



uMOVE

# uMOVE

***– a biobehavioural health care  
centre for human movement***

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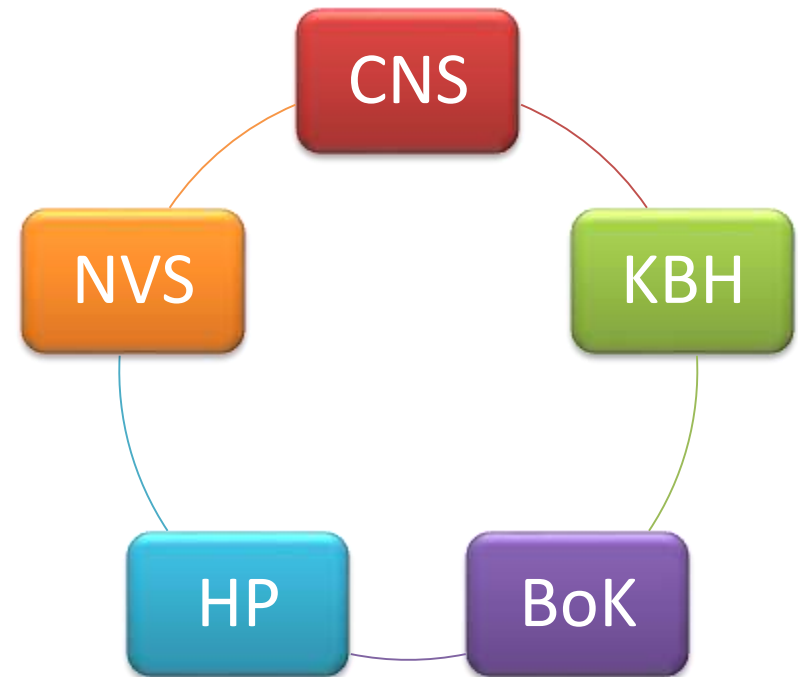


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- Collaboration between Karolinska Institutet and Karolinska University Hospital
- Supported by grants from the Strategic Research Area Health Care Science (SFO-V) to develop an infrastructure offering services to health care science researchers





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# Aim

- To provide new knowledge and evaluation methods of human movement in interplay with psychological aspects
- To provide a state of the art platform for movement analysis for **researchers, teachers, students and clinicians**





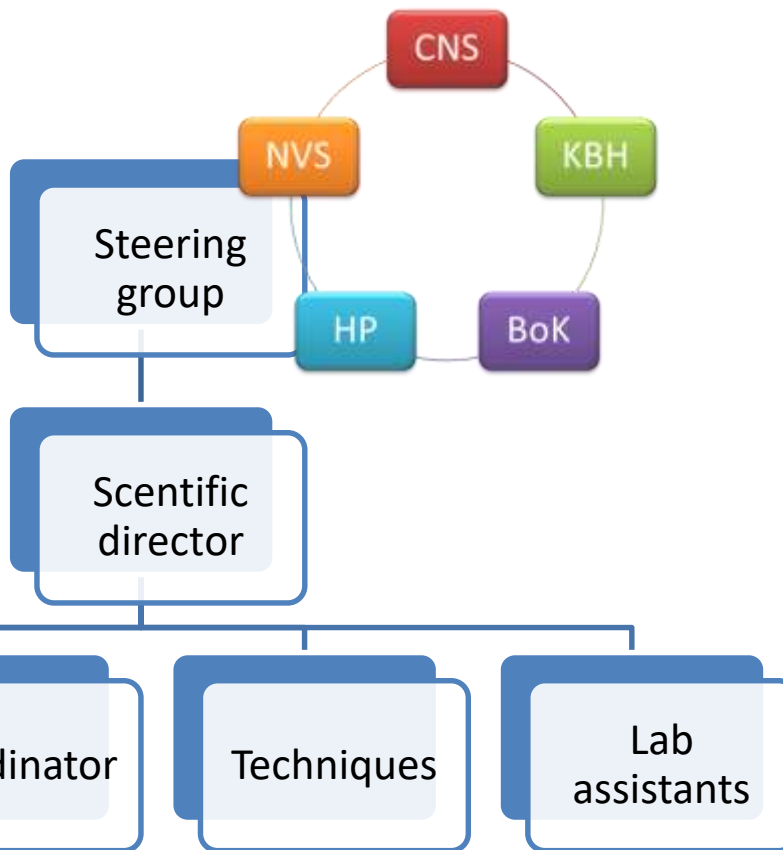
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## Why evaluate movement quality and performance?

