

fMRI studies prior and post acupuncture treatment concerning smoking cessation

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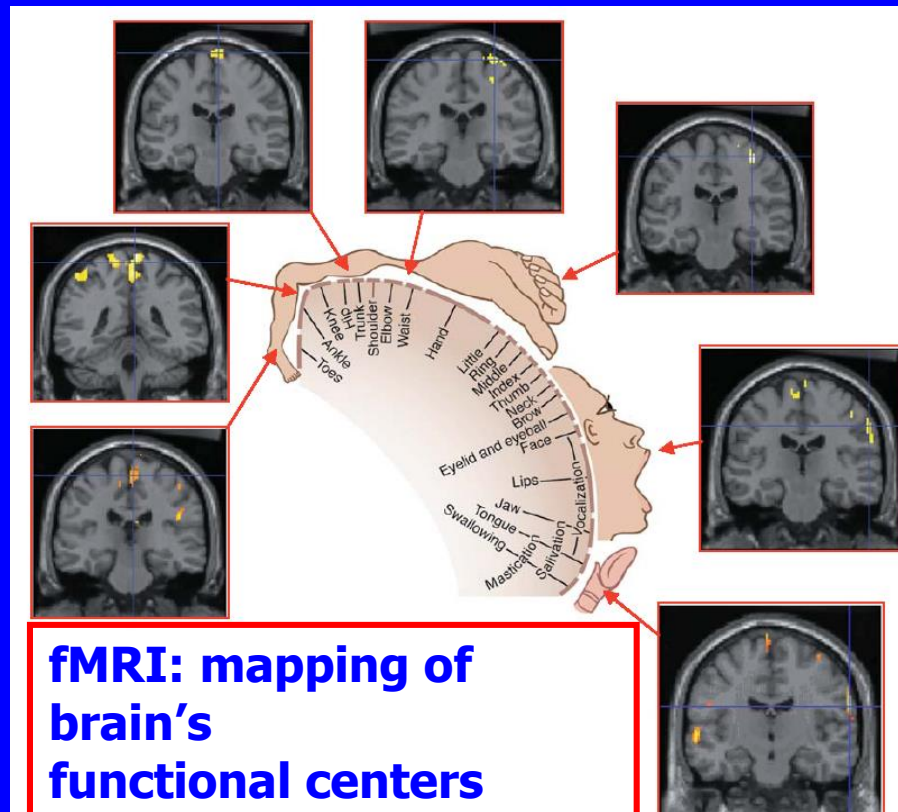
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Introduction:

Acupuncture has been widely reported to be a popular and safe intervention for smoking cessation.

This study demonstrates the potential effects of acupuncture treatment for smoking cessation using the MRI technique of functional Magnetic Resonance Imaging (fMRI).



Purpose:

Substance dependence or addiction is nowadays understood in a multifactorial etiological model, which includes psychological, neurobiological, genetic, social and environmental factors.

This study illustrates patterns of fMRI activation in various specific brain anatomies that correlate with smoking.

Materials and Methods:

Type-Size-Gender-Age:

Control Group: 5 healthy subjects (F, 26-45 y).

Test Groups: 10 smokers (5 M, 32-45 y + 5 F 32-45 y).

Smoking frequency:

~ 10-30 per day.

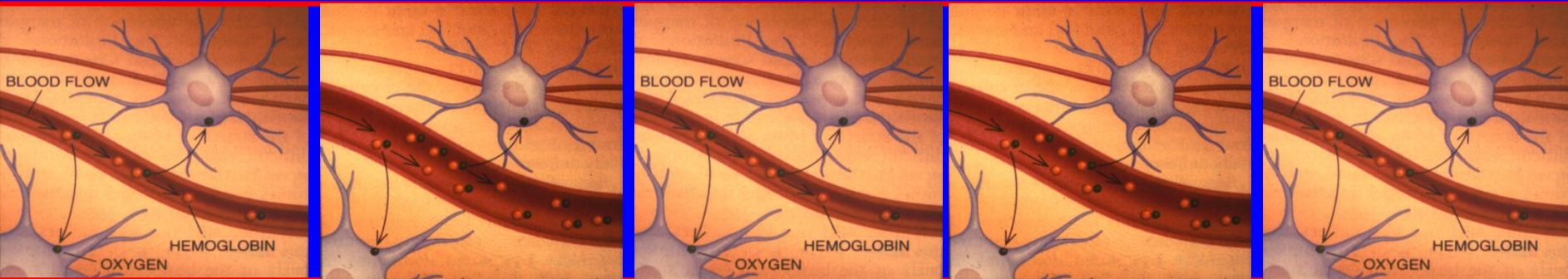
Experiment:

- Questions -Tests → correlations.

Procedure:

- MRI compatibility form.
- Process Description.
- Isolated subjects.
- No previous experience of acupuncture treatment.

Paradigm: 5 periods, 3 passive (**OFF**) and 2 active (**ON**)



OFF
t=30''



ON
t=30''



OFF
t=30''



ON
t=30''



OFF
t=30''





SHOWN IMAGES





**SHOWN
IMAGES**



-----> Acupuncture was followed.

Group A: real acupuncture.

Group B: placebo.

