

STRESS, HYPNOSIS AND ULCERATIVE COLITIS

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WHAT IS STRESS?



Hockney 1962

- A (real or perceived) threat to an organism's homeostasis
 - physical
 - psychological
- Function is to maintain individual's homeostasis
- Effects mediated through HPA axis and brain-gut axis

WHAT IS HYPNOSIS?



- | Induction of a trance, in which the conscious mind is bypassed
- | Unconscious mind is open to suggestion
- | Effective in irritable bowel, non-ulcer dyspepsia, duodenal ulcer

Whorwell 1984-2004

STRESS, HYPNOSIS AND IBD

STRESS

- | Stress worsens experimental colitis in animals
- | In human IBD, chronic stress, depression and adverse life events increase
 - » risk of relapse
 - » rectal mucosal inflammation

HYPNOSIS

- | No data in IBD

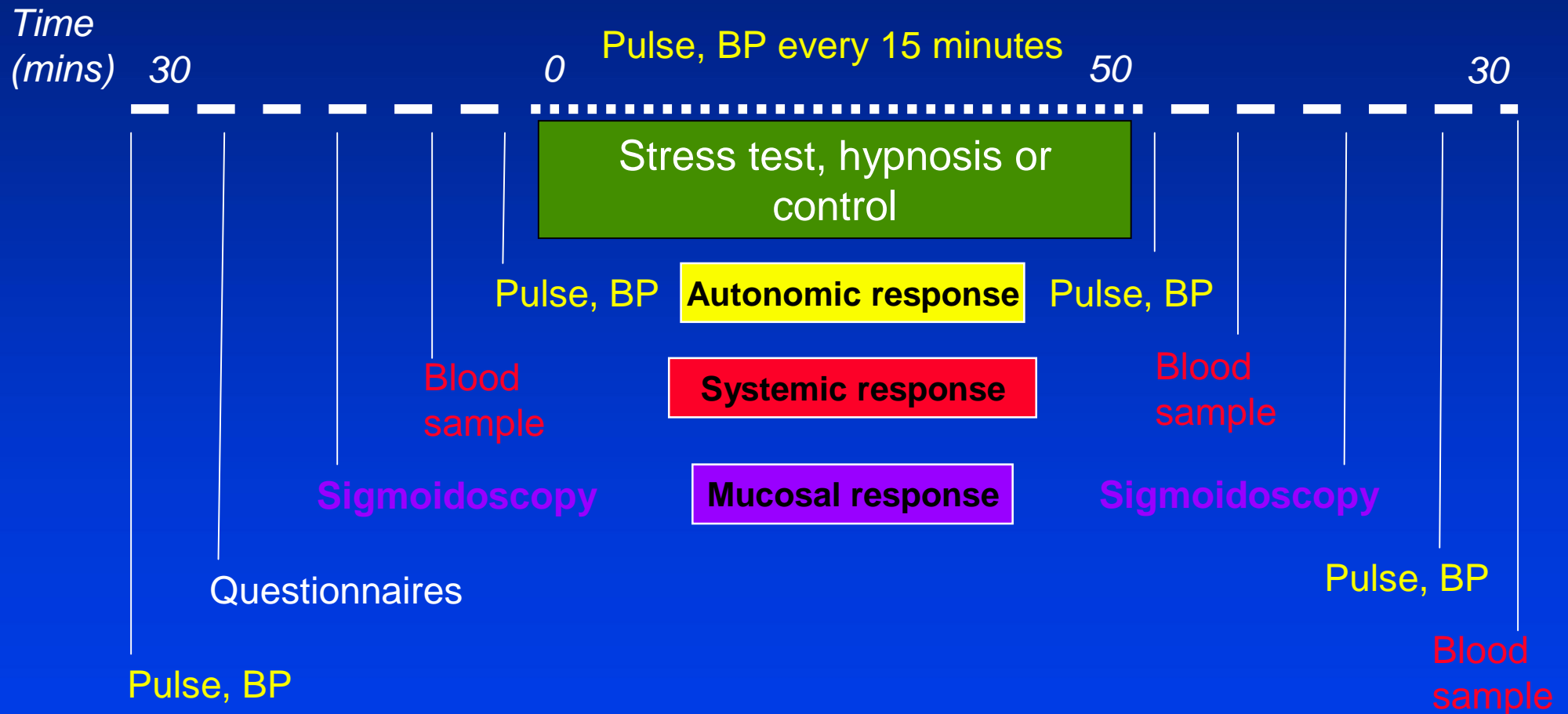
*Levenstein 1994, 2000; Bitton 2004;
Mittermaier 2004; Mardini 2004*

HYPOTHESES

In UC, systemically and in rectal mucosa,

- | acute experimental stress is pro-inflammatory
- | hypnosis is anti-inflammatory

