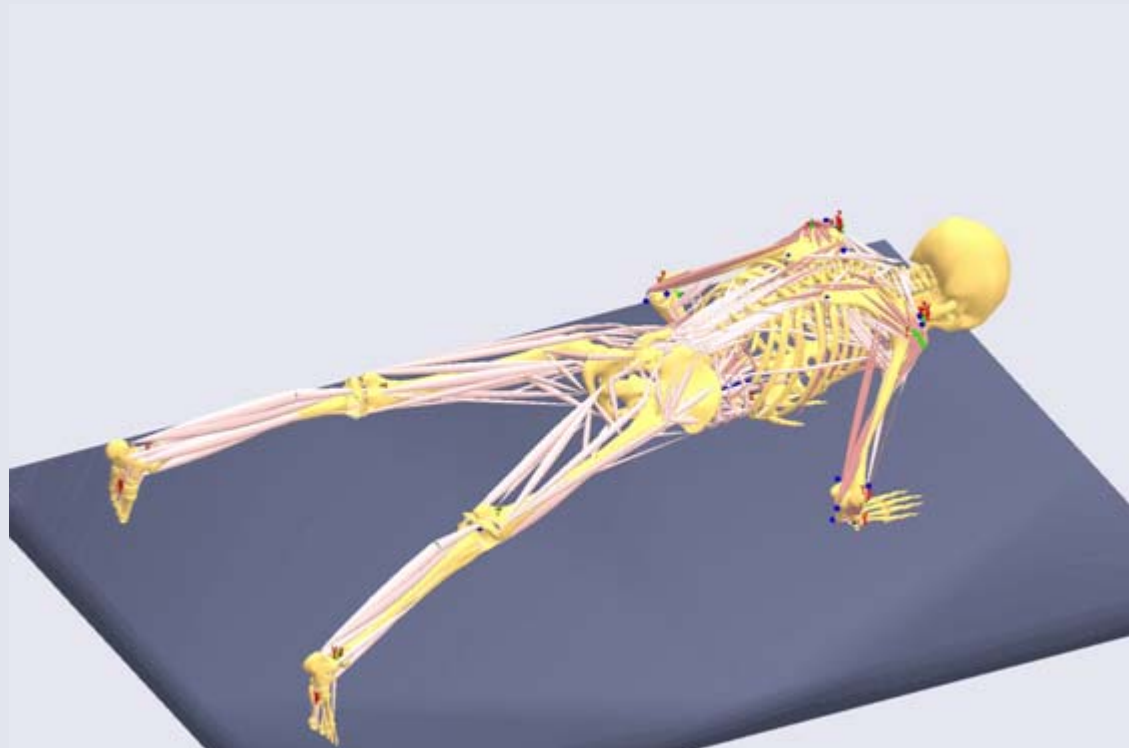


# Ergonomic optimization with the AnyBody Modeling System

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[www.anybodytech.com](http://www.anybodytech.com) - Stand 1U/A1



