

## **Introduction to the “KidLongi 0-18” user CD, which was developed on the basis of the 0-18 years of age reference data of the Hungarian Longitudinal Growth Study**

*KidLongi 0-18* is a computer application developed for physicians and district nurses who deal with children’s growth and development.

The programme can easily be installed using the user CD onto a personal computer. The programme allows continuous follow up and monitoring of a surveyed child’s growth and development.

*KidLongi 0-18* presents the current sizes of the surveyed child’s body height/body length, body weight, body mass index (BMI), head circumference, and chest circumference compared to reference data of the Hungarian Longitudinal Growth Study for ages 0 to 18 years.

The programme presents the current size of the surveyed child, together with the previously measured data recorded in the programme on the reference–percentile figures of the mentioned sizes. In doing so, it helps the user consider whether growth and nutritional conditions meet national reference values, and the corresponding mean of the child’s nutritional condition group at birth (SGA, AGA, LGA).

In the following section, we present the ‘front page’ of the programme and a short description of its capabilities. We then describe additional capabilities available in other windows.

Use of the programme is possible only after installation. After installation, the user has to decide which language to use the programme in. Two options are available, Hungarian and English.

*KidLongi 0-18 Felhasználói CD*  
AZ ORSZÁGOS LONGITUDINÁLIS GYERMEKNÖVEKEDÉS-VIZSGÁLAT  
0-18 ÉVES KORI ADATAI ALAPJÁN  
*Joubert Kálmán, Darvay Sarolta, Gyenis Gyula, Mag Kornélia, Martin van't Hof, Csukás  
Attila, Ágfalvi Rózsa*  
*KidLongi 0-18 CD*  
Programme for monitoring the growth of children  
ANTHROPOMETRIC DATA AND GROWTH CURVES OF CHILDREN  
FROM BIRTH TO 18 YEARS OF AGE BY THE HUNGARIAN LONGITUDINAL  
GROWTH STUDY  
Kálmán Joubert, Sarolta Darvay, Gyula Gyenis, Kornélia Mag, Martin van't Hof,  
Csukás Attila, Rózsa Ágfalvi

Nyelvválasztás:

Select language:

Magyar

English

The opening page ends here, after which the following **information appears:**

***KidLongi 0-18 Felhasználói CD***

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0-18 ÉVES KORI ADATAI ALAPJÁN

***Joubert Kálmán, Darvay Sarolta, Gyenis Gyula, Mag Kornélia, Martin van't Hof, Csukás  
Attila, Ágfalvi Rózsa***

When installed, *KidLongi 0-18* provides the most up-to-date technical and professional tools to assess and evaluate the growth and development of the children.

The basic premise of *KidLongi 0-18*, as regards appearance and basic characteristics, was taken from the original CD presentation of data for 0-5 years of age, as part of the international longitudinal Growth Study titled “*Euro Growth Study*”. We are extremely grateful to Professor Dr. Martin van’t Hof for his permission to use this as a basis for *KidLongi 0-18* and for providing advice and support during its development.

The interactive programme we developed is, however, more advanced than the model CD.

For the implementation of *KidLongi 0-18* we used the reference data of the Hungarian Longitudinal Growth Study (HLCS). This research programme is the first longitudinal growth study in Hungary that followed child growth and development on a nationally representative sample from birth to the age of 18 years.

The sample at birth was sufficiently high (2984 boys and 2701) and it was possible to perform anthropometric examinations on 516 boys and 523 girls at the age of 18 years in the reference data population. This data is only available because of the high standard of work and efforts of the mother and child health visitors.

The *KidLongi 0-18* CD presents reference values (mean, standard deviation) in table format and reference percentiles (3<sup>rd</sup>, 10<sup>th</sup>, 25<sup>th</sup>, 50<sup>th</sup>, 75<sup>th</sup>, 90<sup>th</sup> and 97<sup>th</sup>) graphically of body length/body height, body mass, head circumference, chest circumference, BMI (body mass index) of the several body measurements measured during the HLC study.

