



- Biomarqueurs biologiques de stress
- WHO approved registry: why? how?
- Stratégie de publication: Trials

Fred Dutheil – CHU Clermont-Ferrand
Do Well B.?
Saint-Nectaire – le 25 juin 2013

Biomarqueurs de stress

JOBSTRESS study: Comparison of heart rate variability in emergency physicians working a 24-hour shift or a 14-hour night shift — A randomized trial

Frédéric Dutheil^{a,b,c,d,*}, Gil Boudet^b, Christophe Perrier^a, Gérard Lac^c, Lemlih Ouchchane^e, Alain Chamoux^b, Martine Duclos^d, Jeannot Schmidt^a

doi:10.1016/j.ijcard.2012.04.141

International Journal of
CARDIOLOGY



Use of heart rate variability to detect stressing professional events among emergency physicians

F. Dutheil^{a,*,b,c,d}, G. Boudet^a, C. Perrier^b, G. Lac^c, L. Ouchchane^d, G. Brousse^b, M. Duclos^e, A. Chamoux^a, J. Schmidt^b



ELSEVIER
MASSON

Archives des Maladies Professionnelles et de l'Environnement 2012;73:334-338

24-hour shift (24hS)

versus

14-hour shift (14hS)

HRV

Salive

Urines

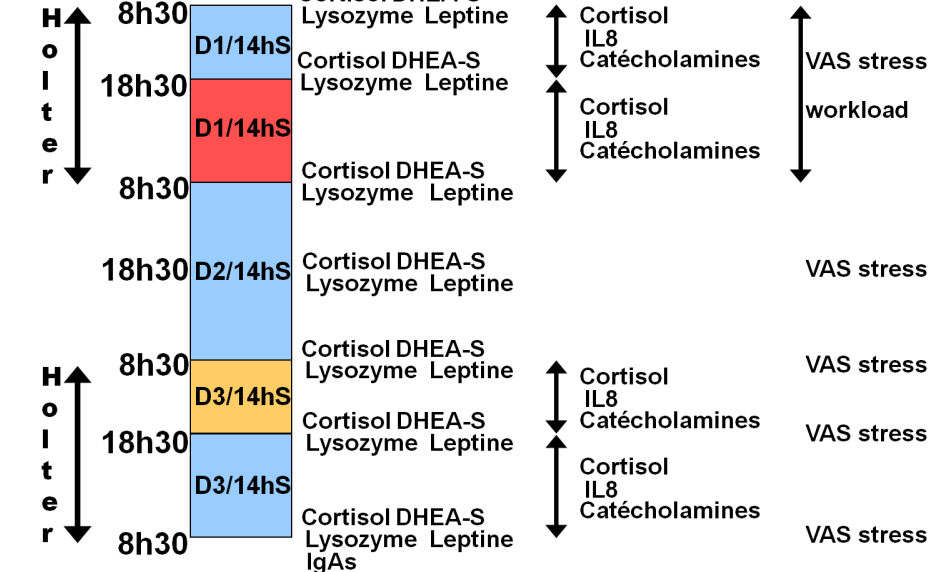
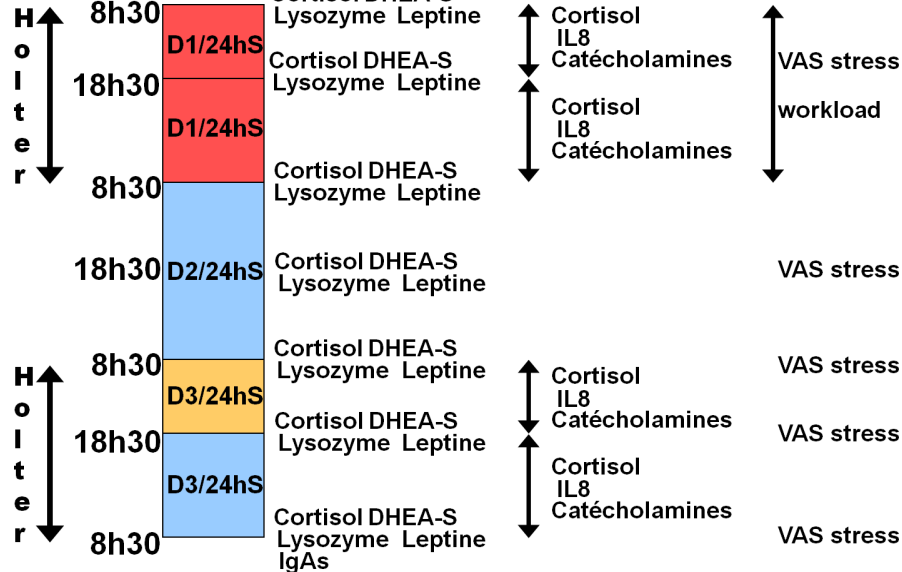
Stress

HRV

Salive

Urines

Stress



versus

Control Day

On return from leave (> 8 days off)

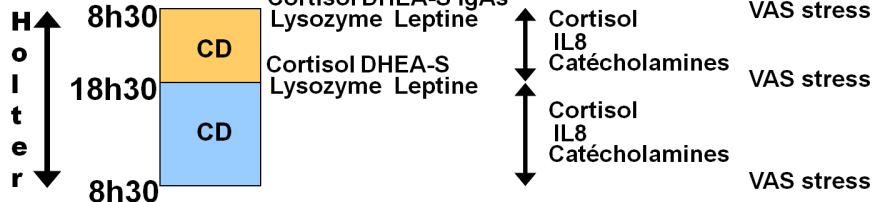
HRV

Saliva

Urines

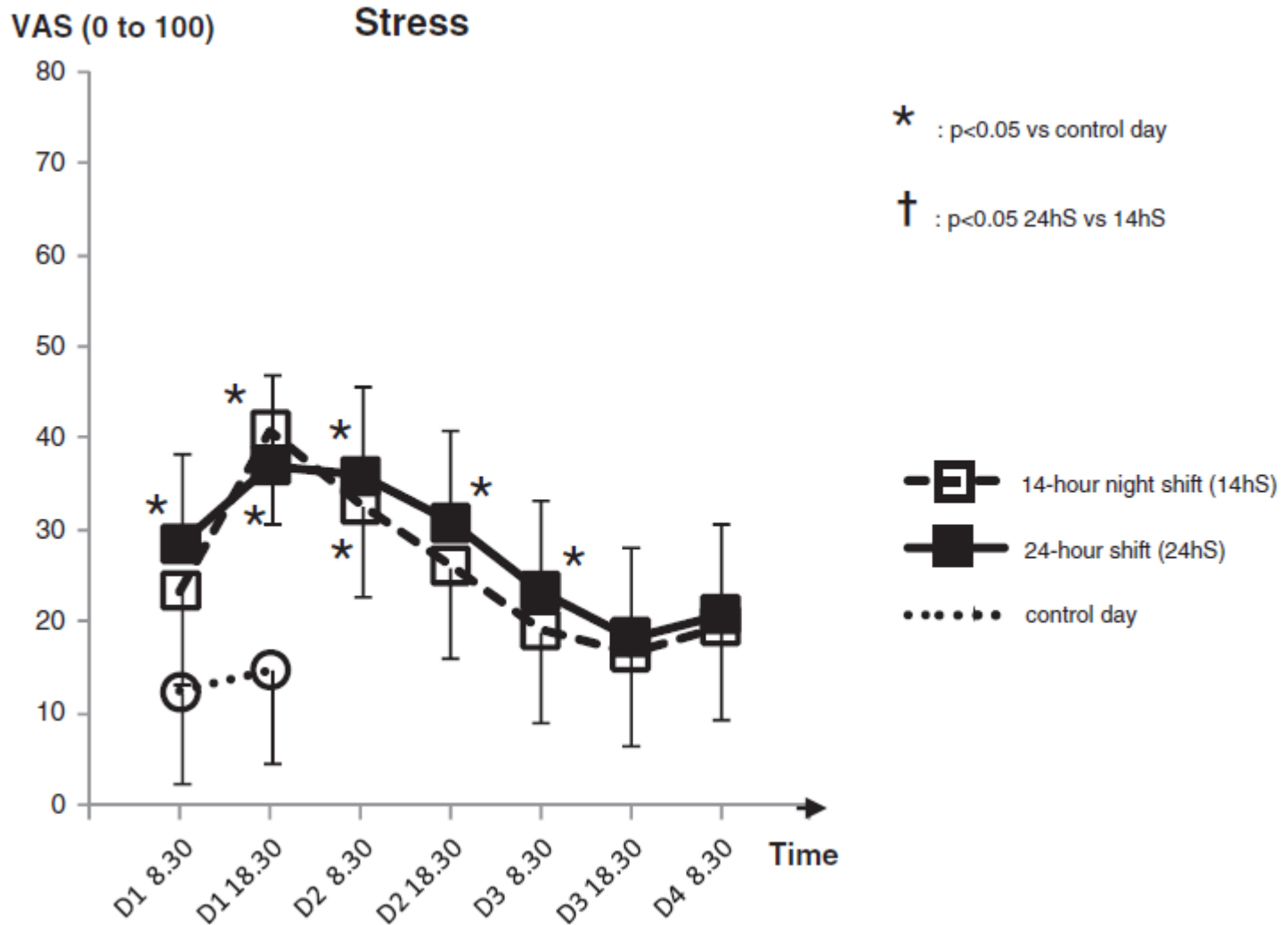
Stress

+ Questionnaires:



