

**Wer kann uns helfen nicht krank zu werden?**

**Auf dem Weg zum künstlichen Knochen**

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**May 15, 2015**

- > ...
- > climate change
- > water
- > environment
- > disarmament
- > disease
- > **age**

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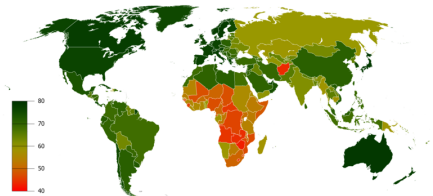
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- > climate change
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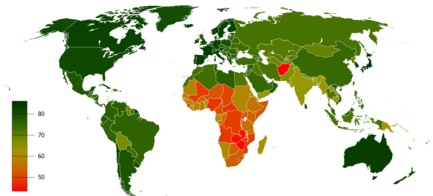
- > ...
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- > disease
- > **age**

# Life Expectancy

Male life expectancy (The UNDP Human Development Report 2009)



Female life expectancy (The UNDP Human Development Report 2009)

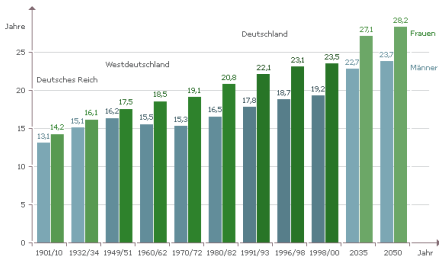


# Life Expectancy

## Further Life Expectancy

### Entwicklung der Lebenserwartung

Fernere Lebenserwartung im Alter von 60 Jahren, 1901 bis 2050, Stand: 2003

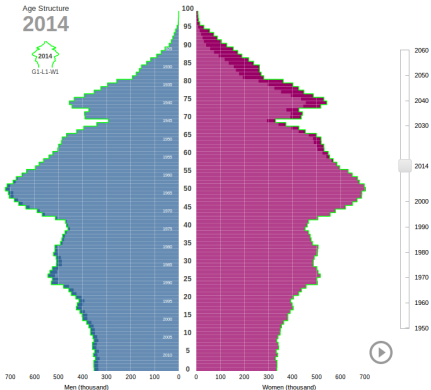


Quelle: Statistisches Bundesamt: Bevölkerung Deutschlands bis 2050  
Lizenz: Creative Commons by-nc-nd/2.0/de  
Stand: 2007

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## German Population 2014

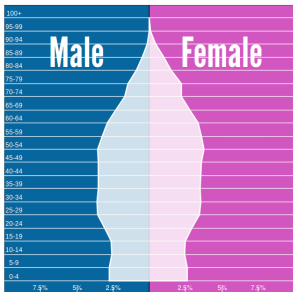
13th coordinated Population Projection for Germany



# Population Pyramids

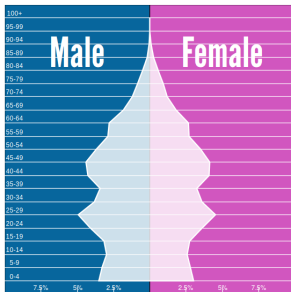
EUROPE  
2015

Population: 743.122.000



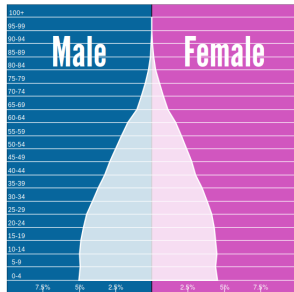
China  
2015

Population: 1.401.586.000



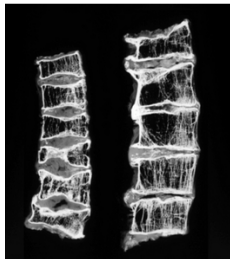
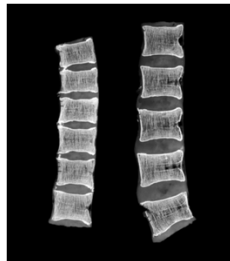
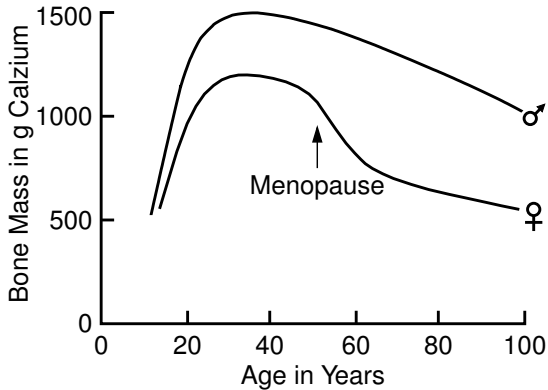
India  
2015

