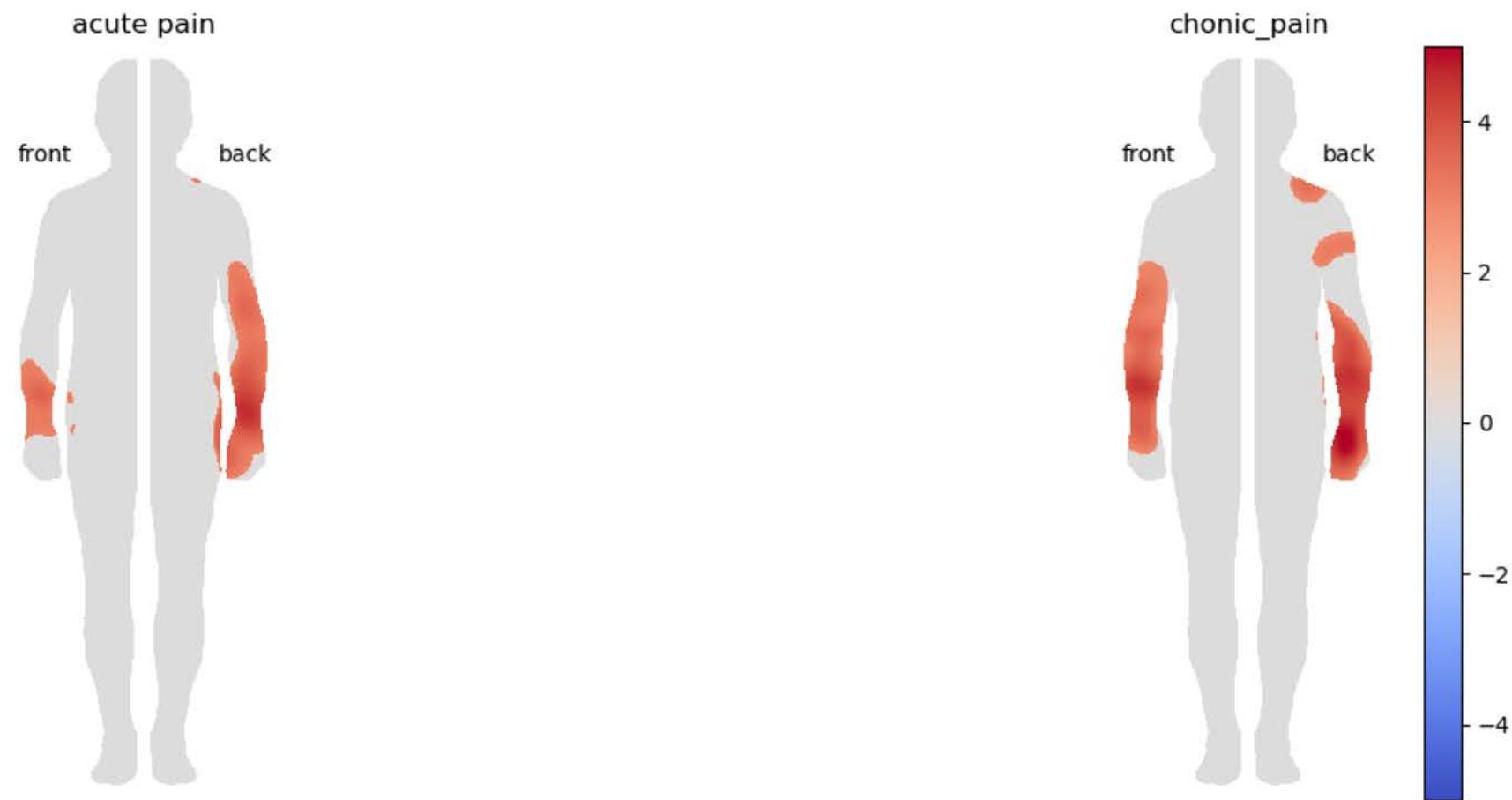
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 '' 1



CRPS patients

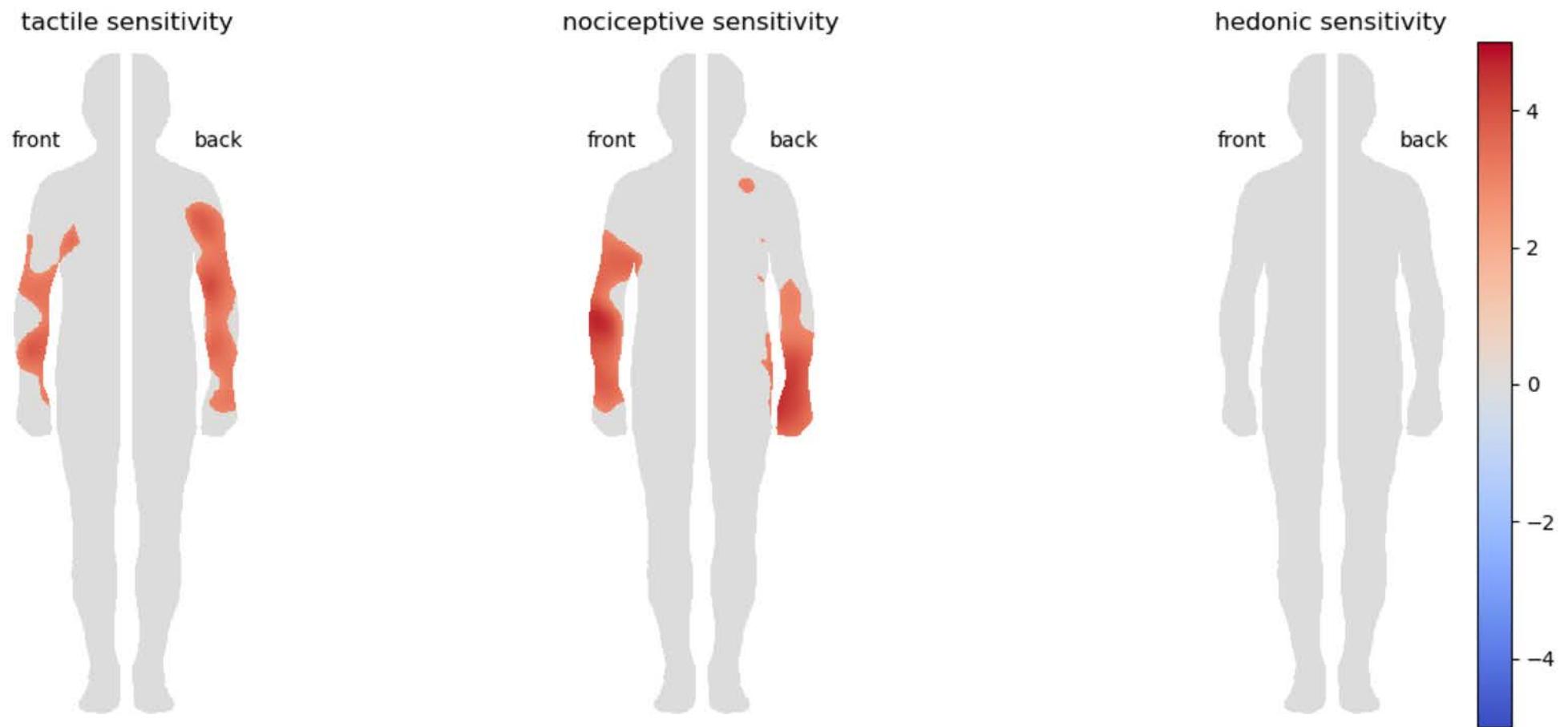
Comparing side with pain to side with no pain within the same subject
(NB: these have not been changed since September)

CRPS patients: pain vs nonpain side



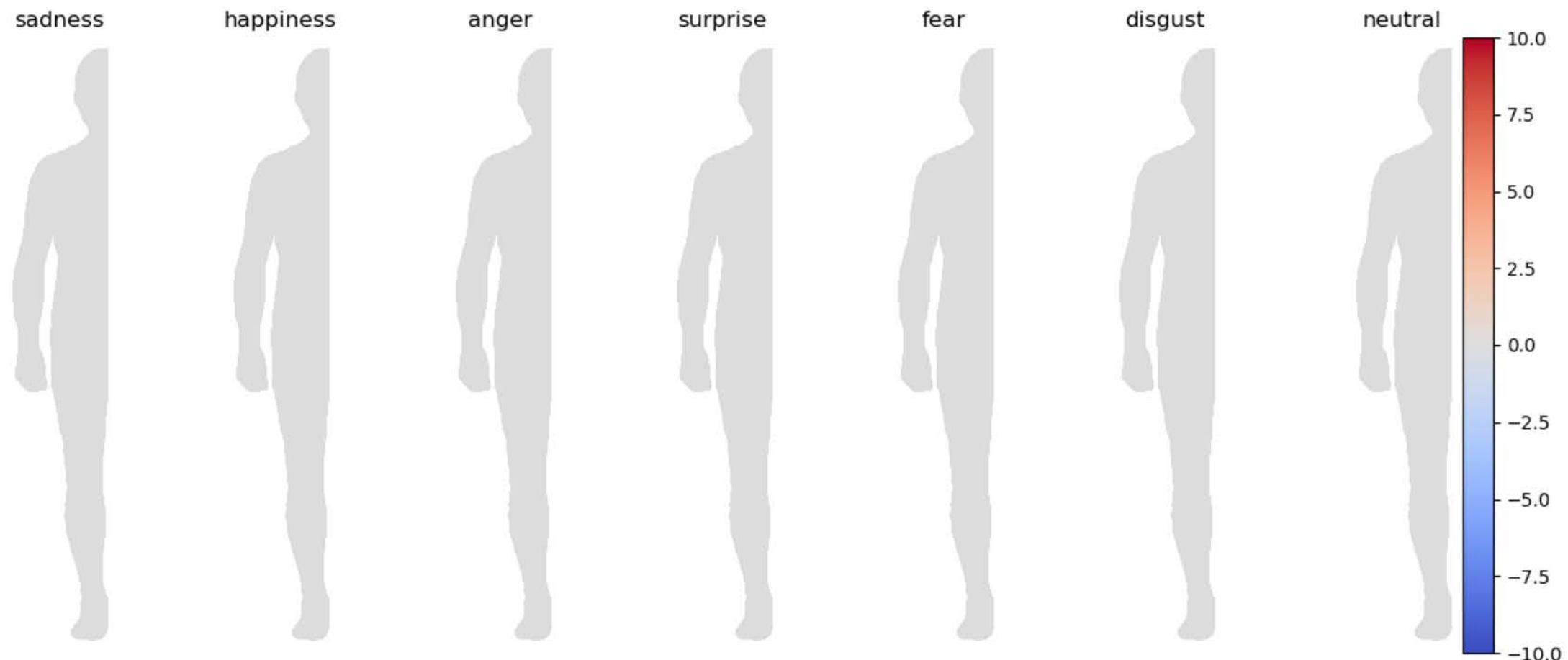
Paired samples t-test, only showing $p < 0.05$
FDR corrected within mask (benjamini-hochberg)

