

# **Arbeits- und Gesundheitsschutz bei Auszubildenden**

# Deutsche Azubi-Gesundheitsstudie (DAGS)

- Untersuchungen zu Gesundheitszustand, Gesundheitsverhalten und Belastungen von 16- bis 25jährigen Auszubildenden im Quer- und Längsschnitt (n >12.000 Auszubildende)
- Datenerhebung: standardisierte Fragebögen zum Gesundheitszustand, Gesundheitsverhalten und zu privaten, schul- und arbeitsbezogenen Belastungen, medizinische und motorische Tests
- Projektleitung
  - ❖ Dr. Manfred Betz (Institut für Gesundheitsförderung und -forschung, Dillenburg)
  - ❖ Prof. Dr. Ulrich Köhler (Zentrum für Schlafmedizin der Universität Marburg)
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## Sicherheitsschuhversorgung & Fußgesundheit

### Beschwerden in den letzten 12 Monaten

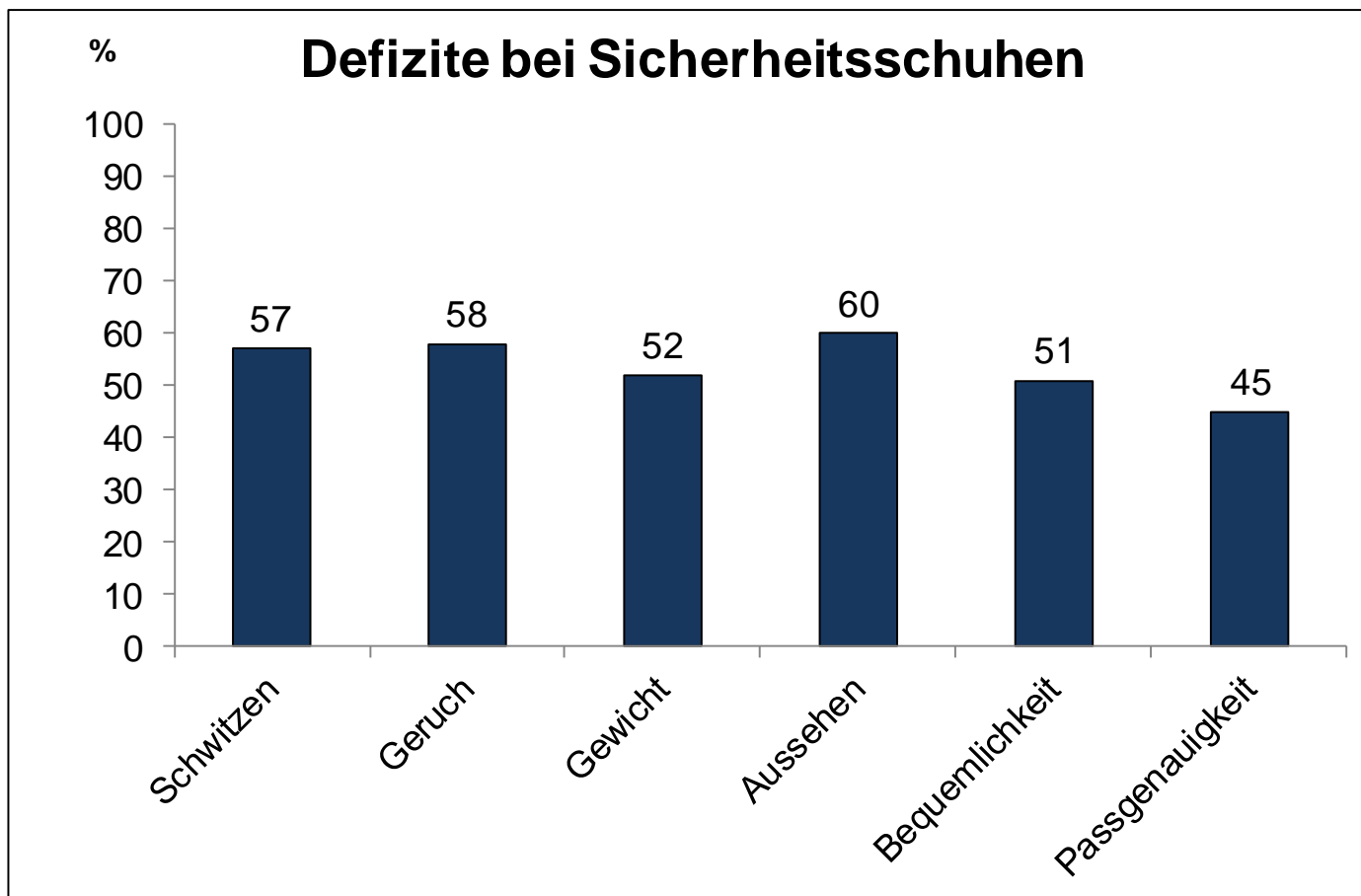
- Fuß 44%
- Knie 25%
- Hüfte 6%
- Rücken 58%

### Fußfehlstellungen

- Knickfuß 44%
- Senk-/Plattfuß 70%
- Spreizfuß 74%
- Hohlfuß 4%
- Hallux valgus 13%



## Sicherheitsschuhversorgung & Fußgesundheit



Nur **46%** der Sicherheitsschuhträger sind mit Ihren Schuhen zufrieden!