By taking the above measurements of the surveyed child and recording them in the corresponding *KidLongi 0-18* entry points, the given sizes appear on the reference-percentile diagrams, so one can immediately tell in which percentile zone the specific body size of the surveyed child can be found. Based on this, the child’s specific size at a given age can be assessed by comparing it to national reference values. The programme provides written evaluation after the corresponding menu point has been activated.

After the surveyed child's data at birth are entered, he/she is automatically assigned a corresponding nutritional condition group at birth, based on the birth weight and duration of pregnancy: SGA (under-nourished as compared to the duration of the pregnancy), AGA (adequately nourished with regard to the duration of the pregnancy), or LGA (over-nourished as compared to the duration of the pregnancy). Through this feature it is possible to compare the specific size and the specific age-related state of the development of a child with the reference means of the corresponding nutritional condition group at birth (by using the z-score). By activating the z-score we can observe whether the development of the studied child at a specific age is better or worse than the group mean.

By exploiting the possibilities offered by a follow-up survey, we calculated the puberty reference-percentiles of the body height growth rate. Through this we provide the possibility for professionals working with growth problems to judge the surveyed child's growth rate based on Hungarian height velocity data.

We would like to express our gratitude to the HCSO Demographic Research Institute, the Hungarian Central Statistical Office, the National Paediatric Health Institute, and the Ministry of Health for their help in implementing *KidLongi 0-18*.

*KidLongi* was developed by Calculus Bt.

A list of publications related to the Hungarian Longitudinal Growth Study serves as the basis for *KidLongi 0-18*, and some publications are included on the CD and accessible through the "Help" menu.

If you would like to become familiar with the functions of the *KidLongi 0-18* CD, mark **test data** in the **Database selection** menu, and then press **OK**. If you wish to work with real data, mark "sharp data" and then click OK.

**Test data**  
**Sharp data**  
**OK**

*Using the KidLongi 0-18 programme*



# KIDLONGI<sup>0-18</sup>

## Program for monitoring the growth of children

Created by: ANTHROPOMETRIC DATA AND GROWTH CURVES OF CHILDREN FROM BIRTH TO 18 YEARS OF AGE BY THE HUNGARIAN LONGITUDINAL GROWTH STUDY

Kálmán Joubert, Sarolta Darvay, Rózsa Ágfalvi, Kornélia Mag

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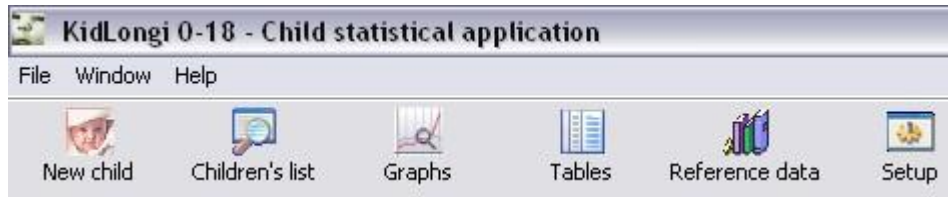


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- Recording a new child
- Adding a child's data
- Children list
- Entering a new measurement
- Viewing and editing measured data
- Viewing graphs

## Recording a new child

To record a new child in the application click on the **New child** button.



Enter the child's data in the pop-up window:

The image shows a pop-up window titled 'Add new child...'. It contains the following fields and options:

- Last name:** Próba
- First name:** Panna
- Date of birth:** 2004. február 6. (dropdown menu)
- Place of birth:** Budapest
- Gestational age (week):** 27
- Father's height (cm):** 178
- Father's weight (kg):** 80
- Sex:**  Boy  Girl
- Weight at birth (g):** 2400
- Length at birth (cm):** 45
- Mother's name:** Nagy Nóra
- Mother's height (cm):** 167
- Mother's weight (kg):** 57

At the bottom, there are 'OK' and 'Cancel' buttons.

