

# Optimizing alcohol screening according to DSM-5 severity by adaptive testing using the AUDIT

---

**G. Bischof, A. Bischof, C. Meyer\*, Rumpf, H.-J.**

University of Luebeck, Research Group **S:TEP** (Substance related and other addictive diseases: Therapy, Epidemiology, Prevention), Dpt. of Psychiatry and Psychotherapy

\*Ernst-Moritz Arndt University Greifswald, Dpt. Of Epidemiology and Social Medicine

## C.O.I.



- Conflict of Interest: None
- This work was funded by the German Ministry of Education and Research

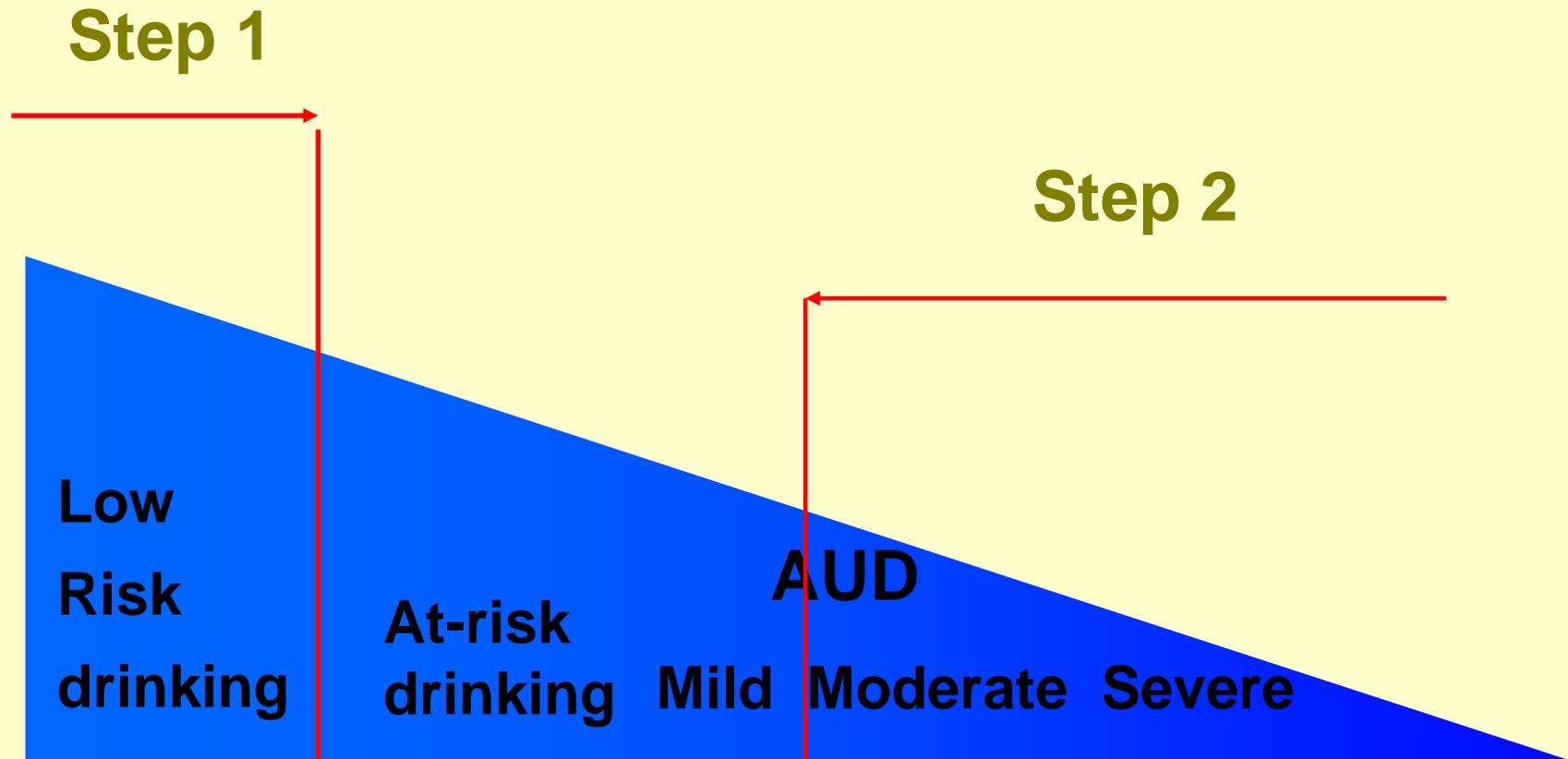
## Background

- Efficacy of SBIRT depend (among other) on the severity of alcohol-related problems
- AUDIT-C scores are sufficient for identifying at-risk drinking and AUDs
- Studies aiming to exclude alcohol dependent individuals usually have relied to cut-off values in the upper spectrum (e.g., 20 points in the AUDIT)
- Validity of these cut-off scores is restricted to individuals already at the more severe spectrum of the disorder (e.g. Donovan et al., 2006)

## Background

- AUDIT covers separate domains and cannot be ordered along a single severity dimension (e.g. Rist et al, 2009, DAD)
- AUDIT-C can be distinguished from the other items
- Aim of the analysis is to analyze if adaptive screening starting with AUDIT-C items can be used for maximizing screening efficacy

# Drinking pattern and Alcohol Use Disorders



## Method

- General population sample consisting of 4.075 respondents from Luebeck and it's surrounding communities aged 18 to 64 years
- Response rate 70,2%
- Personal computer-assisted interview using the CIDI
- Additional questionnaires on health-related behaviors including the AUDIT.

## Method: General Population Sample

- 3625 Respondents reported to have consumed alcohol in the previous 12 months and provided valid data on the AUDIT-C
- Participants were classified according to DSM-5 AUD, at-risk drinking (12/24 g/alc) and drinking within safe limits.
- Distribution of drinking patterns: no at-risk-consumption n=3075 (84.9%), at-risk drinking n=407 (11.2%), Alcohol Use Disorder: mild =88 (2.4%), moderate= 21 (0.6%), severe =30 (0.8%)