EXPERIMENTAL PROTOCOL: 17 patients with inactive, 15 with active UC



EXPERIMENTAL PROCEDURES – each 50 minutes

Stress

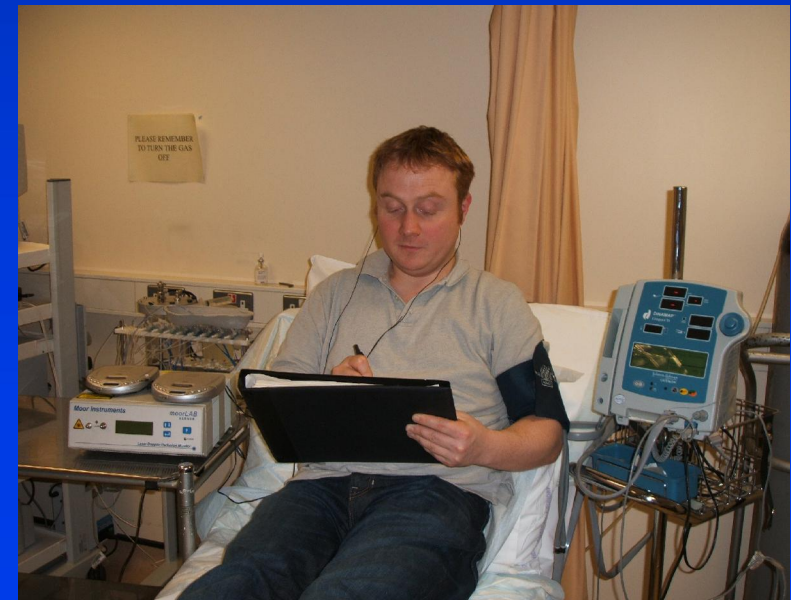
- | dichotomous listening test
 - » folk and rock music in either ear
- | IQ test simultaneously