- Developing and restoring maximum movement ability throughout the lifespan is essential for health and well-being.
- Poor health is normally reflected in alterations in movement.
- Psychological factors (e.g. pain, fear, depression) and cognition also influences movement.
- ***Assessment of movement*** could therefore contribute with vital information to diagnosing, evaluating treatment, monitoring disease progression and prevention of disease.



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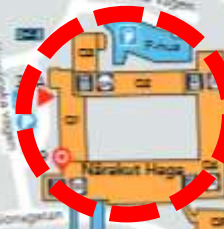
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# Where?

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Solna kyrkbygd





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# Services provided

## For WHO?

**Research:** clinical and basic research, up to date infrastructure, early career support

**Education:** lectures, seminars and laboratory work

**Clinical** assessments, follow-ups and monitoring

## Equipment/methods

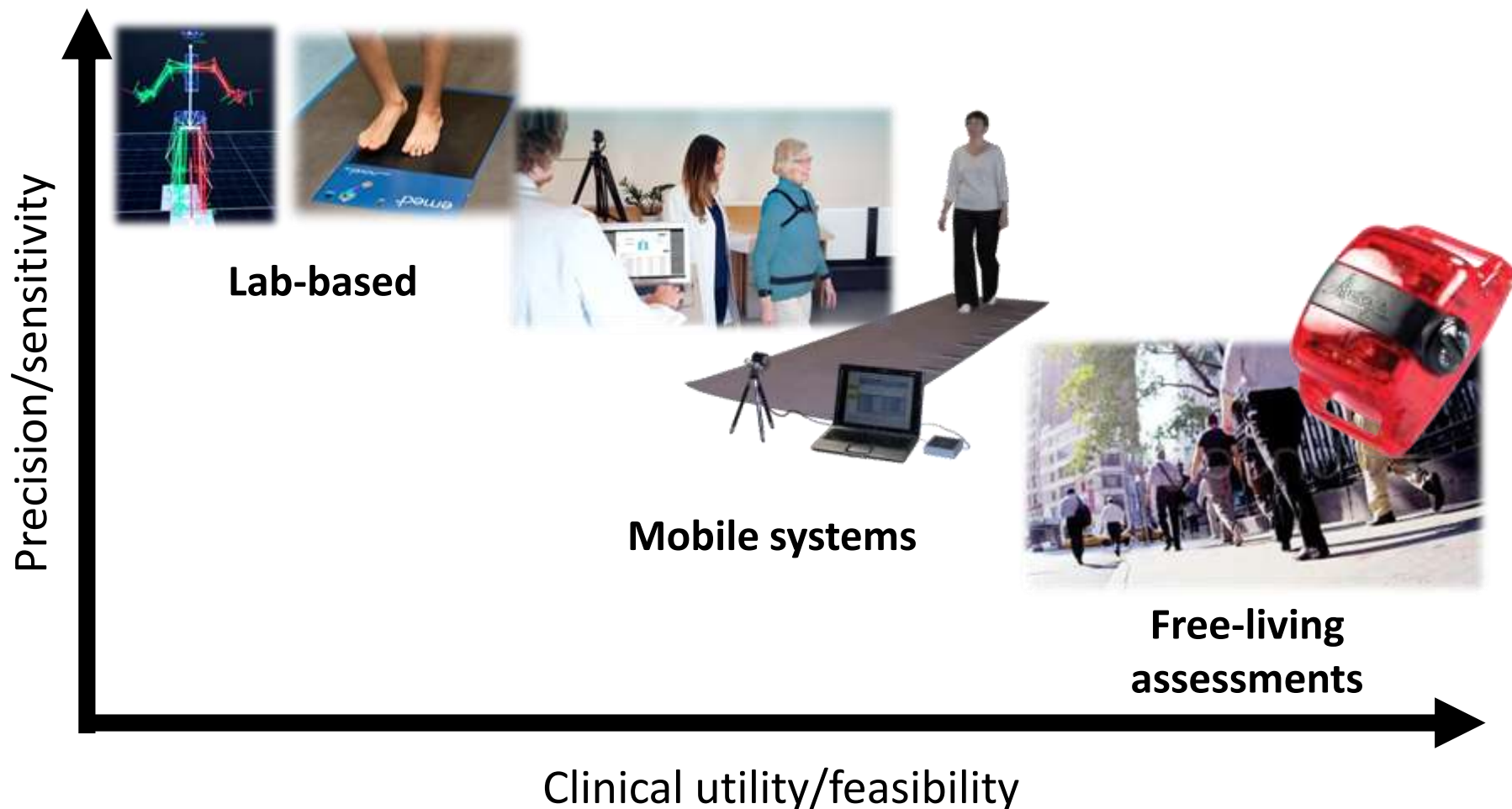
- 3D motion analysis (joint motion/power, muscle activity)
- Mobile sensor-based gait and movement analysis
- Free living sensors for physical activity assessment
- Movement and behavior in relation to cognitive and emotional factors





