

FPST 3213 Human Factors in Accident Prevention (2022 Spring)

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此学习集的词语(44)

Personal risk factors, existing health problems, gender, age , work technique, hobbies, and organizational factors cause WMSDs.	False
When did OSHA start implementing guidelines and regulatory efforts that have effected ergonomics?	Late 1970s
Due to anatomical and hormonal differences, certain WMSDs are more prevalent in	Women
Bernardino Ramazzini observed that a variety of common worker's diseases appeared to be due to prolonged, violent, and irregular motions and prolonged exposures.	True

Work-related Musculoskeletal Disorders (WMSDs) are also known as Cumulative Trauma Disorders (CTDs).	True
Awkward or unsupported postures can stretch the body's physical limits and can compress and irritate	Nerves Tendons
Researchers have identified specific physical workplace risk factors involved in the development of WMSDs. Exposure to these risk factors can result in:	Muscle, tendon, or ligament sprain or strain Decreased blood flow to muscles, nerves, and joints Joint Damage Tendon or Tendon Sheath Damage Nerve Compression
The difference between human factors and ergonomics is that ergonomics focuses on the human/machine interface, human factors focuses on how work affects people.	False
Physical ergonomics risk factors that can cause injury	Force Repetition Compression Vibration Posture Duration Temperature

What is ergonomics	Field of study that involves the application of knowledge about physiological, psychological, and biomechanical capacities and limitations of the human
What is the purpose of ergonomics	Prevent WMSDs by applying principles to identify, evaluate, and control physical workplace risk factors
What is WMSD?	work related musculoskeletal disorders
Which factors can cause WMSD?	Posture----both awkward and static Forces-including heavy, frequent, or awkward lifting Compression Repetition Vibration
List the alias of WMSDs	cumulative trauma disorders (CTDs) repetitive strain injuries(RSIs) repetitive motion trauma(RMT) occupational overuse syndrome
What is the difference between ergonomics and human factors	Ergonomics: How people affects people, reduce fatigue Human factors: Human machine interface, reduce the potential for human error
What is the new trends of ergonomics nowadays	computer hardware nuclear power plants and weapon systems neuro-ergonomics and nano-ergonomics

Workplace conditions that can contribute to but do not cause WMSDs	<ul style="list-style-type: none"> Duration Intensity Temperature Workplace Stress Organizational issues Inadequate Recovery
Personal risks factors that also contribute to the development of WMSDs	<ul style="list-style-type: none"> Age Gender Hobbies Previous injuries Physical or medical conditions Smoking Fatigue Obesity and pregnancy
What is the difference between reactive, proactive and strategic controls	<ul style="list-style-type: none"> Reactive: apply intervention efforts after an issue is recognized Proactive: apply ergonomic principles in designing products, work stations, work areas, programs, and systems to enhance work Strategic: incorporates analysis, of management, sociotechnical and environmental of work systems
Ergonomic problem solving process	<ul style="list-style-type: none"> identify jobs with ergonomics opportunities defining the job demands identify risk factors by body part for each task of concern for each risk factor, ask why it is present until a dead end is reached develop strategies and work out at least three solution choose solution and be within the affordable cost guidelines

What is vibration	The oscillating, reciprocating, or other periodic motion of a rigid or elastic body or medium forced from a position or state of equilibrium.
Potential Injuries resulting from vibration exposure	Raynaud's syndrome:a condition, a local syncope (loss of blood circulation) to the finger and hand Hand Arm Vibration (HAVS) blanching, pain, and flushing
Measurement for Hand-Arm Vibration	conducted for workers using handheld power tools such as drills, grinders, needle guns, and jackhammers
Measurement for Whole-Body Vibration	vibration from large pieces of machinery that are operated in a seated, standing, or reclined posture z is from head to toe, x is from front to back, and y is from shoulder to shoulder
Discrete Movements	A singular reaching movement to a stationary target
Repetitive movements	Repetition of a single movement to a stationary target
Sequential movements	Discrete movements to a number of stationary targets regularly or a regularly spaced
Continuous movements	Require muscular control adjustments to some degree during the movement
Static posturing	Maintaining a specific position of a body member for a period of time

<p>We wish to sell prefabricated fixed height seats for Indian males. Provide the measurements for the popliteal height of Indian males that will allow the company to fit down the 5th percentile. (in mm)</p> <p>The mean and standard deviation of the popliteal height of Indian males are: Mean=415 mm and Standard Deviation = 21 mm</p>	380.35
<p>In designing a workstation, you use ___ as the upper and ___ lower limits of design.</p>	95th percentile male; 5th percentile female
<p>Who was the first person to develop a system of identifying people based on the unchanging characteristics of certain measurements?</p>	Alphonse Bertillon
<p>Fracis Galton placed the research of _____ on a scientific footing to further anthropometry.</p>	finger prints
<p>Which factors will affect anthropometry? (select all that apply)</p>	<p>Age</p> <p>Gender</p> <p>Race</p> <p>Ethnicity</p>

What percentage of a population will fall with 1.38 standard deviations of the mean in a normal distribution?	83.2%
A student's scores in Chemistry this semester were rather inconsistent: 100, 85, 55, 95, 75, 100. For this population, how many scores are within one standard deviation of the mean?	5
Students in a class ask a professor to curve their grades. The professor agrees and said that students at least 0.5 standard deviation above the mean will get B's and 1.5 standard deviations above the means will get A's. If the grades are normally distributed in a class of 30 students, how many will get A's and how many will get B's? Round to the nearest student.	2 A, 7 B

We wish to sell prefabricated fitted kitchen furniture to China, for the burgeoning home products market. We want to know whether our kitchen table tops, cupboards, and work surfaces, designed for sale in the United States and Europe, will fit Chinese housewives. Our kitchen work surface is 1 m above the floor, which is the mean U.S. female standing elbow height. Do the kitchen work surfaces fit the Chinese females?

False

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1.67

What is the potential injury from vibration exposure?	Raynaud's Syndrome White Finger HAVS Loss of blood circulation
A person using a hand tool is subjected to vibrations. Where should the accelerometer be placed to measure the vibration	Mounted on the handle of the tool or near the location where the vibrating object is grasped
Thermal balance depends on	Work demand The environment Clothing
What is one engineering control for reducing worker exposure to radiant heat sources	Shielding 3个答案选项
What is the potential injury from vibration exposure?	...