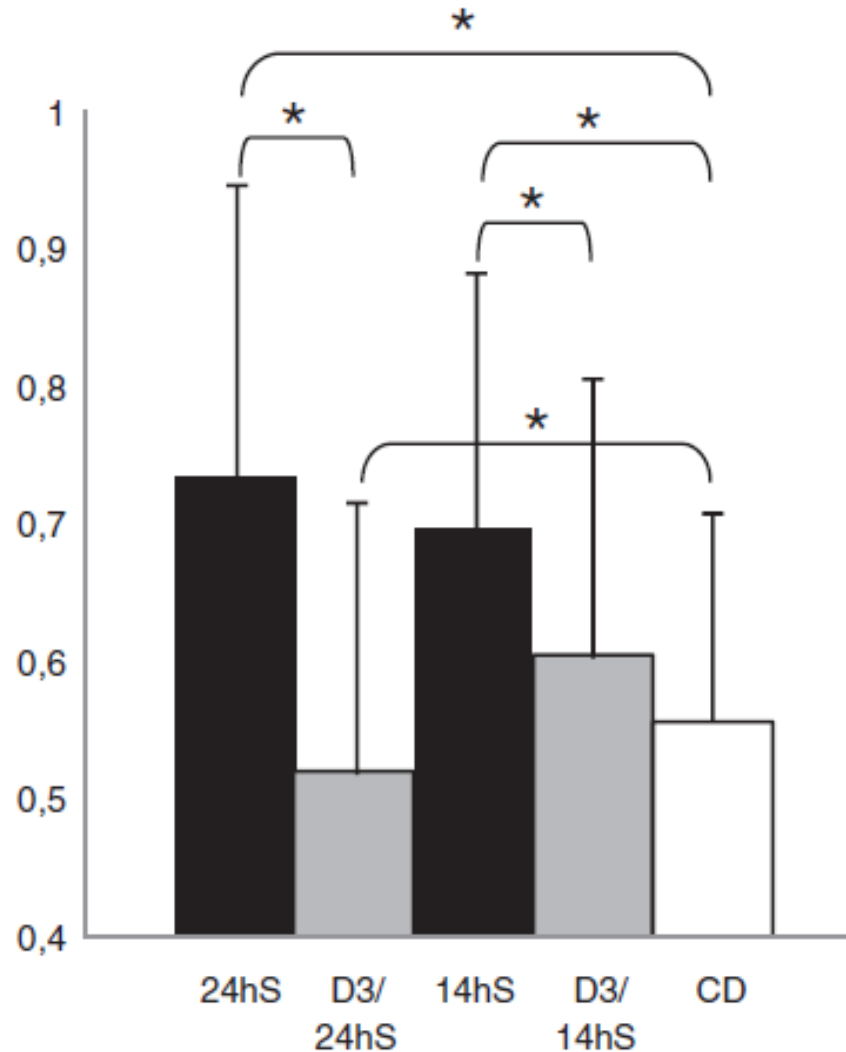
Hamilton
Maslach Burn out Inventory
Hospital Anxiety an Depression Scale
Karasek
+ specific questionnaires