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# Methods of movements analysis

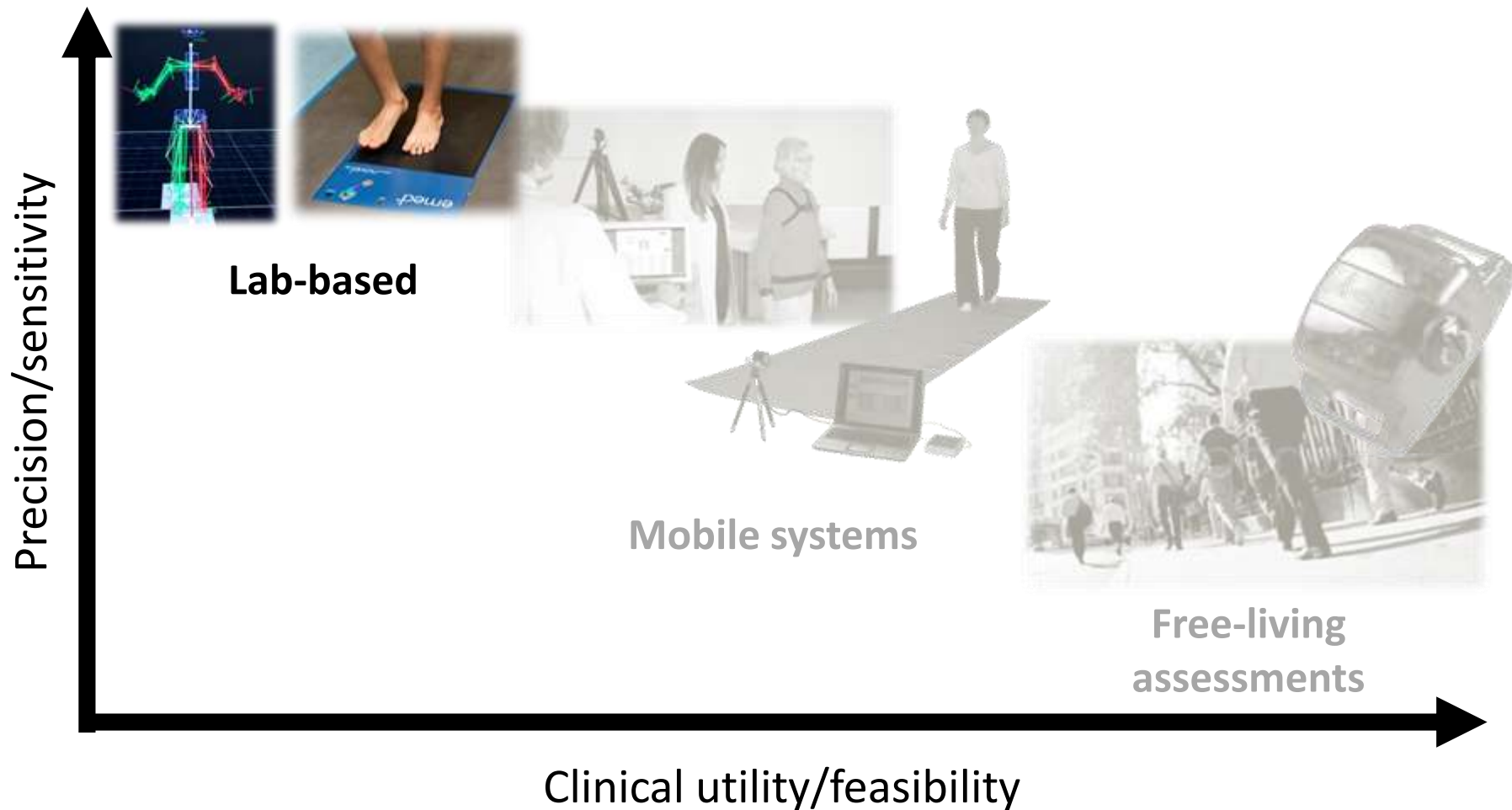






