

**Webinar of 2021-11-30**

**Webinar 'Anthropometric and strength data of children for use in standardization'**

**Questions & Answers**

1	As the data and guidelines will be essential to develop suitable standards will CEN/TR 17698 (and subsequent TR's) be available for free to standards makers?	CEN/TR 17698 was published as usual CEN technical report and there are up to now no plans in making it available for free. The same applies to the other two future Technical Reports resulting from the project. If there is a specific (justified) request it is up to CEN/CENELEC to decide whether any document should be made available for free.
2	Where experts from household industries involved?	<p>Experts from e.g. the sector of furniture participated in the questionnaire.</p> <p>Specific interviews with experts on standards for construction were done. It was related to specifications for stairs, barriers and railings to avoid falls and electric hazards.</p> <p>Experts on consumer product safety participated in the interviews.</p>
3	Relative to existing databases, why did you decide not to include studies with athletes?	<p>The study was focused on identifying data which represent the usual population in Europe. Data from studies exclusively focused on athletes consequently did not fit the objective of the project and were therefore not considered.</p> <p>In the case of strengths, studies with athletes measure isometric forces. In this study, the strengths are related to safety and ergonomics criteria. These applications involve measuring strength performing actions such as pressing a button, opening a jar closed with a screw cap, pulling a small piece from a toy or a garment, etc.</p>
4	More observation than question. TC 248 WG 20 considers child age as indicative of behaviour (children of the same age do similar things), but the size of clothing as sold is usually defined by height of the child it is intended to fit which varies considerable with age. As European data	<p>This is an excellent approach from an ergonomics design perspective.</p> <p>As a result of the project, statistical tables of anthropometry and strength measurements will be reported. Consideration will be given to</p>

	<p>was not available in 2004, we used the few national data bases available. The data for the Netherlands showed children were MUCH taller, than in several EU countries eg Spain Sweden. Since EN 14682 was being developed in response to a mandate, we selected Dutch data and 95th percentile to ensure tall young children were considered.</p>	<p>organizing the statistical tables grouping the children population by stature as well as age.</p>
5	<p>Are no participants from universities involved? Was the data of children anthropometry from Steenbekkers (1993) included? This would be very relevant here! At Delft University (the Netherlands) there is a lot of knowledge about measuring anthropometrics and strength and applying the knowledge to design. See <a href="http://bit.ly/steenbekkers">http://bit.ly/steenbekkers</a> for an extensive anthropometric measurement project of children and <a href="https://bit.ly/human-force">https://bit.ly/human-force</a> for an atlas of human force exertion for designers.</p>	<p>During the research on the existence/availability of children’s anthropometric data, studies from universities were also taken into account and contact with several universities was established (e.g. in view of a cooperation in the frame of the project, data acquisition etc.). In particular, there was also contact with Delft University.</p> <p>Several other universities are also directly involved in the project, e.g. by participating in CEN/TC 122/WG 1.</p> <p>The publication of Steenbekkers (1993) was considered in several points of the project: the estimation of the sample size, the definition of the list of anthropometric measurements and strengths, the analysis of correlations between measurements and the design of components and ranges of movement of the new station to measure strengths.</p>
6	<p>Since this was initiated, we now have face coverings. TC 248/WG 38 has learnt there is almost no data available for facial features to enable the correct size of face coverings. The existing data is based on (healthy) adults aged 19-59, mainly male, to support PPE masks. can the project be extended to consider?</p>	<p>The data being measured in the ongoing project will actualize the data situation for the face too. As digital methods are used, there might be a possibility to answer very special questions (e.g. face forms) beyond the traditional tables.</p>
7	<p>Are the data available in the TR or is there only a reference to the database where the data can be found?</p>	<p>CEN/TR 17698 does not include the actual statistical data but provides a summary of data sources which should help the user to identify relevant data and, in this way, serve as an interim solution.</p>

