

## **Kolloquium „Statistische Methoden in der empirischen Forschung“**

Wann: 08. Dezember 2015, 17:00 – 18:30 Uhr

Wo: Robert Koch-Institut | Nordufer 20 | 13353 Berlin (Wedding),  
S41, S42, U9 Westhafen | U9, Bus 142 Amrumer Str

**Thomas A. Gerds (University of Copenhagen)**

### **Wenn man konkurrierende Risiken ignoriert, ist das Alter ein wahnsinnig guter Prädiktor für kardiovaskuläre Erkrankungen**

Risk prediction is an important part of cardiovascular research. However, lack of statistical knowledge and software exposes this field to an increased risk of confusion. It is often natural to assume that some patients will die without any prior cardiovascular event and for non-cardiovascular reasons. In statistical terminology this situation is called a competing risk model. While the model itself is not complex, its interpretation is, because it involves two difficult to understand concepts: probability and time.

Suppose a 40 year old and a 80 year old person both need to decide for or against a preventive cardiovascular therapy. Suppose further that for both persons the predicted risk of a cardiovascular event within the next 10 years is 12%. How can both predictions be valid? One plausible explanation is that the 40 year old person has risk factors that the 80 year old person does not have. Another plausible explanation is that the 80 year old person has a much higher risk to die due to non-cardiovascular causes within the next 10 years than the 40 year old person.

In this talk I will demonstrate that a statistical analysis which ignores non-cardiovascular mortality can lead to severe bias not only in risk predictions but also in the assessment of a new marker for cardiovascular mortality.