

NIOSH LIFTING EQUATION AND VOCATIONAL REHABILITATION SERVICES

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OBJECTIVES

- Present a Case Study in the context of Vocational Rehabilitation Services
- Introduce NIOSH Lifting Equation and Safe lifting guidelines for humans
- Discuss this Case Study in the context of these guidelines

FIRST ME!: AN INTRODUCTION

- New ANZSOM Member; my first teleconference (so I do not have the wisdom of precedence)
- Senior Medical Officer, Civil Aviation Authority of New Zealand
- Occupational Physician, MidCentral DHB (Palmerston North Hospital)
- Private work in Occupational Medicine (Vocational Medical Services, Pain, Concussion, Medical advice for Vocational Rehabilitation Services)
- Background: Aviation Medicine, Occupational Medicine, Human Factors Engineering

CASE STUDY

- 46 years old man
- Injured on 1/7/2016 while lifting (50 kg- alone)
- Felt immediate pain in his back
- Unable to work
- Concrete worker for last 5 years
- Workplace assessment in November 2016
- Physiotherapy ongoing but unable to return to work
- First Specialist assessment on 15 May 2017 when I saw him

CASE STUDY (CONTINUED)

- OREBRO score 84, Height 5-10, Weight – 79kg,
- Functional Enquiry (Tolerances): Sitting – 30 min, Standing – 30 min
- Numbness right thigh/ leg/ foot
- Medication: Tramadol, Codeine
- Could not squat, heel-walk, toe-walk
- Restricted ROM lumbar spine

NIOSH SAFE LIFTING

- <http://ergo-plus.com/niosh-lifting-equation-single-task/>
- The **NIOSH Lifting Equation** is a tool used by occupational health and safety professionals to assess the manual material handling risks associated with lifting and lowering tasks in the workplace. This equation considers job task variables to determine safe lifting practices and guidelines.
- The result of the NIOSH lifting equation is the recommended weight limit (RWL), a weight that 99% of males and 75% of females should be able to lift safely. Under perfect circumstances, for example, when lifting an object with good handles only once in a certain posture, the highest possible RWL is **51 lb**.
- Guidelines suggest that men should be able to safely carry a load of **25kg** if held close to the body at around waist height. However, the maximum weight to lift at arms length and above shoulder height are reduced **5kg**.

The Job Demand definitions are as defined by the US Department of Labour:

Sedentary Work	Exerting up to 4.5 kg of force occasionally
Light Work	Exerting up to 9 kg of force occasionally or up to 4.5 kg of force frequently
Medium Work	Exerting up to 23 kg of force occasionally or 4.5 to 11 kg of force frequently
Heavy Work	Exerting 23 to 45 kg of force occasionally or 11 to 23 kg of force frequently
Very Heavy Work	Exerting in excess of 45 kg of force occasionally and in excess of 23 kg of force frequently

DISCUSSION

- Should a human be expected to lift 50 kg at work on his own occasionally but every day?
- Is nearly one year on a Stay at Work programme to help this man return to work as a Concreter through physiotherapy an appropriate form of Vocational Rehabilitation Service?
- The unspoken expectation of the Occupational Therapist who makes this referral as this client has not returned to work is that I will clear him to return to work as a Concreter since nearly one year has passed!
- Should all stakeholders be educated in safe lifting guidelines and adopt primary, secondary and tertiary tiered prevention strategies?
- Could such injuries and such personal journeys of clients be avoided?