Hypnotherapy

- | stress reduction
 - » gut-focused
- | trained hypnotherapist

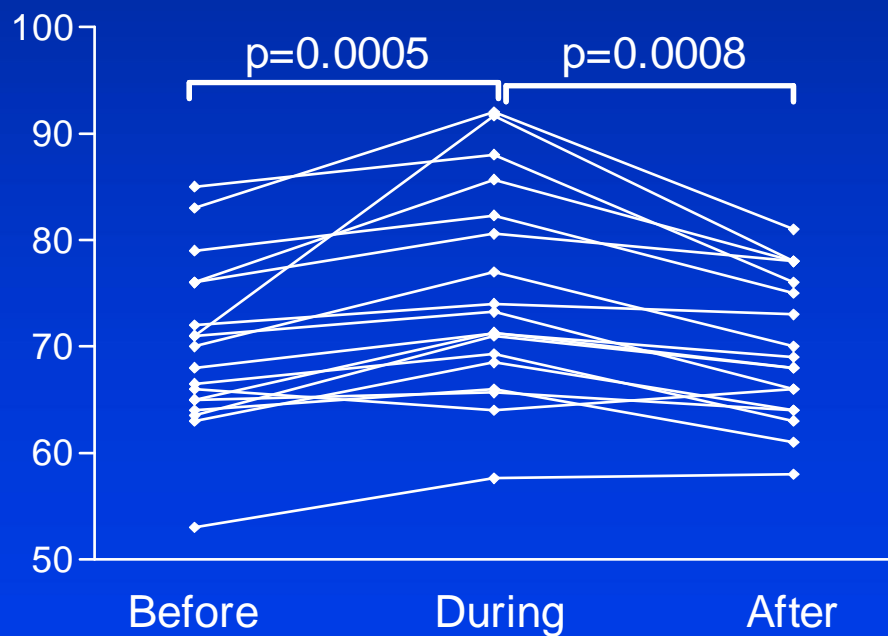
Control

- relaxing music

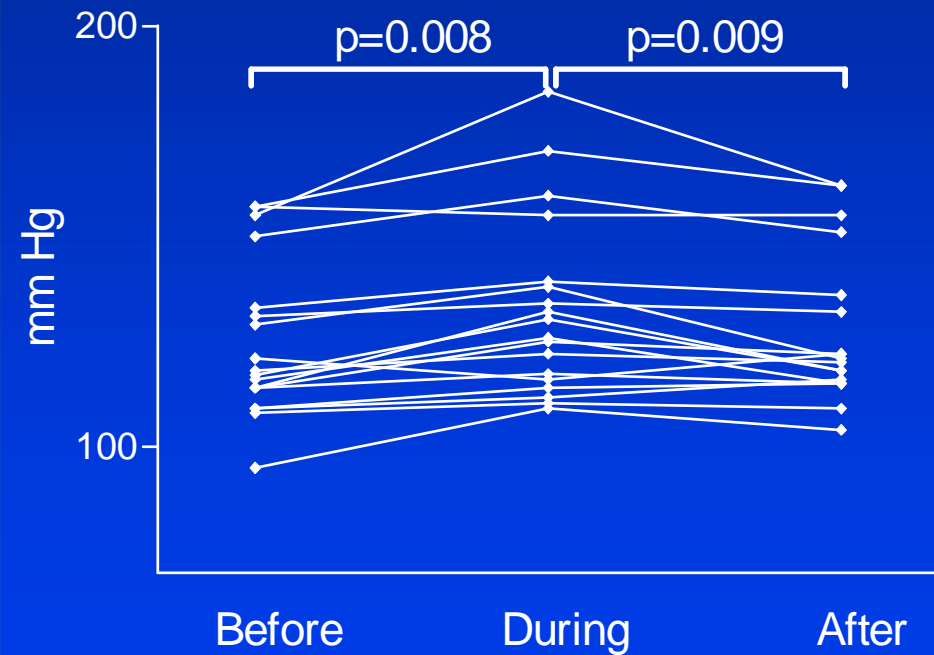


STRESS IN INACTIVE UC (1): autonomic response

Pulse Rate

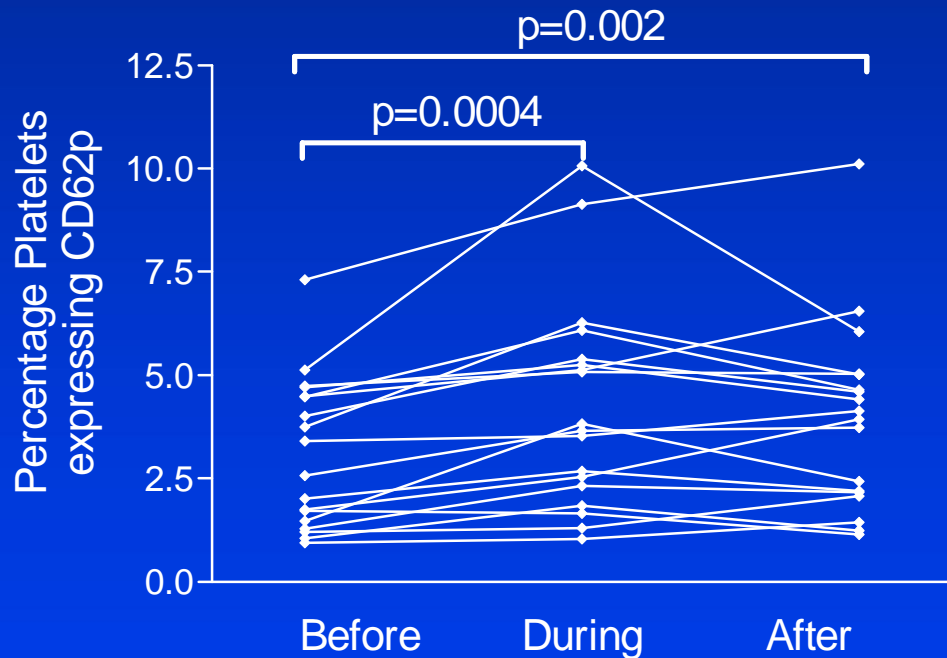


Systolic Blood Pressure

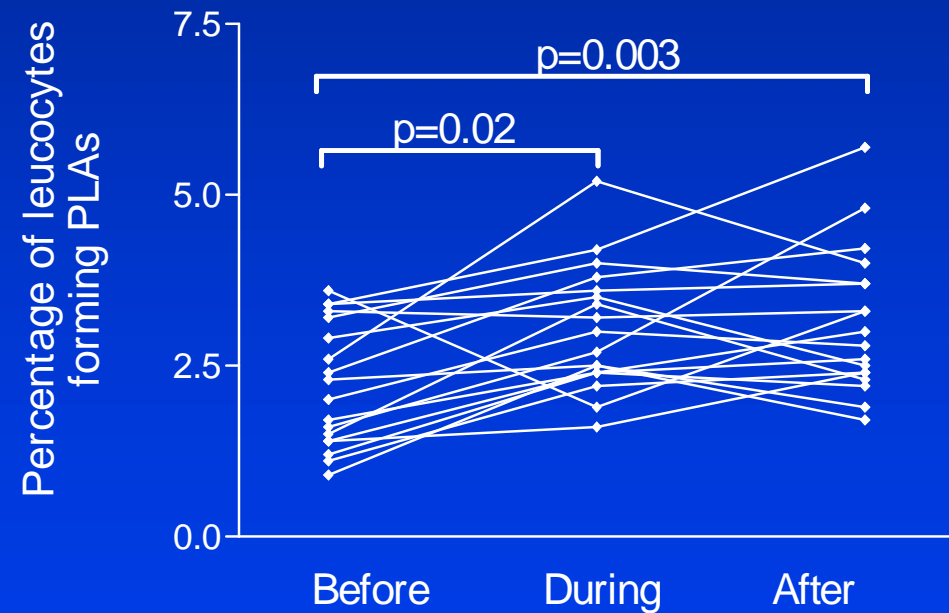


STRESS IN INACTIVE UC (2): SYSTEMIC EFFECTS - platelet function (*flow cytometry*)

