

CHRONIC VENOUS DISEASE IN OCCUPATIONAL ENVIRONMENT WHICH AXES IN PREVENTION?

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INTRODUCTION

- On average, we will take between 6000 to 7000 steps per day, our veins are solicited from waking up to our bedtime. At the end of an active day, edema and a heavy leg sensation may occur.
- Chronic venous disease is underestimated and yet its impact on the quality of life of individuals and employees in particular is not negligible. Global prevalence is important especially in industrialized countries, and health authorities agree that the disease is a public health problem.
- In 1996 in France according to INSEE*, 18 million adults, with 57% of women and 26% of men expressed circulatory disorders of the lower limbs.
- The management of the CVD absorbs between 1 and 3% of the public health budget of the industrialized countries. The most severe forms of CVD cost the most, not only economically but also in terms of impaired quality of life. *Rabe E, Pannier F. Societal costs of chronic venous disease in ceap c4, c5, c6 disease. Phlebology 2010;25 (Suppl. 1):64-7.*
- If certain risk factors are demonstrated, others are part of the collective unconscious. There are many preconceptions about this disease both in the medical community and in the general population.

Materials and Methods: A systematic literature review

A literature review has 4 main objectives :

- Data sources:**
Method: Search engine web, university libraries.
Selection of the literature on the topic of the study.
 - Scientific articles (36) : articles were selected according to the title of the article, the origin of the publication, the authors, the chronology of the texts and the linguistic expression
 - Grey literature (5) Anaes definition: Official reports
 - Scientific Work (1): La maladie veineuse et les facteurs de risque professionnels Philippe Blanchemaison et Pierre Catilina. Édition Phase 5; 2005.
- Synthesis of the information into a summary.**
- Selecting texts:** A selective methodology
I defined 5 selection criteria: the title of the article, the origin of the publication, the authors, the chronology of the texts and the linguistic expression.
- Reading:**
The information gathered by identifying gaps in current knowledge; by showing limitations of theories and points of view; and by formulating areas for further research and reviewing areas of controversy.
All of the above criteria provided a template for the selection of documents.
For this analysis, I was inspired by the reading grids published by ANAES and guidelines *Gehanno, J. F., & Thirion, B. (2000). How to select publications on occupational health: the usefulness of Medline and the impact factor. Occupational and Environmental Medicine, 57(10), 796-799.*
- Organisation:** It presents the literature in an organised way.

Context

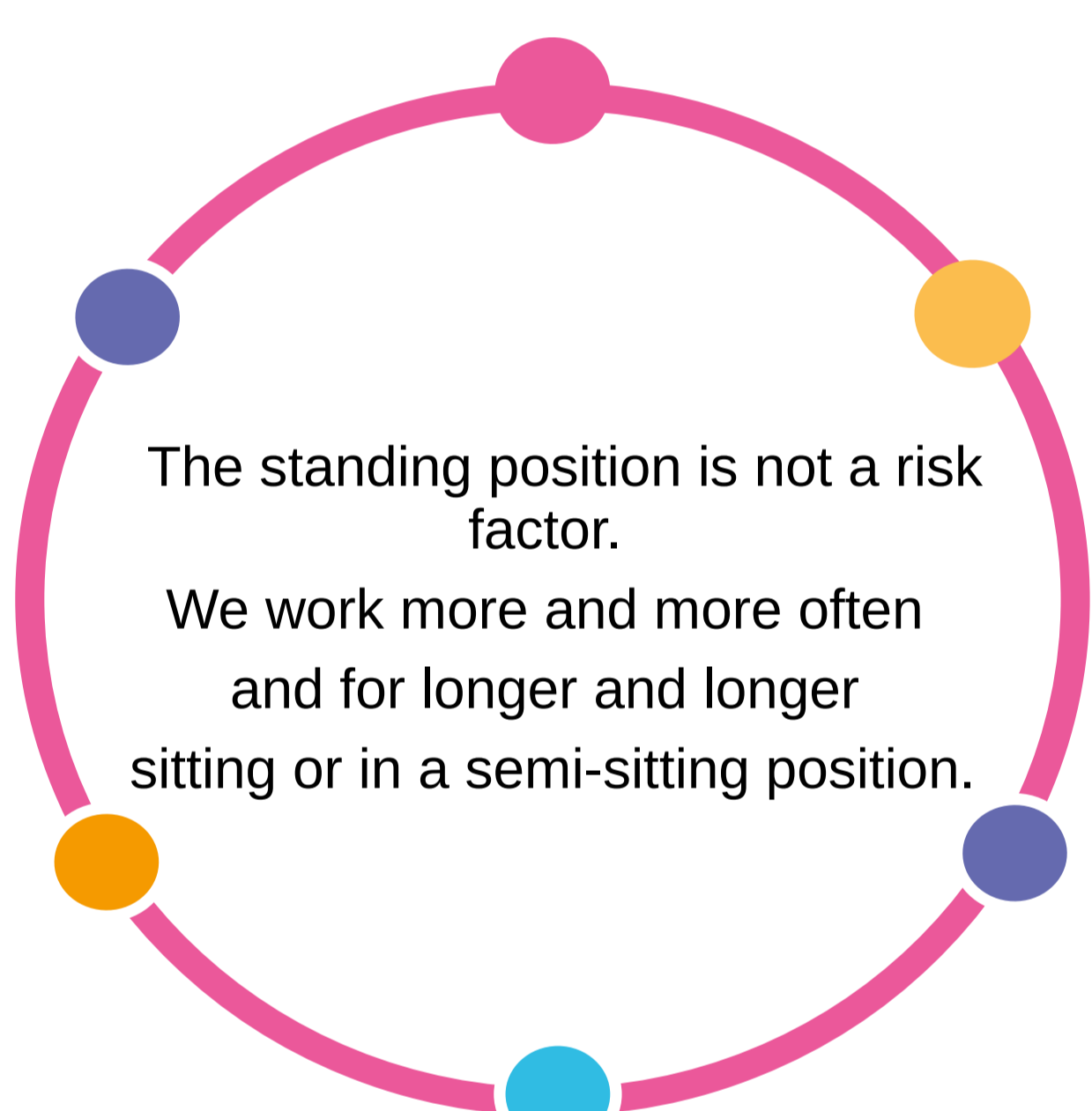
- High prevalence of Chronic venous disease (CVD*).
- Static positions : Risk factor of CVD* ?
- Weak Data from the scientific literature on CVD* and working conditions.
- Enlighten OHS * on a strong theme and identify areas for prevention.