The application provides a warning prompt if obligatory data is omitted. This prompt is a blinking exclamation mark in a small red circle. The user has to add the missing data, and then click on **OK**.

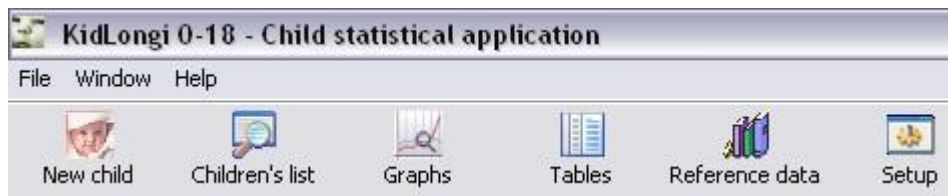
## Adding children's data

If additional information needs to be added later on then it can be done by clicking on **Adding child's data**. A window similar to the one that pops up when a new child is entered allows the user to add the missing data.



*List of children*

The list of children already entered in the application can be viewed by clicking on the button **Children's list**.



Upon clicking on this button, the following window appears:



Here, we can **select** a specific child by clicking on the row in which the child is listed, and then click on **OK**. The list can be narrowed by entering the initials of the first and last names in the **Last name** and **First name** fields.

The Children's list can be **sorted** according to several criteria. Clicking on the header of table columns sorts the children's list in alphabetical order according to the specific column. To reverse the sequence click again on the header of the same column.

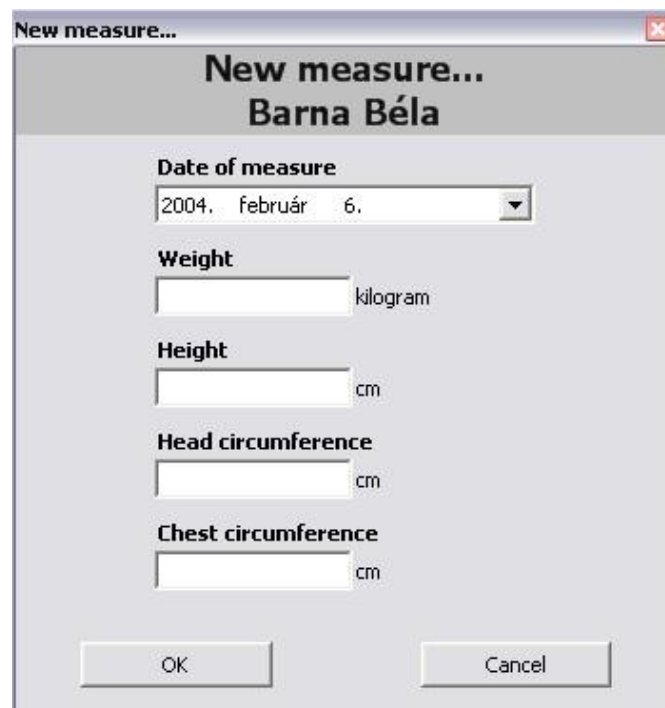
### *Entering a new measurement*

We can enter a new measurement with the **New measurement** button.



The screenshot shows a vertical menu titled "Children" with a dropdown menu set to "Barna Béla". Below the dropdown, the name "Barna Béla" is displayed in bold, followed by "Age: 24 year(s) 0 month(s)" and "AGA" in green. Three buttons are visible: "New measure" with a pencil icon, "Child's data renewal" with a child's face icon, and "SGA - AGA - LGA for Z-Scores" with a checkbox.

Following this, the following screen is displayed, where we can enter measured data.



The screenshot shows a dialog box titled "New measure..." for "Barna Béla". It contains the following fields and options:

- Date of measure:** A dropdown menu showing "2004. február 6."
- Weight:** A text input field followed by "kilogram".
- Height:** A text input field followed by "cm".
- Head circumference:** A text input field followed by "cm".
- Chest circumference:** A text input field followed by "cm".

At the bottom, there are "OK" and "Cancel" buttons.

