1. Introduction:

When human tissues are submitted to a force of traction, they react by increasing in size.

The principle of traction is applied in modern medicine to stimulate the generation of new tissue to cover burn wounds or areas of hair loss (placing a tissular expander underneath the normal skin) or to generate bone lengthening.

In other cultures this principle is applied to lengthen different parts of the body, like the neck of the Giraffe Women of the Paduang tribe in Birmania, or to produce a lengthening of the lips in certain African tribes, by using pieces of wood to create traction. In India, they hang stones on the penis as a form of penitence, with the result being an enlargement of the organ.

The Andropenis® design is based on the principle of external traction.

It is able to exert a gradual traction force of 600 to 1500 grams. The device consists of a plastic ring into which the penis is introduced and from where 2 dynamic metal rods originate the traction. In the upper part there is a plastic support where a silicone band holds the glans in place.

Based on our clinical experience the traction device yields the following results:

- An increase in the length of the penis in erection and flaccidity.
- An increase in the girth of the penis in erection and flaccidity.

These results will be analyzed statistically to be verified and quantified. See next.

2. Materials and methods:

Number of patients: 37 men, 22 to 60 years of age. These men came from different cities in Spain. The patients enrolled in the study were healthy men with normal erection capabilities who never underwent penile surgery. Patients suffering from penile curvatures or other diseases were excluded from the study.

Traction device: The Andropenis® extender.

Traction Force: 600 gr during the 1st month, 900 gr during the 2nd month, 1100 gr during the 3rd and 4th month, and 1200 gr during 5th y 6th month.

Application period: 10 hours a day, every day of the month over a period of 3-6 months.

3. Results:

3.1. Increase in length in erection:

The increase in the length of the penis in erection is proportional to the amount of time the device is worn. Such growth is linear, as it can be observed in the chart. This translates into the following: the longer the time of use, the more length is obtained. The lineal correlation coefficient between time of use and increase in length in erection is 0.760 (p=0.000).
The average length increase of the penis in erection after a month of use is 0.4726 cm. The standard deviation is 0.1329 cm. The 95% confidence interval is [0.4283 ; 0.5169]; that indicates a minimal gain in the population of 0.4283 cm/month.

Regression line is:

\[
DL\,\text{erect} = -0.327 + 0.562 \times t
\]

This calculation will allow us to estimate the increase in length of the penis in erection, based on the months of use of the device. There is a variance of 57.7% in the increment in length, which is explained by the variance in the duration of treatment (R²=0.577). The other 42.3% of variance is due to other differences which are innate to each individual and don’t depend on the duration of treatment.

3.2.- Increment in length in the flaccid state:

The increment in length in the flaccid state is not related to the time of use of the device. Said increment is linear as the graph shows. The longer the device is worn, the greater the increase in length. The coefficient of the linear correlation between the time of use and the increment in length in the flaccid state is 0.725 (p=0.000).
Penile enlargement without surgery with the Andropenis®
Scientific Research presented in the First Virtual Sexology and Hispanoamerican Sexual Education Congress (February-2001).
Dr. Eduardo A. Gómez de Diego, 1998, Andrology Services, Andromedical® Clinic, Madrid (Spain).

The average monthly increment in length of the penis in the flaccid state is 0.4834 cm and the typical deviation is 0.1983 cm. The 95% confidence interval is [0.4173; 0.5495] and indicates a minimum increase in the population of 0.4173 cm/month.

Regression line is:
\[ DL \, flac = -1.300 + 0.840 \times t \]
This calculation allows us to estimate the length increment of the penis in the flaccid state based on the months of use of the device. There is a variance of 52.5% in the increment of length, that can be explained on the base of the variation of the treatment duration (R²=0.525). The remaining 47.5% is due to other differences which are innate to the individual and not to be associated with the duration of the treatment.

3.3.- Variability:
The variability in the length increase of the penis in erection state is different from that of the penis in flaccid state; the difference in variation is significant (p=0.003) and indicates a greater dispersion of the length increase during flaccidity than in erection.
3.4.- The length increment doesn’t depend on the age:

As a very interesting result, the study shows that the length increment doesn’t depend on the age of the patient, since the linear correlation coefficient is not significant (r=0.008, p=0.961). In other words, the patient’s age doesn’t affect the length increment.

