TIC Council & DEKRA Webinar
Occupational Health & Safety Webinar Series:
Tackling Ergonomic Challenges in the Manufacturing Industry
8 June 2021
Work-related musculoskeletal disorders in times of COVID

Moderator

Martin Michelot, TIC Council, Policy and International Affairs Manager
Work-related musculoskeletal disorders in times of COVID

Panellists

Alberto Schiavon
Pirelli,
Group Health & Safety Manager

Carina Strömberg,
Toyota Material Handling Europe,
Sustainability Controller

Sebastian Bartels,
DEKRA Senior Vice President,
Head of Business Line,
HSE & Sustainability
TIC Council - DEKRA
occupational health & safety webinar series:

Tackling Ergonomic Challenges in the Manufacturing Industry

Sebastian Bartels, DEKRA Group, SVP, Head of Global Business Line HSE & Sustainability
Physical risks are ongoing and major challenges in industry.
Physical risks are ongoing & major challenges

Percentage of employees working in establishments where different physical risk factors are in place, EU-28 2019

- Prolonged sitting: 74%
- Repetitive hand or arm movements: 69%
- Lifting or moving people or heavy loads: 64%
- Heat, cold or draught: 44%
- Tiring or painful positions: 37%

Source: EU-OSHA / EU ESENER-3 survey
58% of all workers in the EU report MSD complaints.
### MSD related complaints – job comparison

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Backache</th>
<th>Muscular pain in shoulders, neck and /or upper limbs</th>
<th>Muscular pains in lower limbs</th>
<th>One or more MSD-related health problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armed forces occupations</td>
<td>26%</td>
<td>49%</td>
<td>52%</td>
<td>58%</td>
</tr>
<tr>
<td>Clerical support workers</td>
<td>37%</td>
<td>36%</td>
<td>33%</td>
<td>20%</td>
</tr>
<tr>
<td>Service and sales workers</td>
<td>44%</td>
<td>55%</td>
<td>46%</td>
<td>49%</td>
</tr>
<tr>
<td>Skilled agricultural, forestry and fishery workers</td>
<td>57%</td>
<td>69%</td>
<td>55%</td>
<td>65%</td>
</tr>
<tr>
<td>Craft and related trades workers</td>
<td>40%</td>
<td>51%</td>
<td>49%</td>
<td>50%</td>
</tr>
<tr>
<td>Elementary occupations</td>
<td>5%</td>
<td>7%</td>
<td>39%</td>
<td>64%</td>
</tr>
<tr>
<td>Plant and machine operators and assemblers</td>
<td>37%</td>
<td>47%</td>
<td>33%</td>
<td>66%</td>
</tr>
<tr>
<td>Technicians and associate professionals</td>
<td>39%</td>
<td>41%</td>
<td>25%</td>
<td>56%</td>
</tr>
<tr>
<td>Professionals</td>
<td>22%</td>
<td>35%</td>
<td>36%</td>
<td>52%</td>
</tr>
<tr>
<td>Managers</td>
<td>26%</td>
<td>5%</td>
<td>26%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Source: Sixth wave of the European Working Conditions Survey 2015
Sample annual development in the UK

In 2019/2020 MSD accounted for 30% of all work-related ill health cases in the UK and 27% of all working days lost due to work related ill health.
MSD are not a country specific problem

Source: Sixth wave of the European Working Conditions Survey 2015
How about awareness?
A report of zero risks probably indicates a lack of awareness rather than a safe and healthy workplace.
How about prevention?
Workplaces reporting measures to prevent MSDs, 2014 and 2019

Source: EU-OSHA / EU ESENER-3 survey
Workplaces reporting major difficulties in addressing safety and health, 2014 and 2019

Source: EU-OSHA / EU ESENER-3 survey
Let’s see some best practice
Pirelli:

Alberto Schiavon
Group Health & Safety Manager
The value of moving ergonomics to process design

Alberto Schiavon
PIRELLI
OUR SUSTAINABILITY LEADERSHIP IN NUMBERS

- 2020 KPIs¹

-54%  Accident frequency index

58%  Eco & Safety performance² revenues

-9%  Avg. rolling resistance of car tyres

52%³  Electricity from renewable sources

-31%⁴  Plant CO₂ absolute emissions

-22%⁵  Raw materials suppliers CO₂ absolute emissions

-26%  Specific water withdrawal

97%  Waste sent to recovery
THE PRODUCTION PROCESS
THE PRODUCTION PROCESS

KEY POINTS

• Mature process
• High variability
• High number of tasks/positions
• New products evolution
THE HSE STRATEGY

