

Headache as a Warning Symptom in Occupational Risk Prevention (ORP)

Headache as a Symptom in Certain Occupational Risk Exposures

Health Surveillance

- **In Spain, specific health surveillance** for workers is carried out by means of **protocols** developed for this purpose by the Ministry of Health, from which each company incorporates and adapts the relevant protocols based on the risks associated with their particular activity.



Protocolos de vigilancia específica de los trabajadores

Enlace a protocolos de vigilancia sanitaria del [MSCBS](#) relacionados con agentes químicos (formato PDF) :

Headache as a Symptom in Occupational Risk Prevention

- In some of the specific health surveillance protocols (PVES) used in Spain, headache is listed as a symptom, either alone or associated with others, in certain exposures to occupational risks.
- For individuals who do not typically suffer from headaches or migraine, this can be a warning sign indicating potential occupational harm.
- For those with a history of headaches or migraine, such exposures may trigger or worsen their episodes.

Headache as a Symptom in Specific Health Surveillance Protocols (PVES)

- **1.- SPECIFIC HEALTH SURVEILLANCE PROTOCOL FOR USERS OF VISUAL DISPLAY SCREENS (VDU)**
 - The protocol recommends directly asking the worker through a specific questionnaire:
 - **Visual Function Questionnaire:** "During or after work, do you experience **headaches**?" (Options: never, rarely, sometimes, very often)
 - **Mental Workload Questionnaire:** "Do you suffer from **headaches**?" (included in a list of other symptoms)
"Have they caused sick leave, incapacity, or absences from work?"
- If the worker's assessment determines the occupational origin of the **headache**, we should advise him/her on the postural or organizational modifications to be adopted to eliminate the causes of the pain.
 - In users of visual display screens (VDUs), the forward posture of the head perpetuates **chronic head and neck pain**. By stretching the neck ligaments, it can be the cause of chronic neck pain and **headaches**.

Headache as a Symptom in Specific Health Surveillance Protocols (PVES)

- **2.- PROTOCOLS FOR: FORCED POSTURES, REPETITIVE MOVEMENTS OF UPPER LIMBS, AND MANUAL HANDLING OF LOADS.**
- We group these three protocols together because they are often associated with many tasks and work positions, making them applicable in numerous situations.
- Jobs that involve load handling, as described in **Royal Decree 487/1997**, particularly when combined with repetitive movements of the upper limbs or the maintenance of improper postures during tasks, frequently lead to **occipital headaches** of cervical origin associated with stiffness or contraction of the shoulder girdle.

COMISIÓN DE SALUD PÚBLICA
CONSEJO INTERTERRITORIAL DEL SISTEMA NACIONAL DE SALUD

Public Health Commission,
Interterritorial Council of the
National Health System

Headache as a Symptom in Specific Health Surveillance Protocols (PVES)

- **3.- PROTOCOL FOR OCCUPATIONAL DERMATOSIS**
 - In workers exposed to irritating or allergenic substances through the skin, it is essential to assess whether, in addition to skin lesions, extracutaneous symptoms also appear. These can include **neurological symptoms** such as narcosis, dizziness, **headaches**, and hallucinations.
 - Workers who handle paints, varnishes and lacquers at their workplace or those involved in the manufacture of these products and workers who remain for long periods of time in poorly ventilated places, in contact with paints, may experience dizziness, **headaches** and blurred vision. Hallucinations, permanent disorientation and other alterations of the nervous system may occur.
- When a worker exposed to these products presents a **headache or changes in a pre-existing headache**, we will perform a detailed examination of the entire skin surface and mucous membranes.

