GUIDE TO HEALTH SURVEILLANCE IN THE FISHERIES SECTOR

Instituto Galego de Seguridade e Saúde Laboral

Instituto Asturiano de Prevención de Riesgos Laborales

Instituto Cántabro de Seguridad y Salud en el Trabajo

OSALAN
Laneko Segurtasun eta Osasunerako Euskal Erakundea
Instituto Vasco de Seguridad y Salud Laborales

GUIDE TO HEALTH SURVEILLANCE IN THE FISHERIES SECTOR

GUIDE TO HEALTH SURVEILLANCE IN THE FISHERIES SECTOR

AUTORSHIP

The authors of the **Guide to Health Surveillance in the Fisheries Sector** are listed in the "AUTHORSHIP" section of the digital version, which is the one with the text of the Guide in full.

The author of **the short version of the Guide** is Aitor Guisasola Yeregui, a doctor specialising in occupational health at OSALAN – Basque Institute for Occupational Health and Safety. As the coordinator of the preparation of the Guide to Health Surveillance in the Fisheries Sector, he was in charge of producing the paper format version.

Barakaldo 2016

Edition: First edition. 2016 November

Published by: ISSGA - Instituto Galego de Seguridade e Saúde Laboral, IAPRL - Instituto Asturiano de Prevención de Riesgos Laborales, ICASST - Instituto Cántabro de Seguridad y Salud en el Trabajo, OSALAN – Instituto Vasco de Seguridad y Salud Laborales

Internet: http://www.grupo-cano.com

Photography: The pictures have been taken from photographic libraries of free use

Design and Layout: Samper Impresores

ISBN: 978-84-95859-78-5

COPYRIGHT

WE ACKNOWLEDGE WITH THANKS

All the people who have made the preparation of this Guide possible. Some of whom continue to work with us, while others have moved on to new personal or work fields.

All the people, companies, services and organisations for their input and criterion.

The seafarers, who have taught us so much.

INDEX

PRESENTATION

The Institutes of Occupational Health and Safety of the Basque Country, Cantabria, Asturias and Galicia have been conducting activities for some years now in the field of occupational risk prevention for the benefit of the employers and both male and female workers of their respective autonomous regions. Yet we are also aware that we share in common many situations which make cooperation and pooling efforts a necessity, even more so in the current climate, when we really have to maximise the use of the available resources and where all the activity sectors and areas must prioritise the sums and synergies created when working together.

Fishing is one of these common situations, as it is closely linked to the economic and social life of the four autonomous regions. The heads of our Occupational Health and Safety Institutes thus agreed to embark on joint work in this sector, where there are, undeniably, specificities in each region, but whose points in common are the most significant and determining factors. Therefore, we decided to give impetus to preparing this Health Surveillance Guide, by setting up a multidisciplinary group of technical and medical staff from those institutes. They have worked on the guide step by step, in line with the principles of the Occupational Health and Safety Act, i.e, based on detailed knowledge of the jobs and of the risks associated to their performance.

Fishing is a shared reality and closely linked to the economic and social life of the autonomous regions of Galicia, Asturias, Cantabria and the Basque Country

The risks in the fishing industry mainly come from working with the different machinery used to set and haul the fishing gear, from exposure to adverse environmental conditions, and from the overexertion occurring when handling the catches, either when removing them from the gear, stowing them on deck or in the holds, or when unloading them in port. Each fishing technique involves a series of specific manoeuvres being carried out and the use of different machinery, and the risks therefore vary from one to another.

Yet the fishing sector, apart from the people who work onboard the boats, also includes other people who do not need to go to sea. These are part of different groups: some of which carry out activities linked to the tasks performed on the vessels, such as unloading the fish, its processing and marketing, repairing and making nets, along with other groups working in shellfishing or fish farming. These groups, unlike the ones who work onboard, have in common that they mainly comprise women, thus maintaining the same traditional division of labour according to gender, a perspective that the Guide encompasses right from the start.

The Guide has been developed in different stages. The first stage, aimed at small-scale and inshore fleets, was published in autumn 2011. The second, that covered shellfishing on foot activities, extracting specific resources and fishery auxiliary activities, was released in autumn 2012, and the third, on seagoing and ocean-going fishing, a year later. One last report was still pending and is the one being presented here. It shows how phase, task and sub-task matrices developed throughout the Guide are used as guidelines for performing risk assessments, which in this case is specified in a real example: the ***risk assessment of the post of deckhand on an inshore purse seiner***, and which is then used as the basis to plan the specific health surveillance of the people in that post. The specific medical tests and health screening are thus proposed that will establish whether the working conditions affect their state of health. This will facilitate the early detection by the occupational health medical and nursing staff of those conditions and provide them with the possibility of recommending the most appropriate preventive measures in their work together with the prevention technicians.

In order to provide the opportunity of the whole Guide being available, this fourth stage brings together the three earlier ones, and includes along with them the risk assessment of the post of deckhand on an inshore purse seiner and the specific health surveillance proposal for the people in that post.

This fourth part, due to its volume, is in a **double format**:

- **The short version of the Guide is available in paper form**. The Guide includes the fundamental concepts of health surveillance and goes from the description of the job to the proposed specific health check. Therefore, the risks inherent to the job need to have been previously identified and subsequently assessed.

  The aim is to provide the user with a quick overview of how to proceed to achieve specific health surveillance of the workers. This format will be particularly useful for those people who even though they have responsibilities in terms of prevention, i.e., shipowners, skippers, workers representatives and prevention officers, do not require in their day-to-day work the level of detail to be found in the full version of the Guide. However, they are not the only intended audience of the Guide; thanks to it, the sector´s workers will have a clear view of what they can expect from the surveillance of their health at work and how that can help them to maintain and improve their health.

- **The full Guide is also available in digital format**. This format contains the complete text of all the content of the Guide. It is undeniably useful for health and technical staff, given the detail in which the concepts are covered and the instruments proposed to carry out their preventive work. .

Our aim for this fourth and last part of the Guide to Health Surveillance in the Fisheries Sector is, as has been the case right from the start, to be a useful tool within the field of occupational risk prevention.

Adela Quinzá-Torroja García
ISSGA Director

Miryam Hernández Fernández
IAPRL Director

Amalio Sánchez Grande
ICASST Director

Izaskun Urien Azpitarte
Osalan General Manager

RATIONALE

The **Occupational Health and Safety Act** establishes the general principles to be followed health and safety at work and is the legal framework in that regard. Its coming into force meant, among other achievements, the necessary extension of the preventive activities in the workplace to all the workers, and their application in the fisheries sector means putting the workers, both male and female and those onboard and those onshore, on an equal footing with those working in other productive sectors in our society.

The employer is required, therefore, to establish a **prevention organisation** model that guarantees that it is going to carry out each and every one of the duties, activities and tasks to be performed in the four prevention areas, including occupational medicine.
In the fisheries sector, the people working onboard vessels are required to get clearance to perform their work tasks. This clearance is usually linked to passing pre-sea and periodic medical checks, which allows them to carry on doing their job as it guarantees that the psycho-physical states of the applicants are compatible with the characteristics of the job and do not pose a threat to the health and safety of the individual or to the rest of the crew. Royal Decree 1696/2007, of 14 December, regulating the medical checks of seafarers, states in its Article 1.2 that *"the medical checks envisaged in this Royal Decree shall likewise to be taken to be performed in accordance with what is envisaged in Article 22 of the Occupational Health and Safety Act and its implementing provisions, without prejudice to any other obligations of the employer"*.

Therefore, the one-off activity of the conducting of a medical check needs to be complemented. And over and above the fact that the rationale and objectives of the health surveillance medical checks differ from the pre-sea ones, they must be complemented, including aspects such as the assessment of the health of the both male and female workers after a prolonged absence for health reasons; the health staff of the prevention unit being aware of absences from work for health reasons; analysis using epidemiological criteria of the results of the health surveillance and of the risk assessment; cooperation with the other components of the prevention unit in order to research and analyse the possible relations between exposure to professional risks and damage to health, and to propose the measures aimed at improving the work conditions and environment.

In the case of both male and female workers not going to sea, the health surveillance must be fully assumed by the employer, that is to say, that it will also include initial and regular medical checks by the prevention unit. However, many of the people working in this part of the sector are self-employed and, therefore, they do not usually have health checks. They go to their primary care doctor when they do not feel well and the pathologies affecting them are classified as common, leading to a lack of knowledge about those conditions and their potential relation with the risk factors that cause them. This health surveillance guide offers understanding of that condition and its associated causes, by providing a tool so that primary care doctors can also suspect the occupational origin of the pathologies that they observe in those segments and can report them as "suspected occupational diseases". In this regard, the emphasis placed on **collective health surveillance** acquires an essential value, as over and above the economic compensation to which the worker may be entitled from any condition that may appear, there is the possibility of their appearance being avoided thanks to the adoption of preventive measures.

Therefore, it was deemed necessary to prepare and publish this Basic Guide for the surveillance activities of the health of the workers based on the specific risks of the sector and according to the different fishing techniques. The Guide **adheres to the principles guiding the preventive health activities conducted by the prevention services**. Part of the detailed knowledge of the job and of the risks associated to its performance focuses on the ways of executing the job description and lays down the foundations for the risk assessment which shall be specific for each fishing technique, for each vessel and for each job, by providing a specific example of how this process can be carried out.

OBJECTIVES

The fundamental objective of this Guide is to provide correct guidance and tools to appropriately implement the specific surveillance of the health of the workers in the fisheries sector, so that their right to efficient protections as regards health and safety at work can be guaranteed.

- The Guide is designed as a tool to achieve individual and specific health surveillance as regards the risks inherent to the activity and to the job that the sector's both male and female workers perform.

- It provides tools to conduct the specific collective health surveillance in order to obtain health and safety at work indicators in the fisheries sector that are useful at corporate and community, national and regional levels. This will enable prevention strategies to be developed and the degree of achievement to be assessed of the targets set to improve the working conditions of the sector.

- It provides instruments to detect occupational diseases and diseases related to working in this sector, thus facilitating their knowledge, their reporting and the implementation of preventive activities in that regard.

This Guide likewise aims to provide mechanisms to facilitate risk assessment in this sector and show in a practical way how it can be conducted.

- It contains a help guide to identify and assess occupational risks according to the type of fleet, techniques and secondary techniques of the vessels that form part of the sector, of the segments dedicated to the ancillary activities of fishing and of those people working in shellfishing or fish farming.