LEAD (prevent, anticipate, drive, competitive advantage)

Moving from end of pipe to preventive approach through a systemic HSE process integration

Anticipate substances restrictions
Manage chemical risk at source
HSE hazards/risks/impacts along the product life cycle
Match compatibility between workplaces-process-substances

HSE as part of design process
Design products and processes to improve HSE performances along the life cycle
Resource circularity/efficiency
Waste prevention as process efficiency
Intrinsic safety
Think on human factor
ELTs management

End-of-Pipe Approach
Adapt "as is" for improve safety
Manage environmental aspects as output of the process
Manage human factor
Passive response to new legal requirements

Level of influence
Cost of changes/mitigation and lost value (tangible/intangible)

When HSE is actively involved

HSE Key Activities

RAW MATERIAL
Raw Materials Innovation and assessment,
Green sourcing
Third-party audit on critical suppliers
CDP supply chain

DESIGN R&D - ENG
Product & Process innovation/development
Cyber technologies development

MANUFACTURING
Eco and Safety Processes
Safety Industrial Hygiene
Energy & CO2
Water - Waste - Air emissions
Assets Liabilities

DISTRIBUTION
Green logistics

USE
HSE impacts (Emissions, TRWP)
Equities - POS HSE Management

END OF LIFE
Recycled raw materials
HSE impacts (Tyre Granulates, Microplastic, Tyre Derived Material uses, ...)

PIRELLI
WHICH STRATEGY APPLIED ON ERGONOMICS?

- STANDARDIZATION
- PREVENTING AT SOURCE
- BENCHMARKING
- INTEGRATION
- AUTOMATION
- NEW TECHNOLOGIES
STANDARDIZATION

- Jobs characterization requirements
- Common criteria in risk assessment
- Common language
- Common data set
- Reporting designed for sharing
PREVENTING AT SOURCE

Ergonomics is part of projects design review system

HSE topics are values for the process not constraints

- Engineering, R&D and Technical functions involved, competent, aware
- Tools for ergonomic simulations

- HSE initial requirements are verified before installation of equipment prototype
- Any adjustment enter in a corrective action flow
- Cumulative effects check

- Testing consider work environment and any additional condition
- From risk assessment to safety procedures
- Review and improvements
BENCHMARKING

Results on activities on ergonomics topics (improvements, results, best practices, issues, etc.) are shared in a dedicated tool within the Group for fostering knowledge and continuous improvement.
Managing ergonomics approaching the risks globally in order to have a full framework of job activity.
More and more Pirelli is committed to introduce automation on its processes
NEW TECHNOLOGIES

Looking forward on opportunities from technology development on materials, processes, etc.
Thank you for your attention
Toyota Material Handling Europe

Carina Strömberg
Sustainability Controller
TMHE Safety Health Wellbeing

Employees, customers and other stakeholders

2021-06-08
Carina Strömberg  
Sustainability controller  
Toyota Material Handling Europe  
Based in Mjölby, Sweden  
Safety Health Wellbeing for own staff
About us
Toyota Material Handling
Group

11,700 employees in TMHE
What/Where
We are local

Local Marketing & Sales companies
Own subsidiaries & independent distributors

HQ functions
Mjölby – Willebroek – Gothenburg

Production sites
Mjölby – Ancenis – Bologna – Ferrara – Milan

Regional distribution centres for spare parts
Mjölby – Antwerp – Hannover – Ancenis – Vienna – Bologna
What do we do to keep our people safe and healthy?
What is most important for TMHE?

