



SNS COLLEGE OF TECHNOLOGY

**An Autonomous Institution
Coimbatore – 35**

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DEPARTMENT OF AGRICULTURE ENGINEERING

19AGE307 – ERGONOMICS OF FARM MACHINERY AND IMPLEMENTS

III – YEAR VI SEMESTER

UNIT 1 – INTRODUCTION

TOPIC – OVERALL DISCOMFORT SCORE AND BPDS



Subjective Rating of Perceived Effort

- The subjective rating of perceived effort (RPE) is a valuable tool in ergonomics for assessing the perceived workload and exertion of individuals during various tasks or activities.
- RPE is a subjective measure that gauges an individual's perception of the intensity and effort involved in performing a task. It is usually measured on a scale, with different scales commonly used, such as the Borg Rating of Perceived Exertion (RPE) scale.
- RPE provides insights into how workers subjectively experience the demands placed on them, and it complements physiological measurements and objective assessments.



Subjective Rating of Perceived Effort



- The Borg RPE scale is one of the most widely used subjective rating scales. It typically ranges from 6 to 20, with 6 representing "no exertion at all" and 20 representing "maximal exertion." Participants select a number on the scale that corresponds to how hard they feel they are working.
- RPE provides a subjective perspective to complement objective physiological measurements, such as heart rate monitoring, oxygen consumption, or muscle activity. It helps bridge the gap between physiological responses and how individuals perceive their own efforts.
- Ergonomists use subjective RPE to assess the perceived workload associated with specific tasks or work conditions. This is particularly important in understanding how individuals interpret and respond to the demands of their work.



Subjective Rating of Perceived Effort

- RPE can be a useful indicator of fatigue. As individuals become fatigued, their perceived exertion may increase even if physiological measures remain relatively stable. This information is valuable in identifying when tasks may become unsustainable or lead to discomfort.
- RPE can be applied to various job tasks or activities, allowing for task-specific assessments. For example, it can be used to evaluate the perceived effort during manual material handling, assembly tasks, or prolonged computer work.
- RPE can be sensitive to factors such as posture, environmental conditions, and tool usage. It helps capture the holistic experience of the worker, including factors beyond the purely physical demands of the task.



Overall discomfort score and BPDS

- The Overall Discomfort Score (ODS) and the Body Part Discomfort Scale (BPDS) are tools commonly used in ergonomics and workplace health assessments to measure and quantify discomfort experienced by individuals, especially in relation to their work environment.
- These scales help evaluate the impact of various factors, such as workstation design, job tasks, and environmental conditions, on the well-being of workers.
- The ODS and BPDS are often used in conjunction with other ergonomic assessments, including objective measurements and observations. This comprehensive approach provides a well-rounded understanding of the factors contributing to discomfort.



Overall discomfort score (ODS)

- The ODS is a subjective measure used to assess the overall level of discomfort experienced by an individual. It typically involves the person rating their overall discomfort on a numerical or descriptive scale.
- The scale may range from 0 to 10 or use descriptive categories such as "no discomfort" to "severe discomfort." Individuals provide a rating that reflects their subjective experience of discomfort, considering factors like pain, fatigue, and general well-being.
- The ODS is often used in ergonomic assessments to gather information about the overall impact of the work environment on the individual's comfort and well-being. It helps identify areas for improvement and guides interventions to enhance the ergonomic design of workstations and tasks.



Body Part Discomfort Scale (BPDS)

- The BPDS is a tool that allows individuals to specify the level of discomfort experienced in specific body parts. It focuses on identifying and quantifying discomfort in different regions of the body.
- The scale is typically divided into different body regions (e.g., neck, shoulders, lower back, wrists) to help individuals pinpoint the areas where they are experiencing discomfort..
- Similar to the ODS, individuals may use a numerical or descriptive scale to rate the discomfort level for each body part. This detailed approach helps in understanding which specific areas are most affected.
- The BPDS is particularly useful for targeting interventions and ergonomic adjustments to specific body regions. It assists in identifying the sources of discomfort and guiding the design of solutions that address the specific needs of individuals.



Discomfort Rating

Body posture is one of the major factor which causes muscular fatigue and discomfort in the body. uncomfortable body posture in different activities reduces work efficiency, capacity and safety of operator.

Subjective feeling	ODR Score
Comfortable	0
Uncomfortable	1
Pain starts	2
Slightly painful	3



Discomfort Rating

It is widely agreed that awkward working postures are the principle risk factor associated with muscular-skeletal injuries and disorders during occupational activities. The effect due to working posture can be measured in terms of overall discomfort rate and body part discomfort rate techniques.

Subjective feeling	ODR Score
Moderately painful	4
Highly painful	5-6
Very highly painful	7-9
Extremely painful	10



Thank You!