Visual Analog Scale

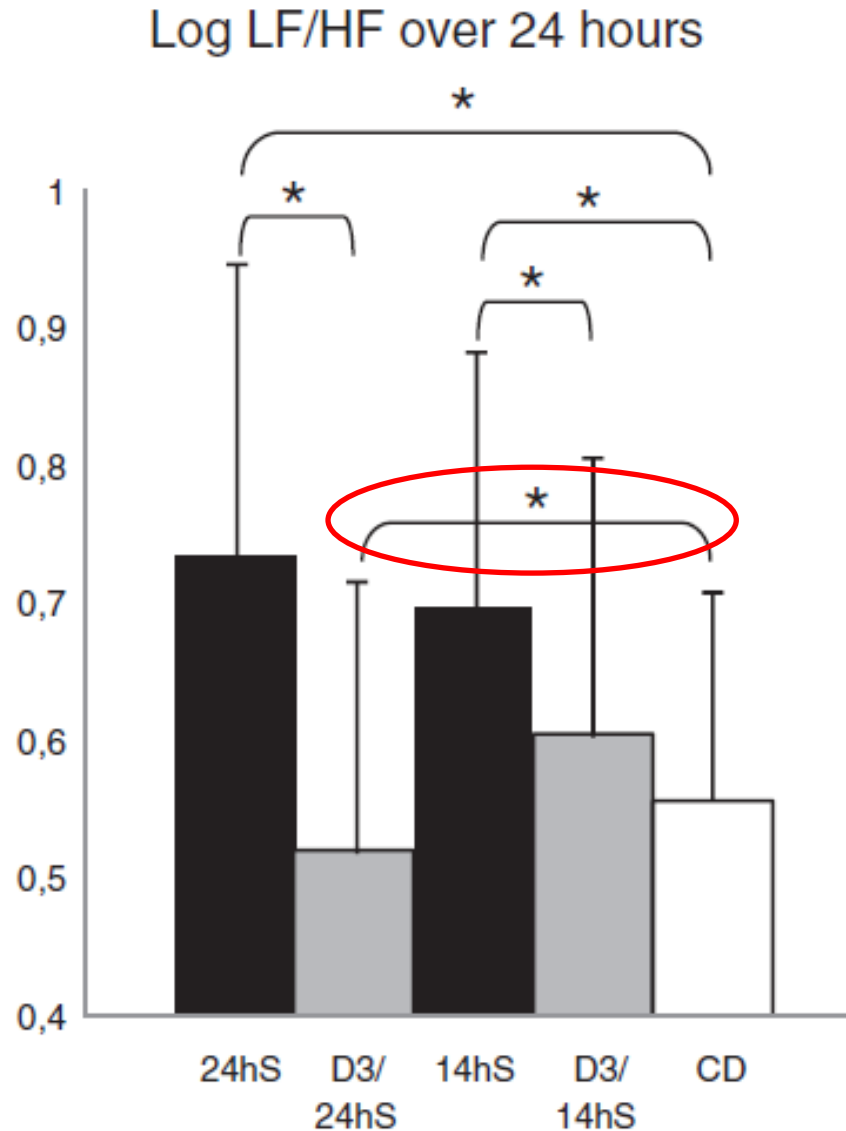


Stress Biomarkers: HRV

Log LF/HF over 24 hours

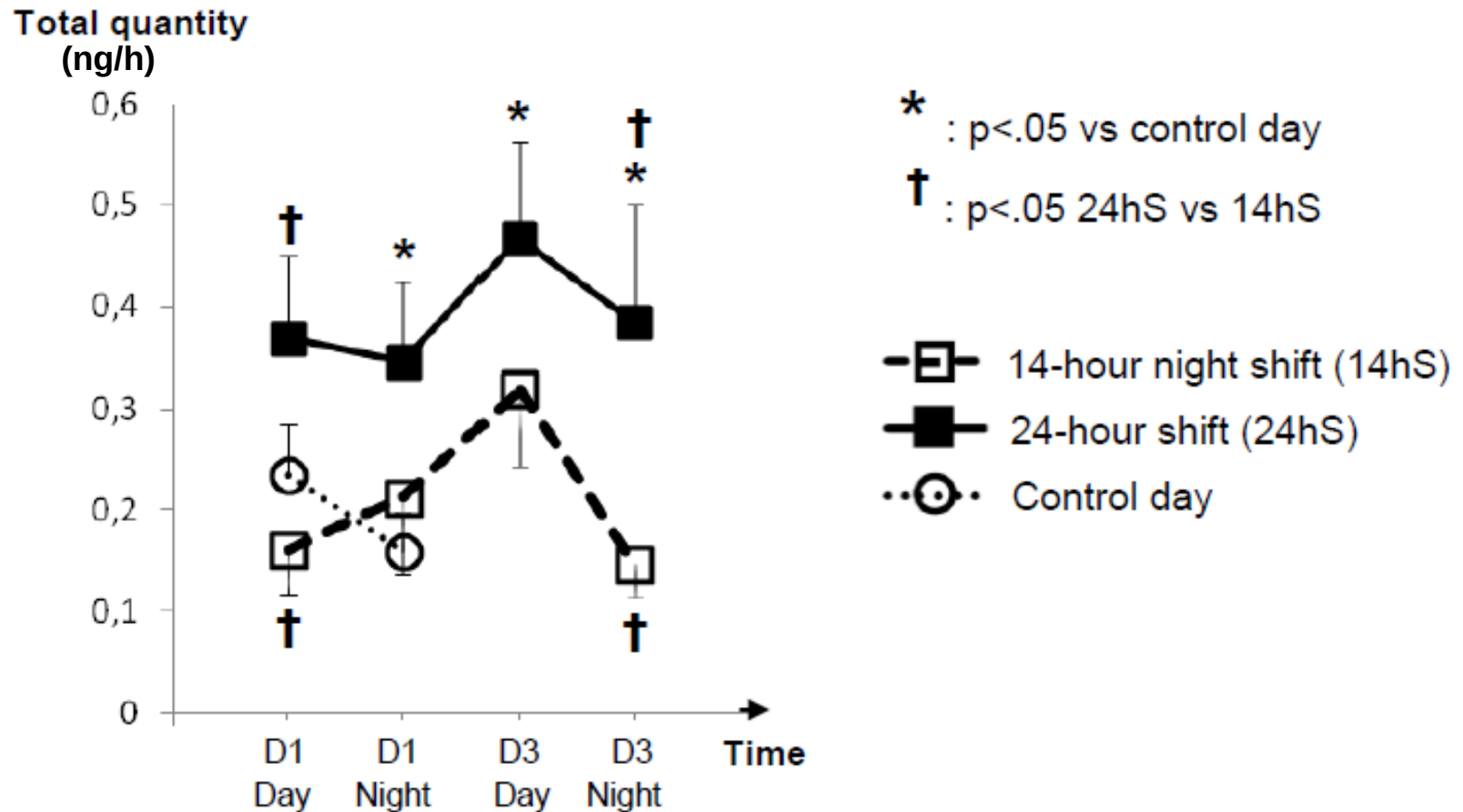


Stress Biomarkers: HRV



Urinary Stress Biomarkers

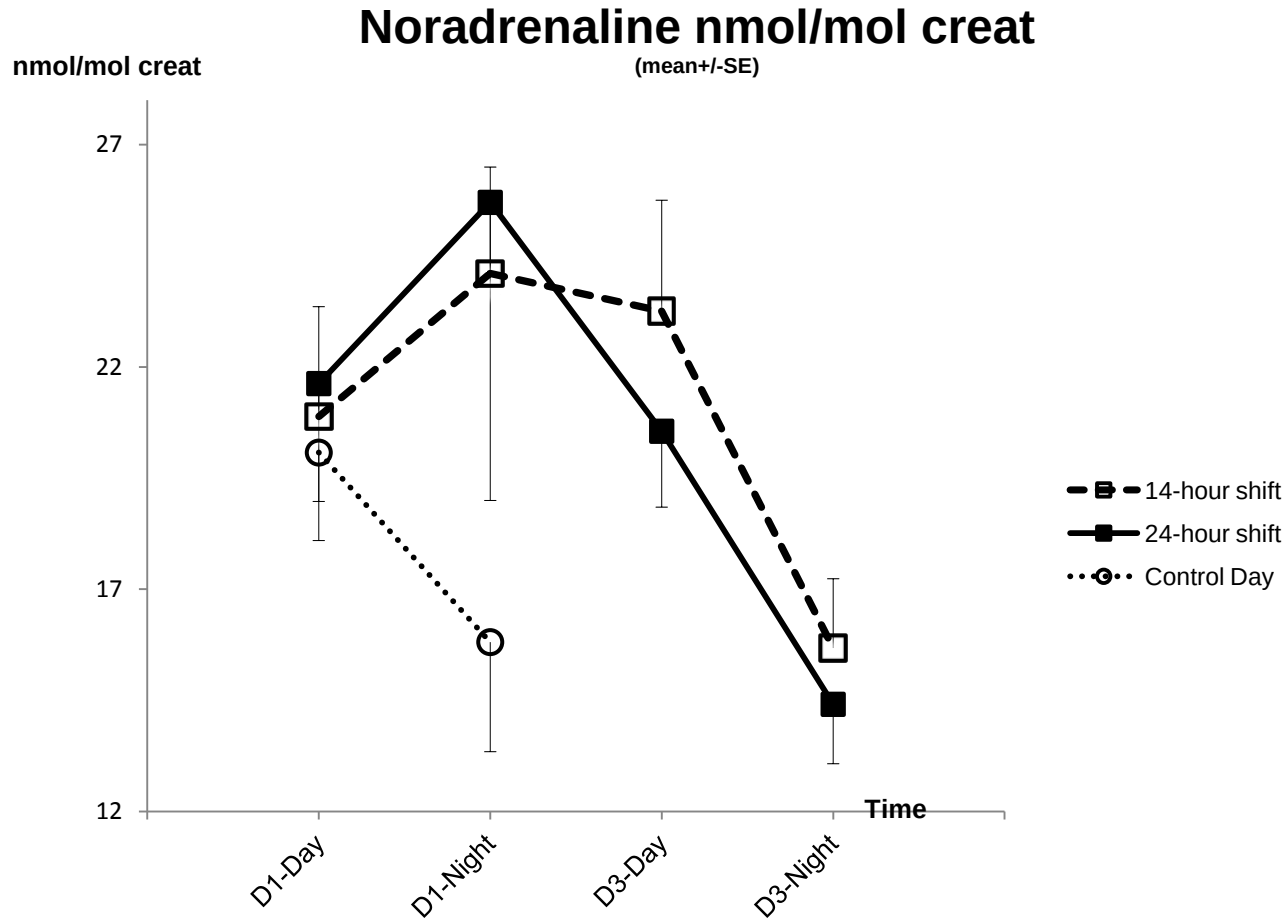
Urinary IL8



