

A need for realistic and applicable approaches in the prevention of physical and stress-related problems

Un besoin d'approches réalistes en matière de prévention de problèmes physiques et reliés au stress

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« Se creuser les méninges et le contrôle de l'appétit »



Effets d'un travail informatique exigeant sur la vigilance cognitive, l'apport énergétique et en aliment-confort, et la stabilité glycémique

Mean energy intake in the buffet-type meal

	Control	Reading-writing	Test-battery
Mean energy intake (kcal)	860	1063*	1113*
Energy intake from desserts (kcal)	180	288*	299*

* $p < 0.05$ versus control values.

Adapted from Chaput et al, Psychosomatic Med 70: 797-804, 2008.

Heart rate variability (ratio LF/HF), blood pressure (BP), and heart rate in response to mental work

Variable	Control session	Mental work
Ratio LF/HF	2.0 ± 1.2	2.8 ± 1.4**
Systolic BP (mmHg)	110 ± 10	112 ± 10
Diastolic BP (mmHg)	69 ± 9	74 ± 8*
Heart rate (bpm)	62 ± 8	68 ± 9**

- Values are means ± SD of 44 participants.
- An increase in the ratio LF/HF reflects a relative increase in sympathetic versus parasympathetic stimulation.
- Significant difference between control and mental work: * $p < 0.05$,
** $p < 0.0001$

Adapted from Pérusse-Lachance et al., Bioenergetics 92, 2012

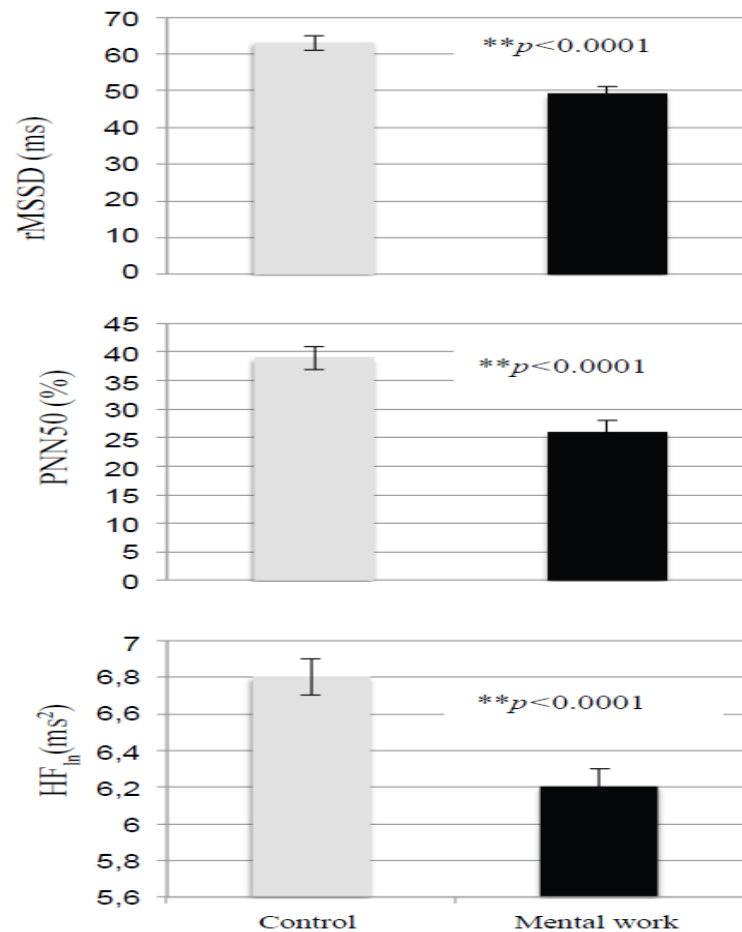
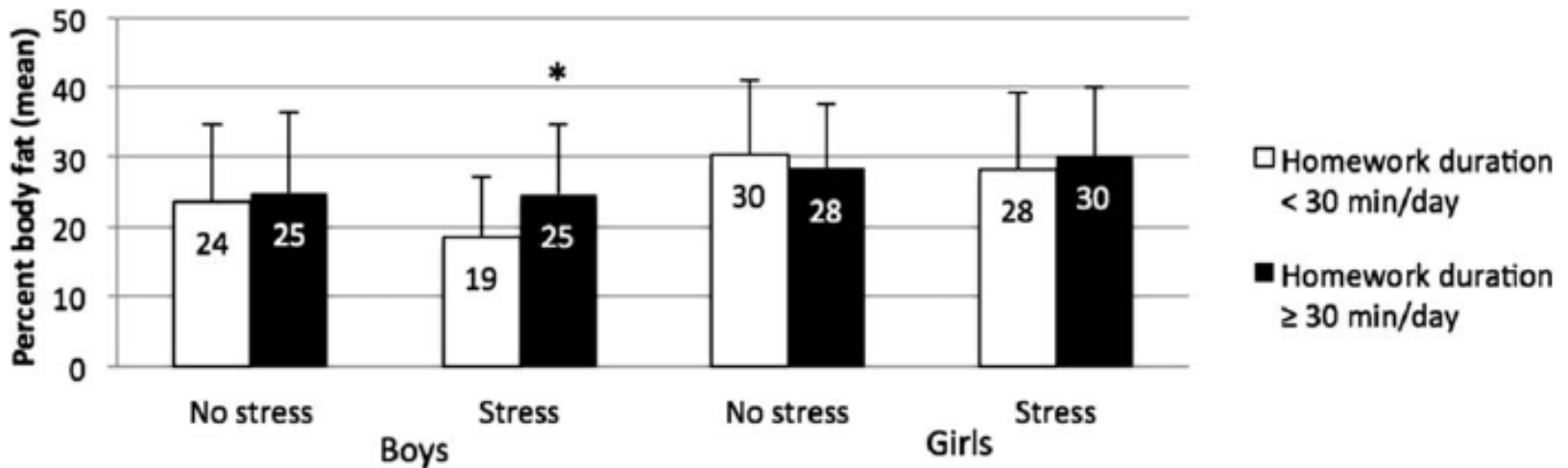