CRPS patients: pain vs nonpain side



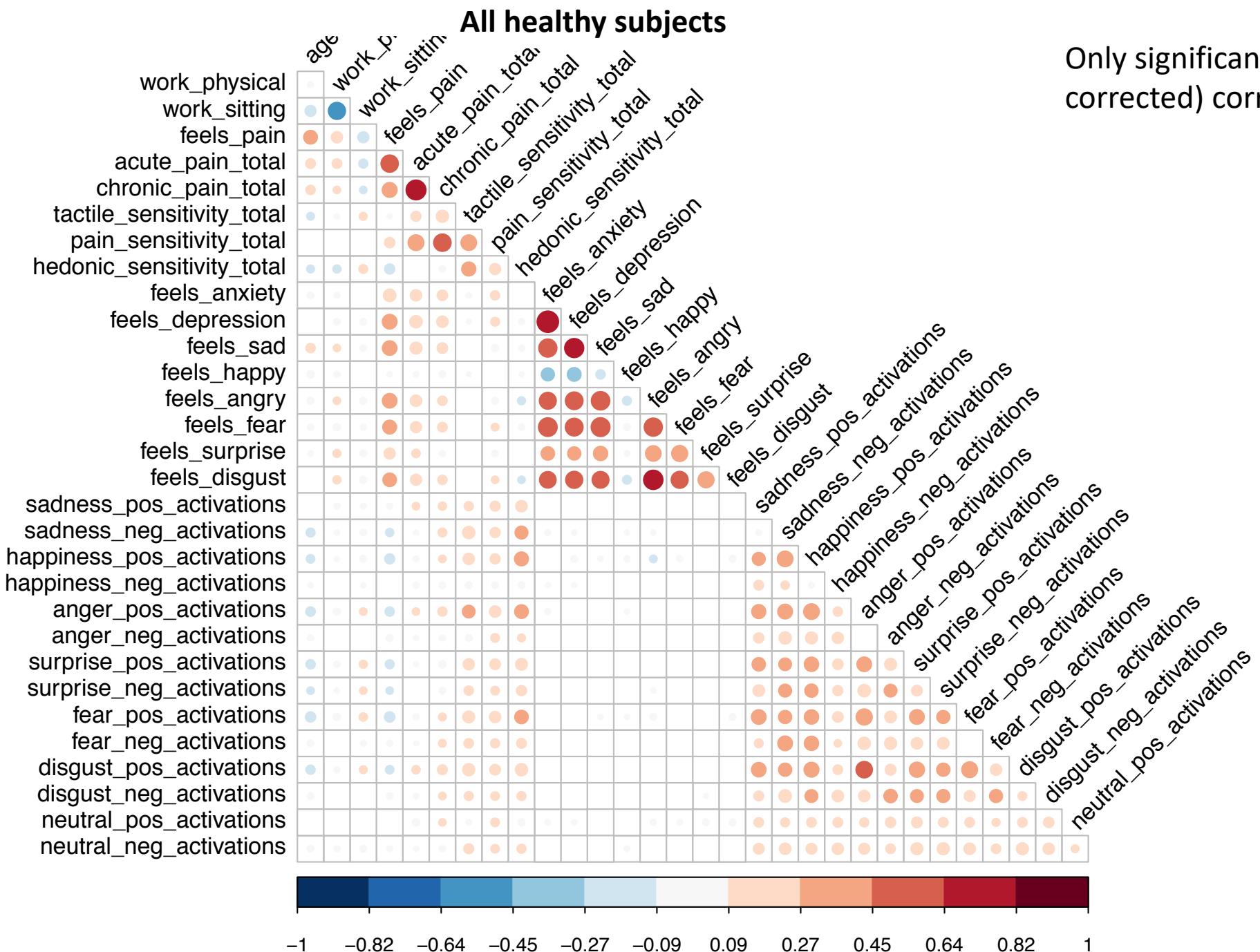
Paired samples t-test, only showing $p < 0.05$
FDR corrected within mask (benjamini-hochberg)

CRPS patients: pain vs nonpain side



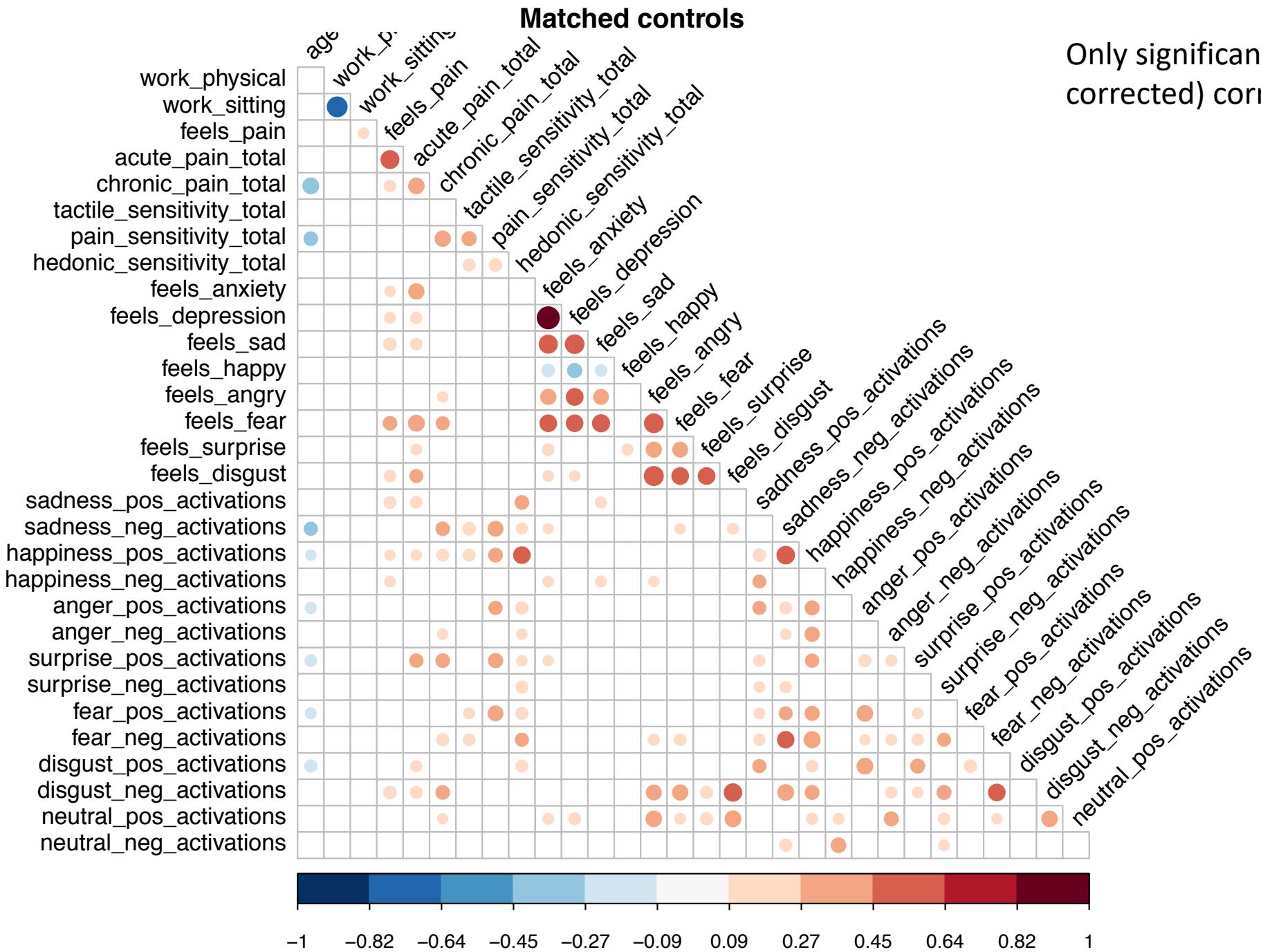
Paired samples t-test, only showing $p < 0.05$
FDR corrected within mask (benjamini-hochberg)

Correlations!



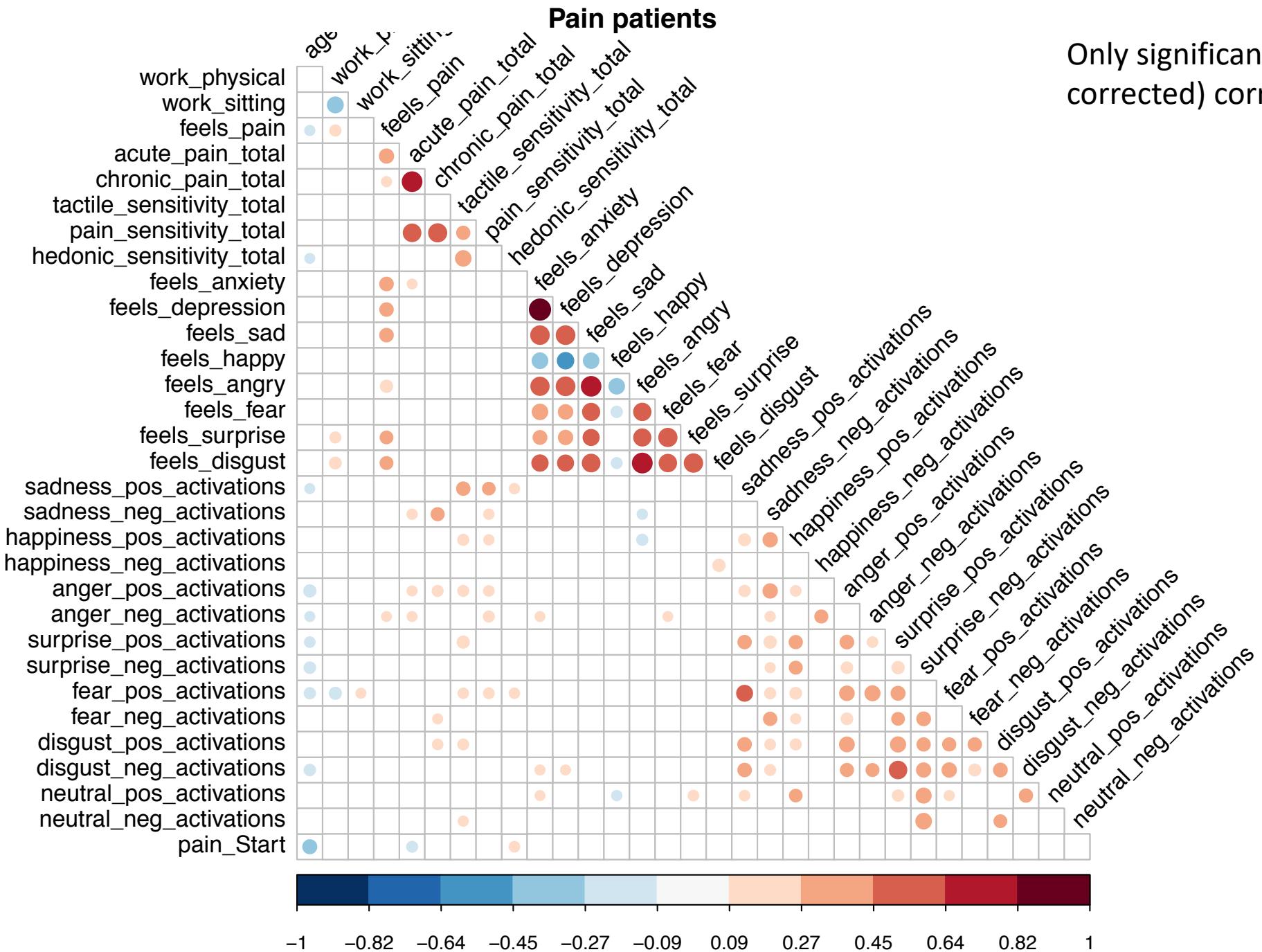
Only significant ($p < 0.05$, Holm corrected) correlations shown