- This tool is necessary to ensure that the health surveillance of the workers is specific to the risks to which they are subject, and including the gender perspective in it.

Finally, the Guide aims to highlight the need to establish mechanisms and instruments that facilitate the coordination between the different agents involved in the health surveillance of the workers in the fisheries sector, both within and outside the structure of each prevention unit.

CORE CONCEPTS

HEALTH SURVEILLANCE

The term ***«health surveillance of the workers»*** encompasses a series of activities, referring both to individuals and to segments and aimed at preventing occupational risks, whose general objectives are to do with identifying health problems and assessing preventive interventions.

This surveillance of occupational diseases and injuries consists of systematic and continuous monitoring of health-related episodes in the working population, in order to generate knowledge about the possible health impacts that arise from exposure to the risks and thus to be able to establish preventive measures to prevent their appearance or deterioration.

In order to better understand these concepts, health surveillance can be said to involve two broad set of activities:

- Individual health surveillance:

The goals of individual health surveillance are to:

- Gather and prepare information on the state and evolution of the health of the both male and female workers based on initial and regular medical screening designed taking into account the characteristics of the workers, the working conditions and the specific risks to which they are subjected.

- Inform each worker of the aspects related to their state of health and the way in which the current and past working conditions and environment have affected or may affect them.

- Inform the employer and the prevention officers of the conclusions arising from the screening carried out in relation to the suitability of the worker to carry out the job or to the need to introduce or improve the prevention and protection measures, in order so that they can perform their prevention duties correctly.

- Collective health surveillance:

The possibility of having collective information on the health of the working population and being able to analyse it is an essential instrument for the good practice of occupational health.

This type of surveillance allows:

- The effects of the occupational risks, their frequency, severity and trend to be assessed.
- Cause-effect hypotheses to be established between the occupational risks and the ensuing health problems.
- Prevention activities to be prioritised and the effectiveness of those measures to be assessed.

Collective health surveillance is based both on health indicators and on investigating the damage that has occurred.

OCCUPATIONAL HEALTH AND GENDER

The main objective of the prevention of occupational risks is to protect all the workers from exposure to those occupational situations or activities that may damage their health. As regards protecting reproductive health, there is a dual objective:

- Protecting the procreation function established in Article 25.2 of the Health and Safety at Work Act, which includes men and women of childbearing age.
- The maternity protection established in Article 26 of the Health and Safety at Work Act, in Points 1 and 4, which includes the pregnant worker, a worker who has recently given birth and is breastfeeding.

The perspective, therefore, has two aspects:

- Prevention of work-related damage impacting men, women and their offspring.
- Prevention of inequalities and discrimination at work linked to pregnancy, recent childbirth and breastfeeding.

The risk assessment should include the gender perspective, something that would enable tools to be available for research and analysing the work of men and women separately. Furthermore, the initial risk assessment should include those risks that may affect maternity leave as a starting point of the preventive action, regardless of whether or not the post is held by a woman in that situation, and provided that a change occurs in the working conditions or the health of the female worker or of her offspring is harmed.

HEALTH PROMOTION

The most widely accepted definition of health promotion is the one established by the WHO in 1986, in the Ottawa Charter, where it is taken as being the *"Process of enabling people to increase control over, and to improve, their health"*.

Based on the characteristics of the fisheries sector, we can recommend a series of health programmes that the prevention services can implement according to the specific needs of each company and of its workers:

- Prevention and reduction of tobacco consumption.
- Prevention and treatment of alcoholism and other drug addictions.
- Prevention of cardiovascular risk.
- Prevention of sexually transmitted diseases.
- Promotion of healthy lifestyles and habits in the workplace.
- Vaccination campaigns.

SCOPE OF THE GUIDE

This Guide is aimed at the health surveillance of the both male and female workers of:

Small-scale and inshore fleets involved in the following areas:
Raft-based fish farming
Trolling
Live bait
Coastal purse-seine
Gillnet
Vertical line
Shellfishing at sea: towed gear
Shellfishing at sea: manual
Pots
Bottom-set longlines

Activities of:
Shellfishing on foot
Specific resources: On foot
Specific resources: Shellfishing by diving
Specific resources: Barnacles
Gillnet menders
Menders of longline, trawling and purse-seine gear
Net menders: Setting other nets (pots, etc.)
Handling and transport in port: Small fish
Handling and transport in port: Large fish

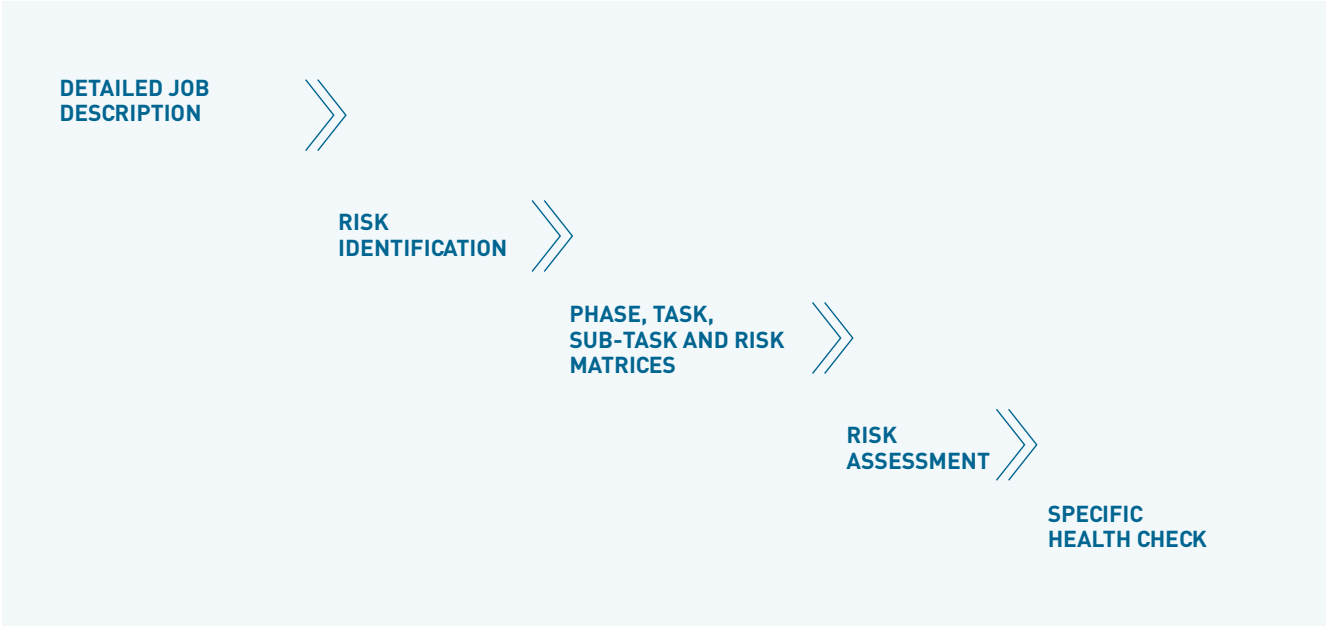
Seagoing and ocean-going fleets using the following techniques:
Surface longlines
Bottom-set longlines (Sinkers or weights)
Seagoing purse-seines (tuna seiners)
Stern trawling
Pair trawling
Demersal trawling
Beam trawling

The version of the Guide in full is in digital format that accompanies this short Guide. It sets out in detail the aspects relating to the aforementioned techniques and activities and the risk assessment of the post of deckhand on an inshore purse-seiner.

METHODOLOGY

The Guide develops the way forward that starting from knowledge of the job, its detailed description and identifying risks then moves on, after the risk assessment, to the collective, individual and specific surveillance of the workers' health.

In order to be used as a model, a specific example of applying this methodology is developed, where the risks are assessed associated to the post of deckhand on an inshore purse-seiner in order to establish the content of the specific health check for the worker according to the risk assessment performed.



DETAILED JOB DESCRIPTION

In order to arrive at the knowledge of the job and have a detailed description of it, each of the techniques and activities have been divided, in turn, into:

Phases, tasks and sub-tasks

All the tasks carried out in fishing can be sub-divided into phases, tasks and sub-tasks, which are defined as follows:

- **Phase**: it refers to each of the stages that the crew has carried out as a group according to the manoeuvre being performed at the time (e.g. sailing to the fishing grounds, catch, etc.)
- **Task**: it refers to the first division of each of the work phases (e.g. the catch phase includes the tasks of shooting and hauling in the gear).
- **Sub-task**: it refers to each of the sequenced jobs that form part of each of the tasks (e.g., the catch phase includes the task of setting the gear and that task includes the sub-task of setting buoys, anchoring, etc.).

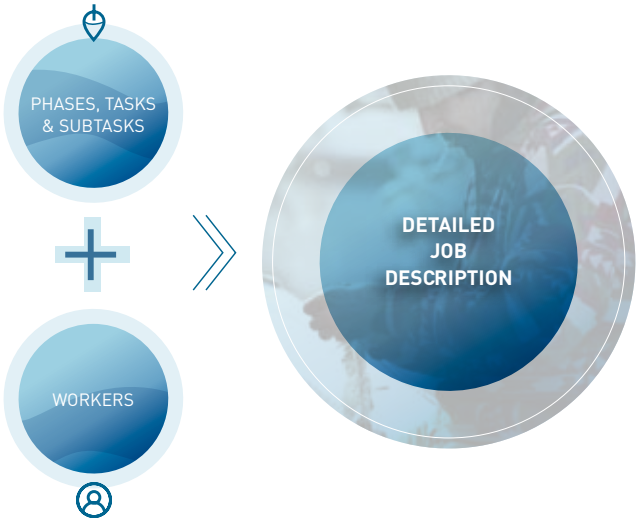
When working on this part, the aim was to standardize the phases, tasks and subtasks of each technique by seeking to identify similar blocks that make it easier to process the information generated.

This strategy allows a global monitoring of all the fishery work carried out, without overlooking any of the movements carried out by the fishermen prior to embarking, the work on board and when coming ashore. It is a way of working that involves an emphasis on detail that allows the user of this Guide to have a faithful idea of the reality.