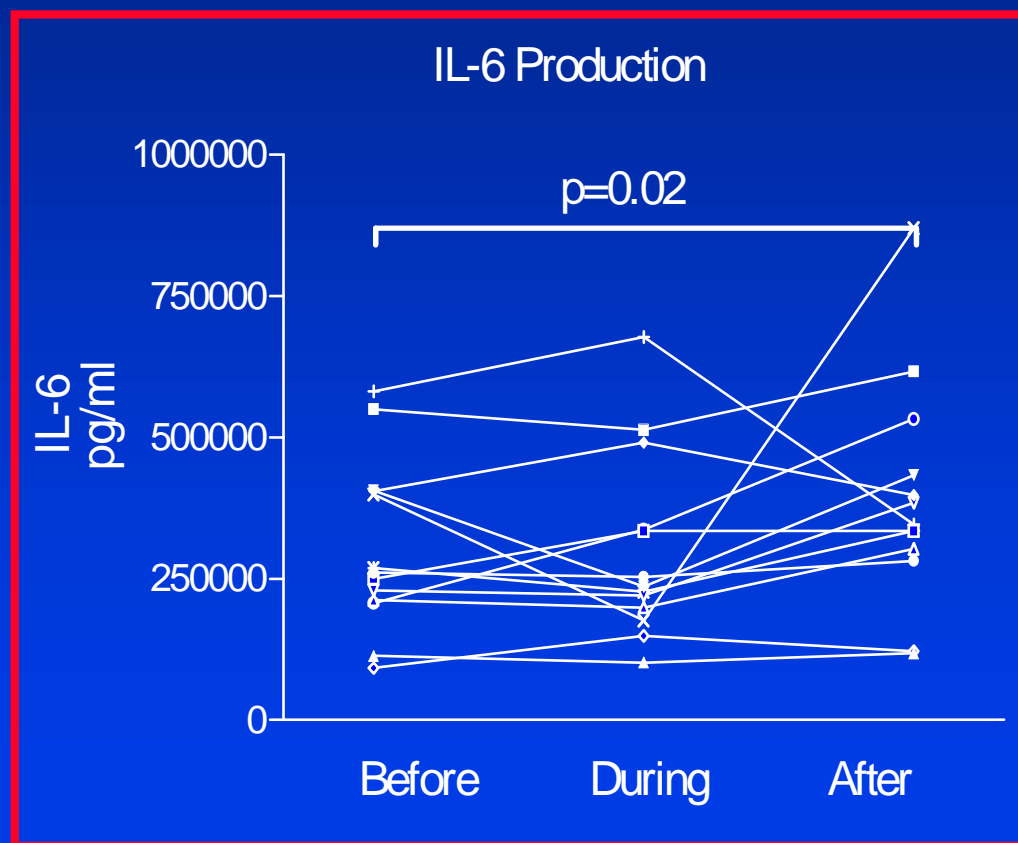
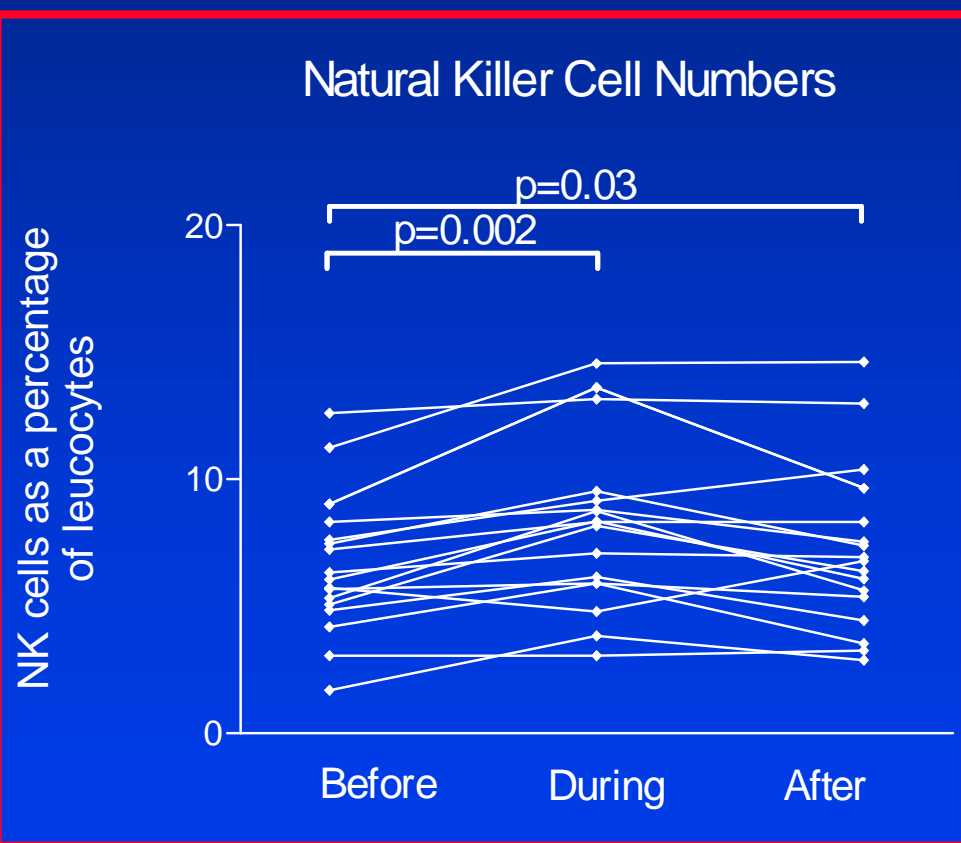
Platelet Activation



