

# Occupational Therapy and Upper Limb Amputee Rehabilitation: Occupational Focused Intervention

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# Declaration of Conflict

The author and co authors declare no conflict of interest

# Upper Limb Amputation

- The consequences of having an amputation are catastrophic, not only for the individual involved, but also their family and friends (Davidson, 2004)
- Upper limb amputation leads to difficulty performing everyday activities that were previously easy and routine (Schabowsky, et. al. 2008)

# Occupational Therapy

- Occupational therapists believe that appropriate engagement in relevant occupations has the potential to structure, shape and transform the lives of individuals (O'Toole, 2011)
- Occupational therapy services are integral to enabling individuals with an amputation to participate in daily tasks (Smur, et al., 2008)
- Occupational therapists are involved in all aspects of rehabilitation

# Three stages of Rehabilitation

## ● Pre-prosthetic training

- Focus on preparing the limb for a prosthesis
- Address and discuss pain
- One handed training begins, with a focus on self-care tasks
- If myo-electric control is expected, myo site training can begin here.

## ● Prosthetic control training

- Training is focused on gaining control and understanding the prosthesis.

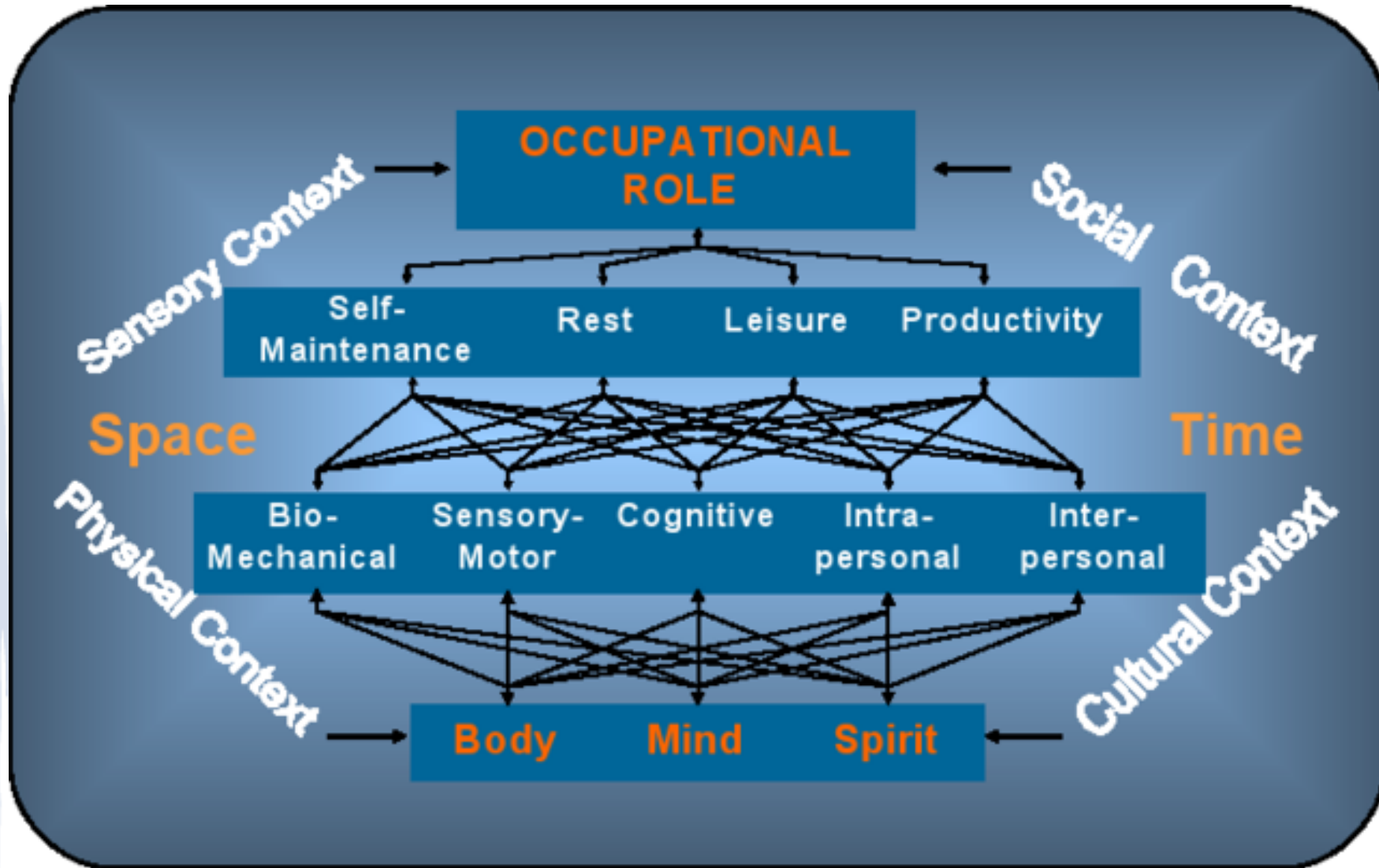
# Three stages of Rehabilitation

- ADL or Functional use training

- Incorporation of the prosthesis into everyday activities
- Refinement of control of prosthesis
- Return to productivity and driving
- One handed training and prosthetic use are balanced to assist the greatest independence