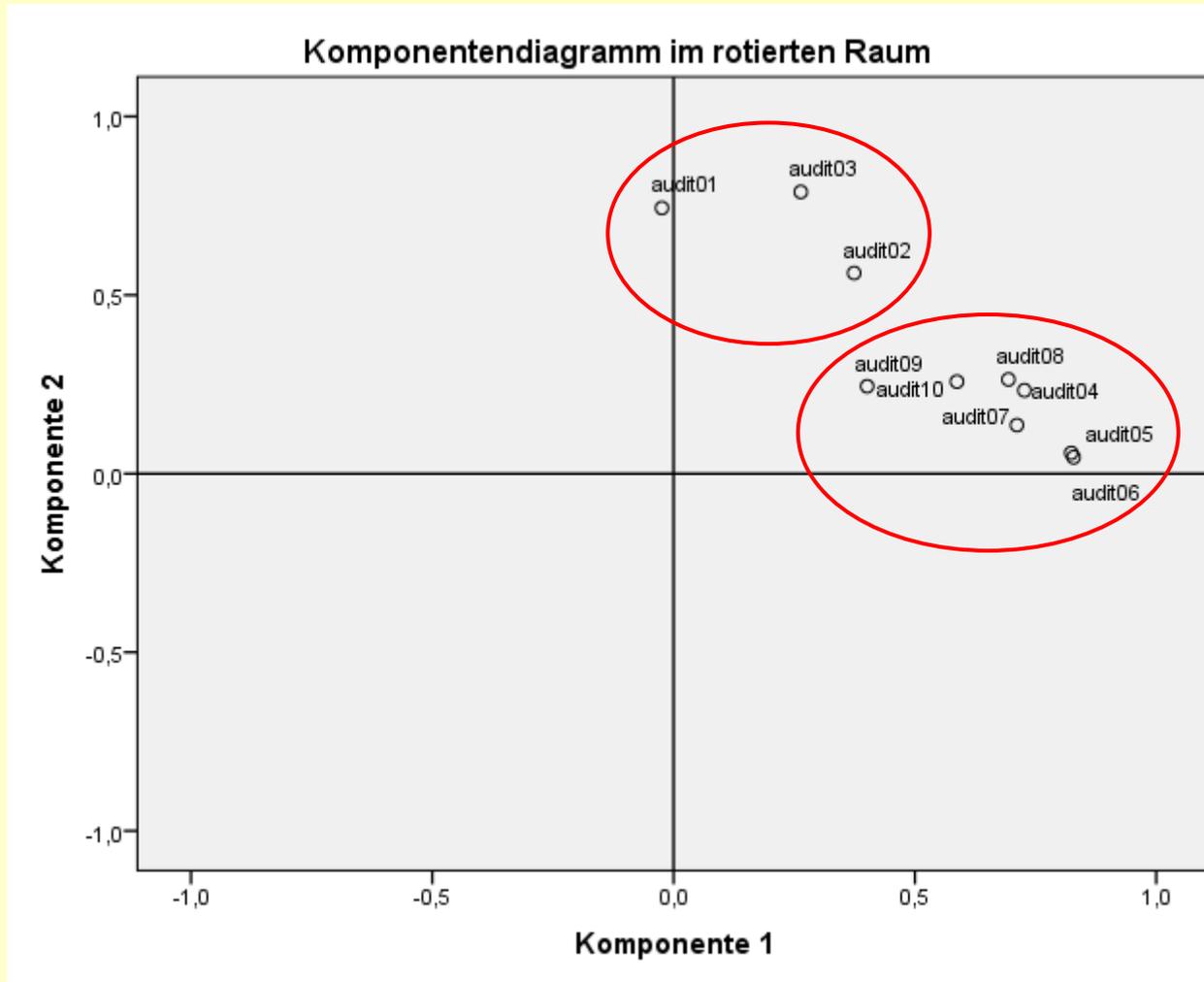
## Method: General Practice Sample

- 10,803 GP patients screened (refusal rate: 5.9%)
- Among 2060 individuals screening positive, 1119 were diagnosed using the CIDI
- Participants were classified according to DSM-5 AUD, at-risk drinking (12/24 g/alc) and drinking within safe limits with screening negatives defined as unrisky drinkers
- Distribution of drinking patterns (N=7050): no at-risk-consumption n=6412 (91.0%), at-risk drinking n=157 (2.2%), Alcohol Use Disorder: mild =258 (3.7%), moderate= 108 (1.5%), severe =115 (1.6 %)