Platelet Leucocyte Aggregate Formation

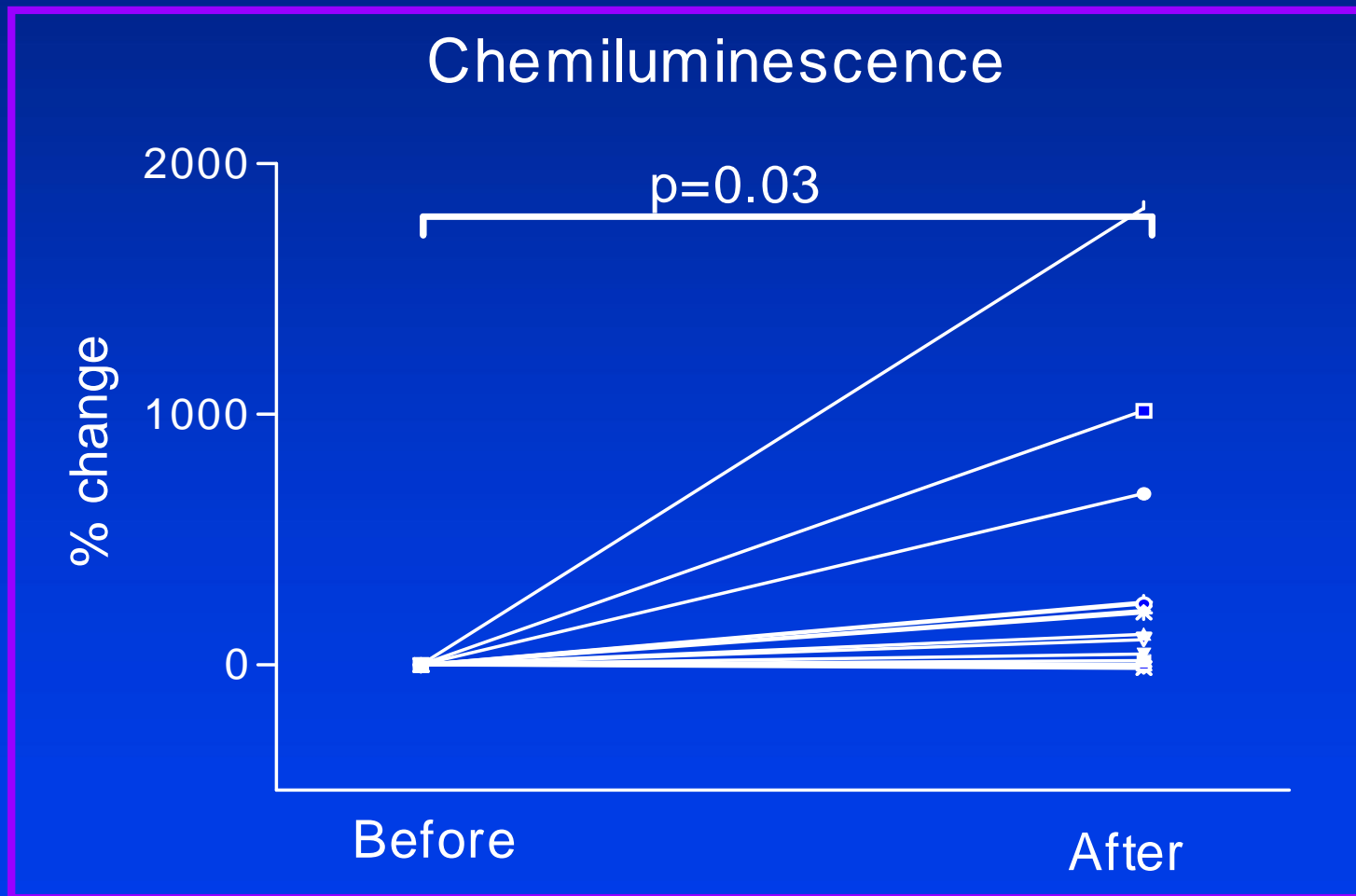


STRESS IN INACTIVE UC (3): SYSTEMIC EFFECTS - NK cells (*flow cytometry*) and LPS-stimulated IL-6