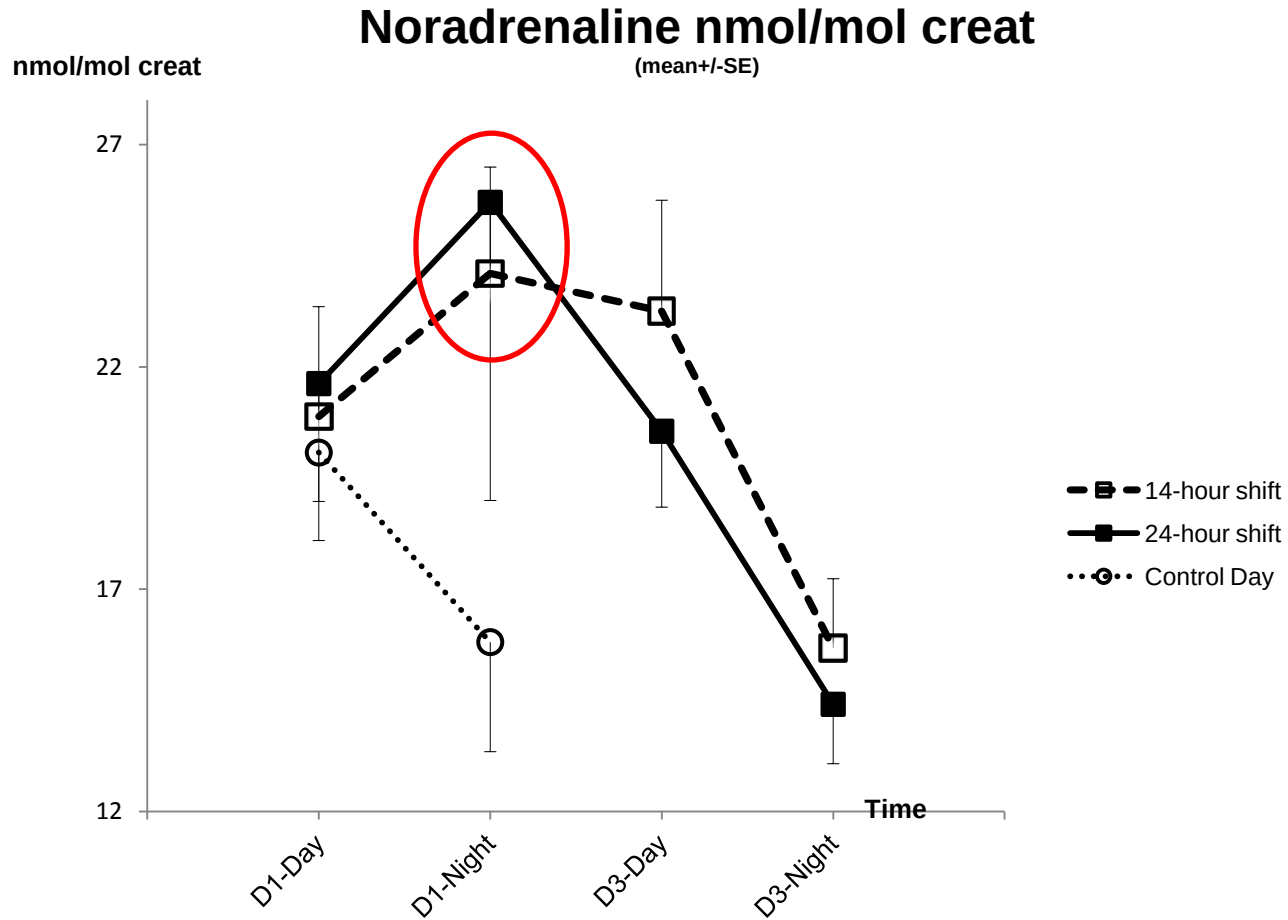
Urinary Stress Biomarkers

DOPA → NorAd → Ad

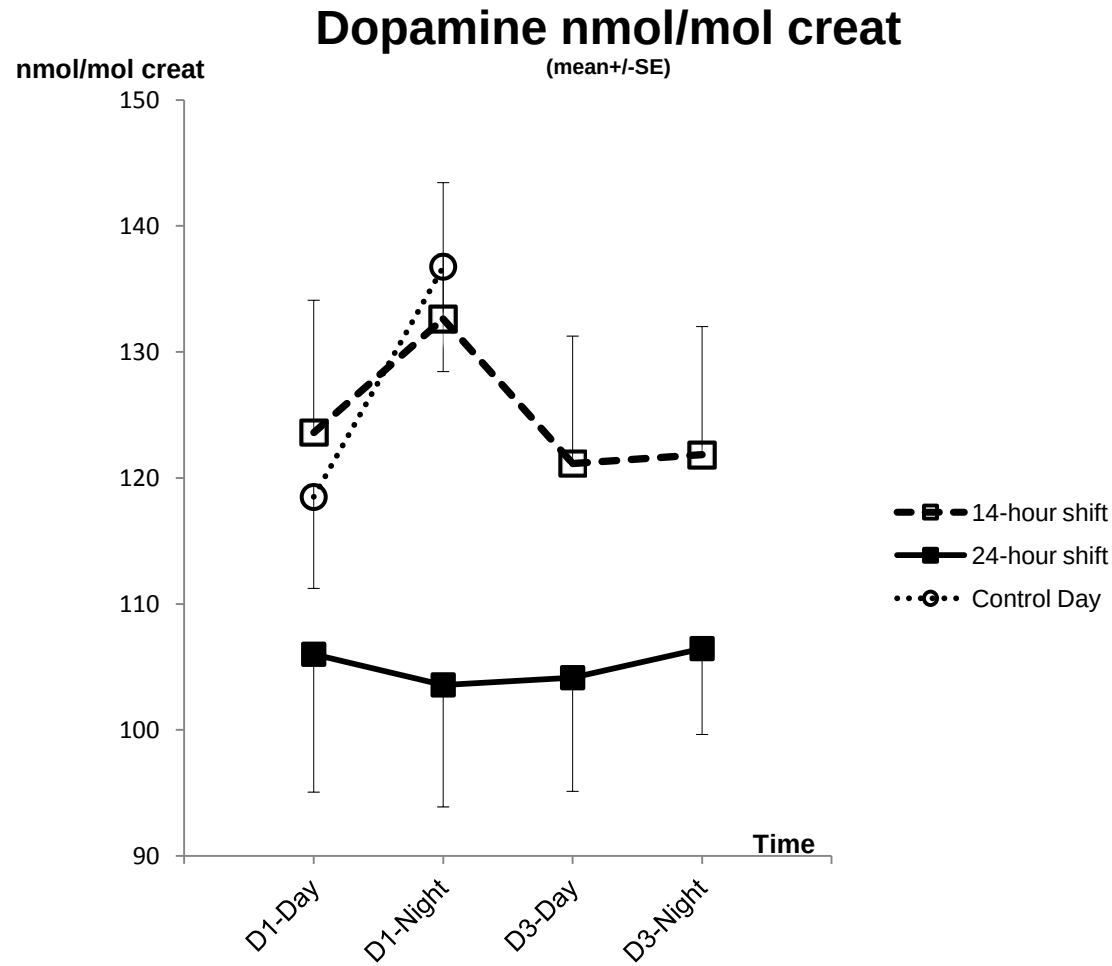
Biomarqueurs de stress



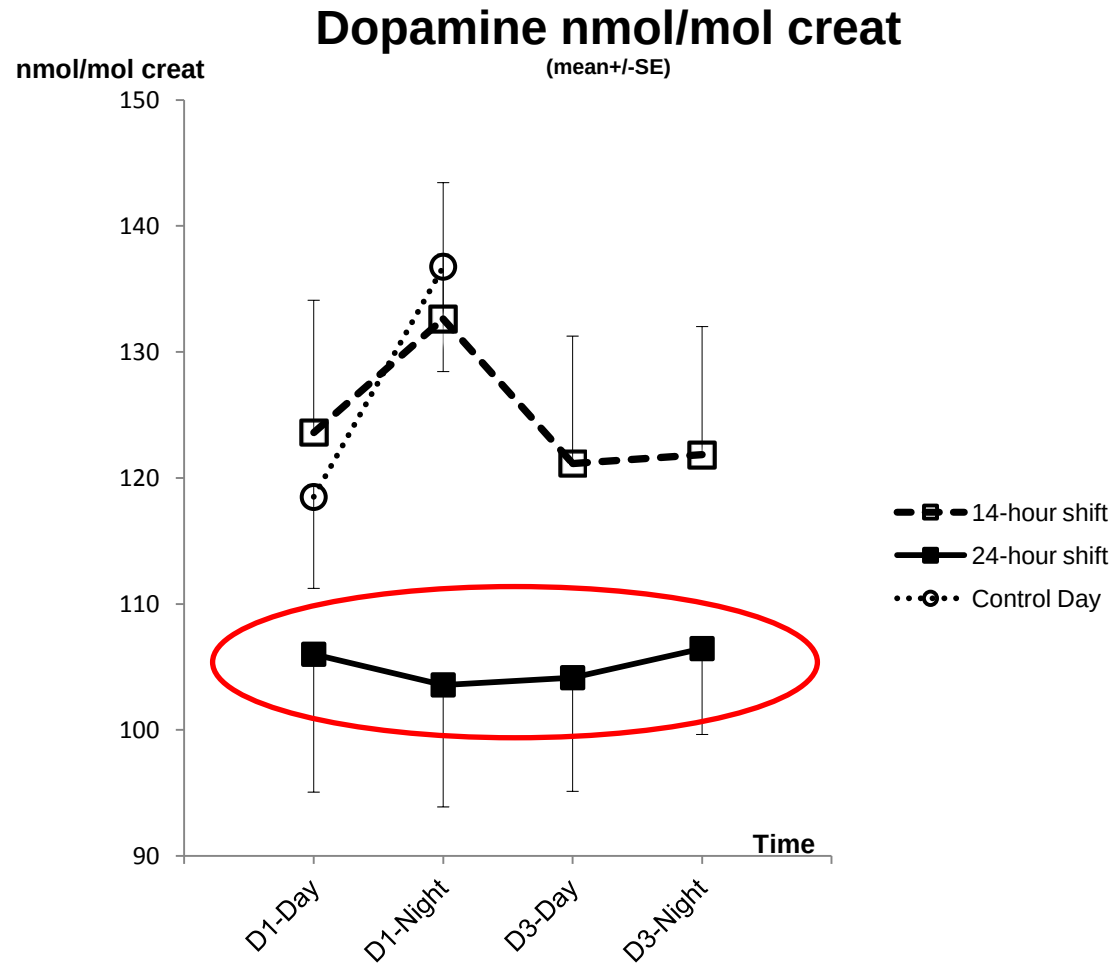
Biomarqueurs de stress



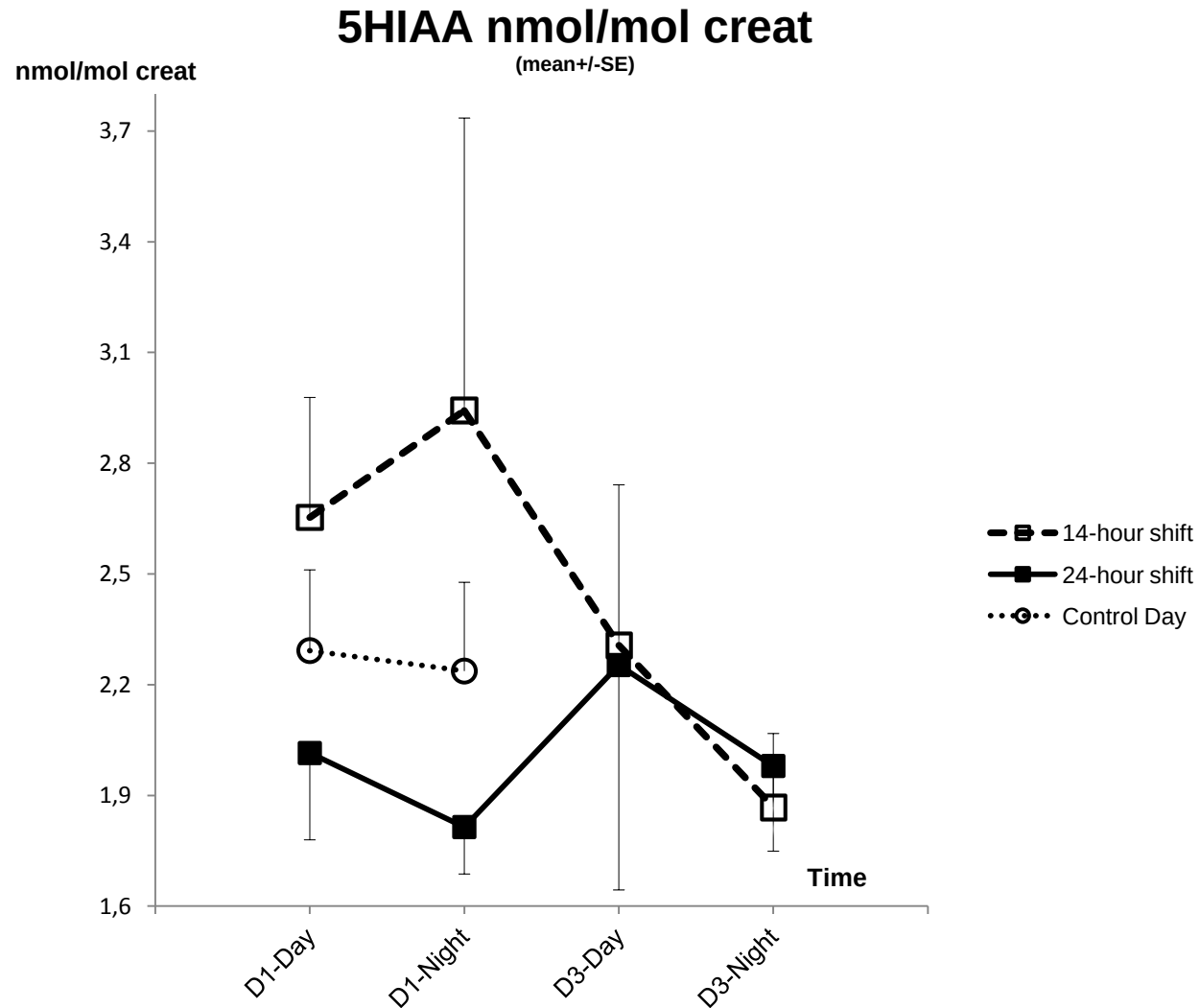