3.5.- Circumference increment in erection:

In erection, the average increment of the circumference was 0.8405 cm and the typical deviation s=0.6057. The average percentage of growth was 9.0741%. The 95% confidence interval of the studied population was 0.6386;1.0425, what shows a minimal perimeter growth increase of 0.6386 cm.

3.6.- Circumference increment in flaccid state:

The average increment of the circumference in flaccid state was 0.8405 cm and the typical deviation s=0.6057. The average percentage of growth was 9.0741%. The 95% confidence interval of the studied population was 0.6386;1.0425, what shows a minimal perimeter growth increase of 0.6386 cm.

3.7.- Length increase in erection state depending on use:

Dividing the studied population in four subgroups, depending on the amount of time they used the Andropenis®, we obtain the following results:

After three month:
The average length increment in erect state was 1.4118, obtaining an average growth of 10.5580% compared to the initial length. The 95% confidence interval of the studied population was 1.1522;1.6713, which shows an average minimum growth of 1.1522 cm in three months.

After four month:
The average length increment in erected state was 1.8462, obtaining an average growth of 14.1113% compared to the initial length. The 95% confidence interval of the studied population was 1.5809;2.1114, which shows an average minimum growth of 1.5809 cm in four months.

After five month:
The average length increment in erected state was 2.2750, obtaining an average growth of 16.6303% compared to the initial length. The 95% confidence interval of the studied population was 1.7656;2.784, which shows an average minimum growth of 1.7656 cm in five months.
Penile enlargement without surgery with the Andropenis®
Scientific Research presented in the First Virtual Sexology and Hispanoamerican Sexual Education Congress (February-2001).
Dr. Eduardo A. Gómez de Diego, 1998, Andrology Services, Andromedical® Clinic, Madrid (Spain).

After six month:
The average length increment in erected state was 3.3333 cm, obtaining an average growth of 27.5% compared to the initial length. The 95% confidence interval of the studied population was 2.8162; 3.8504, which shows an average minimum growth of 2.8162 cm in six months.

The samples corresponding to a time of use of five and six months are very small, consequently they show small intervals and are less reliable.

3.8.- Distribution:
Although the variables that we considered in the population are not normal, the average samples have normal distribution since the amount of the sample is greater than 20.

3.9.- Abbreviations:

<table>
<thead>
<tr>
<th>Inc-Long-Erec</th>
<th>Length increment in erected state</th>
</tr>
</thead>
<tbody>
<tr>
<td>DL exec</td>
<td>Change in length increment in erected state</td>
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<tr>
<td>L.L.ERT</td>
<td>Length increment in erection</td>
</tr>
<tr>
<td>L.FLAC</td>
<td>Length increment in flaccid state</td>
</tr>
<tr>
<td>DL flac</td>
<td>Change in length increment in flaccid state</td>
</tr>
<tr>
<td>L.L. FLT</td>
<td>Length increment in flaccid state as a function of the time variable</td>
</tr>
<tr>
<td>Inc-Long-Erec</td>
<td>Length increment in erected state</td>
</tr>
<tr>
<td>% L.Long-Erec</td>
<td>Length increment percentage in erected state</td>
</tr>
</tbody>
</table>

4. Conclusions:
The use of the Andropenis® will increase the length of the penis, both in erect and flaccid state.

The increase in length, both in erection and flaccidity, is directly proportional to the time of use.

The increase in length both in erection and flaccidity does not depend on the natural size of the patient’s penis.

The average length growth of the penis in cm/month in 95% of the patients lay between 0.4283 and 0.5163 in erection and between 0.4173 and 0.5495 in flaccidity.

The variances in the length of the penis in erection are more uniform than those in flaccidity, which tend to be more disparate.

The variance of the length of the penis in erection is not related to the age of the patient.

The use of the penile traction device will increase the circumference of the penis, both in erection and flaccidity.

The average circumference growth in cm/month in 95% of the patients was between 0.6111 and 1.0200 in erection, and between 0.6386 and 1.0425 in flaccidity. The duration of treatments was of 3-6 months.