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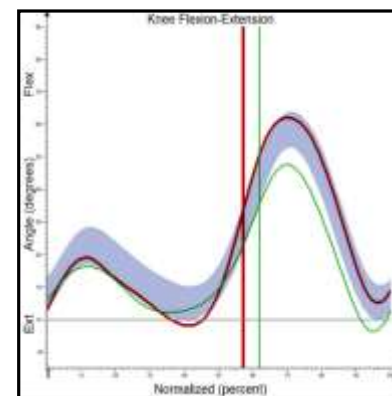
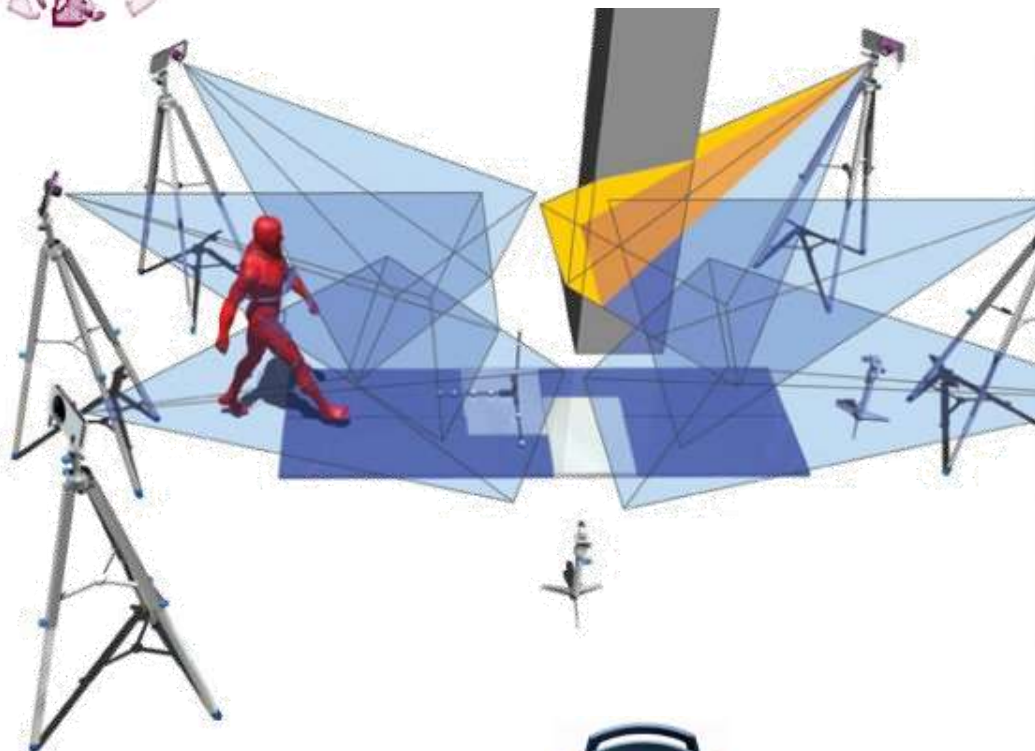
# Methods of movements analysis