Headache as a Symptom in Specific Health Surveillance Protocols (PVES)

- **4.- ASTHMA PROTOCOL**
- **The appearance of neurological symptoms, such as headache, in a worker with asthma is a warning sign and** requires referral to a pulmonologist for treatment.
- The presence of the **following clinical signs indicates the severity** of Acute Respiratory Failure:
 - Tachypnea > 40 breaths/min.
 - Cyanosis
 - Use of auxiliary respiratory muscles.
 - **Obnubilation, headache**
 - Tachycardia > 130 beats/min.
 - Hemodynamic instability

Headache as a Symptom in Specific Health Surveillance Protocols (PVES)

- 5.- **PROTOCOL FOR VINYL CHLORIDE MONOMER (VCM)**
- VCM is irritating to skin, eyes and respiratory mucosa and is acutely toxic to the **CNS**. There is a dose-response relationship with symptoms such as drowsiness, nausea and vomiting, **headache**, paresthesia and fatigue.
- **Neurotoxic symptoms are early**, presenting as psychic excitement followed by asthenia, heaviness in the lower limbs, dizziness, **headache** and drowsiness.
- In the anamnesis it will be necessary to take into account, among other things, any **previous** neurotoxic symptoms (fatigue, asthenia, dizziness, drowsiness, **headaches**).

COMISIÓN DE SALUD PÚBLICA
CONSEJO INTERTERRITORIAL DEL SISTEMA NACIONAL DE SALUD

Public Health Commission,
Interterritorial Council of the
National Health System

Headache as a Symptom in Specific Health Surveillance Protocols (PVES)

- **6.- PROTOCOL FOR INHALATION ANESTHETICS**
- For individuals exposed to inhalational anesthetics, a detailed medical history will be conducted, paying particular attention to:
 - Neurological symptoms (paresthesia, gait or balance disorders, **headaches**, dizziness, or confusion).
- **7.- NOISE PROTOCOL**
- When examining workers exposed to noise, we will have to assess the existence of **headaches** and make a differential diagnosis of secondary headaches, and **determine whether the noise acts as a triggering or aggravating factor of the headache.**

Headache as a Symptom in Specific Health Surveillance Protocols (PVES)

- **8.- LEAD PROTOCOL**
- Lead is a peripheral and central neurotoxin. It interferes with the release of acetylcholine or the reabsorption of choline and the subsequent synthesis of acetylcholine.
- **Chronic poisoning** is commonly found in industry and progresses through several phases. During the **impregnation phase**, when blood lead levels are below 70 µg/100 mL, preventive action is crucial. It is not yet an established disease, but there are already metabolic alterations accompanied by vague and imprecise symptomatology that indicate to us the first effects of lead. We highlight:
 - mood changes, memory loss and attention span, **headaches**, muscle and joint pain and insomnia.

Headache as a Symptom in Specific Health Surveillance Protocols (PVES)

- **9.- CYTOSTATIC PROTOCOL**

- Workers handling cytostatics, mainly when working in poorly ventilated areas, may present symptoms such as dizziness, vertigo, nausea, **headache** and allergic reactions. These may be due to other systemic effects of cytostatics.
- When conducting the medical history, it is important to ask about the existence of symptoms related to exposure to cytostatics. They are usually vague and unspecific, so a cautious interpretation of the presence of these symptoms is necessary. Inquire about the possible association of their appearance with exposure to a specific substance. We will be alerted by the appearance of:
 - Nausea, **Headache**, Vomiting, **Lightheadedness**, Dizziness.

Headache as a Symptom in Specific Health Surveillance Protocols (PVES)

- **10.- PRESSURE NEUROPATHY PROTOCOL**
- In patients with **high plexopathy** (C5-C6-C7) the pain is usually located in the anterior part of the neck radiating to the jaw, face and occasionally ear. **Occipital headaches** or pins and needles or punctures over the cranial calotte are not uncommon.
- Among the neurological syndromes that can cause headache, special mention should be made of **BARRE-LIEOU SYNDROME**. It includes a complex symptomatology: **headaches and neck pain**, dizziness, vertigo, tinnitus, instability, tiredness, nervousness and voice alterations (aphonia, dysphonia), and is explained by a hypertonia of the cervical sympathetic system due to irritation of the sympathetic system between C5-D1.
- The symptoms often arise or worsen in situations of significant emotional stress.

Headache as a Symptom in Specific Health Surveillance Protocols (PVES)

- **11.- PESTICIDES**
- Incorrect handling of pesticides by greenhouse workers frequently produces intoxications.
- **In mild and persistent intoxications, which can be considered chronic,** the following effects can be observed:
 - Asthenia, Anorexia, **Headache**, Sleep disturbances, Depression, Character changes, Tremor, Paresis, Decreased libido, Sexual impotence and chronic or long-term effects, highlighting for their seriousness the carcinogenic and mutagenic potential of some of them.