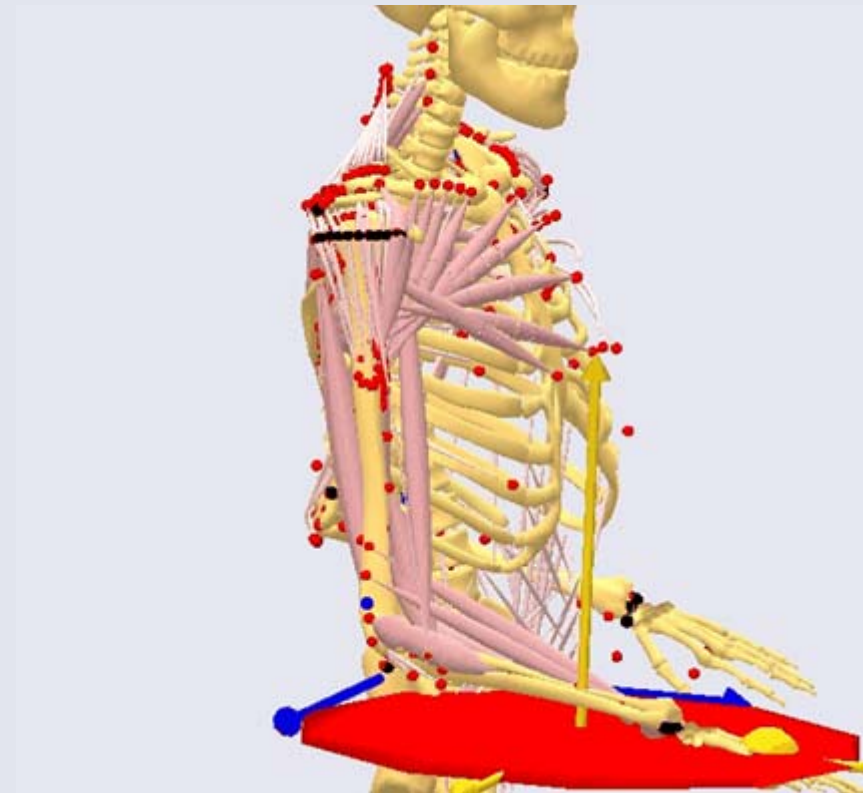
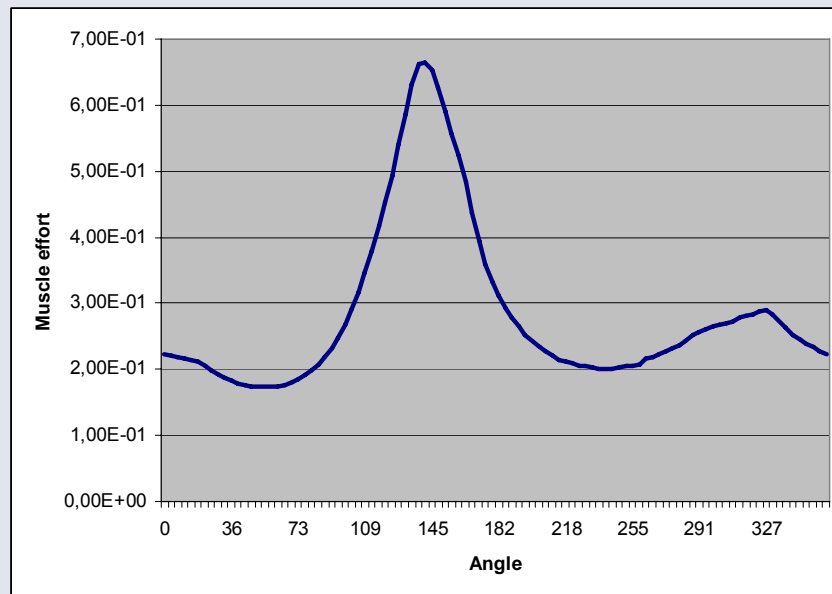
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# Outline



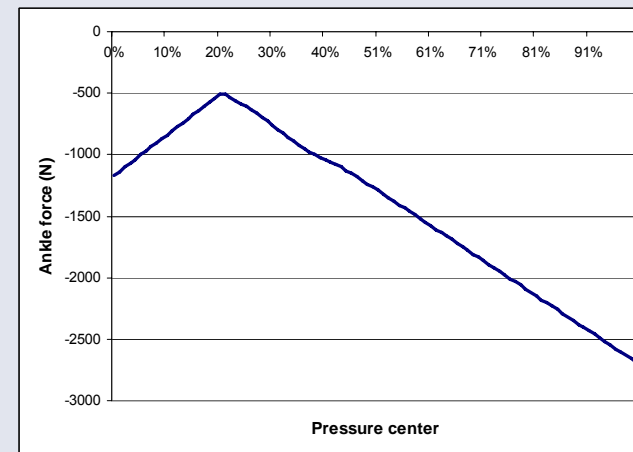
1. The technology
2. Applications
3. Cooperation

# 1. The Technology



# Analysis of properties such as...

- Load on the body in percent of available strength
- Individual muscle load, fatigue, metabolism, etc.
- Joint and contact loads



