

Computable Human Phantoms

At the core of *Sim4Life* is a comprehensive set of computable human phantoms empowered by the most powerful physics solvers and the most advanced tissue models that provide a realistic biological and anatomical environment for conducting fundamental mechanistic studies, testing the effectiveness and safety of medical devices and treatments, and supplementing clinical trials. Based on the Virtual Population [ViP3.0 models](#) of the [IT'IS Foundation](#) at ETH Zurich, the computable phantoms are functionalized for prediction of real-world biological and physiological phenomena for any defined patient population. All tissues are linked to a continually updated [physical properties database](#).



All Virtual Population (ViP) models are natively supported with full resolution and do not require simplification.

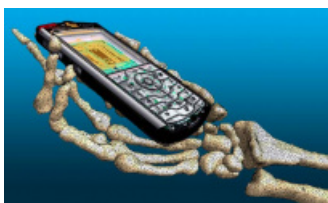
The powerful *Sim4Life* meshers allow high-fidelity discretization of the complex computable human phantoms combined with any implant or external device.

A complementary interactive morpher allows the demographic coverage of the parameterized anatomical models to be extended, e.g., to explore underrepresented or pathological anatomies in clinical trials. A flexible physics-based poser is also included with the models.

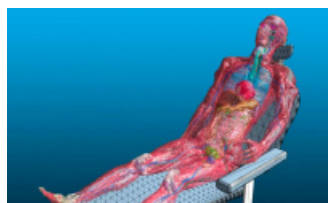
Physicians and biologists rigorously validate the models and the associated database. Comprehensive documentation for all natively supported computable human phantoms is available.

Key Features

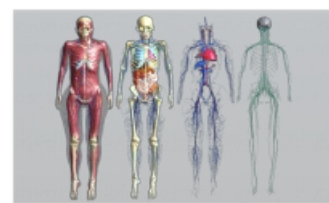
- Native support for the latest generation of the Virtual Population ViP3.x
- Neuro-functionalized Virtual Population ViP 4.0 models: Yoon-sun V4.0 and Jeduk V4.0
- Largest library of 3D high resolution CAD-based phantoms available on the market
- Grid-independent (not based on voxel data), CAD-based anatomical phantom data
- More than 15 full body anatomical human phantoms
- More than 10 anatomical head models (children, adult, male, female, European, Asian)
- High resolution head model with integrated detailed deep brain structures and anisotropy information
- Dedicated ViP Hands Library, consisting of 12 right hands and parts of the forearm
- Posable anatomical models and support for the parameterization of additional models
- Poser based on biomechanical FEM simulation
- Interactive model morphing tool
- Extensive online literature-based tissue parameter database
- Integrated generation of high quality surface models from voxel and image data



The Poser allows for easy and



Posed in a sitting position



Korean male model Yoon-sun

The model allows for easy and realistic postural manipulation, e.g., holding a phone in an anatomically correct position.

model in a sitting position.

model can make model room scan.
V4.0: Neuro-functionalized
Virtual Population model.

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