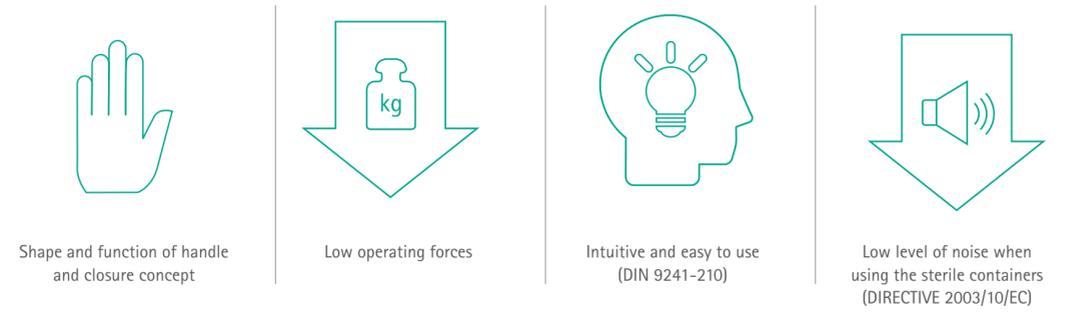


ERGONOMIC QUALITY OF AESCULAP Aicon® STERILE CONTAINERS AND BASKETS

SCIENTIFIC INFORMATION

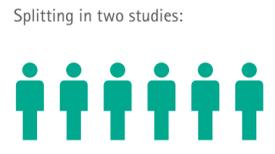
From an ergonomic point of view, the following design criteria of sterile containers and baskets are of particular importance^{1,2,3}:



AIM OF A PRESENT RESEARCH⁴

- ✓ Testing the new AESCULAP Aicon® container and basket under established ergonomic parameters
- ✓ Comparison with the previous version / generation
- ✓ Analyzing benefits tested by ergonomics consultants and real users

METHODS

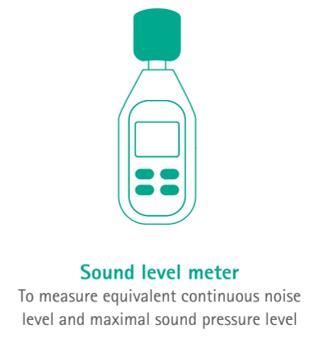
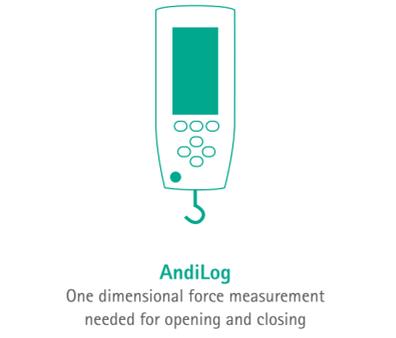
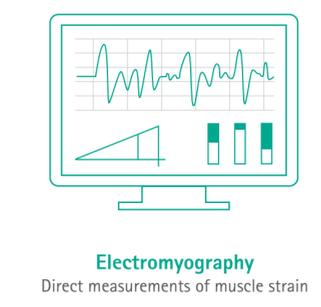


Expert study
(n=6, ergonomic experts of IAD-(Institute of Ergonomics of the Technical University Darmstadt), subjective assessment via questionnaire)



User study
(n=15, from Darmstadt Hospital, CSSD and OR employees, subjective assessment via questionnaire and objective assessment)

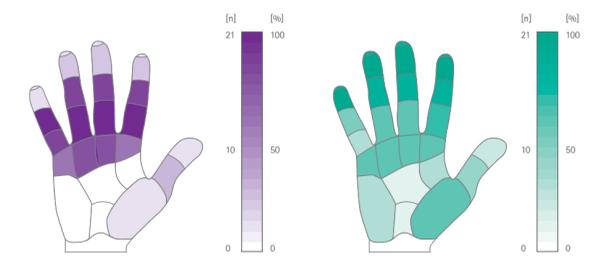
OBJECTIVE ASSESSMENT / MEASUREMENT METHODOLOGY



STUDY RESULTS

1. Subjective results – CONTAINER

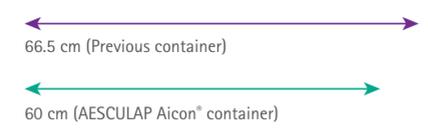
Hand pressure mapping*



Previous and AESCULAP Aicon® container show totally different grip types and pressure burdens when they are transferred from one place to another.
* Results based on expert- / user study

Perception of ergonomic handling

The distance between handles was reduced.