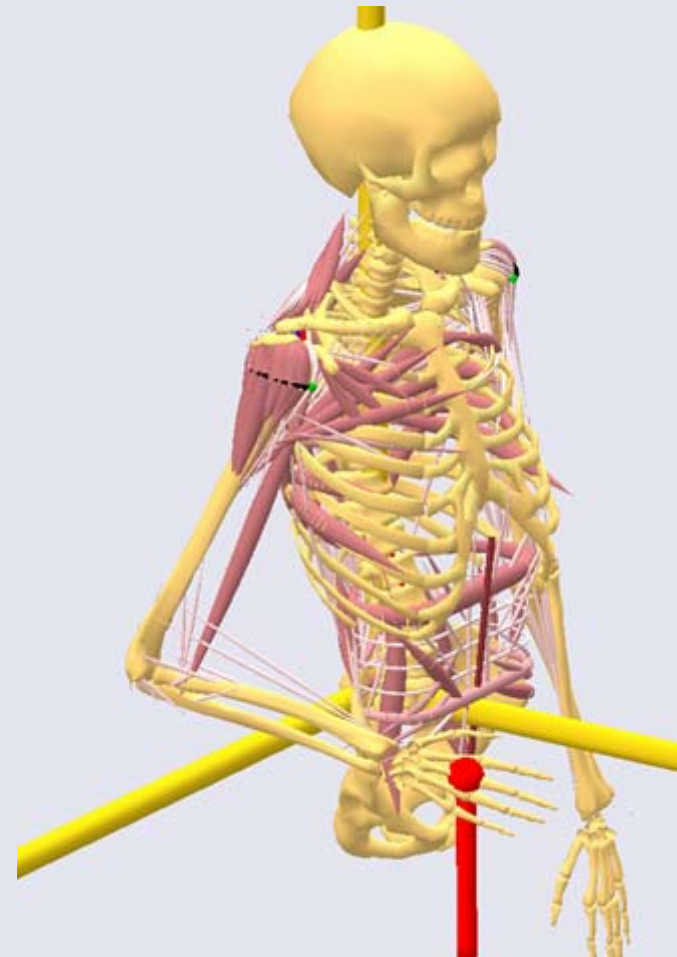


## 2. Applications and optimization



# Fields of application

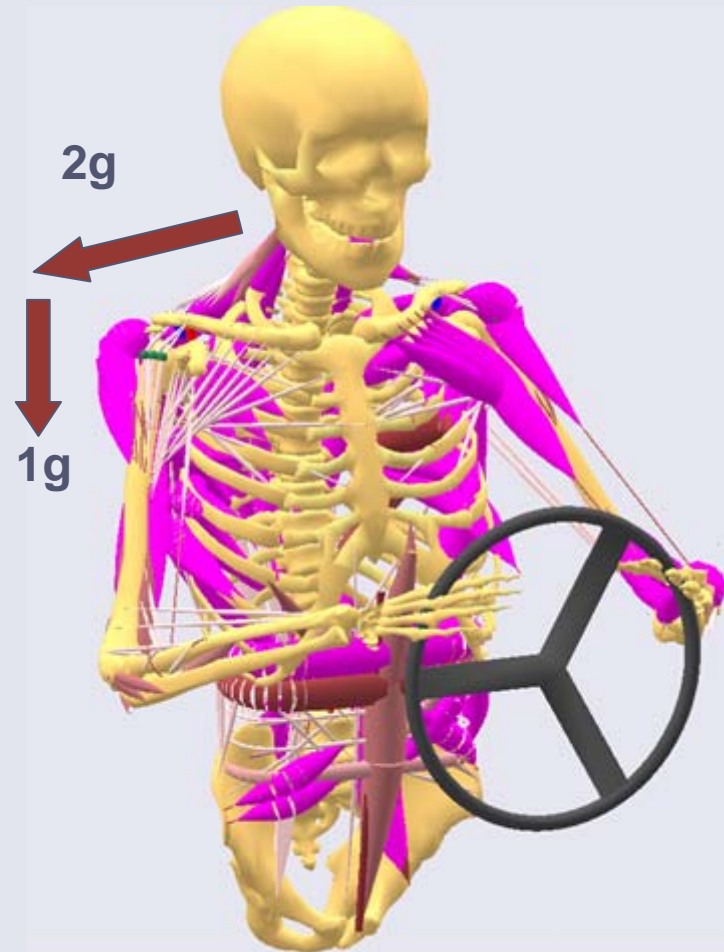
- Compute the body's reaction to the environment.
- Design handles, cockpits, seats, sports equipment, etc. for optimum operability.
- Compute g loads from the human body onto supportive structures such as seat frames.
- Plan surgical procedures and rehabilitation.
- Modify models to reflect different bodies and disabilities.