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# 3-D movement analysis



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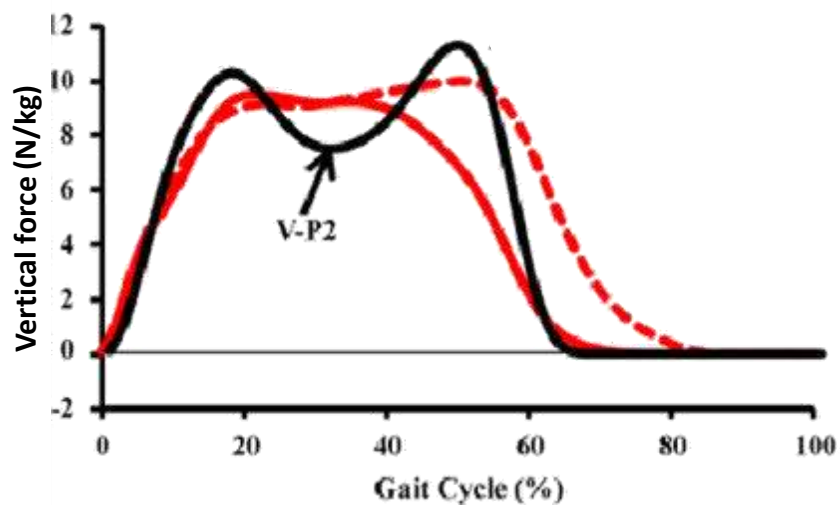
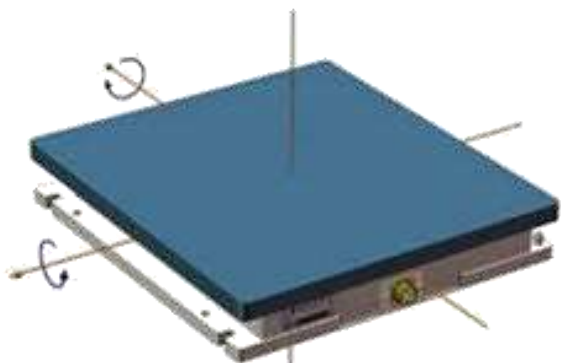
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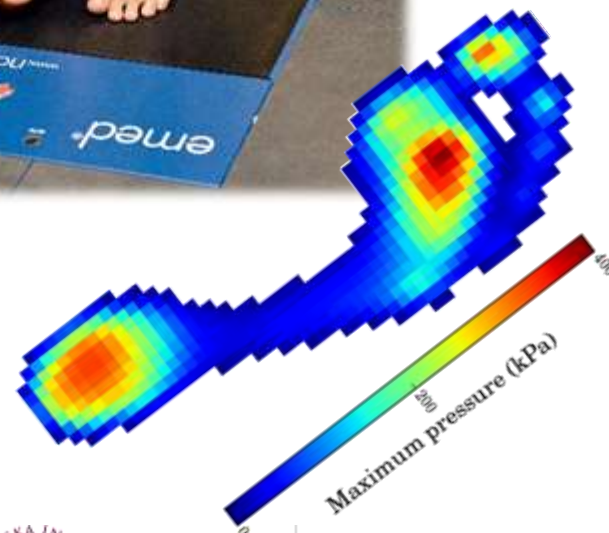
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# Kinetics

*Force plates*



*Pedobarography*



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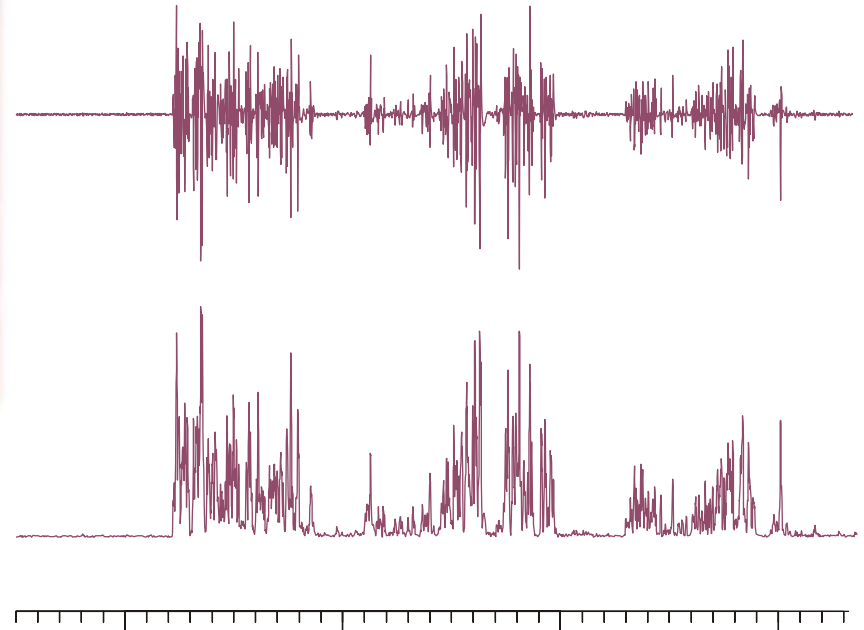
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# Electromyography (EMG)