Urinary Stress Biomarkers



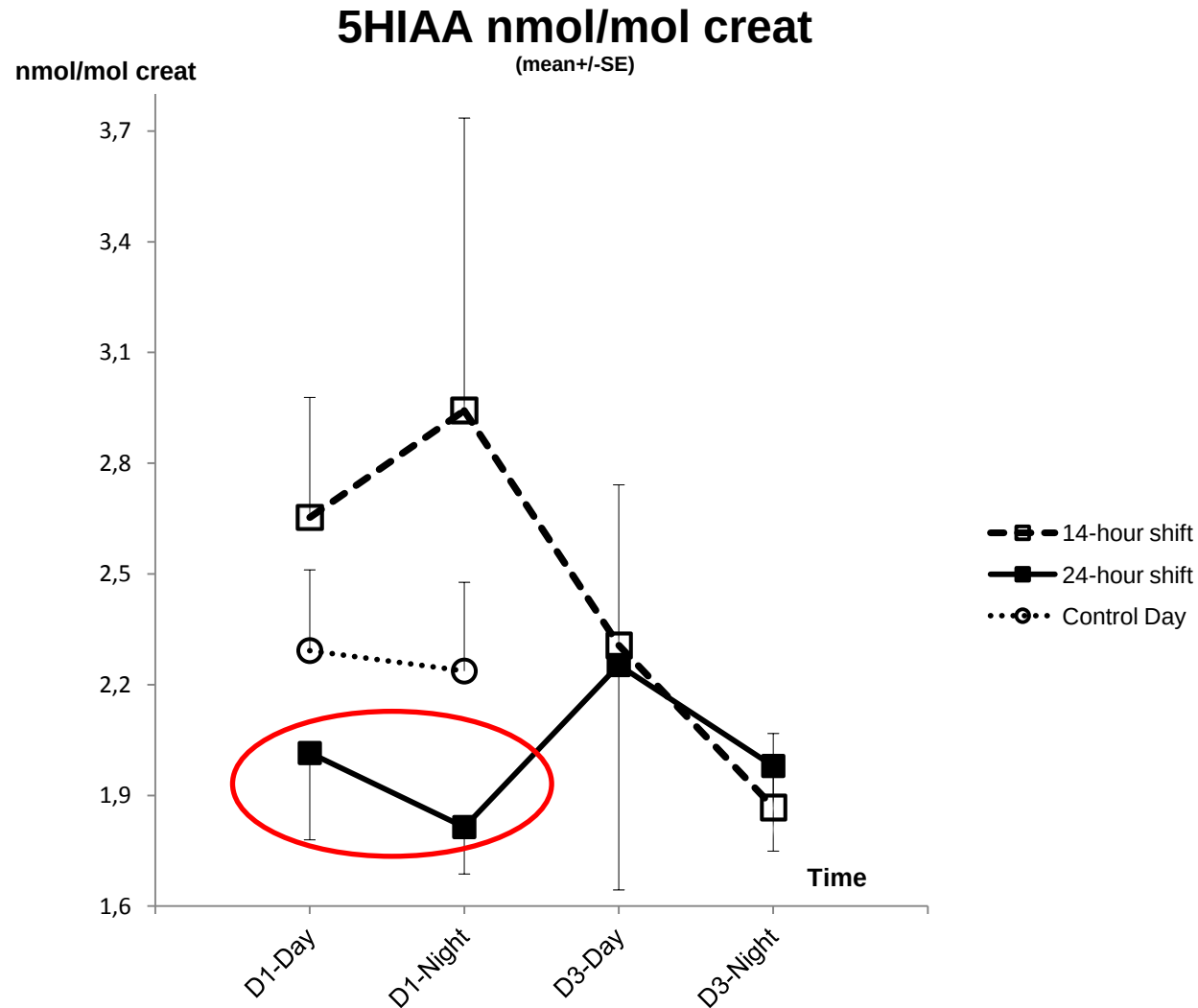
Urinary Stress Biomarkers



Urinary Stress Biomarkers



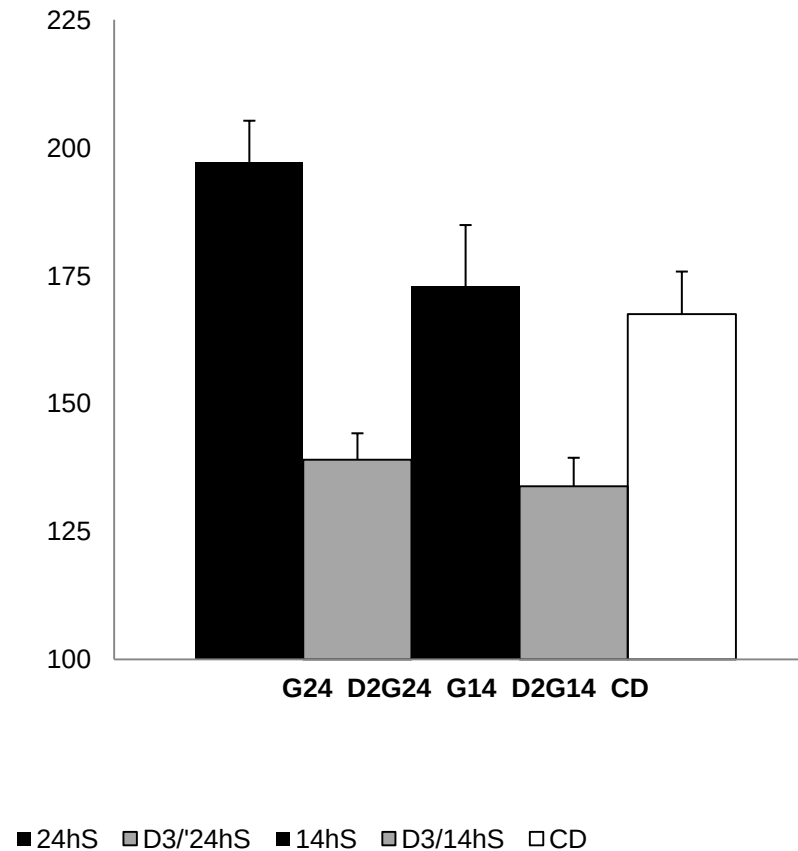
Urinary Stress Biomarkers



Urinary Stress Biomarkers

total quantity
(mg)

