



Vasile Zoicas - Vasile.zoicas@codesna.com

Marc Latouche - Marc.latouche@codesna.com

Chronic stress, a major problem today

- **Chronic stress' sources :**
 - Emotional pressure over a long period (changes, perceived threats, negative emotions, ...)
 - Impact the Autonomic Nervous System
- **Pathologies associated with chronic stress:**

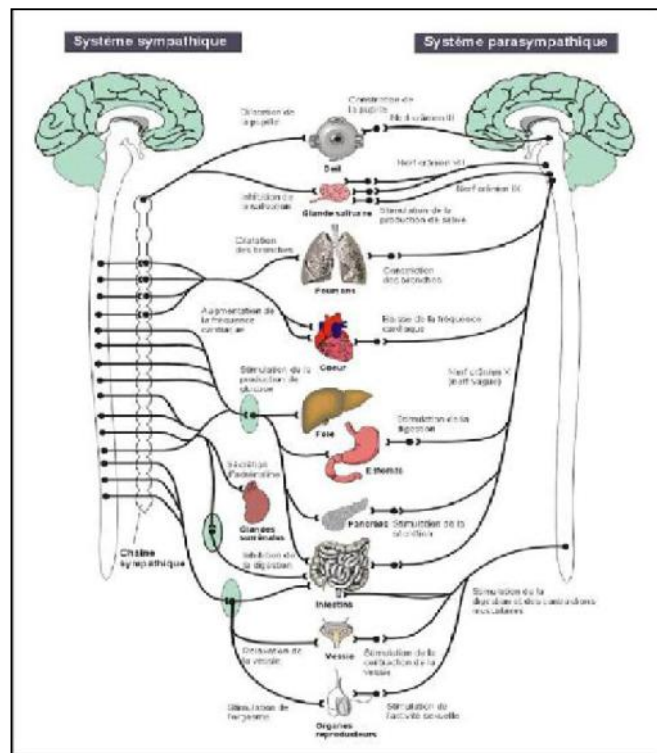


Diagram of the Autonomic Nervous System

- Metabolic syndrome: high blood pressure, cholesterol, ...
- Cardiovascular troubles
- Musculoskeletal Disorders (MSD)
- Depression
- Burn-out, bore-out

Source : Institut National de Recherche et Sécurité (source:www.INRS.FR)

The prevention of chronic stress, critical but complex to manage today

Situation

- Explosion of pathologies related to chronic stress – how to prevent over time ?
- In **Europe, social cost of stress ~20 billions €/year**
- In **US: Stress costs the American economy about \$300 billion \$/year**

Complexity:

- Lots of products measure instant stress, but NOT chronic stress: No products reliable to measure chronic stress
- Hard to express or differentiate for a person
- Based on feelings, questions

How to help people to better manage their health,
to create awareness and consciousness ?

Covid-19: Post Confinement situation

- Many post-traumatic stress cases emerged after the confinement in China.
- 48% of workers seem to suffer from anxiety and depression one month after the measures for confinement take effect (Study in Belgium).
- Studies demonstrate that chronic stress will be exacerbated for people staying in long duration confinement and uncertainty, but as well for people that are “on the first line” (doctors, nurses, employees working in shops open during confinement, etc.)
- Some recent researches have been published on the role of the Autonomic Nervous System balance in “Long Covid” situation where there is a severe inflammatory response after a Covid-19 infection.

Physioner: the approach to scientific chronic stress prevention

- **Scientific**: based on Heart Rate Variability
- **Simple**: Put the clamps on the wrists and perform a breathing exercise
- **Fast**: 2 minutes duration only
- **Markers provided**: chronic stress presence and stress resistance
- **Distinguish chronic stress and instant stress**



- Based on new CODESNA PATENT: real time analysis of the Autonomic Nervous System.
- Proven by scientific and clinical studies (Certified Medical Device)
- Prevention, objectify, put in place corrective actions and measure over time.