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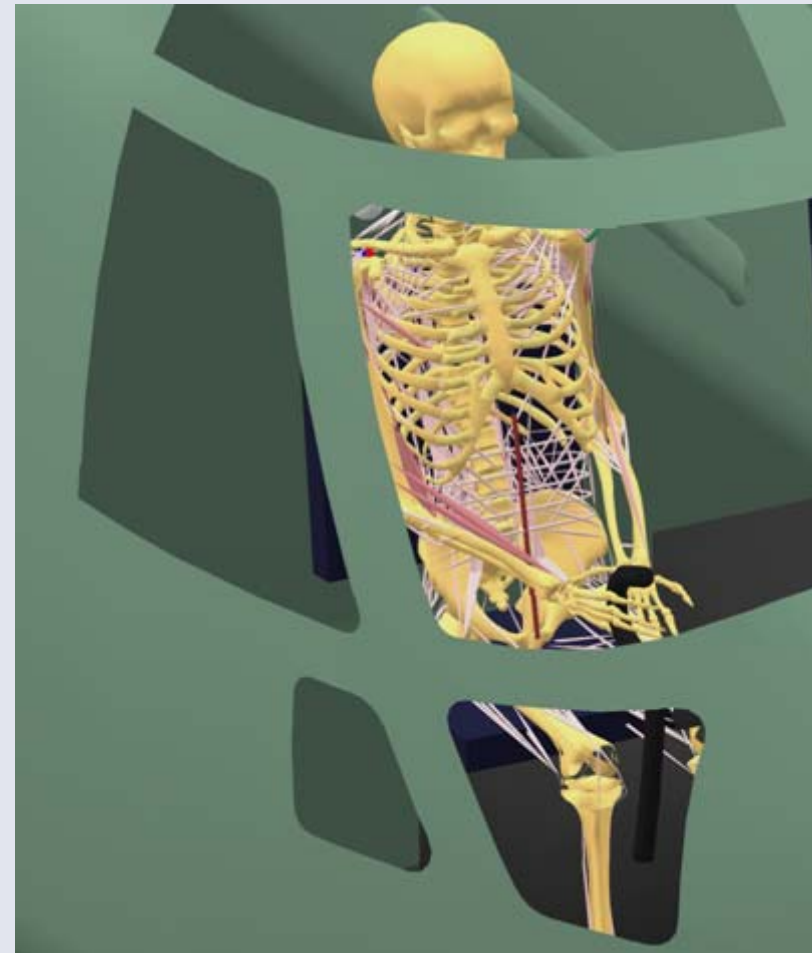
# Seating

- Seating conditions influence the muscle forces.
- Muscle loads under non-vertical g forces are difficult to predict without rigorous analysis.
- Optimization of lateral support is important.
- Strong vertical g forces can affect the ability to move the limbs and operate handles etc.



# Operability

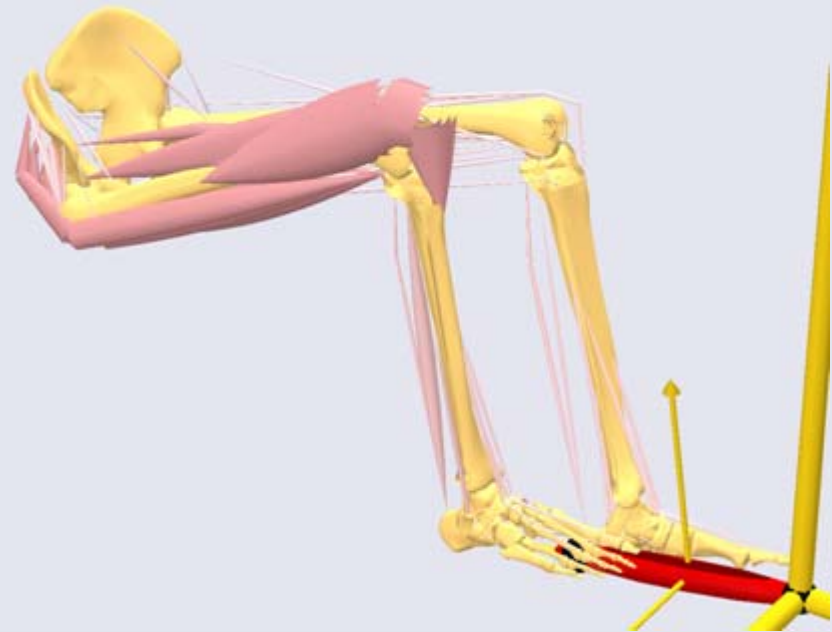
- Minimization of effort
- Optimal force feedback
- Logical connection between perceived effort and position