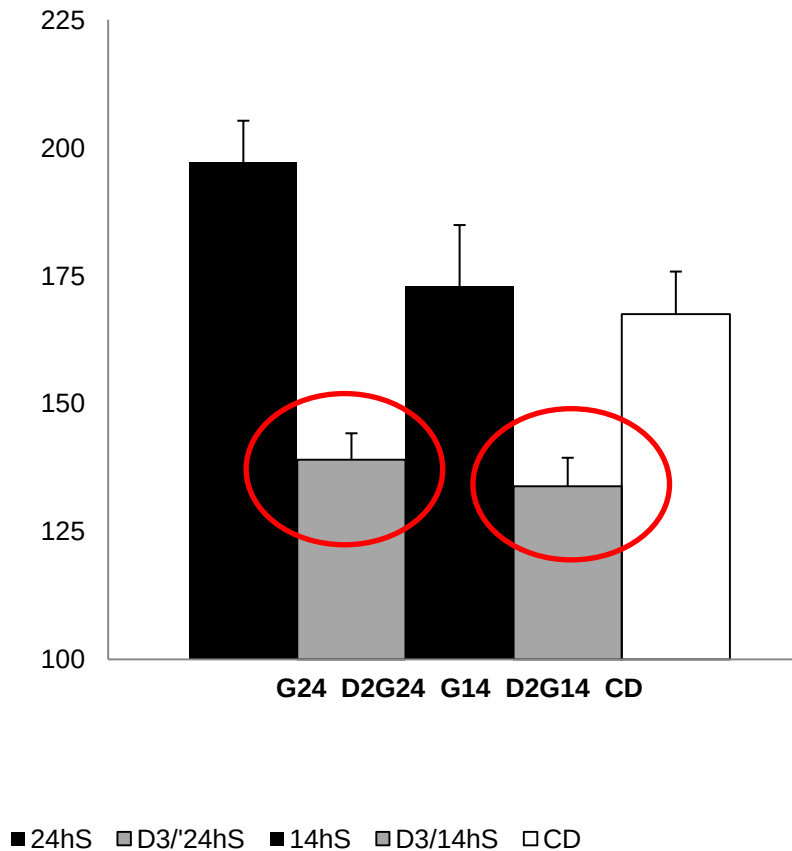
Urinary Cortisol



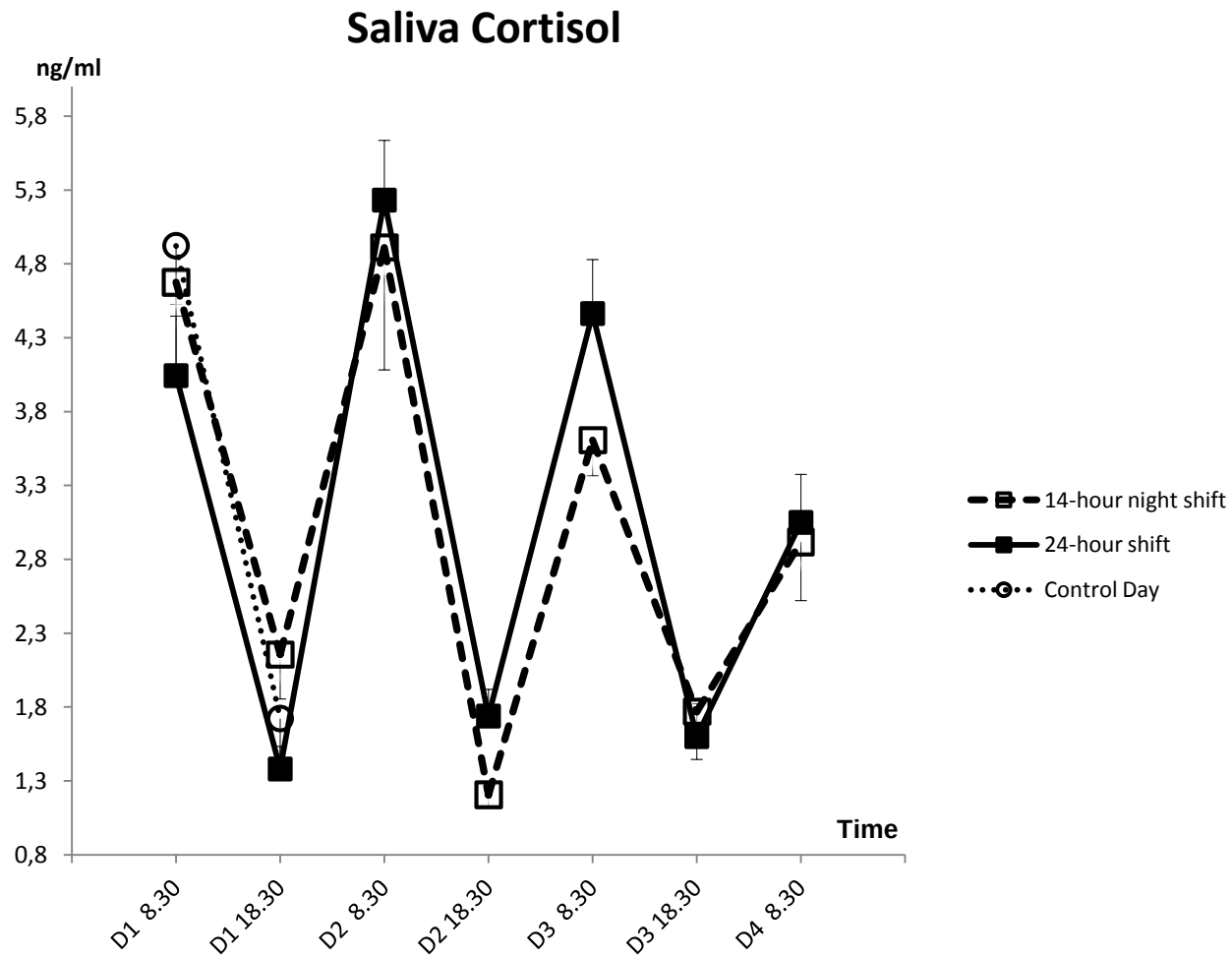
Urinary Stress Biomarkers

total quantity
(mg)