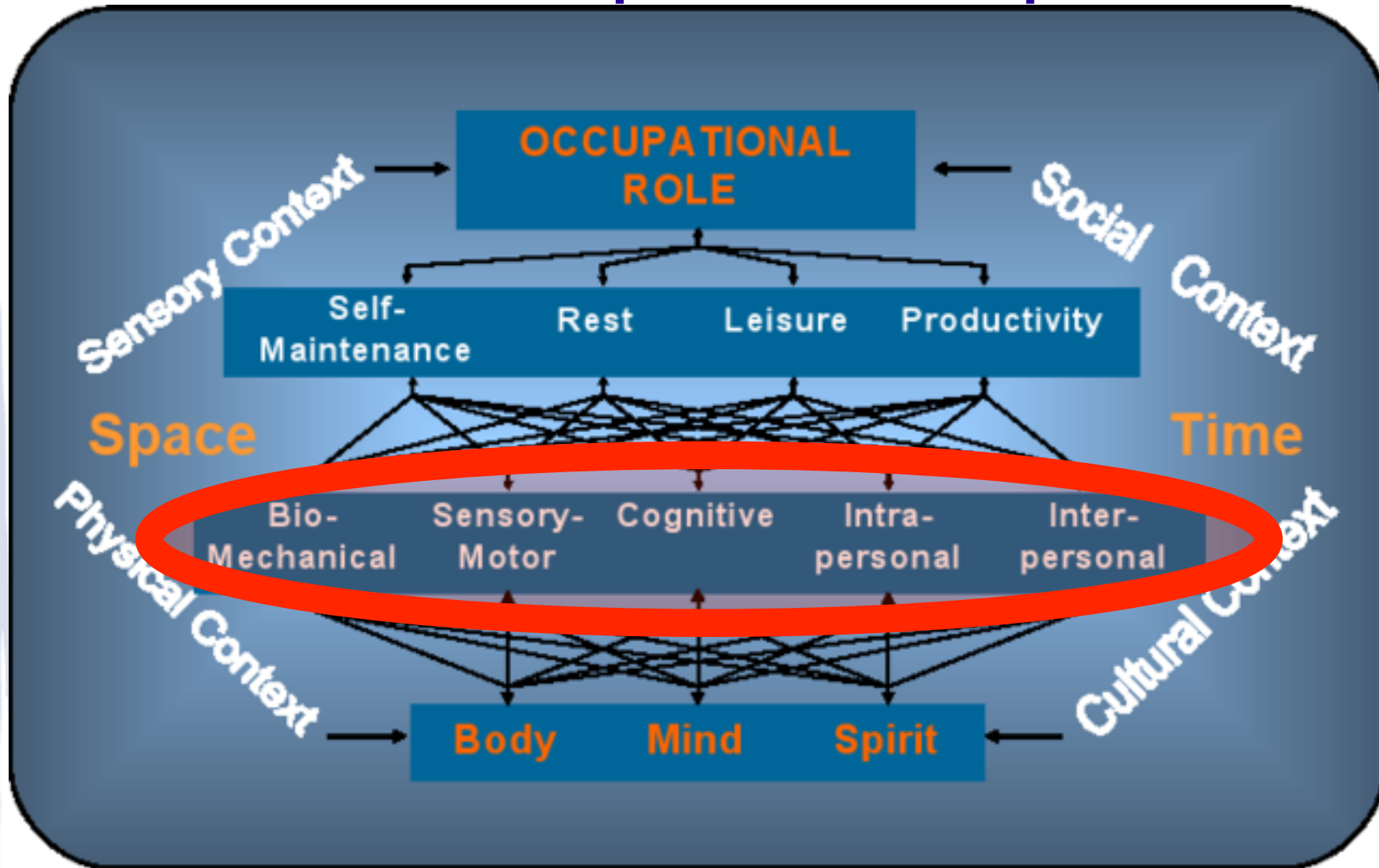
(Celikyol, 1995; Rock & Atkins, 1996)

# The OPMA



(Chapparo and Ranka, 2006)

# What is the impact of amputation?



(Chapparo and Ranka, 2006)