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# Spring stiffness in a pedal

- Find the torsional spring stiffness that optimizes operability and comfort
- A small stiffness does not provide enough support for the foot.
- A large stiffness makes the pedal difficult to suppress.
- A "wrong" spring stiffness makes it difficult to modulate the pedal.



# Egress

- Elderly individual
- Slow movement
- Investigation of handle position

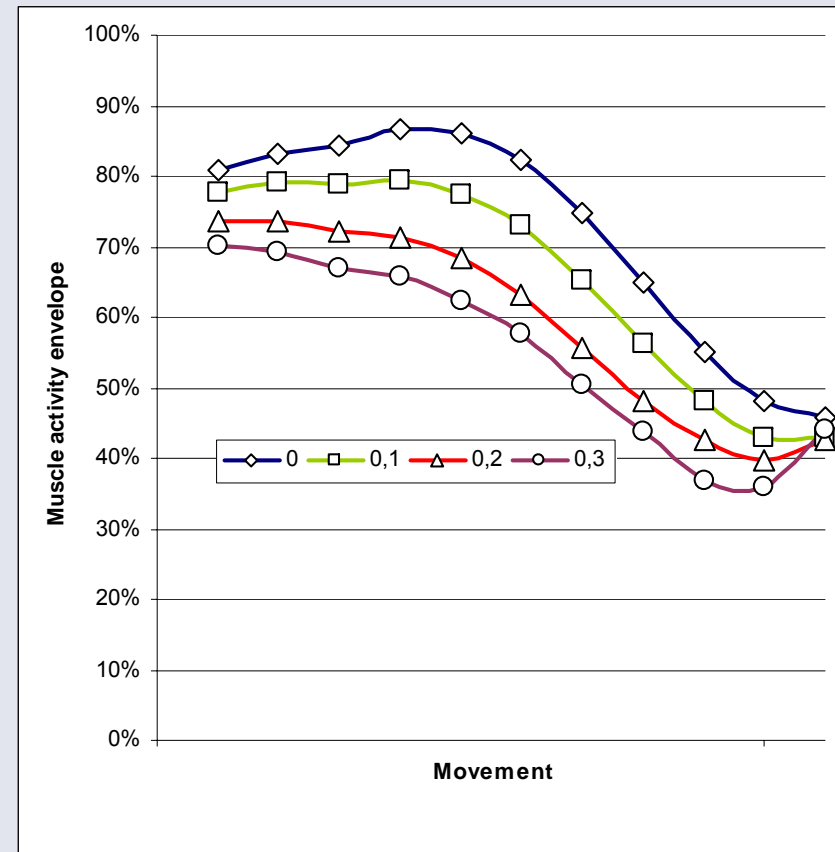
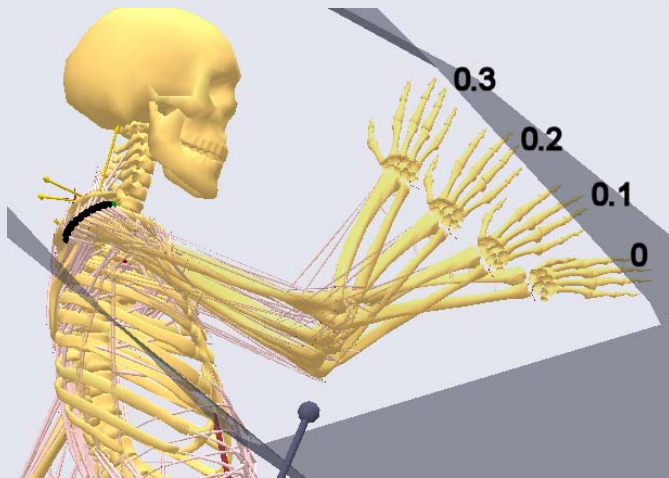