Focus on

ANATOMY

CVD*

CVD: Chronic Venous Disease characterized by symptoms or clinical signs.
CVI: Chronic Venous Insufficiency C3-C6 advanced vein disease according to CEAP.



POSTURAL EVOLUTION
Of the 25.8 million French assets,

- Tertiary sector: + 75%
- Industrial sector: 13.9%
- Construction sector: 6.6%
- Agricultural sector: 2.8%.

source Insee 2014

STATIC POSITION
Only the muscles of the venous wall compress the vessels and propel the blood to the heart with a lower flow rate and less good secondary tissue oxygenation.
When you are staying for a long time in uncomfortable static positions, the phenomenon increases.

DYNAMIC POSITION/WALKING
The walking: human mode of locomotion that opposes running, crawling and swimming. It is made in a standing position. The walking involves the exploitation of the sense of balance.

POSTURES: DEFINITION

WALKING
Muscular contraction propels blood towards the heart.

RUNNING
Muscular contraction propels blood towards the heart.

RESULTS

- Case-control studies are in the majority.
- CVD is a multifactorial disease.
- The types of risks are many and are influenced by factors both internal and external (socio-environmental).

Risk factors	Signes fonctionnels	Signes cliniques	CVI
Age (OR/10ans)	0.7 - 0.9	1.5 - 1.6	2.0 - 2.6
Gender Female	1.5 - 2.5	NS	NS
Heredity	NS	2.2 - 3	NS
Pregnacy/hormone	NS	2.2 - 3.7	NS
Overweight	+	?	+
Diet	+	?	+
Smoking	+	?	+
Sedentarity lifestyle	1.7 - 3	+	+
Clothing	+	?	?
Professional Parameters	+	NS	?
Static position	++	NS	?

- Results for age**
- Linear increase in the incidence of the disease with age.
 - The risk of developing venous disease is even higher when the age is high (p < 0.001).
 - The severity of clinical signs is greater in the elderly population with one of the CEAP clinical stages C5-C6
- Results for working postures**
- The chronology of studies show a postural evolution of occupations: standing → sitting.
 - The static is set extended if it is maintained at least 4h.
 - The prevalence of CVD increases with the duration of exposure to the risks.
 - The prolonged periods of standing position is more restrictive than the prolonged sitting position.
 - Confusion between physical findings and muscular energy cost.
 - Cofactors significantly increase the CVD's physical findings.
- Prolonged static position is not a significant risk factor of CVD.**
Walking is a protective factor of CVD.
Alternating postures is a protective factor of CVD.