Select the date of the measurement if the default date is not correct. Enter data in the text boxes, and click on the **OK** button. If you enter data that are not permissible, the application will provide a warning. This data must be corrected.

### Viewing and editing measured data

We can view a child's measurement data by clicking on the **Table** button, and then clicking on the desired button from among those shown below.



Here we have several options. If we wish to view the child's data below the age of 2 years, we need to click on the button **Data below the age of 2 years**, while if we wish to view data over the age of 2 years, we need to click on the button **Data over the age of 2 years**.

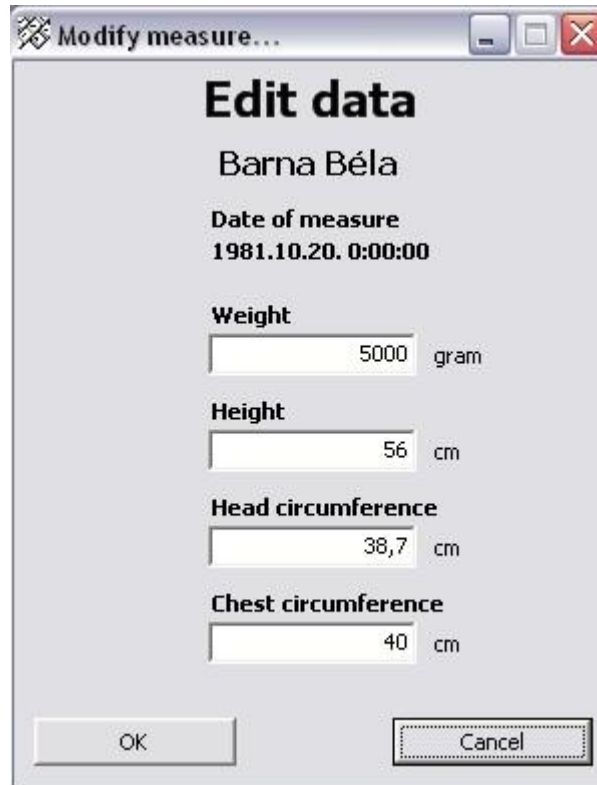
	Date of measure	Age (month)	Height (cm)	Weight (g)	Head circumference (cm)	Chest circumference (cm)	BMI (kg/m <sup>2</sup> )
▶	1981.07.23.	0,00	48,0 cm	2400 g	32,6 cm	28,3 cm	10,42
	1981.08.21.	1,00	50,0 cm	3100 g	33,7 cm	31,4 cm	12,40
	1981.09.20.	2,00	52,0 cm	4000 g	34,5 cm	35,2 cm	14,79
	1981.10.20.	3,00	56,0 cm	5000 g	38,7 cm	40,0 cm	15,94
	1981.11.19.	4,00	61,0 cm	5600 g	40,0 cm	40,5 cm	15,05
	1981.12.19.	5,00	64,0 cm	6000 g	41,0 cm	41,0 cm	14,65
	1982.01.18.	6,00	65,0 cm	6500 g	43,0 cm	41,2 cm	15,38
	1982.03.19.	8,00	70,0 cm	7400 g	44,0 cm	43,5 cm	15,10
	1982.05.18.	10,00	73,0 cm	8200 g	45,5 cm	45,0 cm	15,39
	1982.07.22.	12,00	77,0 cm	9100 g	46,8 cm	45,3 cm	15,35
	1982.10.22.	15,00	81,0 cm	10000 g	48,0 cm	49,0 cm	15,24
	1983.01.22.	18,00	86,0 cm	11000 g	49,0 cm	49,5 cm	14,87
	1983.04.22.	21,00	90,0 cm	12200 g	50,1 cm	50,2 cm	15,06
	1983.07.22.	24,00	93,5 cm	12500 g	50,3 cm	50,5 cm	14,30

Here we can see data entered for a specific child, and the BMI calculated data. We can **navigate** the data using the arrows.



