

Short Introduction To The
 ANTHROPOMETRIC PROGRAM (ANTRO_E)
 for MCPP profile analysis
 VERSION 4.62E

by f.hosenfeld

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1 Preface

This short manual deals with version 4.62E of the ANTHROPOMETRIC PROGRAM. You may have a newer version where some details may differ from those described in this manual.

The ANTHROPOMETRIC PROGRAM is written in Turbo Pascal from Borland.

2 How to make a copy on harddisk

2.1 If this is the first version of the program you install

You can make a copy of the ANTHROPOMETRIC PROGRAM on your harddisk. We suggest the following steps to do this:

- Make sure, that you are on your harddisk in the target-directory.
- Then insert the ANTHROPOMETRIC PROGRAM-Disk in Drive A and enter A: <Return> ¹ to change to Drive A.
- If your harddisk is C: then start the copy-program with ATOC <Return>.
- If your harddisk is D: then start the copy-program with ATOD <Return>.

Now the whole ANTHROPOMETRIC PROGRAM is copied to your harddisk and can be started from there.

2.2 If you already have installed an older version of the program

- Make sure, that you are on your harddisk in the target-directory.
- Then insert the ANTHROPOMETRIC PROGRAM-disk in drive A and enter A: <Return> to change to Drive A.
- If your harddisk is C: then start the copy-program with AKTATOC <Return>.
- If your harddisk is D: then start the copy-program with AKTATOD <Return>.

¹In this notation <Return> means the return- or enter-key

3 How to update an older disk-version

If you use the ANTHROPOMETRIC PROGRAM only with your disk station (without harddisk) and you want to update an older version, follow these steps:

- Insert disk with the new ANTHROPOMETRIC PROGRAM in drive **A:**.
- If you've got a second disk-drive **B:**, insert the disk with your old version in drive **B:**.
- If there is only one disk-drive, the program will tell you to insert the disk with the old version of the ANTHROPOMETRIC PROGRAM in drive **A:**.
- Start copy-program entering **AKTATOB <Return>**.

4 How to start the ANTHROPOMETRIC PROGRAM

You can start the program when you enter **ANTRO <Return>**. Attention: If you have data that have been stored from a version below version 4.00E, the version 4.62E updates the old data automatically because now the data are stored in a different mode. This will take a little time.

5 Short hints for using the ANTHROPOMETRIC PROGRAM

5.1 Entering data

After starting the ANTHROPOMETRIC PROGRAM you get the menu shown in figure 5. Pressing then '1'-key you are able to enter data. An example dialogue is shown in figure 1.

```
Submenu of ANTHROPOMETRICprogram by f.hosenfeld Version: 4.62E NOV 1991
* INPUT OF VALUES *

Print all inputs (Y/N) ? <N>

Name ? Test, John

Older than 15 months ? <2>
1 - younger
2 - older
Age ?(in years >1) 12

Sex (m/f)?M

Date of measurement ?11.01.92

Date of birth ?11.12.69

How do you want to enter values ? <2>
1 - HIPAD
2 - keyboard
Please enter bone-length in mm :
To correct the last input, enter negative value!
Entering -111 you get to HIPAD-input.

Distal
  Finger 5 : 3
```

Figure 1: Input-Dialogue

- Print all inputs?
There is a facility to print all inputs on a printer after you entered them. Then you must give a 'Y'-key, when the ANTHROPOMETRIC PROGRAM asks you.
- Name
Enter the name of the patient.
- Age
Note, that we have a lack of data for patients, who are between 15 and 24 months old. Therefore you are not allowed to enter this agegroup. If the patient is older than 15 months, you must enter the age in years as an integer values. No not-integer-values are allowed! If the patient is younger than 15 months, you can enter the age in months or in weeks: first the integer value and then a character, indicating month or week. *For example: 14w means 14 weeks old, 3m means 3 months old.*
- Sex
Enter the sex, F for *female* or M for *male*.
- Date of measurement
Now you can enter today's date. It is for you, to recognize different measurements of the same person. If you don't need this, leave it empty (pressing <Return>).
- Date of birth
You are asked for the birthdate of the person.
- How do you want to enter values?
If you have an HIPADTM-Digitizer, you can enter the values by that digitizer (see 5.2). In the other case, you have to measure the bone-lengths by other means and enter them using the keyboard.
- Enter bone-lengths
You have to enter the bone-lengths in mm by the keyboard. If you type a wrong value by mistake, you can correct this value entering a negative value (*e.g. -1*), then program enables you to retype the last value. If you decide to enter some values by the HIPAD, type *-111*.