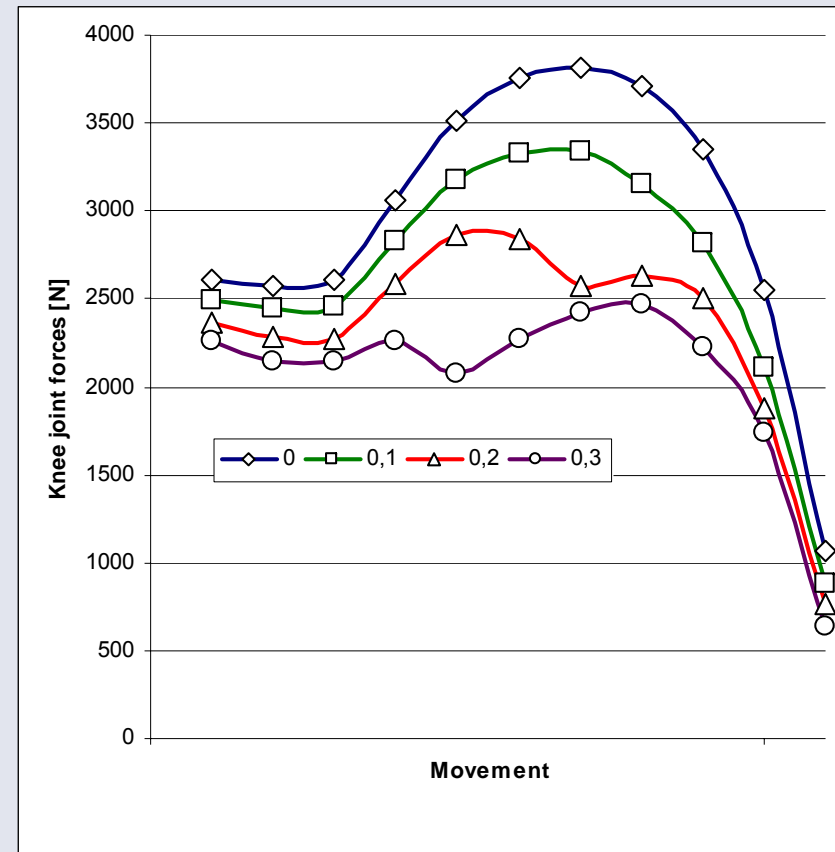
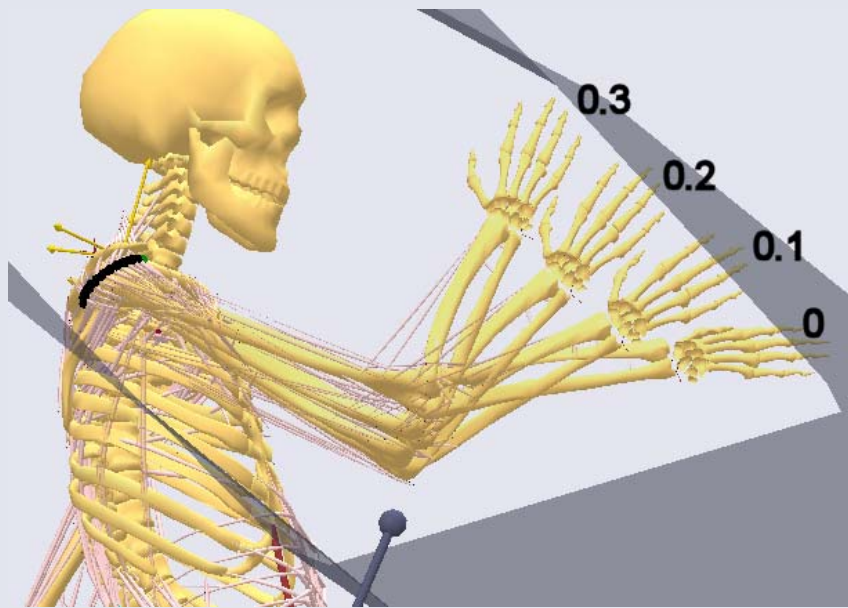
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# Egress results