Workers

The work is carried out by people and the tasks and subtasks of each phase of the work by both male and female workers according to their professional specialisation. In any case, it is well-known that much of the work is carried out by the whole crew, while there are other jobs that are the exclusive remit of the different ranks onboard. Therefore, it was decided to define a series of groups of workers in each of the three main blocks into which this Guide is divided, depending on whether if the tasks and subtasks of each phase are carried out interchangeably or exclusively. This allows the person to be identified in their post as the health surveillance is aimed at that person.

The identification of the phases, tasks and subtasks of each of the techniques studied and the knowledge of who the worker is that carries it out provides us with a **detailed description of the jobs** that each worker has.



RISK IDENTIFICATION

This identification process initially starts by adapting the Risk Codes of the Spanish National Institute for Safety and Hygiene at Work (INSHT) performed in the framework for the Integral Plan for the Prevention of Occupational Risks in the Fisheries Sector of the Basque Autonomous Community (ITSASPREBEN). Some changes were made in turn to adapt those codes to the reality of the Guide, by subdividing some of the items and adding others in order to be able to define the situation more accurately. This has all led to the **"Form Codes of the Risks in the Vessel"** being defined.

Once the tasks and sub-tasks of each work phases in each of the fishing methods has been established, the risks that may occur when they are being carried out are allocated to each of them and to each worker.

Thus, there is an **identification of the risks** to which each worker is subjected.

RISK FORM CODES			
1	Falling to a different level	20	Explosions
2	Falling to the same level.	21	Fires
3	Falling objects due to collapse or demolition.	22	Accidents caused by living beings (bites, stings, etc.)
4	Objects dropped when being handled	23	Being run over or hit by vehicles.
5	Loose objects falling	24	In itinere
6	Treading on objects	25	Natural causes (heart attack, strokes...)
7	Collision against stationery objects.	26	Ergonomic risks
8	Collision against moving objects.	26.1	Pushing and dragging
9	Blows, cuts and punctures from objects and tools	26.2	Awkward postures
10	Flying fragments or particles	26.3	Repetitive movements
11	Workers trapped by or between objects.	26.4	Manual handling of loads
12	Workers trapped by working equipment and vehicle roll-over	27	Psycho-social risks
13	Asphyxiation caused by gases or vapours	28	Falling into the sea
14	Exposure to thermal and hygrometric risks.	29	ES- particularly sensitive
14.1	Exposure to intense heat	30	MA-maternity
14.2	Exposure to intense cold	31	ME- minors
14.3	Exposure to unsuitable humidity levels	32	Due to chemical agents
15	Thermal contacts	33	Due to physical agents
16	Exposure to electrical contacts.	33.1	Exposure to noise
17	Exposure to harmful substances	33.2	Exposure to vibrations
18	Contact with caustic substances	34	Due to biological agents
19	Exposure to radiation	35	Risks due to DDS or lighting conditions
19.1	Exposure to solar radiation	36	Risks due to pressure
19.2	Exposure to equipment radiation	37	Risks due to decompression

PHASE, TASK, SUB-TASK AND RISK MATRICES

These are the tables that set out the work described so far and which can be consulted in the material that is presented in digital format.

By way of example, the matrix for the **inshore purse-seine technique** is reproduced and is the one that corresponds to the risk assessment that will be used in order to propose the specific health check that is used as the work model in this guide.

PURSE SEINE							CODES																																									
Phase	**Task**	**Subtask**	TT	Pa	Mo	Ma	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19.1	19.2	20	21	22	23	24	25	26.1	26.2	26.3	26.4	27	28	29	30	31	32	33.1	33.2	34	35
Equipping and onboard	Gear, fuel, other supplies																																															
		Embarking	x				x	x				x	x																											x								
		Moving between approached vessels	x				x	x				x	x				x																							x								
		Major overhaul and maintenance	x				x	x	x	x		x	x	x	x		x																		x			x										
		Mechanical and manual loading onboard	x				x	x	x	x		x	x	x	x		x																		x	x	x	x		x								
		Stowing onboard	x				x	x	x	x		x	x	x	x		x																		x	x	x	x										
		Powering up equipment		x																				x				x																x	x		
		Fuelling		x	x														x										x	x														x	x	x		
		Engine general service			x		x	x		x		x	x	x	x		x		x	x			x	x	x				x	x						x									x	x		
		Starting up the engine			x		x	x				x	x	x	x	x	x		x	x			x	x	x				x	x														x	x	x		
Sailing to fishing ground	Undocking and sailing																																															
		Undocking				x	x	x				x	x				x					x																		x					x	x		
		Preparing gear and equipment				x	x	x		x		x	x	x	x		x					x													x	x		x		x					x	x		
		Steering the vessel		x				x				x	x									x		x				x																	x	x		x
		Locating shoals		x				x				x	x									x		x				x																	x	x		x
		Moving around the vessel	x				x	x				x	x	x	x		x					x						x												x					x	x		
		Engine maintenance			x			x				x	x	x	x	x	x		x	x			x	x	x				x	x						x	x							x	x	x		
Catch	Setting up																																															
		Setting the guide buoy				x		x				x	x									x																x		x					x	x		
		Setting gear (net)				x		x				x	x	x			x					x														x				x					x	x		
		Setting net beacons			x			x				x	x	x			x					x														x				x					x	x		
		Steering the vessel while purse seining		x				x				x	x									x																		x					x	x		x
		Chanting the releasing of the rings to the skipper			x	x		x				x																																				
	Hauling																					x																		x					x	x		
		Collecting the guide buoy				x		x				x	x				x					x														x		x		x					x	x		
		Closing the purse seine manually				x		x				x	x	x	x		x					x															x			x					x	x		
		Passing the purse seine through the davit and hauling	x					x		x		x	x	x	x		x					x																x		x					x	x		
		Hauling straps	x					x				x	x	x	x		x					x															x			x					x	x		
		Hauling the gear with the crane's turning mechanism	x					x	x	x		x	x		x		x					x															x	x		x					x	x		
		Manual hauling of the gear to the codend	x					x				x	x	x	x		x					x														x	x			x					x	x		
		Stowing the gear	x					x		x		x	x		x		x					x															x	x		x					x	x		
		Handling boxes to store catch	x				x	x	x	x		x	x		x		x					x													x		x	x		x					x	x		
		Checking hauling equipment		x				x				x	x	x								x																		x					x	x		
		Operating the crane		x				x		x	x	x	x	x								x																		x					x	x		
	Stowage																																															
		Preparing boxes for stowage				x	x	x		x		x	x		x		x					x													x			x		x					x	x		
		Mechanical scoop net				x		x		x		x	x	x	x		x					x															x	x		x					x	x	x	
		Manual scoop net				x		x		x		x	x		x							x									x					x	x	x		x					x	x	x	
		Pump aspiration				x		x				x	x	x	x		x					x																		x					x	x		
		Shovelling ices into boxes				x		x				x	x	x	x							x															x	x		x					x	x		
		Stowing crates				x	x	x	x	x		x	x	x	x		x				x	x													x		x	x							x	x	x	
Sailing to port	Sailing																																															
		Moving around the vessel	x				x	x				x	x	x	x		x					x						x								x				x					x	x		
		Steering the vessel		x				x				x	x									x		x				x																	x	x		x
		Cleaning the vessel				x	x	x		x		x	x		x							x															x			x					x	x		
		Checking the gear and work equipment				x	x	x	x	x		x	x	x	x		x																		x			x							x	x		
		Engine maintenance			x			x				x	x	x	x	x	x		x	x			x	x	x				x	x						x	x							x	x	x		
		Docking	x				x	x				x	x									x																		x					x	x		
Work in port	Unloading																																															
		Putting the gangway in place	x				x	x	x	x		x	x	x	x		x	x																	x	x		x		x					x	x		
		Manual handling of the boxes of fish				x	x	x	x	x		x	x		x		x					x													x		x	x		x					x	x		
		Handling the boxes of fish using a crane	x				x	x	x	x	x	x	x	x	x		x					x															x	x		x					x	x		
		Cleaning the vessel				x	x	x		x	x	x	x	x	x		x		x						x	x									x	x	x	x		x				x	x	x		
		Unloading gear	x				x	x	x			x	x		x		x					x													x	x	x	x		x					x	x		
		Loading empty boxes onboard	x				x	x	x	x		x	x				x					x													x					x								
	Disembarking																																															
		Disembarking	x				x	x				x	x																											x								
		Taking pallets to fish auction room				x		x	x	x		x	x	x			x	x														x			x			x										
		Selection, preparation and sale	x					x		x		x	x	x	x																							x										
Using the dinghy	Manoeuvre to fix the shoal																																															
		Using a crane to place generators in the dinghy				x		x		x	x	x	x	x	x		x					x																		x					x	x		
		Launching the dinghy in the water				x		x		x	x	x	x	x			x					x																		x					x	x		
		Embarking				x		x				x	x		x		x					x																		x					x	x		
		Rowing in the dinghy				x		x				x	x									x														x	x			x								
		Lighting and looking after equipment				x		x				x	x									x																		x					x			
		Using a crane to remove generators from the dinghy				x		x		x	x	x	x	x	x		x					x																		x					x	x		
		Lifting the dinghy onboard				x		x		x	x	x	x	x			x					x																		x					x	x		

NOTES ON CERTAIN RISKS

19.1. Exposure to solar radiation. The risk exists according to the work schedules and places (desk and dockside) where the exposure occurs.
20 and 21. Explosions and fires. Even though they are specific to the subtasks indicated, they could affect the whole crew secondarily.
24. "In itinere" accidents. The whole crew (TT) is considered to be exposed in period prior to embarking and after disembarking.
For Items 25, 29, 30 and 31, respectively: natural causes, particularly sensitive, pregnant women and minors. These conditions will be taken into account according to where they exist or prior and individual health conditions.
27. Psychosocial risks. They cannot be allocated to tasks and subtasks and each case will be assessed

TT: The whole crew.
Pa: Skipper.
Ma: Deckhand.
Mo: Engine hand.

RISK ASSESSMENT

The risk assessment is set out that will be used as an example in order to propose the specific health check up. The **post of a deckhand on an inshore purse-seiner** is therefore assessed here.

The inshore purse-seine fleet is one of the most typical of all the fishing techniques along the coastline of the North-West Cantabrian Sea. It was therefore decided to conduct the Standard Risk Assessment for this type of vessel.

This risk assessment work was proposed according to the following premises:

- Sequenced procedure to identify and assess the ergonomic, hygiene, psycho-sociological and safety risks. The specific methodology used to prepare each of the assessment parts is described and its results are set out.