5.2 Measuring by using the digitizer HIPADTM

Please press the red *POINT*-key to the left (on the HIPAD) ².

How to use the HIPAD:

Press the *WHITE* key of the mouse at the starting-point and at the ending

²The HIPAD is a product of Houston Instrument

point. Then the measured length will be displayed in mm. If you want to *CORRECT ONE POINT* please press the *YELLOW* mouse-key. To *CORRECT THE WHOLE VALUE* press the *GREEN* mouse-key. To change to keyboard-input enter ‘!’ (or if you forgot to switch on the HIPAD).

5.3 How to store data

If you want to, you can store the data you have measured with the Anthropometric Program. Helped by a data-management-file you can re-load your data into the memory. In this way you can display up to 3 patterns at the same time. To make files easy to find you can sort that data-management-file. (Chose submenu: **Other facilities**). Initially, when being shipped, a test data-file (**Mr. Test ...**) is stored to check the ANTHROPOMETRIC PROGRAM. You should delete this file.

5.4 How to display and print out the graphics

If your screen is able to display graphics and your memory is not full of other memory-resident applications it is possible to display the pattern as graphics on your screen. If you want to have a printout on a 9-dot-matrix-printer (STAR LC-10 compatible) press the ‘d’-key while the graphic is displayed on the screen. For some 9-dot-matrix-printer it is possible to make hardcopies using the ‘p’-key.

If you’ve got a 24-dot-matrix-printer, which is NEC p6+-compatible, you have to press the ‘o’-key followed by a digit (1-5), which defines the print-resolution. Nota bene: It is dependent on your screen, which resolutions you can use.

Though we are working on it, we have no hardcopy-routines for ink- or laser-printers integrated in our program yet. If you want to have a printout on that sort of printer (or other printers) *please use a hardcopy-routine for your printer*. After printing the hardcopy press any key to continue. If your screen is not able to display graphics the program can display simplified dot-graphics and make a printout on any printer (this printout will be managed by the ANTHROPOMETRIC PROGRAM).

Submenu of ANTHROPOMETRICprogram by f.hosenfeld Version: 4.62E NOV 1991

```
-----  
When graphic is displayed:  
Output on 9-dot-matrix-printer?      Press  d  
Initialize printer after graphic display? Press  i  
Output on 24-dot-matrix-printer?     Press  o  
    and press 1,2,3,4 or 5 for resolution!  
-----
```

Figure 2: Print-Out-Screen

5.5 Changing stored data

If you want to correct some data you stored some time ago, there are two facilities:

- You chose **Other facilities** (pressing '3'-key), then **Data-management-file** (pressing '1'-key). You can now change the data of the data-management-file, which are
 - Name
 - Birthdate
 - Date of measurement
 - Age
 - Diagnosis
 - Folder
- You chose **Other facilities** (pressing '3'-key), then **Data of patients** (pressing '2'-key). Now you are able to change all data from one patient:
 - Name
 - Age
 - Sex
 - Date of measurement
 - Birthdate
 - Diagnosis
 - Folder
 - Bone-length-values (either by HIPAD or by keyboard)

5.6 General use of the ANTHROPOMETRIC PROGRAM

Most of the features offered by the ANTHROPOMETRIC PROGRAM are very easy to discover and easy to manage, because you can see very quickly which item of a menu causes the action you desire. Therefore most of the items of ANTHROPOMETRIC PROGRAM are not described in this manual. However there are some special points mentioned in the following section.