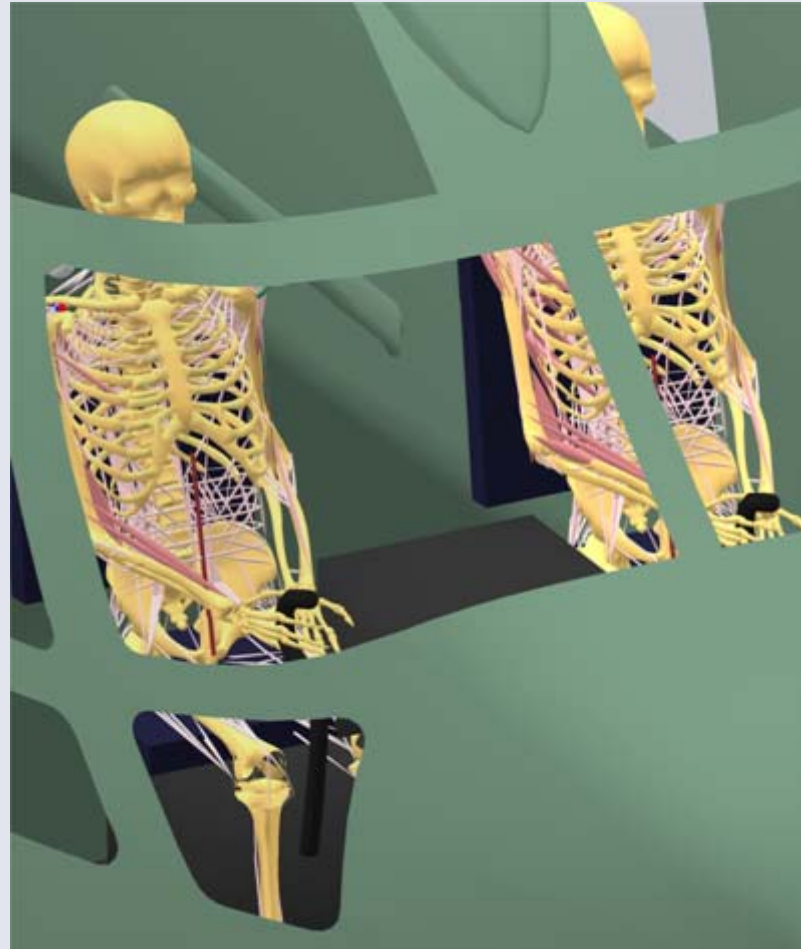
- High handle position preferable
- Near-standing positions less strenuous