- The risk assessment is applicable for:

  - Coastal purse-seiners over 18 metres long between perpendiculars (fishing boat included in the field of application of Royal Decree 1216/97 regarding minimum health and safety provisions onboard fishing vessels).
  - Post: deckhand.
  - Aspects of the work to be assessed: subtasks.

The phase of planning corrective preventive measures that would complement the standard risk evaluation was not implemented in this work.

The full assessment can be found in the material contained in the digital format version.

1. HYGIENE RISK ASSESSMENT

NOISE

The measurements were performed on a modern purse-seiner, in summer and with good weather, during a week of going out to sea and in conditions considered to be typical of normal operating.

NOISE
- Daily exposure level equivalent to: $L_{Aeq,d} = 80 \pm 2$ dB(A)
- The peak level value of 135 dB(C) was not exceeded.

VIBRATIONS

The engine and its auxiliary systems are the main source of mechanical vibrations, which spread and are transmitted through the structure of the vessel itself.

VIBRATIONS
Daily exposure level: $A(8) = 0{,}246\ m/s^2$

CHEMICAL AGENTS

In the chemical risk assessment, the first stage is to identify the chemical agents that may be present in the work place, conditions of use and preventive measures of all the activities carried out by each male or female worker and the special situations of the workers.

The most standard routes of entry of the chemical agents into the body are by inhaling or through the skin, but there can also be contact by digestive, parenteral or ocular routes.

CHEMICAL AGENTS							
EXPOSURE BY INHALATION							
SIMPLIFIED METHODOLOGY (COSHH ESSENTIALS - Control of Substances Hazardous to Health Model)							
OPERATION	**TASK**	**AGENT**	**PHASE H**	**HAZARD LEVEL**	**VOLATILITY**	**QUANTITY**	**RISK LEVEL**
CLEANING PURSE-SEINER (DECKHAND)	GENERAL CLEANING	CONCENTRATED CLEANER B	H314 H317	C(SKIN)	MEDIUM (P.e: 107ºC)	LOW	2
	CLEANING HOLD, BULKHEADS, OUTSIDE DECK	CLEANING AGENT A		A	BAJA	LOW	1
	CLEANING HEADS AND WASHING FACILITIES, FLOORS	BLEACH	EUH031 H314	C(SKIN)	MEDIUM (P.e: ±100ºC)	LOW	2
	ELIMINATING RUST FROM METALLIC PARTS OF THE VESSEL	RUST REMOVER E	H314 H315 H318 H319 H335	C(SKIN)	MEDIUM (P.e: ±100ºC)	LOW	2
	ELIMINATING RUST FROM METALLIC PARTS OF THE VESSEL	RUST REMOVER F	H319 H315	C(SKIN)	LOW (P.e: 172ºC)	LOW	1
	CLEANING HOLD	DISINFECTANT L	H330 H331 H335 H315 H334 H317	E (SKIN)		LOW	4

RISK ASSESSMENT

SKIN EXPOSURE

SIMPLIFIED METHODOLOGY. (INSTITUT NATIONAL DE RECHERCHE ET DE SÉCURITÉ- INRS MODEL)

AREA	AGENT	PHASES H	HAZARD CATEGORY by contact / absorption	POTENTIAL HAZARD CATEGORY (AMOUNT under 1 kg)	HAZARD SCORE (P)	P x S x F	ACTION PRIORITY	CHARACTERISATION OF THE RISK BY CONTACT AND/OR ABSORPTION
FOR GENERAL CLEANING	CONCENTRATED CLEANER B (Ph=13,5 ±0,5)	H314 H317	3	2	10	20	3	A PRIORI LOW RISK WITHOUT NEED FOR MODIFICATIONS
CLEANING HOLD, BULKHEADS, OUTSIDE DECK	CLEANING AGENT		1	1	1	1	3	A PRIORI LOW RISK WITHOUT NEED FOR MODIFICATIONS
CLEANING HEADS AND WASHING FACILITIES, FLOORS	BLEACH (Ph=12,5)	EUH031 H314	4	3	100	200	2	MODERATE RISK. CORRECTIVE MEASURES AND A MORE DETAILED ASSESSMENT PROBABLY NEEDED
ELIMINATING RUST FROM METALLIC PARTS OF THE VESSEL	RUST REMOVER E	H314 H315 H318 H319 H335	4	3	100			
CLEANING HOLD	DISINFECTANT L	H330 H331 H335 H315 H334 H317	4	3	100			
ELIMINATING RUST FROM METALLIC PARTS OF THE VESSEL	RUST REMOVER F (Ph=0,75)	H319 H315	2	1	1	2	3	A PRIORI LOW RISK WITHOUT NEED FOR MODIFICATIONS

Taking into account that in all cases:
- S (body surface exposed): two hands, one hand + forearm = 2
- F (exposure frequency): occasional <30´/day = 1

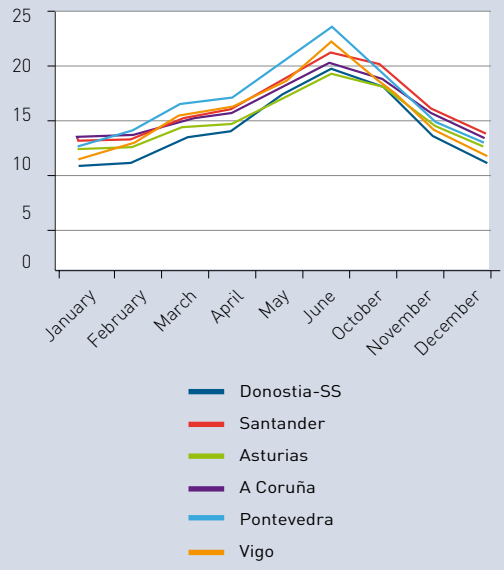
TEMPERATURE

An estimate was performed of the existence of a health risk due to exposure to the temperature at which a deckhand on a purse-seiner is working.

HEAT

Working outdoors

Monthly average of the daily maximum temperatures

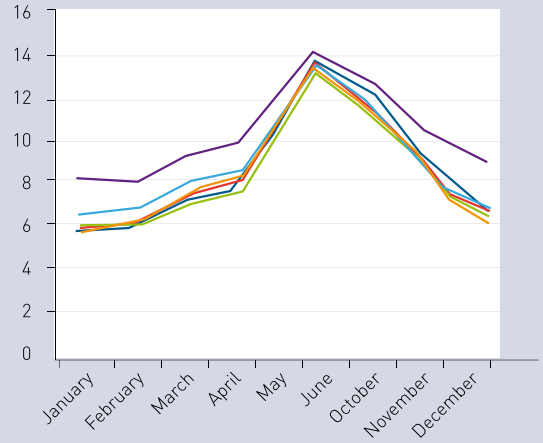


Prepared using AEMET data

COLD

Working outdoors

Monthly average of the daily minimum temperatures



Prepared using AEMET data

Working in holds

Risk of hypothermia and discomfort due to cold all over the body

IREQ neutral	0,4 (clo)	IREQ min	0,3 (clo)
Icl neutral	0,5 (clo)	Icl min	0,4 (clo)
ISO 9920		ISO 9920	

Acceptable risk of hypothermia and discomfort due to cold all over the body in the current circumstances.

Risk of chilling and discomfort localized in airways

Ambient temperature	7,7ºC	Metabolic consumption	>115 W/m^2

Acceptable risk of cooling and discomfort due to cold in airways in the current circumstances.

RISK ASSESSMENT

EXPOSURE TO SOLAR ULTRAVIOLET RADIATION

An estimate was performed of the existence of a health risk due to exposure to ultraviolet radiations as the work is performed outdoors.

RADIACIONES ULTRAVIOLETA DE ORIGEN SOLAR					
IUV	**1-2**	**3-5**	**6-7**	**8-10**	**11 or more**
EXPOSURE RISK	**Low**	**Moderate**	**High**	**Very high**	**Extremely high**
MONTH	January December	February March October November	March October	April May June	June
Prepared using AEMET data					

EXPOSURE TO ELECTROMAGNETIC RADIATIONS

An estimate was performed of the existence of a health risk due to exposure to electromagnetic radiation from the vessel's communication and detection equipment.

ELECTROMAGNETIC RADIATION						
FREQUENCY (MHZ)	Maximum E	Maximum H	Benchmark Value E (1)	Benchmark Value H	Benchmark Value E (public) (2)	Benchmark Value H (public)
156,80	< 10 V/m	----	61 V/m	---	28 V/m	----
6,5	< 1 V/m	< 10 mA/m	93,85 V/m	246,15 mA/m	34,12 V/m	112,3 mA/m

EXPOSURE TO BIOLOGICAL AGENTS

An estimate was performed of the existence of a health risk due to exposure to biological agents arising from contact with living beings, taking into account that no aerosols are generated in the work process, that the contact frequency with the biological agent can occur in a period that ranges from 20% to 75% of the working day, and that the quantity handled of the biological agent is unknown.

BIOLOGICAL AGENTS SIMPLIFIED METHODOLOGY (833 PREVENTION TECHNICAL NOTE. INSHT)		
INFECTIOUS AGENTS	**RISK GROUP RD 664/1997**	**POTENTIAL RISK LEVEL**
Erysipelothrix rhusiopathiae	2	3
Mycobacterium marinum	2	3
Epidermophyton floccosum	2	3
Trichophyton mentagrophytes	2	3
NON-INFECTIOUS AGENTS AND CONTAMINANTS	**RISK GROUP RD 664/1997**	**POTENTIAL RISK LEVEL**
*Epidermophyton floccosum**	2	2

* Note A: Possible allergic effects.