- ✓ Better control over the container
- ✓ Use of palm and thumb for better guidance possible
- ✓ Easy accessibility of the rear handle

2. Subjective results – BASKET

Dimensions



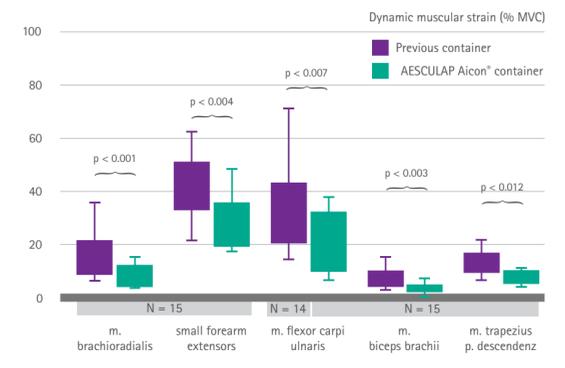
The dimensions of the handles are significantly improved from an ergonomic point of view, users and experts rate the dimensions compared to the previous version as exactly right.

- Experts**
 - ✓ Exactly right
- Users**
 - ✓ Exactly right

3. Objective results

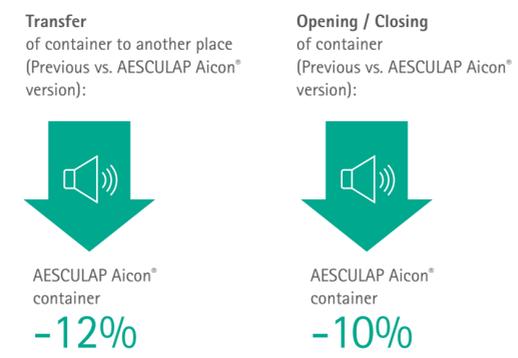
Electromyography

Muscular strain needed for opening and closing is lower with the AESCULAP Aicon® container.



Sound pressure level while transporting, opening / closing

In both tested cases the new container system made less noise:



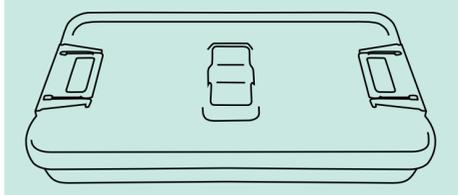
Force needed for opening and closing (via AndiLog system)

Needed force for 240 opening and closing events a day is less than it was needed with the previous version and is ergonomically harmless.⁵



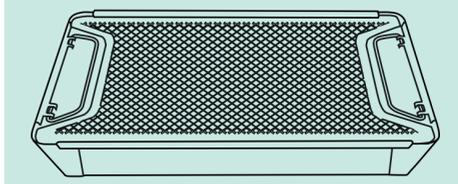
CONCLUSION

The handling of the AESCULAP® sterile container and baskets of the AESCULAP Aicon® series is more ergonomic and offers advantages:



■ Particularly positive is the ergonomic design of the opening mechanism of the container. This has also been confirmed by users in relevant studies.⁶

■ Similarly, the significantly lower noise of the AESCULAP Aicon® container during use is a very positive feature of the new container generation.⁶



■ The gripping and holding conditions of the AESCULAP Aicon® basket are also very good.⁶

Sources:
1 Deutsches Institut für Normung e.V.: DIN 33402-2 – Ergonomie – Körpermaße des Menschen.
2 Deutsches Institut für Normung e.V.: DIN 58952-3 Sterilisation – Transportkörbe für Sterilbarrieresysteme – Teil 2: Sterilisierkörbe aus Metall.
3 Deutsches Institut für Normung e.V.: DIN EN 968-9:2019-03 Verpackungen für in der Endverpackung zu sterilisierende Medizinprodukte.
4 Ergonomische Beurteilung von Sterilcontainern und Siebkörben, Institut für Arbeitswissenschaft der Technischen Universität Darmstadt, Forschungsauftrag der Aesculap AG, 2019.
5 Wakula, J.; Berg, K.; Schaub, K.; Bruder, R.; Glitsch, U.; Ellegast, R.P. (2009): Der montagespezifische Kraftatlas (BGIA-Report 3/2009). Hrsg.: Deutsche Gesetzliche Unfallversicherung (DGUV), Berlin 2009.
6 Gutachten zur ergonomischen Qualität der AESCULAP® Sterilcontainer der AESCULAP® Aicon®-Serie; Prof. Dr.-Ing. Ralph Bruder; Institut für Arbeitswissenschaft der TU Darmstadt, Deutschland.