Matched controls

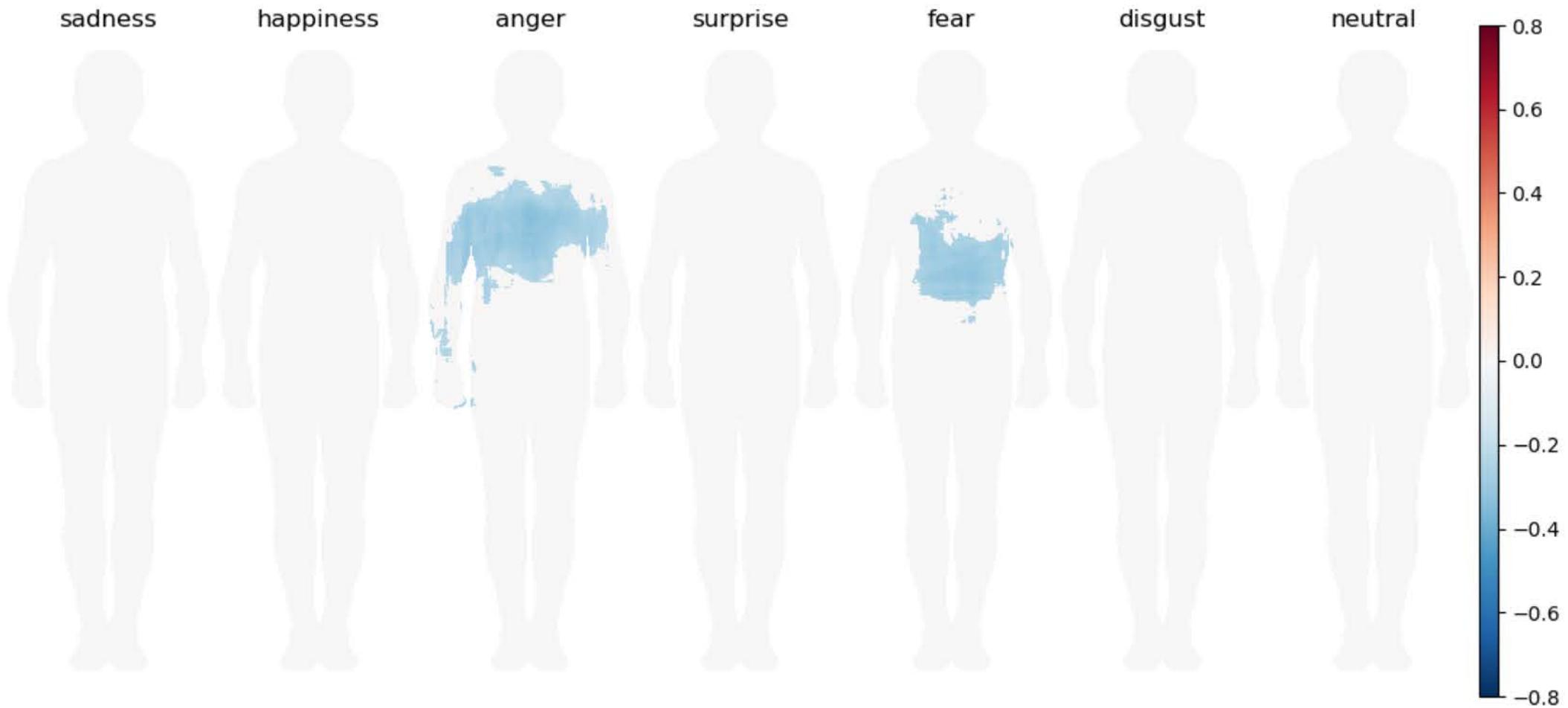


Only significant ($p < 0.05$, Holm corrected) correlations shown

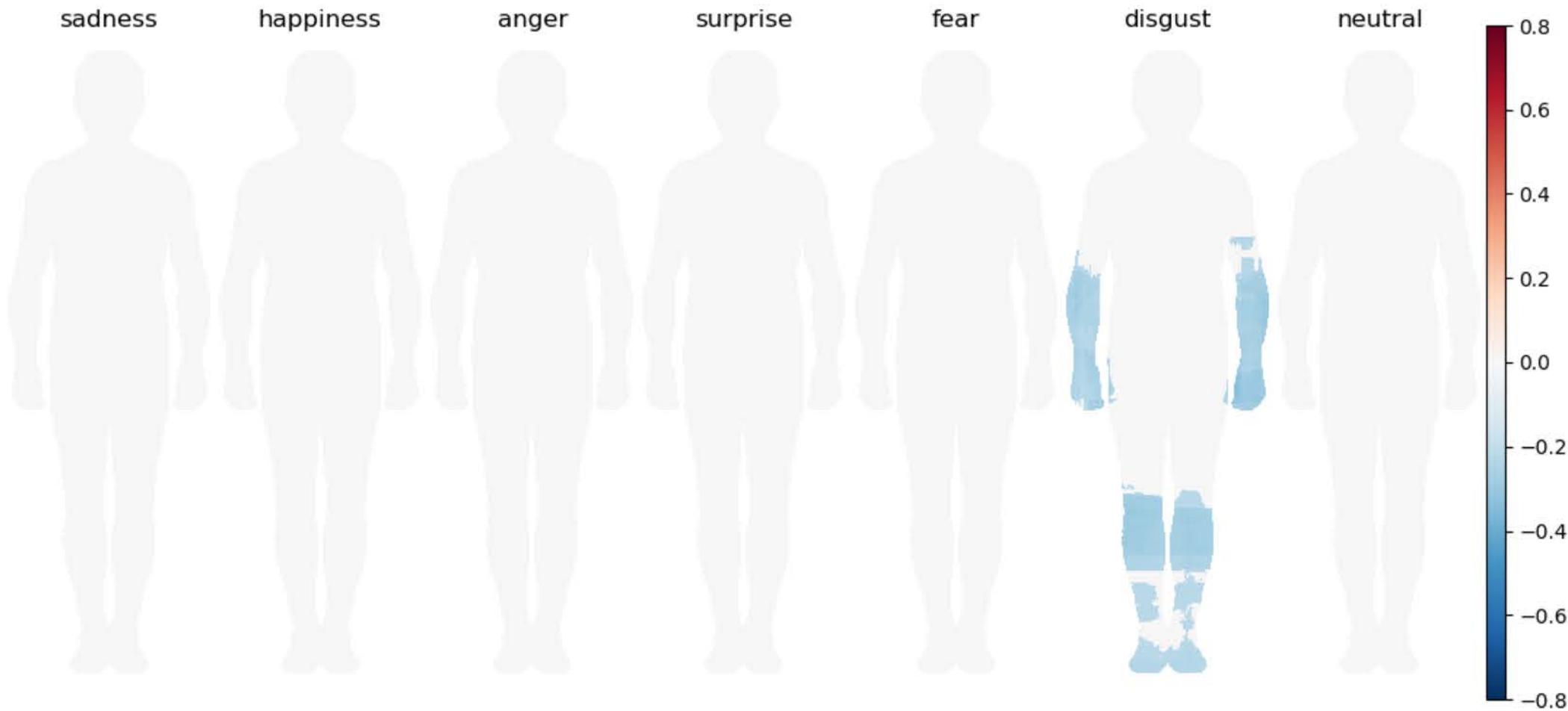
Only significant ($p < 0.05$, Holm corrected) correlations shown



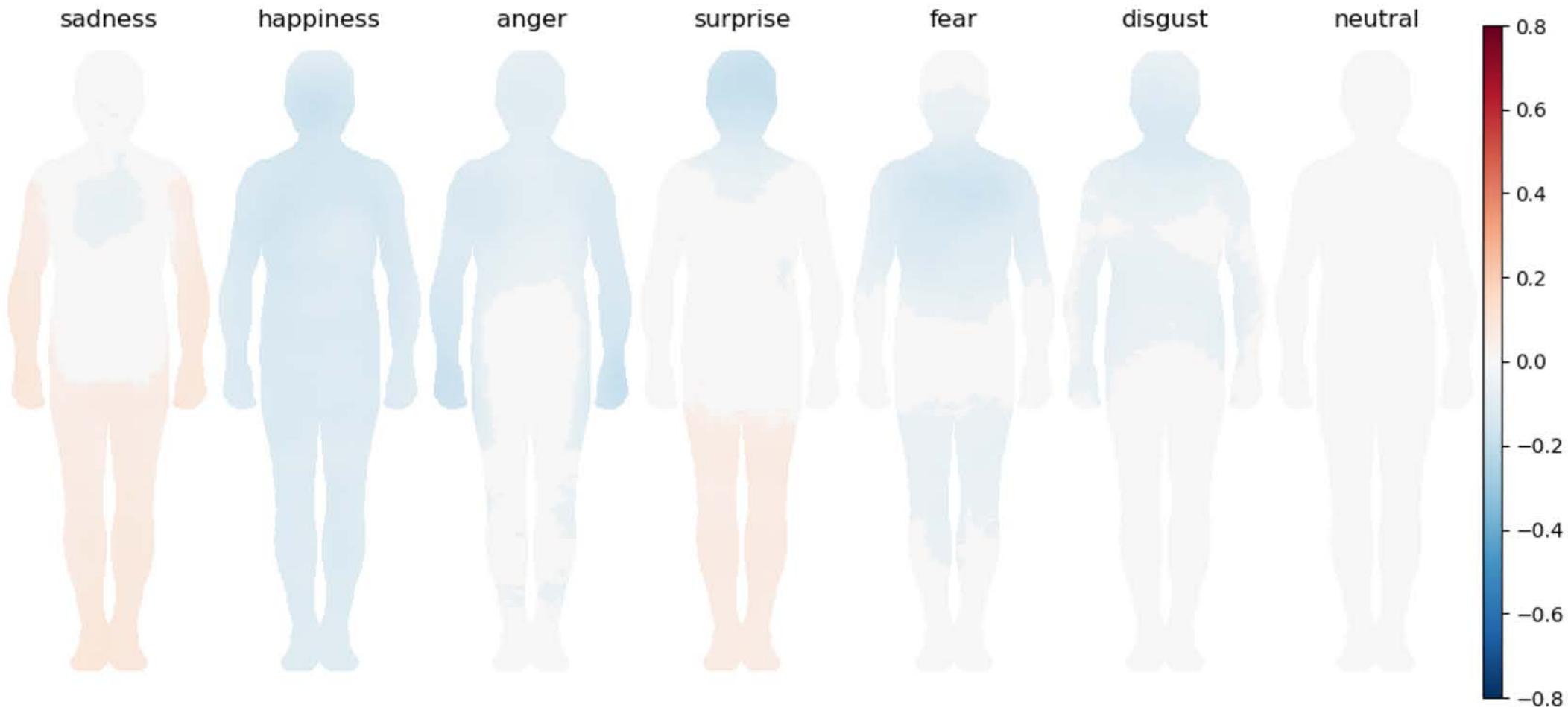
Spearman correlation between colouring and intensity of current pain in general all pain patients (n = 135)