CODESNA Technology

Deliver Autonomic Nervous System analysis in real time (new algorithms, going beyond results from « Task Force 1996 » approach):

- Measure Physiological (Chronic) Stress, origin could be from emotional or physical origin (overtraining)
- Based on a measure of ECG / HRV in real time.
- Simple and non-invasive, with measures stored for each patients for follow-up.
- Enable 2 use cases:
 1. Normalised measure in 2 minutes (sensors + ECG clamps)
 2. Measure using other protocols, i.e. in motion or others (sensor and chest belt)

Use Case

- **Evaluation is easy, fast**
 - Can be done in many places
- **Results help the person to objectify a feeling**
 - Define a program based on results to reduce an eventual imbalance and chronic stress presence
- **Follow-up with regular evaluations**
 - Check markers evolution over time and validate benefits of program
- **Preventive approach**
 - Reduce the risks and costs of pathologies linked to a chronic stress presence

Target segments

- **Health professionals, Wellbeing Centers**
 - Evaluation, propose preventive actions, increase customers
- **Insurances / Health Mutuals**
 - Target Enterprises – health and security risks
 - Reduce the social cost of chronic stress and related pathologies
- **Pharmacies**
 - Deliver advices, increase sales in wellbeing market
 - Customer retention
- **Enterprises**
 - Improve security, health and performance for employees

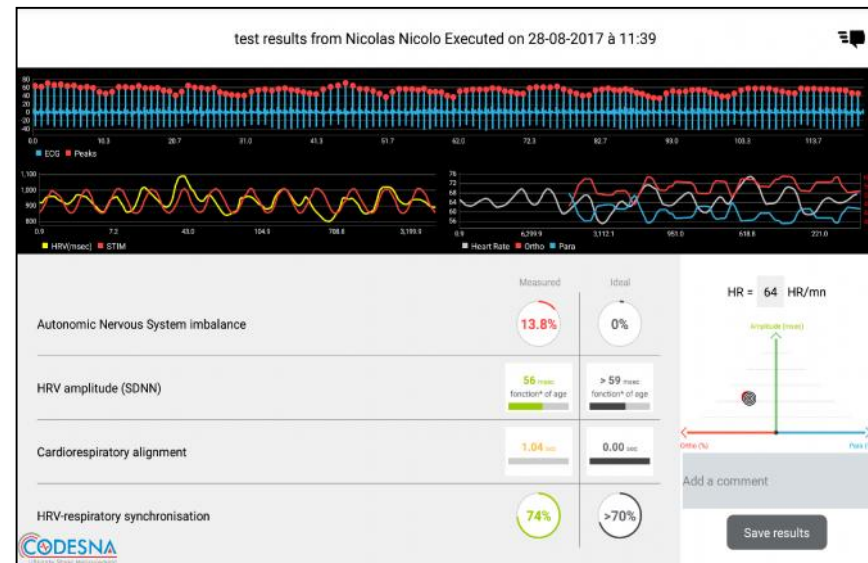
One technology, 2 products

Auto-evaluation product
Target Enterprises, Pharmacies
« simplified » version



Results screenshot example

Physioner Pro
Target healthcare
« full detailed » version



Results screenshot example

Already launched with customers

Examples

Market segments

Health and wellbeing professionals



Enterprises / Insurances



Enterprise wellbeing coaches



Pharmacies



CODESNA, The Team



Vasile Zoicas
President and
CTO



Marc Latouche
General
Manager,
Marketing



François Le Faucheur
Business
Development
Director



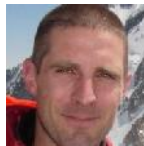
Guillaume Rivas
Sport and
Performance
Management

Scientific Committee

Dr Laurent Schmitt



Dr Laurent Mourot



Pr Jean Marsac



Dr Aurélien Pichon



Dr Lefèvre




Scientific Partners



Scientific Research is a fundamental pillar

Published study

- Journal «Physical Medicine and Rehabilitation Research », volume 3, Issue: CODESNA, a new tool to assess the ANS activity. <http://www.oatext.com/codesna-hrv-a-new-tool-to-assess-the-activity-of-the-autonomic-nervous-system-from-heart-rate-variability.php>
- *Validation de la méthode CODESNA pour l'activité du Système Neurovégétatif par l'analyse de la variabilité de la fréquence cardiaque* - http://www.codesna.com/wp-content/uploads/2015/07/Validation_scientifique_CODESNA_HRV.pdf
- Publications on ResearchGate 
- Study on stress at work with Cimiez's Hospital at Nice, "Centre d'Innovation et Usage santé" - <https://clinicaltrials.gov/ct2/show/NCT02754323>

Statistical study

- Measurements on over 300 patients with various known emotional states, physical activity or medical treatments and correlation with obtained results.





www.codesna.com