Some 250 leaders ranked the topics

Kick-off FY22 Participants
Each picked personal “top 3”:

“Health & Safety, our #1 priority” for our
1. employees
2. customers
3. society
4. planet
5. company
How to ensure physical and mental wellbeing
Staying close to our people, benchmarking and being assessed

With safety as the number-one priority, Toyota Material Handling Europe has been a campaign partner fully supporting the EU-OSHA campaigns for ten years now Our work with EU OSHA

Since 2012, Toyota Material Handling Europe has been continuously assessed by EcoVadis, with focus on key topics including environment, labour & human rights, sustainable procurement and ethics. During recent years, Toyota Material Handling Group has consistently received Gold level scores, but now - two years in a row - the Platinum award has been achieved by the company. This is the highest possible score, ranking us amongst the top 1% of companies in the ‘general-purpose machinery’ sector. This together with the other awards amongst our network makes us unique. TMHE and EcoVadis

Toyota Industries Corporation (TICO) has been selected for the A-list, the maximum score, in surveys conducted by CDP on climate change for the third year in a row now, as well as the 2nd time on water security. Toyota Material Handling Europe, its European operations of the material handling division, continues to run local initiatives that fully support Toyota Industries’ Sixth Environmental Action Plan. CDP A-list 2020

When something special happens:
In the current Covid-19 pandemic, Toyota Material Handling Europe and all its entities are following the Corona virus development with utmost care. Our priorities are clear: the health and safety of our employees, as well as our customers and suppliers, coming first. Second is to do everything we can to uphold our service to our customers and partners. Thus, our policy is not only to protect our own and our customers’ personnel, but also to maintain our role as part of the supply chain for essential supplies (especially in food retail and health care) whilst adhering to local regulations. Our priorities are clear
How to ensure physical and mental wellbeing

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How to prevent MSD’s and other work related issues?
Category and age

How do we meet the different needs

In our company we we have a lot of different occupational categories and ages to take into consideration when we plan our OSH activities.

- Distribution = our MSCO’s Service technicians, Office workers, Sales persons
- Staff: Office workers
- Supply: Factory workers, Office workers
Category and age

How do we meet the different needs

As in many other companies, our staff is getting older. With that in mind, we must constantly update our knowledge and adapt equipment and aids accordingly.

We actively took part in the EU OSHA campaign “Healthy workplaces for all ages” and learned about minimising negative effects and increasing productivity by making work safer and healthier for all ages.
Our safety work includes all **Office worker, service technicians, sales persons, factory staff**

- Routines and procedures are constantly being checked and improved and it is not seen as a responsibility of the mangers only, it is the responsibility of everyone!
- When you are new in the company or if something serious has happened you must visit and take lessons in our Sustainability Dojo.
- Regular risk assessments and as soon as a work station or office should be changed we conduct extra assessments.
Instructions that all our staff need to take part of
Our continuous work with kaizen activities

**Workshop work**

| Image 1   | To consider before lifting:  
|           | Plan, estimate the weight, and how to carry/lift it.  
|           | Straight back, bend the knees.  
|           | Lift calmly and securely.  
|           | Do not twist your back while lifting.  |

| Image 2   | BEFORE the Picasso paint shop:  
|           | Heavy lifts from a low level caused strained lower back  
|           | Example:  
|           | Lifting 20 kilos with an unergonomic posture creates a load of 530 kilos in the lower back.  
|           | In case of lifting a roof section weighing 20 kilos, the compressive force in the lower back is 530 kilos.  
|           | This may be compared to lifting a crate of beer.  |

| Image 3   | AFTER the Picasso paint shop:  
|           | - The material arrives standing upright on a load carrier, no manual lifting  
|           | - When unhooking, the material is lowered directly onto a kobo trolley, no manual lifting  |
Instructions that all our staff need to take part of

Our continuous work with kaizen activities

The chair, the basics are:
- Sit with both feet on the floor
- The back must be supported
- Sit close to the desk

It is important to learn the chair’s settings and to use them. Varying work posture is important in avoiding problems.

Desks:
The procedure for setting the correct height of the desk is as follows:
Relax your shoulders and keep your elbows at a 90-degree angle, regardless of whether you are sitting or standing.

Monitors:
Arrange your monitor so that you are looking at the top half of the monitor and so that you half-close your eyes when you look at the screen.

The following applies to work both when sitting or standing:
- Work with your shoulders lowered
- Work close to your body
- Keep frequently used work materials within easy reach
- Alternate your working position
- Take short breaks
Instructions that all our staff need to take part of
Our continuous work with kaizen activities
What do we see in the near future?
• Future way of working
  Return to work and new normality

Prepare for:
Increased musculoskeletal issues amongst home office workers. How can we secure they are taken care of?
Increased anxiety due to traumatic experiences due to the pandemic. What can we offer in terms of psychological aid etc?