6 Special remarks on some features of the ANTHROPOMETRIC PROGRAM

6.1 Mean-patterns

With the ANTHROPOMETRIC PROGRAM you can create mean-patterns of the stored patient-patterns. Chose **Other facilities** ('2'-key) and **Mean-patterns** ('3'-key). You'll get the menu-screen shown in figure 3.

```
Submenu of ANTHROPOMETRICprogram by f.hosenfeld Version: 4.62E NOV 1991
      M E A N - P A T T E R N
```

```
In this menu you can create an mean-pattern.
You can enter the name of one or more diagnoses and then,
the mean-pattern will be computed. Furthermore, you can select
additional patterns for the computation!
You can name the mean-pattern.
```

```
Name of mean-pattern :
```

Figure 3: Mean-pattern

Now you enter the name of the new mean-pattern. This is useful to re-identify the created mean-pattern. After entering the date of measurement, you must select the patterns, out of which you want to build the mean-pattern. There are two ways selecting the patterns:

- Enter one or more diagnosis, then the ANTHROPOMETRIC PROGRAM searches one or more folders for the entered diagnosis and uses the associated patterns for the computation of the mean-pattern.
- You can select one or more pattern(s) directly.

You can -of course- combine these two methods. After the selection, ANTHROPOMETRIC PROGRAM computes the mean-pattern and stores it. You can watch the computed pattern on the screen immediately.

6.2 Correlation of two patterns

If you want to know the correlation of two patterns, chose **Other facilities** ('3'-key) and **Correlation of patterns** ('5'-key). Now you have to select two

stored patterns, which you want to compute the correlation of. After the selection, you'll see the screen shown in figure 4.

These patterns

1. B., M.	2. K., E.
Age: 11 years	Age: 13 years
Date of birth:01.01.70	Date of birth: 12.06.68

have the correlation: $r = -0.12$

not significant

Printer-output (Y/N) ?

Figure 4: Correlation of two patterns

You can print out the result of the computation.

6.3 Given-pattern-measuring

You can measure patterns, of which you have no x-rays, but the picture of the pattern and store them on your disk. This can be useful to compare it with patterns measured by yourself. This could be patterns which are published in a journal.

Chose **Other facilities** ('3'-key) and **Given-pattern-measuring** ('6'-key). Then you have to define a reference-length to scale the whole measurement. You can chose how often you want to measure each length. So you can improve the quality of the measurement.

6.4 Password-protection and usage of data-directories

After starting the program, you will see the screen shown in figure 5.

If you want to load data from disk or harddisk enter '2'. Now a submenu appears asking you whether you want to display the names of the patients either fully spelled or abbreviated with their initials (figure 6).

There is one reason for this question: sometimes it is not needed or not allowed (for reasons of data-protection) to display or printout the whole name of a patient. This facility is implemented by the **ANTHROPOMETRIC PROGRAM**. For we have a password-protection only users with knowledge of a valid password can access the fully spelled patient-data. If you enter '1' you will see only the

```
      A N T H R O P O M E T R I C   P R O G R A M

      f.hosenfeld

      All rights by fh

      Version:4.62E NOV 1991

      created using Turbo Pascal (c) 1987,1988,1990

      REG. USER: XXXXXXX, XXXXX

Loading data...
Please select:
1 - Enter data
2 - Load data from disk
3 - Other facilities
4 - ABORT
```

Figure 5: Startscreen

initials of the names. If you enter '2' you will see the submenu shown in figure 7 which asks you to enter a valid password (only when you did not so before).

