

# Computational Fluid Dynamics

*Commonly used acronym: CFD*

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## SCOPE OF THE METHOD

<b>The Method relates to</b>	Animal health, Environment, Human health
<b>The Method is situated in</b>	Translational - Applied Research
<b>Type of method</b>	In silico
<b>This method makes use of</b>	Animal derived cells / tissues / organs

## DESCRIPTION

### Method keywords

computational fluid dynamics

in silico

Mathematical modeling

Numerical method

### Scientific area keywords

Biomedical Engineering

biomechanics

Medical physics

Bio-engineering

### Method description

Computational Fluid Dynamics (CFD) is being applied to characterize the fluid flow in

different applications. CFD has obtained significant interest in both the medical and engineering community because of its non-invasive character. It can predict the fluid flow characteristics when one or multiple input flow variables are changed. In addition, it permits investigation of different flow variables and fluid forces to a level of fine detail.

## **Lab equipment**

## **Method status**

Still in development

Published in peer reviewed journal

## **PROS, CONS & FUTURE POTENTIAL**

### **Advantages**

- Time consuming ;
- Ethics aspects (for human and animals) ;
- Cost reduction ;
- Quick assessment of design variations ;
- Possibility of simulation for different conditions ;
- Comprehensive information.

### **Challenges**

Can be developed more and more always.

## **REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION**

### **Associated documents**

## **PARTNERS AND COLLABORATIONS**

### **Organisation**

**Name of the organisation** Ghent University

**Department** Faculty of Medicine and Health Sciences

**Country** Belgium

**Geographical Area** Flemish Region

*Coordinated by*



*Financed by*