Spearman correlation between colouring and intensity of current pain
in matched controls (n = 135)

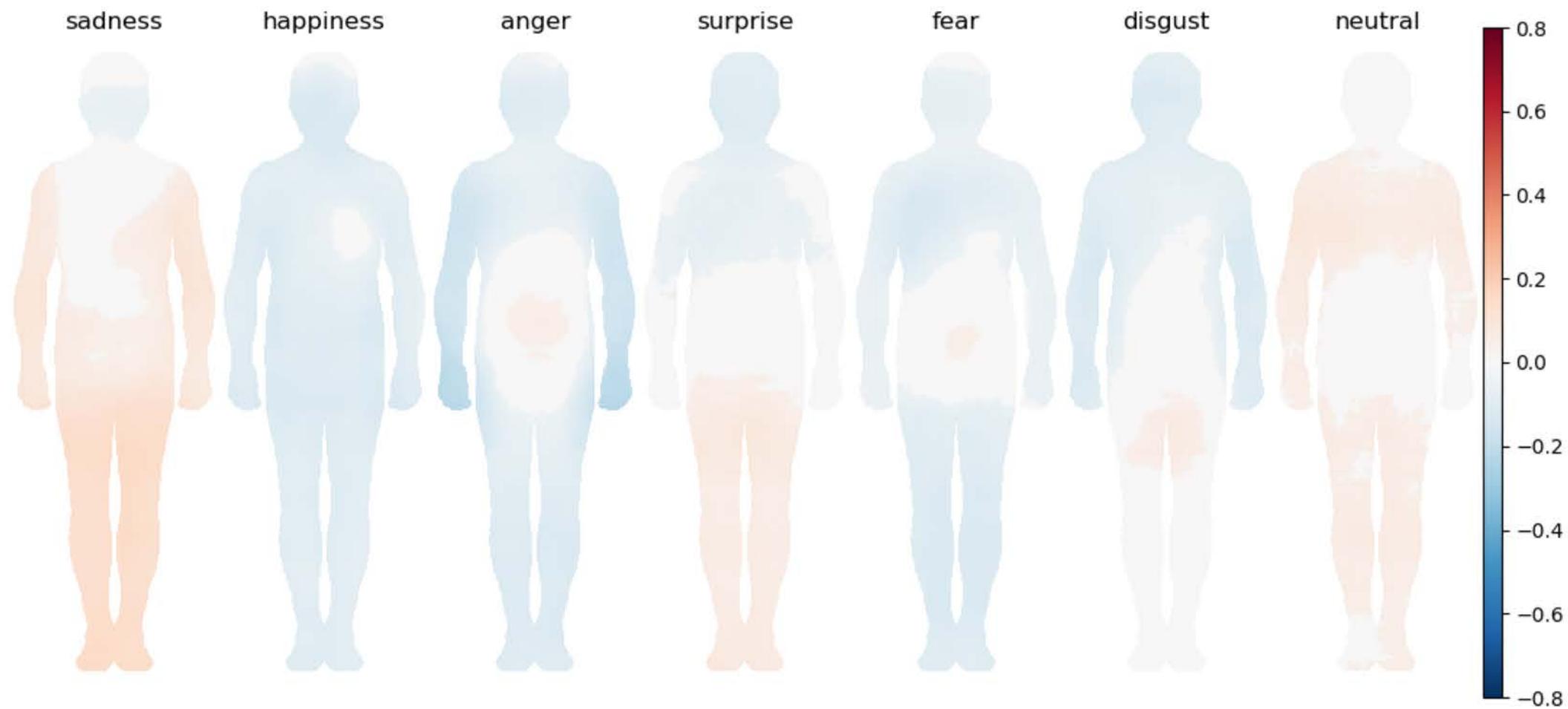


Spearman correlation between colouring and intensity of current pain in general population (n = 2473)

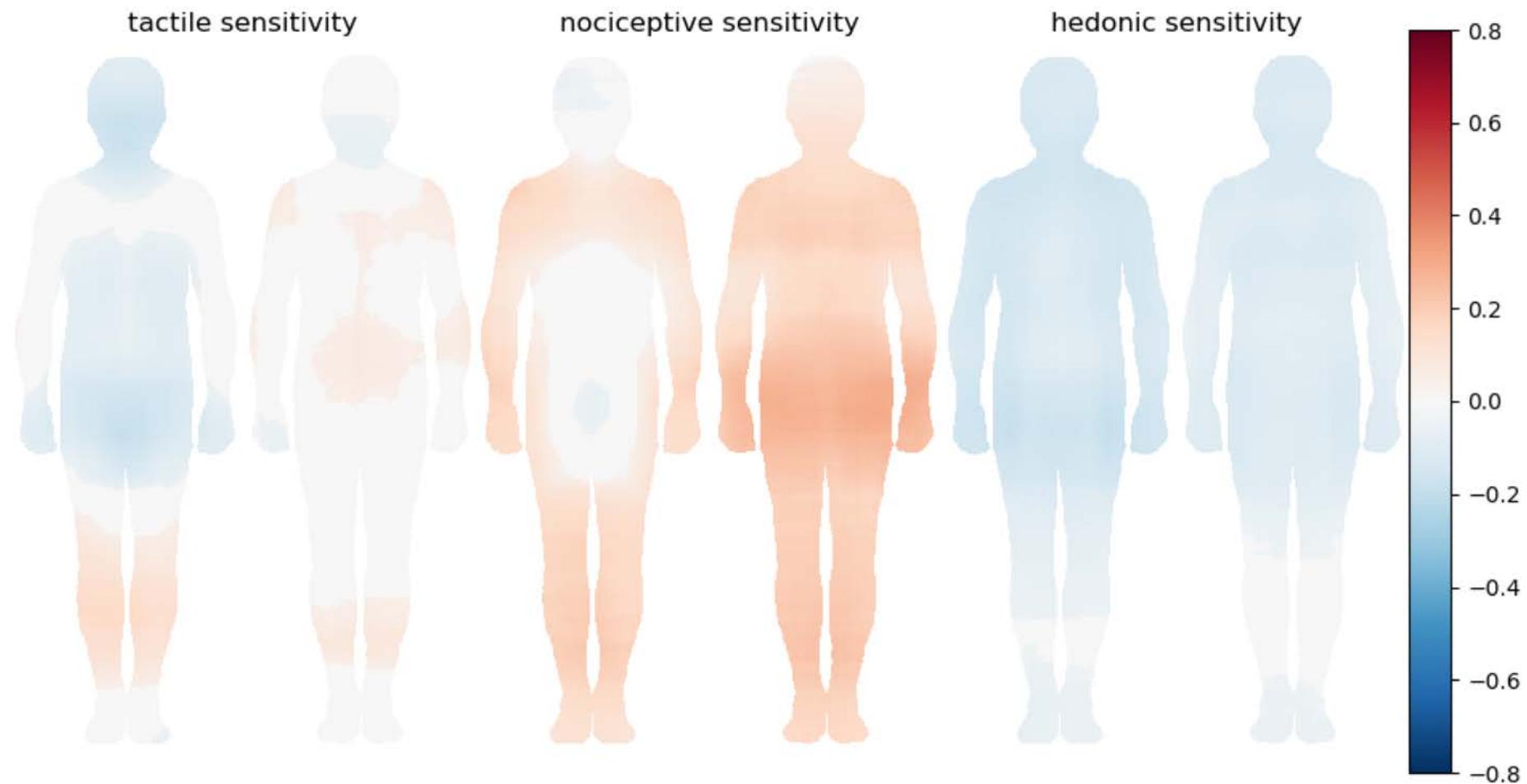


Likely reason why we're not seeing these correlations in the clinical group and matched controls is that the r values in each pixel are quite low, for example the average negative correlation = -0.09589. This would require an n = 783 to detect at $\beta = 0.8$ and $\alpha = 0.05$

Spearman correlation between colouring and age in general population (n = 2473)

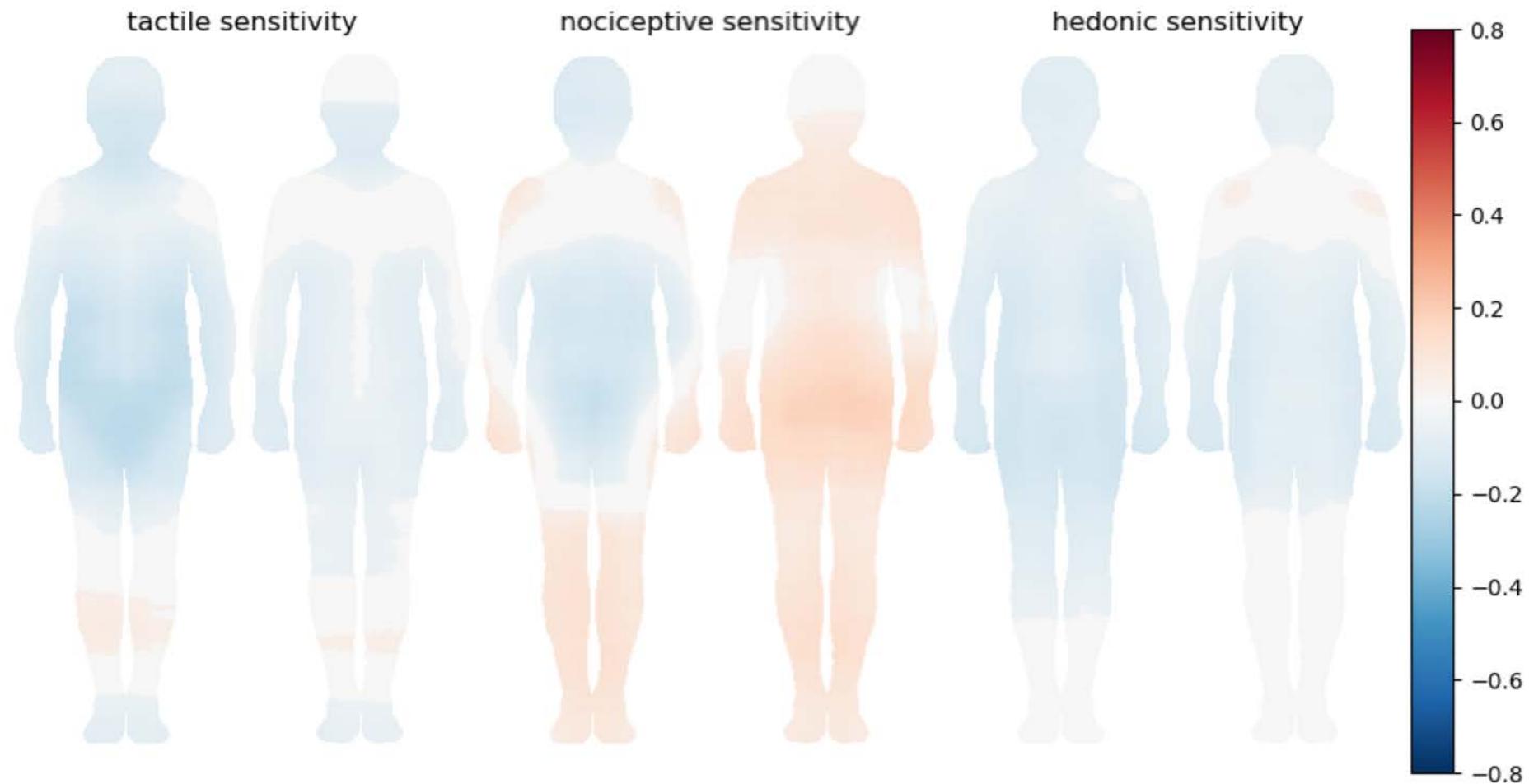


Spearman correlation between colouring and intensity of current pain in general population (n = 2473)