We can **print** the table using the **Print** button, and we can **export** the data into an **Excel table** using the **Export** button. At this point, not only the measured data and the BMI, but also the **z-scores** calculated for them are exported to an Excel table.

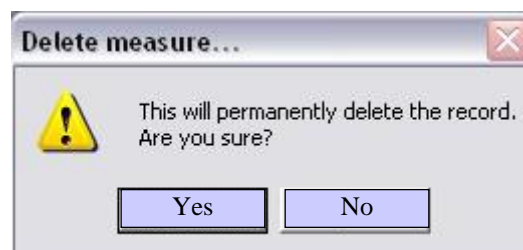
The **Edit** button allows data related to the measurement time to be **edited**.



The screenshot shows a window titled "Modify measure...". Inside, the main heading is "Edit data" for "Barna Béla". The "Date of measure" is set to "1981.10.20. 0:00:00". Below this are four input fields: "Weight" with the value "5000" and unit "gram"; "Height" with the value "56" and unit "cm"; "Head circumference" with the value "38,7" and unit "cm"; and "Chest circumference" with the value "40" and unit "cm". At the bottom of the dialog are two buttons: "OK" and "Cancel".

Here, we can edit data belonging to a specific measurement date. This could be useful if the previously entered data are wrong.

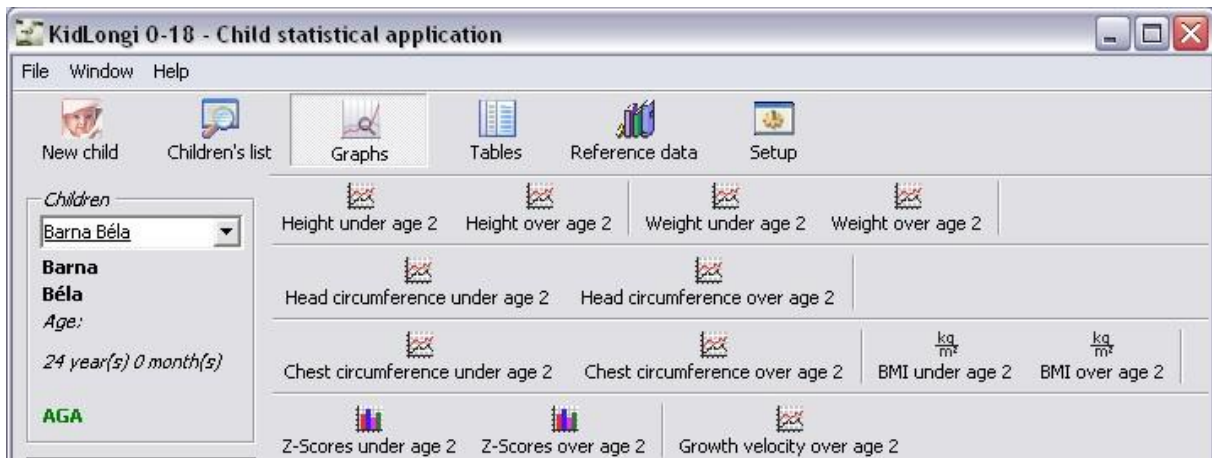
If we performed a measurement with an incorrect date, we may **delete** the specific **measurement** with the **Delete** button. To do so, select the row that you wish to delete, and click on the **Delete** button. At this point a warning prompt is displayed, which allows the user to reconsider the decision.