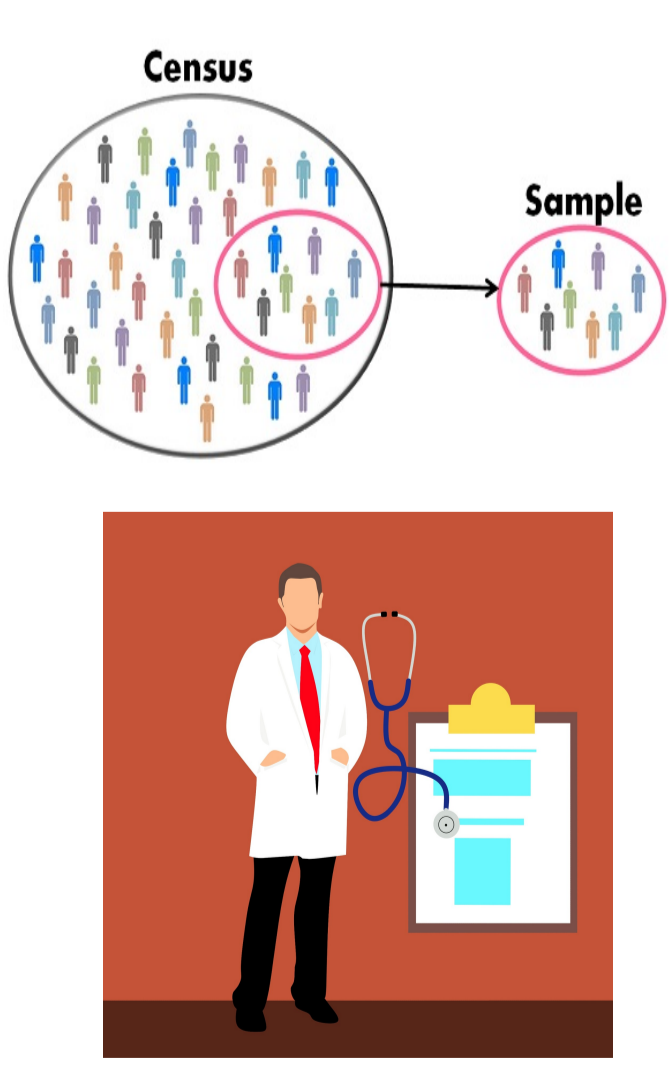
Results for external factors

Overweight If BMI > 25 Predisposing cardiovascular and endocrinological diseases	Diet Low fiber foods Low antioxidant foods	Smoking Change the blood rheology Pro-coagulant activity Oxidative stress disorder
Sedentarity lifestyle Weight gain Slowing intestinal transit	Tight clothes By compression mechanism Main cause of static changes	Professional Parameters Heat and humidity spaces Lifting heavy loads up to 10 KG

- These isolated risk factors studied, are not significant for the CVD.
- The combination of these cofactors favor the onset to the disease.

In practice / Discussion

Risk identification



- Targeting populations
- Where? / When? pre-recruitment examination, periodic examination...
- By whom? OHP, nurses...
- Self-administered questionnaires
- Clinical examination
 - Advices
 - Request for a workplace examination
 - Request a specialist: angiologist, ultrasonography...
 - Score ex FLEVASCORE* Dr Bossy

Assessment



- PPEs
- Workplaces
- Work organisations
- By Whom? Multidisciplinary medical team
- With whom? Partnership
- Apply a rating scale

Adjustment



- Annual assessment's tools
- Self-administered questionnaires
- Occupational risks evaluation questionnaire
- Constitute an efficient medical network
- Results
- Improvement
- Setting
- Difficulties encountered/ challenges
- New behaviours

Discussion

- Subjectivity Heterogeneity of CVD*definition.
- Low sampling.
- Subjectivity of CVD* data collections.
- Perception of functional signs of confused CVD.
- Focus still too big on standing-static position.

The Evidences

- Age is a significant risk factor of the CVD.
- CVD is statistically a common disease and socially underrated.
- Primary prevention of risk factors may decrease the incidence of CVD.

Conclusion

- The venous disease is a chronic pathology and multifactorial.
- Age is the most significant risk factor among all examined components: sex, heredity, and pregnancy.
- Socio-environmental factors favor the onset of the disease.
- About the working situations, the prolonged exposure to static standing positions are perceived as more constraining than sitting position and external factors increase the complaints of the employees in static position.

Alternating different working positions and walking are protective factors of the chronic venous disease.