* None of the correlations of pain intensity with sensitivity maps were significant in patients and matched controls

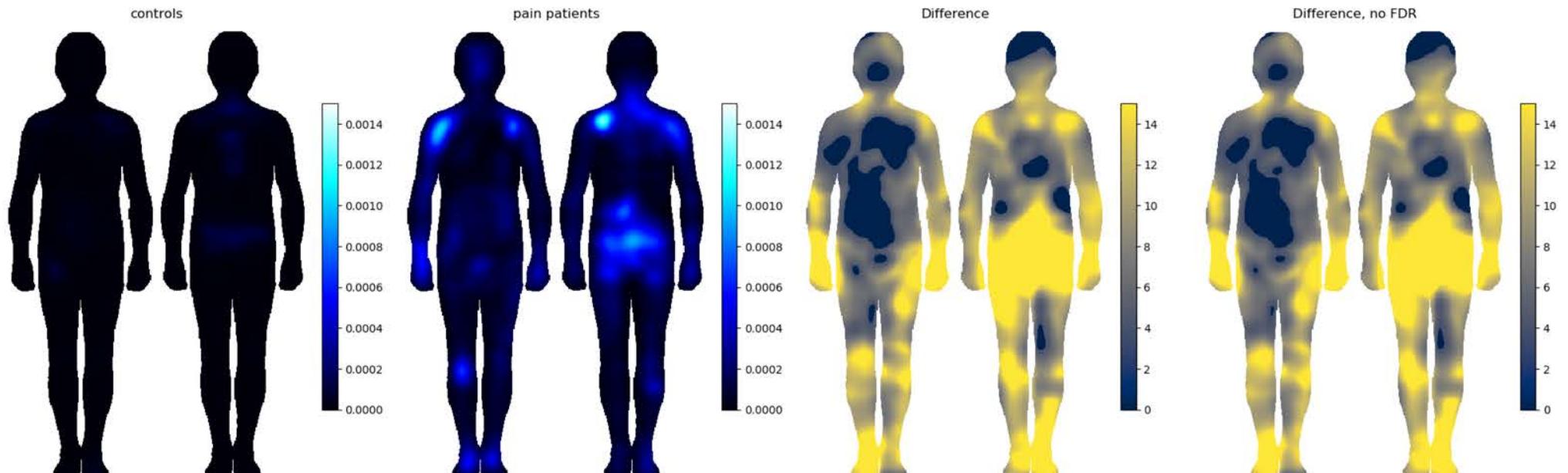
Spearman correlation between colouring and age in general population (n = 2473)



* None of the correlations of pain intensity with sensitivity maps were significant in patients and matched controls

Varianssianalyysit

acute pain



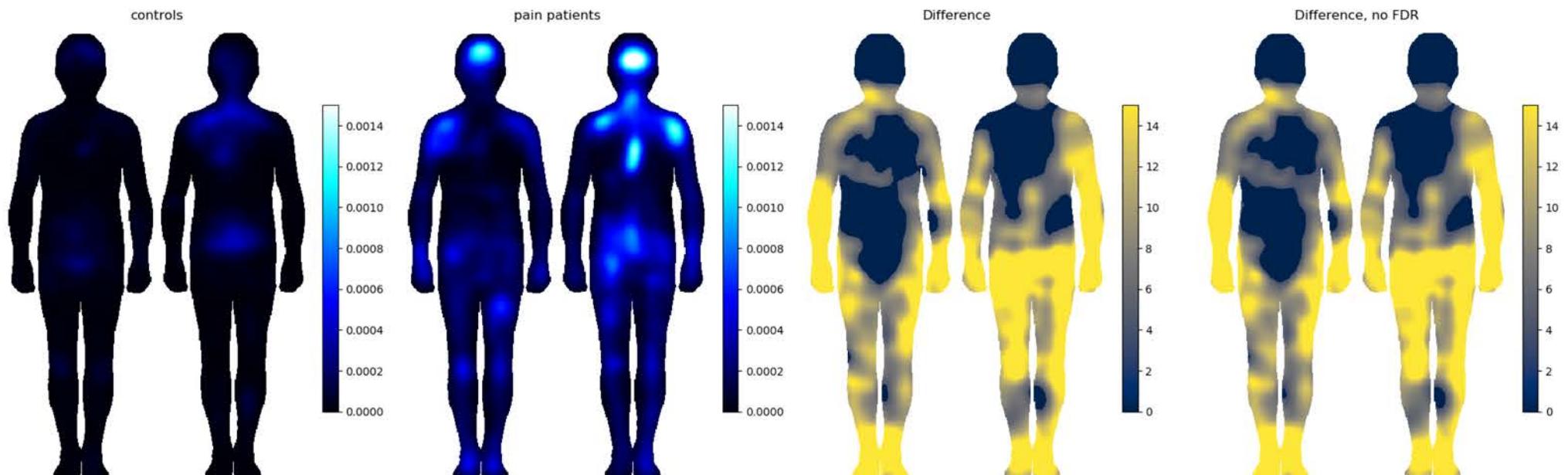
Varianssi per pikseli,
Matched controls

Varianssi per pikseli,
All pain patients

Levene's test statistic W
Thresholded at $\alpha=0.05$
FDR corrected

Levene's test statistic W
Thresholded at $\alpha=0.05$
No multiple comparison
corrections

chonic_pain



Varianssi per pikseli,
Matched controls

Varianssi per pikseli,
All pain patients

Levene's test statistic W
Thresholded at $\alpha=0.05$
FDR corrected

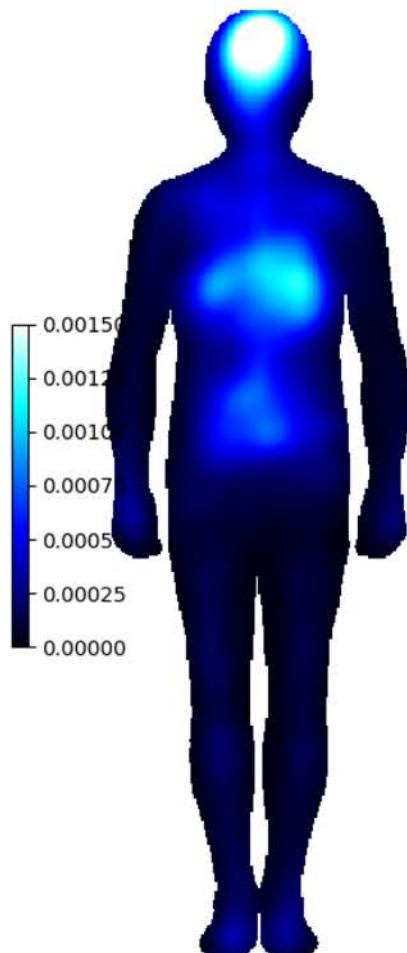
Levene's test statistic W
Thresholded at $\alpha=0.05$
No multiple comparison
corrections