		The overall project will lead to the publication of a Technical Report which will include statistical data.
8	<p>“It is not possible to combine results from different regions due to methodological variations.” It is also impossible, because children in different countries have different anthropometric measures. Dutch children are the tallest, French children are the smallest in Europe. In a large Dutch anthropometric survey of children. We even found differences between children in the south (smaller) and children in the north (taller) of the Netherlands. How to take the different anthropometric measurements in different countries into account in European standards?</p>	<p>That is correct. That is why the study will be done covering two countries in Europe. The variations between the two countries will be analysed considering the complete list of anthropometric measurements of the project (full body, sitting posture, reaches, hand, head and feet). The project includes the acquisition of existing anthropometric data from other European countries. The comparative analysis done with this data will be done with a limited list of body measurements.</p>
9	<p>This work is very relevant for protective devices for children in connection with respiratory infection prevention. Do you plan to collect data for face sizes and dimensions? Some of these were not marked as relevant in the table of stakeholders.</p>	<p>The data being measured in the ongoing project will actualize the data situation for the face too. As digital methods are used, there will be a possibility to answer very special questions (e.g. face forms) beyond the traditional tables.</p>
10	<p>Why are you only sampling 2 countries - and which are the two?</p>	<p>Anthropometric surveys are only carried out in two countries in order to limit the costs of the project to a reasonable amount. Such surveys are very cost intensive, require a lot of manpower and the more countries are involved the more the costs will increase.</p> <p>The strength survey and an anthropometric survey will be carried out in Spain. Another anthropometric survey will be carried out in a second country in another European region taking into account what is known about regional anthropometric differences in Europe.</p>
11	<p>Considering many manufacturer’s make products for global markets: there is similar work ongoing in the US also, e.g. by the University of Michigan. Is there any cooperation happening to ensure an even</p>	<p>There is no concrete cooperation on this subject yet. The scope of the project is, in principle, defined by the specific agreement SA 2019-07 between CEN and the European Commission.</p>

	more robust result and “one-stop-shopping” for manufacturers and standard makers alike?	<p>CEN/TC 122 is, however, in close cooperation with the corresponding ISO group (ISO/TC 159/SC 3 and SC 3/WG 1). So, in principle, cooperation to combine results from this project with data from similar projects would be possible e.g. on ISO level in the future.</p> <p>Public databases of children anthropometry and strengths of the University of Michigan were reviewed to analyse correlations between data and to define the list of measurements. Experts from this university also participated in the questionnaire distributed in phase 1 of the project.</p>
12	Do you also intend to include body-weight data in phase 2	Yes
13	What force exertion protocol is proposed? According to Caldwell, or different? The force exertion protocol is extremely important because a different protocol may result in a very different result (e.g. half or double the force with another protocol).	This is indeed important. A pilot test to validate the protocol, in particular how children perform the movement was carried out. Different studies published in the literature were used as references.
14	What type of force exertions are planned? Only isometric forces or what type?	The forces are more related to actions in the line of how the children use the products. Not isometric forces.
15	Will measurements of hands include "fingers"?	Yes, the study includes several widths, girths and lengths of the small finger, index finger and thumb.
16	When it is expected the kick-off of the measuring campaign?	The intention is to start the surveys late spring / early summer 2022. Due to the COVID-19 disease it is difficult to give a precise estimation.
17	Is there a list of existing DBs that will be included in the "new EU DB"?	Negotiations with owners of existing data are still ongoing and, consequently, there is no complete list of databases/studies which will be taken into account in the Technical Report (besides the data obtained by the surveys).
18	You take dates from 2000 and do also new measurements? What do the 2 countries Spain + Romania?	The project will include data from the two new surveys and data from existing databases that are under negotiation. At this moment it is agreed

		that existing data from Spain and Romania will be included.
19	Will the European database available publicly?	The data resulting from the project will be published in a CEN technical report.
20	When producing international standards, e.g. medical beds for children, we also need global data. We use 'Childata' from University of Nottingham. Is there any plans for developing an international standard for this area?	CEN/TC 122 is closely cooperating with ISO/TC 159 and in particular ISO/TC 159/SC 3/WG 1 so it is quite possible that this committee adopts the European TRs (possibly adding data from other international countries, if available).
21	Where were these specific dolls shown in the presentation acquired?	The dummy family was developed for product testing procedures by the Research Group of Physiological Anthropometry, University of Kiel; contact: <a href="mailto:fia@anthropol.uni-kiel.de">fia@anthropol.uni-kiel.de</a>
22	Wouldn't it be better to choose countries based on anthropometric characteristics, and make a tender for those countries? When the countries are not chosen first, you may end up with two countries who do not represent the European children well. Then the results are not usable as they are intended.	Choosing the country beforehand would indeed have advantages but also disadvantages. As the project receives public funding the organization carrying out the survey will have to be determined in a selection process. There are not many organizations capable of carrying out such huge surveys. Restricting the country could lead to the situation that only one candidate (or no candidate at all) could apply to this call for tender.