Figure 1: Effect of mental work on cardiac parasympathetic modulation
Parasympathetic parameters of heart rate variability: high frequency (HF), the square root of the mean squared differences of successive RR intervals (rMSSD), and the proportion of interval differences of successive NN intervals >50 ms (pNN50)

$**p < 0.0001$ for $n=44$ between control and mental work.

Percent body fat by homework duration, stress status, and sex



From Michaud et al, Obesity 2015

La prise de methylphenidate (Ritalin, Concerta) est-elle une solution?

Methylphenidate reduces energy intake and dietary fat intake during a buffet-style meal in adults

Variable	Mean change (%)
Energy intake	-11*
Fat intake	-17*

Values are means.

* Significant difference versus a placebo condition: $p < 0.05$

Adapted from Goldfield GS, AJCN 86: 308-315, 2007

L'activité physique comme solution non-pharmacologique

Exercise and negative energy balance in males who perform mental work

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Received 2 October 2012; revised 13 February 2013; accepted 20 February 2013

What is already known about this subject

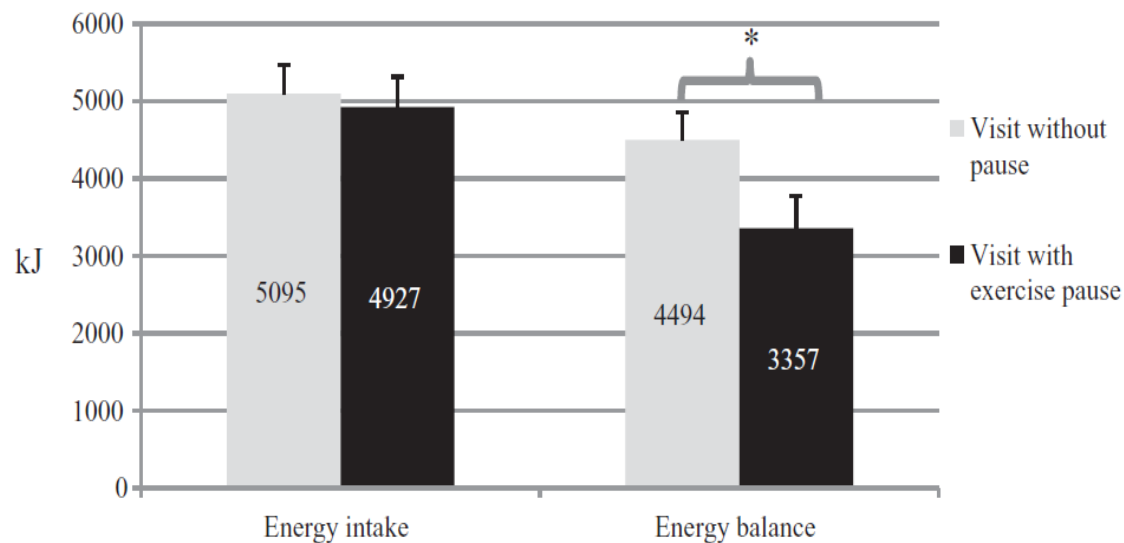
- Achievement of a stressful mental task leads to increased energy intake over a short period of time.
- Given that mental work does not increase energy expenditure, a positive energy balance is observed.