STRESS IN INACTIVE UC (4): MUCOSAL EFFECTS

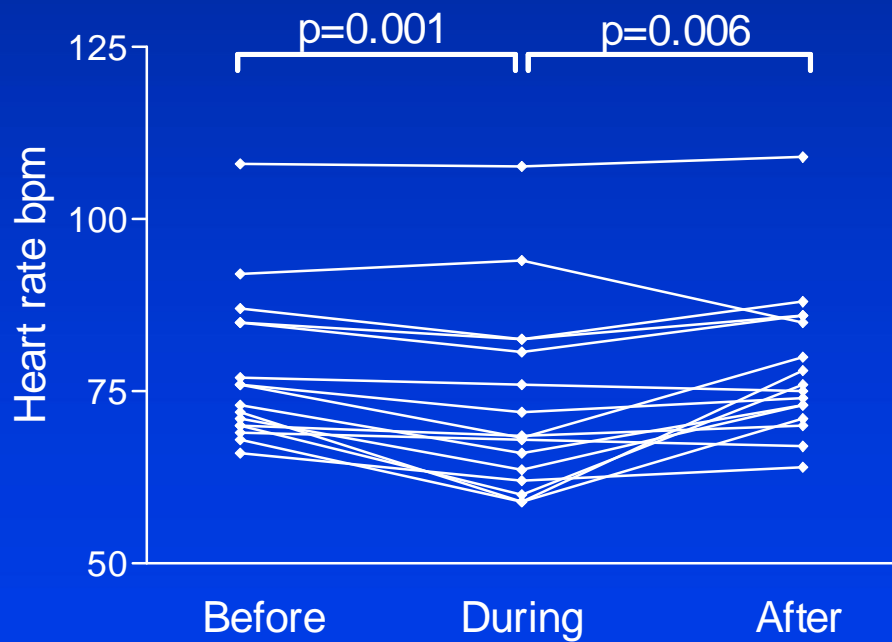
rectal reactive oxygen metabolite production



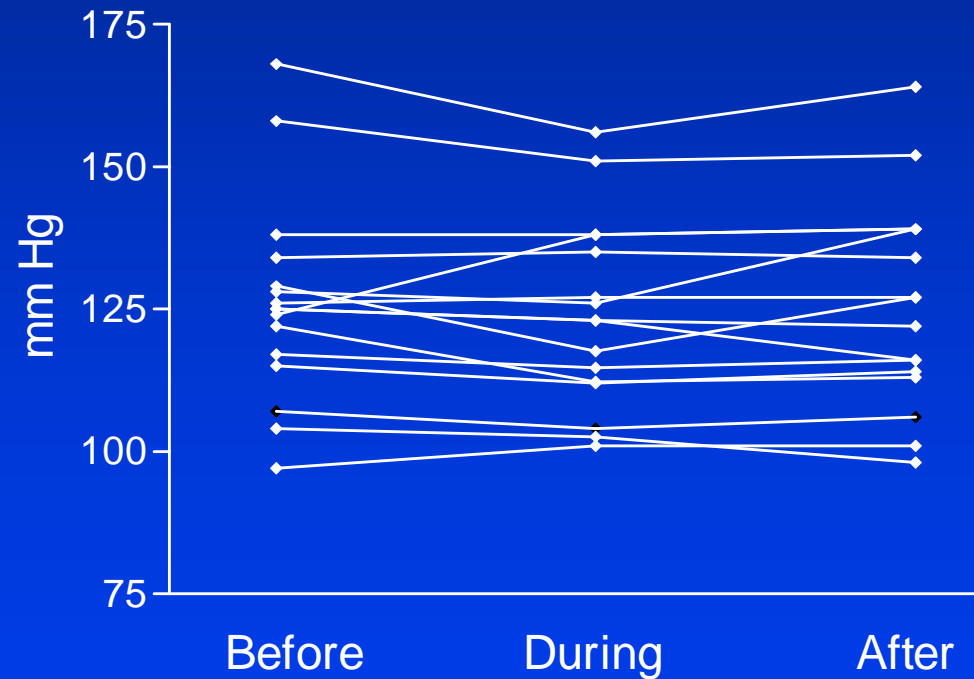
HYPNOSIS IN ACTIVE UC (1)