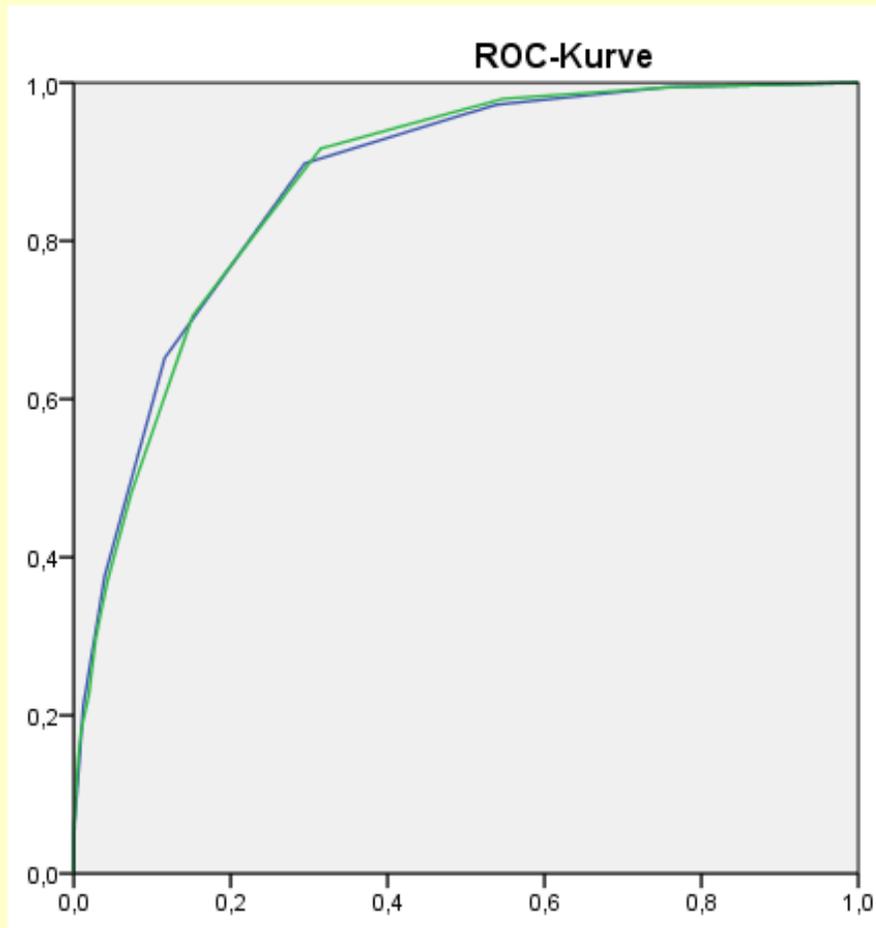
## Analysis

- Identification of the best cut-off score for the AUDIT-C
- Identification of the best cut-off score for the symptom-related questions of the AUDIT
- Test AUDIT-score vs. adaptive Screening
- Replication in GP sample