RISK ASSESSMENT

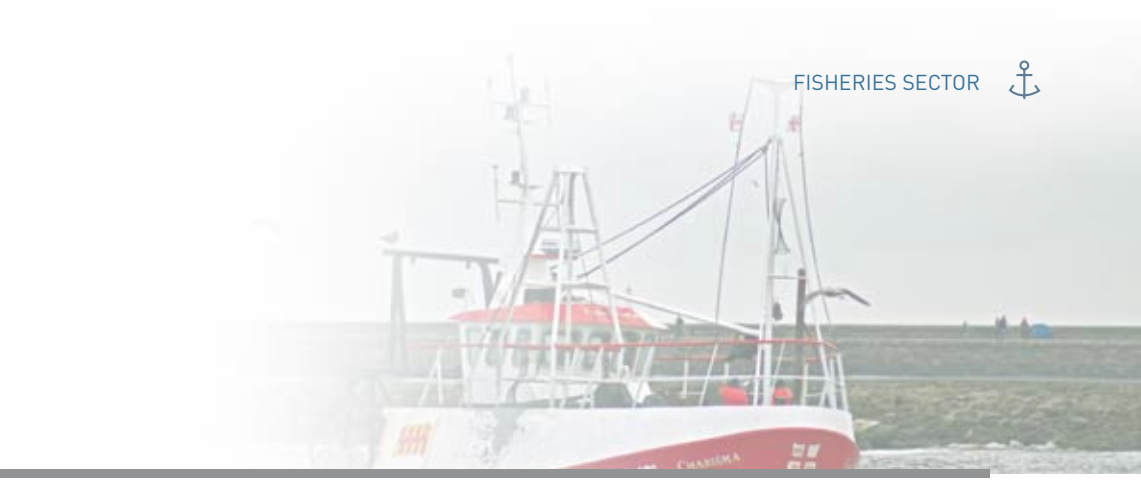
2. ASSESSMENT OF THE ORGANISATIONAL / PSYCHOSOCIAL RISKS

The aim of the assessment is to obtain information on the general state of the organisation of a purse-seiner with respect to psycho-social risk factors that allows situations to be detected that may be a risk source for the health of the crew.

For the purposes of this assessment, it was decided to use the **COPSOQ-istas 21** method, which is the adaptation for the Spanish State of the Copenhagen Psychosocial Questionnaire, in its short version (version 1.5) for companies of under 25 workers.

	Aspect	Most infavourable for health		Intermediate Situation		Most favourable for health	
MOST PROBLEMATIC ⇕ LESS PROBLEMATIC OR FAVOURABLE		N	%	N	%	N	%
	*Insecurity about the future	8	72.7	3	18.3		
	Psychological Demands	7	58.3	4	33.3	1	8.3
	Esteem	6	50	5	41.6	1	8.3
	*Dual presence	5	50	4	40	1	10
	Control at work	4	33.3	4	33.3	4	33.3
	Social support and leadership quality	1	8.33	6	50	5	41.6

* As regards insecurity about the future, one of the workers did not answer any of the questions regarding this aspect. The approach applied was not to take this point on the questionnaire into account and the average was calculated using 11 workers. The same approach was applied to the Dual Presence aspect: two workers did not answer this group of questions.



Main problematic exposures: they are the psychosocial risk factors for which the percentage of workers exposed to the most unfavourable situation for health (red) is greater or equal to 50%. In this case, they are as follows:

1. **Insecurity about the future (72.7%)**
2. **Psychological demands (58.3%)**
3. **Esteem (50%)**
4. **Dual presence (50%)**

Other problematic exposures: control at work was seen as a problematic exposure for 33.3% of the crew.

Favourable exposure: social support and quality of leadership was perceived as a favourable exposure condition for 41.6% of the crew, while control at work was seen as favourable for 33.3%.

3. SAFETY RISK ASSESSMENT

Based on the knowledge of the phases, tasks and subtasks that the deckhand performs onboard and on identifying the risks associated to them, the methodology of the assessment is based on the subjective estimation of the risks.

The estimation of the risk is obtained using the joint appraisal of the probability of certain risks factors ending in damages and of their scope, in other words, of the consequences arising of that fact.

INTOLERABLE OR IMPORTANT RISKS

- People falling to a different level.
- Falling into the sea
- Workers trapped by or between objects.
- Exposure to electrical contacts. The scope of this risk has to be put into perspective, where only a subtask (major overhaul or maintenance) is estimated as intolerable compared to the other three aforementioned risks, present in a great variety of subtasks performed by the deckhand.

RISK ASSESSMENT

SUBTASKS IN WHICH IMPORTANT OR INTOLERABLE RISKS ARE IDENTIFIED

People falling to a different level

Embarking; moving between approached vessels; major overhaul and maintenance; mechanical and manual loading onboard; stowing onboard; undocking; preparing gear and equipment; moving around the vessel; handing boxes to store catches; preparing boxes for stowage; shovelling ice in boxes; stowing crates; cleaning the vessel; checking gear and equipment; mooring; putting the gangway in place; manual handling of boxes; using a crane to handle boxes of fish; cleaning the vessel; unloading gear; loading empty boxes on the boat; disembarking.

Falling into the sea

The risk would always be considered intolerable if the crew member was not wearing a lifejacket while remaining on or crossing the deck of the boat. However, this safety measure was respected during the assessment and the risk was therefore estimated to be moderate.

In any event, the risk is always considered to be important in the sub-tasks related to the dinghy. These are as follows: placing generators in the dinghy; lowering the dinghy to the water; getting into the dinghy; rowing in the dinghy; lighting and looking after lighting equipment in the dinghy; using a crane to remove generators from the dinghy; lifting the dinghy onboard.

Workers trapped by or between objects

Major overhaul and maintenance; setting gear; passing the purse seine through the davit and hauling; hauling the gear with the crane's turning mechanism; manual hauling of the gear; stowing the gear; handling loads to store catches; stowing grates; cleaning the vessel; checking gear and equipment; manual handling of boxes; using a crane to handle boxes of fish; cleaning the vessel; unloading gear; loading empty boxes on the boat; taking pallets to the fish auction room.

Exposure to electrical contacts

Major overhaul and maintenance.

RISKS RATED AS SEVERE OR EXTREMELY HARMFUL CONSEQUENCES

- Falling objects due to collapse or demolition.
- Asphyxiation due to gas or steam.
- Being run over or hit by vehicles.
- Workers trapped by working equipment and vehicle roll-over.

In these cases, the risk has been estimated as moderate due to the likelihood of the damage being considered as low.

4. ERGONOMIC RISK ASSESSMENT

The aim of this assessment is to study the ergonomic risks arising from the dynamic, static and physical strain in the job.

The study considers

- Performing ergonomic assessments of the most important tasks and sub-tasks from the ergonomic point of view.
- Risk assessment by means of using international and European standard ergonomic methods to rate:

- Manual handling of loads using the **NIOSH method**
- Repetitive movements using the **OCRA CHECK-LIST method**
- Awkward postures using the **REBA method**
- Pushing and dragging using the **Snook & Ciriello method.**

The **summary table** below sets out the **ratings of the physical strain and ergonomic risk** obtained for each task, sub-task, movement/position **resulting from applying each of the assessment methods** above. These results are set out in the **"RISK FACTOR"** column.

The results also identify the body regions or areas at risk to complement this information and to summarise concisely the conclusions of the study conducted. This information can be useful to the occupational doctor, given that it will allow him or her to identify the areas of the body that may be affected as the result of exposure to ergonomic risks.

EQUIPPING AND ONBOARD

PHASE	TASK	SUBTASK	RISK FACTOR		RISK REGION				DESCRIPTION OF THE RISK
			Name	Intensity	neck	upper limbs	lumbar	legs	
Equipping and onboard	Mechanical and manual loading onboard	Manually loading boxes	Handling Loads				x		- Handling stacks of boxes approximately 2.5 m high and weighing 25 kg between 2 people. - Handling stacks of boxes weighing 3.5 kg and affecting the lumbar zone - Repetitiveness of movements to load 700 boxes - Adopting awkward neck roatation, shoulder abduction, flexion and inward and outward rotation and of lumbar and leg flexion postures, both in the movement to topple the stacks and when passing the boxes from some deckhands to others at different heights. - Length of task: 4 minutes
			Repetitiveness			x			
			Awkward postures		x	x	x	x	
			Pushing and dragging						
		Manual loading metal pallets	Handling Loads				x		- Handling 15 kg metal pallets affecting the lumbar region -Adopting awkward neck, shoulder flexion and rotation, wrist flexion postures by the person passing on the pallet and when taking it to the storage area, and adoption of awkward lumbar and leg postures by the person passing the pallet from the dock. - Length of task: 120 seconds
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging						
		Manual loading of sacks with auxiliary ropes	Handling Loads				x		- Handing 50 kg sacks affecting the lumbar region. - Dragging 50 kg sacks over 12 metres and affecting the lumbar region. - Adopting awkward postures in the movement to pass the sacks from the dock to the boat. - Adopting awkward neck, shoulder flexion and rotational and wrist flexion and ulnar deviation postures when dragging the sacks. - Adopting awkward lumbar and leg postures by the deckhands who are on the dock passing over the sacks. - Length of task: 120 seconds
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging				x		
		Loading scoop nets	Handling Loads				x		- Handling large scoop nets weighing approximately 15 kg and affecting the back. - Adopting awkward neck, shoulder flexion and rotational and wrist flexion and ulnar deviation postures when dragging the scoop nets. - Adopting an awkward lumbar and leg posture by the person passing over the scoop nets from the dock. - Length of task: 120 seconds
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging						
		Loading rings	Handling Loads				x		- Handing 30 kg set of rings affecting the lumbar region. - Dragging the set of rings 12 metres affecting the lumbar region - Adopting awkward neck, should abduction and extension, wrist flexion postures by all the deckhands involved, and lumbar flexion and awkward leg postures by the deckhand on the dock. - Length of task: 60 seconds
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging				x		
		Loading and storage of the cast in the reel	Handling Loads						- Adopting a static and awkward posture of the neck, shoulder, elbow, hand wrist, lumbar and legs while supporting the cast as it enters the reel. - Length of task: 17 minutes
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging						
		Loading and storing the reel in the winch_1	Handling Loads						- Adopting a static and awkward posture of the neck, shoulder, elbow, hand wrist, lumbar and legs while supporting the reel as it is rolled in the winch.. - Length of task: 9 minutes
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging						
		Loading and storing the auxiliary rope in the winch_2	Handling Loads						- Repetitive shoulder, elbow, hand wrist movements while handling the winch. - Adoption of an awkward neck and shoulder posture in abduction, flexion and extension movements, and back with side flexion. - Force of approximately 1 kg to roll the rope into the winch - Length of task: 8 minutes
			Repetitiveness			x			
			Awkward postures		x	x	x		
			Pushing and dragging						
		Loading ice	Handling Loads						- Adopting awkward neck, shoulder abduction, flexion and extension of shoulder, wrist extension, leg and lumbar flexion postures both when lifting the hose and shovelling ice. - When using the shovel, the deckhand exerts a force of approximately 10 kg. - Length of task: 6 minutes
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging						
	Stowing gear onboard	Taking the gear from the warehouse	Handling Loads						- Repetitive shoulder, elbow and hand wrist movements at 1.5 second frequency - Adopting awkward postures when flexing neck, hand wrist flexion, extension and ulnar deviation of wrist, shoulder abduction and flexion and lumbar flexion when bracing. - Length of task: 15 minutes
			Repetitiveness			x			
			Awkward postures		x	x	x		
			Pushing and dragging						
		Loading the gear on the boat	Handling Loads						- Repetitive shoulder, elbow and hand wrist movements at 2 second frequency - Adopting awkward postures when flexing neck, shoulder abduction and flexion , hand wrist flexion, extension and ulnar deviation of wrist, and lumbar flexion when bracing. - Length of task: 15 minutes
			Repetitiveness			x			
			Awkward postures		x	x	x		
			Pushing and dragging						