sadness

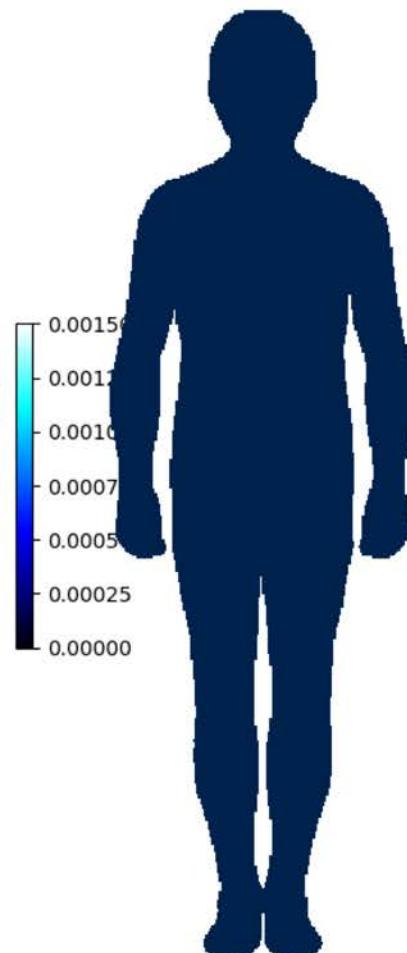
controls



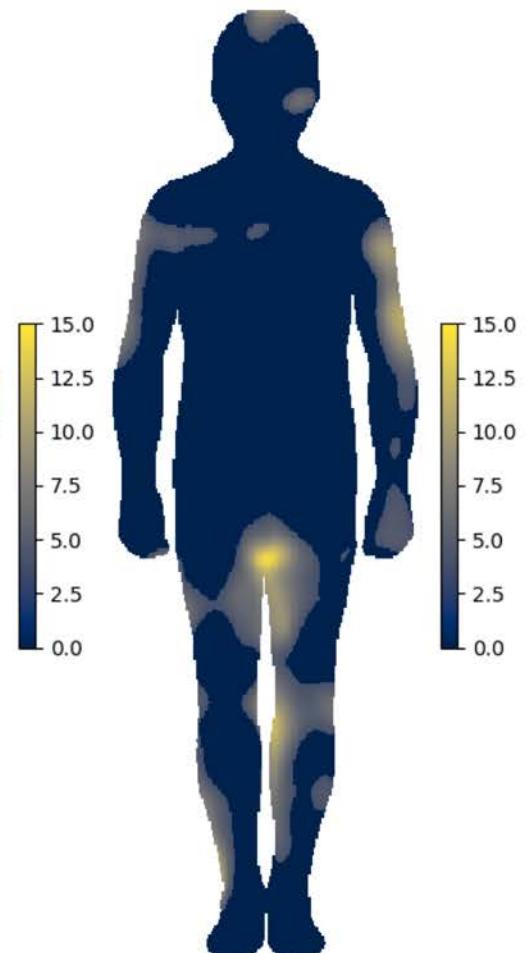
pain patients



Difference



Difference, no FDR



Varianssi per pikseli,
Matched controls

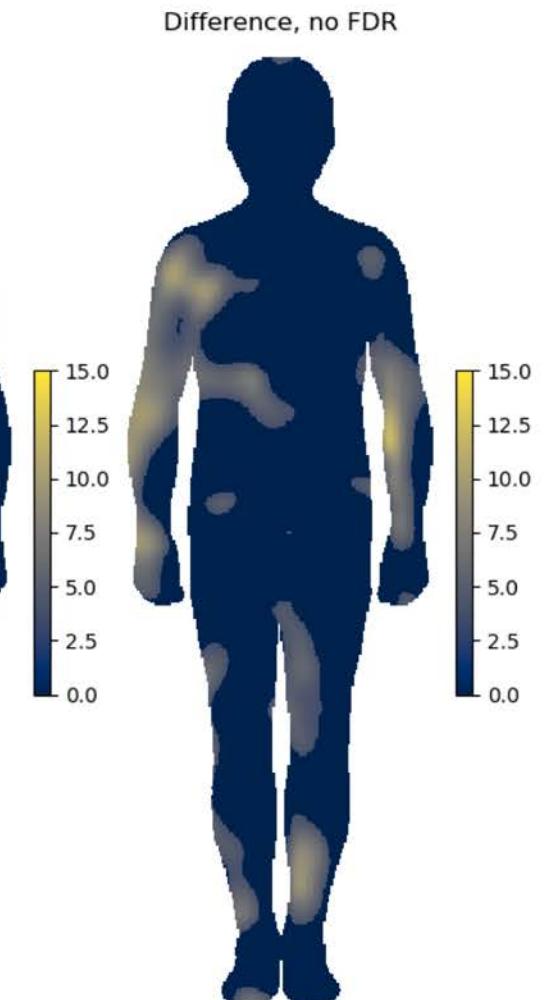
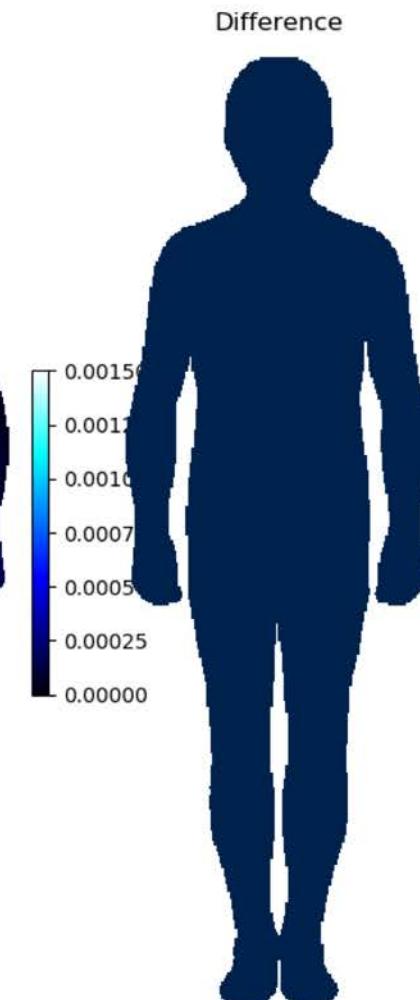
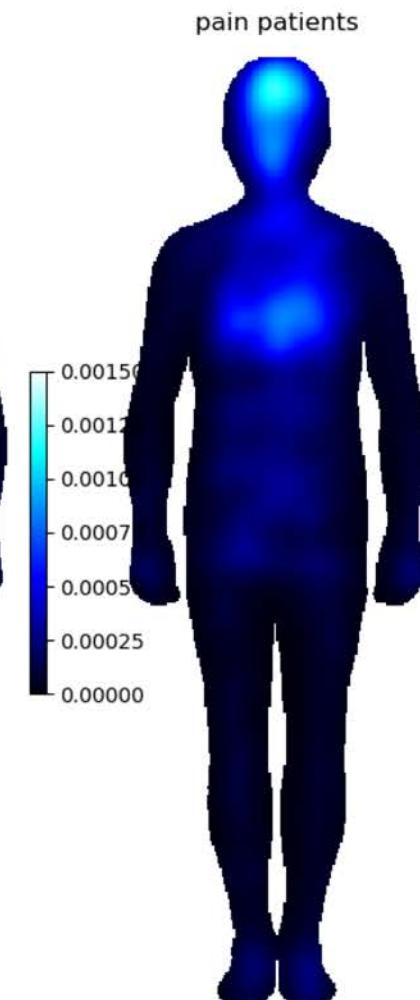
Varianssi per pikseli,
All pain patients

