Movement Orientated Training for the Kinetic and Cyber Warrior

Rob Orr

Bond University, rorr@bond.edu.au

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Movement Orientated Training for Kinetic and Cyber Warriors

By Rob Orr (Bond University: Australia)
BLUF:

• Movement Orientated Training is a conceptual framework around which many current fitness trends are loosely (and on occasion incorrectly) based.

• MOT can be used to direct the occupational training and re-training of cyber and kinetic warriors
Movement Orientated Training – Session Outline:

✓ Movement Patterns
✓ Use or Misuse
✓ Factors influencing the movement patterns
✓ Implementation of MOT
Movement Patterns

- Sagittal Plane
- Coronal Plane
- Transverse Plane
Movement Patterns

Sagittal Plane
- Flexion
- Extension
- Lateral Flexion

Coronal Plane
- Abduction
- Adduction
- Rotation
- Horizontal Flexion
- Horizontal Extension

Transverse Plane
- Flexion
- Extension
- Lateral Flexion

- Rotation
- Horizontal Flexion
- Horizontal Extension
Movement Patterns

- Sagittal Plane
  - Flexion
  - Extension

- Coronal Plane
  - Lateral Flexion
  - Abduction
  - Adduction

- Transverse Plane
  - Rotation
  - Horizontal Flexion
  - Horizontal Extension

- Unilateral
- Bilateral
Movement Patterns

Personal Training Notation:

- Push
- Pull
- Bend
- Lift
- Twist
- Gait* / KL
- G / FB
• Define Functional Training.
• Functional training: Misunderstood term?
• What causes overuse injuries?
Gait: Movement Patterns

- Sagittal Plane
  - Flexion
  - Extension

- Coronal Plane
  - Lateral Flexion
  - Abduction
  - Adduction

- Transverse Plane
  - Rotation
  - Horizontal Flexion
  - Horizontal Extension

- Bilateral
- Unilateral
- Push
- Pull
- Bend
- Lift
- Twist
- Gait
Yanda’s Upper Cross Syndrome

- What muscles are short and tight and
- what muscles are lengthened and weak?
Yanda’s Lower Cross Syndrome

- Which muscles are short and tight and
- Which muscles are lengthened and weak?
• How do we get rid of postural imbalances (muscular approach)?

• What exercises would we prescribe for tight Pecs?

• What are the actions for the Pec Maj and Lats Dorsi?
• Lumbar Fascia (LDF)

What are:

• Origins of the Lats Dorsi
• Origins of the Glute Max
• Lumbar Fascia (LDF)

What are the antagonists to the Glute Max?
Which exercises?
• What muscles take the major load during this exercise?
• The Length-Tension Curve
Cyber vs Kinetic Warriors

- Nothing to do with intelligence
  *(Not a Jocks vs Nerds thing)*

- Cyber – Predominantly low movement requirement

- Kinetic – Predominantly a high movement requirement
Cyber vs Kinetic Warriors
Cyber vs Kinetic Warriors
Cyber vs Kinetic Warriors
• MOT Design Influencing factors: Balance Profile

- Balance Profile
  - Static
  - Dynamic
MOT Design Influencing factors: Balance Profile

- Balance Profile
  - Static
  - Dynamic
  - Balance
  - Counter balance
• MOT Design Influencing factors: Synergy profile

- Isolated  Compound  Kinetic Link
  
  Complex  Multi-plane
- MOT Design Influencing factors: Potential for Movement

<table>
<thead>
<tr>
<th>Machine</th>
<th>Smith</th>
<th>Barbell</th>
<th>Dumbbell</th>
<th>Plyometric</th>
<th>Unstable</th>
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</thead>
<tbody>
<tr>
<td>Squat</td>
<td>Squat</td>
<td>Squat</td>
<td>Squat</td>
<td>Squat</td>
<td>Squat</td>
</tr>
</tbody>
</table>

**WHY?**
- MOT Design Influencing factors: Potential for Movement

Flat Road March  Multi gradient, uneven terrain march
MOT Design Influencing factors: Conditioning Profile

Neuromuscular Conditioning
- Strength
- Endurance
- Hypertrophy
- Power
- Speed
- Agility

Metabolic Conditioning
- Alactic
- Lactic / Glycolytic
- Oxidative
MOT Implementation – Micro
MOT Implementation – Micro

- General Considerations
  - Aims and needs of client
  - Previous training experience
  - Injury history
  - ADLs
  - Other interests (Sports, pastimes, etc)
Skills / Tasks / Functions

Trainable

Function

Counter Function

Un-trainable

Movement patterns

MOT Implementation – Micro
MOT Implementation – Micro
General Training – Micro

• Lunge and U/Row
• Squat and Push
• Chins
• Push Up
• Full sit up and Twist
• Running Man
MOT Implementation – Micro

Obstacle Course – Micro

- Over shoulder throw
- Push Up / Row / Tuck Under
- Lunge and Jump Squat
- Chins
- Dips
- Quick Step / Sprint
- Burpee
- Pommel
- Sit and Stand
MOT Implementation – Macro
MOT Implementation – Macro

- Application
  - Unit / job task profiles
  - Unit injury profiles and risks
  - Pre-habilitation
MOT Implementation – Macro

Unit / Job Tasks

Injury Profiling

Movement Profiles

Program Design
MOT Implementation – Macro

- Unit Role
- Job Tasks
- Events

- Injury Profiles
- Causes of Injury

- Potential Causes of Injury
  - Trainable
  - Untrainable

- Why?