CATCH

PHASE	TASK	SUBTASK	RISK FACTOR		RISK REGION				DESCRIPTION OF THE RISK
			Name	Intensity	neck	upper limbs	lumbar	legs	
Catch	Setting up	Setting the guide buoy	Handling Loads				x		-Handling a 5 kg buoy affecting the back - Adopting awkward f neck extension and rotation, shoulder flexion and abduction, elbow supination, wrist and ulnar deviation, leg and lumbar rotation and flexion postures in the movement to set the buoy. - Length of task: 5 seconds
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging						
		Setting gear (network)	Handling Loads				x		- Handling the cast to set in the water, with a weight of 10 kg and affecting the lumbar region - Adopting awkward neck, shoulder, hand wrist, legs and lumbar postures when setting the cast in the water. - Length of task: 5 minutes (out of which 5 seconds are setting the cast)
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging						
	Collecting the gear (Hauling)	Collecting the guide buoy	Handling Loads				x		- Handling a 5 kg guide buoy affecting the back - Adopting awkward neck extension and rotation, shoulder flexion and abduction, elbow supination, wrist extension and ulnar deviation, leg flexion and of lumbar rotation and flexion postures. - Length of task: 10 seconds
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging						
		Closing the gear underneath (turning the gear)	Handling Loads				x		- Pushing up to 20 kg force when bringing in the davit affecting the lumbar region - Repetitive movements in upper limbs in the tasks to bring the purse seine to the floor and using the winches, and when passing the purse seine through the windlass. - Adopting awkward postures when flexing neck, shoulder abduction and flexion , wrist extension and ulnar deviation of wrist, and lumbar rotation and flexion when passing the purse seine through the davit.. - Adopting awkward postures when flexing neck, shoulder flexion , wrist extension, and lumbar rotation and flexion when bringing in the davit.. - Length of task: 10 minutes (5 seconds when passing the purse seine through the davit and 8 seconds used bringing in the davit)
			Repetitiveness			x			
			Awkward postures		x	x	x		
			Pushing and dragging				x		
		Stowing gear	Handling Loads				x		- Loads of up to 20 kg foce when they are manually bringing in the lead headline. - Repetitive shoulder, elbow and hand wrist movements at 1,6 second frequency while they are bracing to bring the gear in. - Adopting awkward postures when flexing neck, shoulder abduction and flexion, elbow pronation and supination, hand wrist flexion, extension and radial and ulnar deviation and lumbar flexion in the movements when manually bringing in the lead headline, operating the bow crane hoist and manually hauling in the gear of the bow reel - Length of task: 21 minutes (5 minutes to manually haul in the lead headline, 60 seconds to operate the bow crane hoist and 60 seconds to pull in the gear of the bow reel)
			Repetitiveness			x			
			Awkward postures		x	x	x	x	
			Pushing and dragging				x		
	Stowage	Fish Stowage	Handling Loads				x		- Handling a 15 kg load affecting the lumbar region when manually lifting the codend - Handling a scoop net hooked to the drum with 5 kg of fish - Adopting of awkward neck flexion and rotation, shoulder abduction, flexion and extension and lumbar flexion and rotation postures when handling the scoop net and the codend with the catch - Length of task: 3 minutes
			Repetitiveness						
			Awkward postures		x	x	x		
			Pushing and dragging						
		Handling boxes to store catch	Handling Loads				x		- Handling full boxes weighing 13 kg and affecting the lumbar zone - Adopting awkward postures when flexing neck, shoulder abduction and flexion, leg flexion and, and lumbar flexion when handling the boxes. - Length of task: 7 minutes
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging						
	Preparing the run when sailing	Preparing gear for next run	Handling Loads				x		- Handing 20 kg set of rings affecting the lumbar region. - Adopting awkward postures when flexing neck, shoulder abduction and flexion, wrist extension, leg flexion and lumbar flexion when handling the rings. - Length of task: 3.5 minutes (30 seconds handling the rings)
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging						

Extreme risk
High risk
Moderate risk
Slight risk
Limited risk

WORK IN PORT

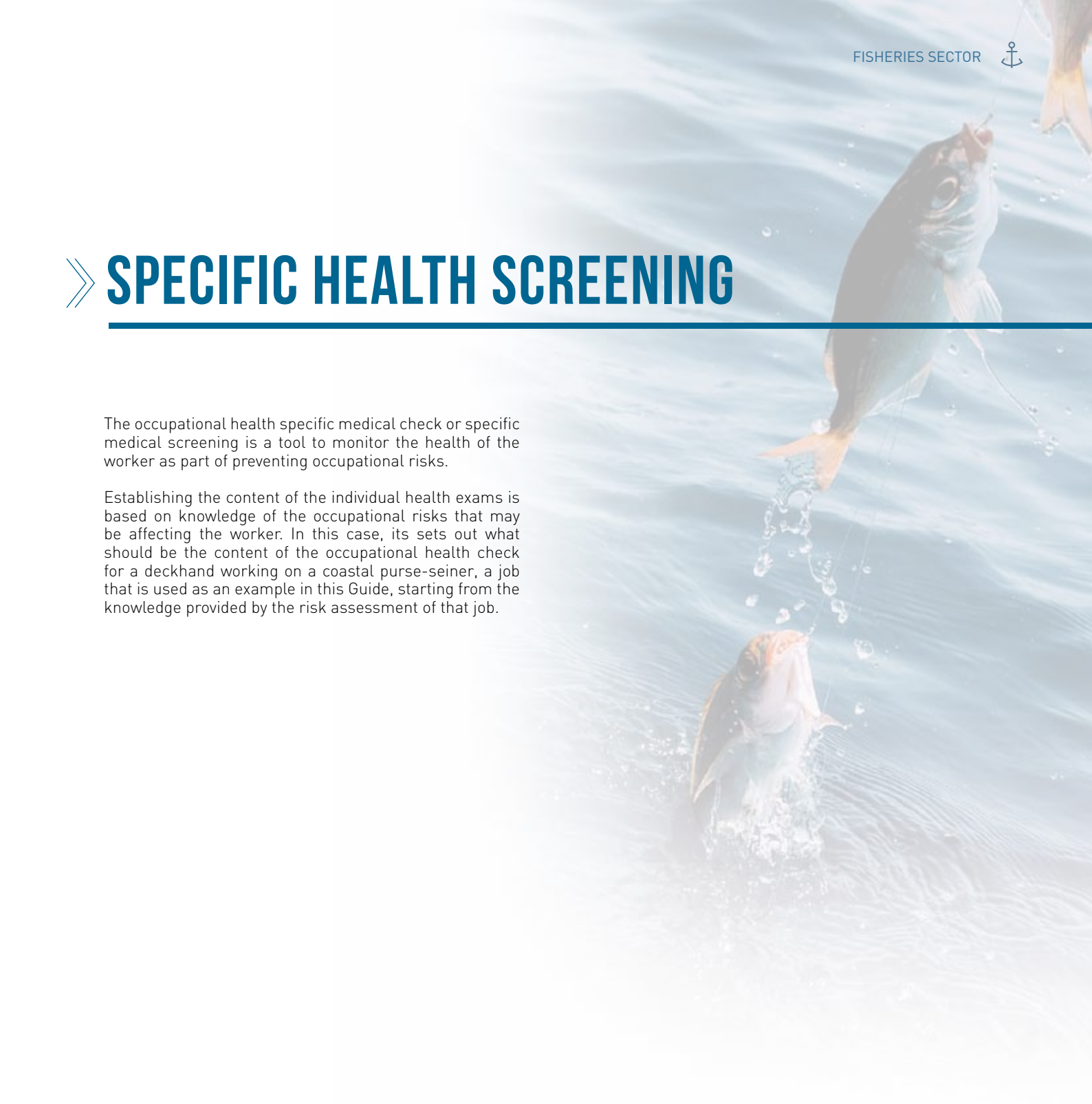
PHASE	TASK	SUBTASK	RISK FACTOR		RISK REGION				DESCRIPTION OF THE RISK
			Name	Intensity	neck	upper limbs	lumbar	legs	
Work in port	Unloading	Unloading boxes of fish	Handling Loads				x		- Handling boxes filled with fish weighing up to 13 kg, handling a shovel to load up to 6 kg of fish in the boxes, and dragging stackes of full boxes weighting up to 32.5 kg of fish affecting the lumbar zone. - Adopting awkward hand wrist, elbow, shoulder and neck and leg and lumbar flexion postures. - Length of task: 4 minutes
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging				x		
		Unloading gear	Handling Loads						- Repetitive shoulder and wrist movements at 2 second frequency while they are bracing. - Adopting awkward postures when flexing neck, shoulder abduction and flexion , hand wrist extension and ulnar deviation, and leg flexion. - Length of task: 40 minutes
			Repetitiveness			x			
			Awkward postures		x	x		x	
			Pushing and dragging						
	Cleaning	Removing floor	Handling Loads				x		- Handling 10 kg floor portions affecting the back - Adopting awkward neck, shoulder abduction and flexion, leg flexion and, and lumbar flexion and rotation postures. - Length of task: 24 seconds
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging						
		Shovelling fish waste	Handling Loads				x		- Using a shovel with loads of up to 5 kg affecting the lumbar zone - Adopting awkward neck postures, shoulder abduction and flexion, leg flexion and, and lumbar flexion and rotation. - Length of task: 4 minutes
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging						
		Vertically cleaning with brush	Handling Loads						- Repetitive movements in upper limbs while cleaning with brush - Adopting awkward shoulder flexion and abduction, wrist extension and ulnar deviation, leg flexion and lumbar rotation and flexion postures. - Length of task: 5 minutes
			Repetitiveness			x			
			Awkward postures			x	x		
			Pushing and dragging						
		Horizontally cleaning with brush	Handling Loads						- Repetitive movements in upper limbs while cleaning with brush - Adopting awkward shoulder flexion and abduction, wrist extension and ulnar deviation, leg flexion and lumbar rotation and flexion postures. - Length of task: 5 minutes
			Repetitiveness			x			
			Awkward postures			x	x		
			Pushing and dragging						
		Cleaning with hose	Handling Loads						- Adopting awkward wrist, elbow and shoulder postures while holding the hose in their hands - Length of task: 20 minutes
			Repetitiveness						
			Awkward postures			x			
			Pushing and dragging						
	Loading	Loading empty boxes onboard	Handling Loads				x		- Dragging stacks of empty boxes weighing 10 kg and affecting the lumbar zone - Adopting awkward hand wrist, elbow, shoulder and neck and leg and lumbar flexion postures while handling empty boxes. - Length of task: 2 minutes
			Repetitiveness						
			Awkward postures		x	x	x	x	
			Pushing and dragging				x		