autonomic response

Heart Rate



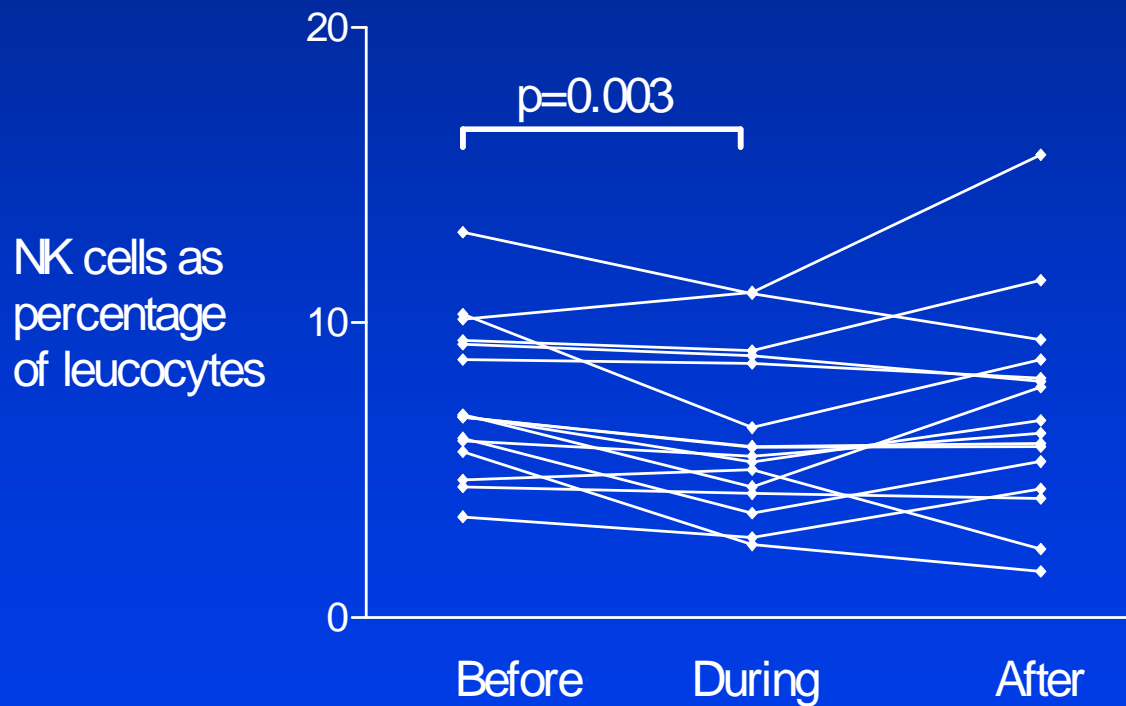
Systolic blood pressure



HYPNOSIS IN ACTIVE UC (2)