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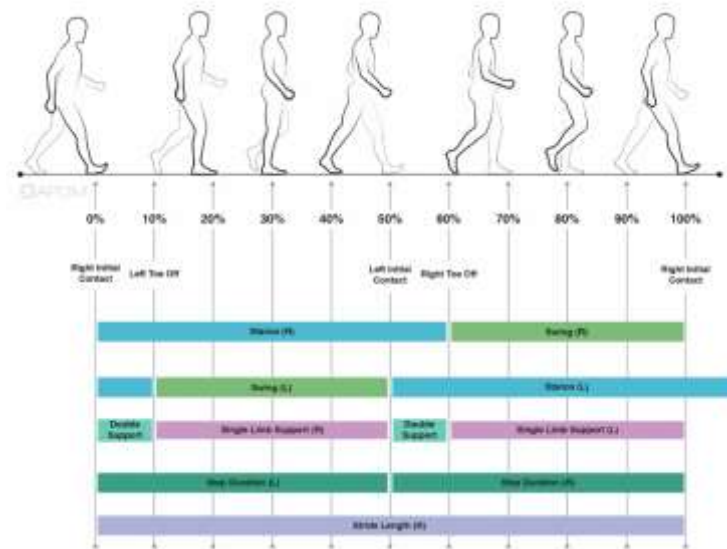
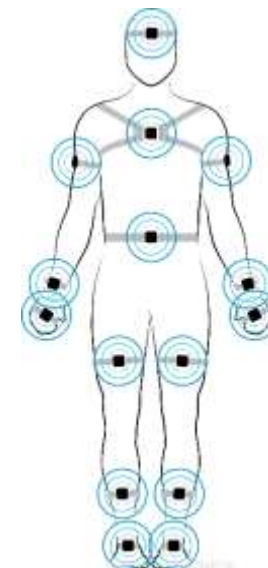
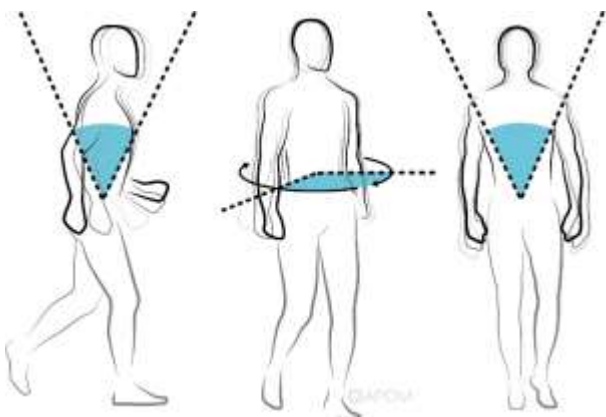


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# APDM

## Gait and balance

- Gait “steady-state”
- Timed Up and Go
- 360° turns
- Postural sway



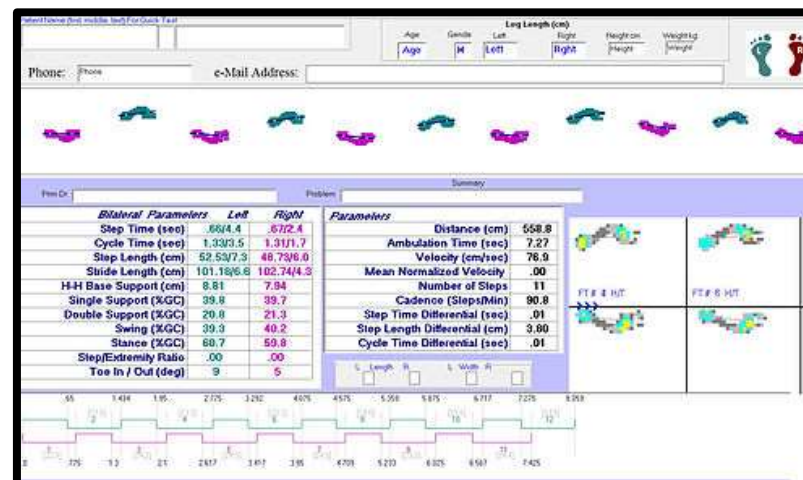
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# GAITRite Gait analysis