Extreme risk
High risk
Moderate risk
Slight risk
Limited risk

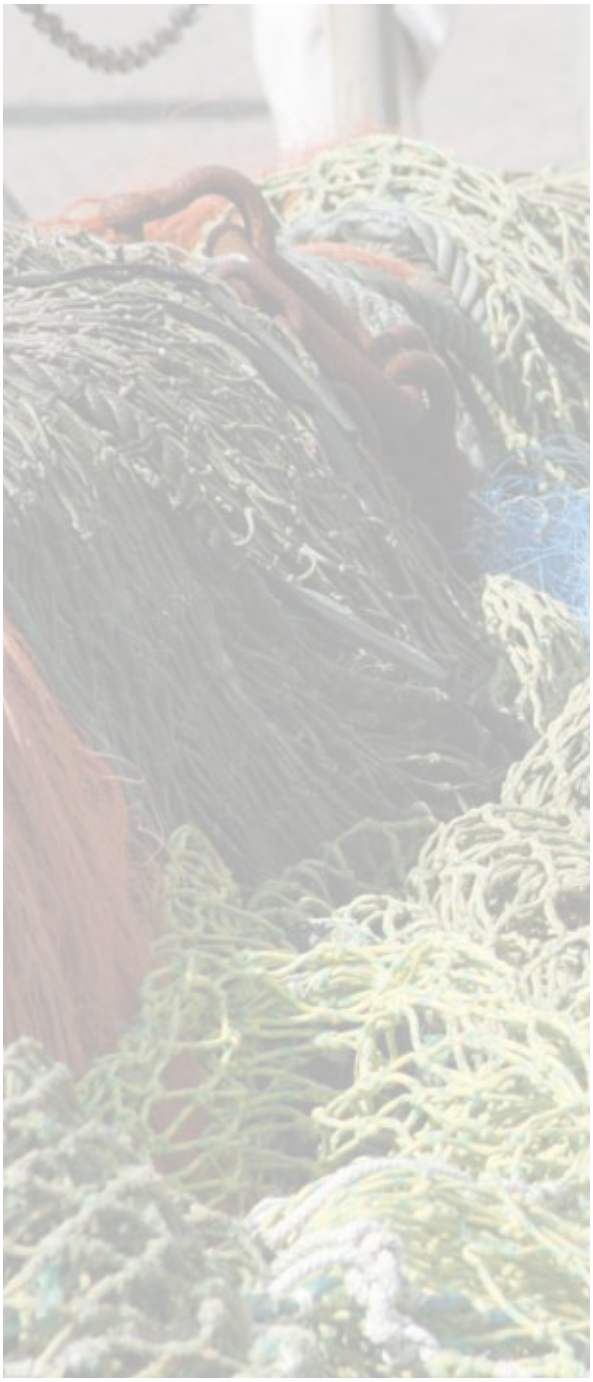
SPECIFIC HEALTH SCREENING

The occupational health specific medical check or specific medical screening is a tool to monitor the health of the worker as part of preventing occupational risks.

Establishing the content of the individual health exams is based on knowledge of the occupational risks that may be affecting the worker. In this case, its sets out what should be the content of the occupational health check for a deckhand working on a coastal purse-seiner, a job that is used as an example in this Guide, starting from the knowledge provided by the risk assessment of that job.



SPECIFIC HEALTH SCREENING



1. HEALTH RISKS AND DAMAGE

Occupational risks identified in the assessment of risks and damage that they may cause:

Risks	Possible damage
Ergonomic risks	Musculoskeletal system
Hygienic risks	
Noise	Hearing
Ultraviolet radiation	Skin
Cold	Skin and systemic effects
Heat	Systemic effects
Chemical agents	• Skin and eye irritation and can cause burns • Airway irritations • Toxicity if inhaled • Asthma or respiratory and skin allergy
Biological agents	Skin and systemic effects
Psychosocial risks	Physical and mental effects
Safety risks	Acute effects to different parts of the body

2. CONTENT OF THE HEALTH CHECKS

The specific medical screening includes a medical history, physical examination and complementary tests.

MEDICAL HISTORY

The medical history is taken to establish the current state of health and medical background regarding any possible damage that may be associated to the assessed risks.

MUSCULOSKELETAL SYSTEM:	
ERGONOMIC RISKS	Repetitive or accumulative physical fatigue
	Muscle lesions: Contractures, cramps, torn muscle fibres or inflammation of muscle sheaths
	Avulsion lesion due to spinous process fatigue
	Ligament and tendon lesions: Synovitis, tenosynovitis, tears and strains
	Joint lesions: Inflammatory arthritis and herniated disks
	Bone lesions: Fractures and cracks
	Neurological lesions: Trapped nerves
	Lesions to the stomach wall: Hernias
	Specific accumulative trauma to shoulders and neck Tendinitis of the rotator cuff Costoclavicular or thoracic outlet syndrome Tension neck syndrome
	Specific accumulative trauma to arm and elbow Epicondylitis and medial epicondylitis Pronator teres syndrome Bursitis
	Specific accumulative trauma to hand and wrist Tendinitis Tenosynovitis: De Quervain syndrowm and tenosynovitis of the trigger finger or stenosing tenosynovitis
	Specific accumulative trauma to knees Bursitis Meniscus lesions Knee ligament lesions
	Pressure neuropathies Brachial plexus: Compression in the thoracic outlet Suprascapular nerve: Compression in the spinoglenoid notch Radial nerve: Compression in underarm and in the cell of supinador Median nerve: compression in the carpal tunnel Ulnar nerve: compression in the epitrochelar channel and in the Guyon channel Fermocutaneous nerve: trapping in the groin ligament External peroneal nerve: compression in the head of the fibula Anterior tibial nerve: compression and ischemia in the anterior tibial cell Posterior tibial nerve: compression in the tarsal tunnel Interdigital nervees: Morton metatarsalgia

ALTERATIONS OF THE PERIPHERAL CIRCULATORY SYSTEM:	
ERGONOMIC RISKS HEAT	Varicose veins
	Oedemas
	Ulcers

HEARING SYSTEM:	
NOISE	Loss of hearing
	Otological disorders
	Earache
	Otorrhoea
	Tinnitus
	Vertigo
	Factors related to the ear and hearing
	Taking ototoxic drugs
	Exposure to noise and to ototoxic substances in the non-professional setting

SKIN DISORDERS:	
CHEMICAL AGENTS BIOLOGICAL AGENTS UV RADIATION	Irritant contact dermatitis
	Allergic contact dermatitis
	Contact hives
	Occupational acne
	Infections in the damaged skin (dermatomycosis, intertrigo, bacterial infections)
	Premalignant and malignant skin lesions

EYE DISORDERS:	
UV RADIATION CHEMICAL AGENTS	Irritation
	Lesions
	Burns

COLD-RELATED DISORDERS:	
CHEMICAL AGENTS	Irritation
	Breathing difficulties
	Asthma

COLD-RELATED DISORDERS	
	General: Hypothermia
	Localised: Acrocyanosis Cold hives Rhinitis due to cold Freezing Leg erythema Trench foot Immersion foot
	Conditions aggravated by exposure to cold

HEAT-RELATED DISORDERS	
	Systemic disorders
	Heat exhaustion
	Heat cramps
	Heat stroke
	Hyperpyrexia
	Fainting from heat
	Heat weariness
	Skin alterations
	Skin rashes
	Burns
	Dehydration and desalination
	Hypohidrosis
	Alterations to the peripheral circulatory system

DISORDERS RELATED TO PSYCHOSOCIAL FACTORS	
	Mood disorders
	Neurotic disorders
	Stress-related disorders
	Somatic symptom disorders
	Emotional exhaustion or "burn out"
	Addictions

PREGNANCY, RECENT CHILDBIRTH, BREASTFEEDING	
	Background
	Current state

USE OF PPI	
	PPI availability
	Real use of PPI

SPECIAL SENSITIVITY	
	People with chronic conditions: cardiac, respiratory, haematological, endocrine that may present flare-ups or imbalance episodes
	Obese people
	People being treated with blood pressure medication, tranquilizes, antidepressants, etc.
	Others

WORK-RELATED HISTORY	
	Occupational accidents
	Professional diseases
	Health-related absence from work

HABITS	
	Substance consumption:
	Tobacco
	Alcohol
	Other substances
	Non-professional exposures to biological, chemical, hygienic or ergonomic risk factors
	Exercise

EXAMINATIONS AND COMPLEMENTARY TESTS

Tests applicable in individual health surveillance of the workers using the specific worker health surveillance protocols published for that purpose by the Ministry of Health, Social Services and Equality and the Autonomous Communities. If there is no published protocol, a series of guideline medical tests prepared by consensus in the group preparing the Guide have been adopted.

The tests will be applied sequentially according to the clinical findings and the medical examination itself.

In the case of pregnancy, the 915 Prevention Technical Note of the Spanish National Institute for Safety and Hygiene at Work.