If you enter an invalid password, you have no access to the fully spelled names. Initially the password 'ANTRO' is the only valid password. I.e: you have to enter ANTRO <Return> . We describe later (6.5) how to change the password. If you have entered your password correctly the directories in which your data-files are stored appear on the screen. You can select one directory using the arrow-keys (↑←→, 2846) and the <Return>-key. If you start the ANTHROPOMETRIC PROGRAM the first time there is only one data-directory. It is described later(6.6.1) how to create more. After selecting a directory there will appear a list of the patient-data-files in the selected directory. You can select one in the way mentioned above. Then the chosen data will be loaded and displayed or printed out – dependent on your decision.

6.5 How to add or delete a password

You can have more than one valid password. It is sensible to delete the initially given password 'ANTRO'. But please do this only, if you have added at least one new password installed which you have tested!

Submenu of ANTHROPOMETRICprogram by f.hosenfeld Version: 4.62E NOV 1991

Please enter whether you want to display
the name of the stored patients fully spelled
or abbreviated with their initials.

Which display mode ?
1 - Abbreviated
2 - Fully spelled

Figure 6: Name-display-mode-screen

- In the menu shown in figure 5 enter '3' for 'Other facilities'.
- You will get the submenu shown below in figure 8.
- Enter '7' getting the screen shown in figure 9.
- Select '1' or '2':
- If you haven't entered a password yet the submenu shown in figure 7 will appear and ask you to enter a valid password. This is a password which was valid when you started the program
- If you want to add a new password to the list of already existing passwords the now following form enables you to enter a new password (figure 10).
- Now you can enter a password consisting of not more than 40 letters. Then press <Return> . Please check this password after restarting the ANTHROPOMETRIC PROGRAM before you delete other passwords.
- If you want to delete a password (you have entered '2') you will get the form shown in figure 11.
- Please enter the password that is to be deleted and press <Return>. Whether you have had success or not is displayed in a short message. If you reached the password-deletion-form by mistake you can enter a word which is not a password — then nothing will happen.

6.6 Storing patient-data in different data-directories

It is possible to store the patient data in different directories. This will make the files easier to find. Initially there is only one directory with a directory-description that you have entered or that is installed from the Anthropometric Program .

Submenu of ANTHROPOMETRICprogram by f.hosenfeld Version: 4.62E NOV 1991

PLEASE ENTER PASSWORD

For further usage of this program in the way you selected
the input of a valid PASSWORD is necessary!
You legalize yourself for further access.

Please enter PASSWORD now:
(Input won't be echoed on the screen)

:

Figure 7: Password-screen

6.6.1 Creating a new data-directory

To create a new data-directory select in menu shown in figure 5 item '**3 - other facilities**' and then item '**4 - Data directories**' in submenu of figure 8. Then you will get another submenu where you have to select the item for creating a new data-directory. Finally the ANTHROPOMETRIC PROGRAM asks you to give a contents-description of the new data-directory. This description helps you to keep track which files you have stored in which directories.

6.6.2 Altering the contents-description of a data-directory

It is similar to section 6.6.1 but in the last step you have to select '**2 - Alter description of directory**' instead of '**1 - Add a new data-directory**'. ANTHROPOMETRIC PROGRAM now shows you all data-directories. You select one and enter the new description.

6.6.3 Moving files in other directories

Follow the same steps as in 6.6.1 but select '**3 - Move file in another dir.**' instead of '**1 - Add a new data-directory**'. Now you have to select the patient-data-file which you want to move into another directory. Then you select the target directory. After moving the file into the target directory it is erased in the old one. If there are a lot of files in one directory the move-operation will require some time.

```
Submenu of ANTHROPOMETRICprogram by f.hosenfeld Version: 4.62E NOV 1991
Other facilities of the program:
Select :
1 - Data-management-file
2 - Data of patients
3 - Mean-patterns
4 - Data-directories
5 - Correlation of patterns
6 - Given-pattern-measuring
7 - Password
8 - SPSS-Output
```

Figure 8: Other facilities

```
Submenu of ANTHROPOMETRICprogram by f.hosenfeld Version: 4.62E NOV 1991
PASSWORDMANAGEMENT:
-----
Select :
1 - ADD a new PASSWORD
2 - DELETE a PASSWORD
```

Figure 9: Change Password

6.6.4 Deletion of data-files

You follow the steps of 6.6.1 but select '**4 - Delete files**' instead of '**1 - Add a new data-directory**'. Then you select the data-file which is to be deleted. After confirming your deletion-command the file will be deleted. If there are a lot of files, this will require some time.