FDR corrected

Levene's test statistic W
Thresholded at $\alpha=0.05$

No FDR

happiness

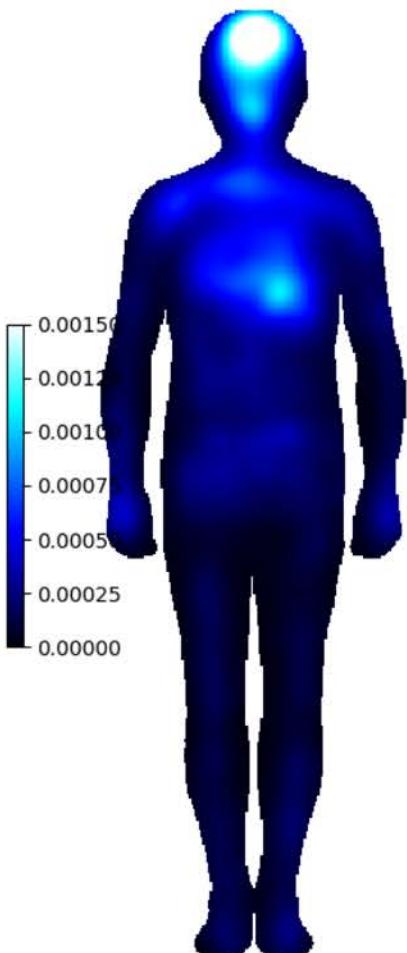


anger

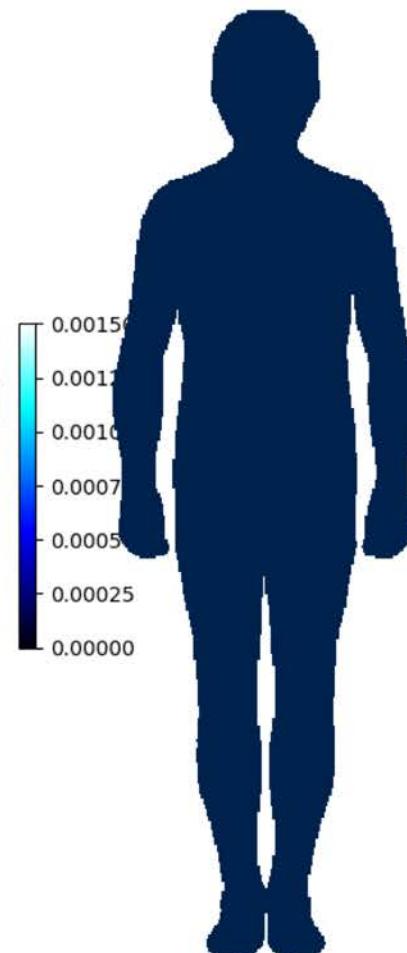
controls



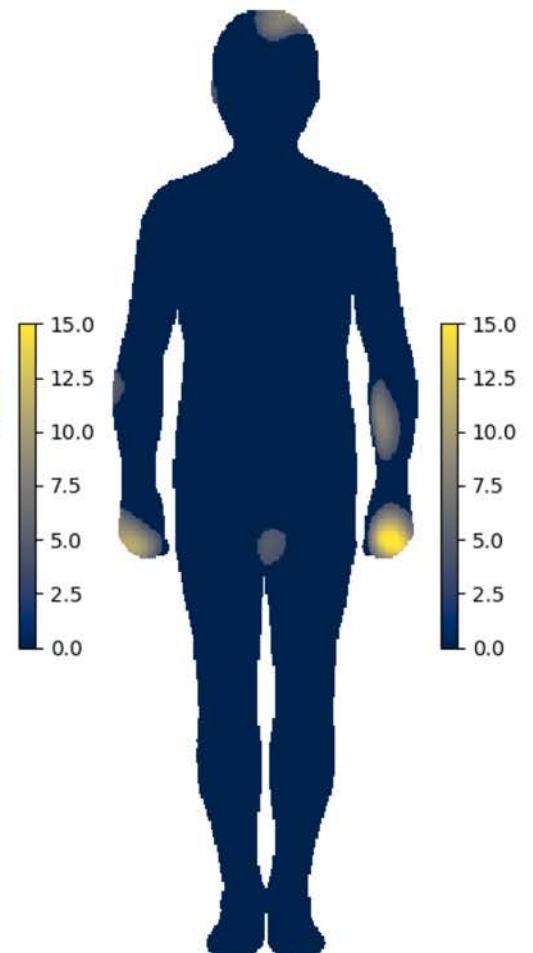
pain patients



Difference



Difference, no FDR



Varianssi per pikseli,
Matched controls

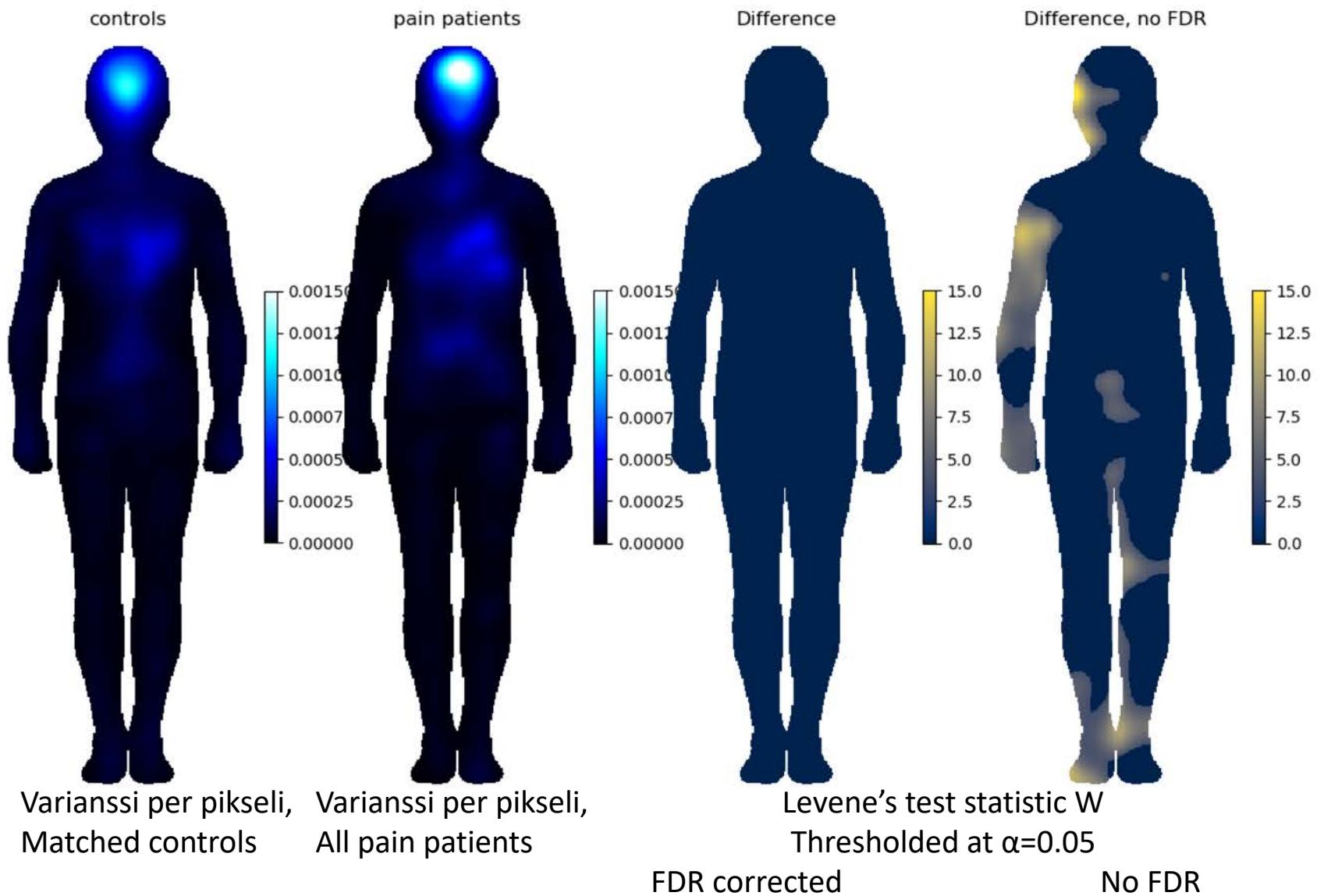
Varianssi per pikseli,
All pain patients

FDR corrected

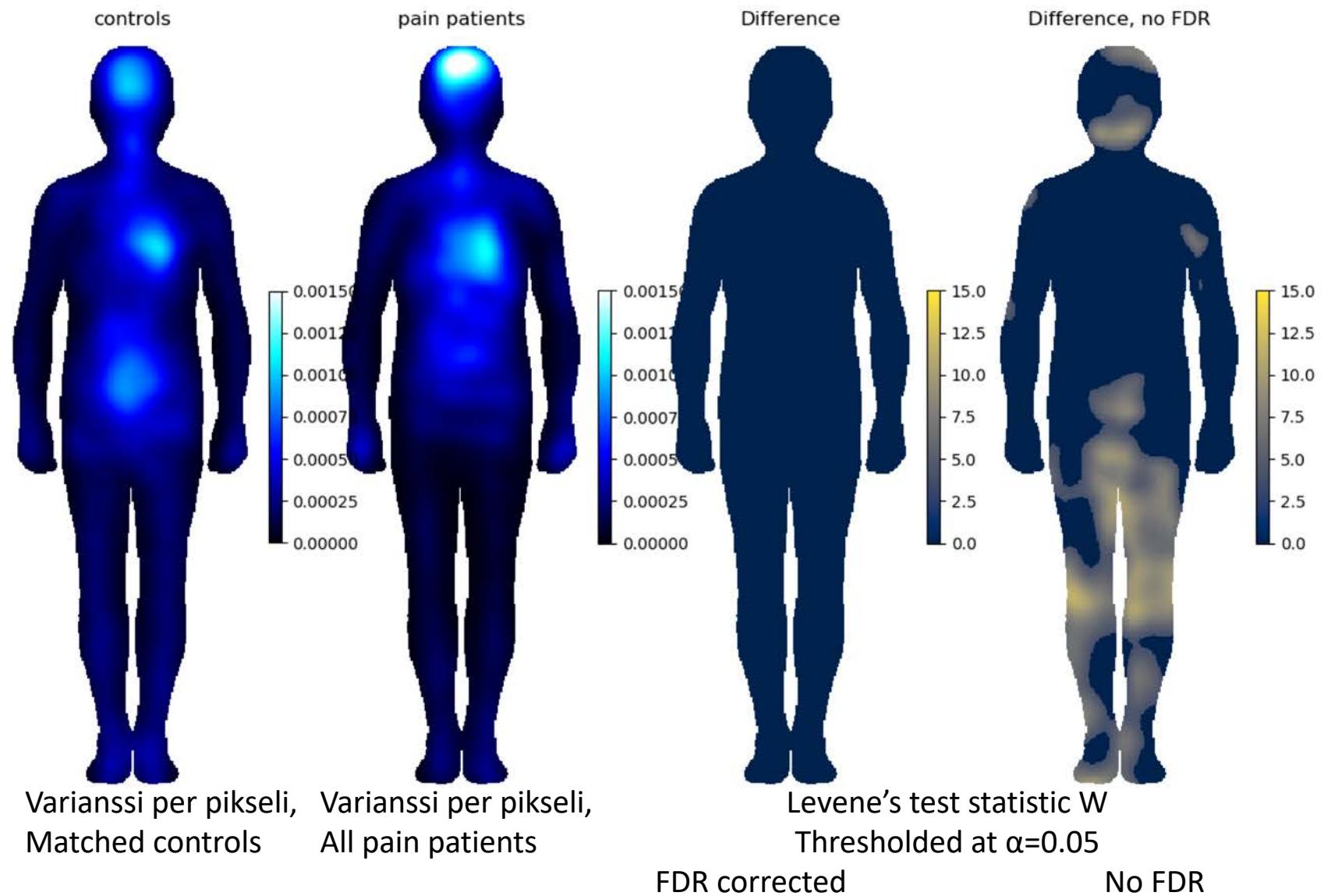
Levene's test statistic W
Thresholded at $\alpha=0.05$