# Factor-Analysis

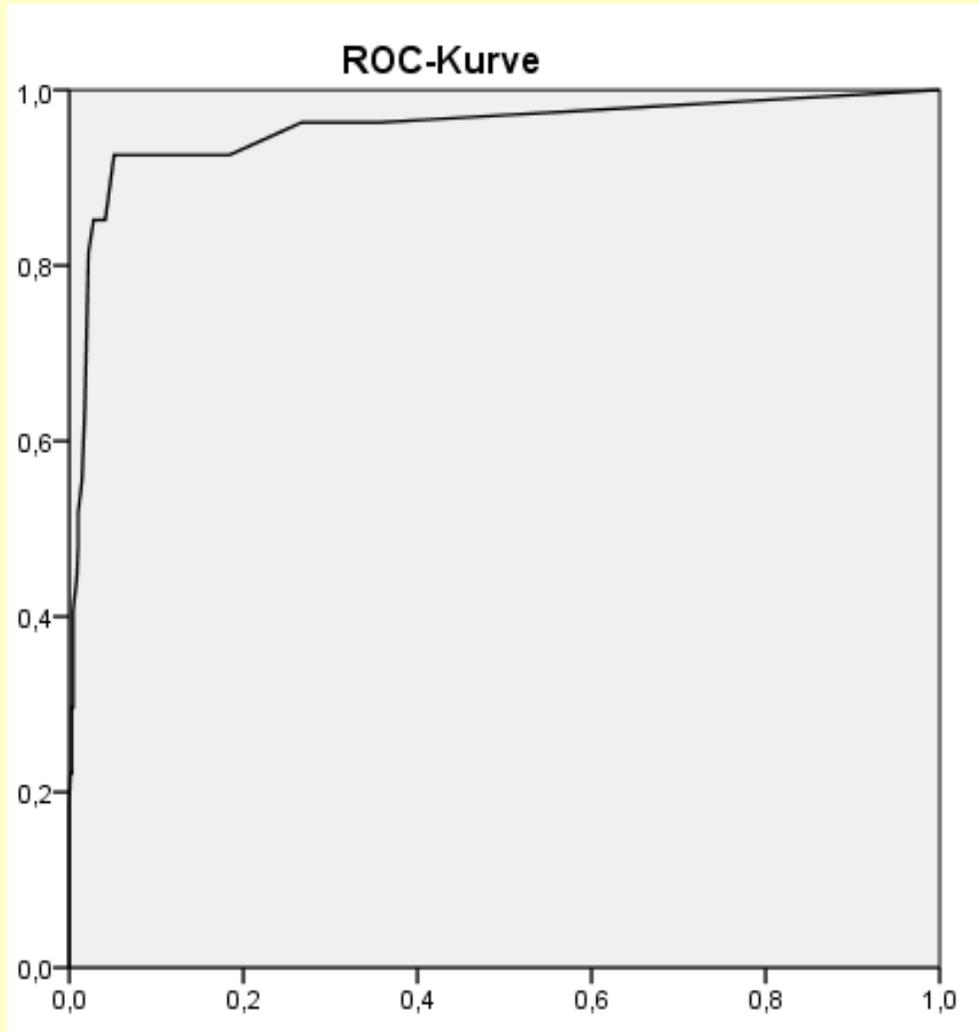


## ROC-Curve unhealthy alcohol consumption + AUD



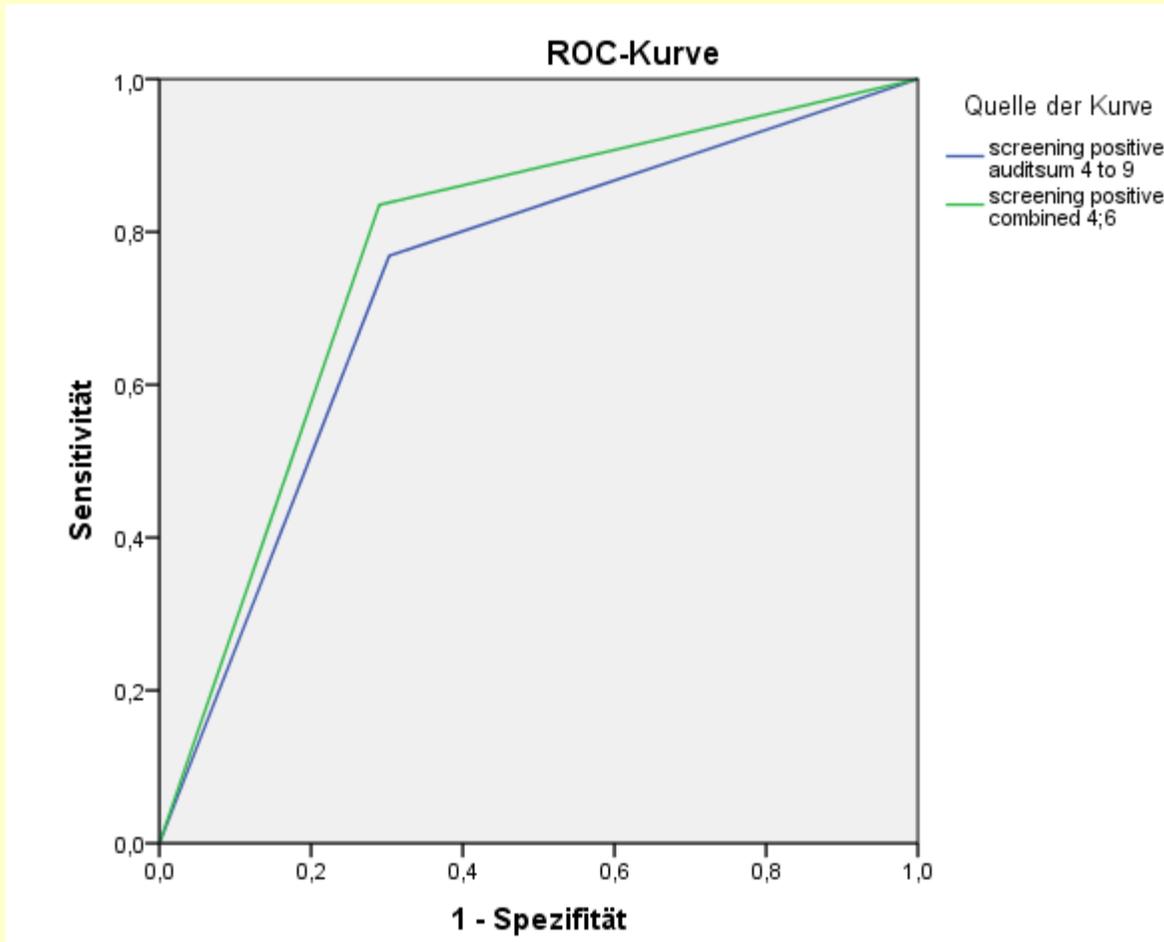
|   | AUDIT-C<br>AUC: .873 |     | AUDIT<br>AUC: .872 |     |
|---|----------------------|-----|--------------------|-----|
|   | Sn.                  | Sp. | Sn.                | Sp. |
| 2 | .99                  | .24 | .99                | .24 |
| 3 | .97                  | .46 | .98                | .45 |
| 4 | .90                  | .71 | .92                | .68 |
| 5 | .65                  | .88 | .70                | .85 |
| 6 | .38                  | .94 | .48                | .93 |