More than ever we need to
STAY CLOSE TO OUR PEOPLE!
How to prevent MSD’s and other work related issues for our customers
Our safety work includes all Customers and other stakeholders

MAXIMISE QUALITY AND CUSTOMER SAFETY

With our new quality strategy, our aim is to provide our customers with excellent quality, by being proactive and offering attractive products that answer their needs. “Quality in everything we do” is key in all processes: product development, purchasing, manufacturing and service.

Another key priority for us is the safety of our customers, we want to contribute to zero accidents in their workplace. By exchanging best practices, we believe we can make a difference in their operations.
• Safety for our customers
  Why choose Toyota as your partner?

We help you understand your legal obligations
We train your supervisor & managers
We manage your training records
We provide both in-house and on-site training
We analyse the performance of your drivers

A productive warehouse starts with a safe workplace. Since working with material handling equipment creates a high-risk environment, it’s important to raise awareness among drivers. Knowing how to drive a forklift efficiently and safely already reduces the risk of accidents happening. This not only contributes to your employees’ safety and well-being, but also to reduce damage cost and labour cost.
Raise productivity and create a safety culture

Win win situation

1. Improve driving skills
2. Improve operators’ motivation
3. Improve truck knowledge

Having a properly trained team with excellent driving skills will boost the workflow in your operation. Standardisation in your warehouse will increase, and your trucks will need less service and repairs.

1. Minimise risks
2. Starting with management
3. Direct impact on the bottom line

An effective culture of safety only works if everyone is aware of the risks and cooperates to prevent accidents. Having received correct training is therefore essential, not only for operators, but also for managers and supervisors and other warehouse staff. This way your entire team and organisation can help to improve productivity and reduce damage costs.

Interested in learning more: Improve ergonomics for your fork lift drivers
TIC Council - DEKRA
occupational health & safety webinar series:

How insights, leadership & competences help to avoid MSD in industry

Sebastian Bartels, DEKRA Group, SVP, Head of Global Business Line HSE & Sustainability
Driving Change

- Sense of urgency
- Capability
- Intention

Source: EU-OSHA / EU ESENER-3 survey
Leadership

Exposure
- Identify exposure
- Recognize consequences

Role
- Understand your role and power
- Review targets

Change
- Define actions
- Implement behaviors
- Communicate

Impact
- Evaluate impact of decisions
- Decide based on impact
Identify the individual targets

**Table 1: Physical environment index: proportion of workers in EU28 (%) and mean index scores (0–100), 2005–2015**

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2010</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vibrations from hand tools, machinery</td>
<td>24</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>Noise so loud that you would have to raise your voice to talk to people</td>
<td>30</td>
<td>29</td>
<td>28</td>
</tr>
<tr>
<td>High temperatures which make you perspire even when not working</td>
<td>25</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>Low temperatures whether indoors or outdoors</td>
<td>22</td>
<td>23</td>
<td>21</td>
</tr>
<tr>
<td>Breathing in smoke, fumes (such as welding or exhaust fumes), powder or dust (such as wood dust or mineral dust)</td>
<td>19</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>Breathing in vapours, such as solvents and thinners</td>
<td>11</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Handling or being in skin contact with chemical products or substances</td>
<td>14</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>Tobacco smoke from other people</td>
<td>20</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Handling or being in direct contact with materials which could be infectious, such as waste, bodily fluids, laboratory materials, etc.</td>
<td>9</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Tiring or painful positions</td>
<td>46</td>
<td>46</td>
<td>43</td>
</tr>
<tr>
<td>Lifting or moving people</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Carrying or moving heavy loads</td>
<td>35</td>
<td>34</td>
<td>32</td>
</tr>
<tr>
<td>Repetitive hand or arm movements</td>
<td>62</td>
<td>63</td>
<td>61</td>
</tr>
</tbody>
</table>

*Mean index scores (0–100)*

| Physical environment index | 82   | 83   | 84   |

Source: EU-OSHA / EU ESENER-3 survey
Using cloud technology for:

- Data collection
- Assessments
- Analysis
- Measures
- Guidance

Sample: DEKRA Workplace Well-Being Solutions Dashboard
Sample: DEKRA Safety Platform
Create measurable improvement

Industry Case Study

Sample Measures: “Warm Up and “Work Hardening” Programs

Outcomes Produced for 5 Consecutive Years Measured Against 61 Total Distribution Centers:

- 6% Increase in Work Output
- Most Cases Picked Per Man Hour Worked
- Lowest Injury Claims
Thank you!
Questions?