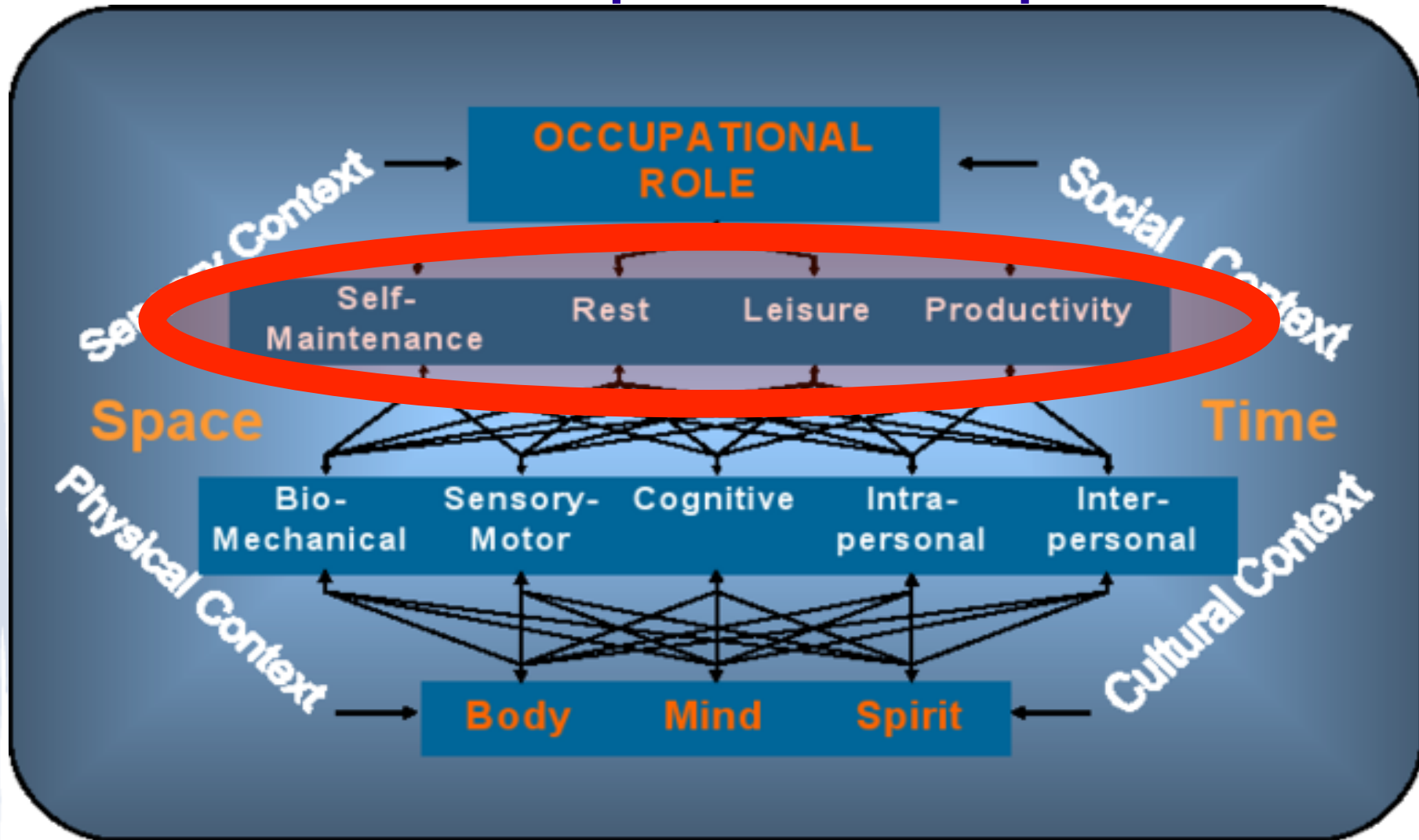


# Component skills

- Bio-mechanical
- Sensory-motor
- Cognition
- Inter-personal
- Intra-personal

“Impairment”

# What is the impact of amputation?



(Chapparo and Ranka, 2006)

# Categories of Occupation

- Self-maintenance
- Rest
- Leisure
- Productivity

“Activity Participation”

# Occupational Roles

- Roles help us apply meaning to our lives
- Amputation impacts our ability to participate in all the tasks and occupations that make up these roles
- The role of a father -
  - Self-maintenance
  - Rest
  - Leisure
  - Productivity

# Top Down

- Occupational therapy is concerned with the performance of everyday tasks.
- Occupations are used not only as the goal, but also the modality of intervention
- Assessment and treatment of occupations occurs in real world contexts
- Outcome measures are focused around participation in occupations.

(Mackenzie & O'Toole, 2011)

# Functional prosthetic use

- How would the person normally use their limb? (dominant vs non-dominant)
- What are the expectations of the role of the prosthetic limb?
- What are the demands of everyday life?

What are the functional performance goals?

# Core principles in training

- Active stabilisation

- The non-dominant limb is used predominantly as an active stabiliser, the prosthesis (regardless of dominance) is used for this role

- Pre-positioning

- The wrist and elbow are difficult to activate whilst carrying out a task, and so organising the limb prior to starting the task is important

# Core principles in training

- Task specific use

- A prosthesis will be used differently for each task and will not be used for all tasks

- Generalisation is planned

- The generalisation of skills used in everyday tasks are not spontaneously generalised, so generalisation must be incorporated into treatment plans and goals



# Final Points

- Prosthetic rejection rates for upper limb amputations remains high.
- Occupation based interventions can lead to greater independence in everyday activities.
- Prosthetic use can assist with independence in everyday activities
- Occupational therapy is key in providing interventions required to maximise function



**Any Questions?**

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