What this study adds

- The single fact of waiting and relaxing after mental work does not reduce energy intake.
- Thirty minutes of physical activity performed at moderate/high intensity between mental work and a meal is enough to create a energy deficit compare to a situation where the meal directly follows mental work.

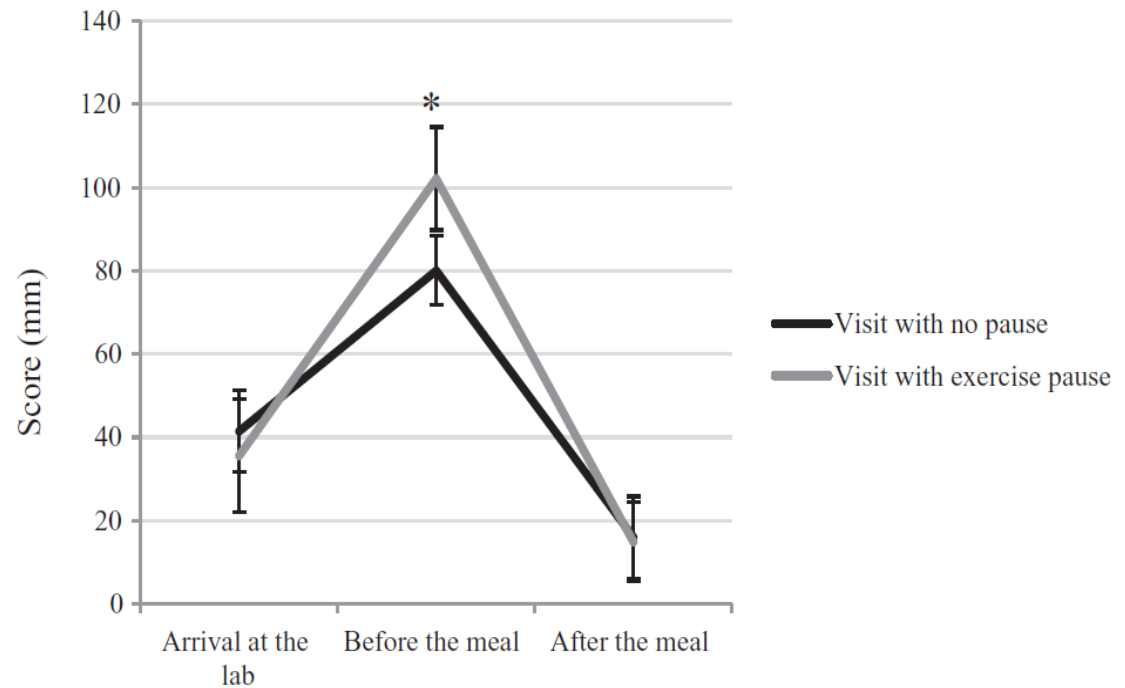
Published in Pediatric Obesity

Figure 2 Energy intake and balance for the visit without pause and the one with exercise pause. Values are the mean (standard error); * $P \leq 0.05$.



From Lemay et al., Pediatric Obesity 2013

Figure 3 Desire to eat scores on visual analogue scales at different moment during the day. Values are the mean (standard error); $*P \leq 0.05$.



From Lemay et al., Pediatric Obesity 2013



Photo 1. Active meeting on ergocycle.

Table 1

Physical activity intensity levels, their equivalence as a percentage of maximum heart rate and the number of participants who reached each intensity at T1 (after 30 min of active meetings).

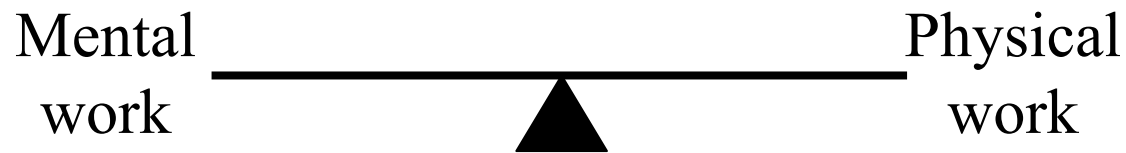
Intensity	% of Max HR	N of participants
Very light	<50%	1
Light	50–63%	13
Moderate	64–76%	13
Hard	77–93%	3
Very hard	94%	0

From Hervieux et al., Applied Ergonomics 2021

The active meeting:

- ↓ perceived stress during and after the session.
- ↑ perceived well-being during and after the session.
- ↑ attention after the session.
- ↓ perceived fatigue after the session.

« Un esprit sain dans un corps sain »



« A sound mind in a sound body »