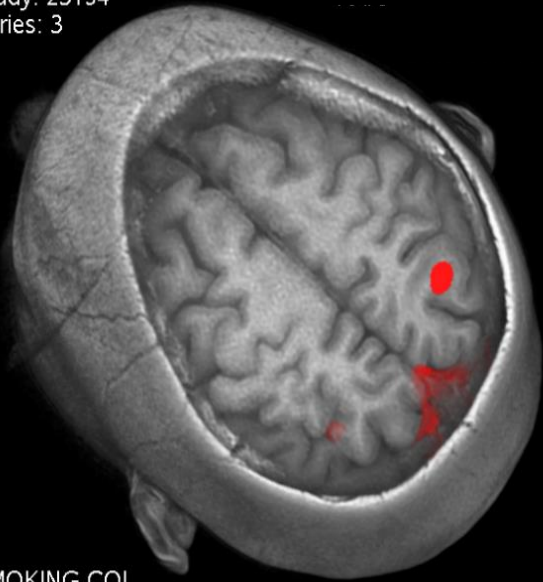
Group C: control group, no smokers.

-----> Cessation of smoking for 12 hrs.

-----> Repeation of the fMRI.

RESULTS

Study: 25194
Series: 3



SMOKING COL

Study: 25194
Series: 3

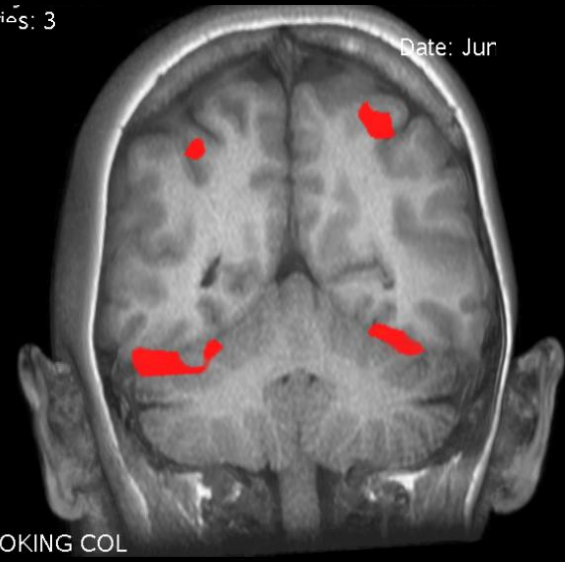


SMOKING B-W

Series: 3

ID: 999
Date: Jun 16 2011

Date: Jun 16 2011



SMOKING COL

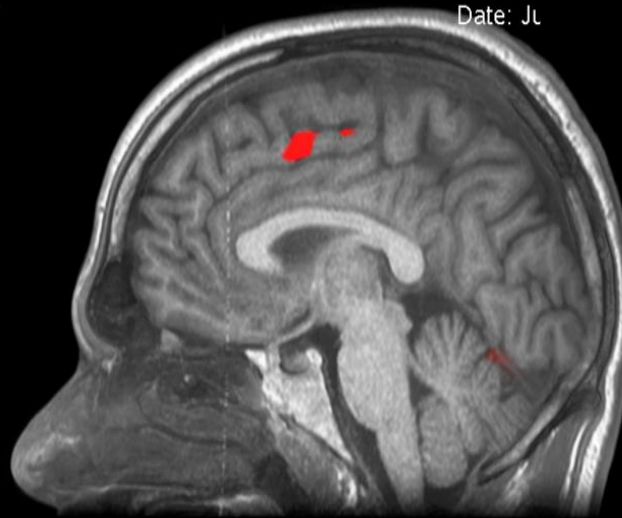
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Series: 3

Date: Jun 16 2011



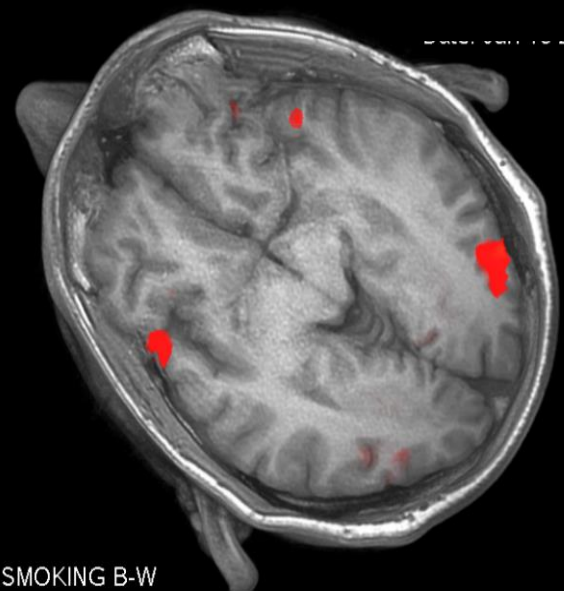
SMOKING COL

Date: Jun 16 2011



SMOKING B-W

Date: Jun 16 2011



SMOKING B-W

RESULTS:

Increased brain response areas were observed, such as:

- dorsolateral prefrontal,
- primary motor gyrus,
- parahippocampal gyrus,
- hippocampus,
- insula,
- posterior cingulate cortex,
- somatosensory cortex,
- visual areas and
- external basal ganglia.

Differences between Groups A and B, as well as interesting correlations between acupuncture points, fMRI findings and neurobiological areas were found.