Population: 1.282.390.000



# Osteoporosis

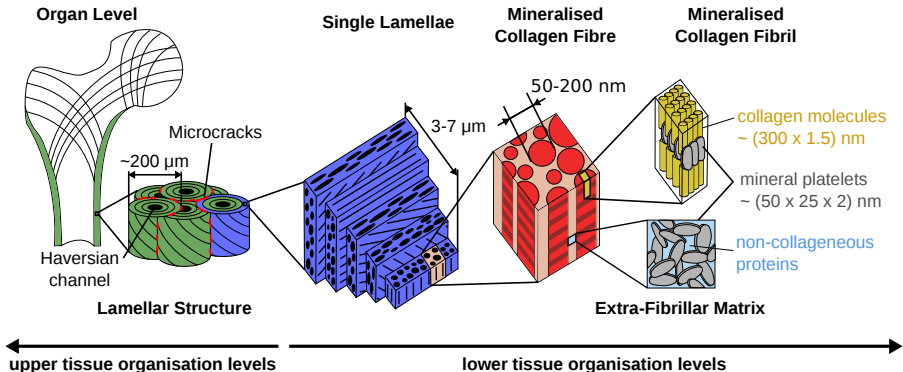
## Bone Mass Over Lifetime



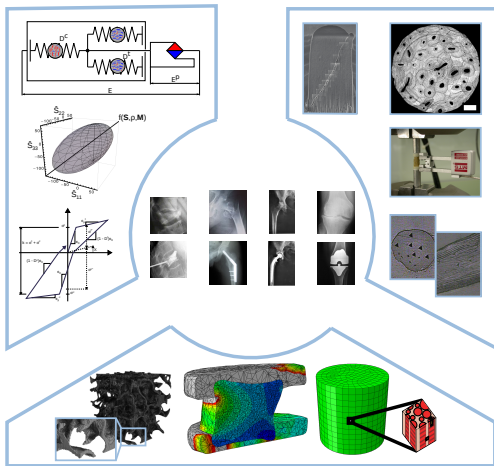




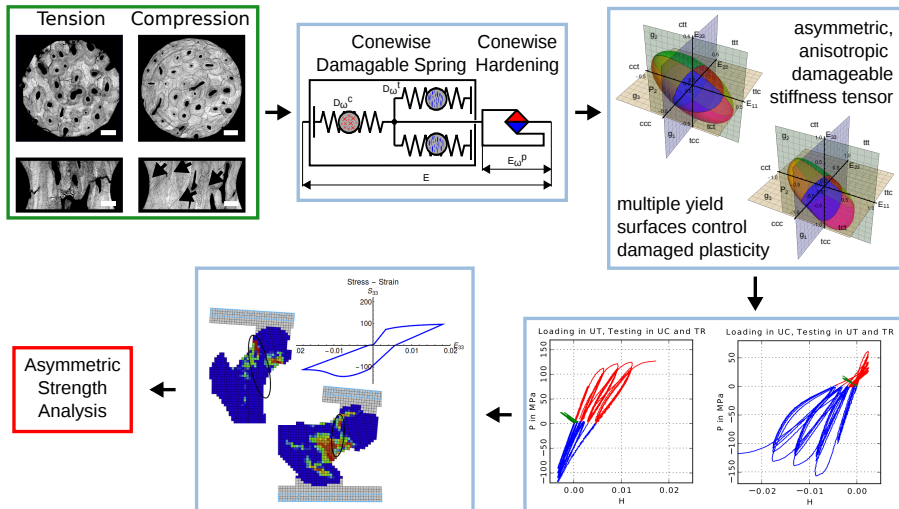
# Bone as Hierarchical Material



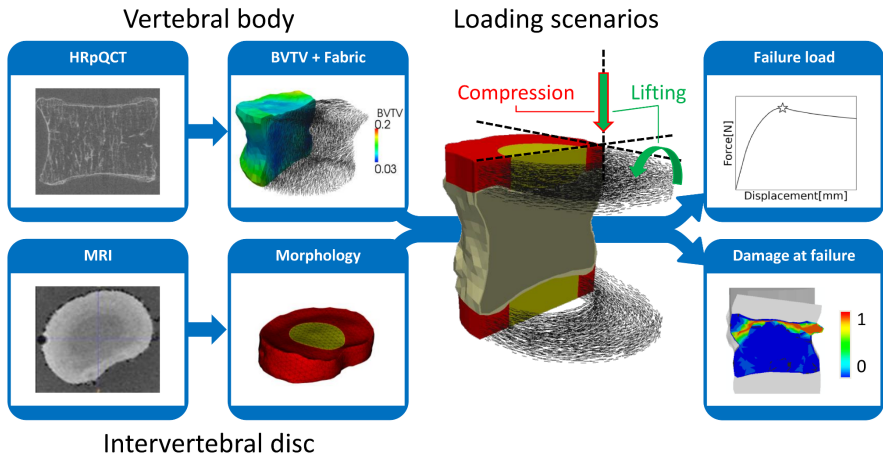
# Approach



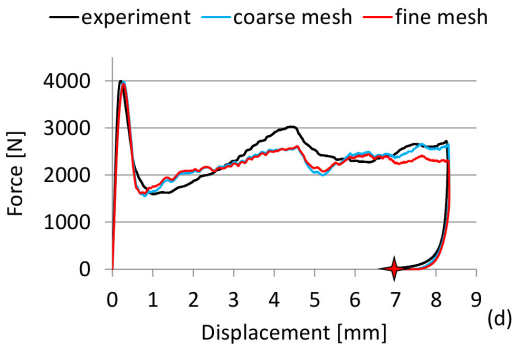
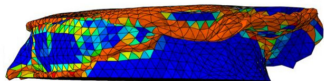