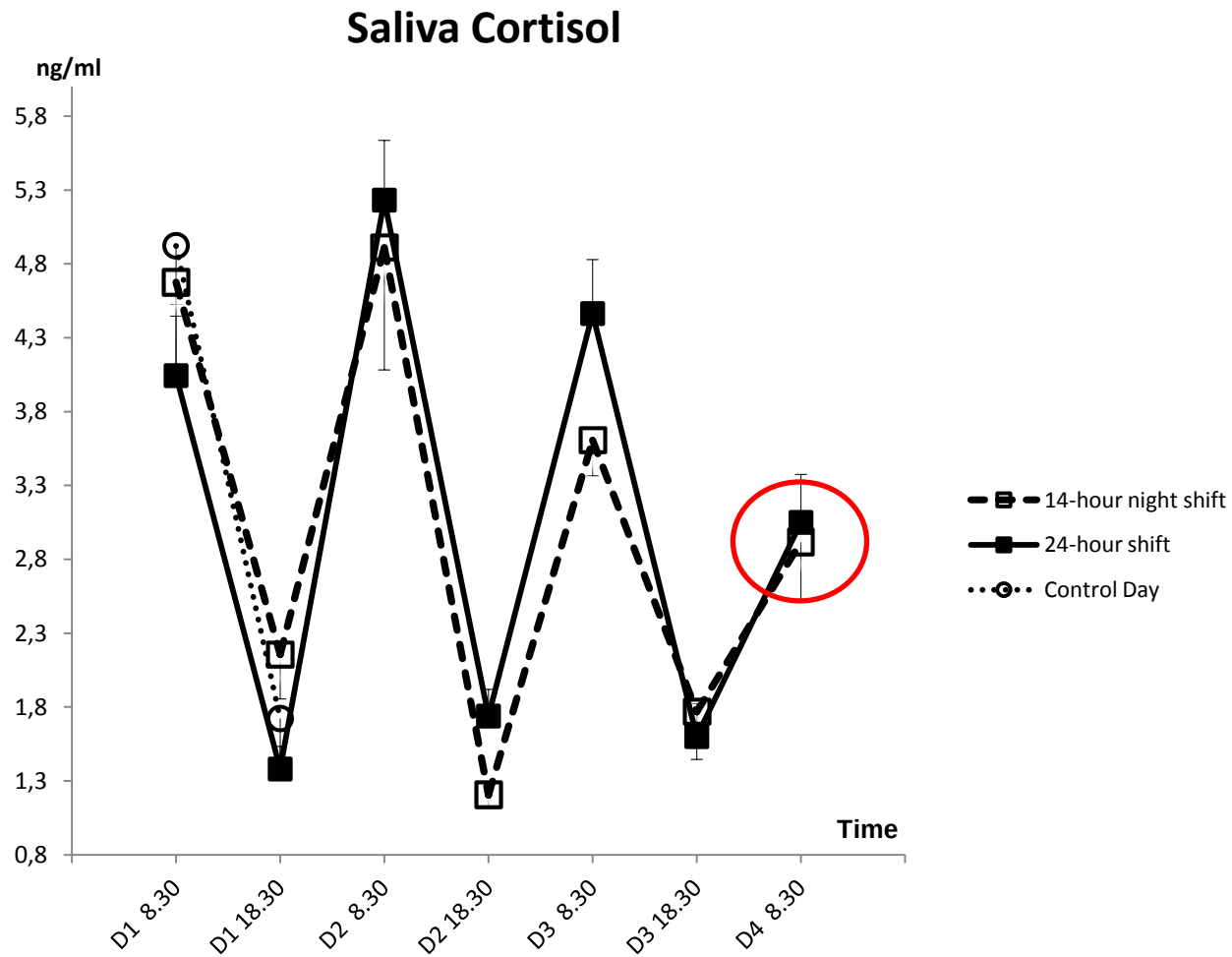
Urinary Cortisol



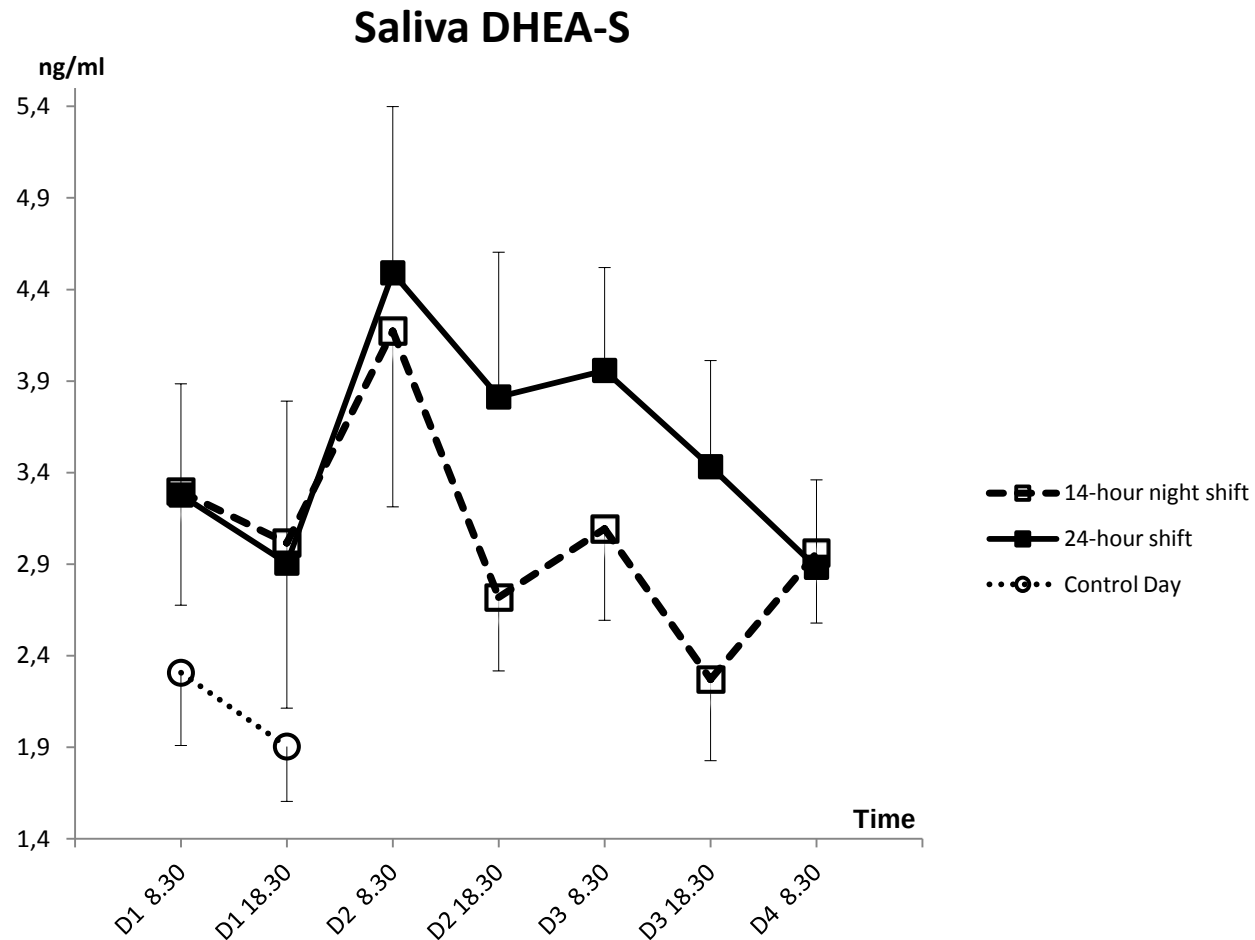
Stress Biomarkers in saliva



Stress Biomarkers in saliva



Stress Biomarkers in saliva



Stress Biomarkers

- 500 euros/80 dosages

[J Neuroendocrinol.](#) 2011 May;23(5):450-5. doi: 10.1111/j.1365-2826.2011.02118.x.
Age-related changes in plasma dehydroepiandrosterone levels in adults with Down's syndrome and the risk of dementia.

[Landt J](#), [Ball SL](#), [Holland AJ](#), [Hon J](#), [Owen A](#), [Treppner P](#), [Herbert J](#).

[Neurosci Lett.](#) 2006 Oct 9;406(3):298-302. Epub 2006 Aug 22.

Bioavailable estradiol and age at onset of Alzheimer's disease in postmenopausal women with Down syndrome.

[Schupf N](#), [Winsten S](#), [Patel B](#), [Pang D](#), [Ferin M](#), [Zigman WB](#), [Silverman W](#), [Mayeux R](#).

[Int J Gynaecol Obstet.](#) 1999 Oct;67(1):15-21.

Gonadal function in young women with Down syndrome.

[Angelopoulou N](#), [Souftas V](#), [Sakadamis A](#), [Matziari C](#), [Papameletiou V](#), [Mandroukas K](#).

WHO approved registry: why? How?

What is PLoS Medicine's policy on trials registration?

By [Emma Veitch](#)

Posted: February 18, 2011

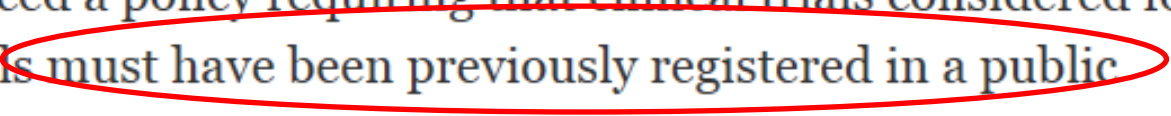
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WHO approved registry: why? How?



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- Brazilian Clinical Trials Registry (ReBec)
- Chinese Clinical Trial Registry (ChiCTR)
- Clinical Research Information Service (CRiS), Republic of Korea
- Clinical Trials Registry - India (CTRI)
- Cuban Public Registry of Clinical Trials(RPCEC)
- EU Clinical Trials Register (EU-CTR)
- ...

WHO approved registry: why? How?



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- ...

ClinicalTrials.gov (NCT)

WHO approved registry: why? How?

ClinicalTrials.gov
Protocol Registration System



Title IND Sponsor Summary Status Design Interventions Conditions Eligibility Locations Citations Links

Title:

Unique Protocol ID:

Brief Title:

Official Title:

Secondary ID's:

(One ID per line)

Definition: Other identification numbers assigned to the protocol, including any applicable NIH grant numbers. Provide up to 5 Secondary ID Numbers.
Example: NCI-793-0115D

WHO approved registry: why? How?

Purpose:

Reason for the protocol

Allocation:

Participant selection

- **Nonrandomized Trial:** participants are expressly assigned to intervention groups

Masking:

knowledge of intervention assignments

- **Open:** no masking is used. All involved know the identity of the intervention assignment.

