

OSC 10
Ohio Safety Congress & Expo

**The human machine:
Predicting injuries through
posture observation**
322

Dennis Apple, CHMM, RS
BWC ergonomic consultant

Wednesday, March 31, 2010, 9:15 to 10:15 a.m.

Consider this

It is best to view the human body as a machine when determining bottlenecks or quality issues within any process. The human body has limitations (short term and long term) that we must operate within for it to function efficiently and without breakdowns.

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Consider this

We are all familiar with what happens when we try to work outside our short-term design parameters. If we try to lift a load beyond our capacity, we cannot. It is the micro-damage we do (much like stress cracks in aircraft aluminum) from working within our design parameters but near to, or outside, our capacity that results in the premature failure known as musculoskeletal disorders.

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Comparison

Machine	Human
Computer	= Brain
Error message	= Aches and pains
Wiring harness	= Peripheral nervous system
Sensors	= Nerve ends
Breaker box	= Spine
Hydraulic lines	= Arteries and veins
Hydraulic pump	= Heart
Backhoe boom	= Human arm
Feet	= Front tires on car
Fuel	= Food
Premature failure	= Injury and illness

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Personality type



Good worker



Good employee

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Food is our fuel

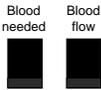



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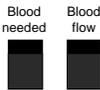
Blood flow during dynamic and static activity



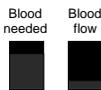
Resting



Dynamic effort



Static effort

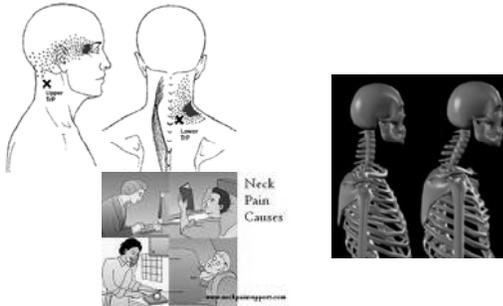


Headaches are symptoms

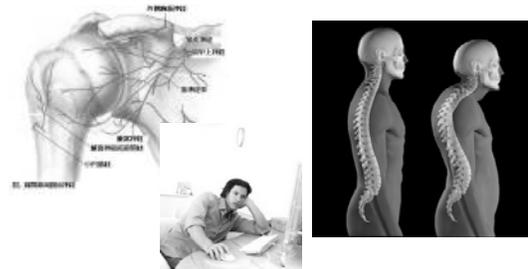
- o Muscle tension
- o Eye strain
- o Pinched nerve
- o Lack of blood flow
- o Lack of blood flow
- o Lack of blood flow



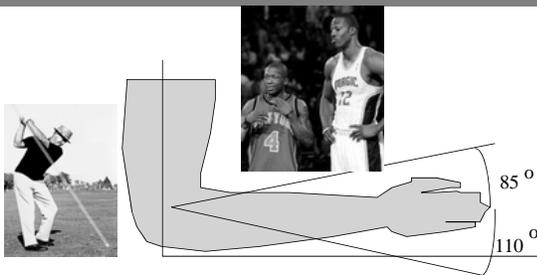
Neck postures



Shoulder postures



Working elbow height



Maintain safe upper extremity working boundaries.

Hand, wrist, and arm discomfort

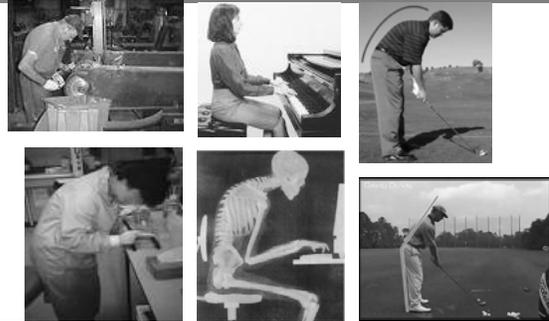


Root cause analysis



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Professional back posture



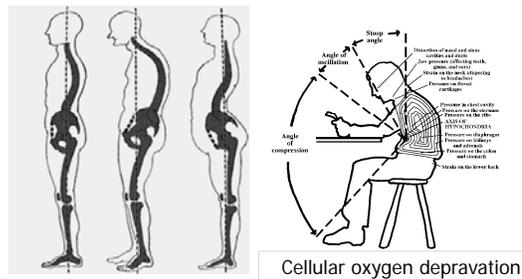
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Backs are not injured by lifting



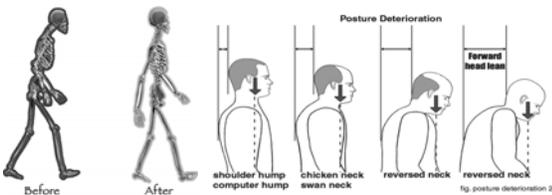
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Abdominal compression



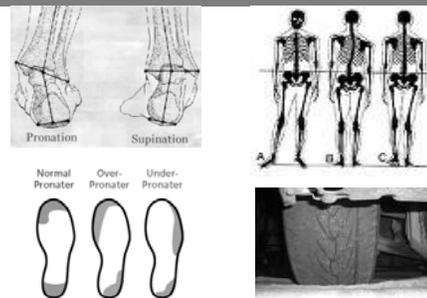
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Fighting the effects of gravity



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Your feet and your front tires



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