inflammatory response

Natural Killer Cells



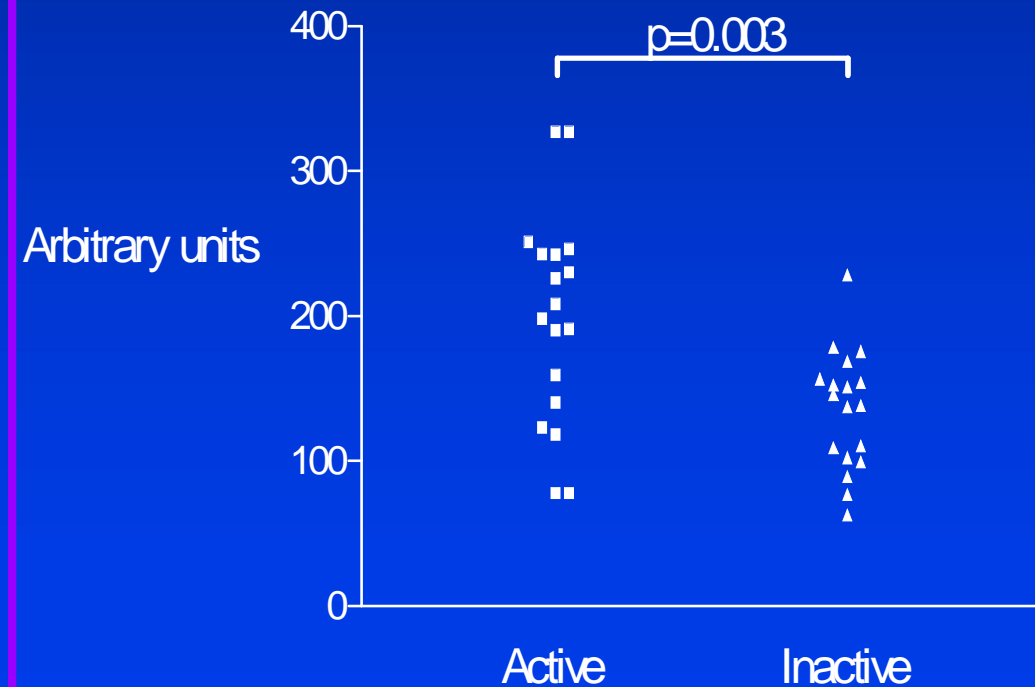
No change in

- platelet activation
- platelet-leucocyte formation
- rectal ROM production

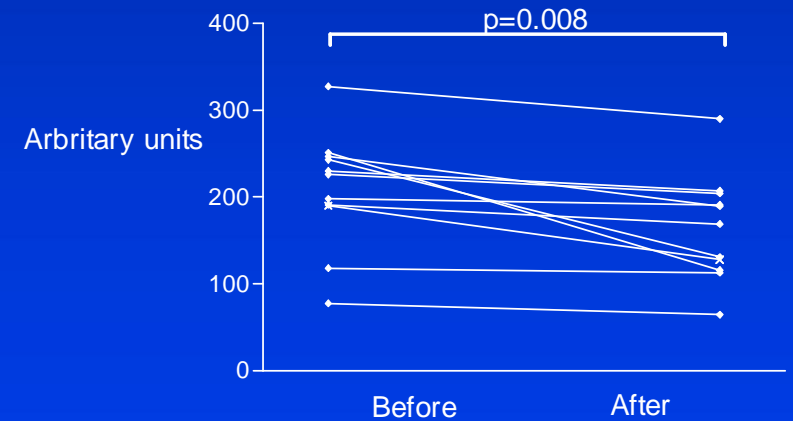
HYPNOSIS IN ACTIVE UC (3): RECTAL MUCOSAL BLOOD FLOW



Rectal Blood Flow in UC



Effect of hypnosis in active UC



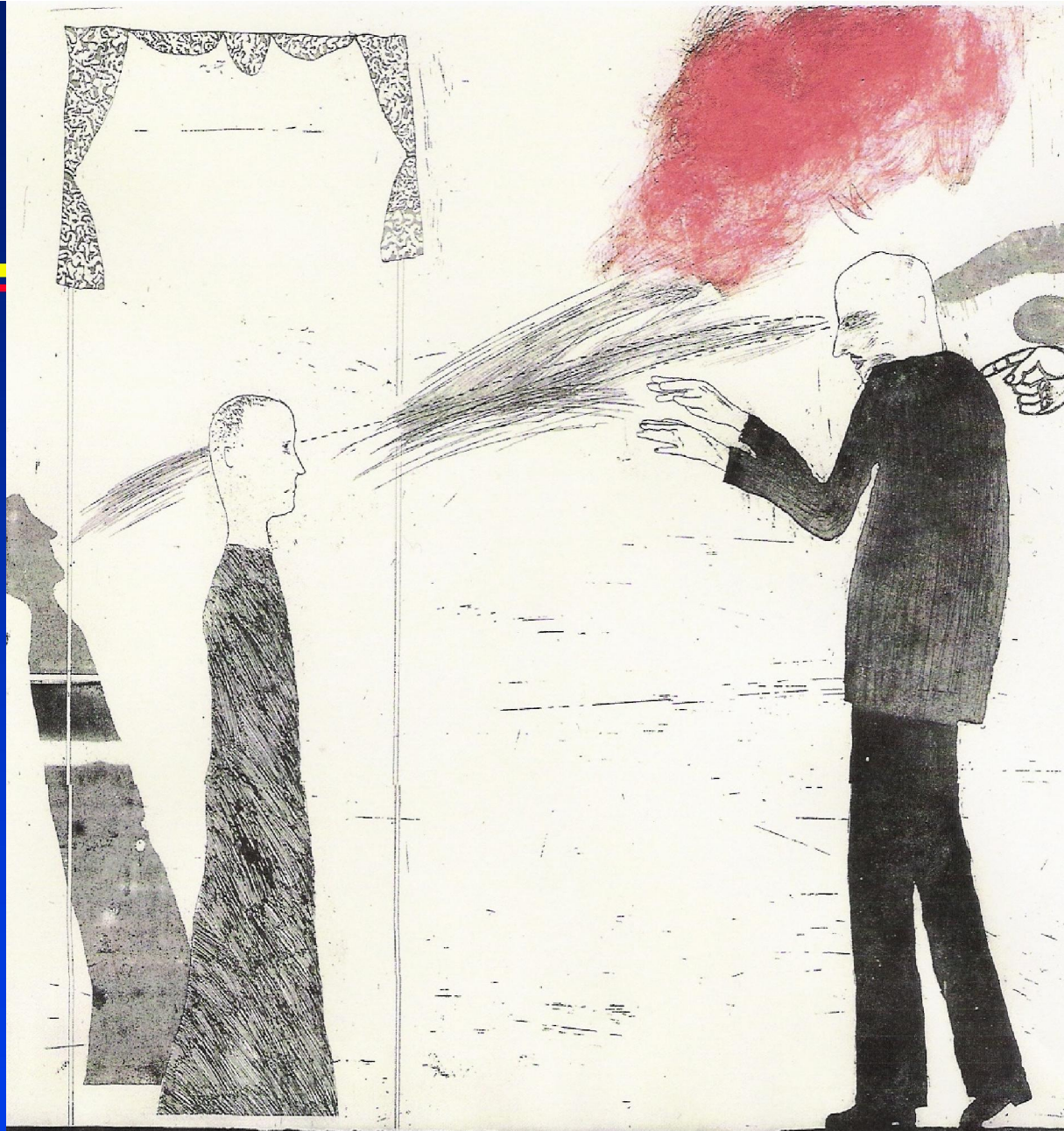
SUMMARY

- | Acute psychological stress increases
 - » platelet activation
 - » platelet-leucocyte formation
 - » NK cell numbers
 - » LPS-stimulated IL6
 - » rectal reactive oxygen metabolite production
- | Single session of hypnotherapy reduces
 - » NK cell numbers
 - » rectal mucosal blood flow

CONCLUSIONS

- | In UC, acute psychological stress increases potentially pathogenic variables in blood and mucosa.
- | These findings may be relevant not only to IBD but also to other diseases including ischaemic heart disease and stroke.
- | To clarify the effects of hypnosis, study of the effects of repeated sessions is needed.

IBD THERAPY - THE FUTURE?



The Hypnotist

Hockney 1963