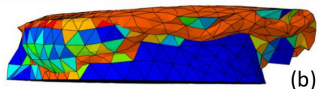
# Identify Mechanical Behaviour



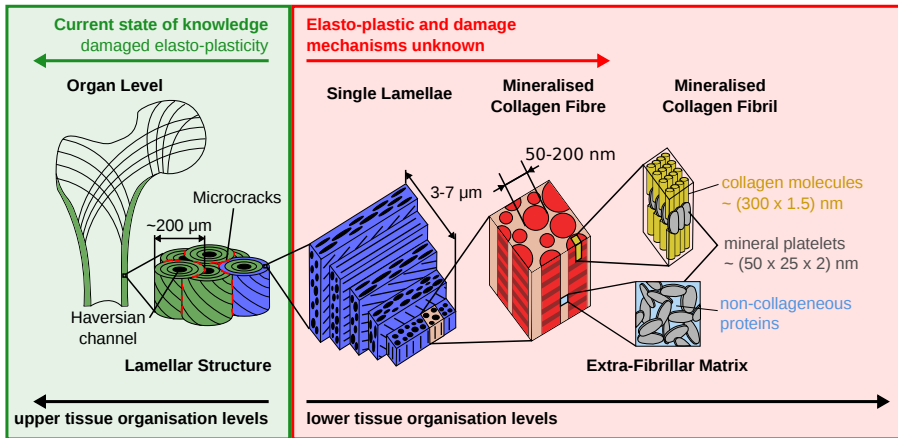
# Whole Bone Simulation



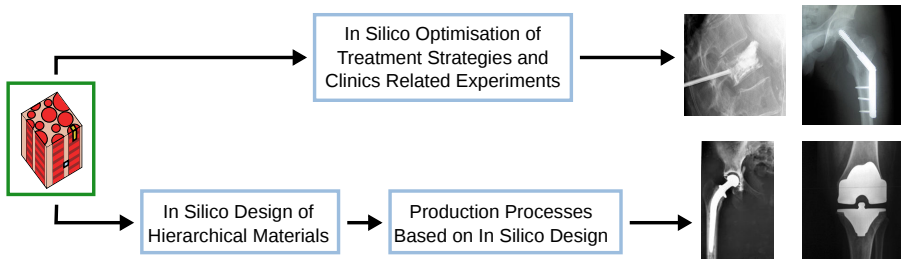
# Whole Bone Simulation



# Where To Go?



# Where To Go?





# For what? To dance!



**Thank you for your attention!**

**u<sup>b</sup>**

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**UNIVERSITÄT  
BERN**