No FDR

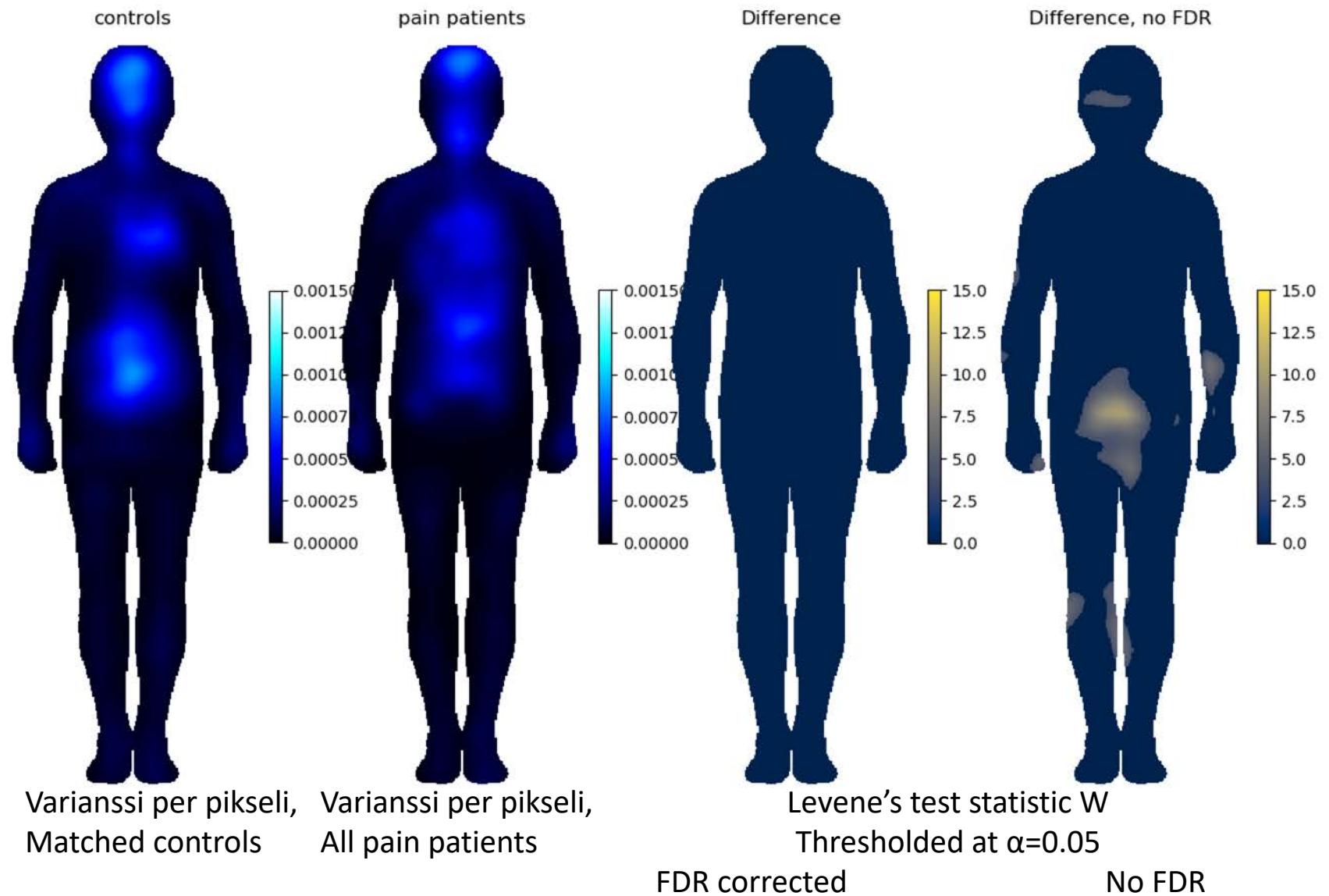
surprise



fear



disgust

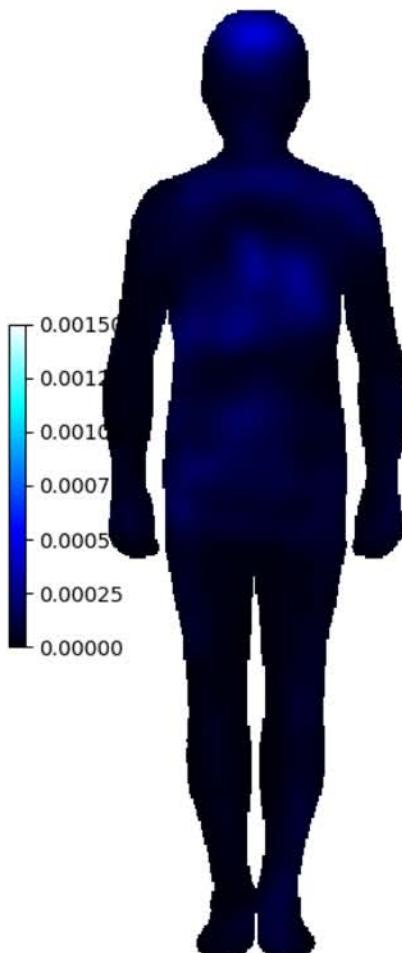


neutral

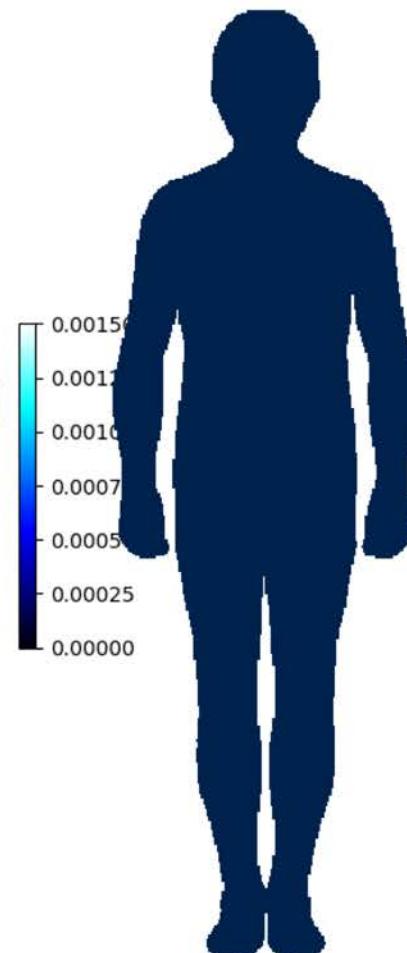
controls



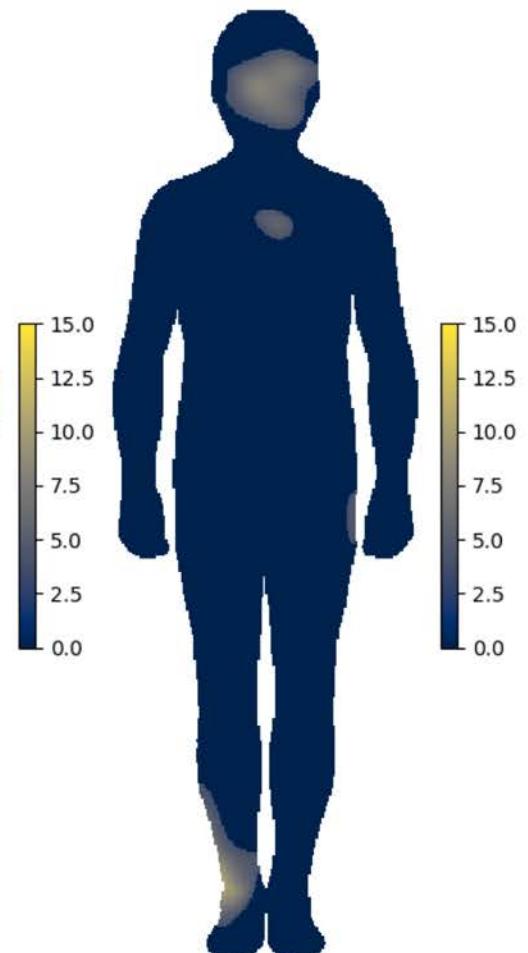
pain patients



Difference



Difference, no FDR



Varianssi per pikseli,
Matched controls

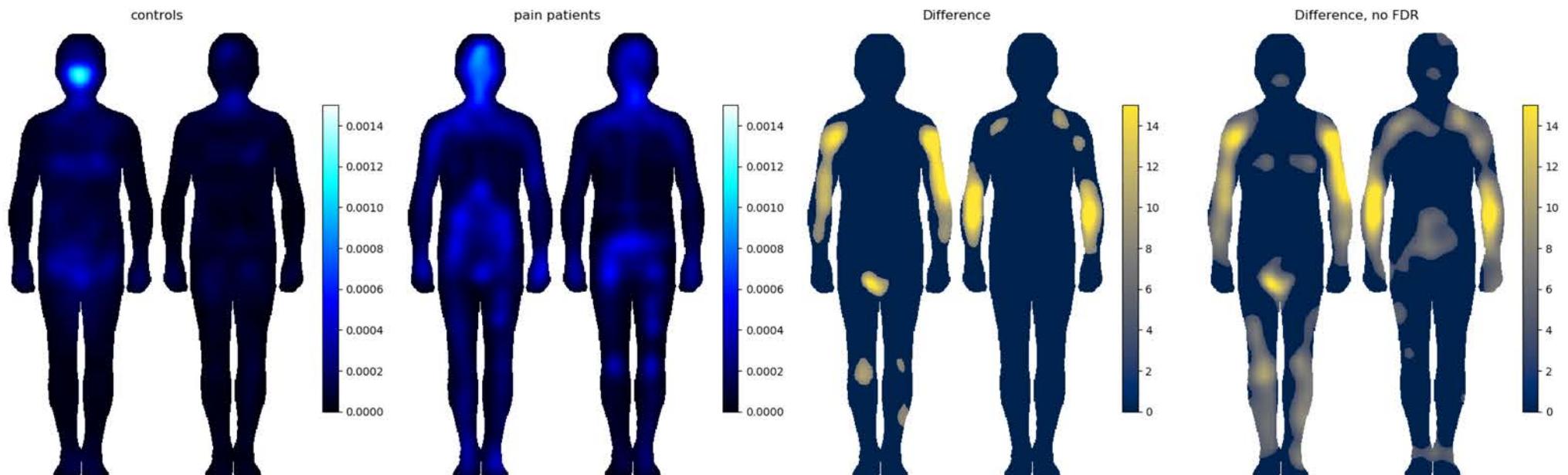
Varianssi per pikseli,
All pain patients

FDR corrected

Levene's test statistic W
Thresholded at $\alpha=0.05$

No FDR

tactile sensitivity



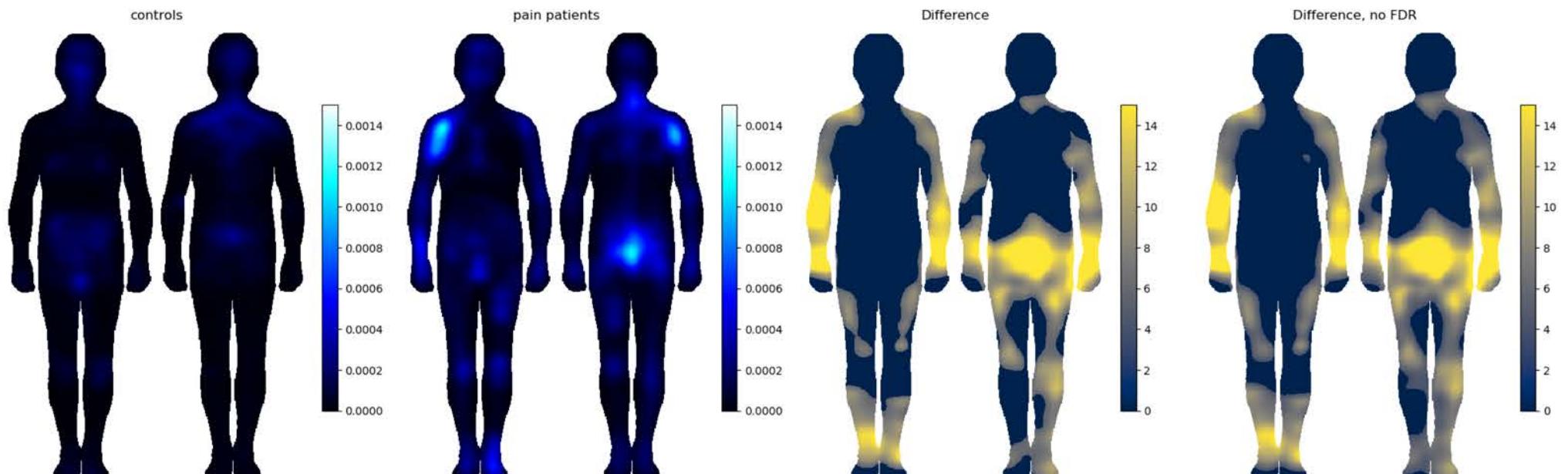
Varianssi per pikseli,
Matched controls

Varianssi per pikseli,
All pain patients

Levene's test statistic W
Thresholded at $\alpha=0.05$
FDR corrected

Levene's test statistic W
Thresholded at $\alpha=0.05$
No multiple comparison
corrections

nociceptive sensitivity



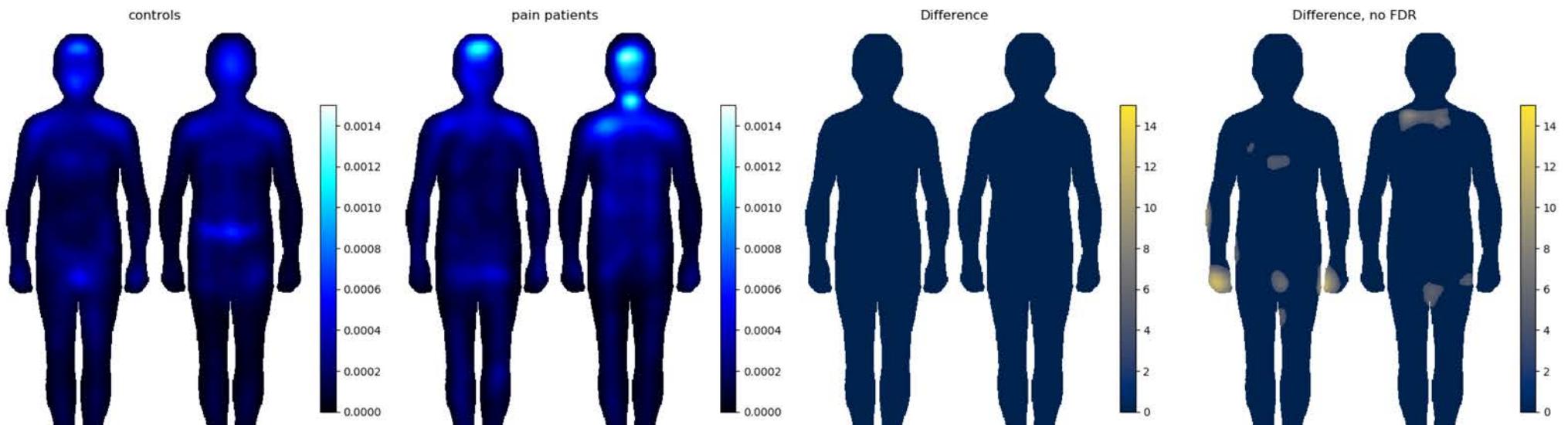
Varianssi per pikseli,
Matched controls

Varianssi per pikseli,
All pain patients

Levene's test statistic W
Thresholded at $\alpha=0.05$
FDR corrected

Levene's test statistic W
Thresholded at $\alpha=0.05$
No multiple comparison
corrections

hedonic sensitivity



Varianssi per pikseli,
Matched controls

Varianssi per pikseli,
All pain patients

Levene's test statistic W
Thresholded at $\alpha=0.05$
FDR corrected

Levene's test statistic W
Thresholded at $\alpha=0.05$
No multiple comparison
corrections