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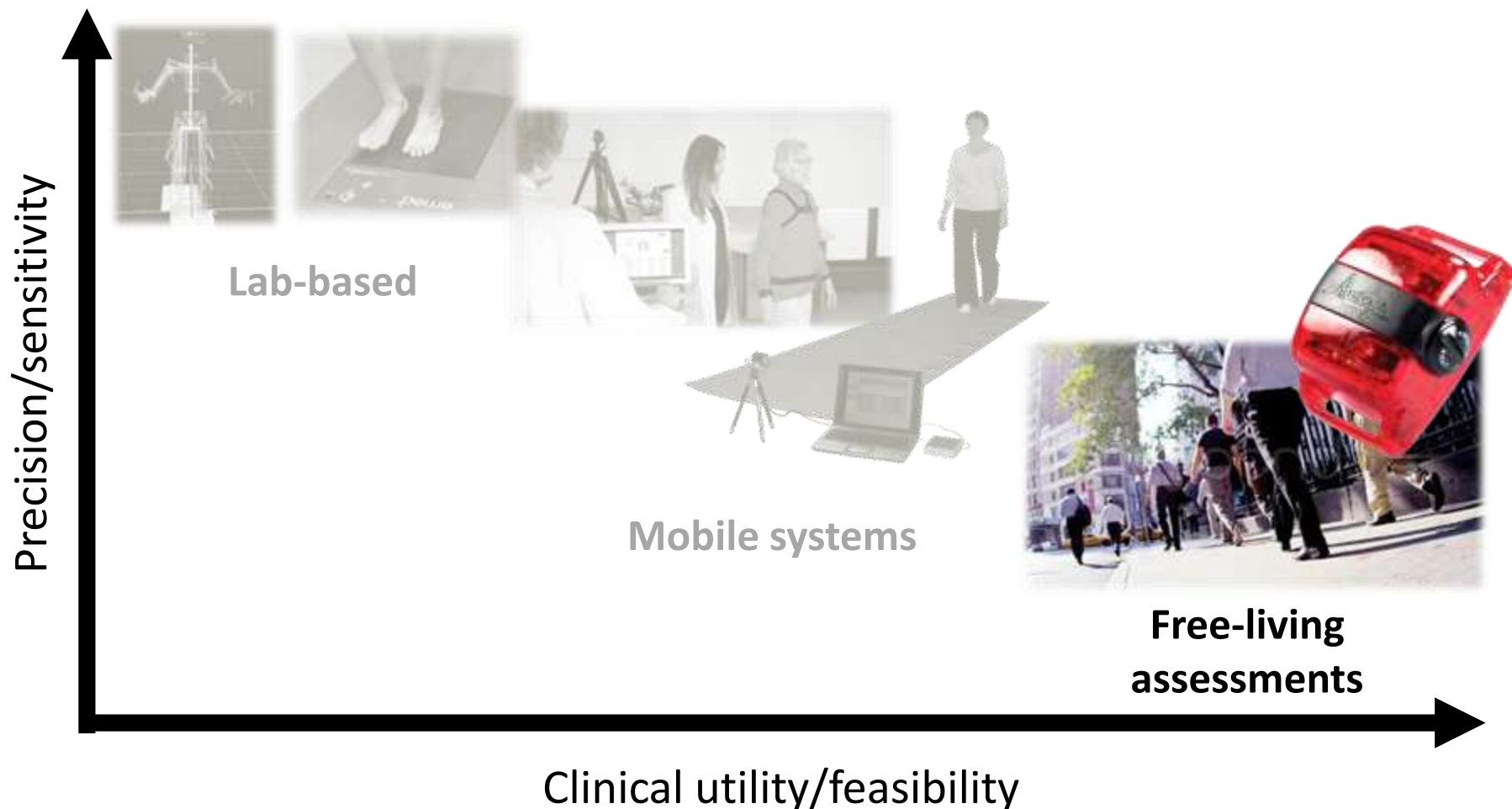
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# Methods of movements analysis





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# Activity monitors/ Accelerometry



*Actigraph*



*ActivePal*





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