Control:

Nature of the intervention control

- **Uncontrolled:** no controls are used

▼ **RE: clinical trial.gov**

Ma

De Paquet Virginie

À Frédéric Dutheil perso

Bonjour Monsieur,

Nous avons ENFIN le n° d'enregistrement pour votre étude : [NCT 01874704](#).

Bonne journée.

Cordialement.

Virginie PAQUET

Délégation à la Recherche Clinique et à l'Innovation

CHU de Clermont-Ferrand

Villa annexe IFSI

58 rue Montalembert

63003 Clermont-Ferrand cedex

WHO approved registry: why? How?

- <http://clinicaltrials.gov/>

WHO approved registry: why? How?

- <http://clinicaltrials.gov/>

ClinicalTrials.gov

A service of the U.S. National Institutes of Health

ClinicalTrials.gov is a registry and results database of publicly and privately supported clinical studies of human participants conducted around the world. [Learn more about clinical studies](#) and [about this site](#), including relevant [history](#), [policies](#), and [laws](#).

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ClinicalTrials.gov currently lists **147,621 studies** with locations in all 50 states and in **185 countries**.

[Text Size](#) ▾

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Example: "Heart attack" AND "Los Angeles"

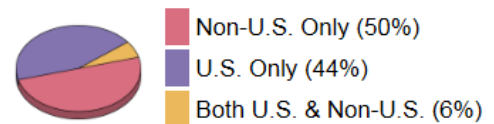
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- [How to read a study record](#)

Locations of Recruiting Studies



Total N = 30,569 studies
Data as of June 24, 2013

WHO approved registry: why? How?

- <http://clinicaltrials.gov/>

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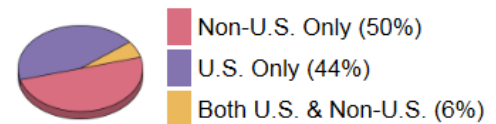
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Locations of Recruiting Studies



Total N = 30,569 studies
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↖ Mot clé ou numéro NCT

WHO approved registry: why? How?

Mot clé = psychologie

Rank	Status	Study
1	Enrolling by invitation	<u>Positive Psychology for Mood Disorders</u> Conditions: Bipolar Disorder; Depression Interventions: Behavioral: Positive psychology intervention; Beha
2	Completed	<u>Development of a Positive Psychology Intervention to Reduce Suicide Risk</u> Conditions: Suicidal Ideation; Suicide Attempt Intervention: Other: Positive Psychology Exercises
3	Completed	<u>Mind-body Interventions in Cardiac Patients</u> Conditions: Acute Coronary Syndrome; Congestive Heart Failu Interventions: Other: Positive Psychology; Behavioral: Relaxation
4	Enrolling by invitation	<u>The Impact of a Bariatric Rehabilitation Service on Patient Outcomes</u> Conditions: Obesity; Bariatric Surgery Candidate

Effects of Diet and Physical Activity Interventions on Weight Loss and Cardiometabolic Risk Factors in Severely Obese Adults:

A Randomized Trial

Dr. Bret H. Goodpaster, PhD, Dr. James P. DeLany, PhD, Dr. Amy D. Otto, PhD, Dr. Lewis Kuller, MD, Dr. Jerry Vockley, MD, PhD, Dr. Jeannette E. South-Paul, MD, Dr. Stephen B. Thomas, PhD, Dr. Jolene Brown, MD, Dr. Kathleen McTigue, MD, MS, MPH, Dr. Kazanna C. Hames, MS, Dr. Wei Lang, PhD, and Dr. John M. Jakicic, PhD

Divisions of Endocrinology and Metabolism (Goodpaster, DeLany, and Brown and Ms Hames) and General Internal Medicine (Dr McTigue), Department of Medicine, and Departments of Pediatrics (Dr Vockley) and Family Medicine (Dr South-Paul), School of Medicine, University of Pittsburgh, Pittsburgh, Pennsylvania; Physical Activity and Weight Management Research Center, Department of Health and Physical Activity, University of Pittsburgh (Drs Otto and Jakicic and Ms Hames); Departments of Epidemiology (Dr Kuller), Human Genetics (Dr Vockley), and Behavioral and Community Health Sciences (Dr Thomas), University of Pittsburgh Graduate

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Corresponding Author: Bret H. Goodpaster, PhD, Division of Endocrinology and Metabolism, Department of Medicine, School of Medicine, University of Pittsburgh, MUH N810, 3459 Fifth Ave, Pittsburgh, PA 15213 (bgood@pitt.edu).

Trial Registration clinicaltrials.gov Identifier: NCT00712127

Author Contributions: Dr Goodpaster had full access to all of the data in the study and takes responsibility for the integrity of the

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A B S T R A C T

Background: Opinions differ over the exercise modalities that best limit cardiovascular risk (CVR) resulting from visceral obesity in individuals with metabolic syndrome (MetS). As little is known about the combined effects of resistance and endurance training at high volumes under sound nutritional conditions, we aimed to analyze the impact of various intensities of physical activity on visceral fat and CVR in individuals with MetS. **Methods:** 100 participants, aged 50–70 years, underwent a diet restriction (protein intake 1.2 g/kg/day) with a high exercise volume (15–20 h/week). They were randomized to three training groups: moderate-resistance–moderate-endurance (re), high-resistance–moderate-endurance (Re), or moderate-resistance–high-endurance (rE). A one-year at-home follow-up (M12) commenced with a three-week residential program (Day 0 to Day 21). We measured the change in visceral fat and body composition by DXA, MetS parameters, fitness, the Framingham score and carotid-intima–media-thickness.

Results: 78 participants completed the program. At D21, visceral fat loss was highest in Re (–18%, $p < .0001$) and higher in rE than re (–12% vs. –7%, $p < .0001$). Similarly, from M3, visceral fat decreased more in *high-intensity-groups* to reach a visceral fat loss of –21.5% (Re) and –21.1% (rE) $> -13.0\%$ (re) at M12 ($p < .001$). CVR, MetS parameters and fitness improved in all groups. Visceral fat loss correlated with changes in MetS parameters.

Conclusion: Increased intensity in high volume training is efficient in improving visceral fat loss and carotid-intima–media-thickness, and is realistic in community dwelling, moderately obese individuals. High-intensity-resistance training induced a faster visceral fat loss, and thus the potential of resistance training should not be undervalued (ClinicalTrials.gov number: NCT00917917).

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Stratégie de publication: Trials

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Trials is an open access, peer-reviewed, online journal that encompasses all aspects of the performance and findings of randomized controlled trials. We publish articles on general trial methodology as well as protocols, commentaries and traditional results papers - regardless of outcome or significance of findings.

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Study protocol

Open Access

Double blind randomized placebo-controlled trial on the effects of testosterone supplementation in elderly men with moderate to low testosterone levels: design and baseline characteristics

Abstract

In ageing men testosterone levels decline, while cognitive function, muscle and bone mass, sexual hair growth, libido and sexual activity decline and the risk of cardiovascular diseases increase. We set up a double-blind, randomized placebo-controlled trial to investigate the effects of testosterone supplementation on functional mobility, quality of life, body composition, cognitive function, vascular function and risk factors, and bone mineral density in older hypogonadal men.

We recruited 237 men with serum testosterone levels below 13.7 nmol/L and ages 60–80 years. They were randomized to either four capsules of 40 mg testosterone undecanoate (TU) or placebo daily for 26 weeks. Primary endpoints are functional mobility and quality of life. Secondary endpoints are body composition, cognitive function, aortic stiffness and cardiovascular risk factors and bone mineral density. Effects on prostate, liver and hematological parameters will be studied with respect to safety.

Measure of effect will be the difference in change from baseline visit to final visit between TU and placebo. We will study whether the effect of TU differs across subgroups of baseline waist girth (< 100 cm vs. $\geq$ 100 cm; testosterone level (< 12 versus $\geq$ 12 nmol/L), age (< median versus $\geq$ median), and level of outcome under study (< median versus $\geq$ median).

Results: 10

- ☐ [Low testosterone concentrations and the symptoms of testosterone deficiency according to the Androgen Deficiency in Ageing Males \(ADAM\) and Ageing Males' Symptoms rating scale \(AMS\) questionnaires.](#)

Emmelot-Vonk MH, Verhaar HJ, **Nakhai-Pour HR**, Grobbee DE, **van der Schouw YT**.

Clin Endocrinol (Oxf). 2011 Apr;74(4):488-94. doi: 10.1111/j.1365-2265.2010.03954.x.

PMID: 21138462 [PubMed - indexed for MEDLINE]

[Related citations](#)

- ☐ [Effect of testosterone supplementation on sexual functioning in aging men: a 6-month randomized controlled trial.](#)

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Int J Impot Res. 2009 Mar-Apr;21(2):129-38. doi: 10.1038/ijir.2009.5. Epub 2009 Feb 19.

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[Related citations](#)

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