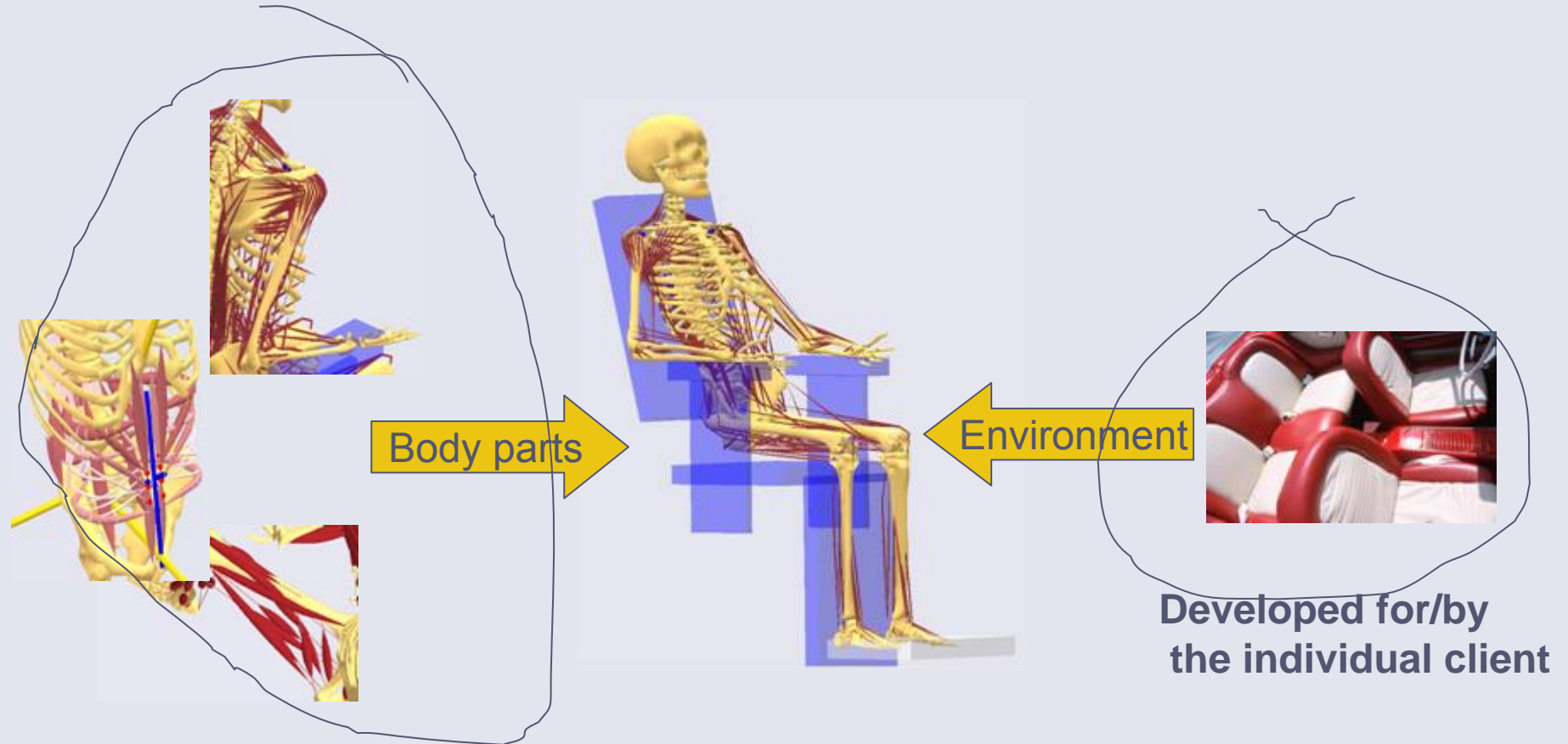
# Knee joint forces



# 3. Cooperation



# Predefined body models are combined with case-specific environments to form the application



Public domain library developed by users

# Technology Transfer

- Software license
- Training
- Initial model development
- Continued support

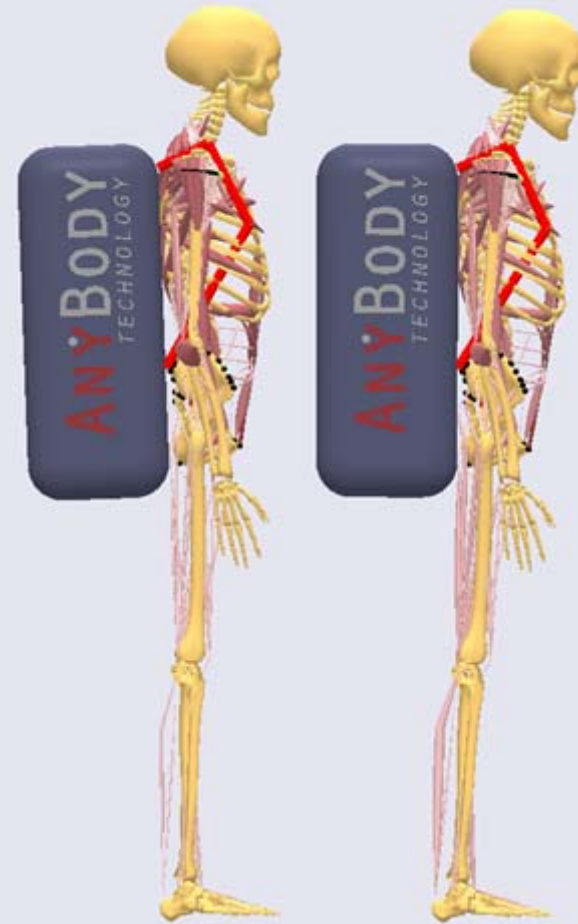
# Thanks for your attention

Further information

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