COMISIÓN DE SALUD PÚBLICA
CONSEJO INTERTERRITORIAL DEL SISTEMA NACIONAL DE SALUD

Public Health Commission,
Interterritorial Council of the
National Health System

Headache as a Symptom in Specific Health Surveillance Protocols (PVES)

- **12.- ETHYLENE OXIDE**
- **In acute and subacute poisoning, inhalation exposure may cause:**
 - Irritation of respiratory tract: dyspnea, cyanosis, even pulmonary edema.
 - Digestive system disorders: nausea, vomiting and diarrhea.
 - **Neurological disorders: headaches, drowsiness, incoordination.**
- When assessing a worker exposed to EO, we will collect information about his **personal history**, including:
 - Respiratory, **neurological**, ocular, dermatitis, allergy, asthma, gastrointestinal disorders, anemias.

Headache as a Symptom in Specific Health Surveillance Protocols (PVES)

- **13.- VIBRATION PROTOCOL**
- Intense whole body vibrations at frequencies above 40 Hz can cause damage and alterations of the central nervous system.
- At frequencies below 20 Hz, irritability and **headaches** appear.

COMISIÓN DE SALUD PÚBLICA
CONSEJO INTERTERRITORIAL DEL SISTEMA NACIONAL DE SALUD

Public Health Commission,
Interterritorial Council of the
National Health System

Urgent Care

- In emergency situations it is of interest:
 - Rule out that the headache has a secondary cause.
 - Detect warning signs and symptoms.
 - Provide emergency care with the available resources.
 - Specialized and informed referral.

Preventive Recommendations

- **To limit the occurrence of damage in workers with headaches or migraine, jobs with specific risks will be taken into consideration:**
 - With **PHYSICAL LOAD**: correct handling of loads, plan breaks, provide adequate training and information on the risks of the position and recommend to workers toning exercises for the most used muscle groups.
 - With **DATA DISPLAY SCREENS**: training and preventive information, ergonomic actions at the workplace and adequate organization of the task.
 - With exposure to **VINYL CHLORIDE MONOMER, LEAD, INHALATORY ANESTHESIA, ETHYLENE OXIDE OR CYTOSTATICS**: early detection of possible CNS toxicity, ESR (blood test) with the periodicity established by legislation depending on exposure. In workers with CM, it may be necessary to adapt working time, more frequent rotations and if it is not possible to isolate the source of exposure, focused extraction systems and use of Personal Protective Equipment (PPE).
 - With exposure to **PESTICIDES**: information and training on the correct handling of pesticides by workers and ensuring adequate ventilation when they are handled in closed places.

Preventive Recommendations

- For exposure to **VIBRATION**, especially low frequency (between 2-20hz): use of anti-vibration cushions, together with a ESR (blood test) and rotating shifts or change to other positions.
- With exposure to **NOISE** (in general > 90 dB): isolate the source or recommend the use of PPE (Personal Protective Equipment), periodic audiometries and promote rotation to noise-free positions.
- With **SHIFT OR NIGHT WORK**: ESR (blood test) for early detection of damage. In workers with CM that worsens due to alteration of circadian rhythms, a fixed shift is recommended and night work should be avoided.
- With changes in **PRESSURE OR EXTREME TEMPERATURES**: adequate training and gradual changes in pressure or temperature, adequate oxygenation, use of PPE and periodic ESR (blood test).
- With **PROLONGED DRIVING OF VEHICLES, HANDLING OF DANGEROUS MACHINERY OR PRECISION WORK**: frequent rest breaks, gentle muscle exercises, adequate lighting and avoid driving or operating machinery in crises with severe pain or aura.

Conclusion

1. Headache can be a warning symptom of exposure to workplace hazards.
2. It may appear alone or together with other symptoms and signs.
3. In people with a previous history of headache, its evolution may be aggravated by exposure to occupational hazards at work.
4. The health surveillance carried out by doctors and nurses at work is the most valuable preventive tool in occupational health with the collaboration of the actions of occupational risk prevention technicians.