6.7 SPSS-Output

There is a new feature of the ANTHROPOMETRIC PROGRAM which enables you to analyse your data with the statistical program SPSS. This requires that you have an installation of the SPSS-System. This feature is yet not fully implemented, but we are working on it. In the following the facilities which you can use up to now are described.

After pressing '**3**'-key and '**8**'-key (**Other facilities - SPSS-Output**) you'll get the screen shown in figure 12.

The ANTHROPOMETRIC PROGRAM generates a SPSS-File called **SPSSANTR.DAT** which you can use to perform a

Submenu of ANTHROPOMETRICprogram by f.hosenfeld Version: 4.62E NOV 1991

A D D N E W P A S S W O R D

For you are legalized, you are permitted
to enter now a new password!
(Input won't be echoed on the screen!)

:

Figure 10: Add new password

two-group-discriminant-analysis. You have to select patterns or groups of patterns and assign the number of a group(1 or 2) to each.

The selection of the patterns can be performed as in the section about mean-pattern-creating (6.1) described above. After the completion of the selection, the ANTHROPOMETRIC PROGRAM writes the data of all selected patterns into the file **SPSSANTR.DAT**.

You received two files within the ANTHROPOMETRIC PROGRAM -distribution, which you need for the SPSS-Analysis:

- **ANTRO.INC:**
This file performs the discriminant analysis using SPSS and the data-file **SPSSANTR.DAT** created by the ANTHROPOMETRIC PROGRAM . You have to copy the file **ANTRO.INC** into your SPSS-directory.
- **SPSS.BAT:**
This is an example-batch-file (see figure 13), which copies the file **SPSSANTR.DAT** into your SPSS-Directory and starts SPSS with the SPSS-File **ANTRO.INC**. Of course you must adapt this file to your personal configuration. You have to insert your own ANTRO- and SPSS-Path.

When you have customized your **SPSS.DAT**-File, you must leave the ANTHROPOMETRIC PROGRAM after creating the **SPSSANTR.DAT**-File. At your DOS-Prompt you enter **SPSS<Return>**. Then SPSS starts and performs the discriminant analysis.

Submenu of ANTHROPOMETRICprogram by f.hosenfeld Version: 4.62E NOV 1991

DELETE PASSWORD

You are legalized to DELETE a PASSWORD.

ATTENTION:

If there is only ONE valid password stored in your password-file, you have no more access on actions which are password-protected!!

Please enter password, that is to delete!
(Input won't be echoed on the screen!

:

Figure 11: Delete password

7 Some remarks

- Please make a working-copy of your ANTHROPOMETRIC PROGRAM-disk.
- You can abort the ANTHROPOMETRIC PROGRAM by pressing <Ctrl Break> (almost) any time.
- Your comments on the ANTHROPOMETRIC PROGRAM are welcome.
- You can write to the following e-mail-address

friedel@hosenfeld.de

- For this manual: ©f.hosenfeld (August 6, 1997)

Submenu of ANTHROPOMETRICprogram by f.hosenfeld Version: 4.62E NOV 1991
S P S S - O U T P U T

With this Option, you can create a file, which can be read by SPSS.
You can enter the name of one or more diagnoses and then, the SPSS-file will be created. Furthermore, you can select additional patterns for this file!
You have to assign each case to a group (1 or 2) to the discriminant analysis.

Figure 12: SPSS-Output

```
copy spssantr.dat d:\math\spss
d:
cd \
cd math\spss
spsspc "antro.inc"
c:
cd c:\antro
```

Figure 13: SPSS-Bat-File