# Defizite bei der Sicherheitsschuhversorgung

## Befunde

- 44% kennen weder Marke noch Modell
- 62% hatten Probleme mit Sicherheitsschuhen
- bei nicht passenden Schuhen signifikant mehr Fuß-, Knie- und Rückenbeschwerden
- 5% tragen selten oder nie Sicherheitsschuhe

## Ursachen

- Schlecht passende Schuhe (keine Beratung, oft Bestellung durch die Firma, keine Anprobe)
- Minderwertige Schuhe (billig!)

## Acceptance of safety footwear

for trainees in the motor vehicle trade



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**Summary**  
The acceptance of safety footwear has been studied on 500 mechanic trainees in the car industry. 62% of the trainees complain about discomfort while wearing safety shoes, 5% rarely or never wear their safety shoes. Every fifth person adds insoles that are not approved.

**Introduction**  
Safety footwear is used to protect the feet from injury. The acceptance of safety shoes mainly depends on their comfort. The comfort is, among other things, determined by individual fit, weight and the ability to regulate heat production of the shoe (Matti 2002). Badly fitting shoes increase the risk of foot deformity and other disorders (Marr & Quine, 1993). Our investigation focused on the individual fit and personal acceptance of safety footwear with trainees in the motor vehicle trade.

**Methods**  
500 male mechanic trainees (mean age: 19.2 ± 2.8 years) were interviewed using a standardized questionnaire regarding their satisfaction with their safety footwear, health problems caused by wearing safety shoes and ergonomic aspects.

Moreover, we reviewed the correlation of physical discomfort with certain activities such as standing for prolonged periods, lifting goods or kneeling down. Further data was collected on the shoes' brand, their retail price, their safety classification, the number and type of pairs used, the orthopaedic insoles and orthopaedic shoe modifications.

**Discomfort during the last 12 months**

- 62% of the wearers had problems with their safety footwear within the last 12 months, of which bruising (34%), pain (13%), reddening (8%) and blisters (6%) were the main concerns.
- Persons who were dissatisfied with their shoes - especially with the fit of their shoes - had a significantly higher amount of problems with their feet, knees or backs compared to persons who were satisfied with their shoes.
- Persons who wore cheap shoes had more complaints than persons who used shoes of the expensive segment.

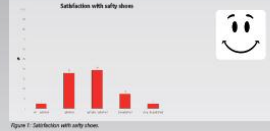


Figure 1: Satisfaction with safety shoes.

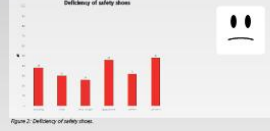


Figure 2: Discomfort of safety shoes.

**Results**

**Particular information on safety shoes**

- 44% of the trainees did not know the brand or model of their safety shoes and 85% were unaware of the level of safety.
- 90% of respondents own one pair only; 80% wear mid-height shoes, 19% boots and 1% sandals. The average life span is 11.3 ± 8.0 months (23% of the pairs are older than one year).
- 7% of the pairs cost more than 100 €, 23% less than 50 € (average price: 66 ± 42 €).
- 21% of the trainees used orthopaedic insoles and 2% have an orthopaedic shoe modification.

**Acceptance of safety shoes**

- 41% of the trainees were satisfied with their shoes, 39% were partially satisfied and 20% were dissatisfied (Figure 1).
- 52% were satisfied with the general fit, 38% complained about excessive sweating in the shoe, 32% found their shoes to be uncomfortable, 20% thought the shoes were too heavy and 46% complained about the lack of fashionable appearance (Figure 2).
- 5% of respondents never or seldom wear the required safety footwear because of the problems they cause.

**Conclusion**

Trainees know very little about the laws regulating the use of safety footwear at work. Thus, one in five adds their own, unapproved insoles. The shoes are usually purchased by the employer with the main selection criterion being the price. The trainees often have no influence on the selection resulting in ill fitting shoes. Consequences are usually orthopaedic complaints. The more complaints and the worse the fit, the lower the general acceptance. In the worst case, the trainees stop wearing safety shoes altogether.

To optimize foot protection in the workplace, trainees must be better informed in the field of "safety footwear" and employers should focus on purchasing ergonomically high-quality shoes taking the individual fit into greater consideration, even if that means offering different models to those from and buying an additional pair for alternate wear (Betz, Bertschin & Hirtmann, 2010).

**References**

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3. Matti, S. (2002): Development of a method for measuring the fit of safety footwear. Arbeitswissenschaft, Berlin.

**Project partners**





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