## Moderate + Severe AUDs in individuals with AUDIT-C $\geq$ 5 points



|   | AUDIT 4-10<br>AUC: .955 |     |
|---|-------------------------|-----|
|   | Sn.                     | Sp. |
| 2 | .96                     | .73 |
| 3 | .93                     | .82 |
| 4 | .93                     | .86 |
| 5 | .93                     | .92 |
| 6 | .93                     | .95 |
| 7 | .85                     | .96 |

## ROC-Curve unhealthy alcohol consumption + AUD



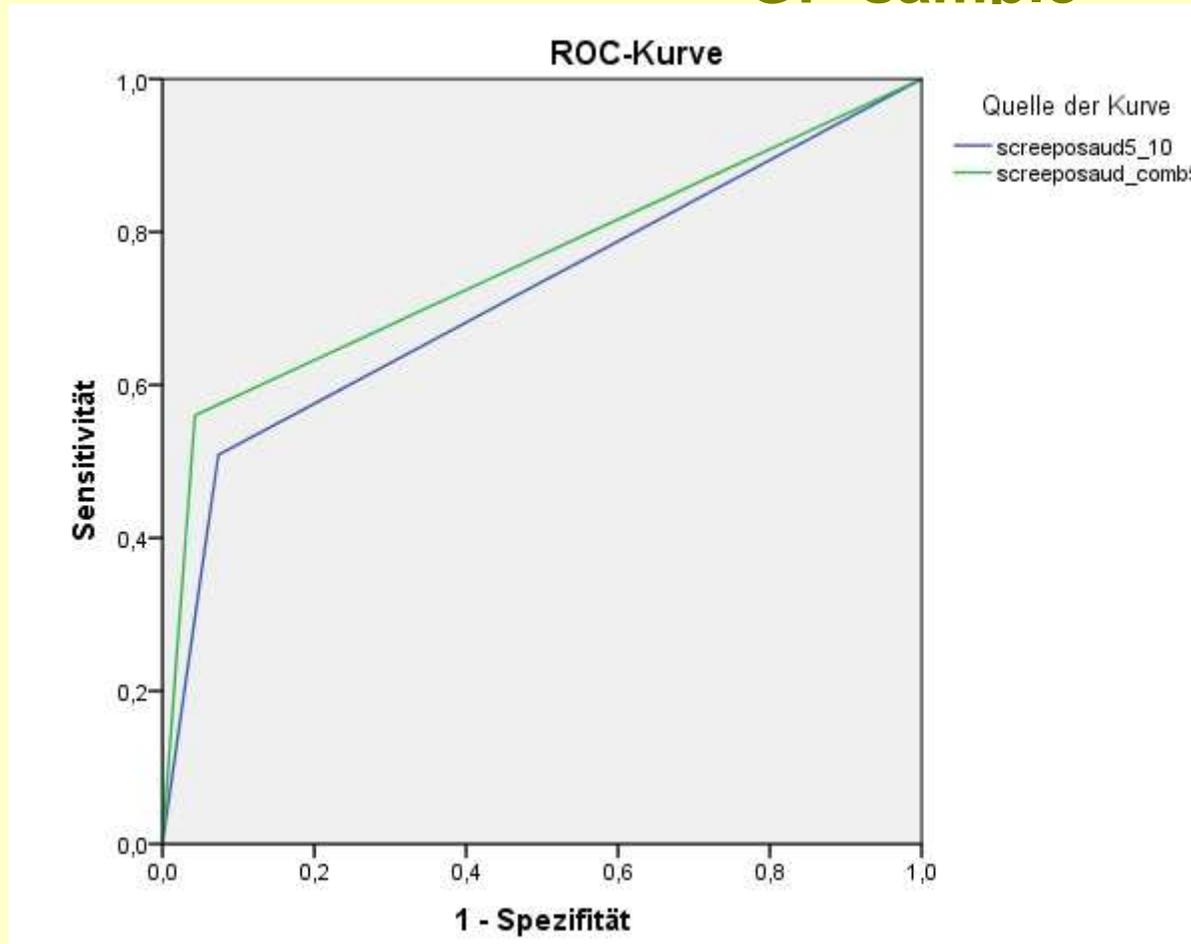
**AUC:**

**Combined .77**

**AUDIT sum .73**

**P<.05**

## ROC-Curve unhealthy alcohol consumption + AUD GP-sample

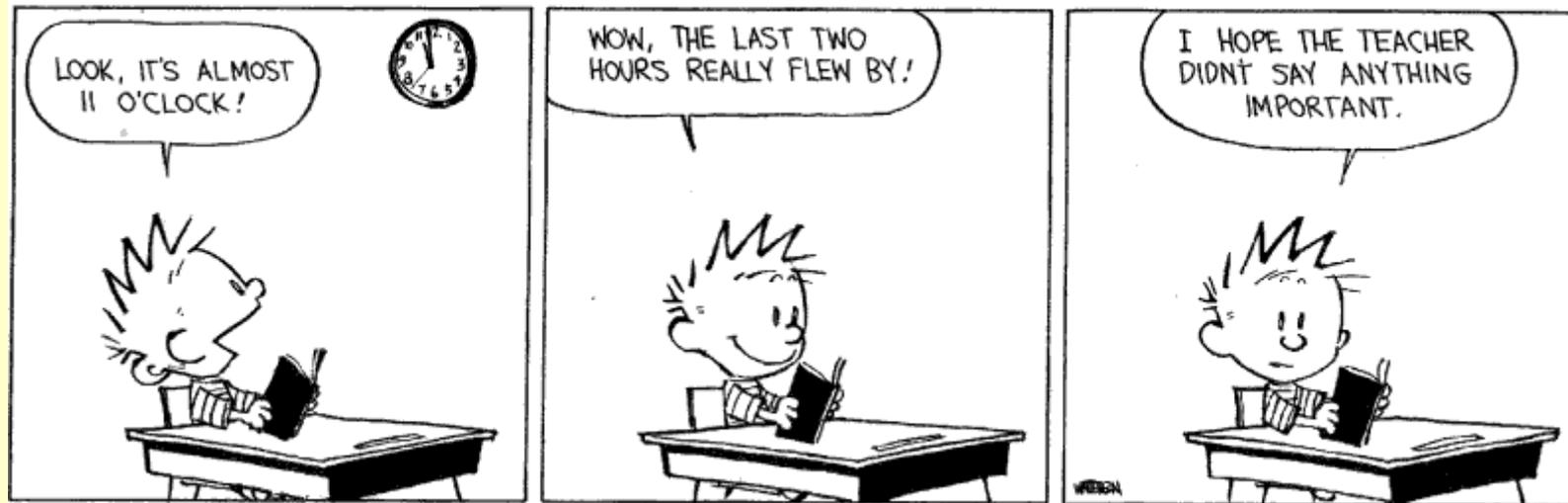


**AUC:**  
**Combined .76**  
**AUDIT sum .72**  
**P<.05**

## Conclusions

- AUDIT consists (at least) of two distinct factors, consumption and AUD-symptoms
- Both factors can be used for an adaptive screening in order to target individuals with risky drinking patterns and to exclude individuals with moderate to severe AUDs (that might need more intense interventions)
- Cut-off values for excluding more severe cases in the literature appear far too high

# Thank you for listening!



[Gallus.Bischof@uksh.de](mailto:Gallus.Bischof@uksh.de)