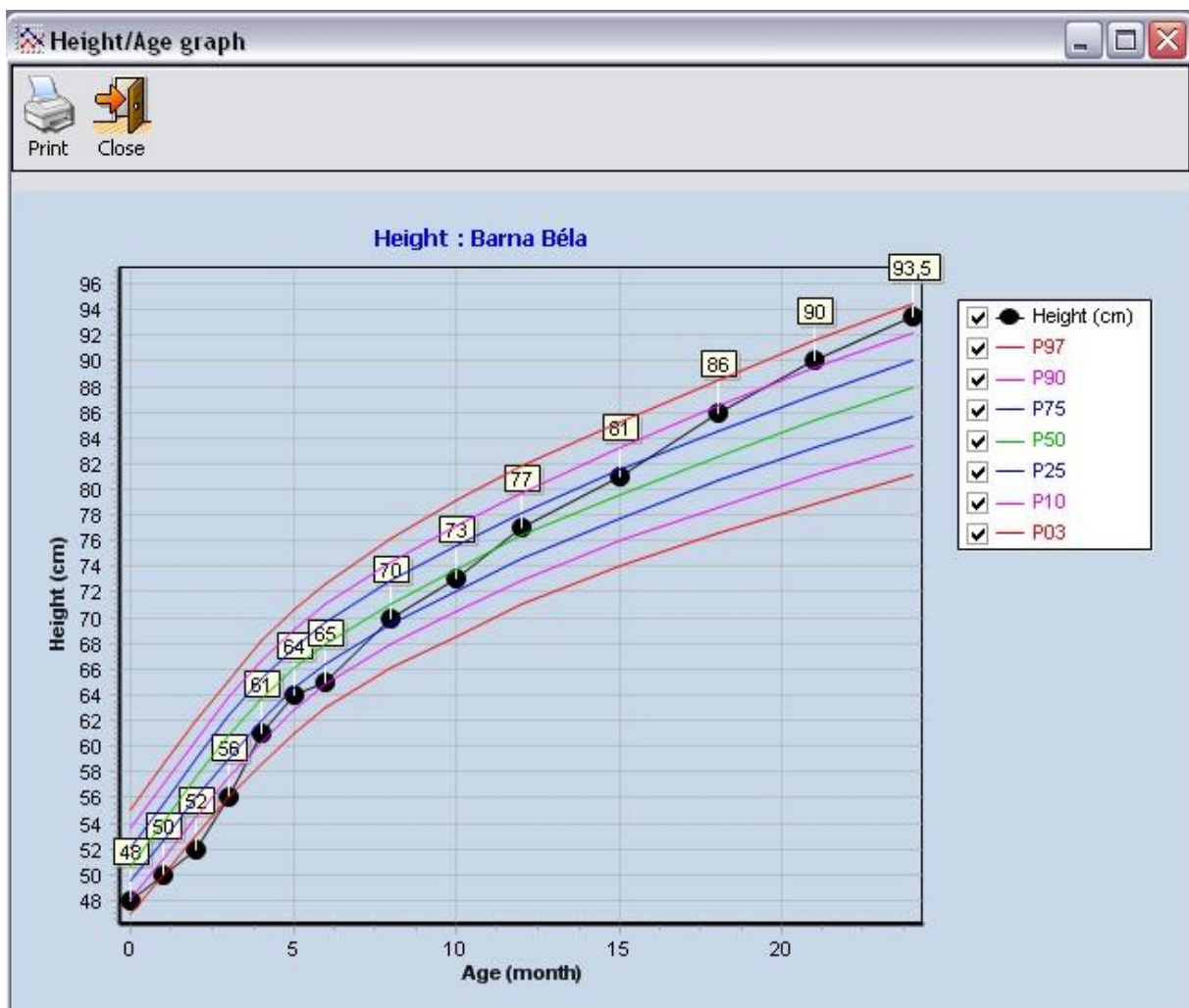
The screenshot shows a dialog box titled "Delete measure...". It contains a yellow warning triangle icon on the left. To the right of the icon, the text reads: "This will permanently delete the record. Are you sure?". At the bottom of the dialog are two buttons: "Yes" and "No".

*Viewing graphs*

In the application, several graphs can be presented using the measured data, BMIs, z-scores, and body height growth rate. Click on the **Graphs** button in the upper toolbar. Here we see a new selection of buttons where the type of graph can be selected.



For instance, we see the following graph as a result of clicking on the **Height under the age of 2 years** button:



The graph can be enlarged (**zoom in**) or the enlarged graph can be rearranged to the original size (**zoom out**) by dragging the mouse.