MUSCULOSKELETAL SYSTEM:	
ERGONOMIC RISKS	**SPINE**
	LOCOMOTIVE SYSTEM EXAMINATION
	INSPECTION Shoulder asymmetry Spine axes: front-to-back and lateral
	PALPATION Painful spinous processes Muscle contractions
	PASSIVE AND ACTIVE MOBILITY Flexion - extension Laterialization Rotation
	PAIN
	NEUROLOGICAL EXAMINATION
	MANOEUVRES: Laségue, Bragard, Schober, Valsalva
	SENSITIVITY
	UPPER LIMB
	LOCOMOTIVE SYSTEM EXAMINATION
	INSPECTION Asymmetries, outline, swelling, deviations, atrophy...
	PALPATION (Painful points, signs of inflammation, crackling...) Shoulder Arm Elbow Forearm Wrist Hands Fingers
	PASSIVE AND ACTIVE MOBILITY Shoulder: Abduction, adduction, flexion, extension, internal rotation, external rotation Elbow: Flexion, extension, pronation, supination Wrist: Flexion, extension, pronation, supination, ulnar deviation, radial deviation Fingers: Flexion, extension, abduction, adduction
	PAIN
	NEUROLOGICAL EXAMINATION
	NERVE OUTLET PALPATION: Clavicular fossa, epitrochlear channel, epicondylitis region, carpal tunnel, Guyon tunnel
	NEUROLOGICAL EXPLORATORY MANOEUVRES Tinel's Sign in nerve output, Finkelstein sign, Phalen test, Adson manoeuvre, costoclavicular narrowing, hyperabduction, luxation of the ulnar nerve in the elbow, Allen manoeuvre, counter-resistance pronation
	TENDON REFLEXES Bicipital, tricipital, styloradial, ulnar pronator teres
	SENSITIVITY Touch, painful

MUSCULOSKELETAL SYSTEM:	
ERGONOMIC RISKS	**LOWER LIMB**
	LOCOMOTIVE SYSTEM EXAMINATION
	INSPECTION Dysmetria, outline, swelling, deviations, atrophy...
	PALPATION (Painful points, signs of inflammation, crackling...) Hip Thigh Knee Leg Ankle Foot Fingers
	PASSIVE AND ACTIVE MOBILITY Hip: Abduction, adduction, flexion, extension, internal rotation, external rotation Knee: Flexion, extension Ankle: Flexion, extension, pronation, supination, internal rotation, external rotation Fingers: Flexion, extension, abduction, adduction
	EXPLORATORY MANOEUVRES Hip: Trendelenburg Knee: Lachman, Pívot Care, Pívot Cari, anterior drawer, posterior drawer, LLE yawn, LLI yawn Meniscus: Steimann, Graham Apley, Mc Murray, Moragas
	PAIN
	NEUROLOGICAL EXAMINATION
	NERVE OUTLET PALPATION Sciatica recess, peroneal head, tarsal tunnel
	EXPLORATORY MANOEUVRES Tinel's Sign in nerve output, pyramidal manoeuvre, Laségue manoeuvre, inverted Laségue manoeuvre, counter-resistance force.
	TENDON REFLEXES Patellar, Achilles
	CUTANEOUS PLANTAR REFLEXES In flexion, in extension
	SENSITIVITY Touch, painful

PERIPHERAL CIRCULATORY SYSTEM	
ERGONOMIC RISKS HEAT	INSPECTION Venous clinical appraisal (Internacional Consensus Commite on Venous Disease)
	PALPATION Temperature, changes in peripheral pulses, Schwartz manoeuvre
	MANOEUVRES Trendelemburg, Perthes, Pratt

HEARING	
NOISE	OTOSCOPY
	AUDIOMETRY

SKIN	
COLD UV RADIATION CHEMICAL AGENTS BIOLOGICAL AGENTS	INSPECTION
	PALPATION
	DESCRIPTION
	Aspect, size, extension, location and distribution pattern of the lesions
	Allergic alterations
	ALLERGY TESTS: specific IgE

EYES	
UV RADIATION CHEMICAL AGENTS	CORNEAL EXAMINATION
	CONJUNCTIVAL EXAMINATION
	VISUAL ACUITY APPRAISAL

RESPIRATORY SYSTEM	
CHEMICAL AGENTS	AUSCULTATION
	SPIROMETRY
	Allergic alterations:
	AUSCULTATION
	SPIROMETRY
	SPIROMETRY WITH BRONCHODILATION TEST
	SERIAL PEAK-FLOW
	ALLERGY TESTS: specific IgE

DISORDERS RELATED TO PSYCHOSOCIAL FACTORS
INTERVENTION LEVEL 1
10Q-FRP basic questionnaire **+** Perception of the perceived and compared current state of health (SF36) **+** Semi-structured interview on general events (Block I) and/or Work events (Block II)
INTERVENTION LEVEL 2
Goldberg's GHQ12 **+** Simple indicate of stress symptom appraisal (simple stress question) **and** General Malaise Appraisal Questionnaire – 2Q-IGM **+** Semi-structure personal interview: Block I (attitude) Block II (behaviour) Block III (paranoid suspicion – confounding factor index (IFC)
INTERVENTION LEVEL 3
Symptom questionnaires:
C1: Musculoskeletal Disorders Questionnaire (Adapted Nordic)
and
C2: Stress Symptom questionnaire (S-10Q-FRP)
Physical examination:
Physical examination/medical history (5 CIE 9-MC groups)
Basic systematic examination by areas:
Biometric data
Skin
Musculoskeletal system
Gastrointestinal system
Cardio-respiratory system
Mental/neurological examination
Complementary tests according to findings: biological control, ECG, spirometry...
Assessment of inclusion of other specific questionnaires
INTERVENTION LEVEL 4
Referring the worker to a specialist of the Manager Entity - Mutual Insurance company or Public Health Service (as applicable)
or
Preventive-medical councillor
and/or
Job reassessment

PREGNANCY

MAIN HEALTH SURVEILLANCE ASPECTS

OBJECTIVES

Analysis of the specific risk factors in the risk assessment
Identification of the particularly sensitive workers.
Early detection of the impact on reproductive health.
Case studies and epidemiological analysis of the data.

FREQUENCY OF THE MEDICAL APPOINTMENTS

The occupational health doctor is the one who will propose the frequency of the health surveillance according to the risk assessment and of the individual characteristics and evolution of the situation. The advice will be for it to take place, at least, at the following times:

First	**Time:** At the time of the worker communicating that she suspects or confirming she is pregnant, prior to the planning. **Objectives:** Identification of the particularly sensitive workers. Information on the risks and measures to be adopted. Information on the company's policy and resources available to her. Assessment of her needs. Propose preventive measures. Individual advice.
Successive	**Time:** During the pregnancy, two medical appointments after the first one are recommended: at the end of the first four months and the other in the third trimester. While breast-feeding, the second appointment could be held in the month of returning to work. Detecting behavioural or functional changes or child cancer would require one or two additional interviews 3-5 years after birth. **Objectives:** Early detection of any circumstance or change to the health of the worker, the foetus, the nursing infant or the child that could be caused or aggravated by the working conditions. Needs assessment. Satisfaction of the worker with the measures and their effectiveness. Proposing preventive measures or improving existing ones.
Circumstantial	**Time:** Appearance of harm to the infant, foetal or maternal health. Change of post or new risks. After sick leave over seven days or short but repeated absences. At the request of the worker. Immediately after returning to work. **Objectives**: Detecting new risk factors. Analysing a specific case or a group of cases. Needs assessment. Proposing preventive measures or improving existing ones. Health education.

CONTENTS OF THE MEDICAL APPOINTMENTS

The medical surveillance of the worker will be specific according to the inherent maternity-related risks in the workplace. Under no circumstances will it be up to the Occupational Medicine Unit to monitor the pregnancy or breastfeeding, which is the responsibility of the national health system doctor.

First Appointment Successive and circumstantial	Once the informed consent of the worker to perform the medical surveillance has been obtained and the latest risk assessment of her job reviewed, the following shall be carried out: Establish or update the work and medical history (including her gynaecological and obstetric history) of the worker. Immune status. Gather information about the state of health of the mother, the foetus or nursing infant. Assess the needs at the time of the appointment. Analyse the perception of the risk of suffering any harm related to the working conditions. Blood pressure. Other examinations considered appropriate to rule out particular sensitivity or confirm pregnancy when reporting delayed menstruation.
Successive and circumstantial	This surveillance will consist of an interview with the worker to establish, according to the type of examination and the time at which it is performed: Possible changes that have occurred or have been aggravated by the working conditions. New needs related to the evolution of her situation or to changes in her job performance. Reviewing and entering information provided by the attending doctor. Satisfaction with the measures implemented. Individual advice. Examinations considered necessary to detect special sensitivity experienced or from prior anamnesis.

ANALYSIS OF THE MEDICAL APPOINTMENT DATA

New risk factors suspected	The appearance of harm to a worker or to her baby or the concentration of cases in a department/area whether simultaneously or in time shall be reason to review the work and non-work risk factors. The prevention unit shall always update the information available on the risks for the reproduction present in the company.
Analysis of the appearance of several cases	The study of the concentration of adverse effects on reproduction in a short time period will require an exhaustive analysis and description of them, among other aspects, to determine whether or not they are comparable regarding the type of effect and exposure, and if the appearance frequency is greater than that in the general population. In those cases, transparency and effective communication are essential to facilitate the investigation and decision-making involving the input and participation of all the main stakeholders.
Effectiveness of the preventive measures	Indicators will be established to assess the effectiveness of the preventive measures according to the objectives set in the maternity protection programme.

COMMENTS

From an individual approach, maternity protection must be based on a detailed analysis of the additional and general risk assessments, on the individual characteristics of the worker and on the evolution of the pregnancy, post-partum and while breastfeeding.
From a collective approach, maternity protection will be based on preparing, collecting and analysing indicators that will allow reproductive health to be monitored overtime according to the risk factors.

SPECIAL SENSITIVITY

SPECIFIC EXAMINATION ACCORDING TO THE SENSITIVITY

www.grupo-cano.com

Instituto Galego de Seguridade e Saúde Laboral

Instituto Asturiano de Prevención de Riesgos Laborales

Instituto Cántabro de Seguridad y Salud en el Trabajo

OSALAN
Laneko Segurtasun eta Osasunerako Euskal Erakundea
Instituto Vasco de Seguridad y Salud Laborales

Xunta de Galicia

Gobierno del Principado de Asturias

Gobierno de Cantabria

Eusko Jaurlaritza
Gobierno Vasco