- Other Options

- Function
  - Movement patterns
  - Counter Function

- Balance Profile
- Synergy Profile
- Conditioning Profile

Program (Design and Implementation)
<table>
<thead>
<tr>
<th>BODY MVT PATTERN</th>
<th>PARRALLE L LIFT</th>
<th>UNILATERAL LIFT</th>
<th>PULL</th>
<th>PUSH</th>
<th>BEND 1</th>
<th>ROTATION</th>
<th>SHOULDER MOBILITY</th>
<th>BEND &amp; LIFT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SQUATTING</td>
<td>LUNGING</td>
<td>PULLING</td>
<td>PUSHING</td>
<td>UPPER CORE FLEXION</td>
<td>SPINAL ROTATION</td>
<td>ARMS ROM</td>
<td>BENDING</td>
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<tr>
<td>LEVEL - 4</td>
<td>Assisted Squat</td>
<td>Step Up</td>
<td>Cable Pull</td>
<td>Standing Pull Up</td>
<td>1 Arm Cable Push</td>
<td>Wall Push Up</td>
<td>Ball Sit</td>
<td>SB Lower Partials</td>
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<tr>
<td>LEVEL - 3</td>
<td>Sit/Stand Squat</td>
<td>Partials</td>
<td>Wall Push Up</td>
<td>Incline Push Up</td>
<td>Pendulum</td>
<td>Breathing Sit Up</td>
<td>SB Circling</td>
<td>Rotators</td>
</tr>
<tr>
<td>LEVEL - 2</td>
<td>Partial Squat</td>
<td>Iso Partials</td>
<td>Incl Pull Up</td>
<td>Breathing Sit Up</td>
<td>Upper/Lower Twist</td>
<td>Grav res Upper/Lower Twist</td>
<td>Window Washer</td>
<td>Kneeling Bend</td>
</tr>
<tr>
<td>LEVEL - 1</td>
<td>SB Wall Squat</td>
<td>Static Lunge</td>
<td>Bent Leg Pull Up</td>
<td>Knee Push Up</td>
<td>1/4 BFA Sit Up</td>
<td>Grav res Upper/Lower Twist</td>
<td>Window Washer</td>
<td>Kneeling Bend</td>
</tr>
<tr>
<td>LEVEL 0</td>
<td>Body Squat</td>
<td>Step Lunge</td>
<td>Lying Pull Up / 1 Arm Row</td>
<td>Push Up</td>
<td>BFA Sit Up</td>
<td>Russian Twist</td>
<td>Curl / Press / Extend</td>
<td>Body Dead Lift</td>
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<tr>
<td>LEVEL 1</td>
<td>Overhead Squat</td>
<td>Walk Lunge</td>
<td>Jump Hve</td>
<td>Push Up Arm Ext</td>
<td>Full Sit Up</td>
<td>Seated Wood Chop</td>
<td>MD Power-Up and throw High Pull/Push Press</td>
<td>Loaded Deadlift</td>
</tr>
<tr>
<td>LEVEL 2</td>
<td>Weighted Squat</td>
<td>Directional Lunge</td>
<td>Hve Under/G</td>
<td>Decline Push Up</td>
<td>Halo Sit Up</td>
<td>MB twist and pass</td>
<td>Unilateral Loaded deadlift</td>
<td>Double Extension</td>
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<tr>
<td>LEVEL 3</td>
<td>MB Squat Pass</td>
<td>Lunge Arms Extended</td>
<td>Loaded Hve</td>
<td>MB Push Up</td>
<td>Weighted Full Sit up</td>
<td>Dynamic twist and pass</td>
<td>MB O/H Pass</td>
<td>Triple Extension</td>
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<tr>
<td>LEVEL 4</td>
<td>1 Arm O/H Squat</td>
<td>Lunge Rotate</td>
<td>Mobile Hve</td>
<td>Clap Push Up</td>
<td>Bosu Full Sit up</td>
<td>Upright Row Press</td>
<td>Triple Extension</td>
<td></td>
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</tbody>
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**TSAC CONFERENCE**
TACTICAL STRENGTH AND CONDITIONING
Key References:


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A/Prof R. ORR

Faculty of Health Sciences and Medicine
Bond University
Gold Coast

Email: rorr@bond.edu.au
Ph: 0468 646 027